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CITY OF Grand Junction COLORADO

CITY COUNCIL AGENDA
WEDNESDAY, FEBRUARY 7, 2018
250 NORTH 5TH STREET
5:15 PM – PRE-MEETING – ADMINISTRATION CONFERENCE ROOM
6:00 PM – REGULAR MEETING – CITY HALL AUDITORIUM

To become the most livable community west of the Rockies by 2025

Call to Order, Pledge of Allegiance, Moment of Silence

Citizen Comments

Individuals may comment regarding items scheduled on the Consent Agenda and items not specifically scheduled on the agenda. This time may be used to address City Council about items that were discussed at a previous City Council Workshop.

Council Reports

CONSENT AGENDA

The Consent Agenda includes items that are considered routine and will be approved by a single motion. Items on the Consent Agenda will not be discussed by City Council, unless an item is removed for individual consideration.

1. Approval of Minutes

a. Minutes of the January 17, 2018 Regular Meeting

b. Minutes of the January 19, 2018 Special Session

c. Minutes of the January 30, 2018 Special Session

REVISED

2. Set Public Hearings

All ordinances require two readings. The first reading is the introduction of an ordinance and generally not discussed by City Council. Those are listed in Section 2 of the agenda. The second reading of the ordinance is a Public Hearing where public comment is taken. Those are listed on the Regular Agenda.

a. Quasi-judicial

i. Introduction of an Ordinance Zoning the Adams Annexation to R-8 (Residential – 8 du/ac), Located South of B ¼ Road, West of 27 ½ Road and just West of the Mesa County Fairgrounds and Set a Public Hearing for February 21, 2018

ii. Introduction of an Ordinance Rezoning the Proposed Patterson Pines Subdivision, Located at 2920 E 7/8 Road from R-4 (Residential – 4 du/ac) to R-8 (Residential – 8 du/ac) and Set a Public Hearing for February 21, 2018

iii. Introduction of an Ordinance Vacating a Portion of the Cannell Avenue Right-of-Way South of Orchard Avenue and Setting a Hearing for February 21, 2018

iv. Introduction of an Ordinance Amending Ordinance No. 4565 Extending the Development Schedule for the Mesa State Development Outline Development Plan to December 15, 2022 and Setting a Hearing for February 21, 2018

v. Introduction of an Ordinance Vacating the Remaining North-South Alley Right-of-Way of Block 7, Richard D. Mobley's First Subdivision and Setting a Hearing for February 21, 2018

3. Continue Public Hearings

a. Legislative

i. An Ordinance Amending Chapter 12 of the Grand Junction Municipal Code Concerning Riverfront and Other Trail Regulations Concerning the Operation of Electrical Assisted Bicycles - **Continued to February 21, 2018**

4. Contracts

a. Contract for Architectural Services for Two Rivers Convention Center Remodel

b. Purchase Police Special Services Vehicles

5. Resolutions

a. A Resolution Amending Resolution No. 56-17 Appointing and Assigning City Councilmembers to Represent the City on Various Boards, Committees, Commissions, Authorities, and Organizations

6. Other Action Items

a. Request for Fireworks Displays at Suplizio Field

REGULAR AGENDA

If any item is removed from the Consent Agenda by City Council, it will be considered here.

7. Public Hearings

a. Quasi-judicial

i. A Resolution Accepting the Petition for Annexation and Ordinance Annexing the Taurus Park Plaza Annexation of 40.414 Acres, Located at 789 23 Road

8. Resolutions

a. Resolutions of Intent Requesting Coverage Under the Fire and Police Defined Benefit System Administered by the Fire and Police Pension Association (FPPA) of Colorado for Sworn Firefighters and Police Officers

9. Other Action Items

a. Consider a request for a North Avenue Catalyst Grant in the Amount of $10,000 for Best Built Homes, Located at 1401 Glenwood Avenue

b. Consider an Appeal of the Community Development Director's conditional approval of Final Plat for Pinnacle Ridge Subdivision, Filings 1 and 2

10. Non-Scheduled Citizens & Visitors

This is the opportunity for individuals to speak to City Council about any item and time may be used to address City Council about items that were discussed at a previous City Council Workshop.

11. Other Business

12. Adjournment

GRAND JUNCTION CITY COUNCIL
MINUTES OF THE REGULAR MEETING

January 17, 2018

The City Council of the City of Grand Junction convened into regular session on the 17th day of January 2018 at 6:00 p.m. Those present were Councilmembers Bennett Boeschenstein, Chris Kennedy, Phyllis Norris, Duncan McArthur, Barbara Traylor Smith, Duke Wortmann, and Council President Rick Taggart. Also present were City Manager Greg Caton, City Attorney John Shaver, and City Clerk Wanda Winkelmann.

Council President Taggart called the meeting to order and Councilmember McArthur led the Pledge of Alliance which was followed by the invocation by Andy Lovelace, New Horizons Foursquare Church.

Presentation - 2017 Champion of the Arts Award

Councilmember Boeschenstein introduced Andy Hamilton, Chair of the Arts and Culture Commission. Mr. Hamilton thanked Council and said this award is given to those that epitomize the very best in leadership, generosity, dedication and commitment towards arts and culture in our community. Mr. Hamilton also noted the economic impact and benefits of arts and culture to the local economy.

Mr. Hamilton said the Arts Commission chose KAFM Public Radio this year as the Champion of the Arts Award recipient and was nominated by Terry Doherty. KAFM was recognized for this honor at the Centennial Band's Christmas Concert at the Avalon Theatre and was presented with Gilded Galaxy by the very talented Grand Valley artist Pavia Justinian.

Mr. Hamilton described the programming and events KAFM offers to their local, national and international audiences by way of radio and in their 75 seat venue. KAFM has a small but mighty staff of four and a volunteer staff of over 200 and is committed to community, creativity, innovation, teamwork, accountability, initiative and passion. KAFM deserves this recognition of leading the charge of promoting a cultural community in the Grand Valley. He then introduced Executive Director Ramona Winkeller and Joe Gudorf, KAFM Board President. Ms. Winkeller mentioned some highlights of KAFM programming and events. Mr. Gudorf thanked the City and Council for what they do to support KAFM.

Proclamation - Proclaiming January 2018 as "National Crime Stoppers Month" in the City of Grand Junction

Councilmember Traylor Smith read the proclamation. Crime Stoppers members Chalane Coit, Shari Zen, Kathy Daniels, and Crista Campbell were present to accept the proclamation. Ms. Coit thanked Council for their support and described how Crime Stoppers helps the community solve crimes. Ms. Coit noted Crime Stoppers of Mesa County was recognized at the national level for two of their programs and local member, Kathy Daniels, was awarded the Crime Stoppers USA Board Member of the Year. Ms. Coit described the community partnership programs with Colorado West Outdoor Advertising and Colorado Mesa University that were recognized and thanked them for their help with sponsorship and the mentor and scholarship program.

Certificate of Appointment - Riverfront Commission

Councilmember Wortmann presented Jeffery Fleming with his certificate of appointment to the Riverfront Commission. Mr. Fleming thanked Council and said it is an honor to be selected. He hopes to raise awareness of the possibilities for the Colorado River in the community, both recreationally and economically.

Citizens Comments

Tom Acker and Joe Kellerby, members of Western Slope Against Human Trafficking, were present to raise awareness of January being National Slavery and Human Trafficking Prevention Month. Mr. Acker said trafficking is too common and many don't recognize it; he defined trafficking, reviewed current statistics, and listed some local training opportunities. Mr. Kellerby, Mesa County Child Welfare Manager, said the most vulnerable population are foster children between the ages of 10 - 15. Councilmember Kennedy asked if there are statistics specifically for the Western Slope and/or Mesa County. Dr. Acker said no, but provided some recent local examples.

Cory Wilcox, who resides at 14th Street and Elm Avenue, said the house across the street (1450 Elm Avenue) from his house burned on June 25, 2017. Mr. Wilcox expressed concerns regarding neighborhood and traffic safety and property values. City Attorney Shaver said the City has been working with the owner and the Mesa County Building Department in order to remedy this situation. There have been abatement orders but there are demolition complications such as airborne contaminants that will need to be contained during the demolition process. The City is sensitive to the problem and is working on it. City Attorney Shaver asked Mr. Wilcox to contact the Legal Department for additional information.

Councilmember Wortmann asked if there is a time limit for these types of situations to be resolved. City Attorney Shaver said there is no ordinance defining a time limit, but

the City can step in and abate any type of nuisance, however; the City would front the money and then the property owner would have a tax lien on the property which often exceeds the property value, so this is used only as a last resort.

Bruce Lohmiller said the Central Intelligence Agency is in the recruitment process and spoke on Night Patrols, 911 Violence Reports, M-1 Holds and a Comprehensive Sexuality Education program.

Council Reports

Councilmember McArthur went to the most recent Community Coffee with City Manager Caton which had a good turnout. He attended a Pre-Legislative Session where Senator Ray Scott discussed various legislative issues coming before the General Assembly in 2018. On January 12th he attended a planning meeting held by the Associated Governments of Northwestern Colorado (AGNC) regarding an economic district and on the 16th he went to a Grand Junction Area Chamber of Commerce (COC) legislative video conference with Senator Scott and Representatives Dan Thurlow and Yeulin Willett.

Councilmember Wortmann, Council liaison to the Parks Improvement Advisory Board, reported finances are in good order and he is looking forward to projects being funded this year such as a new infield at Suplizio Field. Councilmember Wortmann enjoyed attending the Martin Luther King, Jr. (MLK) Day events at Colorado Mesa University (CMU). There was a good turnout of 200-250 people.

Councilmember Boeschenstein attended the MLK March and gathering at CMU and said there were a lot of good speeches. Councilmember Boeschenstein read an email he sent to former Peace Corps co-workers in Africa regarding comments made by President Trump.

Councilmember Kennedy had no comments.

Councilmember Traylor Smith commented while in Austin, TX she noticed the city did not do a good job planning for infrastructure, specifically it's east/west corridors which reminded her to be cognizant of the importance and need of infrastructure planning and growth. Councilmember Traylor Smith said she is happy to know the 29 Road Interchange project is on U.S. Senator Cory Gardner's list to the Department of Transportation and noted it is important to move these types of projects forward.

Councilmember Norris attended the Visit Grand Junction meeting where they reviewed 2017 and although, they did not hit their projected revenue, they were up 3% and group sales were over goal. She then noted the Grand Valley was reported in the Wine Enthusiast as one of the top 10 wine getaways in the U.S. Councilmember Norris

joined the MLK walk from Handy Chapel to City Hall and said three times as many people attended this year compared to 2017. She commented that the MLK Proclamation presentation was very well done by Mayor Taggart.

Council President Taggart said the Grand Junction Regional Airport Authority (GJRAA) Board hired a new Airport Executive Director, Angela Padalecki. He, Ms. Padalecki and Interim Director Mark Achen developed a transition plan and Ms. Padalecki has begun implementing it and is very engaged with her team. This week Ms. Padalecki started to be introduced to the community and is scheduled to attend the February 5th Council workshop. The GJRAA Board was also pleased to hear the BLM (Bureau of Land Management) accepted environmental assessments for land to reposition the 27 ¼ Road runway and is in the process of transferring land to the FAA (Federal Aviation Administration) who will in turn gift the land to the GJRAA for this project. The project design is in process and now there is enough information to submit the RFP (request for proposal). The project is targeted to be finished in 2020. Council President Taggart said it was a real pleasure to present and participate in the MLK events.

Consent Agenda

Councilmember Traylor Smith moved to approve adoption of the Consent Agenda items #1 through #3. Councilmember Kennedy seconded the motion. Motion carried by roll call vote with Councilmember Boeschenstein voting NO.

1. Approval of Minutes

a. Minutes of the January 3, 2018 Regular Meeting

2. Set Public Hearings

a. Legislative

i. An Ordinance Amending Chapter 12 of the Grand Junction Municipal Code Concerning Riverfront and Other Trail Regulations Concerning the Operation of Electrical Assisted Bicycles and Set a Public Hearing for February 7, 2018

b. Quasi-judicial

i. A Resolution Referring a Petition to the City Council for the Annexation of Lands to the City of Grand Junction, Colorado, Setting a Hearing on Such Annexation, Exercising Land Use Control, and Introducing Proposed Annexation Ordinance for the 10.652 acre Camp Annexation, Located at 171 Lake Road, and Set a Public Hearing for March 21, 2018

3. Resolutions

a. Water Treatment Plant Filter Upgrade Construction Final Acceptance

Regular Agenda

Public Hearing - Ordinance Amending Ordinance 4772 Concerning the Downtown Development Authority Tax Increment Debt Financing

With Ordinance 4772 City Council authorized the issuance of Downtown Development Authority (DDA) Tax Increment and Refunding Bonds, Series 2017 and Series 2018. Ordinance 4772 approved a total of $19.12 million; $10 million to be issued in 2017 and $9.12 million in 2018; however, to keep both bonds bank-qualified the order of the issuances were reversed and $9.12 million was issued in 2017 and the $10 million issuance will occur in 2018.

Deputy Finance Director Jay Valentine reviewed the basis and history of Ordinance 4772 and how the issuances were split into two series. He further explained that because a 2017 one-year lease with Dell Financial Services was considered by the City's Bond Counsel as a bank-qualified transaction, the DDA issuances, as initially provided for in Ordinance 4772 was adjusted within the authority of the Ordinance to maintain the overall bank qualification of the DDA financings ($9.12 million in 2017 and the $10 million in 2018). With the adoption of Ordinance 4783 the issuances will be formally amended to confirm the reordering.

City Attorney Shaver said staff is comfortable making this recommendation since it is consistent with the overall authority the Council provided with Ordinance 4772.

Councilmember Kennedy asked if the amount being financed is the same and if there are any concerns regarding financing for 2018. Mr. Valentine said the amounts are the same and he does not foresee the City needing to finance debt in 2018, but if so, it will not be bank-qualified.

The public hearing opened at 7:52 p.m.

There were no public comments.

The public hearing was closed at 7:52 p.m.

Councilmember Kennedy moved to adopt Ordinance No. 4783 – An ordinance amending Ordinance 4772 concerning the issuance of Downtown Development Authority Tax Increment and Refunding Bonds on final passage and ordered final

publication in pamphlet form. Councilmember Boeschenstein seconded the motion. Motion carried unanimously by roll call vote.

Resolution Adopting the City of Grand Junction 2018 Legislative Agenda

City Manager Caton explained this item would typically be on the consent agenda, but since Legislative Agendas have not been presented in quite a few years, it was decided to put it on the regular agenda for the purpose of discussion

City Manager Caton said the 2018 Legislative Agenda identifies the recommended legislative priorities of the City in the upcoming State Legislative Session and will aid in guiding the City's lobbying activities. Due to the unknown nature of bills introduced in the State Legislature, it is important that the Legislative Agenda remain flexible. General concepts and direction are provided for discussion and more specific information can be provided after bills are officially introduced. The issues discussed in this agenda are based on the needs of the City and anticipated legislation for 2018. Council designated Councilmember McArthur as the liaison through this Legislative Session and he will meet with staff, State representatives and other entities like AGNC and Colorado Municipal League (CML) regarding City input. This year the Agenda is more of a defensive document; however, letters may be submitted in support of certain items.

Councilmember McArthur said he attended the CML Policy Meeting where they adopted a similar policy. AGNC also deals actively in the Legislative Session as does the Colorado Water Congress. It is good to have this guidance to support local control and issues that affect the City. Councilmember McArthur will be in Denver often for various organizations and will be able to notify Council of any possible controversial items.

Council President Taggart noted the Gallagher Amendment (passed in 1982) is a "double whammy" regarding amounts assessed for property taxes which puts a burden on small and new businesses.

City Manager Caton agreed and said the Western Slope voice needs to be heard on the Front Range. The Gallagher Amendment puts a disproportionate burden of property taxes on businesses, but has benefits for residential owners. This is very complicated and since it is a Constitutional amendment it would require a State vote for it to be changed. The Grand Junction Chamber of Commerce could also be involved in discussions.

Councilmember McArthur said he spoke with Dennis Gallagher (author of the amendment) and he regrets putting this forward since it has created economic disincentives. Another unintended consequence is municipalities discouraging residential growth since business growth is more financially beneficial.

City Manager Caton said City property tax generated constitutes 11% of the City's budget, so the Gallagher Amendment does not affect the City significantly. However, there is concern regarding the broader community, specifically special districts who rely solely on property taxes. The TABOR (Taxpayer Bill of Rights) Amendment (passed in 1992) has compounded some of the Gallagher effects for Colorado municipalities. The Gallagher Amendment also creates another challenge to the Western Slope regarding residential property taxes; Denver Metro growth rates are used to determine the assessment's and creates a large gap since the local market does not track with those.

Councilmember Boeschenstein noted Mesa County is looking to "de-Bruce" and suggested the City should look into it as well.

Council President Taggart noted the County is seeking to "de-Bruce" for grant purposes.

Councilmember Norris pointed out citizens "de-Bruced" with their vote in favor of 2B in 2017. City Manager Caton said that will be in effect for five years.

Councilmember Boeschenstein moved to adopt Resolution No. 08-18 – A Resolution concerning the 2018 Colorado General Assembly and the Legislative Policy Agenda of the City Council. Councilmember McArthur seconded the motion. Motion carried unanimously by roll call vote.

Non-Scheduled Citizens & Visitors

Boy Scout Jedd Brinton attended the meeting to help earn his Citizenship Badge and said the meeting was a combination of business and fun. Council invited him to lead the Pledge of Allegiance at an upcoming meeting.

Other Business

There was none.

Adjournment

The meeting adjourned at 7:09 p.m.

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Wanda Winkelmann, MMC
City Clerk

GRAND JUNCTION CITY COUNCIL

SPECIAL SESSION MINUTES

JANUARY 19, 2018

The City Council of the City of Grand Junction, Colorado met in Special Session on Friday, January 19, 2018 at 2:00 p.m. in the Administration Conference Room, 2nd Floor, City Hall, 250 N. 5th Street. Those present were Councilmembers Bennett Boeschenstein, Chris Kennedy, Duncan McArthur, Phyllis Norris, Barbara Traylor Smith, Duke Wortmann, and Mayor Rick Taggart.

Staff present for the Executive Session were City Manager Greg Caton, City Attorney John Shaver, and Municipal Judge Care McGinnis.

Councilmember Kennedy moved to go into Executive Session to discuss personnel matters under Colorado Revised Statutes 24-6-402(4)(f)(i) of the Open Meetings Law relative to City Council employees specifically the City Manager, City Attorney, and the Municipal Judge and will not be returning to open session. Councilmember Norris seconded the motion. Motion carried unanimously.

The City Council convened into Executive Session at 2:04 p.m.

Councilmember Kennedy moved to adjourn. Councilmember Wortmann seconded. Motion carried unanimously.

The meeting adjourned at 4:15 p.m.

Wanda Winkelmann
City Clerk

GRAND JUNCTION CITY COUNCIL

SPECIAL SESSION MINUTES

JANUARY 30, 2018

The City Council of the City of Grand Junction, Colorado met in Special Session on Tuesday, January 30, 2018 at 6:00 p.m. in the Administration Conference Room, 2nd Floor, City Hall, 250 N. 5th Street. Those present were Councilmembers Bennett Boeschenstein, Chris Kennedy, Duncan McArthur, Phyllis Norris, Barbara Traylor Smith (via phone), Duke Wortmann (via phone), and Mayor Rick Taggart.

Also present for the Executive Session was attorney Marni Nathan Kloster via phone.

Councilmember Kennedy moved to go into Executive Session to discuss personnel matters under Colorado Revised Statutes 24-6-402(4)(f)(i) of the Open Meetings Law relative to City Council employees specifically the Municipal Judge and will not be returning to open session. Councilmember Boeschenstein seconded the motion. Motion carried unanimously.

The City Council convened into Executive Session at 6:03 p.m.

Councilmember Kennedy moved to adjourn. Councilmember Boeschenstein seconded. Motion carried unanimously.

The meeting adjourned at 6:43 p.m.

Wanda Winkelmann
City Clerk

Grand Junction City Council

Regular Session

Item #2.a.i.

Meeting Date: February 7, 2018

Presented By: Scott D. Peterson, Senior Planner

Department: Community Development

Submitted By: Scott D. Peterson, Senior Planner

Information

SUBJECT:

Introduction of an Ordinance Zoning the Adams Annexation to R-8 (Residential – 8 du/ac), Located South of B ¼ Road, West of 27 ½ Road and just West of the Mesa County Fairgrounds and Set a Public Hearing for February 21, 2018

RECOMMENDATION:

Planning Commission heard this item at its January 23, 2018 meeting and forwarded a recommendation of approval to City Council.

EXECUTIVE SUMMARY:

The Applicant, Paul Adams, is requesting to zone 13.159 acres of currently undeveloped property located west of 27 ½ Road and just west of the Mesa County Fairgrounds from County RSF-4 zone district to R-8 (Residential – 8 du/ac) as part of the Adams Annexation request. This property does not have an assigned address. The Applicant would like to market and sell the property for future residential subdivision development. The proposed zoning of R-8 implements the Comprehensive Plan Future Land Use Map, which has designated the property as Residential Medium (4 – 8 du/ac). The property is currently zoned RSF-4 (Residential Single Family – 4 du/acre) in the County. The request for annexation will be considered by the City Council.

BACKGROUND OR DETAILED INFORMATION:

The Applicant has requested annexation into the City limits and a zoning of R-8 (Residential – 8 du/ac) in order to market and sell the 13.159-acre undeveloped property in anticipation of future residential subdivision development. Though there is not a pending development application, should the Applicant or future owner want to

develop they would be subject to annexation as compelled by the 1998 Persigo Agreement with Mesa County. This agreement requires all future residential development that is considered annexable development be annexed, zoned and reviewed by the City.

Adjacent properties to the south, west and east are single-family detached homes on properties ranging in size from 0.56 to 5.45 acres which are zoned 4 dwelling units to the acre in a mixture of both City and County jurisdiction. To the north are also single-family homes zoned RSF-4 in the County along with a commercial property (City zoned C-2) which contains Humphrey RV's sales lot, etc.

A Neighborhood Meeting was held on August 21, 2017 consistent with the requirements of Section 21.02.080 (e) of the Zoning and Development Code. Four neighbors attended the meeting along with the Applicant and City Staff. The Applicant discussed the proposed annexation, zoning request and provided some additional background information. Area residents did voice concern regarding the anticipated subdivision development of the property and the potential for an increase in residential density to the area. To date, the City has received one email from the public concerning the proposed zoning.

Notice was completed consistent to the provisions in Section 21.02.080(g) of the City's Zoning and Development Code. Mailed notice of the application in the form of notification cards was sent to surrounding property owners within 500 feet of the subject property on September 26, 2017. The subject property was posted with an application sign on September 27, 2017 and notice of the public hearing was published on January 16, 2018 in the Grand Junction Sentinel.

ANALYSIS

Section 21.02.160 (f) of the Grand Junction Zoning and Development Code provides that the zoning of an annexation area shall be consistent with the adopted Comprehensive Plan and the criteria set forth.

The criteria for review is set forth in Section 21.02.140 (a) and includes that the City may rezone property if the proposed changes are consistent with the vision, goals and policies of the Comprehensive Plan and must meet one or more of the following rezone criteria as identified:

(1) Subsequent events have invalidated the original premises and findings; and/or

The property owner has petitioned for annexation into the City limits with a requested zoning district of R-8 which is compatible with the existing Comprehensive Plan Future Land Use Map designation of Residential Medium (4 – 8 du/ac). Since the property is currently in the County, there have been no subsequent events that have invalidated

the original premise therefore staff has not found this criterion to have been met.

(2) The character and/or condition of the area has changed such that the amendment is consistent with the Plan; and/or

The adoption of the Comprehensive Plan in 2010, designated this property as Residential Medium (4 – 8 du/ac). The Applicant is requesting an allowable zone district that is consistent with the density range allowed by the Residential Medium category.

Existing properties to north, south, east and west are within Mesa County jurisdiction and are zoned RSF-4. City zoning adjacent to the property to the north is zoned C-2 (General Commercial) with R-4 (Residential – 4 du/ac) to the south and west. The residential character of this area of Orchard Mesa is single-family detached on properties ranging in size from 0.56 to 5.45 acres. The character and current condition of the area has not significantly changed in recent history however, the requested zone district is compatible with the Comprehensive Plan designation. Staff does not find this criterion has been met.

(3) Public and community facilities are adequate to serve the type and scope of land use proposed; and/or

Adequate public and community facilities and services are available to the property and are sufficient to serve land uses associated with the R-8 zone district. Ute Water and City sanitary sewer are both presently available in B ¼ Road. Property can also be served by Xcel Energy natural gas and Grand Valley Power electric. A short distance away is Dos Rios Elementary School and further to the north along Highway 50 are commercial retail centers that includes offices, convenience stores and gas islands, restaurants, commercial businesses and a grocery store. Near the property directly to the east is the Mesa County Fairgrounds. Due to the proximity and availability of services and facilities, Staff finds this criterion has been met.

(4) An inadequate supply of suitably designated land is available in the community, as defined by the presiding body, to accommodate the proposed land use; and/or

The community as a whole has more than 1,868 acres of R-8 zoned land. This zone district comprises the largest amount of residential acreage within the City limits. However, in Orchard Mesa and south of Highway 50, there exists no R-8 zoning. The lack of supply for this zone type in this part of the community impedes the ability to provide a diverse supply of housing types; a key principle in the Comprehensive Plan. Because of lack of supply in this part of the community, staff has found there exists an inadequate supply of suitably designated land available and has therefore found this criterion been met.

(5) The community or area, as defined by the presiding body, will derive benefits from the proposed amendment.

Annexation and zoning of the property will create consistent land use jurisdiction and allows for efficient provision of municipal services, as the property is located within the Persigo 201 boundary which requires eventual annexation of all developing properties. In addition, the proposed annexation along with the rezone also provides additional larger acreage of undeveloped land that will, when developed, provide additional housing opportunities and choices to meet the needs of a growing community. The community will also derive benefits from the proposed rezone of this property as it would add more residential density to this parcel and to the area generally which will work to support commercial uses along the Highway 50 corridor and provide additional options for different housing types in this area. This principle is supported and encouraged by the Comprehensive Plan and furthers the plan's goal of promoting infill development.

Section 21.02.140 of the Grand Junction Zoning and Development Code states that the City may rezone property if the proposed changes are consistent with the vision, goals and policies of the Comprehensive Plan.

The zone of annexation request is consistent with the following vision, goals and/or policies of the Comprehensive Plan.

Future Land Use Map: The Comprehensive Plan Future Land Use Map for this area is designated as Residential Medium (4 – 8 du/ac). The Comprehensive Plan Future Land Use Map designates the property as Residential Medium (4 – 8 du/ac). The request for an R-8 (Residential – 8 du/ac) zone district is consistent with this designation. Generally, future development should be at a density equal to or greater than the allowed density of the applicable County zoning district. Current County zoning for the property is RSF-4 (Residential Single Family – 4 du/ac).

Goal 1: To implement the Comprehensive Plan in a consistent manner between the City, Mesa County, and other service providers.

Goal 3: The Comprehensive Plan will create ordered and balanced growth and spread future growth throughout the community.

Goal 5: To provide a broader mix of housing types in the community to meet the needs of a variety of incomes, family types and life stages.

Policy B: Encourage mixed-use development and identification of locations for increased density.

FISCAL IMPACT:

This land use action does not have any direct fiscal impact. Subsequent actions such as future development may have direct fiscal impact.

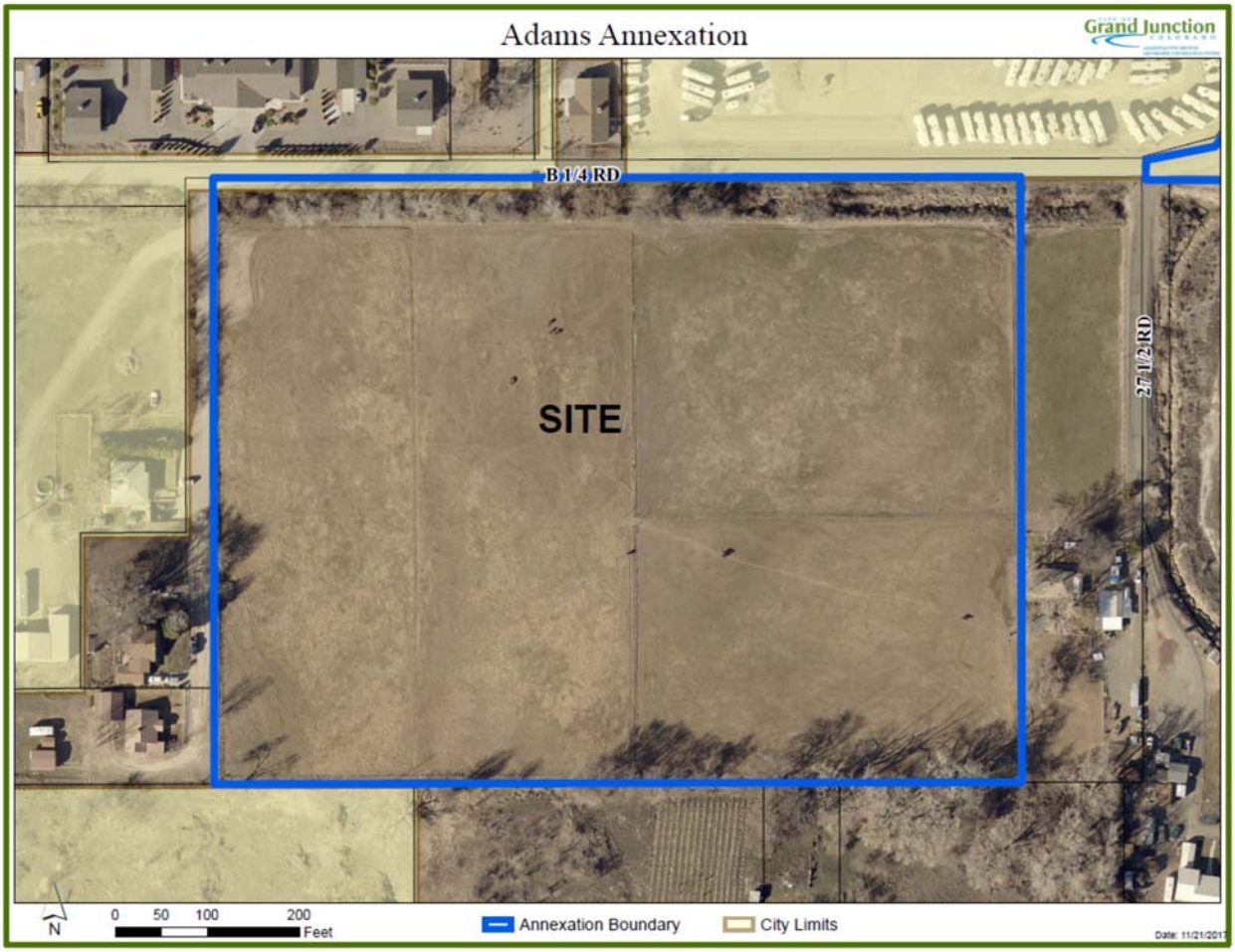
SUGGESTED MOTION:

I move to introduce an Ordinance zoning the Adams Annexation to R-8 (Residential – 8 du/ac) located south of B 1/4 Road and Set a Public Hearing for February 21, 2018.

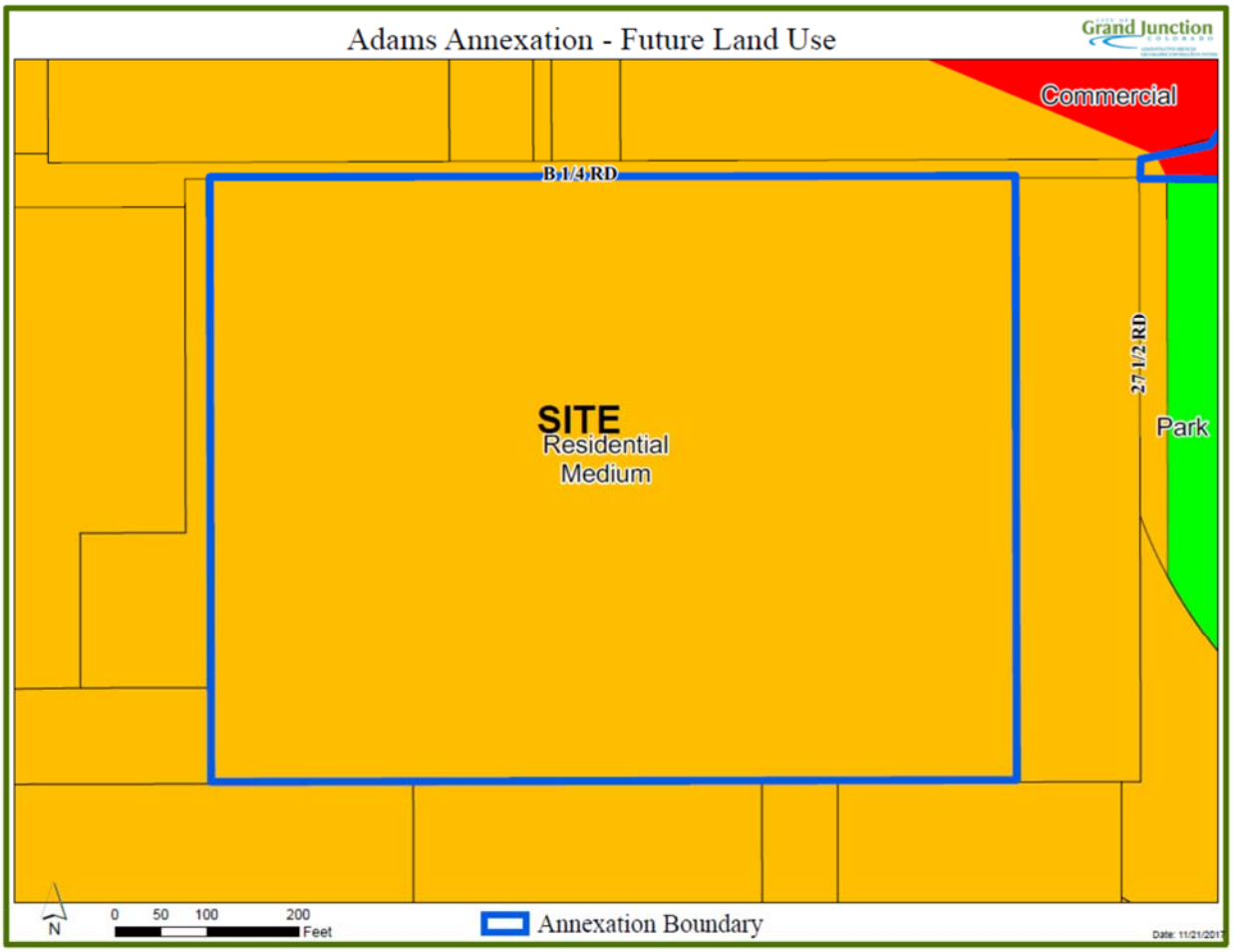
Attachments

1. Site Location & Zoning Maps, etc.
2. Public Correspondence Received
3. Ordinance

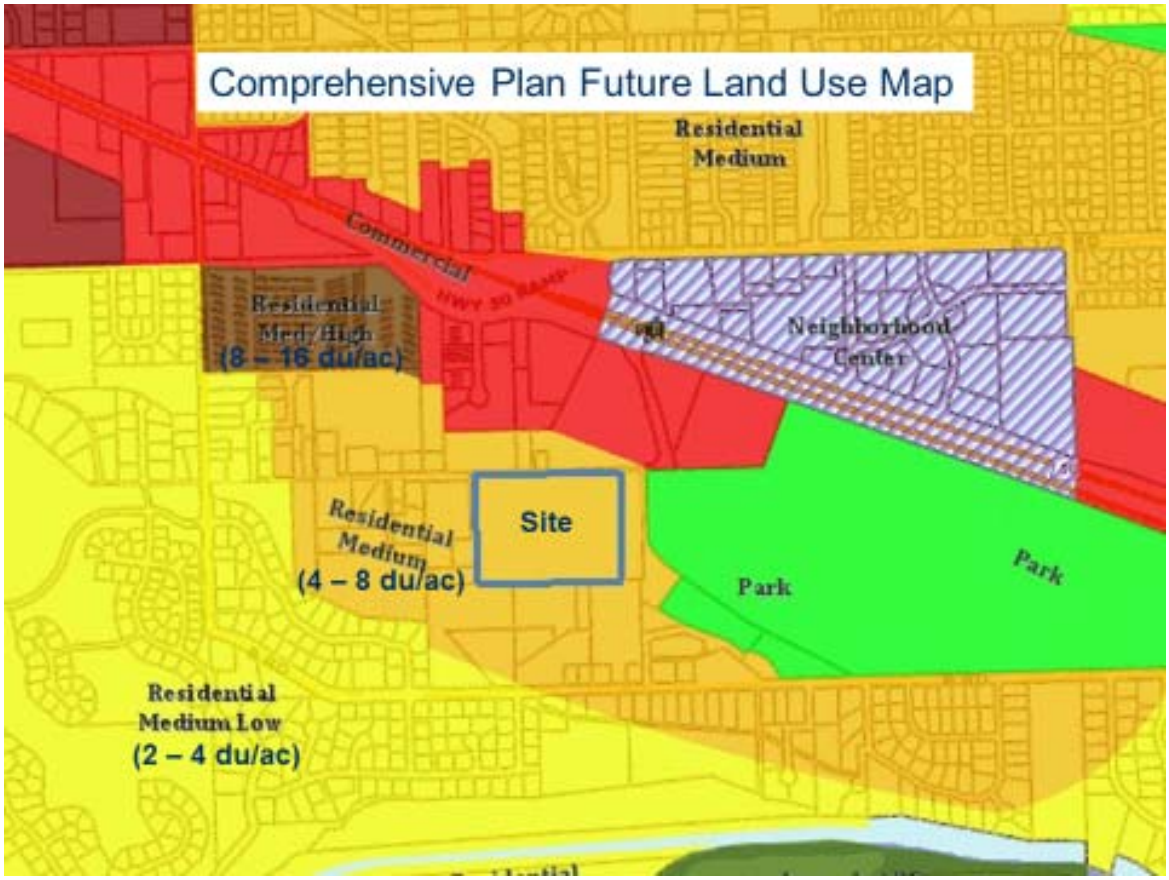

Site Location Map
B ½ Road
City Limits
Hwy. 50
27 Road
Site
Mesa County
Fairgrounds
B Road

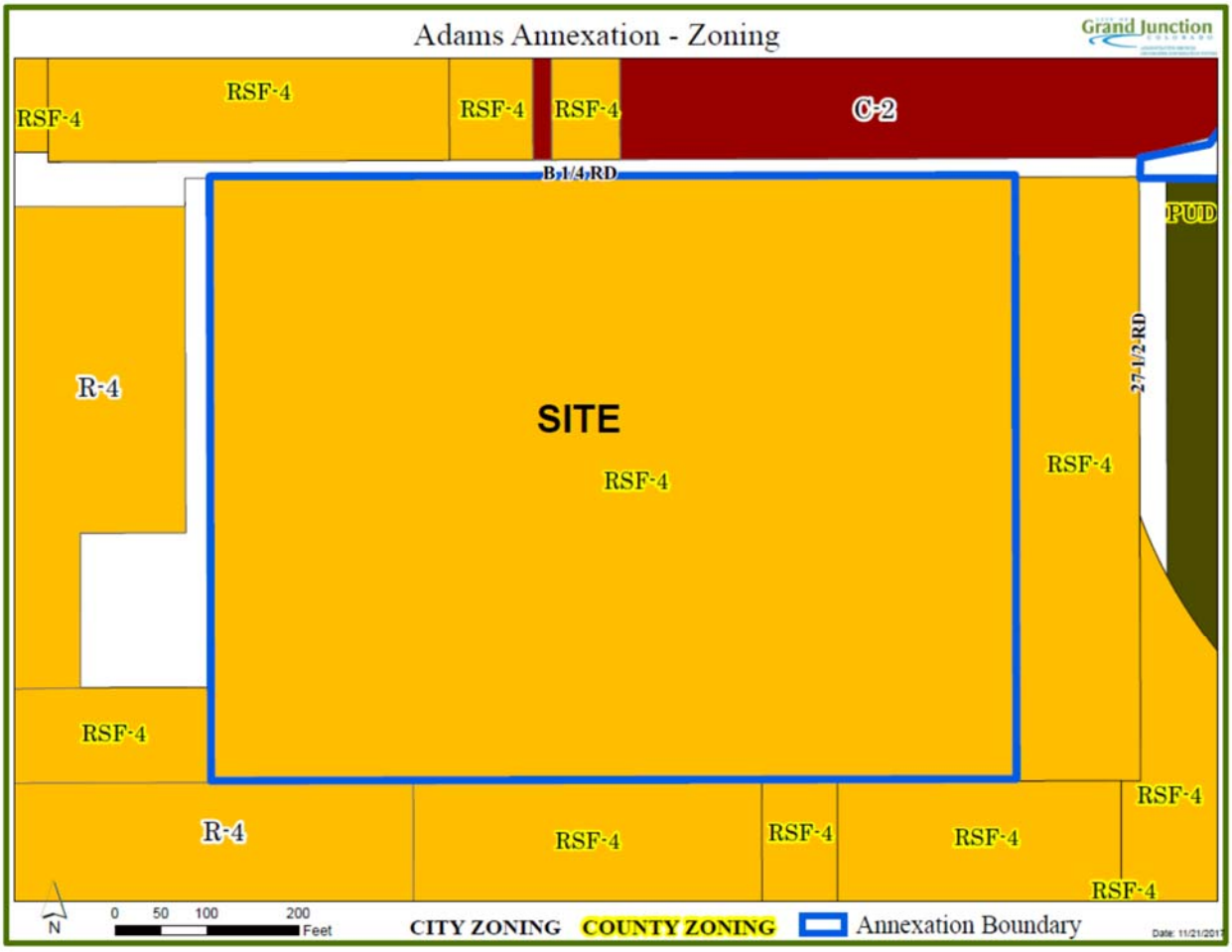


Proposed Zone of Annexation does not include adjacent right-of-way, property only.



Proposed Zone of Annexation does not include adjacent right-of-way, property only.


Comprehensive Plan Future Land Use Map
Residential
Medium
Commercial
Residential
Med/High
(8 – 16 du/ac)
Neighborhood
Center
Site
Residential
Medium
(4 – 8 du/ac)
Park
Park
Residential
Medium Low
(2 – 4 du/ac)



Proposed Zone of Annexation does not include adjacent right-of-way, property only.



View of Property Looking West

Scott Peterson

From: Rachael Reed <rachael.reed@live.com>
Sent: Monday, October 02, 2017 12:27 PM
To: Scott Peterson
Subject: Adams annexation ANX-2017-451

Good Afternoon Scott,

We have received the notice regarding the annexation of Paul Adams property into the city. As direct neighbors of this annex we would like to express our concerns with changing the zoning to a potential R-8. At 8 houses per acre that would likely mean multi family units, which would no doubt create an increase in crime and stress on the infrastructure here. We, along with our two neighbors (2729 and 2733 B 1/4) who reside on our private road directly adjacent to the property would be negatively impacted by this development.

Every property around the annexation in question is zoned at R-4. It does not make sense to squeeze one parcel zoned at R-8 into a surrounding map of R-4 parcels.

While we understand we cannot stop the annexation or development process, we hope that you hear our concerns as neighbors who's lives will be directly negatively impacted by an R-8 zone change.

Thank you for your time and consideration,

Jesse and Rachael Reed
2731 B 1/4 Rd
(Neighbors Merl Thomas and Christy Baker)
2729 B 1/4 Rd
2733 B 1/4 Rd

Sent from my iPhone

Scott Peterson

From: tony bates <tonybates@animas.net>
Sent: Wednesday, January 10, 2018 1:40 PM
To: Scott Peterson
Subject: ANX-2017-451 Adams Annexation

1-10-18

Mr. Scott Peterson
Senior Planner
City of Grand Junction, Colorado

Re: ANX-2017-451 – Adams annexation – Adjacent to B ¼ Road

Dear Mr. Peterson,

We own two parcels (2945-253-00-109 and 2945-253-00-066) just south of property proposed for annexation and zoning.

We reviewed the zoning of the properties adjacent to the property proposed for annexation and south of B ¼ Road. Two of the properties have been annexed into the city and are zoned R-4. The remainder are still in the county and are zoned RSF-4.

Because the request to rezone to property to R-8 is not consistent with the zoning that already exists on city and county parcels that are adjacent to the property, we request that should the property be annexed it be zoned R-4.

Sincerely,

Tony Bates
Sharon Weidner
2736 B Rd.
Grand Junction, CO 81503

Scott Peterson

From: anthombsn <anthombsn@gmail.com>
Sent: Monday, January 22, 2018 12:14 PM
To: Scott Peterson
Subject: Rezoning of Paul Adam's 27 1/2 rd pasture

Good afternoon,

My name is Ashley Thomas. I live with my grandfather Murl Thomas at 2733 B 1/4 Road, adjacent to the pasture which Paul Adam is requesting be annexed to the city and rezoned R8. I am unfortunately unable to attend the meeting being held tomorrow to discuss this matter, as I am working, thus I am emailing you today to express mine and my grandfather's concern about the current proposal to rezone for R8. My grandfather has lived at this location for nearly 50 years - he bought this house in 1973 - my grandmother passed away in this house and my grandfather hopes to do the same. We are heartbroken to think the land in front of our house would ever be sold and developed, but we are especially concerned to think it would be developed to R8 standards. My grandfather and I strongly believe that R8 density housing would be detrimental to this area and while we know that we can not stop the land from being rezoned, we hope you will consider rezoning the pasture smaller, such as R4 or less. Not only do we believe R8 rezoning would harm property value for those of us living here, but we also believe that future developments would put a stress on our collective community, including noise and congestion of not only people, but traffic as well. B 1/4 Road is not currently up to the standards of providing safe and effect traffic control for a project that could bring a large influx of traffic. I have spoken with our neighbors, the Reeds and the Bakers, and we share these similar concerns. I appreciate you taking the time to allow us to voice concerns and for taking them into consideration.

Regards,

Ashley and Murl Thomas
970-773-0287

Sent from my Verizon, Samsung Galaxy smartphone

CITY OF GRAND JUNCTION, COLORADO

ORDINANCE NO. _____

AN ORDINANCE ZONING THE ADAMS ANNEXATION TO R-8 (RESIDENTIAL – 8 DU/AC)

LOCATED SOUTH OF B 1/4 ROAD

Recitals

The property owner has requested annexation into the City limits in order to market and sell the 13.159 +/- acre Unplatted property in anticipation of future residential subdivision development.

After public notice and public hearing as required by the Grand Junction Zoning & Development Code, the Grand Junction Planning Commission recommended approval of zoning the Adams Annexation to the R-8 (Residential – 8 du/ac) zone district, finding that it conforms with the designation of Residential Medium (4 – 8 du/ac) as shown on the Future Land Use Map of the Comprehensive Plan and the Comprehensive Plan's goals and policies and is generally compatible with land uses located in the surrounding area.

After public notice and public hearing, the Grand Junction City Council finds that the R-8 (Residential – 8 du/ac) zone district is in conformance with at least one of the stated criteria of Section 21.02.140 of the Grand Junction Zoning and Development Code.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF GRAND JUNCTION THAT:

The following property be zoned R-8 (Residential – 8 du/ac).

ADAMS ANNEXATION

A certain parcel of land lying in the North-Half (N 1/2) of the Southeast Quarter of the Southwest Quarter (SE 1/4 SW 1/4) of Section 25, Township 1 South, Range 1 West of the Ute Principal Meridian, County of Mesa, State of Colorado and being more particularly described as follows:

COMMENCING at the Northeast corner of the SE 1/4 SW 1/4 of said Section 25 and assuming the North line of the SE 1/4 SW 1/4 of said Section 25 bears N 89°55'07" E with all other bearings contained herein being relative thereto; thence from said Point of Commencement, S 89°55'07" W, along the North line of the SE 1/4 SW 1/4 of said Section 25, a distance of 132.00 feet to the POINT OF BEGINNING; thence from said Point of Beginning, S 00°01'59" E along a line 132.00 feet West of and parallel with, the East line

of the SE 1/4 SW 1/4 of said Section 25, a distance of 659.77 feet; thence S 89°56’43” W along the South line of the N-1/2 of the SE 1/4 SW 1/4 of said Section 25, a distance of 879.15 feet; thence N 00°06’18” W along a line 310.00 feet East of and parallel with, the West line of the SE 1/4 SW 1/4 of said Section 25, a distance of 639.35 feet; thence N 89°55’07” E along the South line of Anson Annexation No’s 2 and 3, Ordinance No’s 3765 and 3766, as recorded in Book 3905, Pages 258 thru 263, inclusive, being a line 20.00 feet South of and parallel with, the North line of the SE 1/4 SW 1/4 of said Section 25, a distance of 346.09 feet; thence N 00°04’53” W, a distance of 20.00 feet; thence N 89°55’07” E, along the North line of the SE 1/4 SW 1/4 of said Section 25, a distance of 533.88 feet, more or less, to the Point of Beginning.

CONTAINING 573,208 Square Feet or 13.159 Acres, more or less, as described.

INTRODUCED on first reading this ___ day of ___, 2018 and ordered published in pamphlet form.

ADOPTED on second reading this _____ day of _____, 2018 and ordered published in pamphlet form.

ATTEST:

_____
President of the Council

_____
City Clerk

Grand Junction City Council

Regular Session

Item #2.a.ii.

Meeting Date: February 7, 2018

Presented By: Scott D. Peterson, Senior Planner

Department: Community Development

Submitted By: Scott D. Peterson, Senior Planner

Information

SUBJECT:

Introduction of an Ordinance Rezoning the Proposed Patterson Pines Subdivision, Located at 2920 E 7/8 Road from R-4 (Residential – 4 du/ac) to R-8 (Residential – 8 du/ac) and Set a Public Hearing for February 21, 2018

RECOMMENDATION:

Planning Commission heard this item at it January 23, 2018 meeting and forwarded a recommendation of approval to City Council.

EXECUTIVE SUMMARY:

The Applicant, James Cagle, is requesting a rezone of 3.99 acres of property located at 2920 E 7/8 Road from R-4 (Residential - 4 dwelling units per acre) to R-8 (Residential - 8 dwelling units per acre) The purpose of the request is to rezone the property to a higher density in anticipation of future single-family residential subdivision development. This property is proposed to be developed in conjunction with an existing vacant property to the south (4.39 acres) located at 2921 E 7/8 Road which is presently zoned R-8 and is also owned by the applicant. The proposed zoning of R-8 implements the Comprehensive Plan Future Land Use Map, which has designated the property as Residential Medium (4 – 8 du/ac).

BACKGROUND OR DETAILED INFORMATION:

The Applicant is requesting to rezone 3.99 acres from R-4 (Residential - 4 du/ac) to R-8 (Residential - 8 du/ac) for the vacant property located at 2920 E 7/8 Road. The requested rezone is in anticipation of future single-family residential subdivision development in conjunction with the existing vacant property to the south (4.39 acres)

located at 2921 E 7/8 Road which is presently zoned R-8 and is also owned by the Applicant. The Applicant is requesting review of the rezone application prior to formal submittal of the subdivision application in order to determine overall density and lot layout. The proposed zoning of R-8 implements the Comprehensive Plan Future Land Use Map, which has designated the property as Residential Medium (4 – 8 du/ac).

Adjacent properties to the east, north and west are single-family detached and are zoned R-4 and R-5 along with a commercial designation of Planned Development – Commercial for the existing Safeway grocery store and commercial center located along Patterson Road. To the south is vacant property owned by the Applicant and is currently zoned R-8. Further to the east is a PD zone district that has a residential density of 3.13 dwelling units to the acre (New Beginnings Subdivision).

A Neighborhood Meeting was held on November 6, 2017 consistent with the requirements of Section 21.02.080 (e) of the Zoning and Development Code. Nine citizens attended the meeting along with the Applicant, the Applicant's representative and City Staff. The Applicant's representative discussed the proposed rezoning request and anticipated subdivision development and provided some additional background information and history. Area residents did voice concern regarding the anticipated subdivision development of the property and the potential for an increase in traffic, increased residential density, and interconnectivity with existing streets. To date, the City has received one email from the public concerning the proposed subdivision development that has been included for review.

Notice was completed consistent to the provisions in Section 21.02.080 (g) of the City's Zoning and Development Code. Mailed notice of the application submittal in the form of notification cards was sent to surrounding property owners within 500 feet of the subject property on November 21, 2017. The subject property was posted with an application sign on November 21, 2017 and notice of the public hearing was published January 16, 2018 in the Grand Junction Sentinel.

ANALYSIS

Pursuant to Section 21.02.140 (a) of the Grand Junction Zoning and Development Code, the City may rezone property if the proposed changes are consistent with the vision, goals and policies of the Comprehensive Plan and must meet one or more of the following rezone criteria as identified:

(1) Subsequent events have invalidated the original premises and findings; and/or

The property owner wishes to rezone the property to a higher density and develop the property in the near future in conjunction with the vacant property to the south which is also owned by the Applicant. The Applicant would like to develop a residential subdivision with a density between 5.5 to 8 dwelling units an acre which is considered

an appropriate development level of density by the Comprehensive Plan as the property is located within the existing Residential Medium category. However, because there are no significant events that have occurred since the zoning of this property, nor is there a specific event that has invalidated the original premise, staff is unable to find that this this criterion has been met.

(2) The character and/or condition of the area has changed such that the amendment is consistent with the Plan; and/or

The property is surrounded by single-family detached on three sides with single-family detached, two-family and multi-family dwelling units further to the south that were l constructed in the late 1970's to mid-1980's. Directly to the northwest of the property is a Safeway grocery store that was constructed in 1996.

Existing properties to north, east and west are zoned R-4, R-5 and PD (Planned Development – Commercial). To the south is R-8. Staff has not found that the character of the area has changed and therefore finds this criterion has not been met.

(3) Public and community facilities are adequate to serve the type and scope of land use proposed; and/or

Adequate public and community facilities and services are available to the property and are sufficient to serve residential land uses associated with the R-8 zone district. Ute Water and City sanitary sewer are both presently available in Redwing Lane and Wellington Avenue. Property can also be served by Xcel Energy natural gas and electric. A short distance away is Bookcliff Junior High School on Orchard Avenue with Fruitvale Elementary School located nearby on 30 Road. Adjacent to the property to the northwest is a Safeway grocery store and retail commercial center that includes gas islands, restaurants and commercial businesses. Public transit stops are also located along 29 Road and Patterson Road. Area churches are also nearby. Due to the proximity and availability of services and facilities, staff finds this criterion has been met.

(4) An inadequate supply of suitably designated land is available in the community, as defined by the presiding body, to accommodate the proposed land use; and/or

The community as a whole has more than 1,868 acres of R-8 zoned land. This zone district comprises the largest amount of residential acreage within the City limits. However, the zoning within approximately ½ mile of this area south of Patterson and east of 29 Road is predominately zoned R-5 or Planned Development with an effective density of 3.13 du/ac. The lack of supply in the immediate area for this zone type impedes the ability to provide a diverse supply of housing types; a key principal in the Comprehensive Plan. Because of a lack of supply in this part of the community, staff

has found that an inadequate supply of suitability designated land is available in this area of the community and therefore has found this criterion has been met.

(5) The community or area, as defined by the presiding body, will derive benefits from the proposed amendment.

The area and community, in general, would derive benefits from the proposed rezone of this property as it would add more residential density to this parcel. Providing for additional density is supported and encouraged by the Comprehensive Plan and furthers the goal of promoting infill development. This increase of density may also work to provide, when developed, residents with more housing choices. R-8 properties for example are generally developed with different lot sizes and housing designs than properties with an R-4 zone designation. These two benefits are enumerated in the adopted Comprehensive Plan as Goal 3 and Goal 5. Because the community and area will derive benefits, staff has found this criterion has been met.

Section 21.02.140 of the Grand Junction Zoning and Development Code states that the City may rezone property if the proposed changes are consistent with the vision, goals and policies of the Comprehensive Plan.

Future Land Use Map:
The Comprehensive Plan Future Land Use Map designates the property as Residential Medium (4 – 8 du/ac). The request for an R-8 (Residential – 8 du/ac) zone district is consistent with this designation and works to implement the Comprehensive Plan. The Blended Land Use Map also designates the property as Residential Medium at 4 – 16 dwelling units an acre. The proposed rezone creates an opportunity for ordered and balanced growth spread throughout the community. The Comprehensive Plan supports the potential for increased residential densities where applicable along with the desire for development of more infill properties, which the applicant is proposing with this application. Staff believes this is an appropriate location for increased density. Though this rezone would allow for additional density, the residential character of the area will remain intact. The proposed rezone also provides additional housing opportunities and choices to meet the needs of a growing community, which implements the following goals and polices from the Comprehensive Plan.

Goal 3: The Comprehensive Plan will create ordered and balanced growth and spread future growth throughout the community.

Goal 5: To provide a broader mix of housing types in the community to meet the needs of a variety of incomes, family types and life stages.

Policy B: Encourage mixed-use development and identification of locations for increased density.

FISCAL IMPACT:

This land use action does not have any direct fiscal impact. Subsequent actions such as future development may have direct fiscal impact.

SUGGESTED MOTION:

I move to introduce an Ordinance rezoning the proposed Patterson Pines Subdivision, from R-4 (Residential - 4 du/ac) to R-8 (Residential – 8 du/ac), located at 2920 E 7/8 Road and Set a Hearing for February 21, 2018.

Attachments

1. Site Location & Zoning Maps, etc.
2. Public Correspondence Received
3. Ordinance


Site Location Map
City Limits
Patterson Road
Safeway
Site
29 Road
29 ½ Road
Orchard Avenue


Aerial Photo Map
PATTERSON RD
PATTERSON RD
Safeway
Site
WELLINGTON AVE
PARK WAY DR
SUNSET DR
DAWN DR
N VIEW DR


Comprehensive Plan Future Land Use Map
Park
Park
Commercial
Patterson Road
Neighborhood
Center
Site
Residential
Med/High
(8 – 16 du/ac)
Residential
Medium
(4 – 8 du/ac)
Mixed-Use
Corridor
29 Road
Residential
Med/High


Existing Zoning Map
RSF-4 (County)
R-4 Site
RSF-4 (County)
RMF-8 (County)
RMF-8 (County)
MXG-3
R-8
R-4
C-1
B-1
R-0
PD
R-5



View of property from Wellington Avenue



Overhead view of property from Redwing Lane

Scott Peterson

From: argeigle@earthlink.net
Sent: Tuesday, October 31, 2017 11:48 AM
To: Scott Peterson
Subject: Dominguez re-zone

Scott, I drove thru the area in question today. It appears that most of the immediately adjacent homes are on lots of obviously larger size than the proposal by South Dominguez estates. The ingress and egress is severely limited and would require E&7/8 to be extremely altered, probably at the expense of the people whose property borders it. I would hope that the limited number of neighboring property owners will not be rolled over by the developer.

Best Regards,

Allen Geigle
2914 B Walnut Ave
Grand Jct. CO 81504

CITY OF GRAND JUNCTION, COLORADO

ORDINANCE NO. _____

AN ORDINANCE REZONING THE PROPOSED PATTERSON PINES SUBDIVISION FROM R-4 (RESIDENTIAL – 4 DU/AC) TO R-8 (RESIDENTIAL – 8 DU/AC)

LOCATED AT 2920 E 7/8 ROAD

Recitals

The applicant, James Cagle, wishes to rezone an Unplatted 3.99 +/- acre parcel of land from R-4 (Residential – 4 du/ac) to R-8 (Residential – 8 du/ac).

The requested rezone is in anticipation of future single-family residential subdivision development in conjunction with the existing vacant Unplatted property to the south (4.39 +/- acres) located at 2921 E 7/8 Road which is presently zoned R-8 and is currently owned by the applicant. The property owner is requesting review of the rezone application prior to formal submittal of the subdivision application in order to determine overall density and lot layout.

After public notice and public hearing as required by the Grand Junction Zoning & Development Code, the Grand Junction Planning Commission recommended approval of rezoning the Patterson Pines Subdivision property from R-4 (Residential – 4 du/ac) to the R-8 (Residential – 8 du/ac) zone district, finding that it conforms with the designation of Residential Medium (4 – 8 du/ac) as shown on the Future Land Use Map of the Comprehensive Plan and the Comprehensive Plan's goals and policies and is generally compatible with land uses located in the surrounding area.

After public notice and public hearing, the Grand Junction City Council finds that the R-8 (Residential – 8 du/ac) zone district is in conformance with at least one of the stated criteria of Section 21.02.140 of the Grand Junction Zoning & Development Code.

BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF GRAND JUNCTION THAT:

The following property be zoned R-8 (Residential – 8 du/ac).

Those parcels located in the Northwest Quarter of the Northwest Quarter (NW ¼ NW ¼), Section 8, Township 1 South, Range 1 East, of the Ute Meridian in Grand Junction, Mesa County, Colorado and being more particularly described:

The East 4 Acres of the N ½ of the SE ¼ of the NW ¼ of the NW ¼ of Section 8, Township 1 South, Range 1 East of the Ute Meridian, County of Mesa, State of Colorado.

INTRODUCED on first reading this ___ day of ___, 2018 and ordered published in pamphlet form.

ADOPTED on second reading this _____ day of _____, 2018 and ordered published in pamphlet form.

ATTEST:

_____
President of the Council

_____
City Clerk

Grand Junction City Council

Regular Session

Item #2.a.iii.

Meeting Date: February 7, 2018

Presented By: Kathy Portner, Community Services Manager

Department: Community Development

Submitted By: Kathy Portner

Information

SUBJECT:

Introduction of an Ordinance Vacating a Portion of the Cannell Avenue Right-of-Way South of Orchard Avenue and Setting a Hearing for February 21, 2018

RECOMMENDATION:

Planning Commission heard this item at the January 23, 2018 meeting and forwarded a recommendation of approval to City Council.

EXECUTIVE SUMMARY:

Colorado Mesa University (CMU) is requesting to vacate the remaining portion of the Cannell Street right-of-way (ROW) directly south of Orchard Avenue, consisting of 109 linear feet by 60 feet wide, to allow for the future north and westward expansion of the CMU campus. CMU owns the adjacent properties, as well as properties to the south where the Cannell Street ROW was vacated in 2015. The vacated ROW will be subject to the terms and conditions of the Colorado Mesa University and City of Grand Junction Utility Easement and Maintenance Agreement-CMU Main Campus. Private easement for Xcel Energy's utilities will be provided and access to privately owned properties north of Hall Avenue and east of N. 8th Street via the alley will be maintained. This section of ROW falls outside of CMU's Institutional and Civic Master Plan, therefore the vacation request is not subject to an administrative review and must proceed through the codified process for right of way vacation requests.

BACKGROUND OR DETAILED INFORMATION:

As Colorado Mesa University (CMU) has acquired properties for campus expansion, requests for right-of-way (ROW) vacations have been made to consolidate CMU's s

ownership. In June of 2017, the City approved an Institutional and Civic Master Plan for Colorado Mesa University and an administrative process for future vacations of ROW interior to the campus once certain conditions were met. However, the proposed boundary of the Master Plan and administrative review process does not include this portion of the Cannell Street ROW; therefore, this specific request is required to follow the codified process for the vacation of a right of way, including review and recommendation by Planning Commission and final decision by City Council.

The Cannell Street ROW to the south of the requested vacation was previously vacated in 2015, along with a portion of the east end of Hall Avenue and the alleys to the north and south of Hall Avenue. This request completes the vacation of Cannell Street to Orchard Avenue. No privately held parcels will be landlocked as a result of the requested vacation. All properties abutting the proposed vacation are under the control of CMU and the private parcels to the west of the proposed vacation front on Orchard Avenue.

NOTIFICATION REQUIREMENTS

A Neighborhood Meeting was held on September 12, 2017 consistent with the requirements of Section 21.02.080(e). Twenty neighbors attended the meeting along with the Applicant. The Applicant provided an update on various campus projects, including the proposal to vacate the portion of the Cannell Street Right-of-Way south of Orchard Avenue. Area residents did not voice any concerns regarding the proposed ROW vacation. To date, the City has received three phone calls inquiring about the request to vacate of this portion of Cannell Street.

Notice was completed consistent to the provisions in Section 21.02.080(g) of the City's Zoning and Development Code. Mailed notice of the public hearing in the form of notification cards was sent to surrounding property owners within 500 feet of the subject property on January 12, 2018. The subject property was posted with an application sign on December 15, 2017 and notice of the public hearing was published on January 16, 2018 in the Grand Junction Sentinel.

ANALYSIS

Pursuant to Section 21.02.100 of the Zoning and Development Code, the vacation of public right-of-way shall conform to the following:

a. The Comprehensive Plan, Grand Valley Circulation Plan, and other adopted plans and policies of the City.

The vacation of this segment of the Cannell Street right-of-way will allow for the consolidation of CMU properties for future development. This does not impact the Grand Valley Circulation Plan and is consistent with the Comprehensive Plan by supporting the University's facilities and building expansion projects, thereby enhancing

a healthy, diverse economy and improving the City as a regional center of commerce, culture and tourism. Therefore, staff believes this criterion has been met.

b. No parcel shall be landlocked as a result of the vacation.

No privately held parcels will be landlocked as a result of the requested vacation. All properties abutting the proposed vacation are under the control of CMU and the private parcels to the west of the proposed vacation front on Orchard Avenue. Therefore, staff finds this criterion has been met.

c. Access to any parcel shall not be restricted to the point where access is unreasonable, economically prohibitive or reduces or devalues any property affected by the proposed vacation.

Access will not be restricted to any privately held parcel. All properties abutting the proposed vacation are under the control of CMU. However, reasonable access to the remaining east-west alley south of Orchard Avenue must be maintained for the private property owners. Therefore, with the recommended condition to provide reasonable access to the alley, staff finds this criterion has been met.

d. There shall be no adverse impacts on the health, safety, and/or welfare of the general community and the quality of public facilities and services provided to any parcel of land shall not be reduced (e.g. police/fire protection and utility services).

The Grand Junction Fire Department and Police Department expressed no objections to the request. As previously agreed, it is expected that CMU must provide for general circulation and emergency access as needed. The vacated ROW will also be subject to the terms and conditions of the Colorado Mesa University and City of Grand Junction Utility Easement and Maintenance Agreement-CMU Main Campus, and necessary easements for Xcel Energy shall be provided. Therefore, with the recommended condition to provide necessary easements for Xcel Energy, staff finds that this criterion has been met.

e. The provision of adequate public facilities and services shall not be inhibited to any property as required in Chapter 21.06 of the Grand Junction Municipal Code.

The Grand Junction Fire Department and Police Department expressed no objections to the request. All City utilities are subject to the terms and conditions of the Colorado Mesa University and City of Grand Junction Utility Easement and Maintenance Agreement-CMU Main Campus and necessary easements will be granted to Xcel Energy. As such, staff finds this criterion has been met.

f. The proposal shall provide benefits to the City such as reduced maintenance

requirements, improved traffic circulation, etc.

Maintenance requirements for the City will be reduced as a result of the street right-of-way vacation. The vacated right-of-way will be incorporated into the overall CMU campus expansion and will be included within their ownership. As such, staff finds this criterion has been met.

FISCAL IMPACT:

Values of the real property associated with right-of-way differ depending on the current market and the area of the City. Staff's experience is that they can range from $2 to $6 per square foot. This right-of-way totals 6,540 square feet.

Maintenance requirements for the City will be reduced as a result of the street right-of-way vacation.

SUGGESTED MOTION:

I move to introduce an Ordinance vacating a Portion of the Cannell Avenue Right-of-Way South of Orchard Avenue and Set a Hearing for February 21, 2018.

Attachments

1. Site Maps
2. Applicant General Project Report
3. CMU Civic and Institutional Master Plan
4. Utilities Easement and Maintenance Agreement
5. Ordinance

Site Location Map



Proposed Cannell Street Vacation



Exhibit #1

GENERAL PROJECT REPORT FOR:

VACATION APPLICATION

CANNELL AVENUE SOUTH OF ORCHARD AVENUE

GRAND JUNCTION, COLORADO
November, 2017

PREPARED FOR:
COLORADO MESA UNIVERSITY
1100 NORTH AVENUE
GRAND JUNCTION, CO 81501

PART A
REQUEST

	PAGE
SITE LOCATION DATA	1
LOCATION MAP	**1**
REQUEST	2
ACCESS AND TRAFFIC CIRCULATION	2
LAND USE ZONING	2
LAND USE ZONING MAP	**2**
FUTURE LAND USE MAP	**3**
SURROUNDING LAND USE	3
LAND USE MAP	

PART B
EVALUATION OF THE REQUEST

	PAGE
VACATION APPROVAL CRITERIA	4 & 5

This application is a request to vacate 109 centerline feet of a 60 foot wide Cannell Avenue south of Orchard Avenue comprising approximately 6,540 square feet. The land adjoining the requested vacated area is under the control of Colorado Mesa University (CMU). Vacation of the streets and alleys will permit the future westward expansion efforts planned for the CMU campus.

The following are justifies for the vacation of the right-of-way:

- ✓ Reduced public alley maintenance costs.
- ✓ Allow CMU to carry on with the implementation of their facilities master plan.
- ✓ An increase in economic construction activity in the community.
- ✓ The request meets all of the approval criteria contained within the development code for vacation requests.

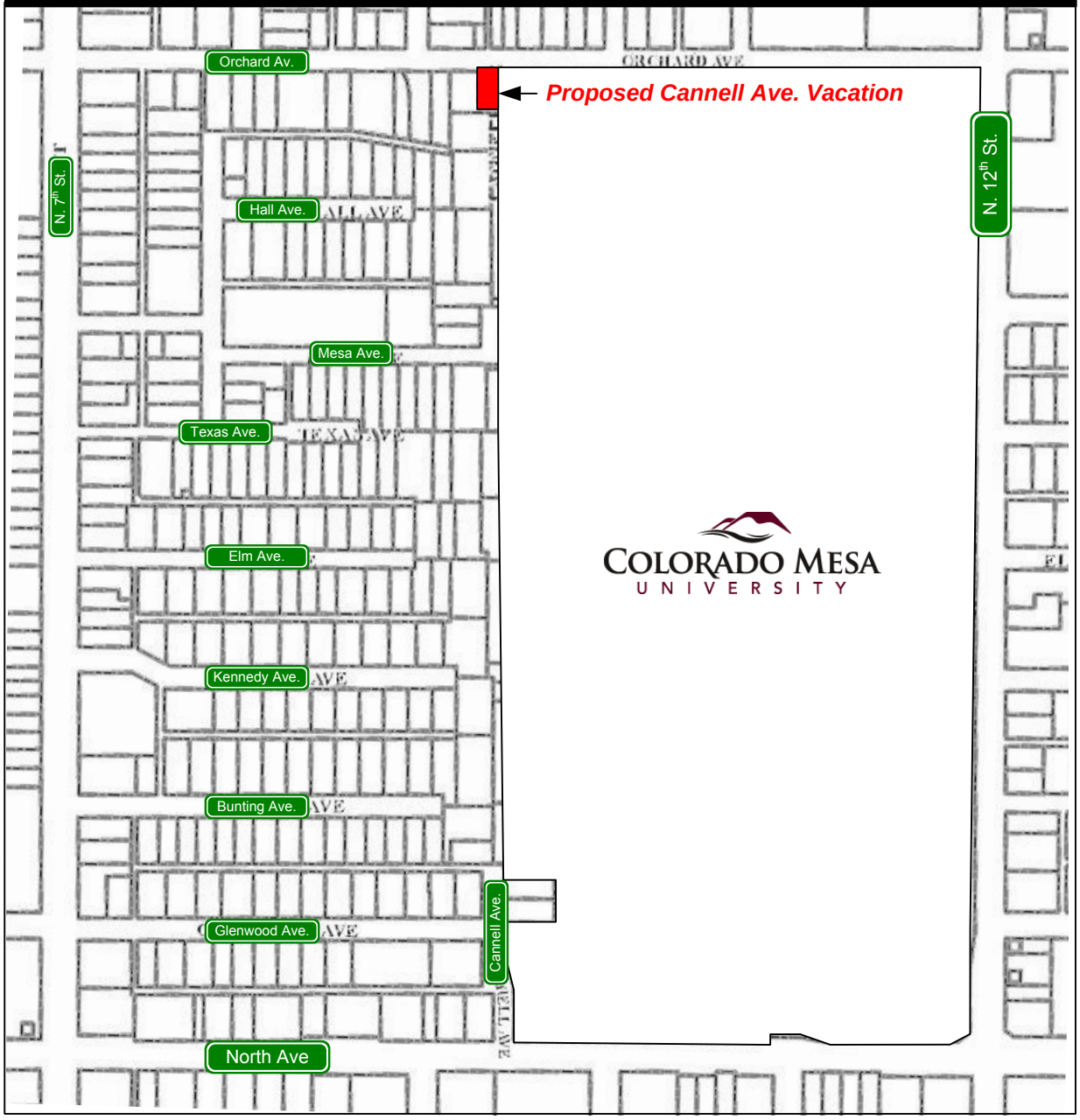
THOMAS A. LOGUE LAND DEVELOPMENT CONSULTANT
537 FRUITWOOD DRIVE • GRAND JUNCTION • COLORADO • 81504 • 970-434-8215

PART A
REQUEST

SITE LOCATION DATA

Common Location	North 109 feet of Cannell Avenue South of Orchard Avenue
Aliquot Section:	NE ¼ Section 11, Township 1 South, Range 1 East, Ute Meridian
Latitude and Longitude:	39° 05' 03", -108° 33' 25"

LOCATION MAP



REQUEST – This application is a request to vacate 109 centerline feet of a 60 foot wide Cannell Avenue south of Orchard Avenue comprising approximately 6,540 square feet.

The land adjoining the requested vacated areas is under the control of Colorado Mesa University (CMU). Vacation of the alley will permit the future westward expansion efforts planned for the CMU campus.

The requested vacated areas will not impede access to any property not currently owned by CMU. Drawings contained herein, illustrates the relationship of the proposed right-of-way vacation to the universities current land ownership and the existing land uses adjoining the proposed street and alley vacations.

ACCESS AND TRAFFIC CIRCULATION – The *Grand Valley Circulation Plan* establishes functional road classifications and a conceptual local street network plan. According to the plan, Cannell Avenue is classified as a "local" street. Other nearby streets is Orchard Avenue, and North 7th Street which are classified as a "minor arterials".

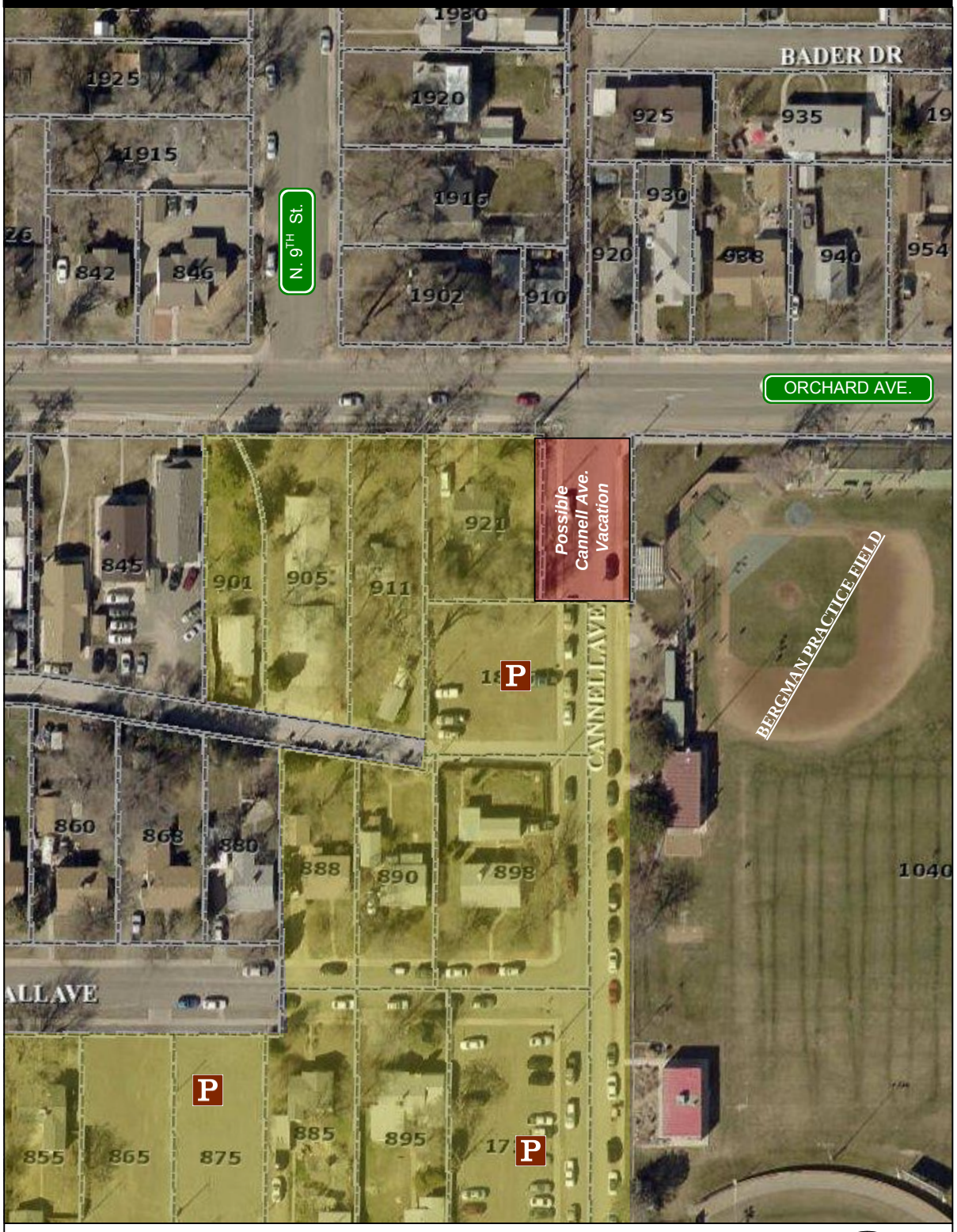
LAND USE ZONING – An examination of the Grand Junction Zoning Map reveals that the property adjacent to the vacated area is zoned: R-8, (Residential Multi Family). A patchwork of "CSR" (Community Services Recreational) zone designation for the main CMU campus can be found east of the subject vacated areas.

LAND USE ZONE MAP


R-8
R-8
R-8

SURROUNDING LAND USE - The surrounding land uses in the vicinity of the proposed street and alley vacations are considered to be "medium" intensity. The area is dominated by the main CMU campus. There are no business/commercial uses nearby. Most the land west of the subject vacated area, not owned by CMU, are single family dwellings on small lots. The majority property owned by CMU is currently used as interim parking areas that were previously occupied by single family dwellings. The following Existing and Surrounding Land Use Map portrays the properties owned by CMU and land uses in the vicinity of the requested vacated alley and street:

SURROUNDING LAND USE MAP (2016 Air Photo)



P Campus Parking

Property Owned by CMU

N

SCALE: 1 in. = 100 ft.

SURROUNDING LAND USE MAP (2016 Air Photo)



PART B
EVALUATION OF THE REQUEST

Evaluation of the **Vacation Request** is accomplished by using the six approval criteria for "Vacations of Rights-of-Way or Easements" in section 21.02.100 of the *Grand Junction Municipal Code*. The following response to each of the criteria illustrates compliance:

The vacation of the right-of-way or easement shall conform to the following:

Criteria 1: The Growth Plan, major street plan and other adopted plans and policies of the City;

RESPONSE: According to the major street plan the subject street is classified as a: local streets. The street plan does not include any specific requirement for the subject street and are not included in any other known adopted plans and policies. Vacation of the requested right-of-way will allow conformance with the following statements contained with the Comprehensive Plan:

Higher education is a key component of Grand Junction's status as a Regional Center. CMU helps train workers for local employment, attracts students that contribute to the local economy, is a significant employer in its own right, and brings recreational and cultural activities that appeal to the whole community.

Yearly growth of the facility has recently been between 2 — 5 %. There is a need to triple the number of dormitory beds, to 3,000. A Master Plan for expansion includes locations of future buildings and facilities.

The CMU Special Use Overlay is intended to allow adequate space around the college to accommodate school facility expansion as well as associated businesses (book stores, retail establishments, offices, etc., restaurants and residential uses.

Criteria 2: No parcel shall be landlocked as a result of the vacation;

RESPONSE: No parcels of land not under the control of CMU will be landlocked as a result of the proposed vacation.

Criteria 3: Access to any parcel shall not be restricted to the point where access is unreasonable, economically prohibitive, or reduces or devalues any property affected by the proposed vacation;

RESPONSE: Access to parcels not owned by CMU will not be restricted as a result of the requested right-of-way vacation because of proposed existing and future drive lanes within campus parking areas.

Criteria 4: There shall be no adverse impacts on the health, safety, and/or welfare of the general community and the quality of public facilities and services provided to any parcel of land shall not be reduced (e.g. police/fire protection and utility service);

RESPONSE: During the interim period of time between the vacation of the subject alley and the actual redevelopment of the adjoining properties existing traffic circulation patterns and accessibility to services will not substantially change.

Criteria 5: The provision of adequate public facilities and services shall not be inhibited to any property as required in Chapter 21.06;

RESPONSE: All necessary public facilities exist, or can be up-graded once the vacation of the right-of-way has occurred. New easements can be dedicated to the various utility providers in order that they can continue to operate and maintain their facilities until redevelopment of the surrounding properties occur.

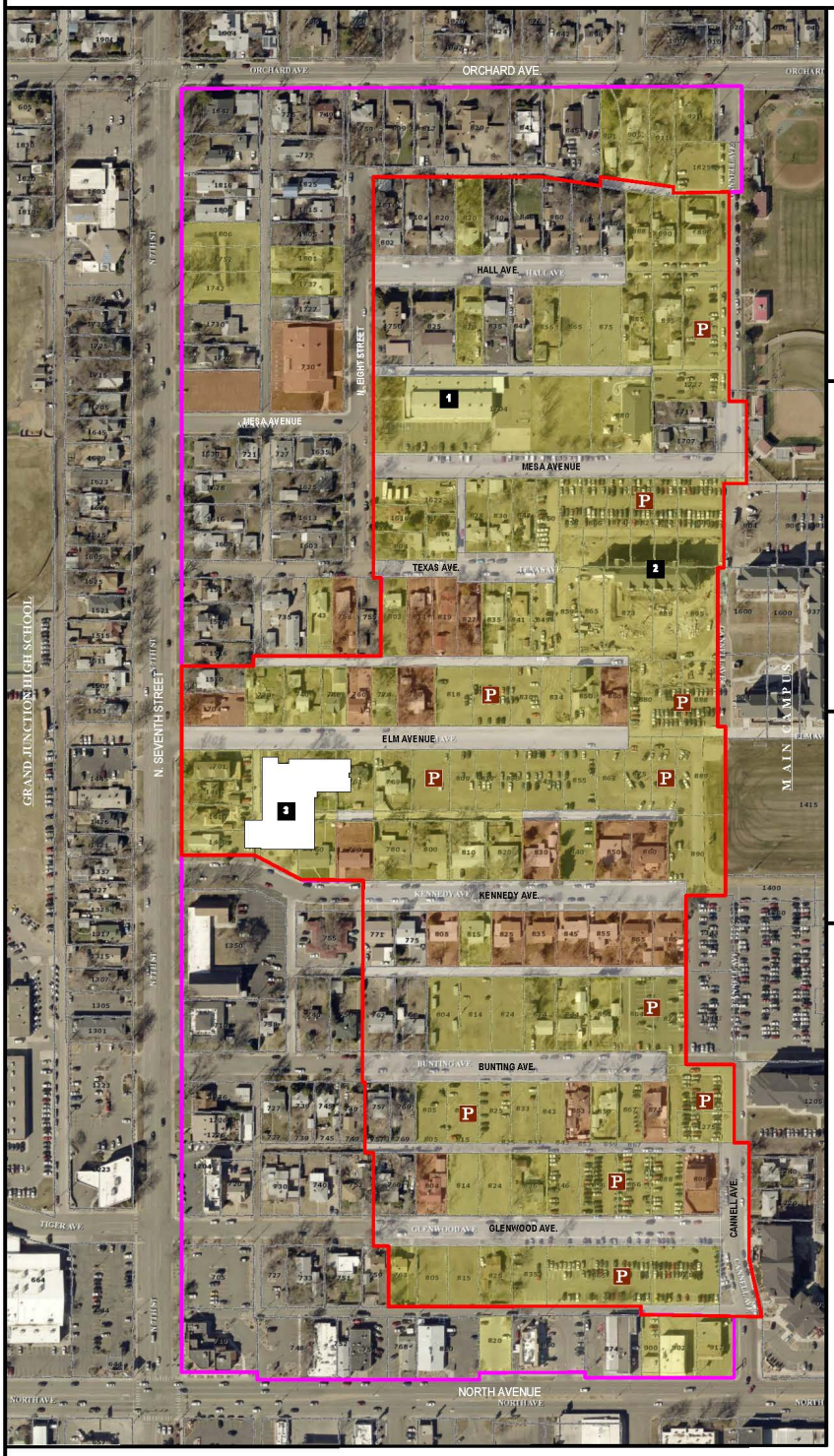
Criteria 6: The proposal shall provide benefits to the City such as reduced maintenance requirement, improved traffic circulation, etc.

RESPONSE: Following are benefits to the community that will occur once the subject right-of-way vacations are granted:

- ✓ Reduced public street and alley maintenance costs.
- ✓ Allow CMU to carry on with the implementation of their facilities master plan.
- ✓ An increase in economic construction activity in the community.

Exhibit 3

COLORADO MESA UNIVERSITY 2017 WEST CAMPUS MASTER PLAN



2017 Master Plan Boundary

Future Master Plan Amendment(s) Boundary

Property Owned by CMC

Short Term Property Acquisitions by CMU

Existing Street and Alley To Be Vacated

P Parking (Subject to Future Change)

1 Relocated Development Center (Under Construction)

2 Wingate Hall

3 Engineering Building (Under Construction)

2017 MASTER PLAN LAND USE SUMMARY

USE	AREA[2] (ac.)	% of TOTAL
Property Owned by CMC[1]	22.6	57.3
Short Term Property Acquisition[1]	3.8	9.6
Existing Street & Alley To Be Vacated	7.6	19.2
Property Not Owned by CMU	5.5	13.9
2017 Master Plan Boundary	39.5	100.0
Future Master Plan Area	23.9	

[1] Does Include 2.8 ac. In Future Master Plan Area
[2] Approximate Area Calculation

Preparation Date: March, 2017

REVISIONS
Date | Description

Scale: 1 in. = 100 ft.
100' 50' 0' 100'
(2016 Air Photo)

Exhibit 4

COLORADO MESA UNIVERSITY AND CITY OF GRAND JUNCTION UTILITY EASEMENT AND MAINTENANCE AGREEMENT-CMU MAIN CAMPUS

This Agreement is made by and between the City of Grand Junction, a Colorado home rule city ("City"), and the Board of Trustees of Colorado Mesa University ("CMU"), and is effective as of the date that both parties have signed below.

1. CMU, as the owner of the property described on **Exhibit B**, hereby grants to the City as the owner and service provider of the Wet Utilities serving the property shown on Exhibit B, a perpetual and non-exclusive easement to be used by the City to access, operate, maintain, improve, repair and replace as necessary the Wet Utilities serving the property shown on Exhibit B in accordance with City standards.

2. The City agrees that it will continue to own, operate, maintain, improve, repair and replace as needed the main and trunk lines as described in recital C above, that serve the property shown on Exhibit B now and as it is planned to exist in the future except as the deviation procedure in paragraph 4 below applies.

3. While the City standards ordinarily require unobstructed ten-foot-wide access on either side of the centerline of Wet Utilities, the City recognizes that doing so within the campus may unduly limit the ability of CMU to make the most efficient use of its limited area and lands. Thus, the City agrees to accept existing accesses to existing Wet Utilities, so long as at least ten feet of unobstructed access is provided, centered over the Wet Utility in question.

4. CMU shall deliver its construction plans to the City with respect to Wet Utilities so that the City has an opportunity to improve the efficiency and effectiveness of Wet Utility service line that will serve the campus both now and in the future. When, CMU determines that one or more City standard(s) must be deviated from when constructing or locating Wet Utilities, CMU shall consult with the City's Engineers to obtain City approval of such deviation(s). If the City's Engineers do not approve such deviation(s), then CMU may request review of such denials by the City Director of Public Works and if said Director does not approve such deviation(s) then CMU may request the City Manager to review such denial and if said City Manager does not approve such deviation(s), and CMU elects to construct the deviations anyway CMU shall be responsible for maintenance, repair and replacement of such service, trunk or main line(s) for that segment or portion of the Wet Utilities that do not meet the City's specifications. Deviations that are approved shall be described in writing, typically including drawing(s) specifying the deviation(s).

5. For buildings and other improvements within the area described on Exhibit A, and for future easements for the campus as it will exist, CMU agrees to provide ready and safe access to the City for Wet Utilities.

6. In the event the City concludes that it cannot reasonably obtain access to Wet Utilities because the CMU design access is too narrow, short or small, City Engineers will inform the City Director of Public Works who shall consult with the CMU consultant/engineer to determine a practical solution, on a case-by-case basis.

7. In any instance where the wet utilities do not meet city standards and where the Campus surface has been improved (*e.g.*, sidewalks and landscaping) , including within the area described in Exhibit A, if the City cannot reasonably obtain access to or perform its necessary maintenance,

improvement, repairs or replacement to Wet Utilities owned by the City, the City shall inform CMU which shall perform the needed maintenance, improvement, repair or replacement; however, in an emergency, the City may damage or remove such surface improvements without notice to CMU and in such event, the City shall not be obligated to replace the improved surface of the damaged area to its prior condition, but shall return the surface to a substantially equivalent of grade and elevation.

8. CMU shall pay for the costs to repair or replace any improvements damaged by the City as a result of the reasonable exercise of maintenance, repair or replacement of City Wet Utilities in locations where such Wet Utilities do not meet City standards.

9. Notwithstanding any provision of this Agreement to the contrary, CMU shall prohibit the construction of any structures on the Campus as it exists or will exist that are not at least ten feet at the centerline from any Wet Utilities existing as of the date of the Agreement.

10. The parties agree that the existing rights-of-way for Cannell and Elm and any existing multi-purpose easements ("MPE"s) shall be vacated, and title thereto shall vest in CMU, subject to reservation by the City of easements (the "Cannell and Elm Easements") for any such MPEs and for access for utilities. The legal description of the Cannell and Elm Easements that are being vacated shall be identical to the description of the vacated rights-of-way and any adjacent MPEs.

11. The City agrees that CMU shall have the right to install improvements such as fiber optic lines and related facilities within the Cannell and Elm Easements, subject to CMU's duty to abide by the law applicable to easements.

12. To facilitate the logical and efficient expansion of CMU on land presently owned or owned in the future either in the name of the CMU Real Estate Foundation or titled in the name of the State of Colorado for the benefit of CMU, or in the name of any entity controlled by the CMU Board of Trustees, this Agreement shall apply to all Wet Utilities serving the present and future CMU main campus.

13. The term of this Agreement shall be for a five year period and can be renewed for another five year term provided both parties are agree able. The term also provides for a two year review by both parties from the effective date of the agreement. This two year review will be an opportunity for the two parties to meet and assess how the agreement is working and make appropriate changes to the agreement as agreed upon by both parties.

Colorado Mesa University, President

By: Tim Foster

City of Grand Junction, City Manager

Greg Caton

Dated: 9-12-16

Dated: 9/12/2016

EXHIBIT

tabbies A

MESA STATE COLLEGE

MESA STATE COLLEGE

PROGRAM PLAN
WEST EXPANSION PROPERTY ACQUISITION PROJECT

APRIL 8, 2011



CHAMBERLIN ARCHITECTS

CONTRIBUTORS

Mesa State College Board of Trustees:

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Kathleen Eck
Lena Elliott
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Ryan Hendershot, Student Trustee

Mesa State College Administration:

Tim Foster, President
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Carol Futhey, Vice President of Academic Affairs
Kent Marsh, Director of Facilities Services
Derek Wagner, Director of Strategic Initiatives

Mesa State College Foundation Officers
Doug May, President
Keith Gilstrap, Vice-President
Travis Perry, Secretary/Treasurer

PREFACE

The project described herein continues the activities associated with the main campus land acquisition project begun in 1999. Since then, the Mesa State College Foundation has been acquiring property and, beginning in 2004 with the approval of the "House Demolition and Ground Recovery Project" program plan, began gifting the properties to the College. Originally the 2004 program plan was expected to take 15 years to complete; however, with only five remaining properties to be acquired, it is approaching its successful completion in half the time. This coupled with the unprecedented enrollment growth that has occurred during this time period places the College in a position where it needs to proceed with phase two its land expansion plan. Approval of this program plan will authorize the Foundation to acquire the additional properties described herein.

Coordinators for this project were Pat Doyle, Vice President, Finance and Administrative Services, Derek Wagner, Director, Strategic Initiatives, Kent Marsh, Director of Facilities Services; and Andy Rodriguez, Director of Purchasing. Program plan documentation was accomplished by Ed Chamberlin, Chamberlin Architects, Campus Architect. This document has been approved by Tim Foster, President of Mesa State College, as well as by the senior administration of the College.

This document responds to the outline requirements of CCHE policy Section III.E, *Guidelines for Facilities Program Planning* last revised April 5, 2001. Some outline sections have been omitted because the project does not deal with new capital construction or building renovation.

TABLE OF CONTENTS

Section	Page
Contributors	1
Preface	2
Table of Contents	3
Executive Summary	4
Program Information	5
Description of the Program	5
History, Role and Mission, Needs and Trends	5
Relation to Academic/Strategic Plans	6
Relation to Other Programs or Agencies	7
Program Alternatives	7
Facilities Needs	8
Total Space & Site Requirements	8
Acquisition of Real Property	10
Project Description	10
Improvements	10
Project Cost Estimate	12
Financial Analysis	12
Project Schedule	12
Relation to the Master Plan / Other Projects	13
Appendices	14
A. Student demographics	14
B. Property listing	15
C. Third Party Review	21
D. CCHE Form CC-C	22

EXECUTIVE SUMMARY

It is the purpose of this project to consolidate activities associated with the main campus land acquisition project begun in 1999. Since then, the Mesa State College Foundation has been acquiring property and giving it to the College through Foundation, Trustee, Colorado Commission on Higher Education, and Legislative actions. The College now needs to be able to accept the gift of additionally acquired properties and to consolidate those and prior associated properties into useful capital construction expansion sites.

This project is necessitated by the continued growth of Mesa State College. In the past ten years, unduplicated fiscal year FTE has increased from 4302 to 6555 or 52.4%. Likewise, unduplicated fiscal year headcount has grown from 5212 to 8131 or 56.0%. These figures indicate a growth rate of almost 4.5% per year.

The specific additional property being considered by the College by its Foundation consists of 214 residential lots, 2 churches, and 21 commercial properties comprising a total of 77.3 acres. Other property that is being given to the College consists of city streets and alleys that will become within the College boundaries.

The land gifts are part of the Land Acquisition Project begun in 1999 with donations from the City of Grand Junction, Mesa County, and numerous community organizations, institutions, leaders, and individuals. The original acquisition project was identified in the 1999 *Mesa State College Facilities Master Plan*. This project will allow for the acceptance of gifted properties within specified boundaries which have yet to be acquired by the College, the Mesa State College Foundation, or through subsequent capital construction projects. The boundaries for the main campus will be North Avenue on the south, Orchard Avenue on the north, Seventh Street on the west, and with the addition of one block east of 12th Street, 12th Street on the east. There are also two other large tracts that, if they become available, will be valuable additions to the campus. These are at the northwest and southeast corners of 12th and Orchard.

Consolidation of the properties into useful sites will consist of demolition of the existing structures and surveying and replatting of the individual lots, streets, and alleys into one parcel that belongs to the College. Existing structures include those being donated to the College under this project as well as those yet to be acquired by the Foundation. The consolidated parcel will then be available for construction of temporary parking lots and green spaces, provide ongoing revenue sources and sites for significant campus expansion projects.

The project will be self-financed over time by the College through the use of cash exempt funds and donations. As those funds become available, parts of the project will be finished. No endowment is included with the gifted properties. It is understood that the College will maintain them within its own budgeted resources.

PROGRAM INFORMATION

DESCRIPTION OF THE PROGRAM

For the past several years, Mesa State College has been increasing its enrollment. In 1996, it was recognized that this enrollment growth would require additional land and facilities, placing its main campus in need of a significant boundary expansion. Since approval of the *Mesa State College Facilities Master Plan* in 1999, the Mesa State College Foundation with the help of the City of Grand Junction, Mesa County, and numerous community organizations, institutions, leaders, and individuals, has acquired several properties to help meet expansion needs. The Foundation has already gifted many of these to the college. The project described herein continues this gifting process that began in 2004. The project gives additional properties to the college in accordance with current and future facilities master plan needs.

HISTORY, ROLE AND MISSION, NEEDS AND TRENDS

Mesa State College's current role and mission:

> There is hereby established a college at Grand Junction, to be known as Mesa state college, which shall be a general baccalaureate and specialized graduate institution with moderately selective admission standards. Mesa state college shall offer liberal arts and sciences, professional and technical degree programs and a limited number of graduate programs. Mesa state college shall also maintain a community college role and mission, including career and technical education programs. Mesa state college shall receive resident credit for two-year course offerings in its commission-approved service area. Mesa state college shall also serve as a regional education provider.[1]

As regional education provider, Mesa State College serves 14 counties in western Colorado. The region's population continues to grow, providing the College with additional students every year. According to the State's Demographic Office, all of the counties in Mesa State's region have grown and will continue to grow.[2] (The period in question is from 2000 to 2040 for 15 to 25 year olds. These dates are the period analyzed for the *Mesa State College Facilities Master Plan*.) Historically, well over half of the College's enrollment comes from this region.[3] However, recent enrollment growth from outside Mesa County and outside Colorado has been dramatic. Non-resident student FTE has grown from 438 to 614 since 2007 – a 40% increase confirming the College's need for additional land to support its mission.

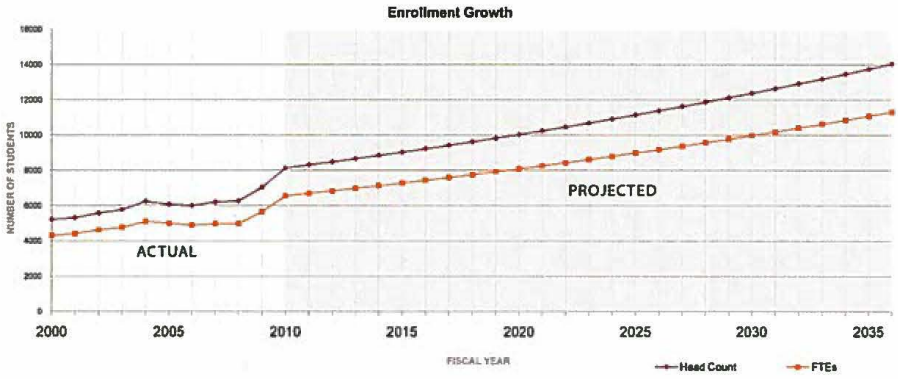
---

[1] Colorado Revised Statutes 23-53-101, College Established – Role and Mission.
[2] Rather than reprint the demographic information within this document, the reader is referred to http://dola.colorado.gov/demog/demog.cfm for backup information from the Colorado Demography Office on the population trends for each county.
[3] See Appendix A of this document for student demographic information.

RELATION TO ACADEMIC/STRATEGIC PLANS

> Mesa State College anticipates continued enrollment growth. The *Mesa State College Strategic Plan*[4] *recognizes the need to balance sustainable growth with maintaining the institution's role as a regional education provider for 14 counties in western Colorado. With a focus on enhancing quality in the institution's programs, faculty, students, technology and facilities, sustainable enrollment growth is likely over the life of the plan. As financial support from the State of Colorado continues to dwindle, the institution is focused on strategic growth initiatives that enhance our competitiveness and strengthen our financial position.*

The following graph presents enrollment growth, actual and projected, for the thirty-five year period from 2000 to 2035.



Using 2000 as the base year, the graph shows that for fiscal year 2010, the actual FTE of 6555 and actual headcount of 8131 represent a growth rate of over 2.1% and 4.5% respectively. The trend for both FTE and headcount is continued growth especially among out of town students who will need on-campus housing. The projection anticipates a growth rate of 2.125% per year.

The College is reevaluating its strategic planning documents in the light of the current economic climate in its current role and mission. However, it is known that, because of its designation as regional education provider for 14 counties, the College will need to be able to respond to the increasing educational needs of a growing western Colorado

[4] http://www.mesastate.edu/president/documents/StrategicPlan01-27-11.PDF

population. It is anticipated that College growth and the subsequent need for additional land will continue.[5]

RELATION TO OTHER PROGRAMS OR AGENCIES

This program is integral to the college being able to fulfill its role and mission. Without the ability to expand the campus boundaries, the college will be limited in its ability to provide access to students outside of its immediate geographic location i.e. Mesa county. Having the capacity to continue to grow enrollment throughout Colorado and surrounding Western Undergraduate Exchange (WUE) states is key to the long term financial stability of the institution.

PROGRAM ALTERNATIVES

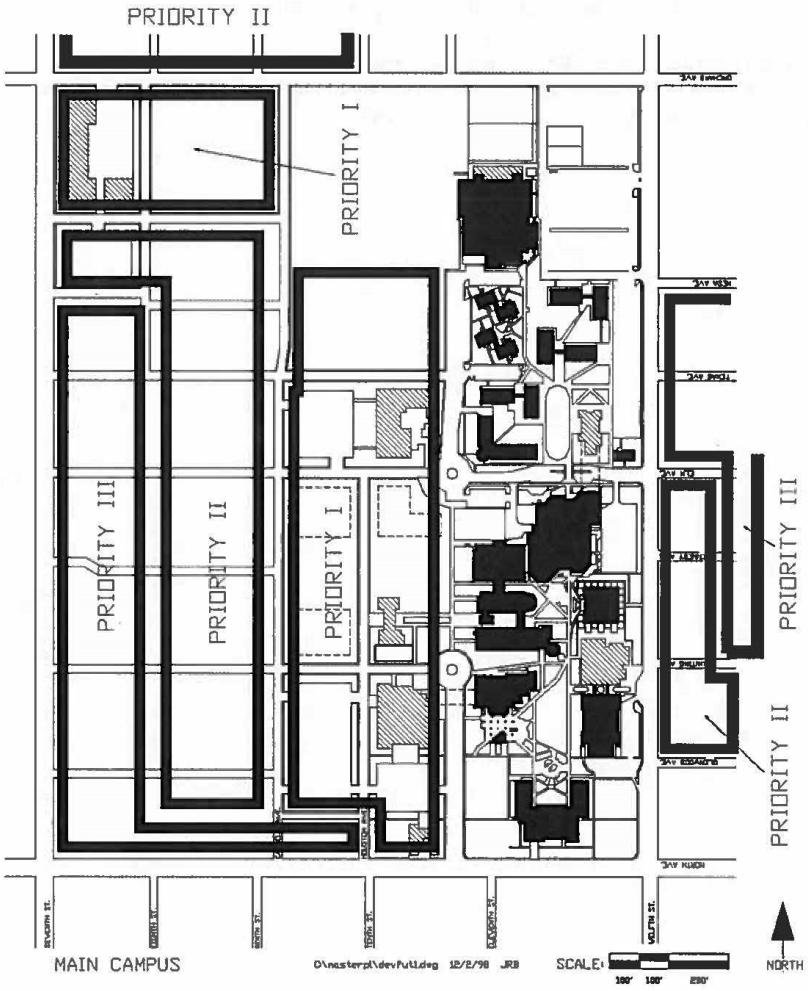
The only alternative to this project is to cap enrollment. This is not acceptable and contrary to the College's role and mission.

[5] It should be noted that this Program Plan discusses only the needs of the main campus. Enrollment growth with subsequent land and facility needs are also anticipated for the UTEC and Montrose campuses.

FACILITIES NEEDS

TOTAL SPACE AND SITE REQUIREMENTS

Prior to the 2004 acquisition project, the main campus contained approximately 45 acres of land. The 1999 Facilities Master Plan identified several areas of potential expansion in accordance with the map shown below.[6]



[6] This map is a reprint of that in the 1999 *Mesa State College Facilities Master Plan*, page 113.

The background of this map shows concepts developed for the 1999 Facilities Master Plan. Several of the capital building projects indicated with diagonal lines on the map have already occurred.

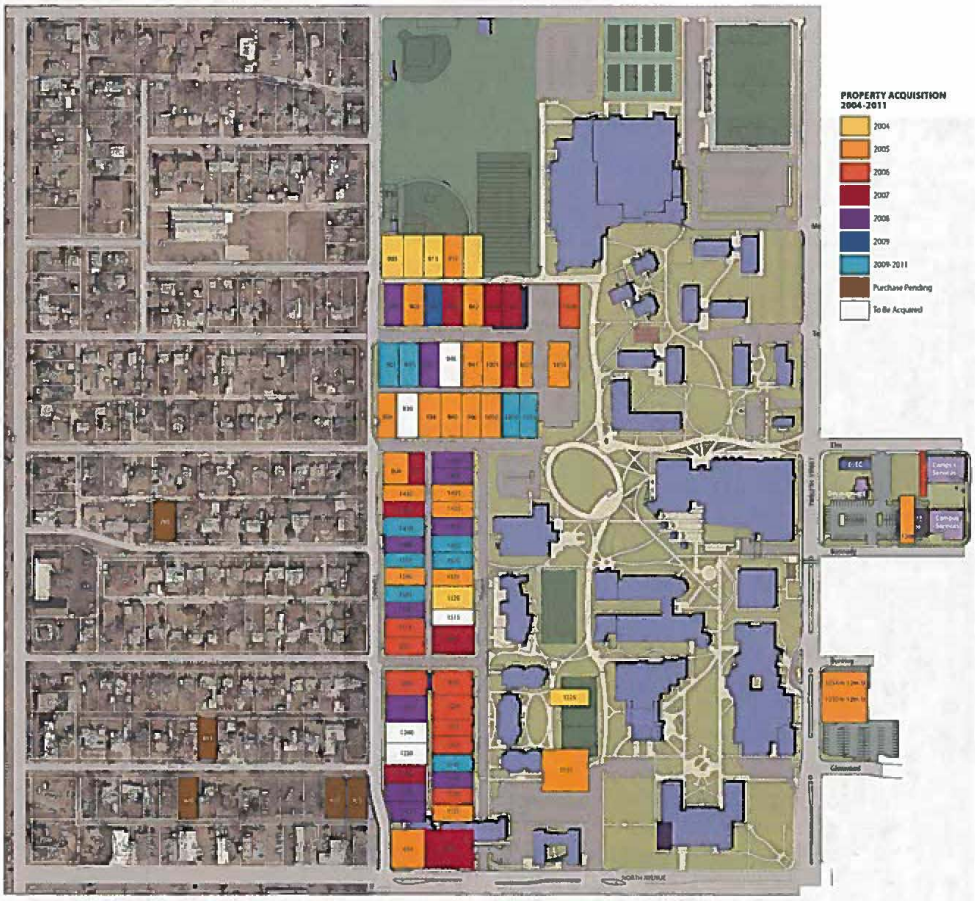
The 2004 House Demolition & Ground Recovery project added most of the property between Cannell and Houston. All but 5 lots within this area have been acquired as shown on the inserted graphic titled Property Acquisitions 2004-2011.

The second inserted graphic titled Acquisition Priorities shows the new priority areas. Priority I areas are those the college is actively trying to purchase. Priority II areas are those the college will pursue if they become available.

MESA STATE COLLEGE

MESA STATE COLLEGE
CAMPUS FACILITIES MASTER PLAN
PROPERTY ACQUISITION 2004-2011 April 6, 2011

CHAMBERLIN ARCHITECTS

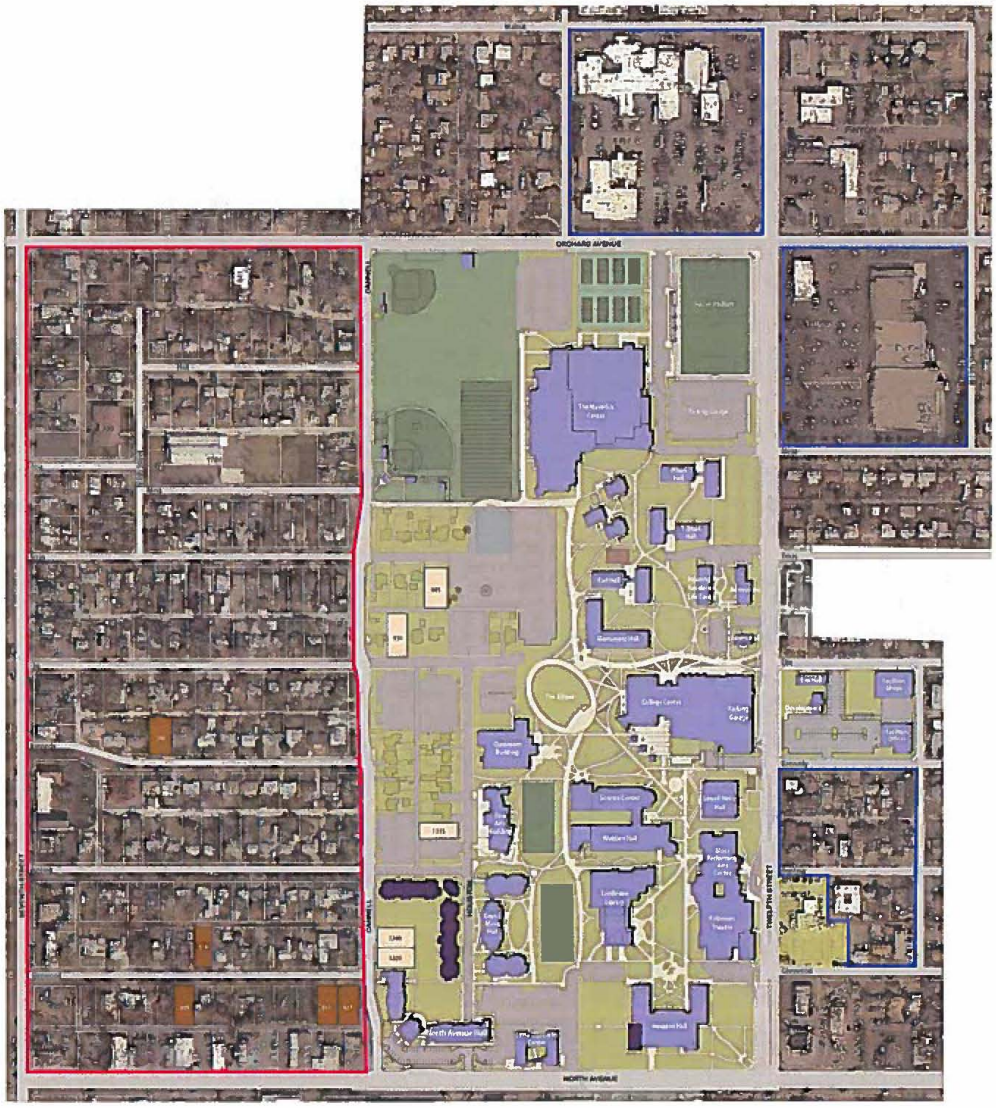


MESA STATE COLLEGE

MESA STATE COLLEGE
CAMPUS FACILITIES MASTER PLAN
CAMPUS EXPANSION DRAFT ACQUISITION PRIORITIES

April 6, 2011

CHAMBERLIN ARCHITECTS



Priority I (59 Acres)

Priority II (27 Acres)

Under contract April 12, 2011

To be acquired w/in campus area

ACQUISITION OF REAL PROPERTY

Appendix B includes a listing of properties under consideration by the College. The list indicates the street address and parcel number.

The property locations are shown by their street address number. Within the Priority I area there are 214 single family houses most of which were constructed in the 1950's and 1960's. Some are vacant while others are rentals. There are also 20 commercial and church properties.

Following discussion with the City of Grand Junction the streets and alleys will be vacated and deeded to the College in sections at different times where property ownership surrounding the various rights-of-way has been completed.

PROJECT DESCRIPTION

Improvements:

As stated, it is the intention of this phase of the land acquisition project to establish complete new boundaries for the main campus of Mesa State College. The western boundary from North Ave. to Orchard Ave. will move from Cannell Ave to Seventh Street. The southern boundary of North Ave. will not change. The eastern boundary of 12th Street will also not change except for the area bounded by Orchard Ave., 13th Street, and Glenwood Ave. The northern boundary may include the Community Hospital property if it becomes available.

Once acquired, it is the intention of the College to replat the land parcels into one parcel belonging to the College, remove structures, and to prepare the ground for construction of College related facilities, parking areas, and green space in accordance with the *Mesa State College Facilities Master Plan.*

The first part of this project will consolidate all properties between Cannell Street, North Avenue, Seventh Street and Orchard Avenue, and within the block shown east of 12th Street. The maps on the next several pages show the campus after completion of incremental consolidation work on a five year basis. Once all structures have been demolished, the lots, streets, and alleys will be surveyed and replatted to identify one parcel belonging to the College.

Initially, the area will become either green space or temporary parking. Green space work will consist of leveling the ground and providing dust and weed control. As more houses are removed and large areas become available, the area will be covered with grass and sprinklered. Lights and appropriate sidewalks will also be provided. Temporary parking work will consist of leveling the ground and providing a gravel surface with dust and weed control, parking bumpers, parking control equipment, and appropriate lighting. Mature trees in good condition will be flagged and protected during construction.

It will take a period of time to acquire all properties, remove all structures, and convert all areas to either parking or green space. All work under this program plan, whether designated as parking or green space, should be viewed as temporary, as all areas will serve as sites for future capital construction projects.[7]

The building areas, parking and land area requirements are based on projected enrollment by prorating approximate facilities in use today. A spreadsheet showing these projections follows.

Mesa State College
Campus Expansion Projection — CHAMBERLIN ARCHITECTS
April 7, 2011

	2010-11 Factor			Growth	2015-16	Growth	2020-21	Growth	2025-26	Growth	2030-31	Growth	2035-36
Student Enrollment													
Main Campus only													
Headcount													
On Campus	1624	11%	5-year	180	1,804	200	2,004	222	2,226	247	2,473	274	2,747
Off Campus	6486	11%	5-year	719	7,205	799	8,004	887	8,891	986	9,877	1,095	10,972
Total	8,110			899	9,009	999	10,008	1,109	11,117	1,232	12,350	1,369	13,719
Buildings													
Main Campus only													
Academic	688,000	85 sf	per Student	76,272	764,272	84,727	848,999	94,120	943,119	104,554	1,047,673	116,145	1,163,818
Residence Halls	402,500	62 sf	per Student	44,621	447,121	49,568	496,689	55,063	551,752	61,167	612,919	67,948	680,867
Non-Academic	91,500	11 sf	per Student	10,144	101,644	11,268	112,912	12,517	125,429	13,905	139,334	15,447	154,781
Total	1,182,000	158	per Student	131,037	1,313,037	145,563	1,458,600	161,700	1,620,300	179,626	1,799,927	199,540	1,999,466
Parking													
Main Campus only													
Residential	1,056	65%	On Campus	117	1,173	130	1,303	144	1,447	160	1,607	178	1,786
Commuter	1,881	29%	Off Campus	209	2,089	232	2,321	257	2,578	286	2,864	318	3,182
Reserved													
Total				326	3,262	362	3,624	402	4,025	446	4,472	496	4,967
Land Area													
Main Campus only													
Total SF	3,189,330			353,569	3,542,899	389,719	3,932,618	432,588	4,365,206	480,173	4,845,379	532,992	5,378,370
Acres	73			8	81	9	90	10	100	11	111	12	123

[7] Program Plans for future capital construction projects within the revised boundary areas will be submitted to CCHE for consideration and approval.

Project Cost Estimate:

Each property will be independently appraised to determine a fair acquisition price. Based on the results of the 2004 House Demolition and Ground Recovery project, the average purchase price over the past seven years was $180,000. However, with the housing market somewhat depressed this may be higher than what the market currently reflects but can serve as a conservative estimate. In the end, each house will be based on its unique characteristics. Total estimated average recovery costs per parcel:

Property Acquisition (projected average):	$180,000
Testing, Abatement, Demolition	$ 36,000
Temporary Parking Improvements	$ 16,500
Planning and Approvals	$ 500
PER RESIDENTIAL LOT TOTAL	$233,000

The initial consolidation work includes environmental assessments and removal of hazardous material in accordance with current laws and regulations. Acquisition will be accomplished by the College or the Mesa State College Foundation through donation, nonexempt funds, or through other capital construction projects.

Projected acquisition cost for the residential lots is based on the average of 17 recently purchased in the neighborhood. The projected acquisition cost for commercial property is an average of the values on a per acre basis considering comparable sales, lease rates and other factors. Projected testing, abatement, demolition, lighting, grading and gravel cost is based on the average of 67 lots recently completed.

Financial Analysis:

The project will be self-financed by the College through the use of cash exempt funds and donations. The Board of Trustees will be requested to authorize the transfer of funds to the Mesa State College Foundation for property acquisition identified in this program plan. This request will be part of the annual budget process. It should be noted that funds to accomplish the entire project are not currently available.

Project Schedule:

It is anticipated that the project will be completed incrementally over the next ten years. Parts of the project will be completed as money becomes available and as the final properties become available for acquisition. In addition, many of the properties will become rentals providing a revenue stream that can assist in the funding of the acquisition program.

RELATION TO THE MASTER PLAN / OTHER PROJECTS

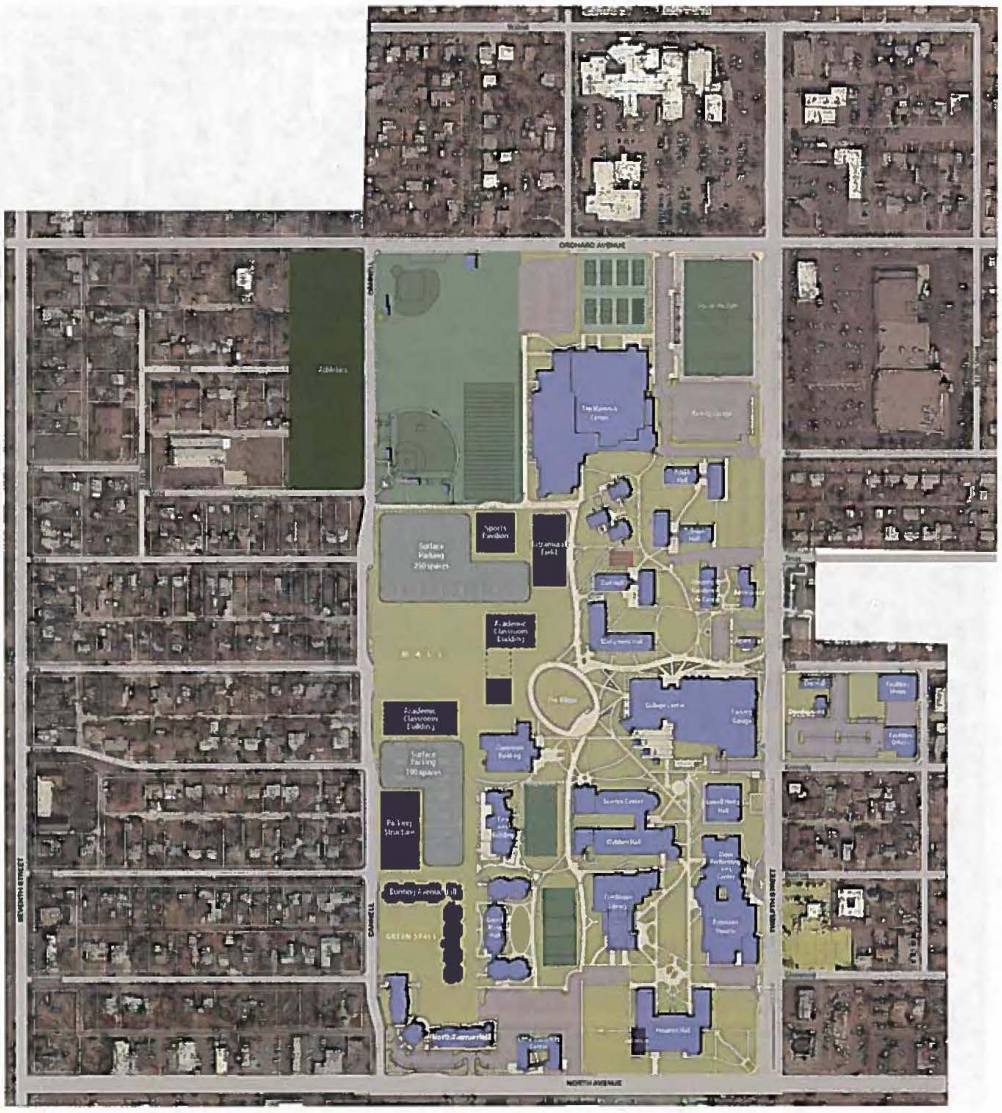
This project is part of "Project A1 – Land Acquisition, Main Campus" as described in the 1999 *Mesa State College Facilities Master Plan*, Volume 1, pages 114 – 116. In coordination with CCHE and the State of Colorado, Mesa State College has already accepted other properties under this project and will quite probably be working to accept additional properties as they become available within the priority areas established in this plan.

MESA STATE COLLEGE

MESA STATE COLLEGE
CAMPUS FACILITIES MASTER PLAN
CAMPUS EXPANSION DRAFT 2015-16

April 6, 2011

CHAMBERLIN ARCHITECTS



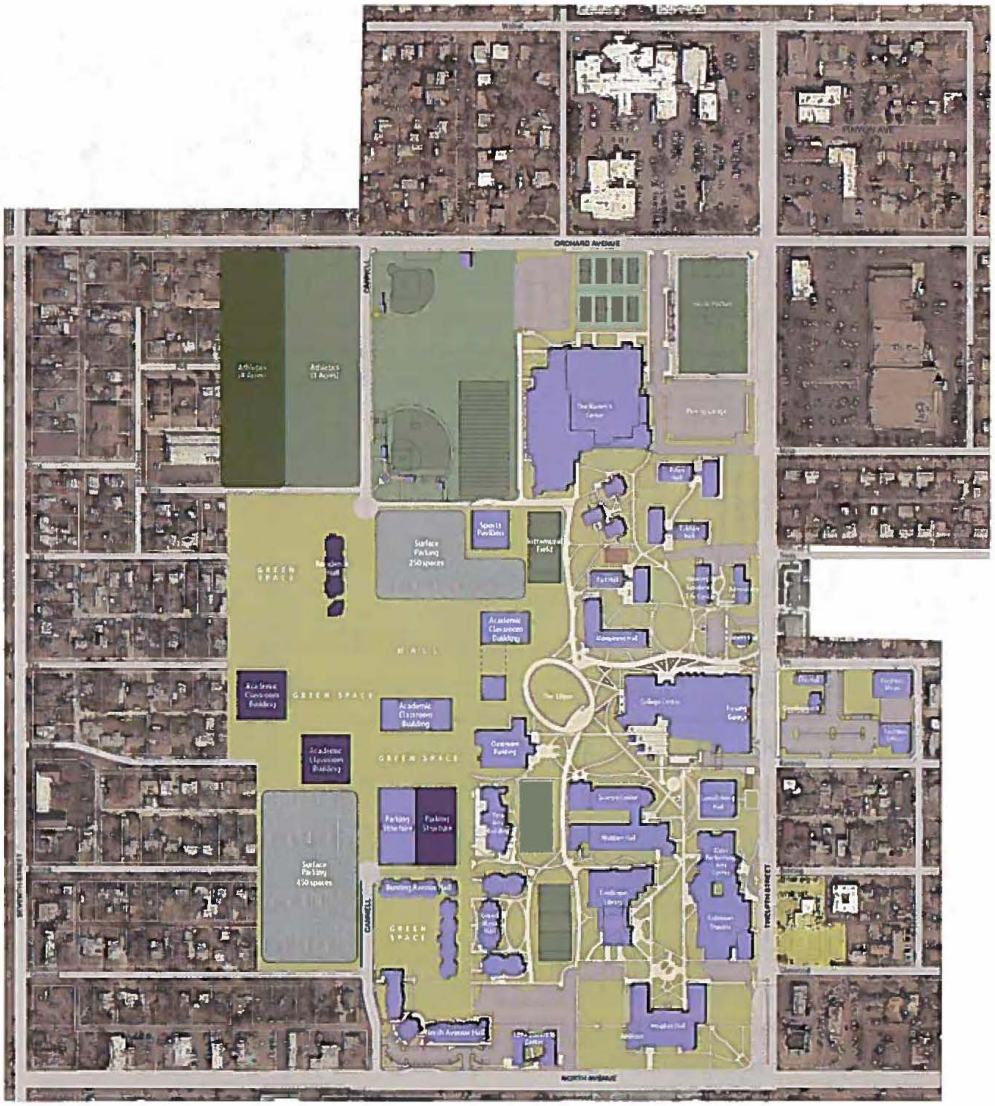
- Building Future Consturction
- Sports Field Future construction
- Green Space
- Surface Parking

MESA STATE COLLEGE

MESA STATE COLLEGE
CAMPUS FACILITIES MASTER PLAN
CAMPUS EXPANSION DRAFT 2020-21

April 6, 2011

CHAMBERLIN ARCHITECTS



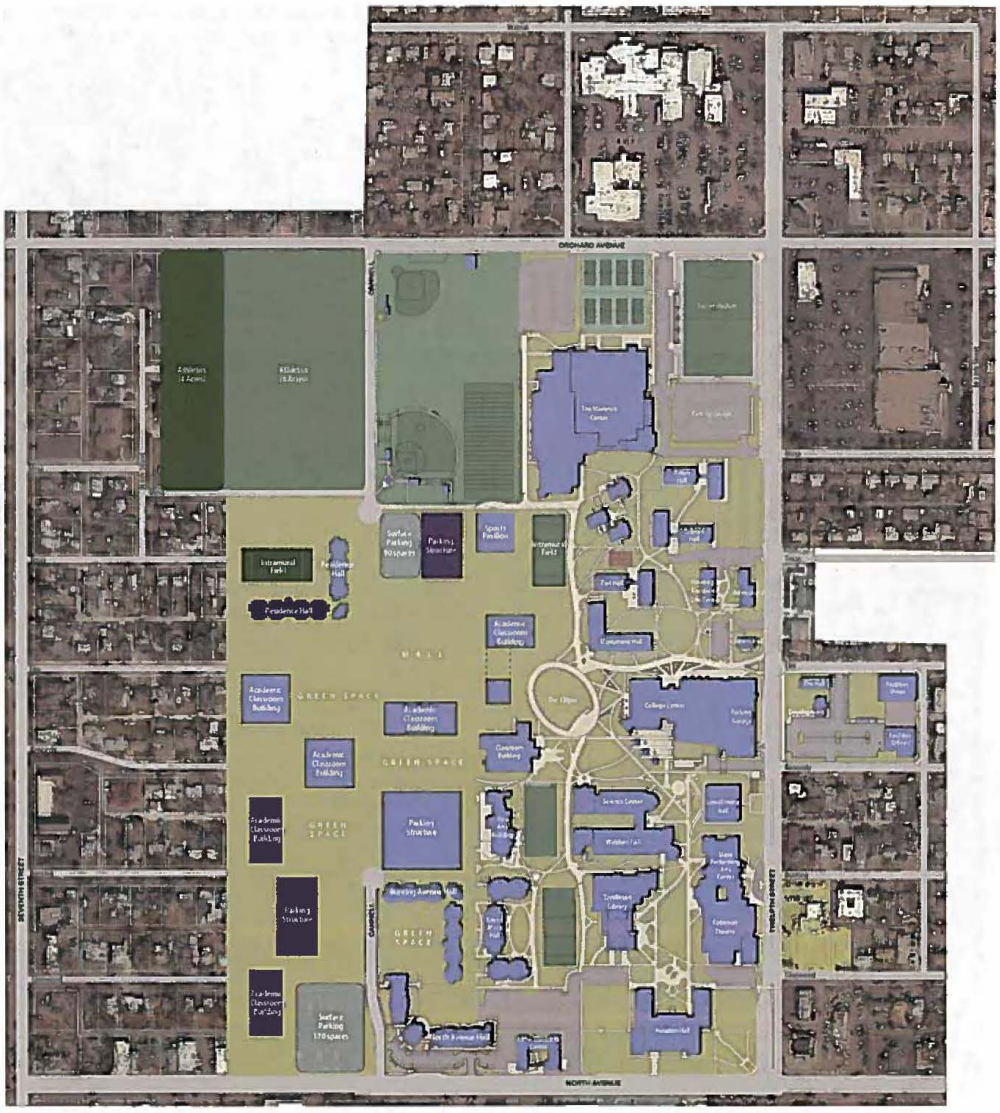
- Building Future Consturction
- Sports Field Future construction
- Green Space
- Surface Parking

MESA STATE COLLEGE

MESA STATE COLLEGE
CAMPUS FACILITIES MASTER PLAN
CAMPUS EXPANSION DRAFT 2025-26

April 6, 2011

CHAMBERLIN ARCHITECTS



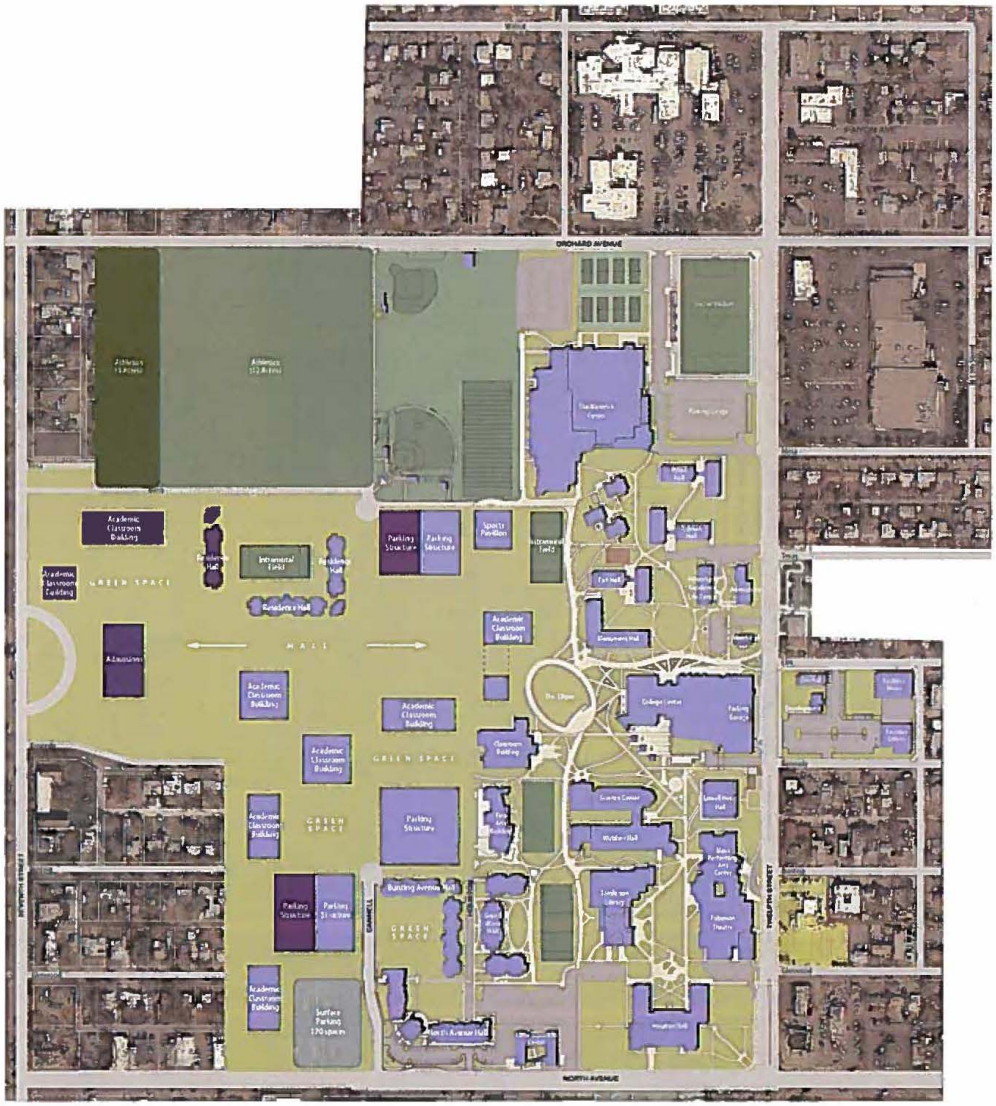
- Building Future Consturction
- Sports Field Future construction
- Green Space
- Surface Parking

MESA STATE COLLEGE

MESA STATE COLLEGE
CAMPUS FACILITIES MASTER PLAN
CAMPUS EXPANSION DRAFT 2030-31

April 6, 2011

CHAMBERLIN ARCHITECTS

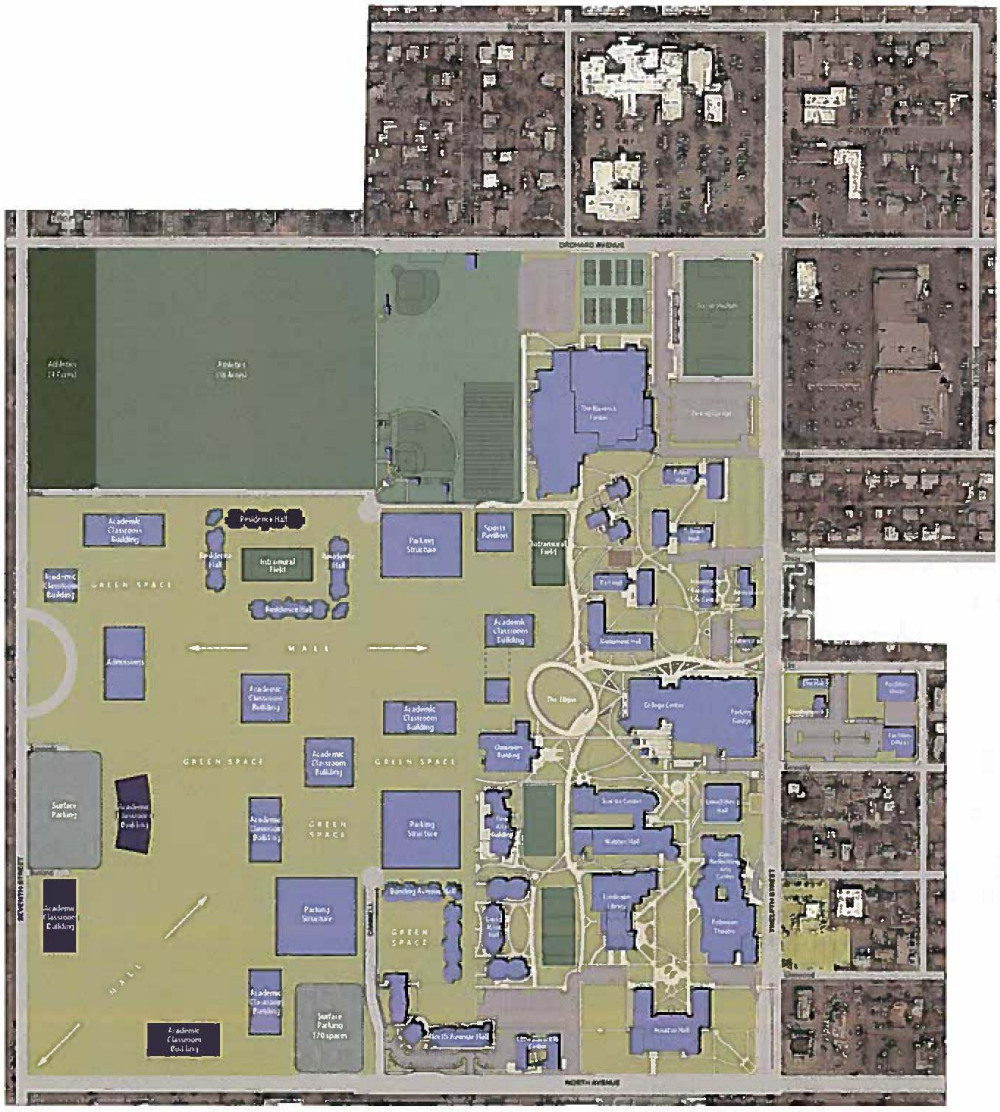


MESA STATE COLLEGE

MESA STATE COLLEGE
CAMPUS FACILITIES MASTER PLAN
CAMPUS EXPANSION DRAFT
2035-36

April 6, 2011

CHAMBERLIN ARCHITECTS


ORCHARD AVENUE
Athletics (17 acres)
Athletics (10 Acres)
Academic Classroom Building
Residence Hall
Intramural Field
Residence Hall
Parking Structure
Sports Pavilion
Intramural Field
GREEN SPACE
MALL
Admissions
Academic Classroom Building
Academic Classroom Building
Academic Classroom Building
GREEN SPACE
GREEN SPACE
Surface Parking
Academic Classroom Building
Academic Classroom Building
GREEN SPACE
Parking Structure
Parking Structure
Academic Classroom Building
Academic Classroom Building
Surface Parking 170 spaces
Academic Classroom Building
Classroom Building
College Center
Parking Garage
Science Center
Lowell Thomas Hall
Western Hall
Library
Robert Neal Jones Arts Center
Peterson Theatre
Houston Hall
Student Recreation Center
Tennis Courts
Softball Field
Softball Field
Softball Field

APPENDIX A
STUDENT DEMOGRAPHICS

Actual Student and FTE Enrollment Data

YearCount	Head	FTEs
1997	4900	4135
1998	5042	4219
1999	4904	4096
2000	5212	4302
2001	5303	4405
2002	5572	4625
2003	5765	4751
2004	6235	5096
2005	6062	4992
2006	5994	4891
2007	6199	4961
2008	6261	4973
2009	7042	5661
2010	8131	6555

Student Origin	Number of Students	Percent
Mesa State's 14 County Region	5488	67.5%
All Other Colorado	1667	20.5%
Out of State	941	11.6%
International	35	0.4%
Total	**8131**	

APPENDIX B
PROPERTY LISTING

Number	PARCEL_NUM	LOCATION
1	2945-114-08-010	1825 CANNELL AVE
2	2945-114-11-008	850 TEXAS AVE
3	2945-114-08-023	1816 N 8TH ST
4	2945-114-10-009	1727 CANNELL AVE
5	2945-114-09-019	725 ORCHARD AVE
6	2945-114-10-012	1717 CANNELL AVE
7	2945-114-08-016	860 HALL AVE
8	2945-114-11-005	828 TEXAS AVE
9	2945-114-08-014	888 HALL AVE
10	2945-114-09-008	1720 N 7TH ST
11	2945-114-08-020	820 HALL AVE
12	2945-114-11-004	816 TEXAS AVE
13	2945-114-10-004	847 HALL AVE
14	2945-114-09-020	749 ORCHARD AVE
15	2945-114-09-006	1742 N 7TH ST
16	2945-114-09-018	1808 N 7TH ST
17	2945-114-09-014	1825 N 8TH ST
18	2945-114-09-007	1730 N 7TH ST
19	2945-114-08-021	810 HALL AVE
20	2945-114-10-011	1735 CANNELL AVE
21	2945-114-08-019	830 HALL AVE
22	2945-114-10-005	855 HALL AVE
23	2945-114-08-012	890 HALL AVE
24	2945-114-08-017	848 HALL AVE
25	2945-114-10-001	1750 N 8TH ST
26	2945-114-09-005	1752 N 7TH ST
27	2945-114-08-013	880 HALL AVE
28	2945-114-09-011	1801 N 8TH ST
29	2945-114-11-009	858 TEXAS AVE
30	2945-114-08-006	845 ORCHARD AVE
31	2945-114-09-010	1737 N 8TH ST
32	2945-114-10-007	875 HALL AVE
33	2945-114-11-010	866 TEXAS AVE
34	2945-114-09-002	1828 N 7TH ST
35	2945-114-09-951	730 MESA AVE
36	2945-114-08-015	868 HALL AVE
37	2945-114-08-018	840 HALL AVE
38	2945-114-09-001	1842 N 7TH ST

39	2945-114-08-025	905 ORCHARD AVE
40	2945-114-09-013	1815 N 8TH ST
41	2945-114-11-003	804 TEXAS AVE
42	2945-114-08-003	817 ORCHARD AVE
43	2945-114-10-010	895 HALL AVE
44	2945-114-10-002	829 HALL AVE
45	2945-114-08-002	809 ORCHARD AVE
46	2945-114-08-022	802 HALL AVE
47	2945-114-09-004	1806 N 7TH ST
48	2945-114-11-007	842 TEXAS AVE
49	2945-114-08-008	911 ORCHARD AVE
50	2945-114-11-002	1616 N 8TH ST
51	2945-114-08-001	759 ORCHARD AVE
52	2945-114-09-017	1816 N 7TH ST
53	2945-114-11-001	1622 N 8TH ST
54	2945-114-11-006	836 TEXAS AVE
55	2945-114-08-011	898 HALL AVE
56	2945-114-09-021	723 ORCHARD AVE #N
57	2945-114-09-009	1727 N 8TH ST
58	2945-114-10-006	865 HALL AVE
59	2945-114-10-013	1707 CANNELL AVE
60	2945-114-08-009	921 ORCHARD AVE
61	2945-114-10-003	835 HALL AVE
62	2945-114-08-005	841 ORCHARD AVE
63	2945-114-10-008	885 HALL AVE
64	2945-114-08-004	829 ORCHARD AVE
65	2945-114-10-014	825 HALL AVE
66	2945-114-09-012	1805 N 8TH ST
67	2945-114-08-024	901 ORCHARD AVE
68	2945-114-13-021	888 ELM AVE
69	2945-114-14-032	1416 N 7TH ST
70	2945-114-15-013	1343 CANNELL AVE
71	2945-114-13-017	873 TEXAS AVE
72	2945-114-14-006	843 ELM AVE
73	2945-114-12-011	727 MESA AVE
74	2945-114-14-026	830 KENNEDY AVE
75	2945-114-15-003	771 KENNEDY AVE
76	2945-114-13-001	1524 N 7TH ST
77	2945-114-13-024	860 ELM AVE
78	2945-114-12-009	1625 N 8TH ST
79	2945-114-12-003	1628 N 7TH ST
80	2945-114-15-004	775 KENNEDY AVE
81	2945-114-15-012	885 KENNEDY AVE

82	2945-114-14-010	803 ELM AVE
83	2945-114-13-011	827 TEXAS AVE
84	2945-114-13-028	820 ELM AVE
85	2945-114-14-013	749 ELM AVE
86	2945-114-12-001	1630 N 7TH ST
87	2945-114-14-024	810 KENNEDY AVE
88	2945-114-13-007	755 TEXAS AVE
89	2945-114-14-019	740 KENNEDY AVE
90	2945-114-13-003	1516 N 7TH ST
91	2945-114-13-032	760 ELM AVE
92	2945-114-13-034	740 ELM AVE
93	2945-114-14-027	840 KENNEDY AVE
94	2945-114-13-019	889 TEXAS AVE
95	2945-114-13-031	774 ELM AVE
96	2945-114-13-014	849 TEXAS AVE
97	2945-114-13-016	865 TEXAS AVE
98	2945-114-13-033	748 ELM AVE
99	2945-114-11-014	898 TEXAS AVE
100	2945-114-13-005	743 TEXAS AVE
101	2945-114-15-020	824 BUNTING AVE
102	2945-114-14-007	833 ELM AVE
103	2945-114-15-005	805 KENNEDY AVE
104	2945-114-11-013	890 TEXAS AVE
105	2945-114-13-026	834 ELM AVE
106	2945-114-15-002	755 KENNEDY AVE
107	2945-114-14-011	769 ELM AVE
108	2945-114-13-027	830 ELM AVE
109	2945-114-13-004	735 TEXAS AVE
110	2945-114-15-015	874 BUNTING AVE
111	2945-114-12-008	1613 N 8TH ST
112	2945-114-13-972	704 ELM AVE
113	2945-114-13-009	811 TEXAS AVE
114	2945-114-15-009	845 KENNEDY AVE
115	2945-114-14-030	890 KENNEDY AVE
116	2945-114-14-002	883 ELM AVE
117	2945-114-13-002	1520 N 7TH ST
118	2945-114-15-019	834 BUNTING AVE
119	2945-114-13-035	730 ELM AVE
120	2945-114-15-008	835 KENNEDY AVE
121	2945-114-11-011	874 TEXAS AVE
122	2945-114-11-012	882 TEXAS AVE
123	2945-114-14-031	701 ELM AVE
124	2945-114-13-013	841 TEXAS AVE

125	2945-114-14-004	863 ELM AVE
126	2945-114-14-012	761 ELM AVE
127	2945-114-13-012	835 TEXAS AVE
128	2945-114-12-012	1604 N 7TH ST
129	2945-114-14-018	1400 N 7TH ST
130	2945-114-13-030	780 ELM AVE
131	2945-114-15-006	815 KENNEDY AVE
132	2945-114-13-010	819 TEXAS AVE
133	2945-114-15-011	865 KENNEDY AVE
134	2945-114-13-029	818 ELM AVE
135	2945-114-15-017	854 BUNTING AVE
136	2945-114-14-005	855 ELM AVE
137	2945-114-14-001	889 ELM AVE
138	2945-114-13-008	803 TEXAS AVE
139	2945-114-14-021	760 KENNEDY AVE
140	2945-114-14-003	875 ELM AVE
141	2945-114-15-007	825 KENNEDY AVE
142	2945-114-12-007	1603 N 8TH ST
143	2945-114-12-010	1635 N 8TH ST
144	2945-114-12-004	1616 N 7TH ST
145	2945-114-13-022	886 ELM AVE
146	2945-114-13-023	880 ELM AVE
147	2945-114-13-025	850 ELM AVE
148	2945-114-14-023	800 KENNEDY AVE
149	2945-114-14-029	860 KENNEDY AVE
150	2945-114-14-028	850 KENNEDY AVE
151	2945-114-12-002	721 MESA AVE
152	2945-114-15-010	855 KENNEDY AVE
153	2945-114-13-036	1510 N 7TH ST
154	2945-114-13-015	859 TEXAS AVE
155	2945-114-13-018	881 TEXAS AVE
156	2945-114-14-017	1410 N 7TH ST
157	2945-114-14-008	817 ELM AVE
158	2945-114-14-025	820 KENNEDY AVE
159	2945-114-14-009	809 ELM AVE
160	2945-114-13-020	895 TEXAS AVE
161	2945-114-13-006	753 TEXAS AVE
162	2945-114-15-018	844 BUNTING AVE
163	2945-114-14-020	750 KENNEDY AVE
164	2945-114-15-016	864 BUNTING AVE
165	2945-114-14-014	745 ELM AVE
166	2945-114-14-022	780 KENNEDY AVE
167	2945-114-17-012	856 GLENWOOD AVE

168	2945-114-16-014	752 GLENWOOD AVE
169	2945-114-19-006	865 GLENWOOD AVE
170	2945-114-18-001	763 GLENWOOD AVE
171	2945-114-17-013	846 GLENWOOD AVE
172	2945-114-17-014	836 GLENWOOD AVE
173	2945-114-17-017	804 GLENWOOD AVE
174	2945-114-16-006	727 BUNTING AVE
175	2945-114-19-007	875 GLENWOOD AVE
176	2945-114-16-012	730 GLENWOOD AVE #B
177	2945-114-15-023	768 BUNTING AVE
178	2945-114-17-024	888 GLENWOOD AVE
179	2945-114-15-028	710 BUNTING AVE
180	2945-114-16-010	720 GLENWOOD AVE
181	2945-114-16-003	749 BUNTING AVE
182	2945-114-15-025	750 BUNTING AVE
183	2945-114-17-021	866 GLENWOOD AVE
184	2945-114-19-005	845 GLENWOOD AVE
185	2945-114-17-006	853 BUNTING AVE
186	2945-114-19-008	911 GLENWOOD AVE
187	2945-114-16-008	1226 N 7TH ST
188	2945-114-19-003	825 GLENWOOD AVE
189	2945-114-17-018	867 BUNTING AVE
190	2945-114-15-024	762 BUNTING AVE
191	2945-114-15-021	814 BUNTING AVE
192	2945-114-17-009	887 BUNTING AVE
193	2945-114-21-951	1350 N 7TH ST
194	2945-114-19-002	815 GLENWOOD AVE
195	2945-114-16-004	745 BUNTING AVE
196	2945-114-19-001	805 GLENWOOD AVE
197	2945-114-16-016	1204 N 7TH ST
198	2945-114-17-002	815 BUNTING AVE
199	2945-114-18-003	751 GLENWOOD AVE
200	2945-114-17-003	825 BUNTING AVE
201	2945-114-16-005	739 BUNTING AVE
202	2945-114-17-005	843 BUNTING AVE
203	2945-114-19-004	835 GLENWOOD AVE
204	2945-114-16-001	769 BUNTING AVE
205	2945-114-18-005	727 GLENWOOD AVE
206	2945-114-18-002	759 GLENWOOD AVE
207	2945-114-17-015	824 GLENWOOD AVE
208	2945-114-17-016	814 GLENWOOD AVE
209	2945-114-17-004	833 BUNTING AVE
210	2945-114-16-013	740 GLENWOOD AVE

211	2945-114-16-002	757 BUNTING AVE
212	2945-114-17-007	859 BUNTING AVE
213	2945-114-17-001	805 BUNTING AVE
214	2945-114-18-004	733 GLENWOOD AVE
215	2945-114-15-030	730 BUNTING AVE
216	2945-114-18-006	705 GLENWOOD AVE
217	2945-114-15-026	740 BUNTING AVE
218	2945-114-16-007	1236 N 7TH ST
219	2945-114-16-015	760 GLENWOOD AVE
220	2945-114-15-022	804 BUNTING AVE
221	2945-114-17-950	875 BUNTING AVE
222	2945-114-10-953	1704 N 8TH ST
223	2945-114-10-954	

APPENDIX C
THIRD PARTY REVIEW

APPENDIX D
CCHE FORM CC-C

EXHIBIT B

COLORADO MESA UNIVERSITY SUBDIVISION

A TRACT OF LAND ENCOMPASSING ALL THAT REAL PROPERTY PREVIOUSLY SUBDIVIDED AS LOT 1, BLOCK 1 OF ELAM SUBDIVISION, A SUBDIVISION RECORDED AS RECEPTION NUMBER 2261431 IN THE RECORDS OF THE OFFICE OF THE MESA COUNTY CLERK AND RECORDER, LOT 1 OF ELAM II SUBDIVISION, A SUBDIVISION RECORDED AS RECEPTION NUMBER 2455622, SAID MESA COUNTY RECORDS, BLOCKS 1, 2, 3, 4, 5 AND 6, MCMULLIN & GORMELY SUBDIVISION, A SUBDIVISION RECORDED AS RECEPTION NUMBER 349926, SAID MESA COUNTY RECORDS, BLOCKS 1, 2, 3, 4, 5 AND 6, GARFIELD PARK SUBDIVISION, ACCORDING TO THE RE-FILING PLAT THEREOF, A SUBDIVISION RECORDED AS RECEPTION NUMBER 444756, SAID MESA COUNTY RECORDS, LOTS 1 THROUGH 38, INCLUSIVE AND LOT 40, SOUTH GARFIELD PARK SUBDIVISION, A SUBDIVISION RECORDED AS RECEPTION NUMBER 539508, SAID MESA COUNTY RECORDS, MESA COLLEGE CAMPUS SUBDIVISION, A SUBDIVISION RECORDED AT RECEPTION NUMBER 459010, SAID MESA COUNTY RECORDS, TOGETHER WITH THOSE RIGHTS-OF-WAY AND ALLEY WAYS DEDICATED BY THE ABOVE REFERENCED SUBDIVISION PLATS AND VACATED BY THOSE CITY OF GRAND JUNCTION ORDINANCES NUMBERED 1120, 1299, 1675, 2913, 3356, 3759, 4106, 4252, 4431, 4590 AND 4628, ALL IN THE SOUTHEAST QUARTER OF SECTION 11, TOWNSHIP 1 SOUTH, RANGE 1 WEST OF THE UTE MERIDIAN, CITY OF GRAND JUNCTION, COUNTY OF MESA, STATE OF COLORADO

AREA = 73.848 ACRES +/-

Sheet 1 of 3

DEDICATION AND OWNERSHIP STATEMENT

KNOW ALL MEN BY THESE PRESENTS THAT COLORADO MESA UNIVERSITY IS THE OWNER OF THAT REAL PROPERTY DESCRIBED AS FOLLOWS:

A TRACT OF LAND ENCOMPASSING ALL THAT REAL PROPERTY PREVIOUSLY SUBDIVIDED AS LOT 1, BLOCK 1 OF ELAM SUBDIVISION, A SUBDIVISION RECORDED AS RECEPTION NUMBER 2261431 IN THE RECORDS OF THE OFFICE OF THE MESA COUNTY CLERK AND RECORDER, LOT 1 OF ELAM II SUBDIVISION, A SUBDIVISION RECORDED AS RECEPTION NUMBER 2455622, SAID MESA COUNTY RECORDS, BLOCKS 1, 2, 3, 4, 5 AND 6, MCMULLIN & GORMELY SUBDIVISION, A SUBDIVISION RECORDED AS RECEPTION NUMBER 349926, SAID MESA COUNTY RECORDS, BLOCKS 1, 2, 3, 4, 5 AND 6, GARFIELD PARK SUBDIVISION, ACCORDING TO THE RE-FILING PLAT THEREOF, A SUBDIVISION RECORDED AS RECEPTION NUMBER 444756, SAID MESA COUNTY RECORDS, LOTS 1 THROUGH 38, INCLUSIVE AND LOT 40, SOUTH GARFIELD PARK SUBDIVISION, A SUBDIVISION RECORDED AS RECEPTION NUMBER 539508, SAID MESA COUNTY RECORDS, MESA COLLEGE CAMPUS SUBDIVISION, A SUBDIVISION RECORDED AT RECEPTION NUMBER 459010, SAID MESA COUNTY RECORDS, TOGETHER WITH THOSE RIGHTS-OF-WAY AND ALLEYWAYS DEDICATED BY THE ABOVE REFERENCED SUBDIVISION PLATS AND VACATED BY THOSE CITY OF GRAND JUNCTION ORDINANCES NUMBERED 1120, 1299, 1675, 2913, 3356, 3759, 4106, 4252, 4431, 4590 AND 4628, ALL IN THE SOUTHEAST QUARTER OF SECTION 11, TOWNSHIP 1 SOUTH, RANGE 1 WEST OF THE UTE MERIDIAN, CITY OF GRAND JUNCTION, COUNTY OF MESA, STATE OF COLORADO, BEING FURTHER DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHEAST CORNER OF SAID SECTION 11 AND CONSIDERING THE SOUTH LINE OF SAID SECTION 11 TO BEAR NORTH 89°51'39" WEST, WITH ALL BEARINGS CONTAINED HEREIN RELATIVE THERETO; THENCE NORTH 89°51'39" WEST, ALONG SAID SOUTH LINE, SAID LINE BEING ALSO THE CENTERLINE OF NORTH AVENUE, A DISTANCE OF 40.50 FEET; THENCE NORTH 00°03'55" EAST, A DISTANCE OF 40.00 FEET TO A POINT AT THE INTERSECTION OF THE NORTHERLY RIGHT-OF-WAY LINE OF SAID NORTH AVENUE AND THE WESTERLY RIGHT-OF-WAY LINE OF 12TH STREET AND THE POINT OF BEGINNING; THENCE NORTH 89°51'39" WEST, ALONG SAID NORTHERLY RIGHT-OF-WAY LINE, AND ALONG THE SOUTHERLY LINE OF MESA COLLEGE CAMPUS SUBDIVISION AND THE SOUTHERLY LINE OF BLOCKS 5 AND 6, SAID MCMULLIN AND GORMLEY SUBDIVISION, A DISTANCE OF 1214.19 FEET TO A POINT ON THE EASTERLY RIGHT-OF-WAY LINE OF CANNELL AVENUE; THENCE NORTHERLY ALONG SAID EASTERLY RIGHT-OF-WAY LINE THE FOLLOWING FOUR (4) COURSES:

(1) NORTH 00°06'37" WEST, A DISTANCE OF 137.65 FEET;

(2) NORTH 14°07'45" WEST, A DISTANCE OF 51.80 FEET;

(3) NORTH 26°38'21" WEST, A DISTANCE OF 27.99 FEET;

(4) NORTH 00°06'37" WEST, A DISTANCE OF 100.11 FEET TO THE SOUTHWEST CORNER OF LOT 26, SAID BLOCK 3, MCMULLIN AND GORMLEY SUBDIVISION;

THENCE NORTH 89°57'31" EAST, ALONG THE SOUTH LINE OF SAID LOT 26 AND THE EASTERLY EXTENSION THEREOF, A DISTANCE OF 131.72 FEET TO THE CENTERLINE OF THAT ALLEY VACATED PER SAID ORDINANCE NUMBER 4431; THENCE NORTH 00°03'17" WEST, ALONG THE CENTERLINE OF SAID VACATED ALLEY, A DISTANCE OF 125.10 FEET TO A POINT AT THE INTERSECTION OF SAID CENTERLINE AND THE EASTERLY EXTENSION OF THE NORTH LINE OF LOT 30, SAID BLOCK 3, MCMULLIN AND GORMLEY SUBDIVISION; THENCE SOUTH 89°58'44" WEST, ALONG SAID NORTH LINE AND THE EASTERLY EXTENSION THEREOF, A DISTANCE OF 131.84 FEET TO THE NORTHWEST CORNER OF SAID LOT 30 AND SAID EASTERLY RIGHT-OF-WAY LINE OF CANNELL AVENUE; THENCE NORTH 00°06'37" WEST, ALONG SAID EASTERLY RIGHT-OF-WAY LINE AND ALONG THE WESTERLY LINE OF SAID BLOCK 3 AND THE NORTHERLY EXTENSION THEREOF, A DISTANCE OF 190.22 FEET TO A POINT AT THE INTERSECTION OF SAID NORTHERLY EXTENSION OF THE WESTERLY LINE OF BLOCK 3 AND THE SOUTHERLY EXTENSION OF THE WESTERLY LINE OF BLOCK 2, SAID MCMULLIN AND GORMLEY SUBDIVISION; THENCE NORTH 00°04'58" WEST, ALONG THE WESTERLY LINE OF SAID BLOCK 2 AND THE SOUTHERLY AND NORTHERLY EXTENSIONS THEREOF AND CONTINUING ALONG SAID EASTERLY RIGHT-OF-WAY, A DISTANCE OF 362.28 FEET TO THE SOUTHERLY LINE OF THAT PORTION OF CANNELL AVENUE VACATED BY CITY ORDINANCE No. 4628, RECORDED AT RECEPTION No. 2688697, SAID MESA COUNTY RECORDS; THENCE SOUTH 89°58'03" WEST, ALONG SAID SOUTHERLY LINE, A DISTANCE OF 90.00 FEET TO THE WESTERLY LINE OF SAID VACATED CANNELL AVENUE; THENCE NORTHERLY ALONG SAID WESTERLY LINE AND ALONG THE EASTERLY LINE OF KENNEDY SUBDIVISION, A SUBDIVISION RECORDED AT RECEPTION No. 670067, SAID MESA COUNTY RECORDS AND ALONG THE EASTERLY LINE OF ELM AVENUE SUBDIVISION, A SUBDIVISION RECORDED AT RECEPTION NUMBER 330445, SAID MESA COUNTY RECORDS, NORTH 00°04'58" WEST, A DISTANCE OF 277.37 FEET; THENCE NORTHERLY, CONTINUING ALONG SAID EASTERLY LINE OF SAID ELM AVENUE SUBDIVISION AND ALONG THE EASTERLY LINE OF HELMS SUBDIVISION, A SUBDIVISION RECORDED AT RECEPTION No. 367856, SAID MESA COUNTY RECORDS, NORTH 00°12'30" WEST, A DISTANCE OF 308.07 FEET TO THE SOUTH RIGHT-OF-WAY LINE OF TEXAS AVENUE; THENCE NORTH 89°55'24" EAST, ALONG THE NORTHERLY LINE OF SAID VACATED CANNELL AVENUE, A DISTANCE OF 60.00 FEET TO THE SOUTHWESTERLY CORNER OF THAT PORTION OF CANNELL AVENUE VACATED BY CITY ORDINANCE No. 4590, RECORDED AT RECEPTION No. 2661369, SAID MESA COUNTY RECORDS; THENCE NORTH 00°12'30" WEST, ALONG THE WESTERLY LINE OF SAID VACATED PORTION OF CANNELL AVENUE, A DISTANCE OF 2.62 FEET; THENCE CONTINUING ALONG SAID WESTERLY LINE, NORTH 30°46'28" EAST, A DISTANCE OF 58.28 FEET TO THE EASTERLY RIGHT-OF-WAY LINE OF CANNELL AVENUE; THENCE NORTH 00°12'21" WEST, ALONG THE WESTERLY LINE OF BLOCKS 2, 3 AND 6 OF SAID GARFIELD PARK SUBDIVISION AND ALONG SAID EASTERLY RIGHT-OF-WAY LINE OF CANNELL AVENUE, A DISTANCE OF 930.71 FEET TO THE SOUTHERLY RIGHT-OF-WAY LINE OF ORCHARD AVENUE; THENCE SOUTH 89°58'42" EAST, ALONG SAID SOUTHERLY RIGHT-OF-WAY LINE, SAID LINE BEING ALSO THE NORTHERLY LINE OF BLOCKS 1 AND 2, SAID GARFIELD PARK SUBDIVISION, A DISTANCE OF 1249.02 FEET TO THE WESTERLY RIGHT-OF-WAY LINE OF 12TH STREET; THENCE SOUTH 00°02'56" WEST, ALONG SAID WESTERLY RIGHT-OF-WAY LINE, SAID LINE BEING ALSO THE EAST LINE OF BLOCKS 1, 4 AND 5 OF GARFIELD PARK SUBDIVISION AND THE EAST LINE OF SAID SOUTH GARFIELD PARK SUBDIVISION AND THE SOUTHERLY EXTENSION THEREOF, A DISTANCE OF 1285.41 FEET; THENCE SOUTH 89°45'08" WEST, A DISTANCE OF 0.50 FEET TO A POINT ON THE NORTHERLY EXTENSION OF THE EAST LINE OF SAID MESA COLLEGE CAMPUS SUBDIVISION; THENCE SOUTH 00°03'55" WEST, ALONG SAID EAST LINE AND THE NORTHERLY EXTENSION THEREOF AND ALONG SAID WESTERLY RIGHT-OF-WAY LINE OF 12TH STREET, A DISTANCE OF 1276.39 FEET TO THE POINT OF BEGINNING.

CONTAINING 73.848 ACRES OR 3,216,833 SQUARE FEET, MORE OR LESS.

SAID OWNER HAS BY THESE PRESENTS LAID OUT, PLATTED AND SUBDIVIDED THE ABOVE-DESCRIBED REAL PROPERTY INTO A LOT, AND A BLOCK AS SHOWN HEREON, AND DESIGNATED THE SAME AS "COLORADO MESA UNIVERSITY SUBDIVISION", IN THE CITY OF GRAND JUNCTION, COUNTY OF MESA, STATE OF COLORADO.

ALL STREETS, ROADS AND RIGHTS-OF-WAY ARE DEDICATED TO THE CITY OF GRAND JUNCTION FOR THE USE OF THE PUBLIC FOREVER.

ALL UTILITY EASEMENTS ARE DEDICATED TO THE CITY OF GRAND JUNCTION AS PERPETUAL EASEMENTS FOR CITY APPROVED UTILITIES INCLUDING THE INSTALLATION, OPERATION, MAINTENANCE AND REPAIR OF SAID UTILITIES AND APPURTENANCES WHICH MAY INCLUDE BUT ARE NOT LIMITED TO ELECTRIC LINES, CABLE TV LINES, NATURAL GAS PIPELINES, SANITARY SEWER LINES, STORM SEWERS, WATER LINES, TELEPHONE LINES, EQUIVALENT OTHER PUBLIC UTILITY PROVIDERS AND APPURTENANT FACILITIES.

INGRESS-EGRESS EASEMENTS SHOWN HEREON ARE HEREBY DEDICATED TO THE CITY OF GRAND JUNCTION AS PERPETUAL NON-EXCLUSIVE EASEMENTS FOR PUBLIC INGRESS AND EGRESS.

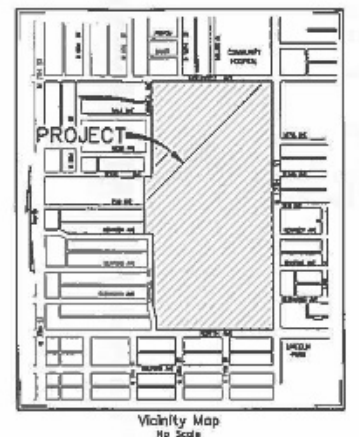
ALL TRACTS/EASEMENTS INCLUDE THE RIGHT OF INGRESS AND EGRESS ON, ALONG, OVER, UNDER, THROUGH AND ACROSS BY THE BENEFICIARIES, THEIR SUCCESSORS, OR ASSIGNS, TOGETHER WITH THE RIGHT TO TRIM OR REMOVE INTERFERING TREES AND BRUSH, AND IN DRAINAGE AND DETENTION/RETENTION EASEMENTS OR TRACTS, THE RIGHT TO DREDGE; PROVIDED HOWEVER, THAT THE BENEFICIARIES/OWNERS SHALL UTILIZE THE SAME IN A REASONABLE AND PRUDENT MANNER. FURTHERMORE, THE OWNERS OF SAID LOTS OR TRACTS HEREBY PLATTED SHALL NOT BURDEN OR OVERBURDEN SAID EASEMENTS BY ERECTING OR PLACING ANY IMPROVEMENTS THEREON WHICH MAY IMPEDE THE USE OF THE EASEMENT AND/OR PREVENT THE REASONABLE INGRESS AND EGRESS TO AND FROM THE EASEMENT. SURFACE USE WITHIN THE UTILITY EASEMENTS DEDICATED HEREON SHALL LIMITED TO SOD, ASPHALT OR GRAVEL.

OWNER HEREBY DECLARES THERE ARE NO LIEN HOLDERS OF RECORD FOR THE HEREIN DESCRIBED PROPERTY.

IN WITNESS WHEREOF, SAID OWNER HAS CAUSED ITS NAME TO BE HEREUNTO DESCRIBED THIS _______ DAY OF _____________, A.D. 2018.

BY: ______________________

TIM FOSTER
PRESIDENT, COLORADO MESA UNIVERSITY



Vicinity Map
No Scale

FOR THE USE OF THE CITY OF GRAND JUNCTION

Book	Page	Description

NOTARY PUBLIC CERTIFICATION

STATE OF COLORADO } SS
COUNTY OF MESA }

THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME BY TIM FOSTER AS PRESIDENT OF COLORADO MESA UNIVERSITY.

THIS _______ DAY OF _____________, A.D. 2018.

WITNESS MY HAND AND OFFICIAL SEAL: ______________________
NOTARY PUBLIC

MY COMMISSION EXPIRES: ______________________

NOTES:

1. "NOTICE: ACCORDING TO COLORADO LAW YOU MUST COMMENCE ANY LEGAL ACTION BASED UPON ANY DEFECT IN THIS SURVEY WITHIN THREE YEARS AFTER YOU FIRST DISCOVER SUCH DEFECT. IN NO EVENT, MAY ANY ACTION BASED UPON ANY DEFECT IN THIS SURVEY BE COMMENCED MORE THAN TEN YEARS FROM THE DATE OF THE CERTIFICATION SHOWN HEREON".

2. THE BEARINGS AS SHOWN HEREON ARE BASED UPON THE CONSIDERATION THAT THE SOUTH LINE OF SECTION 11, TOWNSHIP 1 SOUTH, RANGE 1 WEST OF THE UTE MERIDIAN IS CONSIDERED TO BEAR NORTH 89°51'39" WEST. SAID LINE IS MONUMENTED AS SHOWN HEREON.

3. THE UNDERSIGNED HAS RELIED, IN PART, UPON ABSTRACT & TITLE CO. OF MESA COUNTY, INC., COMMITMENT TO INSURE, COMMITMENT NUMBER ABA 107001232 HAVING AN EFFECTIVE DATE OF JUNE 2, 2008 AT 7:00 A.M., FOR OWNERSHIP INFORMATION USED IN DEVELOPING THE BOUNDARY OF THE HEREON DESCRIBED PARCEL. ADDITIONAL INFORMATION PERTAINING TO OWNERSHIP HAS BEEN PROVIDED BY THE CITY OF GRAND JUNCTION AND COLORADO MESA UNIVERSITY. THE SURVEY DOES NOT CONSTITUTE A TITLE SEARCH BY DREXEL, BARRELL & CO. TO DETERMINE OWNERSHIP AND EASEMENTS OF RECORD.

RECORDED EASEMENTS AND RIGHTS-OF-WAY WITHIN THE BOUNDARY OF THE HEREON DESCRIBED PARCEL HAVE NOT BEEN SHOWN PENDING COMPLETION OF A FORMAL AGREEMENT BETWEEN COLORADO MESA UNIVERSITY AND THE CITY OF GRAND JUNCTION VACATING ALL PRIOR EASEMENTS OF RECORD.

4. FOR THE PURPOSES OF THE SURVEY OF THIS SUBDIVISION THE CENTERLINE OF NORTH AVENUE IS CONSIDERED TO BE THE SOUTH LINE OF SECTION 11 RUNNING BETWEEN MESA COUNTY SURVEY MARKER No. P032 AT THE SOUTHEAST CORNER, WESTERLY TO MESA COUNTY SURVEY MARKER No. P033 AT THE SOUTHWEST CORNER.

5. DIMENSIONS SHOWN ON THE SURVEY AND DENOTED WITH AN "(R)" INDICATE RECORD DIMENSIONS BASED UPON INFORMATION CONTAINED IN THE CITY OF GRAND JUNCTION ENGINEERING DEPARTMENT RECORDS PERTAINING TO A CITY MONUMENT STUDY AND FROM THE PLAT OF GARFIELD PARK SUBDIVISION, ACCORDING TO THE REFILING PLAT THEREOF, RECORDED IN BOOK 7 AT PAGE 9, THE PLAT OF SOUTH GARFIELD PARK SUBDIVISION, RECORDED IN BOOK 7 AT PAGE 84, THE PLAT OF MCMULLIN & GORMLEY SUBDIVISION, RECORDED IN BOOK 6 AT PAGE 3 AND THE PLAT OF MESA COLLEGE CAMPUS, RECORDED IN BOOK 7 AT PAGE 28, ALL IN THE RECORDS OF THE OFFICE OF THE CLERK AND RECORDER OF MESA COUNTY. (refer to legend on sheet 2)

6. THE LINEAL DIMENSIONS AS SHOWN HEREON ARE IN U.S. SURVEY FEET.

SURVEYORS STATEMENT

I, PATRICK C. O'HEARN, A REGISTERED PROFESSIONAL LAND SURVEYOR IN THE STATE OF COLORADO, DO HEREBY CERTIFY THAT THIS SUBDIVISION PLAT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION, AND THAT IT IS ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF AND IS IN COMPLIANCE WITH THE APPLICABLE LAWS AND REGULATIONS OF THE STATE OF COLORADO PERTAINING TO LAND SURVEYING. THIS CERTIFICATION IS NOT A GUARANTY OR WARRANTY, EITHER EXPRESSED OR IMPLIED.

____
PATRICK C. O'HEARN, P.L.S. 23515
COLORADO LICENSED PROFESSIONAL LAND SURVEYOR
FOR AND ON BEHALF OF DREXEL, BARRELL & CO.

TITLE CERTIFICATION

WE, xxxxxxxxxxxxxxxxxxxxxxxxxxxx, A TITLE INSURANCE COMPANY, AS DULY LICENSED IN THE STATE OF COLORADO, HEREBY CERTIFY THAT WE HAVE EXAMINED THE TITLE TO THE HEREON DESCRIBED PROPERTY, THAT WE FIND THE TITLE TO THE PROPERTY IS VESTED TO COLORADO MESA UNIVERSITY, THAT THE CURRENT TAXES HAVE BEEN PAID, THAT ALL MORTGAGES NOT SATISFIED OR RELEASED OF RECORD NOR OTHERWISE TERMINATED BY LAW ARE SHOWN HEREON AND THAT THERE ARE NO OTHER ENCUMBRANCES OF RECORD, THAT ALL EASEMENTS, RESERVATIONS AND RIGHT-OF-WAYS OF RECORD ARE SHOWN HEREON.

DATE: ______________ BY: ______________________

TITLE: ______________________
FOR: xxxxxxxxxxxxxxxxxx

CITY OF GRAND JUNCTION APPROVAL

THIS PLAT OF COLORADO MESA UNIVERSITY SUBDIVISION, A SUBDIVISION IN THE CITY OF GRAND JUNCTION, COUNTY OF MESA, STATE OF COLORADO IS APPROVED AND ACCEPTED ON THE _____ DAY OF _______________, A.D. 2018.

______________________ ______________________
CITY MANAGER PRESIDENT, CITY COUNCIL

CLERK AND RECORDERS CERTIFICATE

STATE OF COLORADO } SS
COUNTY OF MESA }

I HEREBY CERTIFY THAT THIS INSTRUMENT WAS FILED FOR RECORDING IN MY OFFICE

AT _______ O'CLOCK _______ THIS _________ DAY OF _____________ A.D. 2018

AND IS DULY RECORDED IN BOOK NO. _________ AT PAGE _______

RECEPTION NO. __________ ; DRAWER NO. __________ ; FEE $ __________ .

______________________ ______________________
CLERK AND RECORDER BY: DEPUTY

Sheet 1 – Description, Dedication, Notes and Certificates
Sheet 2 – Plat Graphic / Subdivision Boundary
Sheet 3 – Plat Graphic / Easement Dedications

COLORADO MESA UNIVERSITY SUBDIVISION
LOCATED IN THE SE 1/4 OF SECTION 11, TOWNSHIP 1 SOUTH, RANGE 1 WEST OF THE UTE MERIDIAN, CITY OF GRAND JUNCTION, COUNTY OF MESA, STATE OF COLORADO.

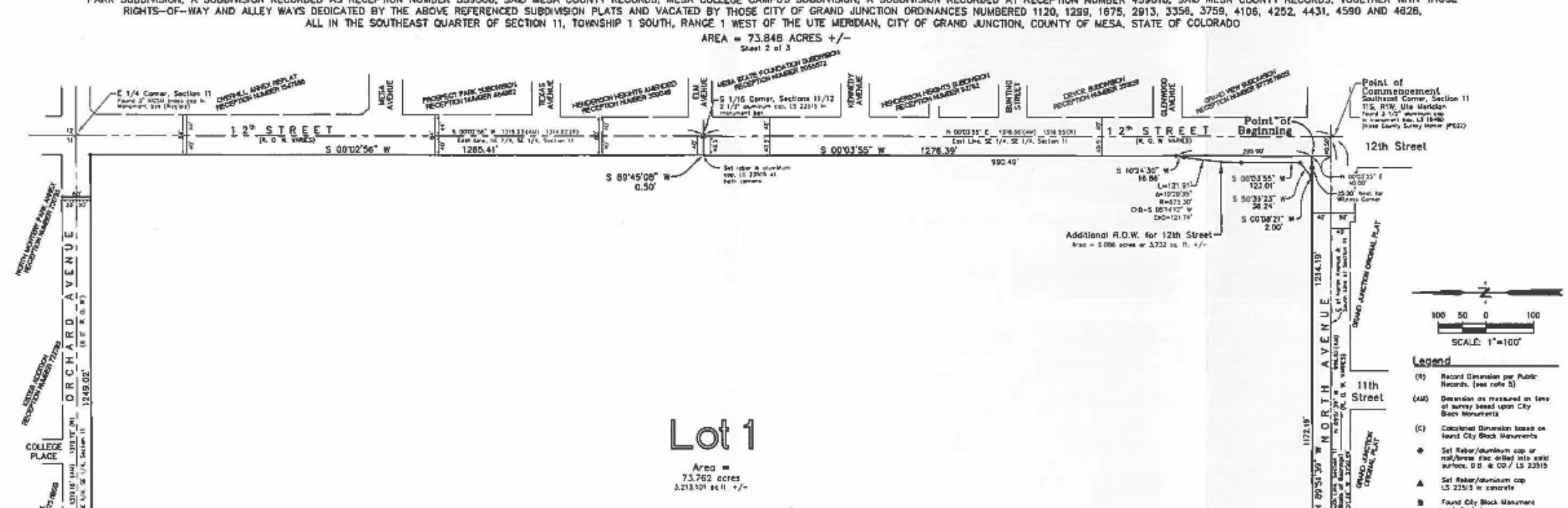
Drexel, Barrell & Co. Engineers/Surveyors
Date 11-08-14 Drawn By PCO/PCO Job No. 20219-02 Scale N/A Checked By PCO

COLORADO MESA UNIVERSITY SUBDIVISION

A TRACT OF LAND ENCOMPASSING ALL THAT REAL PROPERTY PREVIOUSLY SUBDIVIDED AS LOT 1, BLOCK 1 OF ELAM SUBDIVISION, A SUBDIVISION RECORDED AS RECEPTION NUMBER 2261431 IN THE RECORDS OF THE OFFICE OF THE MESA COUNTY CLERK AND RECORDER, LOT 1 OF ELAM II SUBDIVISION, A SUBDIVISION RECORDED AS RECEPTION NUMBER 2455622, SAID MESA COUNTY RECORDS, BLOCKS 1, 2, 3, 4, 5 AND 6, MCMULLIN & GORMELY SUBDIVISION, A SUBDIVISION RECORDED AS RECEPTION NUMBER 349926, SAID MESA COUNTY RECORDS, BLOCKS 1, 2, 3, 4, 5 AND 6, GARFIELD PARK SUBDIVISION, ACCORDING TO THE RE-FILING PLAT THEREOF, A SUBDIVISION RECORDED AS RECEPTION NUMBER 444756, SAID MESA COUNTY RECORDS, LOTS 1 THROUGH 38, INCLUSIVE AND LOT 40, SOUTH GARFIELD PARK SUBDIVISION, A SUBDIVISION RECORDED AS RECEPTION NUMBER 539508, SAID MESA COUNTY RECORDS, MESA COLLEGE CAMPUS SUBDIVISION, A SUBDIVISION RECORDED AT RECEPTION NUMBER 459010, SAID MESA COUNTY RECORDS, TOGETHER WITH THOSE RIGHTS-OF-WAY AND ALLEY WAYS DEDICATED BY THE ABOVE REFERENCED SUBDIVISION PLATS AND VACATED BY THOSE CITY OF GRAND JUNCTION ORDINANCES NUMBERED 1120, 1299, 1675, 2913, 3356, 3759, 4106, 4252, 4431, 4590 AND 4628, ALL IN THE SOUTHEAST QUARTER OF SECTION 11, TOWNSHIP 1 SOUTH, RANGE 1 WEST OF THE UTE MERIDIAN, CITY OF GRAND JUNCTION, COUNTY OF MESA, STATE OF COLORADO

AREA = 73.848 ACRES +/-

Sheet 2 of 3



Sheet 2 of 3 – Subdivision Boundary

COLORADO MESA UNIVERSITY SUBDIVISION
LOCATED IN THE SE 1/4 OF SECTION 11, TOWNSHIP 1 SOUTH, RANGE 1 WEST OF THE UTE MERIDIAN, CITY OF GRAND JUNCTION, COUNTY OF MESA, STATE OF COLORADO.

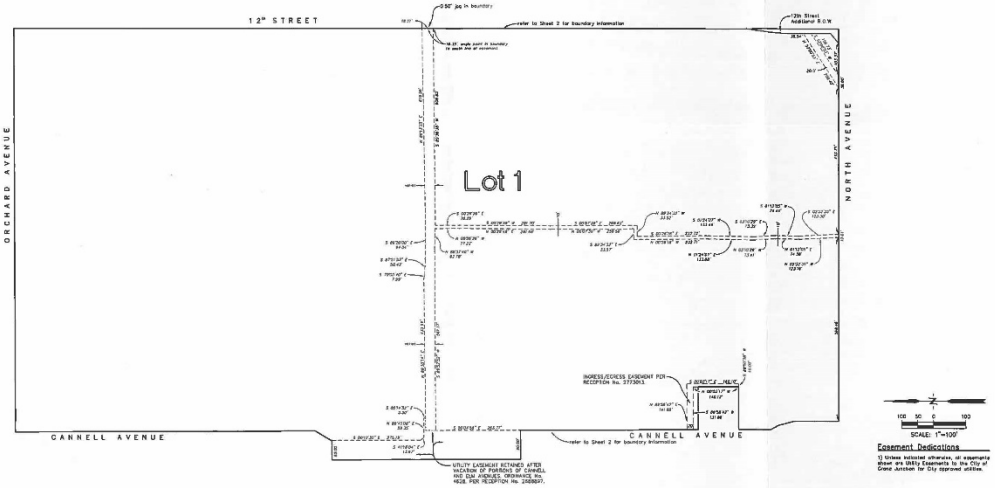
Drexel, Barrell & Co. Engineers/Surveyors
Date 11-08-14 Drawn By PCO Job No. 20219-02 Scale 1"=100' Checked By PCO

COLORADO MESA UNIVERSITY SUBDIVISION

A TRACT OF LAND ENCOMPASSING ALL THAT REAL PROPERTY PREVIOUSLY SUBDIVIDED AS LOT 1, BLOCK 1 OF ELAM SUBDIVISION, A SUBDIVISION RECORDED AS RECEPTION NUMBER 2261431 IN THE RECORDS OF THE OFFICE OF THE MESA COUNTY CLERK AND RECORDER, LOT 1 OF ELAM II SUBDIVISION, A SUBDIVISION RECORDED AS RECEPTION NUMBER 2455822, SAID MESA COUNTY RECORDS, BLOCKS 1, 2, 3, 4, 5 AND 6, MCMULLIN & GORNELY SUBDIVISION, A SUBDIVISION RECORDED AS RECEPTION NUMBER 349926, SAID MESA COUNTY RECORDS, BLOCKS 1, 2, 3, 4, 5 AND 6, GARFIELD PARK SUBDIVISION, ACCORDING TO THE RE-FILING PLAT THEREOF, A SUBDIVISION RECORDED AS RECEPTION NUMBER 444758, SAID MESA COUNTY RECORDS, LOTS 1 THROUGH 38, INCLUSIVE AND LOT 40, SOUTH GARFIELD PARK SUBDIVISION, A SUBDIVISION RECORDED AS RECEPTION NUMBER 539508, SAID MESA COUNTY RECORDS, MESA COLLEGE CAMPUS SUBDIVISION, A SUBDIVISION RECORDED AT RECEPTION NUMBER 459010, SAID MESA COUNTY RECORDS, TOGETHER WITH THOSE RIGHTS-OF-WAY AND ALLEY WAYS DEDICATED BY THE ABOVE REFERENCED SUBDIVISION PLATS AND VACATED BY THOSE CITY OF GRAND JUNCTION ORDINANCES NUMBERED 1120, 1299, 1675, 2813, 3356, 3759, 4106, 4252, 4431, 4590 AND 4628, ALL IN THE SOUTHEAST QUARTER OF SECTION 11, TOWNSHIP 1 SOUTH, RANGE 1 WEST OF THE UTE MERIDIAN, CITY OF GRAND JUNCTION, COUNTY OF MESA, STATE OF COLORADO

AREA = 73.848 ACRES +/-

Sheet 3 of 3



100 50 0 100

SCALE: 1"=100'

Easement Dedications

1) Unless noted otherwise, all easements shown are Utility Easements to the City of Grand Junction for City approved utilities.

COLORADO MESA UNIVERSITY SUBDIVISION
LOCATED IN THE SE 1/4 OF SECTION 11, TOWNSHIP 1 SOUTH, RANGE 1 WEST OF THE UTE MERIDIAN, CITY OF GRAND JUNCTION, COUNTY OF MESA, STATE OF COLORADO.

Sheet 3 of 3 - Easement Dedications

Drexel, Barrell & Co. Engineers/Surveyors

Revision - Date	Date	Drawn By	Job No.
	5-25-21	Checked By PSD	20219-02

CITY OF GRAND JUNCTION, COLORADO

ORDINANCE NO. _____

AN ORDINANCE VACATING A PORTION OF CANNELL AVENUE RIGHT-OF-WAY SOUTH OF ORCHARD AVENUE

Recitals:

Colorado Mesa University (CMU) is requesting to vacate the remaining portion of the Cannell Street right-of-way (ROW) directly south of Orchard Avenue, consisting of 109 linear feet by 60 feet wide, to allow for the future north and westward expansion of the CMU campus. CMU owns the adjacent properties, as well as properties to the south where the Cannell Street ROW was vacated in 2015. The vacated ROW will be subject to the terms and conditions of the *Colorado Mesa University and City of Grand Junction Utility Easement and Maintenance Agreement-CMU Main Campus*. Private easement for Xcel Energy's utilities will be provided and access to privately owned properties north of Hall Avenue and east of N. 8th Street via the alley will be maintained. This section of ROW falls outside of CMU's Institutional and Civic Master Plan, therefore the vacation request is not subject to an administrative review and must proceed through the codified process for right of way vacation requests.

After public notice and public hearing as required by the Grand Junction Zoning and Development Code, and upon recommendation of approval by the Planning Commission, the Grand Junction City Council finds that the request to vacate the street right-of-way is consistent with the Comprehensive Plan, the Grand Valley Circulation Plan and Section 21.02.100 of the Grand Junction Municipal Code.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF GRAND JUNCTION THAT THE FOLLOWING DESCRIBED DEDICATED RIGHT-OF-WAY IS VACATED SUBJECT TO THE FOLLOWING CONDITIONS:

1. CMU shall plan for and provide circulation and emergency access to standards mutually acceptable and agreed to by the City and CMU, to establish and preserve public safety and legal access for both public and private users; and,

2. All City utilities shall be subject to the terms and conditions of the *Colorado Mesa University and City of Grand Junction Utility Easement and Maintenance Agreement-CMU Main Campus;* and,

3. CMU shall grant, as applicable, necessary utility easements to Xcel Energy.

Dedicated Right-of-Way to be vacated:

A Portion of Cannell Avenue Right-of-Way as dedicated on the plat Mesa Subdivision as recorded at Reception Number 449854 of the Mesa County Records, situated in the Southeast ¼ of Section 11, Township 1 South, Range 1 West of the Ute Meridian, County of Mesa, State of Colorado; being more particularly described as follows:

All of Cannell Avenue lying south of the south Right-of-Way line of Orchard Avenue Road Book 3, Page 21 and north of the north line of the Cannell Avenue Vacation recorded at Reception No. 2738781.

Containing an area of 6,540 square feet (0.150 acres) more or less, as described herein and depicted on “Exhibit A”

Introduced on first reading this 7th day of February, 2018 and ordered published in pamphlet form.

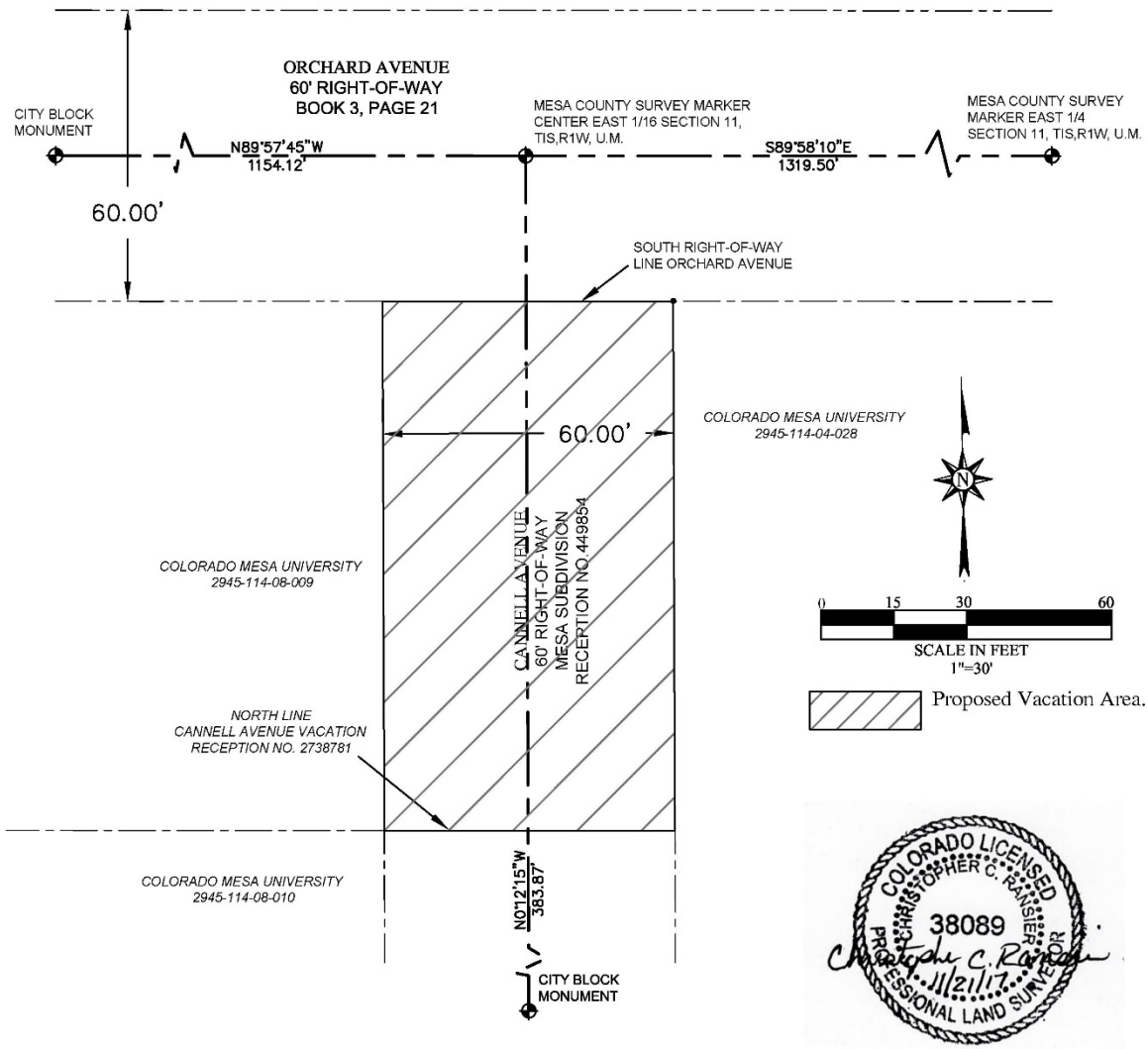
Adopted on second reading this _____ day of _____, 2018 and ordered published in pamphlet form.

ATTEST:

_____ _____

City Clerk Mayor

EXHIBIT "A"
SOUTHEAST 1/4 OF SECTION 11,
TOWNSHIP 1 SOUTH, RANGE 1 WEST, UTE MERIDIAN,
IN THE CITY OF GRAND JUNCTION,
COUNTY OF MESA, STATE OF COLORADO



COLORADO LICENSED
CHRISTOPHER C. RANSIER
38089
PROFESSIONAL LAND SURVEYOR
11/21/17

CHRISTOPHER C. RANSIER
CO PLS 38089

*This Exhibit is not intended to be used for establishing or verifying property boundary lines.
*Title information shown is from Mesa County Clerk and Recorders Office.
*Linear units are in U.S. Survey Feet.

Grand Junction City Council

Regular Session

Item #2.a.iv.

Meeting Date: February 7, 2018

Presented By: Kathy Portner, Community Services Manager

Department: Community Development

Submitted By: Kathy Portner

Information

SUBJECT:

Introduction of an Ordinance Amending Ordinance No. 4565 Extending the Development Schedule for the Mesa State Development Outline Development Plan to December 15, 2022 and Setting a Hearing for February 21, 2018

RECOMMENDATION:

Planning Commission heard this item at the January 23, 2018 meeting and forwarded a recommendation of approval to City Council.

EXECUTIVE SUMMARY:

The Applicant, Colorado Mesa University, requests a five-year extension of the Outline Development Plan (ODP) for the 154-acre property located 2899 D ½ Road at the northwest corner of Riverside Parkway and 29 Road. The ODP was originally approved in 2008 and has been approved for two extensions. The ODP is a mixed-use development with light industrial, office, retail, service and multifamily residential uses and establishes a general circulation plan for the development, including access to 29 Road and Riverside Parkway, as well as site design standards. The Applicant requests the development schedule extension to allow for market conditions to improve to the point that development of the property becomes feasible. If granted, the extension would expire December 15, 2022.

BACKGROUND OR DETAILED INFORMATION:

The 154 acres property, located at 2899 D ½ Road (northwest corner of Riverside Parkway and 29 Road), was annexed into the City in 2008 and zoned PD (Planned Development) with a default zone of Mixed Use (M-U). The subsequent 2010

Comprehensive Plan Future Land Use Map designated this property as Village Center, Residential Medium High (8 – 16 du/ac), Urban Residential Mixed Use (24+ du/ac) and Commercial/Industrial, consistent with the Outline Development Plan (ODP) approved for the subject property.

The ODP allows multi-family residential, commercial and industrial uses within four pods, as defined by Ordinance 4314 (see attached) and as shown on the included ODP Map. Pod A (44.3 acres) allows light industrial uses, Pods B (56.4 acres) and Pod C (15.5 acres) allow retail/service/restaurant and multi-family uses. Pod D (31.5 acres) allows multi-family uses and limited retail/service/restaurant uses. The ODP also establishes a general circulation plan for the property, including access points to 29 Road and Riverside Parkway. Site Design Standards include the establishment of a Design Review Committee, screening of mechanical and HVAC systems, unified site design and architecture, and detached trails.

The original approval of the PD zoning and Outline Development Plan in 2008 required that a preliminary development plan be submitted within 2 years. In 2010, the City Council approved a two-year extension until December 15, 2012 and in 2013 granted another extension of five-years to December 15, 2017. The Applicant submitted their request for extension to the City on November 1, 2017, preserving the ability for an extension to be considered for this ODP. If granted, the extension would expire December 15, 2022.

NOTIFICATION REQUIREMENTS

Notice was completed consistent to the provisions in Section 21.02.080(g) of the City's Zoning and Development Code. Mailed notice of the public hearing in the form of notification cards was sent to surrounding property owners within 500 feet of the subject property on January 12, 2018. The subject property was posted with an application sign on December 15, 2017 and notice of the public hearing was published on January 16, 2018 in the Grand Junction Sentinel.

ANALYSIS

(a) The decision-making body may extend any deadline if the applicant demonstrates why the original effective period or development phasing schedule was not sufficient and cannot be met.

The Applicant, in their letter dated November 1, 2017, requested an extension to the current ODP for a period of 5 more years to wait for market conditions to improve to the point that development of the property becomes feasible. The original effective period has not allowed for favorable market conditions for this site to develop.

(b) The decision-making body shall consider when deciding to extend or change any

deadlines if development regulations have materially changed so as to render the project inconsistent with the regulations prevailing at the time the extension would expire.

The original approval of the PD zoning and Outline Development Plan was in 2008. The extension granted in 2013 also required that the ODP be subject to the 2010 Zoning and Development Code, which did not substantially change the requirements applicable to this development. The only significant change made to the Planned Development section of the Code was to allow for administrative review and approval of a Preliminary Plan. The approved ODP meets the requirements of the most current Zoning and Development Code and is consistent with the Comprehensive Plan goals and policies, as well as the Future Land Use designation for this area. A process to update the Comprehensive Plan is anticipated to commence in late 2018, but to the degree staff can predict, this property's designation for intensive mixed-use development will likely still be an important component for infill development in this area, resulting in the ODP as originally approved continuing to be relevant.

(c) A request to extend any deadline shall be submitted in writing to the Director prior to the expiration of the original approval or deadline.

The Applicant submitted their request for extension to the City on November 1, 2017 prior to the expiration or their extended approval on December 15, 2017.

FISCAL IMPACT:

This action has no direct fiscal impact.

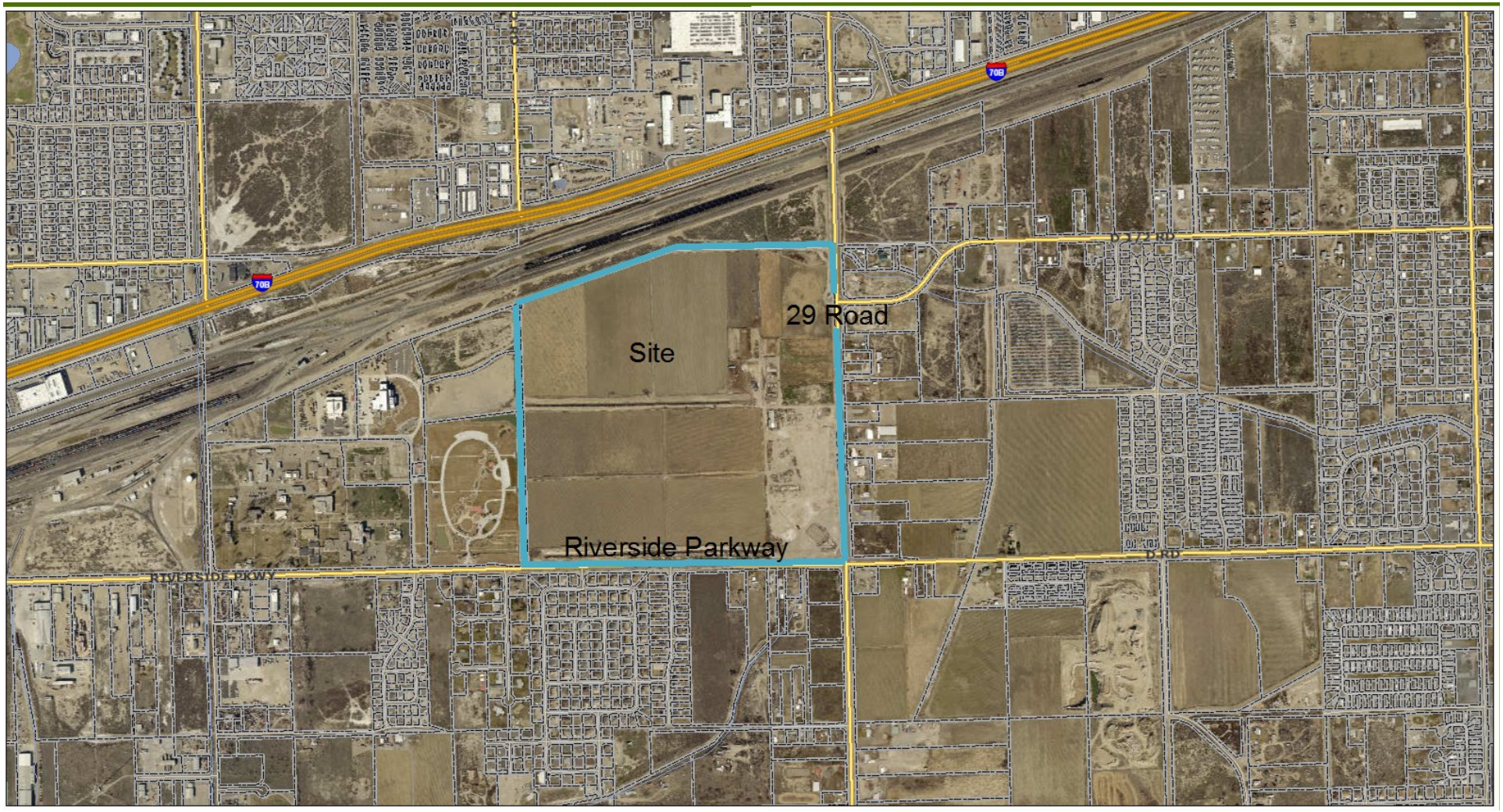
SUGGESTED MOTION:

I move to introduce an Ordinance amending Ordinance No. 4565 Extending the Development Schedule for the Mesa State Development Outline Development Plan to December 15, 2022 located at 2899 D 1/2 Road and Set a Hearing for February 21, 2018.

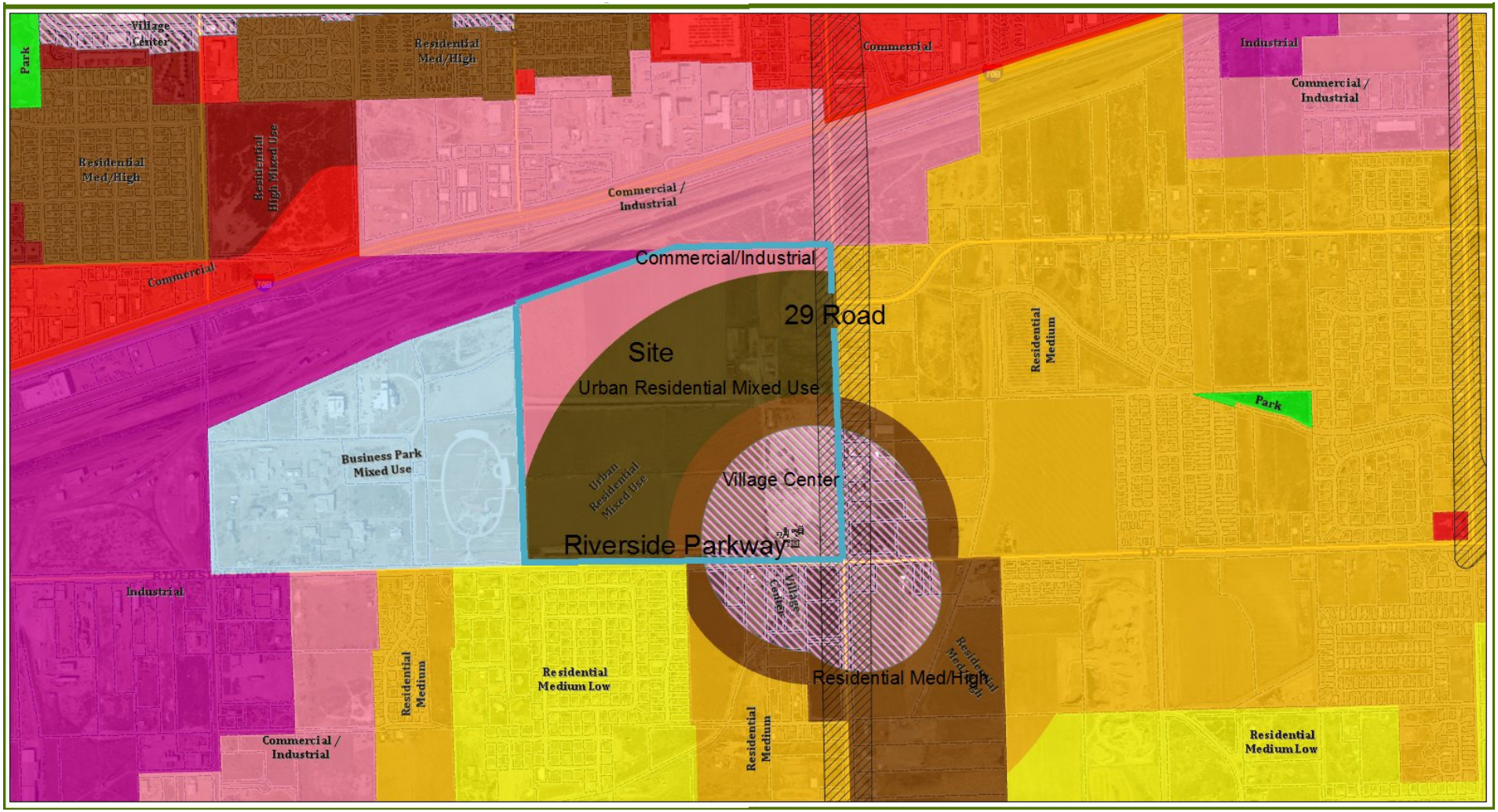
Attachments

1. Site Maps
2. Letter of Request
3. Outline Development Plan
4. Ordinance

Vicinity Map



Comprehensive Plan Future Land Use



Existing Zoning

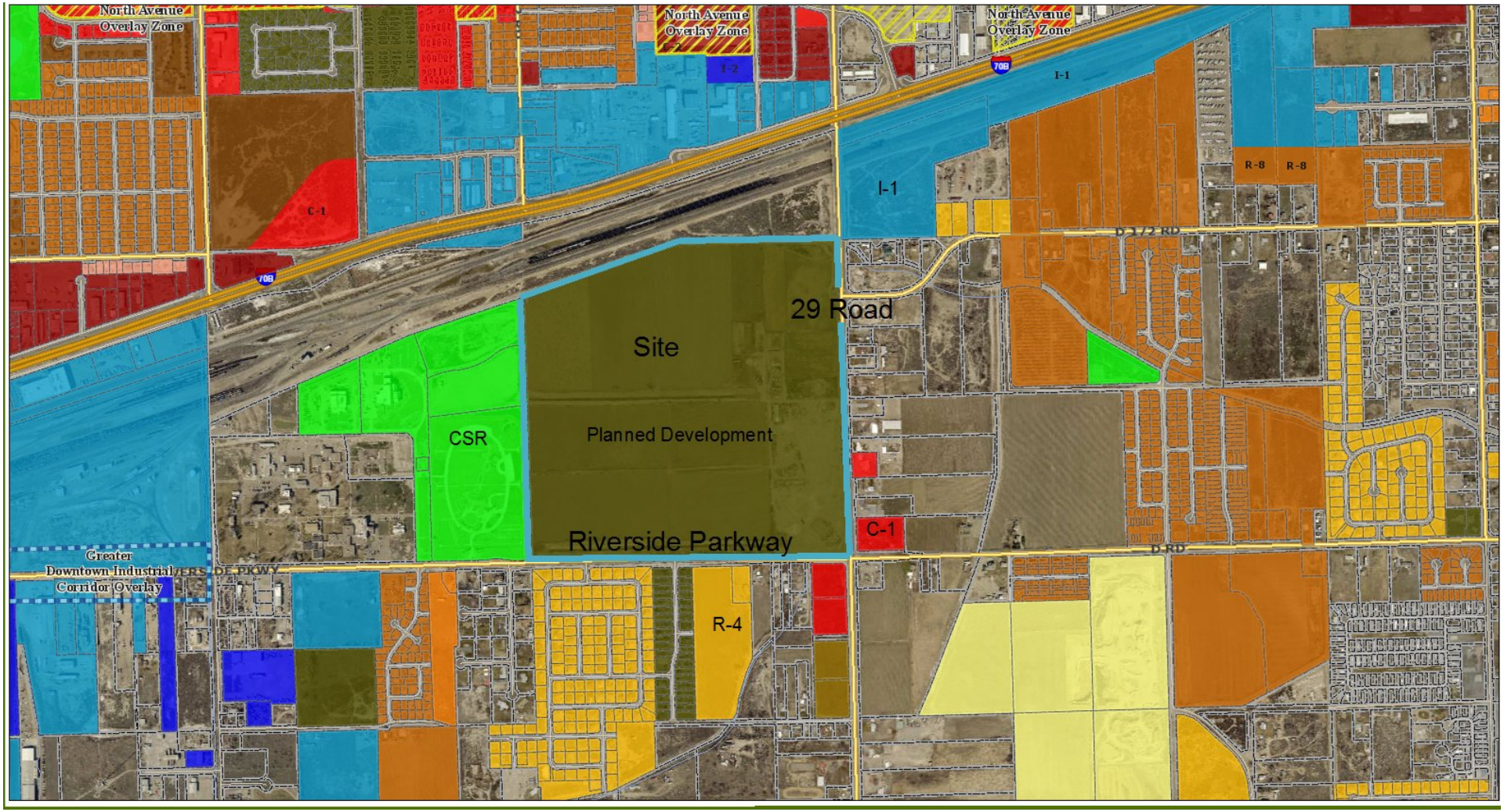


Exhibit 1

COLORADO MESA UNIVERSITY
REAL ESTATE FOUNDATION

1100 North Avenue • Grand Junction, CO 81501-3122
970.248.1533 (o) • 970.248.1903 (f)

November 1, 2017

Ms. Tamra Allen, Community Development Director
City of Grand Junction
250 North 5th Street
Grand Junction, CO 81501

Dear Ms. Allen:

Thank you for taking time recently to visit with us about the status of the CMU Real Estate Foundation's property at the corner of 29 and D Roads. As you know, the City of Grand Junction has been very helpful to our organization in developing our Outline Development Plan (ODP) for the property.

It has come to my attention that the current ODP for the property is set to expire next month. It is the sense of our Board that we would like to extend the current ODP for a period of five more years as we wait for market conditions to improve to the point that development of the property becomes feasible.

We would welcome the opportunity to visit with you about the process needed to accomplish this extension. Please coordinate with Derek Wagner at: 970-248-1553 or via e-mail at: dawagner@coloradomesa.edu.

Thank you again for your assistance and I look forward to visiting with you.

Sincerely,

R. Arnold Butler, Chairman
Colorado Mesa University Real Estate Foundation

Cc: President Tim Foster

Exhibit 3

CITY OF GRAND JUNCTION, COLORADO

ORDINANCE NO. 4314

AN ORDINANCE TO ZONE THE MESA STATE DEVELOPMENT TO PD (PLANNED DEVELOPMENT) ZONE, BY APPROVING AN OUTLINE DEVELOPMENT PLAN WITH A DEFAULT M-U (MIXED USE) ZONE FOR THE DEVELOPMENT OF A MIXED USE DEVELOPMENT

LOCATED AT 2899 D 1/2 ROAD

Recitals:

A request to zone 154.05 acres to PD (Planned Development) by approval of an Outline Development Plan (Plan) with a default M-U (Mixed Use) zone has been submitted in accordance with the Zoning and Development Code (Code).

This Planned Development zoning ordinance will establish the standards, default zoning (M-U) and adopt the Outline Development Plan for the Mesa State Development. If this approval expires or becomes invalid for any reason, the property shall be fully subject to the default standards of the M-U zone district.

In public hearings, the Planning Commission and City Council reviewed the request for the proposed Outline Development Plan approval and determined that the Plan satisfied the criteria of the Code and is consistent with the purpose and intent of the Growth Plan. Furthermore, it was determined that the proposed Plan has achieved "long-term community benefits" by proposing more effective infrastructure, needed housing types and innovative design.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF GRAND JUNCTION THAT THE AREA DESCRIBED BELOW IS ZONED TO PLANNED DEVELOPMENT WITH THE FOLLOWING DEFAULT ZONE AND STANDARDS:

A. A certain parcel of land located in the Southeast Quarter of (SE 1/4) of Section 18, Township 1 South, Range 1 East of the Ute Principal Meridian, County of Mesa, State of Colorado and being more particularly described as follows:

BEGINNING at the Southeast corner of said Section 18 and assuming the South line of the Southeast Quarter of the Southeast Quarter (SE 1/4 SE 1/4) of said Section 18 bears N89°40'51"W with all other bearings contained herein being relative thereto; thence N89°40'51"W along said South line a distance of 1319.50 feet to the Southwest corner of said SE 1/4 SE 1/4; thence N00°21'19"W along the West line of said SE 1/4 SE 1/4 a distance of 30.00 feet to a point on the North line of Riverside Parkway (also known as D Road); thence N89°37'59"W along said North line a distance of 1328.65 feet to a point on the West line of the Southwest Quarter of the Southeast Quarter (SW 1/4 SE 1/4) of said Section 18,

said North line also being the North line of the Darren Davidson Annexation, City of Grand Junction, Ordinance No. 3205; thence N00°06'35"W along said West line a distance of 1288.69 feet to the Northwest corner of said SW 1/4 SE 1/4; thence N00°25'09"W along the West line of the Northwest Quarter of the Southeast Quarter (NW 1/4 SE 1/4) of said Section 18 a distance of 903.48 feet to a point on the South line of the Southern Pacific Railroad Annexation, City of Grand Junction, Ordinance No. 3158; thence N73°01'14"E along said South line a distance of 1415.51 feet to a point on the North line of the Northeast Quarter of the Southeast Quarter (NE 1/4 SE 1/4) of said Section 18; thence N00°15'05"E a distance of 30.00 feet; thence N89°35'13"E along a line being 30.00 feet North of and parallel with the North line of said NE 1/4 SE 1/4 a distance of 1292.57 feet; thence S00°13'55"E along the East line of said NE 1/4 SE 1/4 a distance of 1350.87 feet to the Northeast corner of the Southeast Quarter of the Southeast Quarter (SE 1/4 SE 1/4) of said Section 18; thence S00°13'09"E along the East line of said SE 1/4 SE 1/4, a distance of 1321.23 feet, more or less to the POINT OF BEGINNING.

Said parcel contains 154.05 acres (6,710,387 square feet), more or less, as described.

B. Mesa State Development Outline Development Plan is approved with the Findings of Fact and Conclusions listed in the Staff Reports dated November 10, 2008 and November 17, 2008 including attachments and Exhibits.

C. The default zone is M-U (Mixed Use) with deviations contained within this Ordinance.

D. Unified Development

The project should be developed in a unified manner with similar architectural styles and themes throughout. Detached trails along the arterial frontages are intended to provide for safe multi-modal transportation haven and provide access to uses within the development. These detached trails will also provide connectivity from the development to other points of interest adjacent to the subject property including the Colorado River Front trail.

E. Purpose

The proposed development will provide for a mix of light manufacturing, office park employment centers, retail, service and multifamily residential uses with appropriate screening, buffering and open space, enhancement of natural features and other amenities such as trails, shared drainage facilities, and common landscape and streetscape character.

F. Intensity

1. Nonresidential intensity shall not exceed a floor area ratio (FAR) of 2.0.

2. Nonresidential minimum lot size shall be one (1) acre, except commercial lots within a retail center.

3. Maximum building size of a retail commercial use shall be 250,000 square feet.

4. Maximum overall gross residential density shall not exceed twenty-four (24) units per acre.

5. Minimum overall net residential density shall be eight (8) units per acres.

6. The minimum and maximum density shall be calculated utilizing Pods B, C and D. Individual lots or sites do not have to be density compliant.

G. Performance Standards

1. Any applicable overlay zone district and/or corridor design standards and guidelines shall apply, unless otherwise approved by the City, to encourage design flexibility and coordination of uses.

2. Loading docks and trash areas or other service areas when located in the side or rear yards must be screened from adjacent right-of-ways with either a wall or landscaping. Front façade loading docks shall be recessed a minimum of 20 feet behind the front façade of the building.

3. Vibration, Smoke, Odor Noise, Glare, Wastes, Fire Hazards and Hazardous Materials. No person shall occupy, maintain or allow any use in an M-U zone without continuously meeting the following minimum standards regarding vibration, smoke, odor, noise, glare, wastes, fire hazards and hazardous materials.

   a. Vibration: Except during construction or as authorized by the City, activity or operation which causes any perceptible vibration of the earth to an ordinary person on any other lot or parcel shall not be permitted.

   b. Noise: The owner and / or occupant shall regulate uses and activities on a lot so that the Day-Night Average Sound Level does not exceed sixty-five decibels (65 dB) at any point along the property line. This sound level is not intended apply to limited periods of landscape maintenance activity for the subject property.

   c. Glare: Lights, spotlights, high temperatures processes or otherwise, whether direct or reflected, shall not be visible from any other lot, parcel or any right-of-way.

   d. Solid and Liquid Waste: All solid waste, debris and garbage shall be contained within a closed and screened dumpster, refuse bin and/or trash compactor(s). Incineration of trash or garbage is prohibited. No sewage or liquid wastes shall be discharged or spilled on the property.

e. Hazardous Materials: Information and materials to be used or located on the site whether on a full-time or part-time basis, that are required by the SARA Title III Community Right to Know shall be provided at the time of any City review, including the site plan. Such information regarding the activity shall be provided to the Director at the time of any proposed change, use or expansion, even for existing uses.

f. Outdoor Storage and Display: Outdoor storage and permanent display areas shall only be located in the rear half of the lot beside or behind the principal structure. Portable display or retail merchandise may be permitted as provided in Chapter four of the Zoning and Development Code.

H. Pod Character

The property will be developed into three distinct areas within the development that have a character similar to the following uses:

1. Pod A – Light Industrial (Commercial is allowed)

2. Pods B and C – Commercial (Multifamily residential is allowed)

3. Pod D – Multifamily Residential (Ground floor commercial is allowed)

I. Authorized Uses

1. The list of authorized uses allowed within the M-U zone is hereby amended to include and exclude the following. The following uses are allowed without the need for approval of a conditional use permit.

a) POD A – LIGHT INDUSTRIAL

1) All other community service
2) Golf Driving Ranges
3) Utility Basic (indoor or outdoor)
4) General Offices
5) Office with Drive-through
6) Commercial Parking
7) Skating Rink
8) Shooting Range, Indoor
9) All other indoor recreation
10) Animal Care / Boarding / Sales, Indoor
11) Delivery and Dispatch Services
12) Fuel Sales, automotive/appliance
13) General Retail Sales, outdoor operations, display and storage
14) Landscaping Materials Sales/Greenhouse/Nursery
15) All other sales and services
16) Auto and Light Truck Mechanical Repair
17) Body shop
18) Car wash

19) Gasoline Service Station
20) Quick Lube
21) All other vehicle service, limited
22) Indoor Operations and Storage
    i. Assembly
    ii. Food Products
    iii. Manufacturing/Processing
23) Indoor Operations with Outdoor Storage
    i. Assembly
    ii. Food Products
    iii. Manufacturing/Processing
24) Outdoor Operations and Storage
    i. Assembly
    ii. Food Products
    iii. Manufacturing/Processing
25) Contractors and Trade Shops
26) Indoor operations and outdoor storage (heavy vehicles)
27) Warehouse and Freight Movement
28) Indoor Storage with Outdoor Loading Docks
    i. Outdoor Storage or Loading
29) Sand or Gravel Storage
30) Wholesale Sales – allowed
    i. Wholesale Business
    ii. Agricultural Products
    iii. All other Wholesale Uses
31) Telecommunications Facilities

b) PODS B & C – COMMERCIAL

1) Community Service
2) Cultural Uses
3) Multi-family residential
4) General Day Care
5) Entertainment Event,
    i. Indoor Facilities
    ii. Outdoor Facilities
6) Hotels / Motels
7) General Offices
8) Office with drive-through
9) Commercial Parking
10) Health Club
11) Movie Theater
12) Skating Rink
13) Arcade
14) Bar / Nightclub
15) Alcohol Sales
16) Drive-through Uses (restaurants)
17) Drive-through Uses (retail)
18) Food Service, Catering

19) Food Service, Restaurant (including alcohol sales)
20) Farmers Market
21) General Retail Sales, Indoor Operations, display and storage
22) Gasoline Service Station
23) Repair, small appliance
24) Repair, large appliance
25) Personal Service
26) All other retails sales and service
27) Utility Service Facilities (underground)
28) All other Utility, Basic
29) Transmission Lines, (above ground)
30) Transmission Lines, (underground)

c) POD D – RESIDENTIAL

1) Multifamily residential
2) Non-residential uses are limited to a combined total of 10,000 square feet in POD D.
   i. Large Group Living Facilities
   ii. Unlimited Group Living Facilities
   iii. General Day Care
   iv. Bar / Nightclub
   v. Food Service, Restaurant (including alcohol sales)
   vi. Farmers Market
   vii. General Retail Sales, Indoor Operations, display and storage

d) Restricted Uses

The uses below are not allowed within any of the Pods.

1) Cemetery
2) Golf Course
3) Religious Assembly
4) Funeral Homes/Mortuaries/Crematories
5) Schools – Boarding, Elementary, Secondary
6) Transmission Lines (above ground)
7) Bed and Breakfast (1 – 3 guest rooms)
8) Bed and Breakfast (4 or more guest rooms)
9) Amusement Park
10) Miniature Golf
11) All other outdoor recreation
12) Adult Entertainment
13) Farm Implement / Equipment Sales / Service
14) Fuel Sales, heavy vehicle
15) Mini warehouse
16) Agriculture
17) Winery
18) Aviation
19) Helipads

J. Dimensional Standards

Minimum Lot Area	
Pod A	1 acre minimum
Pods B and C	No minimum when part of a retail center 1 acre when stand alone
Pod D	No minimum

Minimum Lot Width	
Pod A	100’ Minimum
Pods B and C	No minimum when part of a retail center 100’ when stand alone use
Pod D	No minimum

Minimum Street Frontage	
Pod A	100’ Minimum
Pods B and C	No minimum when part of a retail center 100’ when stand alone use
Pod D	No minimum

Pod A Minimum Setbacks	**Principle Structure / Accessory Structure**
Front	15’ / 25’
Side	5’ / 5’
Rear	25’ / 5’[a]

Pods B and C Minimum Setbacks	**Principle Structure / Accessory Structure**
Front	15’ / 25’
Side	0’ / 0’
Rear	10’ / 10’

Pod D Minimum Setbacks	**Principle Structure / Accessory Structure**
Front	15’ / 20’
Side	5’ / 3’
Rear	10’ / 5’

Maximum Lot Coverage	
Pod A	N/A
Pods B and C	N/A
Pod D	N/A

Maximum FAR	
Pod A	2.0 FAR
Pods B and C	2.0 FAR
Pod D	N/A

Maximum Height	
Pod A	40’
Pods B and C / Mixed Use Buildings	40’/65’
Pod D	65’

1. Footnotes: The applicable footnotes in Table 3.2 of the Zoning and Development Code shall be referenced including the following:

    a. A 50 foot wide building setback is required along the western property line of the development adjacent to the Department of Military and Veterans Affairs Cemetery.

K. Other Regulations

1. Fencing: A fence is required along the western most boundary of the property (adjacent to the Department of Military and Veterans Affairs Cemetery).

2. Construction Cessation: During military funerals, services or veterans ceremonies, construction on any and all projects will cease until these funerals, service or ceremonies have ended. Each general contractor will contact the Department of Military and Veterans Affairs to work out details for construction cessation during the requested periods of time.

3. Landscape Buffer:

    a. A 25 foot wide landscape buffer, including a six (6) foot fence, is required along the western property line of the development. The landscape buffer will count towards the overall landscape requirements of each site.

    b. A 50 foot wide building setback is required along the western property line of the development adjacent to the Department of Military and Veterans Affairs Cemetery.

4. Parking per Section 6.6 of the Zoning and Development Code with the following modifications:

    a. Commercial – Per Shopping Center Calculations (1 parking space per every 250 square feet of gross floor area).

    b. Mixed-use structures – parking calculated per use per floor of structure (Shopping center parking calculation can be used for ground floor commercial uses at 1 parking space per every 250 square feet of gross floor area).

5. Landscaping shall meet Section 6.5 of the Zoning and Development Code.

6. Buildings shall meet Section 4.3 M. of the Zoning and Development Code.

7. Sign Regulations shall meet Section 4.2 with the following exceptions:

    a. Freestanding signs shall be limited to monument type signage.

    b. Freestanding signs shall not exceed 8' in height – sign face calculated per Section 4.2.

    c. Only one freestanding monument sign shall be allowed at each intersection along Riverside Parkway and 29 Road.

    d. A sign package will be required as part of each Preliminary Development Plan.

8. Hours of Operation:

    a. Pod A – unrestricted

    b. Pods B and C – unrestricted

    c. Pod D – non-residential uses shall be restricted from 5 am to 11 pm.

9. Mixed-Use Development

    a. The maximum residential densities within Pod C shall not exceed twenty-four (24) dwelling units per acre, minus (1) dwelling unit per 2,000 square feet of nonresidential development or portion thereof. In Pod C, residential uses shall not constitute more than seventy-five percent (75%) of the total floor area. In no case shall the total number of dwelling units in Pod C exceed 370 dwelling units.

    b. The total number of residential dwelling units on the project shall not exceed 24 dwelling units per acre.

    c. Mixed-use development in Pod D shall not exceed the plan density minus one (1) dwelling unit per 1,000 square feet of nonresidential development or portion thereof. No more than ten percent (10%) of the land area may be dedicated to commercial uses.

    d. Multifamily residential development in Pod D is eligible for density bonuses pursuant to Chapter 3.6.B.10.

10. Definitions

    a. Mixed-use structure: Any mix of residential and nonresidential uses in the same building.

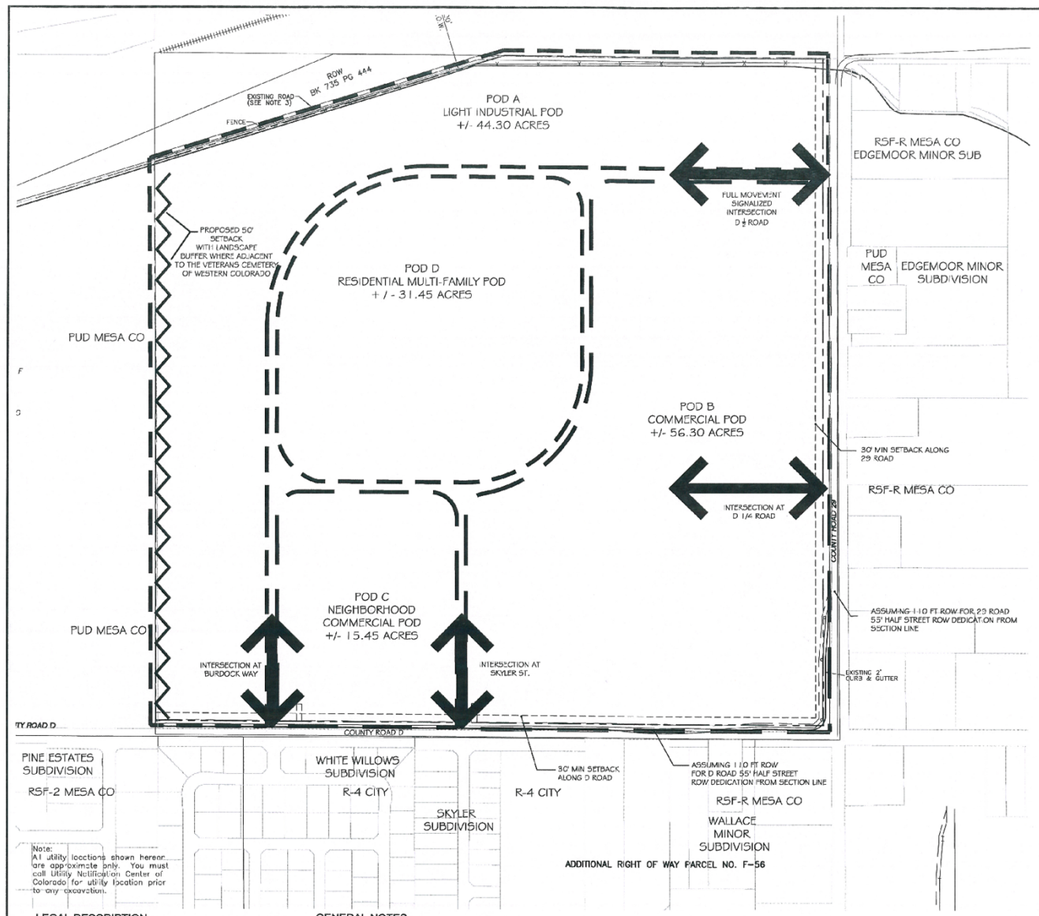
INTRODUCED on first reading on the 1st day of December, 2008 and ordered published.

ADOPTED on second reading this 15th day of December, 2008.

ATTEST:

/s/: Gregg Palmer
President of the Council

/s/: Stephanie Tuin
City Clerk



LEGAL DESCRIPTION

A PORTION OF SE4 SEC 18 1S 1E LYG S OF D&RGW RAILROAD HUMP YARD MORE PARTICULARLY DESCRIBED IN BOOK 4312 PAGE 202 & E2NE4SE4 SD SECTION 18 & THAT PT OF E2E2NW4SE4 SD SECTION 18 & W2NE4SE4 SD SECTION 18 LYG S OF ROW OF DENVER & RIO GRANDE JUNCTION RAILROAD & ALSO THAT PT OF W2E2NW4SE4 SD SECTION 18 LYG S OF ROW OF DENVER & RIO GRANDE JUNCTION RAILROAD - 151.82 ACRES.

PHASING SCHEDULE

THE DEVELOPMENT PHASING WILL OCCUR AT THE TIME OF PRELIMINARY PLAN FOR THE SUBJECT PARCEL. THE PHASING OF THE PROJECT IS NOT KNOWN AT THIS TIME.

GENERAL NOTES

1. THE APPLICANT TO ZONE THE PROPERTY PD - PLANNED DEVELOPMENT.
2. THE PROPOSED PLANNED DEVELOPMENT ZONE WILL HAVE A DEFAULT ZONE OF MU - MIXED USE.
3. REFERENCE TABLE 1 ON THIS DRAWING FOR PROPOSED ZONED DIMENSIONAL STANDARDS.
4. REFERENCE TABLE 2 ON THIS DRAWING FOR LAND USES.
5. REFERENCE TABLE 3 ON THIS DRAWING FOR SITE DESIGN STANDARDS.
6. REFERENCE ORDINANCE #_____ FOR ALLOWED USES.
7. ALL DEVELOPMENT PLANS WILL REQUIRE APPROVAL BY THE CITY OF GRAND JUNCTION. ALL DEVELOPMENT PLANS WILL NEED TO CONFORM TO THE PROPOSED ZONE DIMENSIONAL STANDARDS, AND THE STANDARDS AND DEVELOPMENT GUIDELINES PROPOSED WITHIN THIS OUTLINE DEVELOPMENT PLAN AND AS REFERENCED IN ORDINANCE # _____.
8. SITE DESIGN STANDARDS ARE PER CITY OF GRAND JUNCTION CODE UNLESS SPECIFICALLY ADDRESSED HEREIN. SEE TABLE 3 FOR SITE DESIGN STANDARDS.

TABLE 1
PROPOSED ZONE DIMENSIONAL STANDARDS (Table 3.2 ZDC)

POD	DEFAULT ZONING DISTRICT	MIN LOT SIZE AREA (SQ. FT)	MIN LOT SIZE WIDTH (FT.)	MIN STREET FRONTAGE	MINIMUM SETBACKS (1), (2), (3), (6) FRONT	SIDE	REAR	MAX. LOT COVERAGE	MAX. F.A.R. (4)	MAX HEIGHT (5)
POD A	MU	1 AC	100	N/A	15 / 25	5 / 5	25 / 5	N/A	2.0	40'
POD B	MU	N/A	N/A	N/A	15 / 25	0 / 0	10 /10	N/A	2.0	40' / 65'
POD C	MU	N/A	N/A	N/A	15 / 25	0 / 0	10 /10	N/A	2.0	40' / 65'
POD D	MU	N/A	N/A	N/A	15 / 20	5 / 3	10 / 5	80%	N/A	65'

(1) PRINCIPAL / ACCESSORY BUILDING

(2) NON-RESIDENTIAL BUILDINGS SHALL BE SETBACK A MINIMUM OF 30' FROM THE RIGHT - OF -WAY OF 29 ROAD AND D ROAD

(3) NON-RESIDENTIAL BUILDINGS SHALL BE SETBACK A MINIMUM OF 15' FROM THE RIGHT OF WAY OF ALL NON-ARTERIAL STREETS.

(4) UNDER GROUND PARKING OR PARKING UNDER BUILDINGS IS EXCLUDED FROM MAX F.A.R. CALCULATIONS.

(5) IN COMMERCIAL PODS A COMMERCIAL USE BUILDING HEIGHT CAN BE LESS THAN OR EQUAL TO 40' IN HEIGHT. A MIXED-USE BUILDING IN COMMERCIAL PODS CAN BE LESS THAN OR EQUAL TO 65' IN HEIGHT. A MULTI-FAMILY RESIDENTIAL BUILDING IN ANY POD CAN BE LESS THAN OR EQUAL TO 65' IN HEIGHT.

(6) REAR YARD SETBACKS IN POD D THAT ARE LOCATED ALONG THE WESTERN PROPERTY LINE ADJACENT TO THE VETERANS CEMETERY OF WESTERN COLORADO SHALL BE FIFTY FEET (50').

TABLE 2
LAND USE TABLE

LAND USE	AREA	% OF SITE	USES	ESTIMATED INTENSITY/DENSITY
GENERAL USES	TOTAL AREA	100 %	GENERAL USES PER POD	POD INTENSITY / DENSITY (3) (4)
INDUSTRIAL				
POD A	± 44.30 ACRES	29 %	LIGHT INDUSTRIAL	N / A
COMMERCIAL				
POD B	± 56.30 ACRES	37 %	RETAIL/SERVICE/RESTAURANT MULTI-FAMILY DWELLINGS	+/- 450,000 SQ FEET
POD C (1)	±15.45 ACRES	10 %	RETAIL/SERVICE/RESTAURANT MULTI-FAMILY DWELLINGS	+/- 15,000 SQ FEET / RESIDENTIAL DENSITY RANGE ALLOWING BETWEEN 123 TO 370 DWELLING UNITS
RESIDENTIAL (2)				
POD D (1)	± 31.45 ACRES	20 %	MULTI-FAMILY DWELLINGS WITH THE ABILITY FOR LIMITED RETAIL/SERVICE/RESTAURANT AS GROUND FLOOR MIXED-USE BUILDING	RESIDENTIAL DENSITY RANGE ALLOWING BETWEEN 251 TO 754 DWELLING UNITS AND UP TO 10,000 SQ FEET OF GROUND FLOOR COMMERCIAL USES IN MIXED-USE BUILDINGS
ARTERIAL RIGHT OF WAYS	± 6.58 ACRES	4 %	N / A	N / A
GROSS SITE AREA	±154.08 ACRES	100 %	100 %	100 %

NOTE (1): NON-RESIDENTIAL INTENSITY CAN BE CONVERTED TO RESIDENTIAL DENISTY. SEE ORDINANCE FOR DETAILS ON CONVERSION RATIOS.

NOTE (2): DEVELOPMENT DENSITY - MINIMUM OF 5 DWELLING UNITS PER ACRE AND A MAXIMUM OF 24 DWELLING UNITS PER ACRE FOR PODS WITH RESIDENTIAL USES ALLOWED. DENSITY CAN BE AVERAGED ACROSS THE PODS.

NOTE (3): THE MAXIMUM NUMBER OF RESIDENTIAL UNITS ALLOWED ON THE PROPERTY IS 1124

NOTE (4): ADDITIONAL COMMERCIAL SQUARE FOOTAGE CAN BE CONSTRUCTED WITHIN PODS B AND C IF IT CAN BE ACCOMODATED BY ADJACENT ARTERIAL STREETS. THE TRAFFIC IMPACT STUDY SHALL ADDRESS ANY ADDITIONAL COMMERICAL SQUARE FOOTAGE REQUEST.

TABLE 3
SITE DESIGN STANDARDS

(1) THE DESIGN REVIEW COMMITTEE MUST APPROVE ALL ARCHITECTURE PRIOR TO SUBMITTAL OF TO THE CITY OF GRAND JUNCTION.

(2) IN PODS B AND C ALL ROOF TOP AND GROUND MOUNTED MECHANICAL AND HVAC EQUIPMENT SHALL BE SCREENED FROM ON-SITE PARKING LOTS.

(3) ALL UTILITY METERS AND ABOVE GROUND MECHANICAL EQUIPMENT SHALL BE PAINTED THE SAME COLOR AS THE BUILDING OR SCREENED FROM VIEW.

(4) IN POD D ALL HVAC EQUIPMENT LOCATED ON THE GROUND SHALL BE SCREENED FROM VIEW. LATTICE OR PLANT MATERIAL IS A SUFFICIENT SCREEN.

(5) UNIFIED DEVELOPMENT

THE PROJECT SHALL BE DEVELOPED IN A UNIFIED MANNER WITH SIMILAR ARCHITECTURAL STYLES AND THEMES THROUGHOUT. DETACHED TRAILS ALONG THE ARTERIAL FRONTAGES ARE INTENDED TO PROVIDE A SAFE MULTI-MODAL TRANSPORTATION HAVEN AND PROVIDE ACCESS USES WITHIN THE DEVELOPMENT. THESE DETACHED TRAILS WILL ALSO PROVIDE CONNECTIVITY FROM THE DEVELOPMENT TO OTHER POINTS OF INTEREST ADJACENT TO THE SUBJECT PROPERTY INCLUDING THE COLORADO RIVER FRONT TRAIL.

(6) SIDE AND REAR YARD LOADING AREAS SHALL BE SCREENED FROM VIEW FROM ARTERIAL ROADWAYS. FRONT FACADE LOADING DOCKS SHALL BE RECESSED A MINIMUM OF 20' BEHIND THE FRONT FACADE OF THE BUILDING.

(7) AN OPEN SIX FOOT (6') FENCE IS REQUIRED ALONG THE WESTERN MOST PROPRERTY LINE OF POD D WHERE ADJACENT TO VETERANS CEMETERY OF WESTERN COLORADO.

OUTLINE DEVELOPMENT PLAN

MESA STATE COLLEGE REAL ESTATE FOUNDATION

29 & D ROAD MIXED-USE DEVELOPMENT

DRAWN BY JC
CHECKED TC
JOB NO. 0729
DATE 05-01-08
REVISIONS
09-16-08 Comments
10-20-08 Comments
10-30-08 Comments
DRAWING NO.
0729_10-30-08

SHEET NO. 1

STATUS
- ODP & REZONE
- PRELIMINARY PLAN
- FINAL PLAN

CIAVONNE, ROBERTS & ASSOC., INC.
LANDSCAPE AND PLANNING ARCHITECTS
222 NORTH 7TH STREET
GRAND JCT, CO 81501
PH: 970-241-0745
FAX: 970-241-0765
EMAIL: info@ciavonne.com

CITY OF GRAND JUNCTION, COLORADO

ORDINANCE NO. _____

AN ORDINANCE AMENDING ORDINANCE NO. 4565 EXTENDING THE DEVELOPMENT SCHEDULE FOR THE MESA STATE DEVELOPMENT OUTLINE DEVELOPMENT PLAN TO DECEMBER 15, 2022

LOCATED AT 2899 D ½ ROAD

Recitals:

The Applicant, Colorado Mesa University, requests a five-year extension of the Outline Development Plan (ODP) for the 154-acre property located 2899 D ½ Road at the northwest corner of Riverside Parkway and 29 Road. The ODP was originally approved in 2008 and has been approved for two extensions. The ODP is a mixed-use development with light industrial, office, retail, service and multifamily residential uses and establishes a general circulation plan for the development, including access to 29 Road and Riverside Parkway, as well as site design standards. The Applicant requests the development schedule extension to allow for market conditions to improve to the point that development of the property becomes feasible. If granted, the extension would expire December 15, 2022.

After public notice and public hearing as required by the Grand Junction Zoning and Development Code, and upon recommendation of approval by the Planning Commission, the Grand Junction City Council finds that the request for a five year extension of the Outline Development Plan for the 154 acre property, located at 2899 D ½ Road meets the criteria of Section 21.02.080(n)(2)(i) of the Zoning and Development Code in that Applicant has demonstrated why the original effective period or development phasing schedule was not sufficient and cannot be met and the development regulations have not materially changed so as to render the project inconsistent with the regulations prevailing at the time the extension would expire.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF GRAND JUNCTION THAT:

The development schedule approved by Ordinance 4565 is amended to provide for an allow an additional five (5) years to December 15, 2022 for the development of the project/land described in said ordinance. All other approvals made by and in accordance with Ordinance No. 4314 that established the Planned Development Zoning shall remain the same.

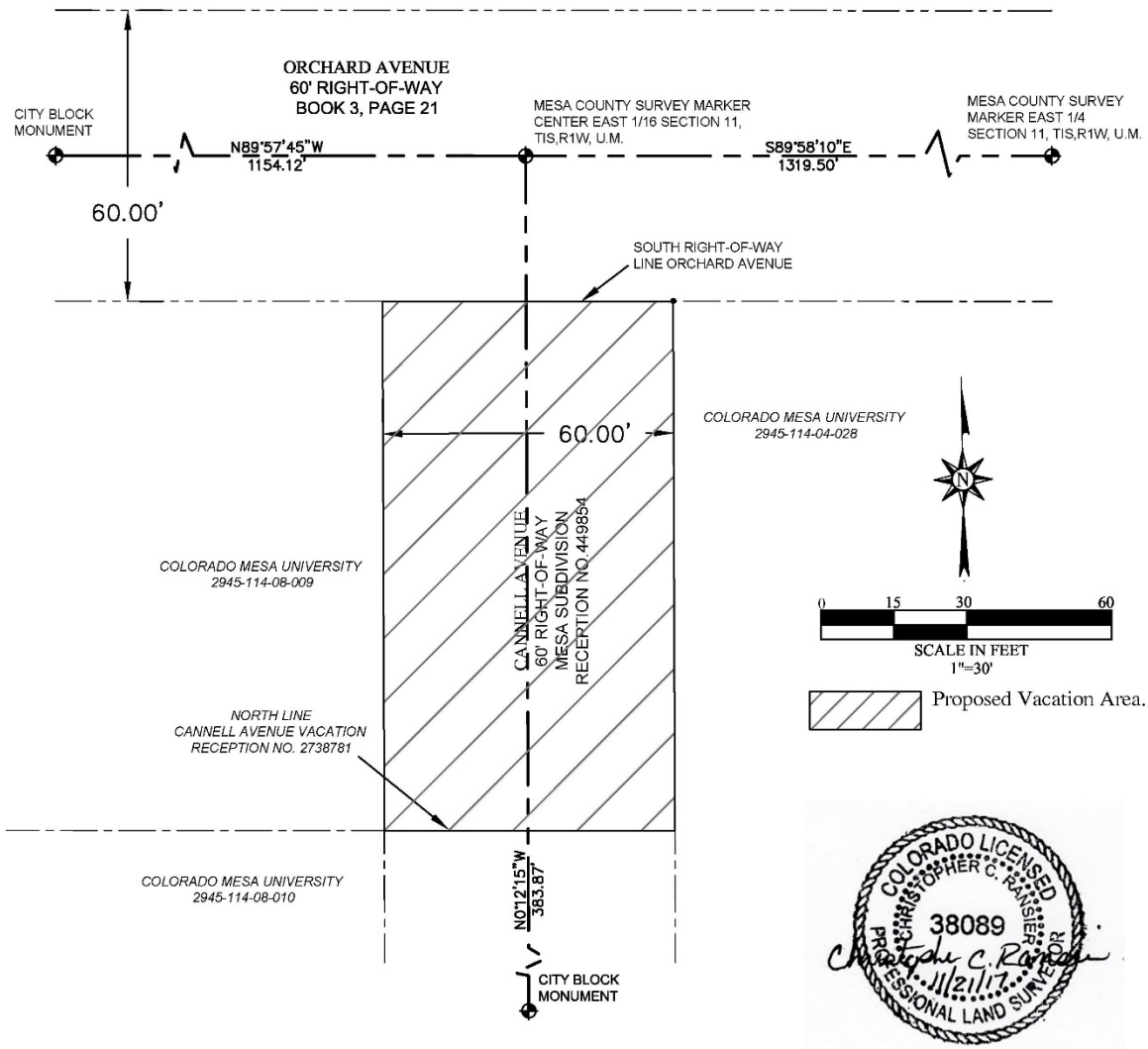
Introduced on first reading this 7th day of February, 2018 and ordered published in pamphlet form.

Adopted on second reading this _____ day of _____, 2018 and ordered published in pamphlet form.

ATTEST:

_____	_____
City Clerk	Mayor

EXHIBIT "A"
SOUTHEAST 1/4 OF SECTION 11,
TOWNSHIP 1 SOUTH, RANGE 1 WEST, UTE MERIDIAN,
IN THE CITY OF GRAND JUNCTION,
COUNTY OF MESA, STATE OF COLORADO



COLORADO LICENSED
CHRISTOPHER C. RANSIER
38089
PROFESSIONAL LAND SURVEYOR
11/21/17

CHRISTOPHER C. RANSIER
CO PLS 38089

*This Exhibit is not intended to be used for establishing or verifying property boundary lines.
*Title information shown is from Mesa County Clerk and Recorders Office.
*Linear units are in U.S. Survey Feet.

Grand Junction City Council

Regular Session

Item #2.a.v.

Meeting Date: February 7, 2018

Presented By: Lori Bowers, Senior Planner

Department: Community Development

Submitted By: Lori Bowers

Information

SUBJECT:

Introduction of an Ordinance Vacating the Remaining North-South Alley Right-of-Way of Block 7, Richard D. Mobley's First Subdivision and Setting a Hearing for February 21, 2018

RECOMMENDATION:

Planning Commission heard this item at the January 23, 2018 meeting and forwarded a recommendation of approval to City Council.

EXECUTIVE SUMMARY:

The Applicant, CenterPoint Development Group, is requesting vacation of the remainder of the alleyway south of West Main Street and between South Spruce Street and South 1st Street. The remaining alley right of way to be vacated is divided into two pieces. The northern portion is a square, approximately 0.01 Acre; 20-feet by 25-feet in size. The second portion of the alley right-of-way is 0.02 Acres and is an irregularly shaped piece. The east side is 82.61 feet in length, the west side is 72.61 feet, with a 10-foot by 10-foot jog at the northern end. The attached survey map provides clarity regarding the exact dimensions and location of this vacate request. Another exhibit, a copy of the GCK Subdivision, shows how a previous portion of the alley was partially vacated and will be completed with this vacation request. The vacation of the alley will enable the Applicant to develop the property using their preferred site plan.

BACKGROUND OR DETAILED INFORMATION:

The building at 105 West Main was demolished in 2016. It was originally home to the accounting offices for City Market. The building located at 137 West Main was also

demolished, clearing the way for the potential redevelopment of the area consisting of 1.06 acres, owned by Prinster Brothers LLC.

There are two areas as shown in the attached maps that are included in this request to vacate this alley. Of these two areas, the small area adjacent to and south of West Main Street created by instrument recorded in Book 237, Page 290, Reception No. 166098. The second portion, the irregularly shaped island of an area, was platted as part of the Richard D. Mobley's First Subdivision Reception No. 11306, Plat Book 1, Page 22. A portion of this alley was vacated by Ordinance #1344 in 1970 and Ordinance No. 4339 in 2009. The remaining portion of the alley was retained at that time. It also appears that the majority of physically present north/south alleyway was never actually platted as a public right of way but has been used for a long period of time for this purpose and should be considered as a public way by prescription.

Within the area used as a public way, of which some is right-of-way, there exists overhead power lines owned by Xcel. These lines are private lines and as such, the property owner is working with Xcel to grant an easement appropriate for Xcel's ongoing use of these lines. The Applicant is also working with the City to replat these properties. In the replat process, staff will ensure that the easements have been secured for Xcel's purposes.

The current property owner, Prinster Brothers, LLC, is currently under contract with CenterPointe Development Group to purchase the property located at the southwest corner of 1st Street and West Main Street. The Applicant, CenterPointe Development Group, is proposing to develop a new 2,400 square foot Starbucks with a drive-through on the property. The vacation of the alley will enable the Applicant to develop the property using their preferred site plan.

The property directly south is owned by Mesa County. It houses Motor Vehicle, Planning and the Building Department offices. The county does not utilize the alley as they have direct access to South Spruce Street.

NOTIFICATION REQUIREMENTS
A Neighborhood Meeting was held on November 13, 2017 consistent with the requirements of Section 21.02.080 (e) of the Zoning and Development Code. Three citizens attended the meeting along with the Applicant's representative. All comments were supportive of the proposal but they questioned the traffic impacts to the area. In general, those in attendance did not object to the alley vacation.

Notice was completed consistent to the provisions in Section 21.02.080 (g) of the City's Zoning and Development Code. Mailed notice of the application submittal in the form of notification cards was sent to surrounding property owners within 500 feet of the subject property on November 17, 2017. The subject property was posted with an

application sign on December 4, 2017 and notice of the public hearing was published January 16, 2018 in the Grand Junction Sentinel.

ANALYSIS
Pursuant to Section 21.02.100 of the Zoning and Development Code, the vacation of public right-of-way shall conform to the following:

a. The Comprehensive Plan, Grand Valley Circulation Plan, and other adopted plans and policies of the City.

The proposed alley vacation is supported by the following Goals and Policies of the Comprehensive Plan.

Goal 1: To implement the Comprehensive Plan in a consistent manner between the City, Mesa County, and other service providers.

Policy C: The City and Mesa County will make land use and infrastructure decisions consistent with the goal of supporting and encouraging the development of centers.
Goal 4: Support the continued development of the downtown area of the City Center into a vibrant and growing area with jobs, housing and tourist attractions.

Policy A: The City and County will support the vision and implement the goals and actions of the Downtown Strategic Plan.

The Grand Valley Circulation Plan does not address alley right-of-ways. The alley currently has overhead power lines in place but is surrounded by vacant land. Adjacent streets will not be impacted by the alley vacation.

This request conforms with the Comprehensive Plan, the Grand Valley Circulation Plan and other adopted plans of the City. Staff therefore finds this request conforms with this criterion.

b. No parcel shall be landlocked as a result of the vacation.

The request to vacate the remaining alley in Block 7, Richard D. Mobley's First Subdivision, approximately 0.03 acres, will not leave any parcel landlocked as these portions of right of way do not currently provide contiguous access and the properties will continue to have access from West Main, South 1st Street, and South Spruce Street. Therefore, staff finds this request conforms with this criterion.

c. Access to any parcel shall not be restricted to the point where access is unreasonable, economically prohibitive or reduces or devalues any property affected

by the proposed vacation.

No access to any parcel will be restricted. The properties will continue to have access from West Main, South 1st Street and from South Spruce Street. Due to the high traffic counts associated with the Applicant's proposed land use, the Applicants have been notified that access may become a right-in, right-out only from West Main Street when they develop due to safety and stacking issues. Staff has found this request conforms with this criterion.

d. There shall be no adverse impacts on the health, safety, and/or welfare of the general community and the quality of public facilities and services provided to any parcel of land shall not be reduced (e.g. police/fire protection and utility services).

This request was sent as a referral to the Fire Department, Police Department and City Sanitation for review and comment. These city review agencies expressed no concerns with this alley vacation. Xcel Energy reviewed the request and did not have a problem with the alley vacation as long as an easement is retained for the overhead power lines in this area. It is not anticipated that there will be any adverse impacts on the health, safety, and/or welfare of the general community, nor will the quality of public facilities and services provided to any parcel of land be reduced as a result of this vacation request. Staff, therefore has found this request conforms with this criterion.

e. The provision of adequate public facilities and services shall not be inhibited to any property as required in Chapter 21.06 of the Grand Junction Municipal Code.

Adequate public facilities exist for these parcels. No additional services will be impacted or inhibited by this request. Staff has therefore, found this request to conform with this criterion.

f. The proposal shall provide benefits to the City such as reduced maintenance requirements, improved traffic circulation, etc.

With the vacation of this alley, the City will be relieved of any future maintenance of this alley. Staff therefore finds this request to conform with this criterion.

FISCAL IMPACT:

Maintenance requirements for the City will be reduced as a result of the street right-of-way vacation.

SUGGESTED MOTION:

I move to introduce an Ordinance Vacating the Remaining North-South Alley Right-of-Way of Block 7, Richard D. Mobley's First Subdivision and Set a Hearing for February

21, 2018.

Attachments

1. Site Maps
2. Ordinance

Vicinity Map / Alley ROW shown in Red



N

0 0.0275 0.055 Miles

Printed: 1/4/2018

1 inch = 94 feet

City of Grand Junction Colorado

Prinster Property in blue / Areas to be vacated red



N

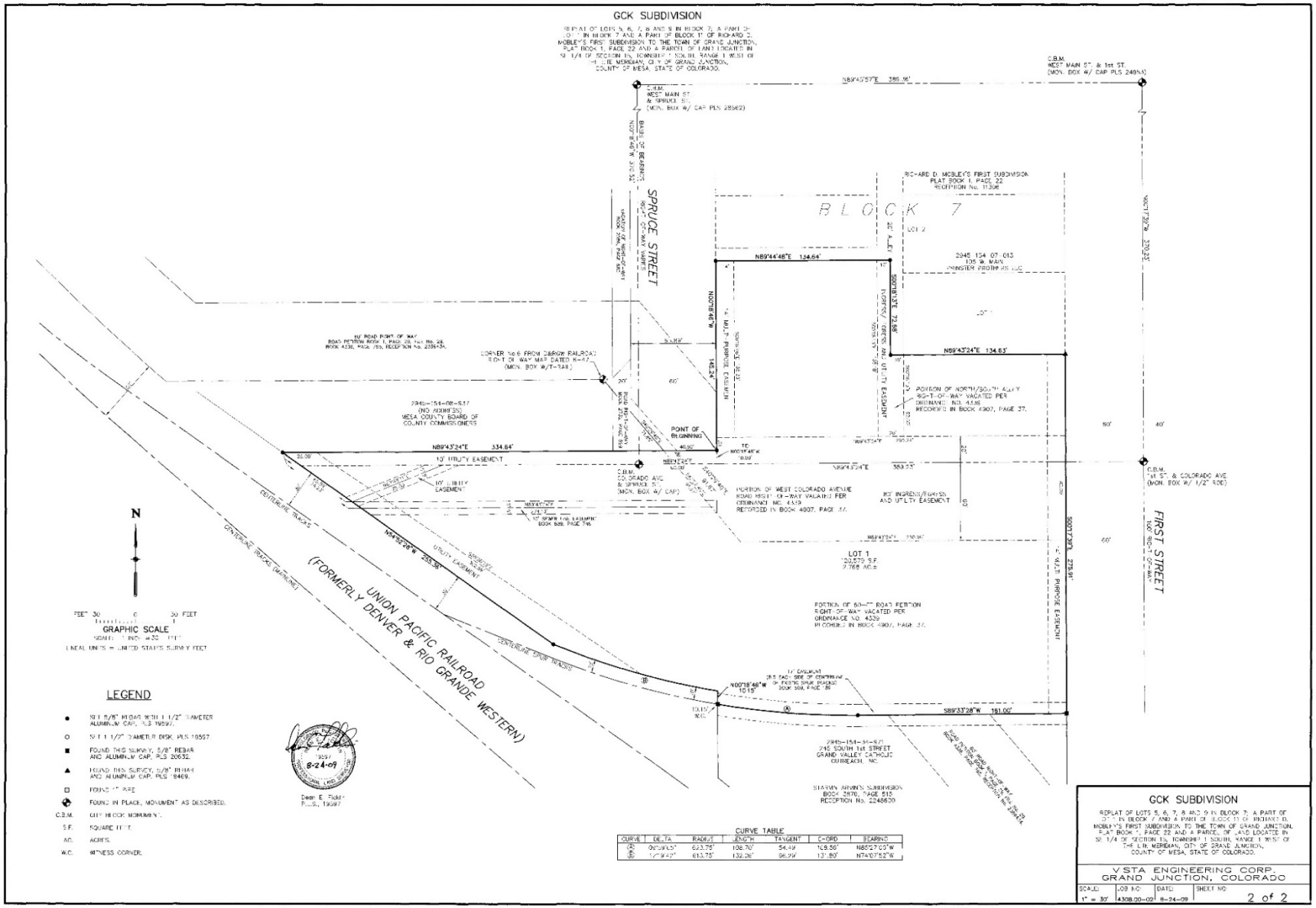
0 0.0125 0.025 Miles

Printed: 1/3/2018

1 inch = 47 feet

City of Grand Junction Colorado

RECEPTION #: 2504527, BK 4913 PG 846 09/04/2009 at 03:17:55 PM, 2 OF 2, R
$20.00 S $1.00 Janice Rich, Mesa County, CO CLERK AND RECORDER



CITY OF GRAND JUNCTION, COLORADO

ORDINANCE NO. _____

AN ORDINANCE VACATING THE REMAINING NORTH-SOUTH ALLEY RIGHT-OF-WAY OF BLOCK 7, RICHARD D. MOBLEY'S FIRST SUBDIVISION

Recitals:

The Applicant, CenterPoint Development Group, is requesting vacation of the remainder of the alleyway south of West Main Street and between South Spruce Street and South 1st Street. The remaining alley right of way to be vacated is divided into two pieces. The northern portion is a square, approximately 0.01 Acre; 20-feet by 25-feet in size. The second portion of the alley right-of-way is 0.02 Acres and is an irregularly shaped piece. The east side is 82.61 feet in length, the west side is 72.61 feet, with a 10-foot by 10-foot jog at the northern end. The attached survey map provides clarity regarding the exact dimensions and location of this vacate request. Another exhibit, a copy of the GCK Subdivision, shows how a previous portion of the alley was partially vacated and will be completed with this vacation request. The vacation of the alley will enable the Applicant to develop the property using their preferred site plan.

After public notice and public hearing as required by the Grand Junction Zoning and Development Code, and upon recommendation of approval by the Planning Commission, the Grand Junction City Council finds that the request to vacate the alley right-of-way is consistent with the Comprehensive Plan, the Grand Valley Circulation Plan and Section 21.02.100 of the Grand Junction Municipal Code.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF GRAND JUNCTION THAT THE FOLLOWING DESCRIBED DEDICATED RIGHT-OF-WAY IS VACATED SUBJECT TO THE GRANT OF A UTILITY EASEMENT TO XCEL ENERGY FOR EXISTING OVERHEAD POWER LINES:

A parcel of land located in block 7, Richard D. Mobley's first subdivision to the Town of Grand Junction as shown on plat recorded in Reception Number 11306 of the Mesa County records and in the Southeast Quarter (se¼) of Section 15, Township 1 South, Range 1 West of the Ute Meridian, in the City of Grand Junction, Mesa County, Colorado and being that alley right-of-way as described in Reception Number 166098, Mesa County records and more particularly described as follows:

Commencing at the Northeast corner of lot 4, said block 7, Richard D. Mobley's first subdivision; thence north 89°52'34" West, a distance of 124.73 feet, also being the basis of bearings with all bearings contained herein relative thereto, along the North line of said lot 4, block 7 to the point of beginning; thence South 00°05'34" West, a distance of 25.00 feet; thence North 89°52'34" West, a distance of 20.00 feet; thence North

00°05'34" East, a distance of 25.00 feet; thence South 89°52'34" East, a distance of 20.00 feet to the point of beginning.

said parcel containing an area of 0.01 acres, as herein described.

and

Commencing at the Southeast corner of lot 1, said block 7, Richard D. Mobley's first subdivision; thence North 89°52'34" West, a distance of 124.65 feet, along the South line of said lot 1, block 7, also being the basis of bearings, with all bearings contained herein relative thereto, to the point of beginning; thence N89°53'47"W, a distance of 10.00 feet; thence North 00°04'13" East, a distance of 72.61 feet; thence North 89°52'34" West, a distance of 10.00 feet; thence North 00°05'34" East, a distance of 10.00 feet; thence South 89°52'34" East, a distance of 20.00 feet; thence South 00°04'13" West, a distance of 82.61 feet to the Point of Beginning.

Said parcel containing an area of 0.02 acres, as herein described.

Introduced on first reading this _____day of _____, 2018 and ordered published in pamphlet form.

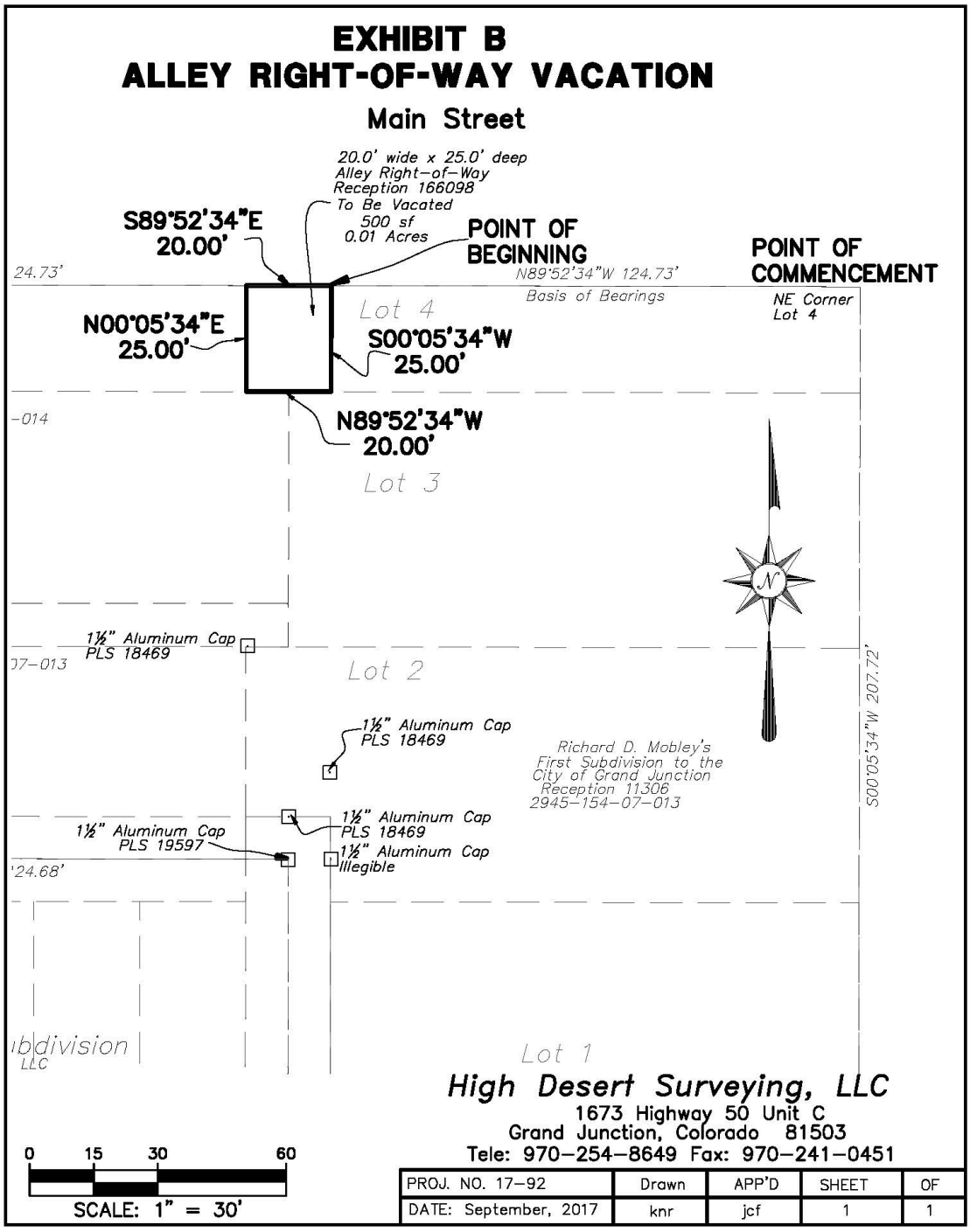
Adopted on second reading this _____ day of _____, 2018 and ordered published in pamphlet form.

ATTEST:

_____ _____

City Clerk Mayor

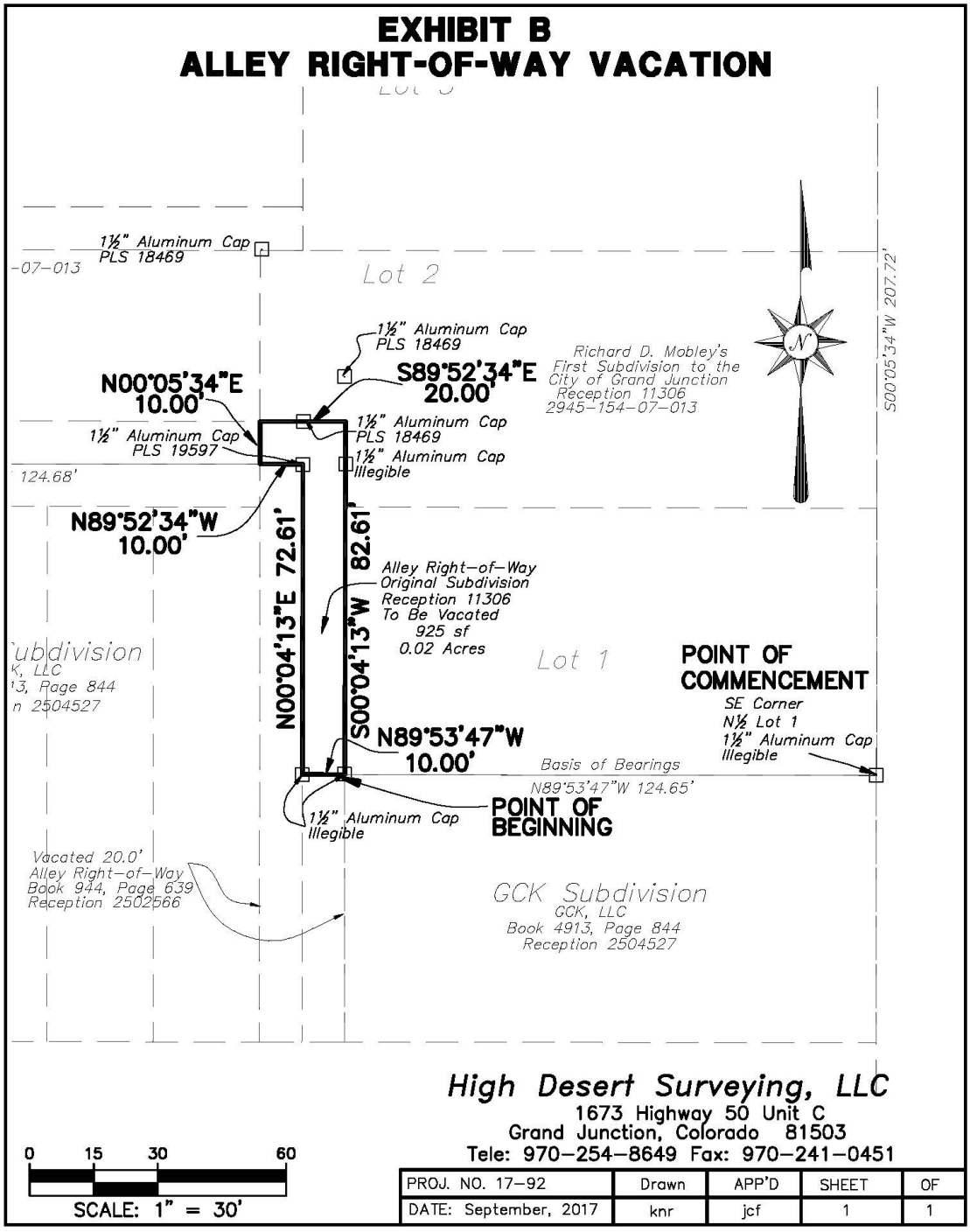
EXHIBIT B
ALLEY RIGHT-OF-WAY VACATION



High Desert Surveying, LLC
1673 Highway 50 Unit C
Grand Junction, Colorado 81503
Tele: 970-254-8649 Fax: 970-241-0451

PROJ. NO. 17-92	Drawn	APP'D	SHEET	OF
DATE: September, 2017	knr	jcf	1	1

EXHIBIT B
ALLEY RIGHT-OF-WAY VACATION



High Desert Surveying, LLC
1673 Highway 50 Unit C
Grand Junction, Colorado 81503
Tele: 970-254-8649 Fax: 970-241-0451

0 15 30 60

SCALE: 1" = 30'

PROJ. NO. 17-92	Drawn	APP'D	SHEET	OF
DATE: September, 2017	knr	jcf	1	1

Grand Junction City Council

Regular Session

Item #3.a.i.

Meeting Date: February 7, 2018

Presented By: John Shaver, City Attorney, Rob Schoeber, Parks and Recreation Director

Department: Parks and Recreation

Submitted By: Rob Schoeber, Parks and Recreation Director

Information

SUBJECT:

An Ordinance Amending Chapter 12 of the Grand Junction Municipal Code Concerning Riverfront and Other Trail Regulations Concerning the Operation of Electrical Assisted Bicycles - **Continued to February 21, 2018**

RECOMMENDATION:

Parks and Recreation Advisory Board unanimously supported this ordinance revision at their April 27, 2017 meeting. Staff recommends that City Council adopt the recommendation and approve the ordinance.

EXECUTIVE SUMMARY:

City Council formally considered this item at the December 20, 2017 Regular City Council meeting and the ordinance was not adopted on second reading. Since that time, the Mayor and members of Council have requested that this item be brought back for Council discussion.

The City of Grand Junction currently maintains a trail system approximately 21 miles in length, including Riverfront, Ridges and Urban Trails. These developed hard surface trails are utilized for non-motorized activities such as walking, running and cycling. Other power driven mobility devices (OPDMDs) may be operated on any of these trails by individuals with mobility disabilities.

E-bikes, or electrical assisted bicycles, use a small electric engine to boost rider's speeds. They are popular among riders of all ages and are designed to enhance a rider's pedaling with limited engine power.

During the recent Colorado legislative session, HB 17-1151 was approved by the legislature. In summary, this bill removes electrical assisted bicycles from the definition of motorized vehicles and creates three classes of E-bikes. The three classifications are defined according to the maximum speed of the electrical power in relationship to the pedaling by the rider.

Class I Electrical Assisted Bicycle – An electrical assisted bicycle equipped with a motor that provides assistance only when the rider is pedaling and that ceases to provide assistance when the bicycle reaches a speed of twenty miles per hour.

Class II Electrical Assisted Bicycle – An electrical assisted bicycle equipped with a motor that provides assistance regardless of whether the rider is pedaling but ceases to provide assistance when the bicycle reaches a speed of twenty miles per hour.

Class III Electrical Assisted Bicycle – An electrical assisted bicycle equipped with a motor that provides assistance only when the rider is pedaling and that ceases to provide assistance when the bicycle reaches a speed of twenty-eight miles per hour.

Great Outdoors Colorado (GOCO) has provided significant capital funding for trails in the Grand Valley, primarily the Riverfront Trail. In general, GOCO opposes motorized uses on all of their grant funded trails. Recently, however GOCO has stated that they view E-bikes differently than motorized uses, and are leaving these decisions up to the local communities. Policy revisions pertaining to E-bikes are currently being explored in several Colorado communities including, Loveland, Vail, Steamboat Springs, Boulder, Durango, Town of Breckenridge, and Summit County.

During a City Council workshop on June 5, 2017, this topic was discussed with members of the Riverfront Commission. The Commission stated that they continue to support the ban of motorized equipment on the Riverfront Trail, with the exception of ADA compliant devices. They also stated that while they support the ban, they would not oppose the exception of E-bikes if the City chose to allow them.

The proposed ordinance revision would continue to ban all OPDMDs on City trails with the exception of ADA approved devices, and would also exclude Class I and Class II E-bikes from the definition of motorized devices.

BACKGROUND OR DETAILED INFORMATION:

The City of Grand Junction currently restricts the use of motorized devices (with exception of ADA approved) on developed trails throughout the community. The trail system encompasses approximately 21 miles of hard surface trails in the Ridges, along the Riverfront and throughout subdivisions and parks.

Electrical assist bicycles are battery powered devices that can be operated either by power or pedaling. Depending upon the battery packs, E-bikes can range in speeds from 12 to 28 miles per hour. Earlier in 2017, the Colorado Legislature adopted House Bill 17-1151. This bill excludes E-bikes from the traditional definition of motorized devices, and defines them into three different categories according to maximum speed of the electrical power in relationship to pedaling by the rider. The classifications are as follows:

Class I Electrical Assisted Bicycle – An electrical assisted bicycle equipped with a motor that provides assistance only when the rider is pedaling and that ceases to provide assistance when the bicycle reaches a speed of twenty miles per hour.

Class II Electrical Assisted Bicycle – An electrical assisted bicycle equipped with a motor that provides assistance regardless of whether the rider is pedaling but ceases to provide assistance when the bicycle reaches a speed of twenty miles per hour.

Class III Electrical Assisted Bicycle – An electrical assisted bicycle equipped with a motor that provides assistance only when the rider is pedaling and that ceases to provide assistance when the bicycle reaches a speed of twenty-eight miles per hour.

Great Outdoors Colorado (GOCO) has provided on-going grants for the development of the Riverfront Trail. This funding is contingent upon the trails being utilized for non-motorized uses only. In recognition of HB 17-1511 however, GOCO has recently stated that local governments should develop policies that best fit their communities, and would support the allowance of E-bikes on GOCO funded trails.

The Riverfront Commission is made up of 11 members that are appointed by the City of Grand Junction, Town of Palisade, Mesa County and City of Fruita. In a letter dated September, 2016, the Commission expressed their concern about the use E-bikes on the Riverfront Trail and recommended the continued ban of all motorized devices on the trail (with the exception of ADA compliant devices). City Manager Greg Caton responded to their recommendation through a letter dated April, 2017, and encouraged the Commission to further study and evaluate the use of E-bikes on the trails. He cited several Colorado Communities who either allow their use or are exploring their uses on public trails. Several members of the Riverfront Commission attended a City Council workshop on June 5, 2017. They continued to support a full ban on motorized devices on the Riverfront Trail, however indicated that they would not oppose an exception for E-bikes if any of the local entities chose to allow exclude them from the ban.

The City of Grand Junction maintains a portion of the Riverfront Trail through an Intergovernmental Agreement with the City of Fruita, Town of Palisade, Mesa County and Colorado State Parks. Currently, the State is drafting a similar exception for Class I and Class II E-bikes, and the Town of Palisade continues to support the full ban.

The proposed ordinance revision would allow the use of Class I and Class II E-bikes on City trails. Class III E-bikes would be permitted on City streets.

FISCAL IMPACT:

Appropriate signage would be installed by Parks Department (estimate: $300).

SUGGESTED MOTION:

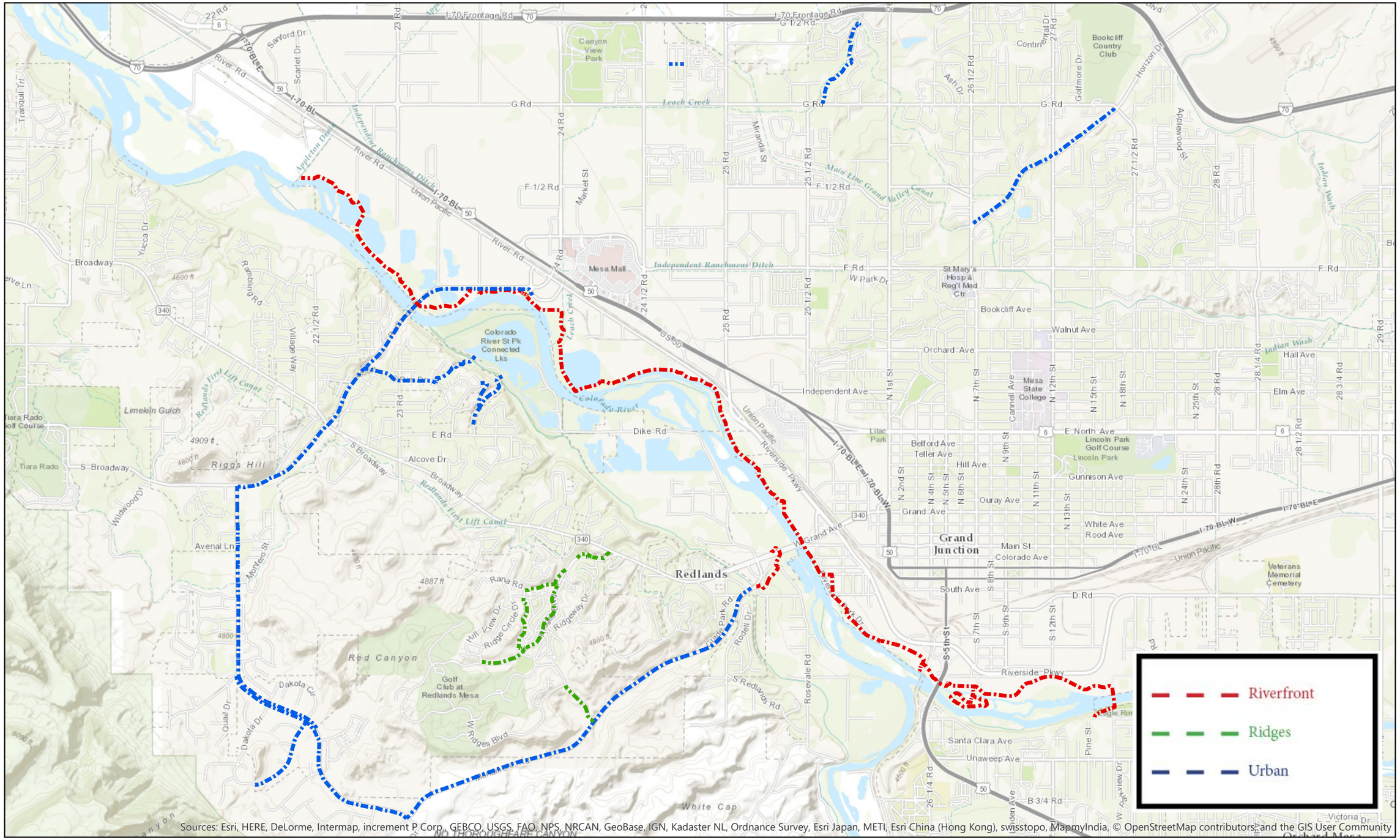
I move to adopt/deny Ordinance No. 4784 - An ordinance amending Chapter 12 of the Grand Junction Municipal Code concerning Riverfront and other trail regulations concerning the operations of electrical assisted bicycles on final passage and order final publication in pamphlet form.

Attachments

1. Trails Map
2. House Bill 17 - 1151
3. Riverfront Commission Letter 9-20-16
4. City Manager Letter 4-20-17
5. Ordinance E Bikes
6. Trail Mileage
7. Urban Trails Map
8. Riverfront Trails Map
9. Ridges Map

All Trails Map

CITY OF Grand Junction COLORADO GEOGRAPHIC INFORMATION SYSTEM



Wednesday, August 30, 2017



HOUSE BILL 17-1151

BY REPRESENTATIVE(S) Hansen and Willett, Becker K., Buckner, Ginal, Hooton, Kennedy, Lontine, Mitsch Bush, Valdez, Winter, Young, Singer;
also SENATOR(S) Kerr and Hill, Gardner, Kagan.

CONCERNING THE REGULATION OF ELECTRICAL ASSISTED BICYCLES.

Be it enacted by the General Assembly of the State of Colorado:

SECTION 1. In Colorado Revised Statutes, 42-1-102, **amend** (28.5) and (58) as follows:

42-1-102. Definitions. As used in articles 1 to 4 of this title, unless the context otherwise requires:

(28.5) "Electrical assisted bicycle" means a vehicle having two ~~tandem wheels~~ or ~~two parallel~~ THREE wheels, ~~and one forward wheel,~~ fully operable pedals, AND an electric motor not exceeding seven hundred fifty watts of power. ~~and a top motor-powered speed of twenty miles per hour.~~ ELECTRICAL ASSISTED BICYCLES ARE FURTHER REQUIRED TO CONFORM TO ONE OF THREE CLASSES AS FOLLOWS:

(a) "CLASS 1 ELECTRICAL ASSISTED BICYCLE" MEANS AN ELECTRICAL

Capital letters indicate new material added to existing statutes; dashes through words indicate deletions from existing statutes and such material not part of act.

ASSISTED BICYCLE EQUIPPED WITH A MOTOR THAT PROVIDES ASSISTANCE ONLY WHEN THE RIDER IS PEDALING AND THAT CEASES TO PROVIDE ASSISTANCE WHEN THE BICYCLE REACHES A SPEED OF TWENTY MILES PER HOUR.

(b) "CLASS 2 ELECTRICAL ASSISTED BICYCLE" MEANS AN ELECTRICAL ASSISTED BICYCLE EQUIPPED WITH A MOTOR THAT PROVIDES ASSISTANCE REGARDLESS OF WHETHER THE RIDER IS PEDALING BUT CEASES TO PROVIDE ASSISTANCE WHEN THE BICYCLE REACHES A SPEED OF TWENTY MILES PER HOUR.

(c) "CLASS 3 ELECTRICAL ASSISTED BICYCLE" MEANS AN ELECTRICAL ASSISTED BICYCLE EQUIPPED WITH A MOTOR THAT PROVIDES ASSISTANCE ONLY WHEN THE RIDER IS PEDALING AND THAT CEASES TO PROVIDE ASSISTANCE WHEN THE BICYCLE REACHES A SPEED OF TWENTY-EIGHT MILES PER HOUR.

(58) "Motor vehicle" means any self-propelled vehicle that is designed primarily for travel on the public highways and that is generally and commonly used to transport persons and property over the public highways or a low-speed electric vehicle; except that the term does not include ELECTRICAL ASSISTED BICYCLES, low-power scooters, wheelchairs, or vehicles moved solely by human power. For the purposes of the offenses described in sections 42-2-128, 42-4-1301, 42-4-1301.1, and 42-4-1401 for farm tractors and off-highway vehicles, as defined in section 33-14.5-101 (3), ~~C.R.S.,~~ operated on streets and highways, "motor vehicle" includes a farm tractor or an off-highway vehicle that is not otherwise classified as a motor vehicle. For the purposes of sections 42-2-127, 42-2-127.7, 42-2-128, 42-2-138, 42-2-206, 42-4-1301, and 42-4-1301.1, "motor vehicle" includes a low-power scooter.

SECTION 2. In Colorado Revised Statutes, 42-3-103, **amend** (1)(b) introductory portion and (1)(b)(I) as follows:

42-3-103. Registration required - exemptions. (1) (b) This subsection (1) ~~shall~~ DOES not apply to the following:

(I) A bicycle, ~~electric~~ ELECTRICAL assisted bicycle, or other human-powered vehicle;

SECTION 3. In Colorado Revised Statutes, 42-4-111, **amend** (1) introductory portion and (1)(dd) as follows:

42-4-111. Powers of local authorities. (1) Except as otherwise provided in subsection (2) of this section, this ~~article~~ ARTICLE 4 does not prevent local authorities, with respect to streets and highways under their jurisdiction and within the reasonable exercise of the police power, from:

(dd) Authorizing OR PROHIBITING the use of ~~the electrical motor on~~ an electrical assisted bicycle on a bike or pedestrian path IN ACCORDANCE WITH SECTION 42-4-1412;

SECTION 4. In Colorado Revised Statutes, 42-4-221, **amend** (9); and **add** (10) and (11) as follows:

42-4-221. Bicycle and personal mobility device equipment. (9) (a) ~~Any person who violates any provision of this section commits a class B traffic infraction~~ ON OR AFTER JANUARY 1, 2018, EVERY MANUFACTURER OR DISTRIBUTOR OF NEW ELECTRICAL ASSISTED BICYCLES INTENDED FOR SALE OR DISTRIBUTION IN THIS STATE SHALL PERMANENTLY AFFIX TO EACH ELECTRICAL ASSISTED BICYCLE, IN A PROMINENT LOCATION, A LABEL THAT CONTAINS THE CLASSIFICATION NUMBER, TOP ASSISTED SPEED, AND MOTOR WATTAGE OF THE ELECTRICAL ASSISTED BICYCLE. THE LABEL MUST BE PRINTED IN THE ARIAL FONT IN AT LEAST NINE-POINT TYPE.

(b) A PERSON SHALL NOT KNOWINGLY MODIFY AN ELECTRICAL ASSISTED BICYCLE SO AS TO CHANGE THE SPEED CAPABILITY OR MOTOR ENGAGEMENT OF THE ELECTRICAL ASSISTED BICYCLE WITHOUT ALSO APPROPRIATELY REPLACING, OR CAUSING TO BE REPLACED, THE LABEL INDICATING THE CLASSIFICATION REQUIRED BY SUBSECTION (9)(a) OF THIS SECTION.

(10) (a) AN ELECTRICAL ASSISTED BICYCLE MUST COMPLY WITH THE EQUIPMENT AND MANUFACTURING REQUIREMENTS FOR BICYCLES ADOPTED BY THE UNITED STATES CONSUMER PRODUCT SAFETY COMMISSION AND CODIFIED AT 16 CFR 1512 OR ITS SUCCESSOR REGULATION.

(b) A CLASS 2 ELECTRICAL ASSISTED BICYCLE MUST OPERATE IN A MANNER SO THAT THE ELECTRIC MOTOR IS DISENGAGED OR CEASES TO FUNCTION WHEN THE BRAKES ARE APPLIED. CLASS 1 AND CLASS 3

ELECTRICAL ASSISTED BICYCLES MUST BE EQUIPPED WITH A MECHANISM OR CIRCUIT THAT CANNOT BE BYPASSED AND THAT CAUSES THE ELECTRIC MOTOR TO DISENGAGE OR CEASE TO FUNCTION WHEN THE RIDER STOPS PEDALING.

(c) A CLASS 3 ELECTRICAL ASSISTED BICYCLE MUST BE EQUIPPED WITH A SPEEDOMETER THAT DISPLAYS, IN MILES PER HOUR, THE SPEED THE ELECTRICAL ASSISTED BICYCLE IS TRAVELING.

(11) A PERSON WHO VIOLATES THIS SECTION COMMITS A CLASS B TRAFFIC INFRACTION.

SECTION 5. In Colorado Revised Statutes, 42-4-1412, **amend** (14); and **add** (15) as follows:

42-4-1412. Operation of bicycles and other human-powered vehicles. (14) (a) (I) ~~Except as authorized by section 42-4-111, the rider of an electrical assisted bicycle shall not use the electrical motor on a bike or pedestrian path~~ A PERSON MAY RIDE A CLASS 1 OR CLASS 2 ELECTRICAL ASSISTED BICYCLE ON A BIKE OR PEDESTRIAN PATH WHERE BICYCLES ARE AUTHORIZED TO TRAVEL.

(II) A LOCAL AUTHORITY MAY PROHIBIT THE OPERATION OF A CLASS 1 OR CLASS 2 ELECTRICAL ASSISTED BICYCLE ON A BIKE OR PEDESTRIAN PATH UNDER ITS JURISDICTION.

(b) A PERSON SHALL NOT RIDE A CLASS 3 ELECTRICAL ASSISTED BICYCLE ON A BIKE OR PEDESTRIAN PATH UNLESS:

(I) THE PATH IS WITHIN A STREET OR HIGHWAY; OR

(II) THE LOCAL AUTHORITY PERMITS THE OPERATION OF A CLASS 3 ELECTRICAL ASSISTED BICYCLE ON A PATH UNDER ITS JURISDICTION.

(15) (a) A PERSON UNDER SIXTEEN YEARS OF AGE SHALL NOT RIDE A CLASS 3 ELECTRICAL ASSISTED BICYCLE UPON ANY STREET, HIGHWAY, OR BIKE OR PEDESTRIAN PATH; EXCEPT THAT A PERSON UNDER SIXTEEN YEARS OF AGE MAY RIDE AS A PASSENGER ON A CLASS 3 ELECTRICAL ASSISTED BICYCLE THAT IS DESIGNED TO ACCOMMODATE PASSENGERS.

(b) A PERSON SHALL NOT OPERATE OR RIDE AS A PASSENGER ON A CLASS 3 ELECTRICAL ASSISTED BICYCLE UNLESS:

(I) EACH PERSON UNDER EIGHTEEN YEARS OF AGE IS WEARING A PROTECTIVE HELMET OF A TYPE AND DESIGN MANUFACTURED FOR USE BY OPERATORS OF BICYCLES;

(II) THE PROTECTIVE HELMET CONFORMS TO THE DESIGN AND SPECIFICATIONS SET FORTH BY THE UNITED STATES CONSUMER PRODUCT SAFETY COMMISSION OR THE AMERICAN SOCIETY FOR TESTING AND MATERIALS; AND

(III) THE PROTECTIVE HELMET IS SECURED PROPERLY ON THE PERSON'S HEAD WITH A CHIN STRAP WHILE THE CLASS 3 ELECTRICAL ASSISTED BICYCLE IS IN MOTION.

(c) A VIOLATION OF SUBSECTION (15)(b) OF THIS SECTION DOES NOT CONSTITUTE NEGLIGENCE OR NEGLIGENCE PER SE IN THE CONTEXT OF ANY CIVIL PERSONAL INJURY CLAIM OR LAWSUIT SEEKING DAMAGES.

SECTION 6. Act subject to petition - effective date. This act takes effect at 12:01 a.m. on the day following the expiration of the ninety-day period after final adjournment of the general assembly (August 9, 2017, if adjournment sine die is on May 10, 2017); except that, if a referendum petition is filed pursuant to section 1 (3) of article V of the state constitution against this act or an item, section, or part of this act within such period, then the act, item, section, or part will not take effect unless

approved by the people at the general election to be held in November 2018 and, in such case, will take effect on the date of the official declaration of the vote thereon by the governor.

Crisanta Duran
SPEAKER OF THE HOUSE
OF REPRESENTATIVES

Kevin J. Grantham
PRESIDENT OF
THE SENATE

Marilyn Eddins
CHIEF CLERK OF THE HOUSE
OF REPRESENTATIVES

Effie Ameen
SECRETARY OF
THE SENATE

APPROVED 1:45 PM 4/4/17

John W. Hickenlooper
GOVERNOR OF THE STATE OF COLORADO

RIVERFRONT COMMISSION
P.O. Box 2477
Grand Junction, Colorado 81502
(970) 683-4333

Sponsors:
Fruita
Grand Junction
Mesa County
Palisade

September 20, 2016

Grand Junction City Council
250 North 5th Street
Grand Junction, CO 81501

Dear Members of the City of Grand Junction City Council:

The Colorado Riverfront Commission is an advisory board to the Riverfront Trail partners; the City of Grand Junction, the City of Fruita, Mesa County, Colorado Parks and Wildlife and the Town of Palisade. As such, we feel very strongly that we must advocate for the continuing ban of motorized vehicles on the Riverfront Trail. This ban does not include ADA compliant devices such as motorized wheelchairs, but refers to recreational vehicles such as electric bicycles (e-bikes), motorized scooters, Segways and all-terrain vehicles. Of particular concern are e-bikes since retailers have become increasingly vocal in their advocacy of trail use by their customers.

Recently the City of Durango dealt with this issue and cited the following concerns:

- Electric-motor assisted bicycles have a set top speed of 20 mph and require the cyclist to pedal to engage the motor. Others have a throttle and go much faster. Although they can give some cyclists a needed boost, the Durango City Council has decided to ban electric bikes on Durango trails. Motorized vehicles have been banned for years on Durango trails and the council has now banned electric bikes whether the motor is engaged or not.

Other relevant concerns are:

- Jeopardizes future GOCO funding since they only fund non-motorized trails.
- Could threaten ~$20 Million in past funding, i.e. give the money back if you don't ban all motorized use.
- Sets a precedent that opens the door for other motorized vehicles – golf carts, dirt bikes, go-carts, etc.
- Motorized vehicles create a safety hazard for pedestrians and cyclists due to their speed and mass.

We would be happy to come before the Council to further discuss the issue if that would be of help, but as advocates for the ongoing maintenance, improvement and development of the Riverfront Trail we must state our absolute and unanimous support of banning electric bikes from the Trail.

Sincerely,

Frank Watt
Co-Chair
Riverfront Commission

Brad Taylor
Co-Chair
Riverfront Commission

CITY OF Grand Junction COLORADO

CITY MANAGER'S OFFICE

April 20, 2017

Riverfront Commission
P.O. Box 2477
Grand Junction, CO 81502

RE: E-bikes on Riverfront Trail

The City of Grand Junction offers diverse recreational amenities that allow both citizens and visitors to enjoy the type that best suits his or her abilities. Previously, the Riverfront Commission sent a letter to the members of Grand Junction's City Council, expressing its support for banning electric bikes (e-bikes) from the Riverfront Trail. The letter is attached below. In October of 2016, Great Outdoors Colorado (GOCO) Board members discussed and agreed to grant deference to local governments, allowing municipalities to make their own determination of use on trails based on research and demand of their community. The new position on e-bikes is in reference to trails funded with local government purpose funds.
As a result, I encourage the Riverfront Commission to study and evaluate the use of e-bikes on the Riverfront Trail.

Grand Junction's peer cities, particularly those on the Western Slope, are addressing the use of e-bikes on public multi-use trails. All municipalities require e-bike users to follow standard trail and bicycle etiquette. Some municipalities are entering into a trial period, while other have established rules regulating e-bikes. The following are some examples of peer city regulations:

- Earlier this year, the City of Durango issued e-bike policy recommendations for the City's trail system. The recommendations restrict e-bikes to only pedal assist Class I models and limit use to certain multi-use hard and soft surface trails.
- The City of Boulder permits e-bikes on certain multi-use paths in the City. E-bikes must comply with existing use multi-use path rules, including a 15 mph speed limit, travel and passing lanes, audible alerts, and use of lights and reflective materials.
- The Town of Vail's Ordinance No. 9 set a trial period that allows e-bikes on paved recreation trails. The ordinance limits motors to 500 watts, limits the speed of the e-bike, and requires riders to be 16 years of age or older.
- Steamboat Springs wants its Parks and Recreation Commission to consider allowing some types of e-bikes on both hard and soft surface trails. A pilot program for the City's Yampa River Core Trail is set to begin this summer.

Research by Portland State University found that 60% of electric bicycle riders surveyed bought an electric bicycle to enable trips in hilly areas and 73% rode to different destinations than with a standard bicycle. 65% of respondents in that survey said replacing car trips was a main reason to get an electric bicycle. PSU has also created an interactive map detailing e-bike laws by state and province in North America.

A study by Navigent Research describes a global e-bike market that is well-positioned for continued growth. The group predicts global sales of e-bikes will grow from over $15.7 billion in 2016 to $24 billion by 2025. The report also examines key drivers of growth, including government influence on the market. Further, the League of American Bicyclists examined e-bikes and public policy and highlighted how national sales exceeded 200,000 in 2015.

While I understand the Commission's concern that allowing e-bikes might set a precedent for allowing other types of motorized vehicles on trails, e-bikes can be viewed differently. Benefits of e-bikes include cost-savings, improved public health, and ease of convenience.

- **E-bikes are not necessarily quicker than traditional bikes.** The average e-bike speed is 15 mph, within most urban and multi-use trails' speed limits. Compared to traditional bikes, where a professional cyclist can reach speeds of 30 mph, e-bikes are designed to provide motorized assistance up to speeds of 20 mph.
- **E-bikes still count as exercise.** Although e-bikes deliver pedal-assisted power, a study by the University of Colorado, Boulder suggests that e-bikes can still improve cardiovascular health. The CU study measured the improvements in various aspects of health of twenty sedentary commuters through the use of e-bikes. It is important to note that the riders in the study rode at an average speed of 12.5 mph and reported no crashes.
- **E-bikes provide ease of convenience.** E-bikes allow individuals to move farther and easier. Pedal assisted motors provide riders with increased mechanical advantage which aids the rider in moving heavier loads. The pedal assist also helps commuters reduce exertion, generating less sweat, and helps individuals with physical or medical challenges to pedal the bicycle easier.
- **E-bikes reduce cars on the road.** Through the use of e-bikes, the burden on our roadways is lessened. This improves air-quality, eases traffic, reduces road maintenance costs, reduces vehicle accidents, and lowers our community's carbon footprint. By offsetting vehicles on the road with e-bikes, the overall health of the community is improved.

GOCO's stance regarding e-bikes has driven local policy for years. With GOCO's change in position with deference to local governments, communities across the state have evaluated the allowance of e-bikes. We owe it to our businesses and community members to assess their potential use on the Riverfront Trail.

Sincerely,



Greg Caton
City Manager

C: City Council
Rob Schoeber, Parks and Recreation Director

RIVERFRONT COMMISSION
P.O. Box 2477
Grand Junction, Colorado 81502
(970) 683-4333

Sponsors:
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September 20, 2016

Grand Junction City Council
250 North 5th Street
Grand Junction, CO 81501

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Sincerely,

Frank Watt
Co-Chair
Riverfront Commission

Brad Taylor
Co-Chair
Riverfront Commission

ORDINANCE NO. ___

AN ORDINANCE AMENDING CHAPTER 12 OF THE GRAND JUNCTION MUNICIPAL CODE CONCERNING RIVERFRONT AND OTHER TRAIL REGULATIONS CONCERNING THE OPERATION OF ELECTRICAL ASSISTED BICYCLES

RECITALS:

The City Council has recently considered a modification to the City's code concerning electrical assisted bicycles also known as "E-bikes." The proposed change is to allow certain types or classes of E-bikes, as defined by this ordinance and Colorado law, to be operated on certain trails and all roads within the City. While the proposed change will create consistency between the Grand Junction Municipal Code and the Colorado Revised Statutes, it also furthers the opportunities for users of non-traditional bicycles to access certain trails and all streets in turn reducing automobile usage.

In 1992 the City Council adopted Ordinance 2606 which, among other things. authorized the Parks and Recreation Advisory Board to promulgate regulations for the usage of the Riverfront Trails as the same are depicted and described in that ordinance. Among other things that ordinance, and the regulations subsequently adopted by the PRAB, prohibited motorized vehicles on the trails. Since 1992, battery technology and the expertise to adapt that technology to transportation has resulted in a burgeoning of electrical transportation including electrical assisted bicycles. The growth of the E-bike industry and the popularity of the products resulted in the Colorado Legislature approving, and Governor Hickenlooper signing into law, House Bill 17-1151. The House Bill regulates electrical assisted bicycles by, among other things creating three classes of E-bikes, amending the definition of "motor vehicle" to exclude electrical assisted bicycles and authorized local jurisdictions to authorize (or prohibit) E-bikes as those jurisdictions determine. With this ordinance the City Council does authorize electrical assisted bicycles to be used in the City; however, such use is subject to the following rules and regulations which are applicable to the specified trails and locations.

NOW THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF GRAND JUNCTION:

That Sections 12.08.010 and 12.08.140 of the Grand Junction Municipal Code are amended as follows: (Additions are shown in ALL CAPS changes/deletions are shown in ~~strikethrough~~)

12.08.010 Definition – Incorporation of ~~riverfront~~ TRAILS map(S).

"Riverfront," "riverfront trails" or "trails" means those areas, facilities, lands and waters as identified on the mapS entitled "Riverfront Map", "RIDGES MAP" AND "URBAN MAP," COLLECTIVELY "TRAILS MAPS," which mapS ARE incorporated in this article by this reference. The City Manager or his designee shall provide to the Parks and Recreation Advisory Board updated and revised maps of the TRAILS ~~riverfront~~ as additional trails, lands, lakes or facilities are acquired, placed or constructed. The most current mapS shall be on file on the City's Geographical Information System (GIS) and incorporated by reference into this chapter and shall constitute the riverfront AND

TRAILS mapS. The substitution of maps and incorporation thereof by reference shall not necessitate re-adoption of this chapter.

12.08.140 Regulations relating to TRAILS ~~riverfront trails~~, lands and waters.

(b) No person shall:
(1) Operate any motor vehicle OR OTHER POWER DRIVEN MOBILITY DEVICE(S) (OPDMD) on any ~~of the riverfront~~ CITY trail(s) or land(s) ~~of the riverfront~~ AS THOSE ARE DEPICTED AND DESCRIBED ON THE "TRAILS MAP(S)" except MAINTENANCE OR EMERGENCY VEHICLE(S) OR as may be authorized by the City or by signs AND ~~or~~ except for A "COMMON WHEELCHAIR" WHICH IS DEFINED AS A MANUALLY OPERATED OR POWER DRIVEN DEVICE DESIGNED PRIMARILY FOR USE BY A PERSON WITH A MOBILITY DISABILITY FOR THE PURPOSE OF INDOOR, OR OF BOTH INDOOR AND OUTDOOR LOCOMOTION. AN ELECTRIC MOTORIZED SCOOTER/POWER CHAIR MEETS THIS DEFINITION, PROVIDED IT MEETS SECTION 37.3 OF THE U.S. DEPARTMENT OF TRANSPORTATION'S REGULATIONS IMPLEMENTING THE ADA (49 CFR PARTS 27, 37, AND 38).

AN OPDMD IS DEFINED AS ANY MOBILITY DEVICE POWERED BY BATTERIES, FUEL, OR OTHER ENGINE(S), WHETHER OR NOT DESIGNED PRIMARILY FOR USE BY PERSONS WITH MOBILITY DISABILITIES THAT IS USED BY PERSONS WITH MOBILITY DISABILITIES FOR THE PURPOSE OF LOCOMOTION, INCLUDING GOLF CARS, ELECTRIC PERSONAL ASSISTANCE MOBILITY DEVICES (EPAMDS), SUCH AS THE SEGWAY PT® OR ANY MOBILITY DEVICE DESIGNED TO OPERATE IN AREAS WITHOUT DEFINED PEDESTRIAN ROUTES, BUT THAT IS NOT A COMMON WHEELCHAIR WITHIN THE MEANING OF THIS SECTION.

~~motorized wheelchairs, maintenance or emergency vehicles.~~ Motor vehicle shall be as defined in § ~~42-1-101~~, 42-1-102(58) C.R.S. et seq. EPAMDS SHALL BE AS DEFINED IN §42-1-102(28.7).

(C) WITH THE EXCEPTION OF A COMMON WHEELCHAIR, AN ELECTRIC MOTORIZED SCOOTER AND CLASS I AND CLASS II E-BIKES, NO MOTOR VEHICLE OR OPDMD IS ALLOWED ON THE TRAILS, AS THE SAME ARE DEPICTED AND DESCRIBED BY ORDINANCE 2606 AND THESE ADOPTED REGULATIONS.

(1) A CLASS I ELECTRICAL ASSISTED BICYCLE OR LOW-SPEED PEDAL-ASSIST ELECTRIC BICYCLE IS A TWO-WHEELED BICYCLE EQUIPPED WITH A MOTOR THAT PROVIDES ASSISTANCE ONLY WHEN THE RIDER IS PEDALING, AND THAT CEASES TO PROVIDE ASSISTANCE WHEN THE BICYCLE REACHES THE SPEED OF 20 MILES PER HOUR. A CLASS I ELECTRICAL ASSISTED BICYCLE MOTOR SHALL NOT EXCEED 750 WATTS OF POWER;

(2) A CLASS II ELECTRICAL ASSISTED BICYCLE OR LOW-SPEED THROTTLE-ASSISTED ELECTRIC BICYCLE IS A BICYCLE EQUIPPED

WITH A MOTOR THAT MAY BE USED EXCLUSIVELY TO PROPEL THE BICYCLE AND IS NOT CAPABLE OF PROVIDING ASSISTANCE WHEN THE BICYCLE REACHES THE SPEED OF 20 MILES PER HOUR;

(3) A CLASS III ELECTRICAL ASSISTED BICYCLE IS A BICYCLE EQUIPPED WITH A MOTOR THAT PROVIDES ASSISTANCE ONLY WHEN THE RIDER IS PEDALING AND THAT CEASES TO PROVIDE ASSISTANCE WHEN THE BICYCLE REACHES A SPEED OF 28 MILES PER HOUR.

(A) CLASS III ELECTRICAL ASSISTED BICYCLES ARE ALLOWED ONLY ON STREETS/BIKE LANES ADJACENT TO STREETS (NOT TRAILS, PATHS OR SIDEWALKS.)

(B) CLASS III ELECTRICAL ASSISTED BICYCLES MAY NOT BE OPERATED BY A PERSON UNDER 16 YEARS OF AGE; A PERSON UNDER 16 YEARS OF AGE MAY RIDE AS A PASSENGER ON A CLASS III ELECTRICAL ASSISTED BICYCLE THAT IS MANUFACTURED TO ACCOMMODATE A PASSENGER(S).

(4) ANY PERSON UNDER 18 YEARS OF AGE RIDING OR A PASSENGER ON A CLASS III ELECTRICAL ASSISTED BICYCLE SHALL WEAR AN AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM) OR UNITED STATES CONSUMER PRODUCT SAFETY COMMISSION (USCPS) APPROVED HELMET OF A TYPE AND DESIGN MANUFACTUED FOR USE BY RIDERS OF BICYCLES. THE PROTECTIVE HELMET SHALL BE PROPERLY SECURED ON THE PERSON'S HEAD WITH THE STRAP FASTENED WHILE THE CLASS III ELECTRICAL ASSISTED BICYCLE IS IN MOTION.

(5) NO PERSON SHALL OPERATE AN ELECTRICAL ASSISTED BICYCLE IN ANY PLACE WHERE THERE ARE ONE OR MORE SIGNS POSTED PROHIBITING SUCH ACTIVITY. NO PERSON SHALL OPERATE AN ELECTRICAL ASSISTED BICYCLE IN ANY PUBLIC PLACE IN A MANNER WHICH CAUSES INJURY TO ANY PERSON OR DAMAGE TO PUBLIC OR PRIVATE PROPERTY.

(6) A PERSON USING AN ELECTRICAL ASSISTED BICYCLE IN ANY PUBLIC PLACE WITHIN THE CITY SHALL USE THE SAME IN A CAREFUL AND PRUDENT MANNER AND AT A RATE OF SPEED NO GREATER THAN IS REASONABLE AND PRUDENT UNDER THE CONDITIONS EXISTING AT THE PLACE AND TIME OF OPERATION, TAKING INTO ACCOUNT THE AMOUNT AND CHARACTER OF PEDESTRIAN TRAFFIC, GRADE AND WIDTH OF THE PATH, TRAIL OR RIGHT-OF-WAY AND CONDITION OF

THE SURFACE THEREOF AND SHALL OBEY ALL TRAFFIC CONTROL DEVICES.

(7) EVERY PERSON RIDING AN ELECTRICAL ASSISTED BICYCLE UPON A PUBLIC PATH, TRAIL OR OTHER RIGHT-OF-WAY SHALL YIELD THE RIGHT-OF-WAY TO ANY PEDESTRIAN THEREON.

(8) TO THE EXTENT NOT INCONSISTENT HEREWITH, HOUSE BILL 17-1151 AMENDING VARIOUS SECTIONS OF THE COLORADO REVISED STATUTES IS INCORPORATED BY THIS REFERENCE.

(9) WITHIN SIXTY DAYS OF THE THIRD ANNIVERSARY OF THE ADOPTION OF THIS ORDINANCE THE CITY COUNCIL SHALL CONSIDER THE EFFECTIVENESS OF THE ORDINANCE AT ACHIEVING ITS STATED PURPOSES. WITHOUT FURTHER ACTION BY THE CITY COUNCIL, THE TERMS AND PROVISIONS OF THIS ORDINANCE SHALL EXPIRE ON THE THIRD ANNIVERSARY OF THE EFFECTIVE DATE HEREOF. THE CITY COUNCIL MAY DETERMINE THAT THE ORDINANCE IS EFFECTIVE AS WRITTEN AND REINSTATE IT OR MAY AMEND IT AS IT DETERMINES IN ITS SOUND DISCRETION.

Introduced on first reading this 17th day of January 2018.

PASSED and ADOPTED this __ day of February 2018.

_____
J. Merrick Taggart
Mayor and President of the City Council

ATTEST:

_____
Wanda Winkelmann
City Clerk

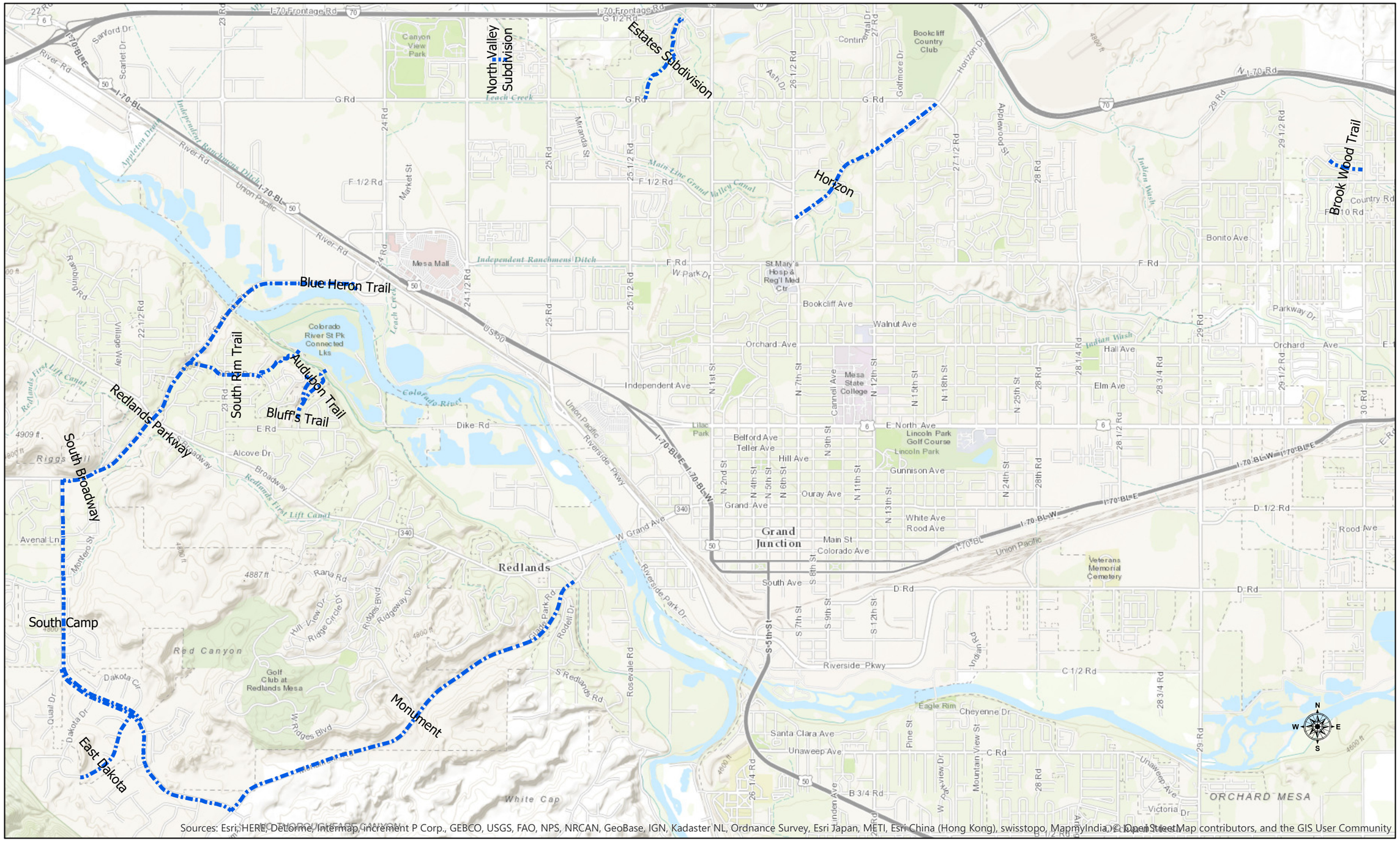
DRAFT

TRAIL MILEAGE AS OF 2017

Eagle Rim to Botanical Gardens	1.50 miles
Las Colonias Section 7924'	
Watson Island Loop 3540'	.67
Botanical Garden to Riverside Park	1.75
Jarvis Property 8295'	
Riverside Park to Jr. Service League Park	3.03
Blue Heron Section 16015'	
Jr. Service League to Boat Ramp	.41
Along the River 2200'	
Jr. Service League to Colorado River Bridge	.75
Along Redlands Parkway 3973'	
Monument View	1.5
Boat Ramp to Appleton Drain	
Colorado River Bridge to South Rim Drive	.53
Along Redlands Parkway 2810'	
Lower no Thoroughfare 2087'	.39
RIVERFRONT TOTAL	**10.53**
South Rim Trail Head to Power Canal 1460'	.28
Promontory Point Trail Head to Power Canal 2292'	.43
Bluffs Trail Head to Power Canal 1865'	.35
South Rim to Broadway (340)	.40
Along Redlands Parkway	
Broadway to South Camp	.71
Along South Broadway	
South Broadway to Wingate Elementary	1.10
Along South Camp	
Wingate Elementary to Monument Road	1.52
Along South Camp	
East Dakota Dr. 2774'	.52
East Side of South Camp	1.10
Horizon Drive 7th to 12th	.61
Horizon Drive 12th to G Road	.51
Brook Wood Subdivision	.48
North Valley Subdivision	.10
Estates Subdivision	.36
URBAN TRAIL TOTAL	**8.47**
Ridges Trails	
Ridges Blvd. to Rana Rd. 1712'	.32
Rana to Hill View 601'	.11
Duck Pond to 340 Underpass 1327'	.25
Ridge Blvd. School Ridge to bus stop 4559'	.86
Ridge Circle to Desert Trail Dr. 1507'	.29
Mariposa Dr. to Monument Rd. 1578'	.29
RIDGES TRAIL TOTAL	**2.12**
TOTALS	**21.12 MILES**

Urban Trails Map

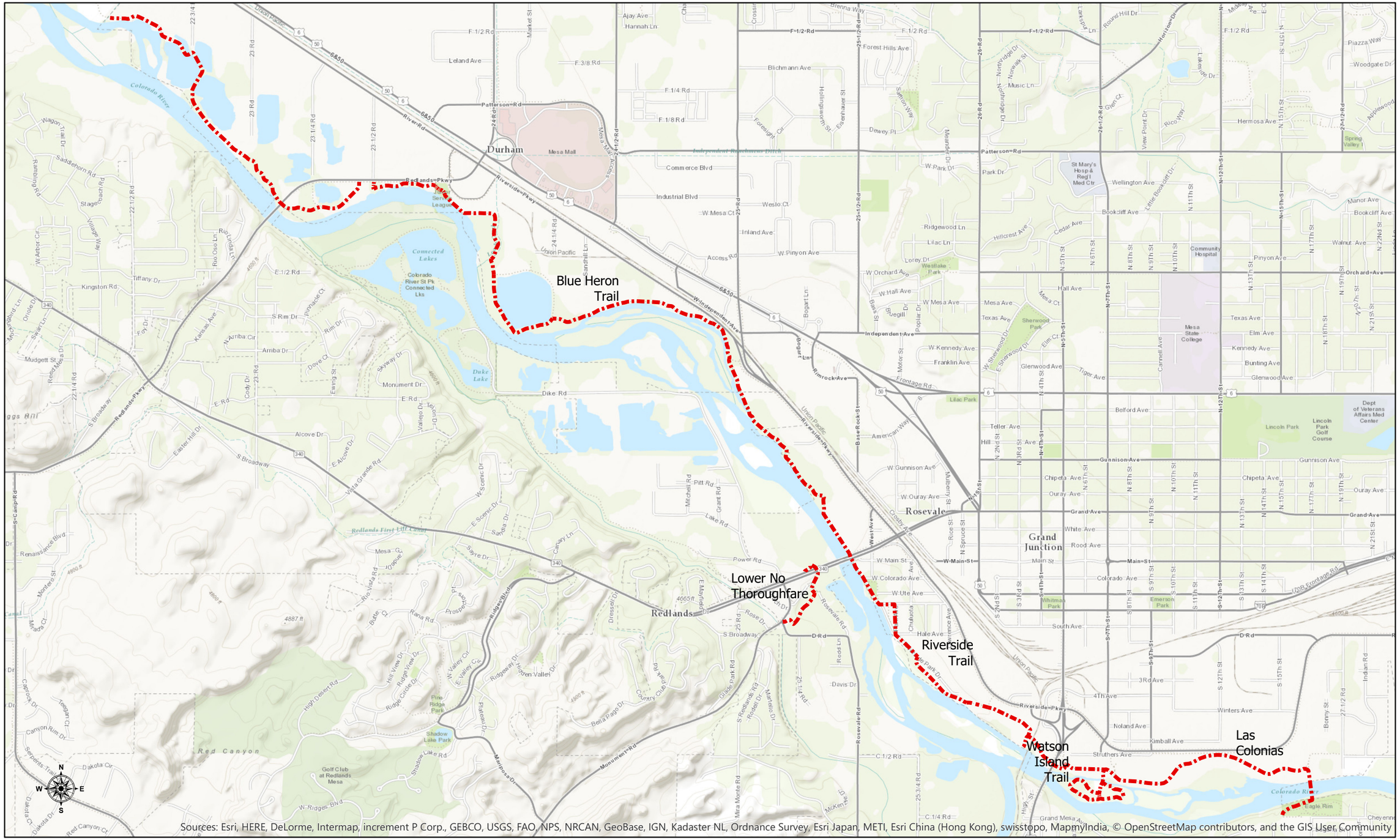
CITY OF Grand Junction COLORADO GEOGRAPHIC INFORMATION SYSTEM



Wednesday, August 30, 2017

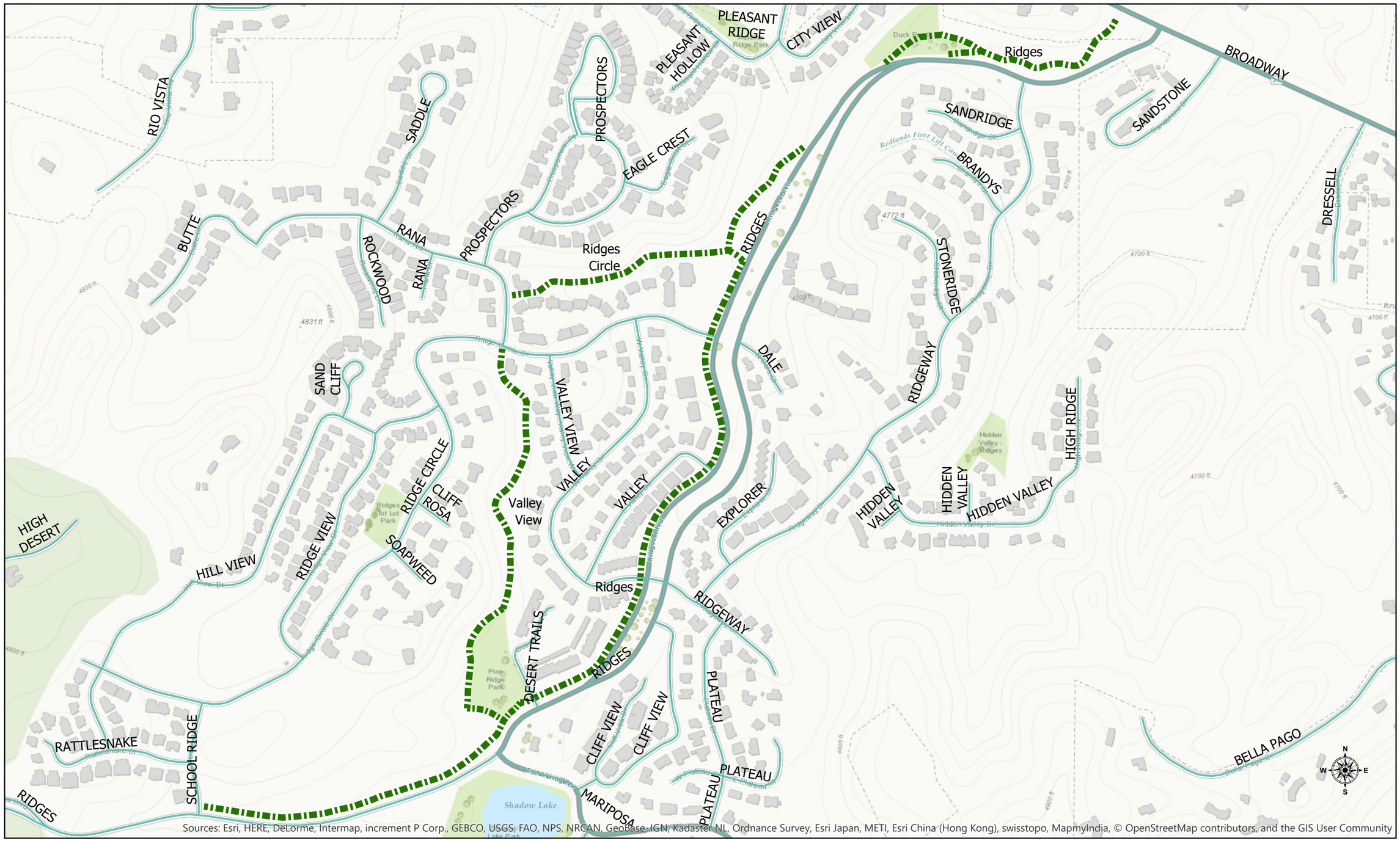
Riverfront Trails Map

CITY OF Grand Junction COLORADO
GEOGRAPHIC INFORMATION SYSTEM



Wednesday, August 30, 2017

Ridges Trails Map



Wednesday, August 30, 2017

Grand Junction City Council

Regular Session

Item #4.a.

Meeting Date: February 7, 2018

Presented By: Jay Valentine, Deputy Finance Director

Department: Finance

Submitted By: Jay Valentine

Information

SUBJECT:

Contract for Architectural Services for Two Rivers Convention Center Remodel

RECOMMENDATION:

Staff recommends the approval of a contract with Chamberlin Architects for design services for the Two Rivers Convention Center remodel in the amount of $362,000.

EXECUTIVE SUMMARY:

The City of Grand Junction Downtown Development Authority (DDA) is planning to finance approximately $6,000,000 for capital improvements to Two Rivers Convention Center (TRCC). These improvements, which will include building systems, functionality and aesthetics, will need to be evaluated and designed by a professional architectural firm. Chamberlin Architects has been chosen as the firm to lead this process.

BACKGROUND OR DETAILED INFORMATION:

The DDA is financing $6,000,000 of capital improvements to the TRCC. Built in 1974, the 2-story facility was last renovated/expanded in 2001 and contains a gross area of 88,500 square feet which includes nearly 23,000 square feet of meeting/event space that can accommodate a group of up to 2,000 people. The Convention Center contains three ballrooms of at least 5,800 square feet each, as well as six smaller rooms. TRCC is managed by Pinnacle Venue Services, which began managing the facility in January 2017.

The improvements to the Convention Center will include roof repairs, upgrades to the water distribution system, kitchen upgrades, exterior repairs, and various other

improvements, including the construction of a corridor that will connect the Convention Center to a Jr. Ballroom located in the future hotel. The plans are to break ground on this hotel in fall of 2019 with completion in Spring of 2021. The hotel owners have hired Chamberlain Architects to design the hotel and the connection to TRCC and this is the primary reason for recommending this firm for the improvement project.

Because the City frequently requires the specialized skills, knowledge, resources and services of private consultants to provide a specialized product or to design facilities, in accordance with City Purchasing Policy, and with the approval of City Council, professional, technical and expert services can be procured without competition for amounts over $50,000.

FISCAL IMPACT:

Bond proceeds from the Downtown Development Authority in the amount of $6,000,000 has been designated for the Convention Center remodel project. Construction of the improvements is planned for 2018 and 2019. The funding for architectural services is included in the $6,000,000 and is budgeted in the Two Rivers Convention Center fund.

SUGGESTED MOTION:

I move to approve the City Purchasing Division to enter into a contract for basic architectural services with Chamberlin Architects in the amount of $362,000.

Attachments

None

Grand Junction City Council

Regular Session

Item #4.b.

Meeting Date: February 7, 2018

Presented By: Jay Valentine, Deputy Finance Director

Department: Finance

Submitted By: Jay Valentine

Information

SUBJECT:

Purchase Police Special Services Vehicles

RECOMMENDATION:

Staff recommends the purchase of seven Police Special Services Vehicles from Larry H. Miller Ford in the amount of $307,976.55.

EXECUTIVE SUMMARY:

This purchase of seven vehicles for the amount of $307,976.55 will replace seven police patrol vehicles that are at the end of their useful life. As part of the Fleet Replacement Program, these new units will be used as patrol vehicles in the Police Department.

BACKGROUND OR DETAILED INFORMATION:

These vehicles are replacements to the fleet and will be purchased through accruals in the Fleet Replacement Fund. More than any other vehicle in the City's fleet, Police vehicles are in constant use and driven through adverse conditions which diminish the life span of the units. The replacement of these vehicles will help ensure the equipment maintains the highest practical state of suitability, reliability, safety, and efficiency.

The Fleet Services Division administers the equipment replacement program and vehicle operating budgets. This includes evaluation and determination of equipment replacement, preparation of specifications which ensure acquisition of effective equipment and asset management of all equipment from purchase through disposal.

At the end of their useful life (determined through a combination of age, cost of maintenance and mileage), these police vehicles, according to policy, will either be sold at public auction, donated to other law enforcement agencies and/or academies or retained as maintenance only reserve vehicles.

A formal Invitation for Bids was completed via the Rocky Mountain Bid System, an on-line site for government agencies to post solicitations, and advertised in *The Daily Sentinel*. Five vendors responded in accordance with specified requirements.

Company	Location	Amount (Extended for Seven)
Larry H. Miller Ford	Lakewood, CO	$307,976.55
Glenwood Springs Ford	Glenwood Sp., CO	$311,847.41
Spradley Barr Ford	Greeley, CO	$313,082.00
Spradley Barr Ford (Alternate)	Greeley, CO	$319,186.00
AutoNation Ford	Littleton, CO	$325,871.00

FISCAL IMPACT:

The budgeted amount in the Fleet Replacement Fund for the purchase of these seven units is $313,947.

SUGGESTED MOTION:

I move to approve the City Purchasing Division to enter into a contract with Larry H. Miller Ford for the purchase of seven Police Special Services Vehicles.

Attachments

None

Grand Junction City Council

Regular Session

Item #5.a.

Meeting Date: February 7, 2018

Presented By: Wanda Winkelmann, City Clerk

Department: City Clerk

Submitted By: Wanda Winkelmann, City Clerk

Information

SUBJECT:

A Resolution Amending Resolution No. 56-17 Appointing and Assigning City Councilmembers to Represent the City on Various Boards, Committees, Commissions, Authorities, and Organizations

RECOMMENDATION:

Staff recommends adoption of Resolution No. 09-18.

EXECUTIVE SUMMARY:

In October 2017, the City Council reviewed and determined who on the City Council will represent the City Council on various boards, committees, commissions, authorities, and organizations. The purpose of this resolution is to change 1) the assignment to the Parks Improvement Advisory Board of Councilmember Barbara Traylor Smith, with Councilmember Duke Wortmann serving as alternate and 2) the assignment to the Parks & Recreation Advisory Board of Councilmember Duke Wortmann.

BACKGROUND OR DETAILED INFORMATION:

The City Council assigns its members to represent the governing body on a variety of Council appointed boards, committees and commissions as well as a number of outside organizations. By way of Resolution No. 56-17, City Council made these assignments, which included Councilmember Traylor Smith's assignment to the Parks & Recreation Advisory Board and Councilmember Wortmann's assignment to the Parks Improvement Advisory Board. Due to scheduling conflicts, Councilmember Traylor Smith has requested a change in her assignment, and Councilmember Wortmann has volunteered to switch assignments. Therefore, Resolution xx-18 assigns

Councilmember Traylor Smith to the Parks Improvement Advisory Board, with Councilmember Wortmann as alternate, and Councilmember Wortmann to the Parks & Recreation Advisory Board.

FISCAL IMPACT:

Not applicable.

SUGGESTED MOTION:

I move to adopt Resolution No. 09-18 - A Resolution Amending Resolution No. 56-17 Appointing and Assigning City Councilmembers to Represent the City on Various Boards, Committees, Commissions, Authorities, and Organizations.

Attachments

1. Proposed Resolution

RESOLUTION NO. XX-18

A RESOLUTION AMENDING RESOLUTION NO. 56-17 APPOINTING AND ASSIGNING CITY COUNCILMEMBERS TO REPRESENT THE CITY ON VARIOUS BOARDS, COMMITTEES, COMMISSIONS, AUTHORITIES, AND ORGANIZATIONS

Recitals:

At its meeting on October 4, 2017 the City Council appointed its members to serve on various boards, commissions, committees and organizations**.** The City Council subsequently amended that resolution to reassign the Parks Improvement Advisory Board and the Parks & Recreation Advisory Board. The assignments heretofore made by Resolution 56-17 are amended as follows.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GRAND JUNCTION COLORADO THAT:

Until further action by the City Council, the appointments and assignments of the members of the City Council as approved by Resolution 56-17 and subsequently amended by Resolution No. XX-18 are amended to wit:

1) Barbara Traylor Smith is assigned to serve on the Parks Improvement Advisory Board, with Duke Wortmann assigned as alternate.
2) Duke Wortmann is assigned to serve on the Parks & Recreation Advisory Board.

PASSED AND ADOPTED THIS 7th day February, 2018.

/s/ J. Merrick Taggart
President of the City Council

ATTEST:

/s/ Wanda Winkelmann
City Clerk

AMENDED CITY COUNCIL FORMAL ASSIGNMENTS

Individual Members are assigned for each of the following:

Board/Organization	Meeting Day/Time/Place	2018 Assignments
Associated Governments of Northwest Colorado (AGNC)	3rd Wednesday of each month @ 9:00 am different municipalities	Duncan McArthur
Downtown Development Authority/Downtown BID	2nd and 4th Thursdays @ 7:30 am @ DDA Offices, 437 Colorado, BID board meets monthly 2nd Thursday	Phyllis Norris
Grand Junction Housing Authority	4th Monday @ 5:00 pm @ GJHA Offices at 8 Foresight Circle	Phyllis Norris
Grand Junction Regional Airport Authority	Usually 3rd Tuesday @ 5:15 pm @ City Hall Auditorium (workshops held the 1st Tuesday when needed)	Rick Taggart
Parks Improvement Advisory Board (PIAB)	Quarterly, 1st Tuesday @ noon @ various locations (usually Hospitality Suite)	Barbara Traylor Smith Duke Wortmann (Alt)
Parks & Recreation Advisory Board	1st Thursday @ noon @ various locations (usually at Parks Administration Offices)	Duke Wortmann
Riverfront Commission	3rd Tuesday of every other month @ 5:30 p.m. in Training Room A, Old Courthouse	Duke Wortmann
Mesa County Separator Project Board (PDR)	Quarterly @ Mesa Land Trust, 1006 Main Street	Barbara Traylor Smith
Grand Valley Regional Transportation Committee (GVRTC)	4th Monday every other month @ 3:00 pm @ GVT Offices, 525 S. 6th St., 2nd Floor	Bennett Boeschenstein
Grand Junction Economic Partnership	3rd Wednesday of every month @ 7:30 am @ GJEP offices, 122 N. 6th Street	Chris Kennedy
Colorado Water Congress	Meets 3-4 times a year in Denver	Duncan McArthur
Colorado Municipal League Legislative Liaison		Duncan McArthur
5-2-1 Drainage Authority	Meets quarterly, generally the 4th Wednesday of month at 3:00 p.m. in Old Courthouse in Training Rm B	Duncan McArthur
Club 20	The board of directors meets at least annually. The time and place for board meetings are determined by the Executive Committee.	Rick Taggart
Orchard Mesa Pool Board	Meets twice a year at 8:00 A.M. at a designated location.	Duke Wortmann

Ad Hoc Committees	Date/Time	2017 Representative
Avalon Theatre Committee	Third Thursday at 8:00 a.m.	Phyllis Norris Bennett Boeschenstein
Property Committee	Meets as needed and scheduled	Bennett Boeschenstein Barbara Traylor Smith
Zoning and Development Code Review*	Meets as needed and scheduled	Bennett Boeschenstein Duncan McArthur
Regional Communication Center Committee	Meets as needed and scheduled	Phyllis Norris Chris Kennedy

Other Boards

Board Name	Date/Time	2017 Representative who attends regularly
Associated Members for Growth and Development (AMGD)	1st Wednesday, 7:30 a.m., Realtors Association Offices, 2743 Crossroads Blvd.	Duncan McArthur is facilitator, Open to all
Building Code Board of Appeals *	As needed	NA
Commission on Arts and Culture *	4th Wednesday of each month at 4:00 p.m.	Bennett Boeschenstein
Forestry Board *	First Thursday of each month at 8:00 a.m.	NA
Historic Preservation Board *	1st Tuesday of each month at 4:00 p.m.	Bennett Boeschenstein
Homeless Coalition	Meets on the third Thursday of the month at 10:00 a.m. at St. Mary's Pavilion	Duncan McArthur, Bennett Boeschenstein
Horizon Drive Association Business Improvement District *	3rd Wednesday of each month at 10:30 a.m.	Duke Wortmann
Persigo Board (All City and County Elected)	Annually and as needed	All
Planning Commission *	2nd and 4th Tuesday at 6:00 p.m.	NA
Public Finance Corporation *	Annual meeting in January	NA
Ridges Architectural Control Committee *	As needed	NA
Riverview Technology Corporation *	Annual meeting in January	Bennett Boeschenstein
State Leasing Authority *	2nd Tuesday in January, other times as needed	In process of dissolution
Urban Trails Committee *	2nd Tuesday of each month at 5:30 p.m.	Bennett Boeschenstein
Visitor and Convention Bureau Board of Directors *	2nd Tuesday of each month at 3:00 p.m.	Phyllis Norris
Zoning Code Board of Appeals *	As needed	NA

*No Council representative required or assigned - City Council either makes or ratifies appointments - may or may not interview dependent on particular board

Grand Junction City Council

Regular Session

Item #6.a.

Meeting Date: February 7, 2018

Presented By: Rob Schoeber, Parks and Recreation Director

Department: Parks and Recreation

Submitted By: Rob Schoeber, Parks and Recreation Director

Information

SUBJECT:

Request for Fireworks Displays at Suplizio Field

RECOMMENDATION:

Consider approval of nine public fireworks displays at Suplizio Field for the 2018 baseball season.

EXECUTIVE SUMMARY:

To be held in conjunction with baseball games and events at Suplizio, fireworks displays are being requested on behalf of Grand Junction Baseball, Inc. (JUCO), Colorado Mesa University, City of Grand Junction, Special Olympics, and the Grand Junction Rockies. 2018 dates include one JUCO game (Memorial Day), one CMU game (May 3rd), Special Olympics Opening Ceremony, Independence Day, and five Friday evening Rockies Games.

BACKGROUND OR DETAILED INFORMATION:

Lincoln Park typically hosts two community fireworks displays annually on Memorial Day and July 4th. This request also adds seven dates in conjunction with CMU, Grand Junction Rockies baseball games, and one special event date for the Special Olympics state meet. Game times for the Rockies and CMU games will be no later than 6:40 p.m., with an estimated display time of 9:45 p.m. In an effort to minimize noise impacts, shell sizes will be limited to 2” in size, and loud exploding shells will be limited. Throughout the course of the season, staff responded to seven citizen concerns relating to fireworks in Lincoln Park. If approved, a direct mailing will be sent to all adjacent neighbors highlighting the dates of the shows this season.

All shows at Lincoln Park require a coordinated effort including the event organizer, City staff from Parks, Fire, Police, and Traffic. Dependent upon the size of the show, fireworks are staged east of the field from either the practice field or the golf course driving range. Weather conditions are monitored closely with final approval being granted each night by the Grand Junction Fire Department.

The proposed schedule for 2018 is as follows:

Friday, May 3 (CMU)
Monday, May 28 (JUCO)
Friday, June 8 (Special Olympics)
Friday, June 15 (Rockies)
Friday, June 22 (Rockies)
Tuesday, July 4 (City of GJ, Rockies)
Friday, July 6 (Rockies)
Friday, July 20 (Rockies)
Friday, August 10 (Rockies)

In addition to the nine scheduled dates, the Grand Junction Rockies propose Saturday, August 25 be approved as an alternate date in case weather prevents fireworks on one of the above dates.

FISCAL IMPACT:

N/A

SUGGESTED MOTION:

I move to approve a request to host nine public fireworks displays at Lincoln Park as requested by Grand Junction Baseball, Inc. (JUCO), Colorado Mesa University, Special Olympics, City of Grand Junction, and Grand Junction Rockies.

Attachments

None

Grand Junction City Council

Regular Session

Item #7.a.i.

Meeting Date: February 7, 2018

Presented By: David Thornton, Principal Planner

Department: Community Development

Submitted By: David Thornton, AICP, Principal Planner

Information

SUBJECT:

A Resolution Accepting the Petition for Annexation and Ordinance Annexing the Taurus Park Plaza Annexation of 40.414 Acres, Located at 789 23 Road

RECOMMENDATION:

Staff recommends approval of the Taurus Park Plaza Annexation.

EXECUTIVE SUMMARY:

The Applicants, Club Deal 113/114 Park Plaza and Grand Junction Limited Partnership, have requested annexation of their 40.414 acres located on 23 Road just north of I-70 with an address of 789 23 Road. The proposed annexation also includes the south half of H road of 1,318 lineal feet as well as the west half of 23 Road, including 1,298 lineal feet of road. These sections of roadway are currently not dedicated rights-of-way. The Applicant seeks to develop this property in conjunction with the 30 acres they own to the south for a future residential, mixed use development known as Mosaic Planned Development. The proposed development constitutes Annexable Development under the Perigo Agreement and as such is required to annex to the City. Consideration for zoning of this annexation will be heard in a future action.

BACKGROUND OR DETAILED INFORMATION:

The Taurus Park Plaza annexation consists of one 40.414 acre parcel of land located at 789 23 Road. The property is currently vacant and is adjacent to existing city limits, within the Persigo 201 boundary and is Annexable Development as defined in the Persigo Agreement. The property owners have signed a petition for annexation and have recently submitted an application for the zoning and development of this property

along with the adjacent 30 acres to the south that are already within the City limits for a residential, mixed use development to be known as the Mosaic Planned Development. The review and zoning related to the development will be processed subsequently to the annexation process. The annexation includes 1,318 feet of the south half of the undedicated H Road Right-of-Way and 1,298 feet of the west half of the undedicated 23 Road Right-of-Way.

Staff has found, based on review of the petition and knowledge of applicable state law, including the Municipal Annexation Act Pursuant to C.R.S. 31-12-104, that the Taurus Park Plaza Annexation is eligible to be annexed because of compliance with the following:

a) A proper petition has been signed by more than 50% of the owners and more than 50% of the property described;

b) Not less than one-sixth of the perimeter of the area to be annexed is contiguous with the existing City limits;

c) A community of interest exists between the area to be annexed and the City. This is so in part because the Central Grand Valley is essentially a single demographic and economic unit and occupants of the area can be expected to, and regularly do, use City streets, parks and other urban facilities;

d) The area is or will be urbanized in the near future;

e) The area is capable of being integrated with the City;

f) No land held in identical ownership is being divided by the proposed annexation;

g) No land held in identical ownership comprising 20 contiguous acres or more with an assessed valuation of $200,000 or more for tax purposes is included without the owner's consent.

The proposed annexation and zoning schedule with a summary is attached.

FISCAL IMPACT:

The provision of municipal services will be consistent with adjacent properties already in the City. Property tax levies and municipal sales/use tax will be collected, as applicable, upon annexation and development.

Annual maintenance costs for the combined 2,616 feet of roadway including the south

half of H Road and west half of 23 Road is estimated at approximately $575 per year. Future overlay and chipseal costs for this road are estimated at $79,600 with a chipseal required in the next four years and an overlay within 13 years.

The cost to improve the road frontage to a major collector standard consistent with the Grand Valley Circulation Plan is estimated at $1.15 million. No immediate plans are in place for this major improvement.

SUGGESTED MOTION:

I move to adopt/deny Resolution No. 10-18 - A Resolution accepting a petition for the annexation of lands to the City of Grand Junction, Colorado, making certain findings, and determining that the 40.414 acres Taurus Park Plaza Annexation, located at 789 23 Road is eligible for annexation; and Ordinance No. 4785 - An Ordinance annexing territory to the City of Grand Junction, Colorado, Taurus Park Plaza Annexation approximately 40.414 acres, located at 789 23 Road on final passage and order final publication in pamphlet form.

Attachments

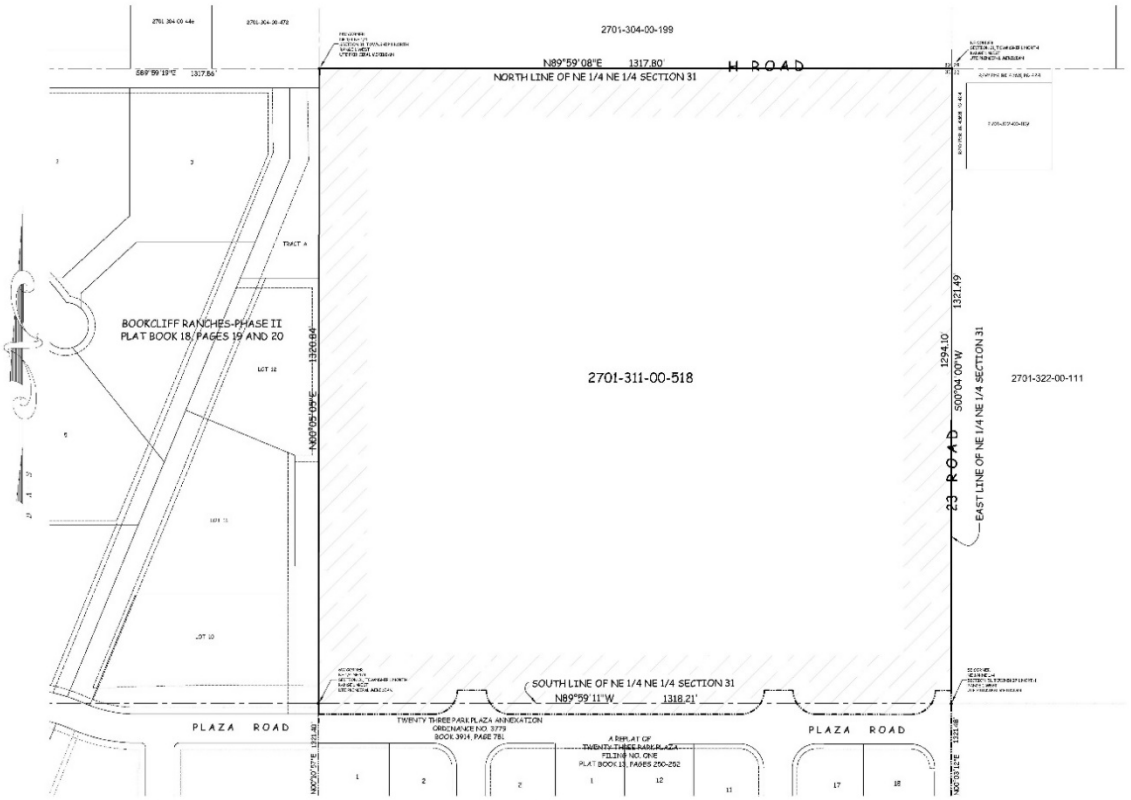
1. Annexation Background Information Schedule and Summary
2. Maps
3. Proposed Resolution
4. Proposed Ordinance

TAURUS PARK PLAZA ANNEXATION SCHEDULE	
January 3, 2018	Referral of Petition (30 Day Notice), Introduction of a Proposed Ordinance, Exercising Land Use
To be scheduled with Mosaic PD	Planning Commission considers Zone of Annexation
To be scheduled with Mosaic PD	Introduction of a Proposed Ordinance on Zoning by City Council
February 7, 2018	Acceptance of Petition and Public Hearing on Annexation by City Council
March 11, 2018	Effective date of Annexation
To be scheduled with Mosaic PD	City Council considers Zone of Annexation

ANNEXATION SUMMARY		
File Number:		ANX-2017-560
Location:		789 23 Road
Tax ID Numbers:		2701-311-00-518
# of Parcels:		1
Existing Population:		0
# of Parcels (owner occupied):		0
# of Dwelling Units:		0
Acres land annexed:		40.414
Developable Acres Remaining:		40.414
Right-of-way in Annexation:		0
Previous County Zoning:		Planned Development
Proposed City Zoning:		PD – (mixed use)
Current Land Use:		Vacant
Future Land Use:		Mixed use residential/neighborhood commercial
Values:	**Assessed:**	$111,340
	Actual:	$383,920
Address Ranges:		Odd numbers between 775 and 799 23 Rd / 2275 to 2299 H Rd
Special Districts:	**Water:**	Ute
	Sewer:	City
	Fire:	GJ Rural
	Irrigation/Drainage:	Grand Valley Irrigation / Grand Valley Drainage
	School:	Fruita Monument HS / Fruita Middle / Appleton Ele
	Pest:	Grand River Mosquito Control District

TAURUS PARK PLAZA ANNEXATION

SITUATE IN THE NE 1/4 NE 1/4 AND THE SE 1/4 NE 1/4 OF SECTION 31, TOWNSHIP 1 NORTH, RANGE 1 WEST
UTE PRINCIPAL MERIDIAN
COUNTY OF MESA, STATE OF COLORADO





LOCATION MAP - NOT-TO-SCALE

DESCRIPTION

A certain parcel of land lying in the Northeast Quarter of the Northeast Quarter (NE 1/4 NE 1/4) and the Southeast Quarter of the Northeast Quarter (SE 1/4 NE 1/4) of Section 31, Township 1 North, Range 1 West of the Ute Principal Meridian, County of Mesa, State of Colorado and being more particularly described as follows:

ALL of that certain parcel of land, bounded on the North by the North line of the NE 1/4 NE 1/4 of said Section 31; bounded on the East by the East line of the NE 1/4 NE 1/4 of said Section 31; bounded on the West by the West line of the NE 1/4 NE 1/4 of said Section 31 and Bounded on the South by the North line of the Twenty Three Park Plaza Annexation, City of Grand Junction Ordinance No. 3779, as same is recorded in Book 3914, Page 781, Public Records of Mesa County, Colorado.

CONTAINING 1,760,453 Square Feet or 40.414 Acres, more or less, as described

PARCEL DATA (PDA)

P.O.C.	POINT OF COMMENCEMENT
P.O.B.	POINT OF BEGINNING
R.O.W.	RIGHT-OF-WAY
SEC.	SECTION
TWP.	TOWNSHIP
RGE.	RANGE
U.P.M.	UTE PRINCIPAL MERIDIAN
NO.	NUMBER
SQ. FT.	SQUARE FEET
CM	CENTIMETER
(M)	(MEAS)
AC.	ACRE (ACRES)
CMP	CMP/MONUMENT
CMPS	CMP/MONUMENTS
BK#	BOOK
PG	PAGE
PGS	PAGES

The Bearing and Coordinate Control Points have been derived from coordinate values and field descriptions as they appear in the office of the Mesa County Clerk and Recorder. This plat does not constitute a legal survey and is not intended to be used as a means for establishing or verifying property boundary lines.

PRELIMINARY

Kevin J. Koch, PLS No. 32624
Professional Land Surveyor for the
City of Grand Junction

DATE: _____

AREA OF ANNEXATION

LANDS NOW ANNEXED	5,758.91 FT.
EXISTING ANNEXATION	1,755,694 FT.
LESS IN RIGHT OF WAY	1,760,453 FT.
LESS IN ROW'S	40.414 AC.
(WHETHER DEDICATED TO PUBLIC RIGHT OF WAY)	

LEGEND

ANNEXATION BOUNDARY
EXISTING CITY LIMIT

GRAPHIC SCALE

1 IN. = 100 FT.

LINEAL UNITS USED HEREIN = U.S. SURVEY FOOT, AS ESTABLISHED

ORDINANCE NO.
????

EFFECTIVE DATE
??????????

THIS IS NOT A BOUNDARY SURVEY

Notice: According to Colorado law you must commence any legal action based upon any defect in this survey within ten years after you first discover such defect, or in no event may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon.

DRAWN BY	P.T.K.	DATE 11-22-2017
DESIGNED BY		DATE
CHECKED BY	P.T.K.	DATE
APPROVED BY		DATE

SCALE 1" = 100'

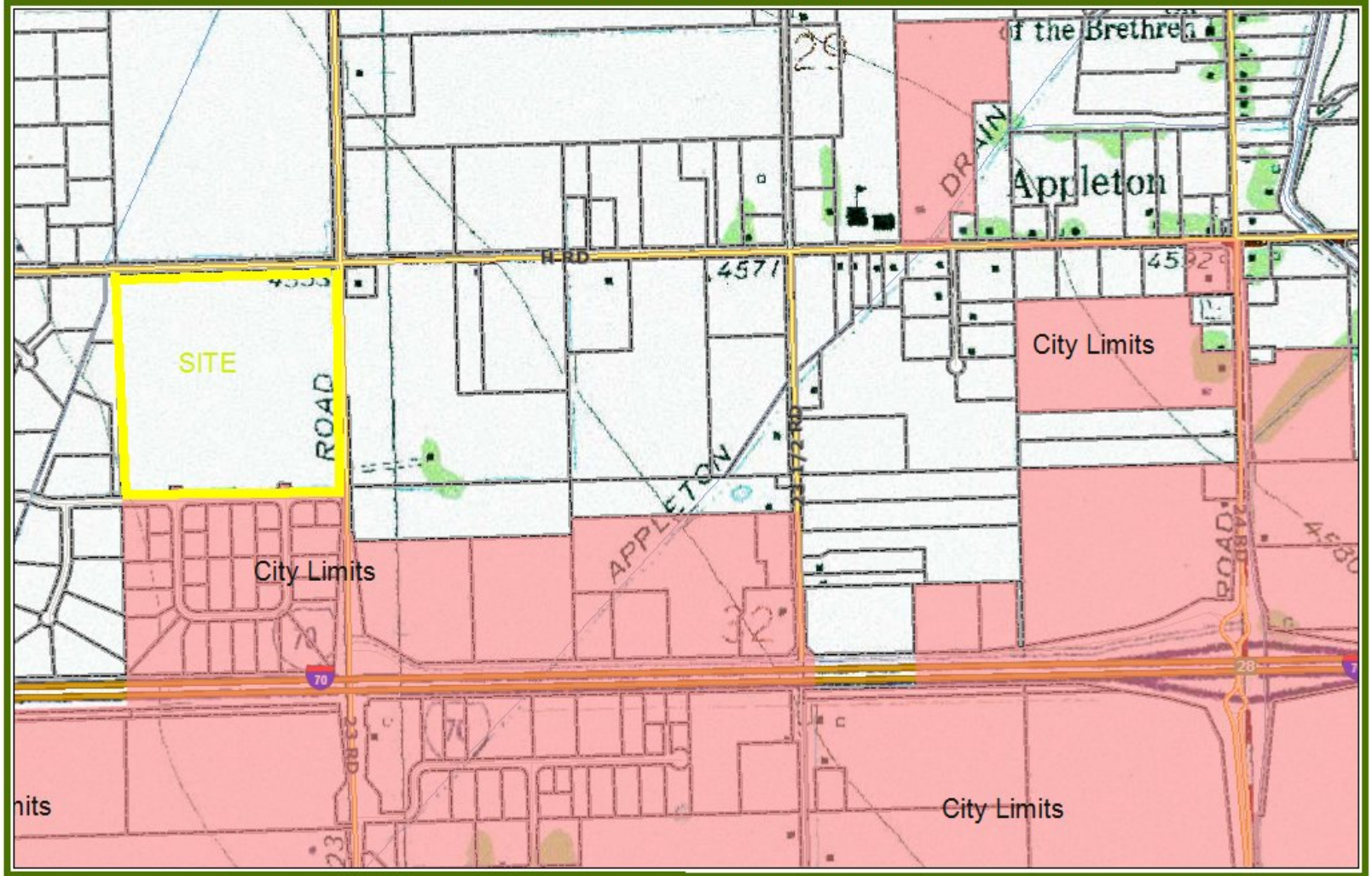
CITY OF Grand Junction COLORADO

PUBLIC WORKS AND UTILITIES ENGINEERING DIVISION SURVEY DEPARTMENT

TAURUS PARK PLAZA ANNEXATION

1 OF 1

Expanded City Limits Location Map



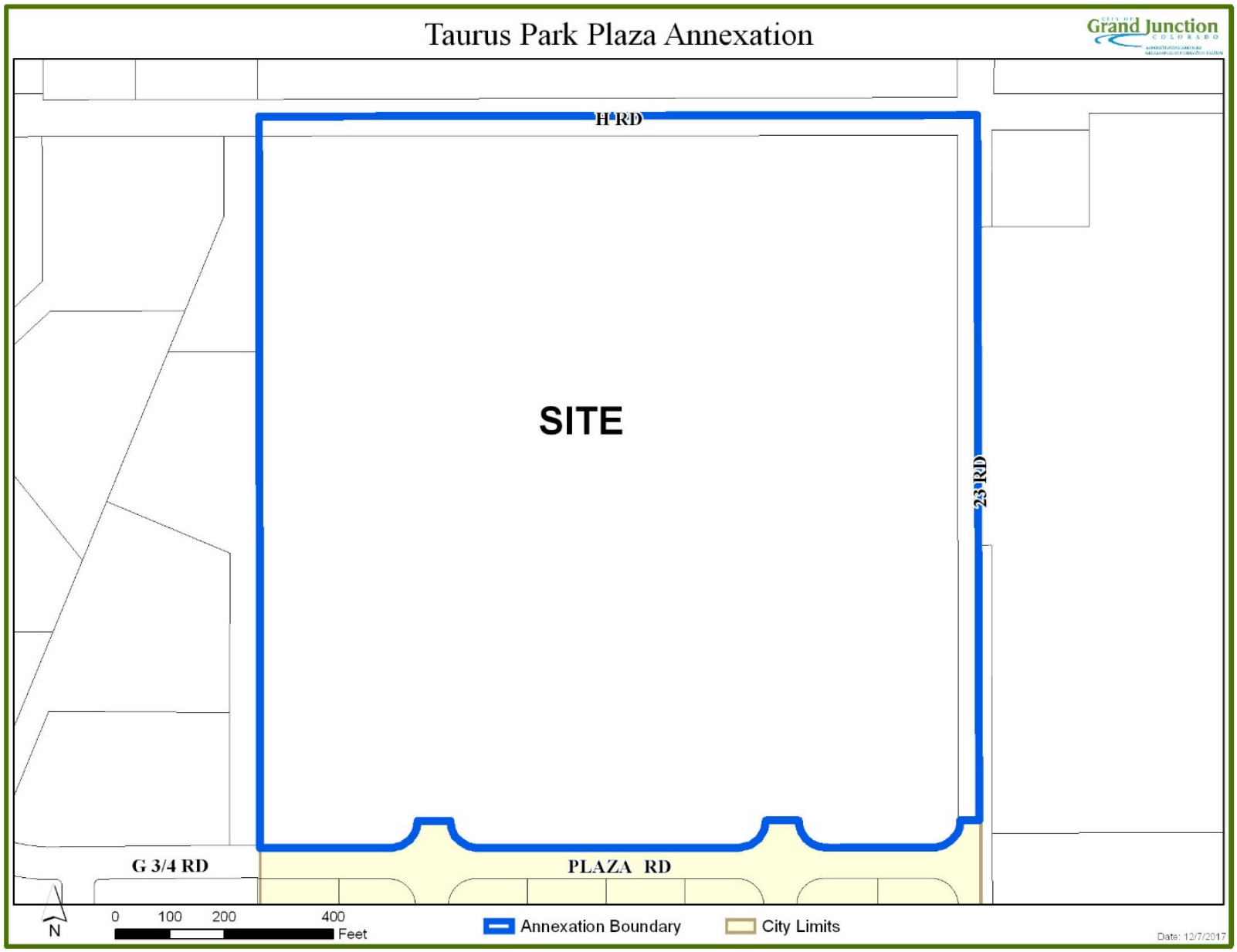
N

0 0.2 0.4 Miles

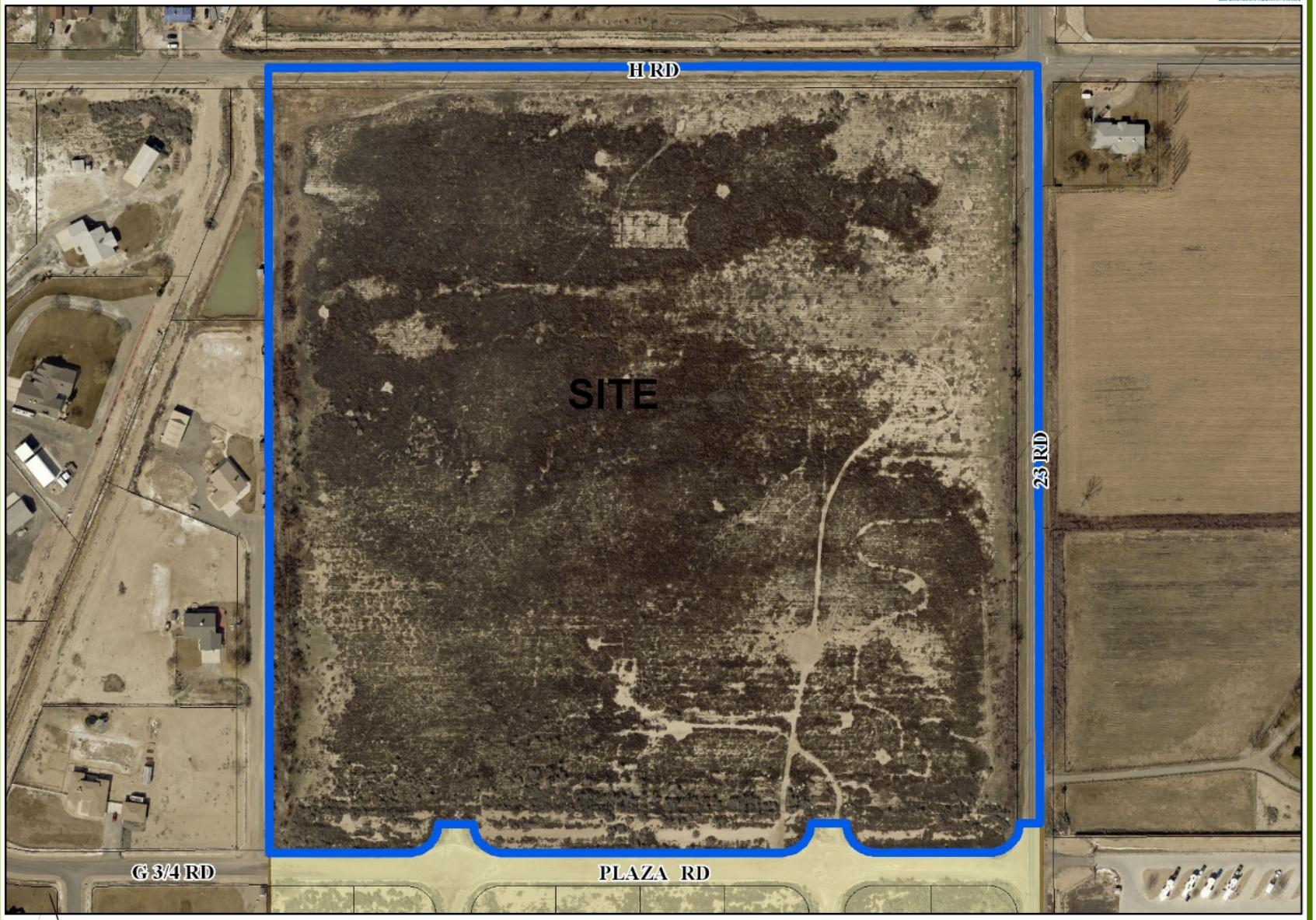
Printed: 12/8/2017

1 inch = 752 feet

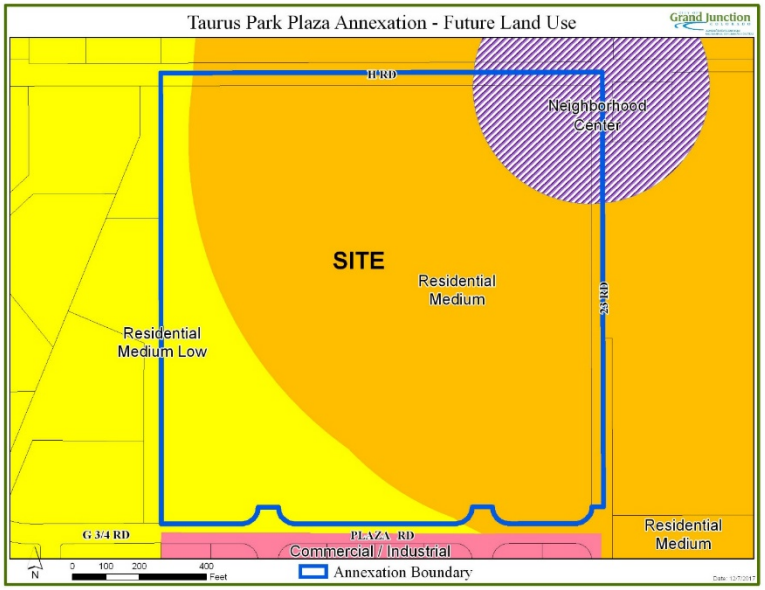
City of Grand Junction Colorado

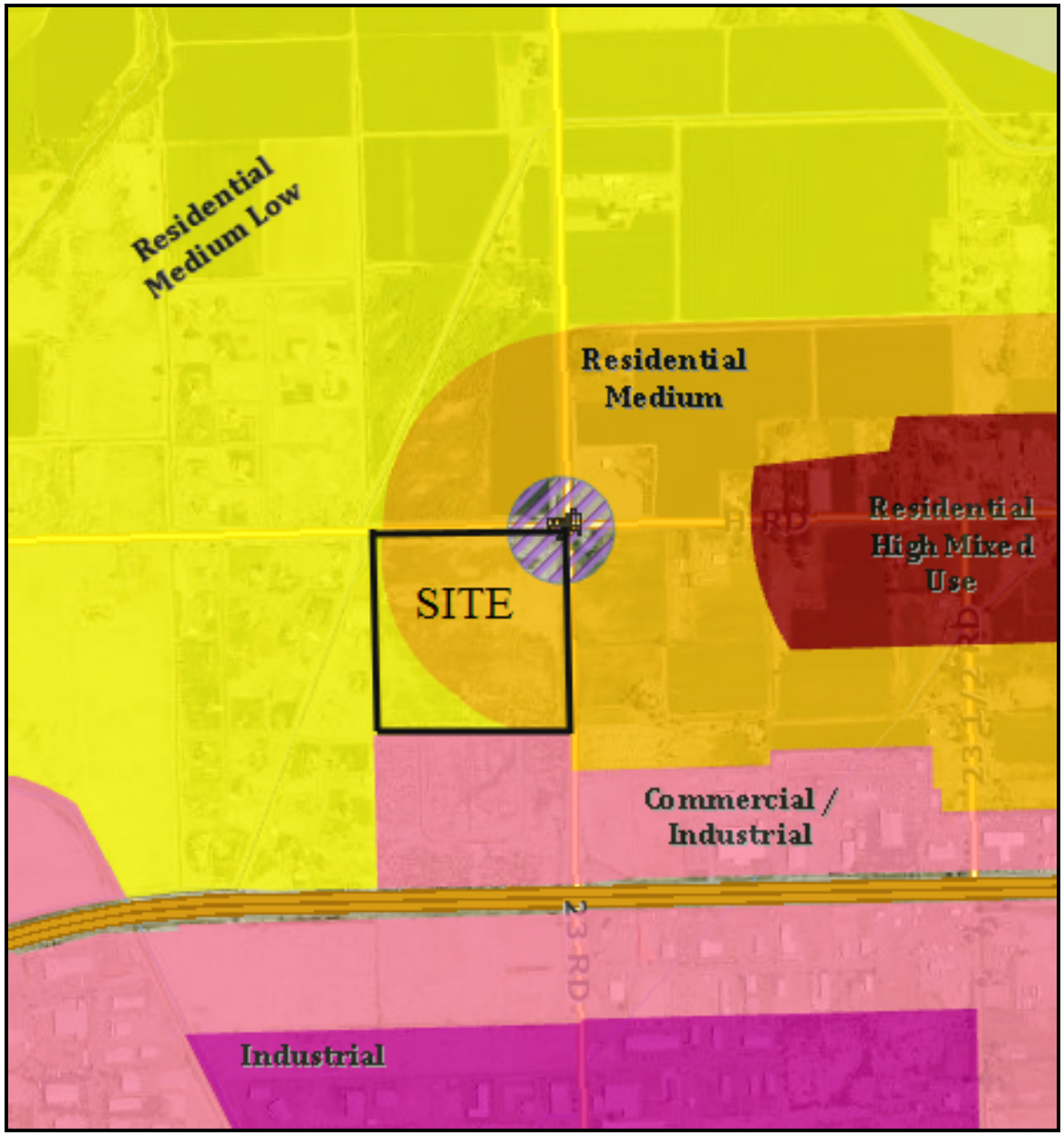

Taurus Park Plaza Annexation
Grand Junction
COLORADO
H RD
SITE
23 RD
G 3/4 RD
PLAZA RD
N
0
100
200
400
Feet
Annexation Boundary
City Limits
Date: 12/7/2017

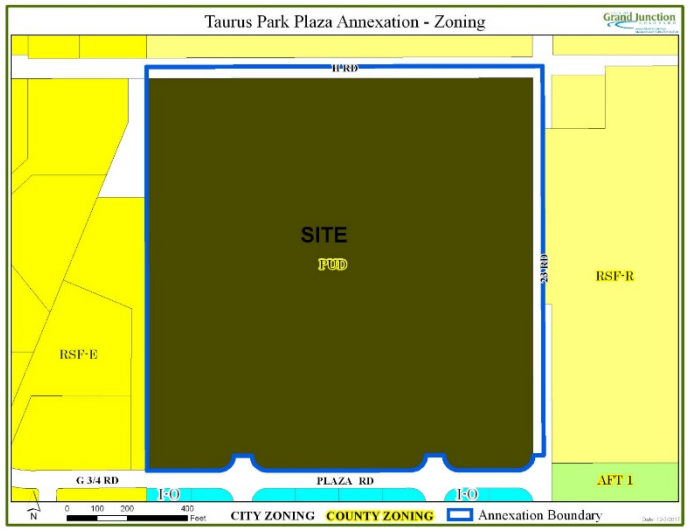
Taurus Park Plaza Annexation



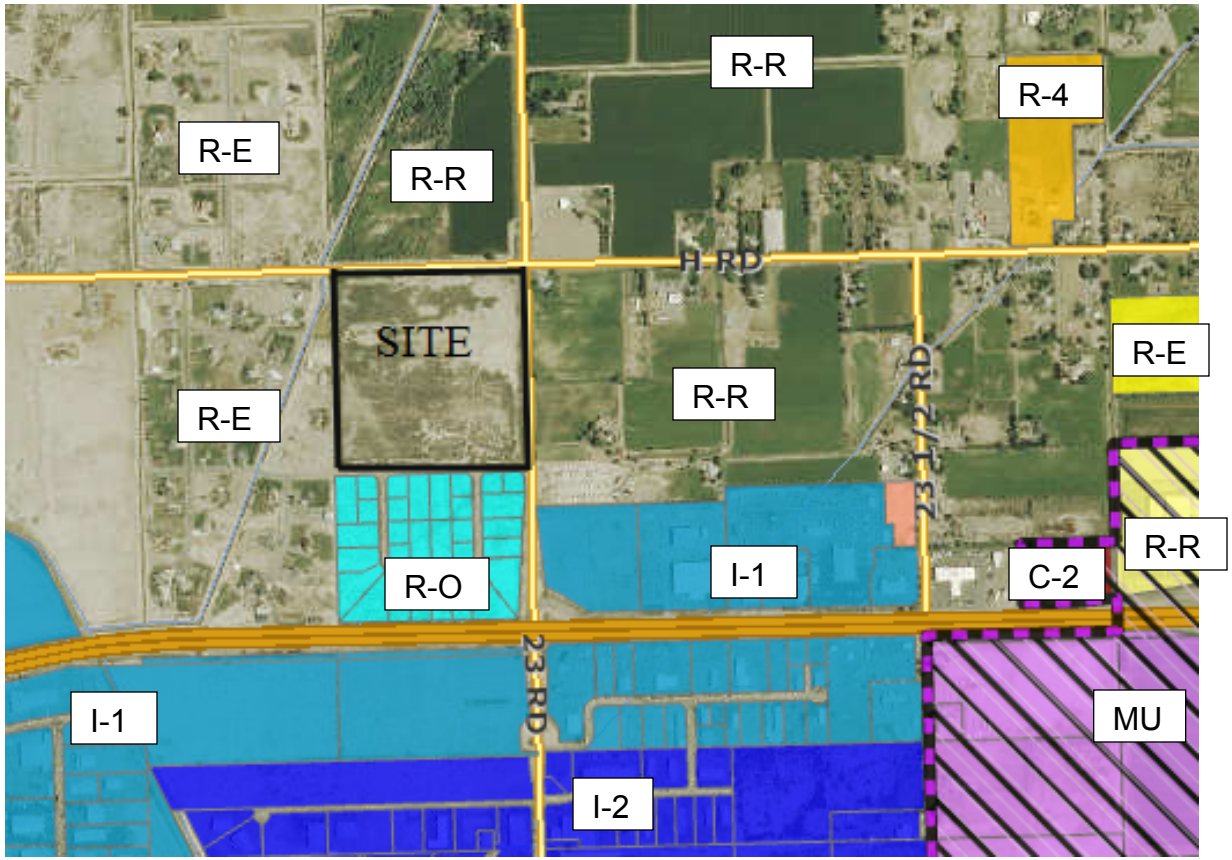
Future Land Use Map






Taurus Park Plaza Annexation - Zoning
Grand Junction
H RD
SITE
PUD
RSF-R
RSF-E
23RD
G 3/4 RD
PLAZA RD
I-O
I-O
AFT 1
N
0 100 200 400 Feet
CITY ZONING
COUNTY ZONING
Annexation Boundary

Zoning Map


R-R
R-4
R-E
R-R
H RD
SITE
R-E
R-R
23 1/2 RD
R-E
R-R
R-O
I-1
C-2
23 RD
I-1
MU
I-2

CITY OF GRAND JUNCTION, COLORADO

RESOLUTION NO. ____

A RESOLUTION ACCEPTING A PETITION FOR THE ANNEXATION OF LANDS TO THE CITY OF GRAND JUNCTION, COLORADO, MAKING CERTAIN FINDINGS, AND DETERMINING THAT THE 40.414 ACRE TAURUS PARK PLAZA ANNEXATION, LOCATED AT 789 23 ROAD, IS ELIGIBLE FOR ANNEXATION

WHEREAS, on the 3rd day of January 2018, a petition was referred to the City Council of the City of Grand Junction, Colorado, for annexation to said City of the following property situate in Mesa County, Colorado, and described as follows:

TAURUS PARK PLAZA ANNEXATION

A certain parcel of land lying in the Northeast Quarter of the Northeast Quarter (NE 1/4 NE 1/4) and the Southeast Quarter of the Northeast Quarter (SE 1/4 NE 1/4) of Section 31, Township 1 North, Range 1 West of the Ute Principal Meridian, County of Mesa, State of Colorado and being more particularly described as follows:

ALL of that certain parcel of land, bounded on the North by the North line of the NE 1/4 NE 1/4 of said Section 31; bounded on the East by the East line of the NE 1/4 NE 1/4 of said Section 31; bounded on the West by the West line of the NE 1/4 NE 1/4 of said Section 31 and Bounded on the South by the North line of the Twenty Three Park Plaza Annexation, City of Grand Junction Ordinance No. 3779, as same is recorded in Book 3914, Page 781, Public Records of Mesa County, Colorado, LESS HOWEVER, any portion of the NE 1/4 NE 1/4 of said Section 31 lying within said Twenty Tree Park Plaza Annexation.

CONTAINING 1,760,453 Square Feet or 40.414 Acres, more or less, as described

WHEREAS, a hearing on the petition was duly held after proper notice on the 7th day of February 2018; and

WHEREAS, the Council has found and determined and does hereby find and determine that said petition is in substantial compliance with statutory requirements therefore, that one-sixth of the perimeter of the area proposed to be annexed is contiguous with the City; that a community of interest exists between the territory and the City; that the territory proposed to be annexed is urban or will be urbanized in the near future; that the said territory is integrated or is capable of being integrated with said City; that no land held in identical ownership has been divided without the consent of the landowner; that no land held in identical ownership comprising more than twenty acres which, together with the buildings and improvements thereon, has an assessed valuation in excess of two hundred thousand dollars is included without the landowner's consent; and that no election is required under the Municipal Annexation Act of 1965.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GRAND JUNCTION:

The said territory is eligible for annexation to the City of Grand Junction, Colorado, and should be so annexed by Ordinance.

ADOPTED the 7th day of February, 2018.

_____
President of the Council

Attest:

_____
City Clerk

CITY OF GRAND JUNCTION, COLORADO

ORDINANCE NO. ___

AN ORDINANCE ANNEXING TERRITORY TO THE CITY OF GRAND JUNCTION, COLORADO

TAURUS PARK PLAZA ANNEXATION

APPROXIMATELY 40.414 ACRES LOCATED AT 789 23 ROAD

WHEREAS, on the 3rd day of January 2018, the City Council of the City of Grand Junction considered a petition for the annexation of the following described territory to the City of Grand Junction; and

WHEREAS, a hearing on the petition was duly held after proper notice on the 7th day of February 2018; and

WHEREAS, the City Council determined that said territory was eligible for annexation and that no election was necessary to determine whether such territory should be annexed;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF GRAND JUNCTION, COLORADO:

That the property situate in Mesa County, Colorado, and described to wit:

TAURUS PARK PLAZA ANNEXATION

A certain parcel of land lying in the Northeast Quarter of the Northeast Quarter (NE 1/4 NE 1/4) and the Southeast Quarter of the Northeast Quarter (SE 1/4 NE 1/4) of Section 31, Township 1 North, Range 1 West of the Ute Principal Meridian, County of Mesa, State of Colorado and being more particularly described as follows:

ALL of that certain parcel of land, bounded on the North by the North line of the NE 1/4 NE 1/4 of said Section 31; bounded on the East by the East line of the NE 1/4 NE 1/4 of said Section 31; bounded on the West by the West line of the NE 1/4 NE 1/4 of said Section 31 and Bounded on the South by the North line of the Twenty Three Park Plaza Annexation, City of Grand Junction Ordinance No. 3779, as same is recorded in Book 3914, Page 781, Public Records of Mesa County, Colorado, LESS HOWEVER, any portion of the NE 1/4 NE 1/4 of said Section 31 lying within said Twenty Tree Park Plaza Annexation.

CONTAINING 1,760,453 Square Feet or 40.414 Acres, more or less, as described

be and is hereby annexed to the City of Grand Junction, Colorado.

INTRODUCED on first reading on the 3rd day of January 2018 and ordered published in pamphlet form.

ADOPTED on second reading the 7th day of February 2018 and ordered published in pamphlet form.

_____
President of the Council

Attest:

_____
City Clerk

Grand Junction City Council

Regular Session

Item #8.a.

Meeting Date: February 7, 2018

Presented By: Ken Watkins, Fire Chief, Mike Nordine, Interim Police Chief

Department: Fire

Submitted By: Ken Watkins, Mike Nordine

Information

SUBJECT:

Resolutions of Intent Requesting Coverage Under the Fire and Police Defined Benefit System Administered by the Fire and Police Pension Association (FPPA) of Colorado for Sworn Firefighters and Police Officers

RECOMMENDATION:

Staff recommends adoption of the non-binding resolutions requesting partial affiliation under the FPPA Defined Benefit System administered by the Fire and Police Pension Association ("FPPA") for eligible Fire and Police Department members currently covered by the City of Grand Junction Fire and Police Retirement Plans.

EXECUTIVE SUMMARY:

On December 18, 2017, City Council authorized Staff to begin the initial planning stages of partial conversion for the City's Fire and Police Retirement Plans to the FPPA Defined Benefit System. A necessary step in this conversion process is the submittal to FPPA of a non-binding resolution adopted by City Council indicating the City's intent to partially convert the existing Grand Junction defined contribution Fire and Police Retirement Plans to the FPPA Defined Benefit System. The proposed resolutions, which were prepared by City and have been reviewed and approved by FPPA, are attached for Council review and recommended adoption.

In order to affiliate with FPPA the following steps must be completed:

1) Submittal of a non-binding resolution approved by City Council as pension plan provider requesting coverage under FPPA; and,
2) General education sessions provided by FPPA to eligible employees; and,

3) Completion of individual pension comparisons by FPPA for each employee; and,
4) Final approval by City Council to affiliate and filing of Certification of Compliance.

Staff has targeted September 9, 2018 as the date of conversion for eligible Fire and Police employees to the FPPA plan. The criteria for partial conversion from the Grand Junction Fire and Police Retirement Plans to the FPPA plan is that conversion be in the best interests of the City and its employees and that a minimum threshold number of employees are interested.

BACKGROUND OR DETAILED INFORMATION:

Fire and Police employees are currently in the City's Money Purchase Retirement Plan administered through the International City Manager's Association Retirement Corporation (ICMA-RC). Fire and Police Department employees have expressed an interest in evaluating retirement plan options provided by FPPA. On December 18, 2017 FPPA representatives made a presentation to City Council on the FPPA retirement plans and the process for affiliation.

The Fire and Police Pension Association (FPPA) was established January 1, 1980 and administers a statewide, multiple employer public employee retirement system offering various retirement plan options for firefighters and police officers throughout Colorado. At this time, FPPA is permitting employers to partially affiliate whereby existing firefighters and police officers individually choose to either remain covered by their employer's money purchase retirement plan or join the FPPA system. Three alternative plans are available upon affiliation for current employees (sworn personnel only): 1) Statewide Defined Benefit Plan; 2) Statewide Hybrid Plan consisting of both a defined benefit and defined contribution component; and 3) Statewide Hybrid Plan with only a defined contribution plan component. The selection of one of these plans is irrevocable once made.

The City previously evaluated FPPA as a retirement option for sworn public safety employees in 2006 and 2012. In 2006, City Council elected not to move forward with FPPA and in 2012, FPPA passed a moratorium on new enrollments pending a membership vote. Both times, FPPA required "full-entry" of all sworn employees.

On October 27, 2016, FPPA lifted the entry moratorium and began allowing "partial entry" beginning December 1, 2016. Partial entry allows existing firefighters and police officers to individually choose to either remain covered by their employer's money purchase retirement plan or join the FPPA system. Partial entry only applies to existing employees; if the City affiliates with FPPA all new employees will have FPPA retirement coverage upon employment.

Representatives of the City's Fire Retirement Board have expressed an interest in evaluating the partial entry option for sworn fire employees. On September 12, 2017 FPPA representatives presented information at the City's Joint Retirement Board meeting – the Joint Retirement Board is comprised of representatives from fire, police and general employees.

On October 5, 2017 the Fire Retirement Board requested, with a unanimous vote, to continue the process of evaluating FPPA retirement options for sworn Fire Department employees. Police representatives had requested more information for their employees before moving forward with a similar vote. An education session was offered on December 19, 2017 by FPPA representatives and was attended by over 75 police and fire employees. On January 8, 2018, the Police Retirement Board voted to also continue the process of evaluating FPPA retirement options for sworn Police Department employees.

The primary reasons for evaluating the FPPA Partial Entry plan are: 1) existing employees can have a choice between one of three FPPA plans or elect to stay in the current ICMA-RC plan; 2) a number of employees believe that the FPPA plan better represents the interest of public safety employees over the City's retirement plan; 3) sworn fire and police employees do not contribute to Social Security and a defined benefit plan could provide a "safety net" for these employees; and 4) a defined benefit plan may help in recruiting and retention of public safety employees.

Both the City Fire and Police Retirement Plans and the FPPA plan provide good retirement vehicles for plan participants. The primary differences in the two plans are as follows:

Grand Junction Fire and Police Retirement Plans (ICMA-RC)

- ICMA-RC provides an excellent defined contribution (money purchase) plan at minimal administrative cost.
- Employees are able to self-direct their personal retirement accounts or participate in managed accounts.
- The City plan offers a wide array of investment options including individual mutual funds and target date portfolios.
- The City plan requires an employee contribution of 10.65% and employer contribution of 10.65% from the first day of employment.
- Sworn Fire and Police employees do not contribute to Social Security or have Social Security benefits through the City plan.
- Participants are 100% vested after 5 years of employment.
- All assets in the participant retirement account are available either to the retiree or to the spouse or beneficiaries upon death.

Fire and Police Pension Association Plan

- Offers existing employees a choice of three plans including: the defined benefit plan, a hybrid defined benefit/defined contribution plan, or a defined contribution (money purchase) plan.
- Offers a single plan alternative at the choice of the City for employees hired after affiliation with FPPA. This plan is recommended to be the FPPA Defined Benefit plan.
- Currently requires a total 18% contribution from the first day of employment for all future firefighters and police officers. This is made up of an 8.0% minimum employer contribution and a 10% employee contribution. In 2015, members in FPPA voted to increase the employee contribution by 0.5% per year for the next eight years. In 2022, the employee contribution rate will be 12.0%. The employer contribution will remain at 8.0%.
- Currently requires a total 22% contribution for existing employees. There is a 4% differential required by FPPA for existing employees for re-affiliation. Staff is recommending this be made up of 14% employee contribution and 8% employer contribution. In 2015, members in FPPA voted to increase the employee contribution by 0.5% per year for the eight years. In 2022, the employee contribution rate will be 16.0%. The employer contribution will remain at 8.0%. For those existing employees who elect the Statewide Hybrid Plans the employee contribution is 10.65% and the employer contribution is 8.0%.
- From the first day of membership in the plan, the member is fully vested in the member contributions and any amounts “rolled over” to the plan for the member account.
- There is a five year graduated vesting schedule for the employer contributions. However, the employer contributions are 100% vested upon attaining age 55, regardless of years of service.
- If a member has at least 1 year of continuous service with the Fire or Police Department, the member may be eligible to purchase service credit for the following: all years of service in the City’s Retirement Plan, other public employment not covered by another defined benefit system, and up to 5 years of military time for which the member is not eligible for a retirement benefit. After 5 years in the FPPA plan with the same employer, a member is eligible to purchase up to 5 years of private employment for which the member is not eligible for a retirement benefit.
- FPPA may fund a Stabilization Reserve Account (SRA). When the amount of employer contributions exceed the Defined Benefit Plan’s funding requirements, a separate account is established for each participant. These accounts accrue earnings and employees are eligible to receive additional benefits from this account. If FPPA becomes under-funded, the FPPA Board may utilize amounts held in active members’ SRA accounts to fund the defined benefit plan. However, when an employee retires, funds in their SRA are theirs.

- FPPA offers a Deferred Retirement Option Plan (DROP) that allows an individual to retire, defer payment of pension payments to a separate account, and continue to work for the City for a period of up to five years. During the drop period, the employee continues to make retirement contributions but the employer does not. The employer determines on a person-by-person basis to enter into a DROP contract. The City would have to take a policy position with respect to this plan provision but it is recommended that this option be allowed.
- Spousal or beneficiary benefit payout options are available at retirement, which effectively reduces the monthly retirement amount.

Advantages of Conversion to FPPA

- Existing sworn employees can choose from one of three plans.
- Defined benefit plans may help in recruiting and retaining qualified firefighters and police officers.
- Cost of living adjustments may be awarded to the members to offset inflation.
- FPPA provides a DROP program, which helps with retention of experienced employees and succession planning and allows employees to accumulate additional funds that are available at retirement.
- Employees who are concerned with the responsibility of managing their own retirement accounts have an opportunity to participate in a defined benefit pension plan.
- The City's benefit cost is reduced due to a lower employer contribution amount.

Disadvantages of Conversion to FPPA

- If the City does decide to convert to the FPPA plan, this choice is irrevocable unless an “opt-out” provision is legislated at the state level in the future.
- Investment earnings to the FPPA defined benefit plans go to the plan and not individual participants or the employer.
- The FPPA definition of base salary includes FLSA overtime, which is currently not included in base salary.
- The City will lose policy control for employer contributions to the State Legislature.
- After conversion, new employees will only have one plan choice, which will be decided by the City. The recommended plan is the Statewide Defined Benefit Plan.
- The FPPA plan allows employees to buy prior years of service for credit toward retirement. This service credit is based on the employee’s age at the time of purchase. While this cost is actuarially sound, some employees are concerned that they may not be able to purchase their full service credit.
- If an employee does not have at least 5 years of service, employer contributions

revert to FPPA upon separation.

As of January 1, 2017, FPPA's actuarial report indicates a funding status of 101.4% in the Statewide Defined Benefit Plan and a funding status of 129.6% in the Statewide Hybrid Plan. A ratio above 100 means that FPPA's pension plan is able to cover all of the payments it is obligated to make. FPPA does have several statutory safeguards established if the plan becomes underfunded including: 1) utilize the Stabilization Reserve Account (SRA); 2) reduce Cost of Living Adjustments (COLA); 3) increase the normal retirement age from 55 up to 60; and 4) increase employer and employee contributions. The employer contribution rate for the Statewide Defined Benefit Plan has remained constant since 1980 at 8%.

City staff believe that it is appropriate at this time to proceed with the non-binding resolutions, the next step in the FPPA conversion process, and recommend City Council adopt the attached non-binding resolutions.

FISCAL IMPACT:

This action as the next step in the potential partial conversion to the FPPA Defined Benefit System does not have a direct fiscal impact. Much of what is need to perform the calculations is dependent on the level of conversion from current Fire and Police employees. Should there be interest in proceeding to the final stages of the process, fiscal impacts will be calculated and provided at that time.

SUGGESTED MOTION:

I move to adopt/deny Resolution No. 11-18 - A Resolution of intent requesting coverage under the FPPA Defined Benefit System administered by the Fire and Police Pension Association for new firefighters for the City of Grand Junction, Colorado and Resolution No. 12-18 - A Resolution of intent requesting coverage under the FPPA Defined Benefit System administered by the Fire and Police Pension Association for new police officers for the City of Grand Junction, Colorado.

Attachments

1. Non-Binding Resolution - FPPA Fire
2. Non-Binding Resolution - FPPA Police

RESOLUTION NO._____

A RESOLUTION OF INTENT REQUESTING COVERAGE UNDER THE FPPA DEFINED BENEFIT SYSTEM ADMINISTERED BY THE FIRE AND POLICE PENSION ASSOCIATION FOR NEW FIREFIGHTERS FOR THE CITY OF GRAND JUNCTION, COLORADO

RECITALS:

Pursuant to Colorado Revised Statutes 31-31-1101 and 31-31-1103 the City of Grand Junction may elect to cover all newly hired Firefighters under the Fire and Police Pension Association (FPPA) Defined Benefit System administered by FPPA in lieu of coverage under the City of Grand Junction, Grand Junction Fire Department Money Purchase Plan presently administered by ICMA-RC.

After full and careful deliberation, the City Council of the City of Grand Junction has determined that all newly hired Firefighters meeting the definition of "Member" under and as defined by C.R.S. 31-31-102 participate in the Statewide Defined Benefit Plan beginning on the Effective Date for New Hires, as defined herein.

In accordance with and pursuant to C.R.S. 31-31-1101(3.5) and 31-31-1103(1)(c.5), all current members of the City of Grand Junction, Grand Junction Fire Department Money Purchase Plan may individually elect to participate in the FPPA Defined Benefit System or may remain in the City of Grand Junction, Grand Junction Fire Department Money Purchase Plan.

At a duly noticed and lawfully convened meeting of the City Council held on this date, the City Council of the City of Grand Junction, hereafter "Employer" concluded that the following action was necessary, reasonable and proper.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GRAND JUNCTION COLORADO THAT:

1. The City of Grand Junction hereby requests that the effective date of coverage be September 9, 2018.

2. The Employer elects to offer the Members who are active prior to the Effective Date for New Hires the option of participating in the Statewide Defined Benefit Plan.

3. The Member and Employer contribution rates to the Statewide Defined Benefit Plan, Statewide Hybrid Plan, Statewide Hybrid Plan - Money Purchase Only Component and Local Money Purchase Plan on the effective date of entry, for Members who are active prior to the Effective Date for New Hires shall be as indicated on Exhibit A of this resolution.

4. The City of Grand Junction elects to cover all Members hired on or after the Certification of Compliance designated by the Employer (known herein as the Effective Date for New Hires), under the Statewide Defined Benefit Plan at the contribution rate set forth in Exhibit B.

5. a. The Employer intends to transfer all of the current active Members' account balances to FPPA to the Money Purchase Component of the Statewide Hybrid Plan.

b. The Employer does not intend to transfer the retired Members' account balances to the Money Purchase Component of the Statewide Hybrid Plan.

c. The Employer does not intend to transfer the 100% vested Inactive Members' account balances to the Money Purchase Component of the Statewide Hybrid Plan.

6. The Members' Employer accounts shall be 100% vested upon transfer to the FPPA Defined Benefit System.

7. The Local Money Purchase Plan does provide for loans to plan members. Loans to plan members shall be transferred to the Money Purchase Component as part of the transfer of assets of the Local Money Purchase Plan, subject to approval and acceptance by FPPA.

8. The Employer acknowledges that the election for coverage under the FPPA Defined Benefit System is irrevocable once the final Certification of Compliance is filed by the Employer and approved by FPPA.

9. In addition to this Resolution, the City understands that it must make the certifications contained in the "Form of Certification of Compliance" attached hereto as Exhibit C; once completed by the Employer the Certification is final. Entry into the FPPA Defined Benefit System is not complete and final until the Certification is made and filed with FPPA.

10. The City, in conjunction with the FPPA, will prepare a disclosure statement which generally compares the provisions of the Local Money Purchase Plan and the Plan or Plans offered under the FPPA Defined Benefit System, as applicable. The disclosure statement will be submitted to FPPA for approval and once approved, the Employer will submit the approved disclosure statement to all eligible members prior to the deadline for making individual elections.

11. In conjunction with FPPA, the City shall provide a procedure for eligible employees/members to make individual selections of plan options pursuant to the rules and procedures established by FPPA.

The City understands that if the certification of compliance for coverage under the FPPA Defined Benefit System is accepted, all future members of the Fire Department who would have been covered under the Local Money Purchase Plan, will be covered under the Statewide Defined Benefit Plan of the FPPA Defined Benefit System.

That this resolution of intent shall be certified and transmitted to FPPA for processing in accordance with all applicable law and regulations as part of the application process.

PASSED AND ADOPTED this 7TH day of February 2018.

_____

J. Merrick Taggart

Mayor and President of the City Council

ATTEST:

_____

Wanda Winkelmann

City Clerk

EXHIBIT A

Contribution Rate Schedules for Members hired prior to the effective date of entry
Statewide Defined Benefit Plan – Contribution Rate Schedule - Reentry Members

	1	*2*	*3*	*4*	*5*	*5*
Effective January 1 of Year	*Mandatory Minimum Member Contribution Rate*	*Additional Required rate for reentry members*	*Total Member Contribution Rate*	*Employer Contribution Rate*	*Total Required Rate for Reentry Members*	*Portion of the member contribution to be paid "after-tax"*
2018	*10.65%*	*3.35%*	*14.0%*	*8.0%*	*22.00%*	***3.35%***
2019	*10.65%*	*3.85%*	*14.5%*	*8.0%*	*22.50%*	***3.85%***
2020	*10.65%*	*4.35%*	*15.0%*	*8.0%*	*23.00%*	***4.35%***
2021	*10.65%*	*4.85%*	*15.5%*	*8.0%*	*23.50%*	***4.85%***
2022 and thereafter	*10.65%*	*5.35%*	*16.0%*	*8.0%*	*24.00%*	***5.35%***

Statewide Hybrid Plan - Contribution Rate Schedule - Reentry Members

1.	2.	3.	4.
Member Contribution Rate	*Employer Contribution Rate*	*Total Combined Member and Employer Contribution Rate for Reentry Members*	Portion of the Member Contribution Rate noted in column 1 to be paid "after-tax"
10.65%	***8.0%***	***18.65%***	***0%***

Note: The minimum mandatory rate for the Statewide Hybrid Plan is 8% member and 8% employer; however, a higher rate is accepted.

All contribution rates for the FPPA Plans are calculated on the member's base salary as defined in FPPA Rule 101.05.

Local Money Purchase Plan - Contribution Rate Schedule - Reentry Members

1.	2.	3.	4.
Member Contribution Rate	*Employer Contribution Rate*	*Total Combined Member and Employer Contribution Rate for Reentry Members*	Portion of the Member Contribution Rate noted in column 1 to be paid "after-tax"
10.65%	***10.65%***	***21.3%***	***0%***

EXHIBIT B

Contribution Rate Schedule for Members Hired After the Effective Date of Reentry

Statewide Defined Benefit Plan - Contribution Rate Schedule

	1.	*2.*	*3.*
Effective January 1 of Year	*Mandatory Member Contribution Rate*	*Mandatory Employer Contribution Rate*	*Total Combined Member and Employer Contribution Rate*
2018	*10.0%*	*8.0%*	*18.0%*
2019	*10.5%*	*8.0%*	*18.5%*
2020	*11.0%*	*8.0%*	*19.0%*
2021	*11.5%*	*8.0%*	*19.5%*
2022 and thereafter	*12.0%*	*8.0%*	*20.0%*

EXHIBIT C

Form of Certification of Compliance

In order to comply with Colorado Revised Statutes 31-31-1101 it is necessary for the City to certify the following to the FPPA Board of Directors:

a) the City of Grand Junction Fire Department's Local Money Purchase Plan meets the qualification requirements of the Federal "Internal Revenue Code of 1986" that are applicable to governmental plans;

b) by separate action the City has adopted a Resolution to partially terminate participation in the Local Money Purchase Plan on the Effective Date of Resolution # ___ (FPPA Resolution) in accordance with the terms of that plan;

c) the Resolution partially terminating participation does not adversely affect the qualified status of the Local Money Purchase Plan;

d) the rights of the members in the Local Money Purchase Plan who were affected by the partial termination of the Local Money Purchase Plan to benefits accrued to the date of termination are non-forfeitable;

e) active Members in the Local Money Purchase Plan who have so elected (the Transferred Members), as of the Effective Date shall become Members in the FPPA Defined Benefit System;

f) the Employer will transfer or cause to be transferred to the FPPA Defined Benefit System all assets of the Local Money Purchase Plan that are attributable to the accrued benefits of the Transferred Members, pursuant to the procedure established by the Board;

g) all Employer and employee contributions required to be made to the Local Money Purchase Plan as of the date of the partial termination have been made;

h) Transferred Members in the Local Money Purchase Plan shall not incur a reduction in their account balances in their Local Money Purchase Plan, determined as of the Effective Date, as a result of their transfer to the FPPA Defined Benefit System. For vesting purposes with regard to the Local Money Purchase Plan account balances and with regard to the Money Purchase component of the FPPA Defined Benefit System, years of service in the Local Money Purchase Plan shall be combined with Years of Service in the Money Purchase Component of the FPPA Defined Benefit System. For vesting purposes with regard to the Defined Benefit component of the FPPA Defined Benefit System, Years of Service Credit shall be based upon service credit either earned or purchased while in the FPPA Defined Benefit System; and

i) The Employer agrees to participate in the FPPA Defined Benefit System and to be bound by the terms of the FPPA Defined Benefit System and the decisions and actions of the Board with respect to the FPPA Defined Benefit System.

j) All Members hired on or after [date: either the Effective Date or an earlier date after this filing of the Certification of Compliance, designated by the Employer], the Effective Date for New Hires, shall participate in the FPPA Defined Benefit System, as previously determined by the Employer

k) There are no outstanding loans, liens, assignments, court order including domestic relationship orders, or other types of encumbrances of any nature against any funds transferred to the Statewide Defined Benefit System by the Trustee of the local money purchase plan, except those loans to plan members as described on Exhibit D. The employer will notify FPPA at the time of transfer of any pending domestic relationship orders.

EXHIBIT D

Loans to Plan Members

(Preparer may use a spreadsheet format)

For each loan, please list the following information:

Member Name:

Social Security Number:

Loan ID:

Interest Rate:

Origination Date:

First Payment Date:

Payments per Year:

Payment Frequency (Q/M/B/W/2/3/4):

Total number of Payments:

Regular Payment Amount:

Home Loan or General Loan:

Total Original Loan Amount:

*Original Loan Amount (Source/Amount/Fund) (if reinv. Type 1):

Principal Balance on Valuation Date:

*Only needed if the Plan allowed loans from multiple sources. If the participant's loan came from multiple sources (such as Employee and Employer), indicate how much came from each source. This enables Fidelity to calculate what percentage of the loan repayment goes back to each source. This should add up to the "Total Original Loan Amount".

RESOLUTION NO._____

A RESOLUTION OF INTENT REQUESTING COVERAGE UNDER THE FPPA DEFINED BENEFIT SYSTEM ADMINISTERED BY THE FIRE AND POLICE PENSION ASSOCIATION FOR NEW POLICE OFFICERS FOR THE CITY OF GRAND JUNCTION, COLORADO

RECITALS:

Pursuant to Colorado Revised Statutes 31-31-1101 and 31-31-1103 the City of Grand Junction may elect to cover all newly hired Police Officers under the Fire and Police Pension Association (FPPA) Defined Benefit System administered by FPPA in lieu of coverage under the City of Grand Junction, Grand Junction Police Department Money Purchase Plan presently administered by ICMA-RC.

After full and careful deliberation, the City Council of the City of Grand Junction has determined that all newly hired Police Officers meeting the definition of "Member" under and as defined by C.R.S. 31-31-102 participate in the Statewide Defined Benefit Plan beginning on the Effective Date for New Hires, as defined herein.

In accordance with and pursuant to C.R.S. 31-31-1101(3.5) and 31-31-1103(1)(c.5), all current members of the City of Grand Junction, Grand Junction Police Department Money Purchase Plan may individually elect to participate in the FPPA Defined Benefit System or may remain in the City of Grand Junction, Grand Junction Police Department Money Purchase Plan.

At a duly noticed and lawfully convened meeting of the City Council held on this date, the City Council of the City of Grand Junction, hereafter "Employer" concluded that the following action was necessary, reasonable and proper.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GRAND JUNCTION COLORADO THAT:

1. The City of Grand Junction hereby requests that the effective date of coverage be September 9, 2018.

2. The Employer elects to offer the Members who are active prior to the Effective Date for New Hires the option of participating in the Statewide Defined Benefit Plan.

3. The Member and Employer contribution rates to the Statewide Defined Benefit Plan, Statewide Hybrid Plan, Statewide Hybrid Plan - Money Purchase Only Component and Local Money Purchase Plan on the effective date of entry, for Members who are active prior to the Effective Date for New Hires shall be as indicated on Exhibit A of this resolution.

4. The City of Grand Junction elects to cover all Members hired on or after the Certification of Compliance designated by the Employer (known herein as the Effective Date for New Hires), under the Statewide Defined Benefit Plan at the contribution rate set forth in Exhibit B.

5. a. The Employer intends to transfer all of the current active Members' account balances to FPPA to the Money Purchase Component of the Statewide Hybrid Plan.

b. The Employer does not intend to transfer the retired Members' account balances to the Money Purchase Component of the Statewide Hybrid Plan.

c. The Employer does not intend to transfer the 100% vested Inactive Members' account balances to the Money Purchase Component of the Statewide Hybrid Plan.

6. The Members' Employer accounts shall be 100% vested upon transfer to the FPPA Defined Benefit System.

7. The Local Money Purchase Plan does provide for loans to plan members. Loans to plan members shall be transferred to the Money Purchase Component as part of the transfer of assets of the Local Money Purchase Plan, subject to approval and acceptance by FPPA.

8. The Employer acknowledges that the election for coverage under the FPPA Defined Benefit System is irrevocable once the final Certification of Compliance is filed by the Employer and approved by FPPA.

9. In addition to this Resolution, the City understands that it must make the certifications contained in the "Form of Certification of Compliance" attached hereto as Exhibit C; once completed by the Employer the Certification is final. Entry into the FPPA Defined Benefit System is not complete and final until the Certification is made and filed with FPPA.

10. The City, in conjunction with the FPPA, will prepare a disclosure statement which generally compares the provisions of the Local Money Purchase Plan and the Plan or Plans offered under the FPPA Defined Benefit System, as applicable. The disclosure statement will be submitted to FPPA for approval and once approved, the Employer will submit the approved disclosure statement to all eligible members prior to the deadline for making individual elections.

11. In conjunction with FPPA, the City shall provide a procedure for eligible employees/members to make individual selections of plan options pursuant to the rules and procedures established by FPPA.

The City understands that if the certification of compliance for coverage under the FPPA Defined Benefit System is accepted, all future members of the Police Department who would have been covered under the Local Money Purchase Plan, will be covered under the Statewide Defined Benefit Plan of the FPPA Defined Benefit System.

That this resolution of intent shall be certified and transmitted to FPPA for processing in accordance with all applicable law and regulations as part of the application process.

PASSED AND ADOPTED this 7TH day of February 2018.

_____

J. Merrick Taggart

Mayor and President of the City Council

ATTEST:

_____

Wanda Winkelmann

City Clerk

EXHIBIT A

Contribution Rate Schedules for Members hired prior to the effective date of entry
Statewide Defined Benefit Plan – Contribution Rate Schedule - Reentry Members

	1	*2*	*3*	*4*	*5*	*6*
Effective January 1 of Year	*Mandatory Minimum Member Contribution Rate*	*Additional Required rate for reentry members*	*Total Member Contribution Rate*	*Employer Contribution Rate*	*Total Required Rate for Reentry Members*	*Portion of the member contribution to be paid "after-tax"*
2018	*10.65%*	*3.35%*	*14.0%*	*8.0%*	*22.00%*	***3.35%***
2019	*10.65%*	*3.85%*	*14.5%*	*8.0%*	*22.50%*	***3.85%***
2020	*10.65%*	*4.35%*	*15.0%*	*8.0%*	*23.00%*	***4.35%***
2021	*10.65%*	*4.85%*	*15.5%*	*8.0%*	*23.50%*	***4.85%***
2022 and thereafter	*10.65%*	*5.35%*	*16.0%*	*8.0%*	*24.00%*	***5.35%***

Statewide Hybrid Plan - Contribution Rate Schedule - Reentry Members

1.	2.	3.	4.
Member Contribution Rate	*Employer Contribution Rate*	*Total Combined Member and Employer Contribution Rate for Reentry Members*	Portion of the Member Contribution Rate noted in column 1 to be paid "after-tax"
10.65%	***8.0%***	***18.65%***	***0%***

Note: The minimum mandatory rate for the Statewide Hybrid Plan is 8% member and 8% employer; however, a higher rate is accepted.

All contribution rates for the FPPA Plans are calculated on the member's base salary as defined in FPPA Rule 101.05.

Local Money Purchase Plan - Contribution Rate Schedule - Reentry Members

1.	2.	3.	4.
Member Contribution Rate	*Employer Contribution Rate*	*Total Combined Member and Employer Contribution Rate for Reentry Members*	Portion of the Member Contribution Rate noted in column 1 to be paid "after-tax"
10.65%	***10.65%***	***21.3%***	***0%***

EXHIBIT B

Contribution Rate Schedule for Members Hired After the Effective Date of Reentry

Statewide Defined Benefit Plan - Contribution Rate Schedule

	1.	*2.*	*3.*
Effective January 1 of Year	*Mandatory Member Contribution Rate*	*Mandatory Employer Contribution Rate*	*Total Combined Member and Employer Contribution Rate*
2018	*10.0%*	*8.0%*	*18.0%*
2019	*10.5%*	*8.0%*	*18.5%*
2020	*11.0%*	*8.0%*	*19.0%*
2021	*11.5%*	*8.0%*	*19.5%*
2022 and thereafter	*12.0%*	*8.0%*	*20.0%*

EXHIBIT C

Form of Certification of Compliance

In order to comply with Colorado Revised Statutes 31-31-1101 it is necessary for the City to certify the following to the FPPA Board of Directors:

a) the City of Grand Junction Police Department's Local Money Purchase Plan meets the qualification requirements of the Federal "Internal Revenue Code of 1986" that are applicable to governmental plans;

b) by separate action the City has adopted a Resolution to partially terminate participation in the Local Money Purchase Plan on the Effective Date of Resolution # ___ (FPPA Resolution) in accordance with the terms of that plan;

c) the Resolution partially terminating participation does not adversely affect the qualified status of the Local Money Purchase Plan;

d) the rights of the members in the Local Money Purchase Plan who were affected by the partial termination of the Local Money Purchase Plan to benefits accrued to the date of termination are non-forfeitable;

e) active Members in the Local Money Purchase Plan who have so elected (the Transferred Members), as of the Effective Date shall become Members in the FPPA Defined Benefit System;

f) the Employer will transfer or cause to be transferred to the FPPA Defined Benefit System all assets of the Local Money Purchase Plan that are attributable to the accrued benefits of the Transferred Members, pursuant to the procedure established by the Board;

g) all Employer and employee contributions required to be made to the Local Money Purchase Plan as of the date of the partial termination have been made;

h) transferred Members in the Local Money Purchase Plan shall not incur a reduction in their account balances in their Local Money Purchase Plan, determined as of the Effective Date, as a result of their transfer to the FPPA Defined Benefit System. For vesting purposes with regard to the Local Money Purchase Plan account balances and with regard to the Money Purchase component of the FPPA Defined Benefit System, years of service in the Local Money Purchase Plan shall be combined with Years of Service in the Money Purchase Component of the FPPA Defined Benefit System. For vesting purposes with regard to the Defined Benefit component of the FPPA Defined Benefit System, Years of Service Credit shall be based upon service credit either earned or purchased while in the FPPA Defined Benefit System; and

i) the Employer agrees to participate in the FPPA Defined Benefit System and to be bound by the terms of the FPPA Defined Benefit System and the decisions and actions of the Board with respect to the FPPA Defined Benefit System.

j) all Members hired on or after [date: either the Effective date or an earlier date after this filing of the Certification of compliance, designated by the Employer]**,** shall participate in the FPPA Defined Benefit System, as previously determined by the Employer

k) There are no outstanding loans, liens, assignments, court order including domestic relationship orders, or other types of encumbrances of any nature against any funds transferred to the Statewide Defined Benefit System by the Trustee of the local money purchase plan, except those loans to plan members as described on Exhibit D. The employer will notify FPPA at the time of transfer of any pending domestic relationship orders.

EXHIBIT D

Loans to Plan Members

(Preparer may use a spreadsheet format)

For each loan, please list the following information:

Member Name:

Social Security Number:

Loan ID:

Interest Rate:

Origination Date:

First Payment Date:

Payments per Year:

Payment Frequency (Q/M/B/W/2/3/4):

Total number of Payments:

Regular Payment Amount:

Home Loan or General Loan:

Total Original Loan Amount:

*Original Loan Amount (Source/Amount/Fund) (if reinv. Type 1):

Principal Balance on Valuation Date:

*Only needed if the Plan allowed loans from multiple sources. If the participant's loan came from multiple sources (such as Employee and Employer), indicate how much came from each source. This enables Fidelity to calculate what percentage of the loan repayment goes back to each source. This should add up to the "Total Original Loan Amount".

Grand Junction City Council

Regular Session

Item #9.a.

Meeting Date: February 7, 2018

Presented By: Kathy Portner, Community Services Manager

Department: Community Development

Submitted By: Kathy Portner

Information

SUBJECT:

Consider a request for a North Avenue Catalyst Grant in the Amount of $10,000 for Best Built Homes, Located at 1401 Glenwood Avenue

RECOMMENDATION:

The North Avenue Catalyst Grant committee reviewed the proposal at a meeting held on January 18th and recommended approval of the request.

EXECUTIVE SUMMARY:

The Applicant Best Built Homes submitted an application for a grant of $10,000 from the North Avenue Catalyst Grant Program. The amount requested is for façade improvements for a building that fronts North Avenue with an address of 1401 Glenwood Avenue. The request is consistent with the purpose of the North Avenue Catalyst Grant Program.

BACKGROUND OR DETAILED INFORMATION:

In November 2014, the City Council established a grant program in an effort to help revitalize North Avenue. The grant program requires a 50% match from the property/business owner with grant available in an amount up to $10,000 per property. Projects meeting the requirements of the program and approved by City Council are considered for funding on a first-come first-serve basis.

The Applicant has purchased the property at 1401 Glenwood Avenue, which fronts on North Avenue, and has moved G.J. Gardner Homes into that location. The property owner is proposing front building front façade and landscaping improvements on the

site with a total estimated cost of $26,802.84. Improvements include replacing the roofing material (approximately 65% of the front elevation) to match a new Pergola, replacing three parking spaces in the North Avenue frontage with an enclosed patio with rock columns and metal railing, and landscaping.

FISCAL IMPACT:

$30,000 has been budgeted in 2018 for the North Avenue Catalyst Grant program and the Change in Use Incentive Grant program. Thai Number Nine was recently awarded a Change in Use Incentive Grant of $2,746.21. If the requested $10,000 is granted to Best Built Homes, $17,253.79 will remain in the fund.

SUGGESTED MOTION:

I move to approve/deny the North Avenue Catalyst Grant request from Best Built Homes, located at 1401 Glenwood Avenue, in the amount of $10,000.

Attachments

1. Application
2. Supporting Documents

DETACH & RETURN TO CITY OF GRAND JUNCTION

Grand Junction Commercial Catalyst Improvement Grant Program

APPLICATION

Please note that application will not be considered until all information is submitted to the City Community Development Division, 250 N. 5th Street, Grand Junction, CO 81501, or scan and email to planning@gjcity.org.

Name of Applicant(s): 1401 Glenwood LLC

Mailing Address: 561 25 Rd Grand Junction, Co 81501

Phone Number(s): 970-234-2052

Email: baleria1@aol.com

Project Address: 1401 Glenwood Ave

Business Name: G.J. Gardner Homes **Parcel Number:** 2945-123-21-017

Work to be performed on Front Façade Improvements and/or Pedestrian Safety & Streetscape (check all that apply):

- ✓ Repair, restoration, or installation of exterior masonry, stucco or siding
- ✓ Repair, replacement or installation of exterior awnings, window trim and doors
- ✓ Exterior lighting upgrades
- ___ Signage upgrades (removal of pole sign and signage placed on façade and/or monument sign with maximum height 12 ft.)
- ✓ Addition of a plaza, fountain, outdoor dining or other pedestrian features in front of building and abutting North Avenue
- ___ Construction of detached sidewalks and park-strip running the entire length of the property
- ___ Construction and/or installation of park-strip hardscape features
- ✓ Design/Architect services for project (up to $1,500)
- ___ Renovation of front entryway to make more accessible
- ___ Other (please describe) Remove asphalt in front of building and pour back with Concrete.

Projected Start/Finish Dates for Project: February 1, 2018

Total Estimated Cost of Improvements: $ 26,802.84

Grant Program Amount Requested: $ 10,000.00

3/6

Grand Junction Commercial Catalyst Grant Program

AGREEMENTS AND CONDITIONS

1. The following information must be submitted with your application: plans drawn to 30 scale; samples or depictions of finishes to be used; photos of existing condition of property; and detailed budget of project including cost estimates by contractors.

2. By submitting and signing this Application, the Applicant certifies and agrees to all terms and conditions of the Program, including:

   - The Applicant is in good standing with the City including payment of all taxes to the City of Grand Junction.
   - The Applicant agrees to adhere to the goals and vision for North Avenue as established in the Comprehensive Plan and the North Avenue Corridor Plans.
   - The Applicant agrees that all improvements to be undertaken will be consistent with all applicable zoning and building codes. Grand Junction Planning Commission or City Council review, where required must be conducted prior to commencement of work on the catalyst project. All permits and other requirements are the Applicant's sole responsibility.
   - The project must be started within three months of approval and completed within twelve months of approval to be eligible for reimbursement. Any work done on the project prior to approval of application is ineligible for reimbursement.
   - Only the work that is described in the application and approved by the Grand Junction City Council shall be eligible for reimbursement. Disbursement of funds will be made only after the entire project is complete and passes required inspections.
   - The Applicant must submit before and after photos of the project, copies of invoices, receipts, and a signed itemized statement of the total cost of the project to the City. All documentation for reimbursement must be provided to the City at time of request, with a maximum of two reimbursements. All receipts must be provided no more than 15 months after the application has been approved.
   - The Applicant understands that he/she is responsible for all construction management, including but not limited to traffic control and any permits required by the Colorado Department of Transportation (CDOT).
   - The project grant award will at all times be within the program guidelines. The amount designated by the City will not be increased due to cost overruns, changes in scope or other changes made or necessitated by the applicant, its agents and/or financiers.
   - It is expressly understood and agreed that the Applicant shall be solely responsible for all safety conditions and compliance with all applicable regulations, codes, and ordinances.
   - The Applicant shall indemnify, protect, defend, and hold harmless the City of Grand Junction and its agents and employees from all claims, damages, lawsuits, costs, and expenses for any property damage, personal injury, or other loss relating in any way to the Grand Junction Commercial Catalyst Grant Program.

Applicant's Signature: Laurie Ball Date: 1/12/18

Attest: (if LLC, Corporation or Legal Entity other than Sole Proprietorship)

Owner's Signature (if different): _____ Date: _____

Attest: (if LLC, Corporation or Legal Entity other than Sole Proprietorship)

Revised 9/16/15

Escalante Builders
2925 N. Ave
Grand Junction, Co 81501

January 12, 2018

To: G.J. Gardner Homes
RE: New Office Building - Revised

Quote No : 00136
Site Address: 1401 Glenwood Ave - Grand Junction, Co 81501

Thank you for choosing Escalante Builders.

Please find below the quote for the C05-1401.

		Qty	Units	Price
•	Permits & Fees -	1.000	ea	$400.00
•	Architectural Drawings	1.000	ea	$1,500.00
•	Remodel front elevation to plans & specs.	1.000	ea	$15,052.84
•	Remove existing concrete & haul off.	1.000	ea	$2,450.00
•	Pour front patio.	1.000	ea	$3,600.00
•	Purchase & Install new black aluminum hand railing around patio.	1.000	ea	$3,800.00
	The total cost is:			**$26,802.84**

This quote is valid for 30 days.

Sincerely,

Duke Cox
(Owner)

Proposal

561 25 RD Suite 101
Grand Jct, CO 81505

Proposal Date: 12/1/2017
Proposal #: ENV 280
Project:

Bill To:

1401 LLC
Lawrence Balerio
1401 Glenwood Ave
Grand Junction, Co 81501

Description	Est. Hours/Qty.	Rate	Total
General Requirements - Permits	1	425.00	425.00
Drafting/Architect/Plans	1	1,500.00	1,500.00
Framing Lumber/Labor - Exterior Trim	1	6,358.00	6,358.00
Remove & Replace Metal roof front of building only.	1	5,974.89	5,974.89
Paint Total	1	1,190.80	1,190.80
Flatwork - Remove 480 Sq Ft of existing Concrete	480	4.25	2,040.00
Flatwork - Pour Patio - Per Plans & Specs	1,120	5.00	5,600.00
Masonry - Material Form 10 - 36" Columns and wrap with Wainscoating per plan	10	310.00	3,100.00
Metal Railing Installed between columns.	70	21.00	1,470.00

Thank You for the opportunity.

Total $27,658.69



New Showroom • 1401 Glenwood Ave., Grand Junction, CO

Genesis Designs A+P, LLC © All rights reserved. 03•03•2017.

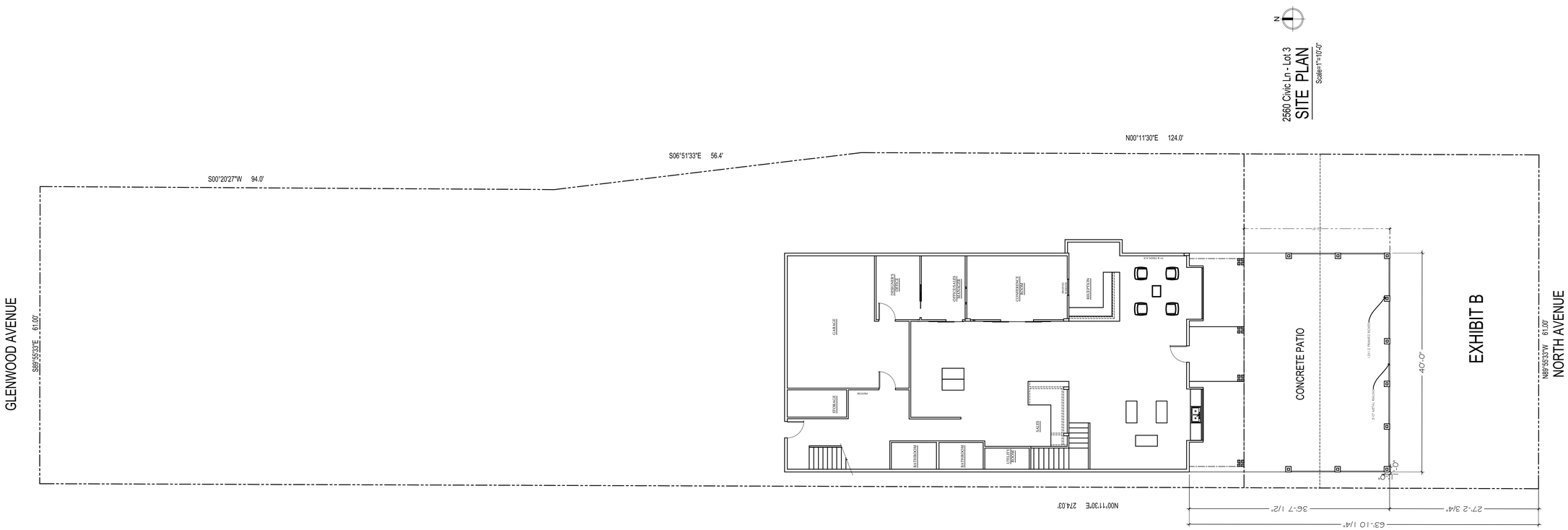
GENESIS DESIGNS A+P LLC

LEGEND

1 Stained Wood Trim
2 Telluride Stone
3 Patina Copper
4 Company Logo Signage
5 Exposed Wood Beams & Columns

Buyer Approved: _____

Date: _____



NOTE: 11"x17" Drawings are printed at Half Scale.

1401 GLENWOOD AVE.

GRAND JUNCTION, CO

Type Inclusions

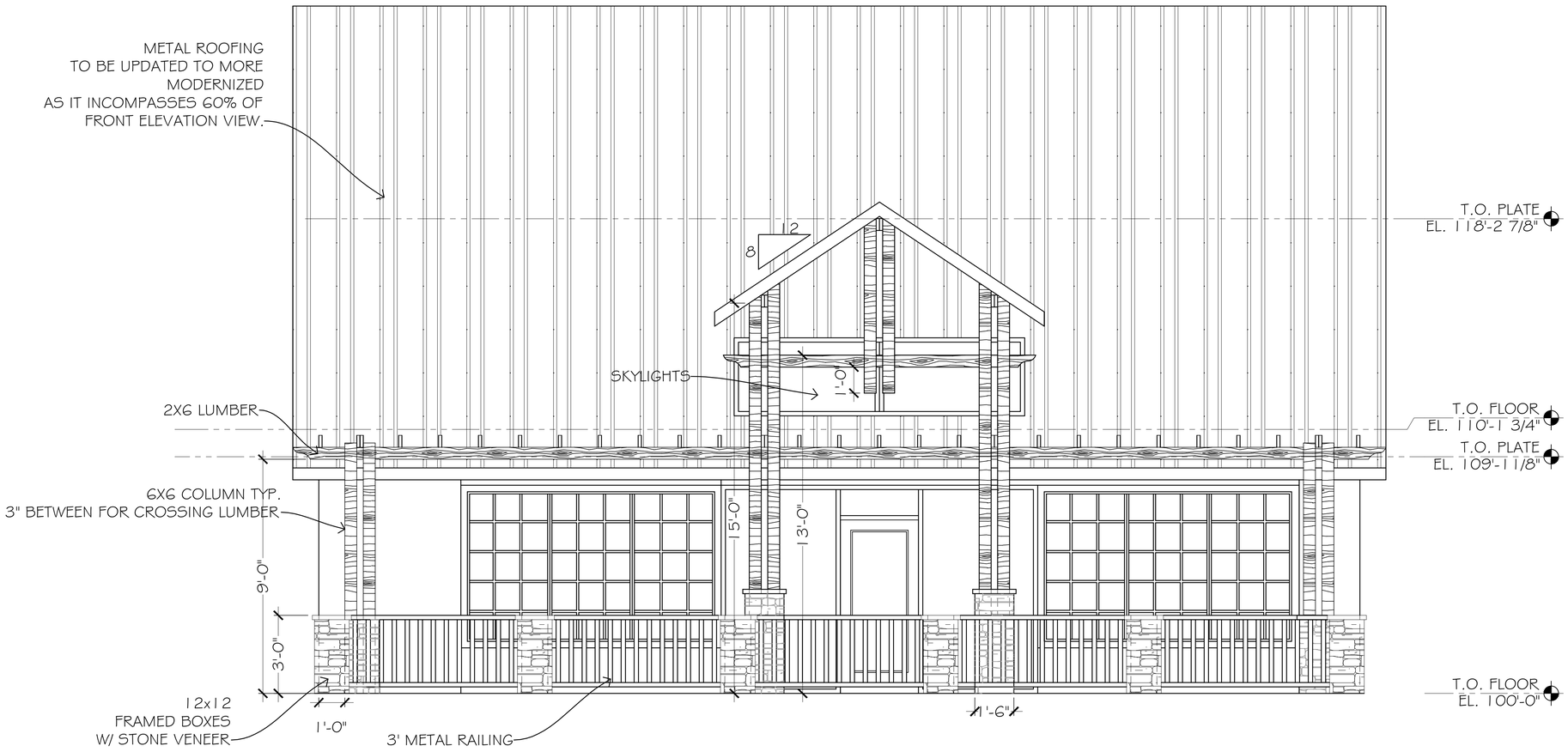
Revisions

Date/Revision Item

Phase	Date	Drawn by:
	20-DEC-17	EG

SITE PLAN

C1



FRONT ELEVATION

Scale=1:30

Grand Junction City Council

Regular Session

Item #9.b.

Meeting Date: February 7, 2018

Presented By: Scott D. Peterson, Senior Planner

Department: Community Development

Submitted By: Scott D. Peterson, Senior Planner

Information

SUBJECT:

Consider an Appeal of the Community Development Director's conditional approval of Final Plat for Pinnacle Ridge Subdivision, Filings 1 and 2

RECOMMENDATION:

The Director believes that she (1) carefully considered applicable law and acted consistent with it; (2) made appropriate findings of fact and considered all facts relevant to the determination; (3) did not act arbitrarily or capriciously; and (4) considered mitigating measures. Therefore, the Director requests and recommends that the City Council affirm the Director's conditional approval for Pinnacle Ridge Subdivision, Filings 1 and 2.

EXECUTIVE SUMMARY:

Richard Wihera, Appellant, appeals the Director's conditional approval of the Final Plat for the Pinnacle Ridge Subdivision, Filings 1 and 2, which filings include 21 single-family detached lots, two homeowner's association tracts, and remaining acreage reserved for future subdivision development all on 32.7acres. The approved Preliminary Plan for Pinnacle Ridge Subdivision comprises 45.36 acres in an R-2 (Residential – 2 du/ac) zone district with a development density of 1.59 dwelling units per acre. It is located east of Mariposa Drive and north of Monument Road in the Redlands. The Appellant alleges the Director approved the Final Plats for Filings 1 and 2 with lots that do not meet the required minimum size and and/or width. The Appellant alleges that the Director's decision is inconsistent with applicable development regulations, that the Director made erroneous findings based on the information in the record, and the Director acted arbitrarily.

BACKGROUND OR DETAILED INFORMATION:

STANDARD OF REVIEW:

Pursuant to Section 21.02.210 (c) (1) of the Zoning and Development Code, the applicable legal standard of this appeal requires the City Council to consider, based on evidence in the record, whether the Director's conditional approval of the Final Plat for Pinnacle Ridge Subdivision, Filings 1 and 2, (1) was inconsistent with the Zoning and Development Code of the City of Grand Junction or other applicable law, or (2) was based on erroneous findings of fact, or (3) failed to consider mitigating measures, or (4) acted arbitrarily, capriciously or abused her discretion. The Appellant bears the burden to show that one of these four has occurred.

PROCEDURAL HISTORY:

The Pinnacle Ridge Subdivision, at full build-out, will contain 72 single-family lots. Filings 1 and 2 contain 21 lots.

The Applicant for the subdivision, Two R & D LLC ("Applicant"), originally proposed the subdivision in 2005 and received Preliminary Plan approval in 2007 for 69 single-family lots (City file # PP-2005-226), however, no development took place due to a downturn in the local economy at the time and the project approval lapsed. In 2015, the applicant submitted a new Preliminary Plan application for 72 single-family lots on the same 45.36-acre property.

In March and April of 2017 the Grand Junction Planning Commission and City Council conducted public hearings to review and approve the Applicant's proposed private streets, streets with grades greater than 30%, and residential lots traversing greater than 30% slopes in accordance with Sections 21.06.060 (g) (5) and 21.07.020 (f) of the Zoning and Development Code. At that time, the Appellant testified at both public hearings about slope stability, minimum lot size requirements for hillside development, streets he considered too steep and long to meet Fire Department access requirements and sensitive land and ridgeline protection. The City Council conditionally approved the private streets, streets with greater than 30% grade, and lots traversing slopes of greater than 30% as provided in Resolution 21-17 (attached).

Following the approval of Resolution 21-17, the Director continued the review of the proposed Preliminary Plan and after finding compliance with Section 21.02.070 (r) conditionally approved the Preliminary Plan application (City file #SUB-2015-120) on April 19, 2017. The Director's Letter of Preliminary Plan Approval is attached and incorporated by this reference.

On June 13, 2017, the Applicant submitted a Final Plat for Filings 1 (13 Lots) and Filing 2 (8 lots), consisting of a total of 21 residential lots, for review (City file #'s SUB-2017-271 & SUB-2017-273). The Director after four rounds of comments and responses,

found that the final plans were designed in accordance with the approved Preliminary Plan, met the conditions imposed by the Resolution 21-17 and was in compliance with Section 21.02.070 (s). The Director issued an approval on December 11, 2017. That letter is attached and incorporated by this reference.

The Appellant submitted an Appeal of an Administrative Decision on December 22, 2017, alleging the Director had approved a subdivision development that does not meet the minimum Hillside Development Regulations regarding minimum lot size and/or width, that letter is attached and incorporated by this reference.

FACTUAL BACKGROUND AND APPLICABLE LAW:

The land comprising Pinnacle Ridge Subdivision is zoned Residential – 2 dwelling units/acre (R-2). The R-2 zone district requires a minimum lot size of 15,000 square feet and lot frontage of 100 feet, but the Applicant's project utilizes the cluster provisions in Section 21.03.060 which allow for smaller lots in exchange for more open space in the subdivision. The property is also subject to the hillside development regulations in Section 21.07.020 (f). Because the Applicant provided for 15.06 acres (33% of the development) of open space within the development, lots can be as small as 7,125 sq. ft. in areas with slopes ranging from 0% to 10%, taking into account and in accordance with both the hillside development standards and the cluster provisions. In addition, the cluster provisions provide that the bulk standards of the R-4 zone district apply, such that the minimum lot frontage width is only 70 feet, rather than 100 feet (See Section 21.03.040 (e) of the Zoning and Development Code).

APPELLANT'S CLAIMS AND DIRECTOR'S RESPONSE:

In summary, the Appellant claims that the Director chose the cluster provisions over the hillside development standards, ignoring the latter; however, the Director applied *both* the cluster provisions and the hillside standards, which are expressly intended to work together, and determined that the proposed development meets *both* sets of standards. The Appellant disagrees with the method the Applicant used to calculate the slope; whereas the Director found that the method used by the Applicant is the appropriate method as provided by the Code.

Appellant's Claim: The approved lot sizes do not meet the required minimums of the hillside development regulations. The Appellant claims that the average slope of the development area should be considered to be 16.06%, resulting from averaging the slope over the entire 45-acre property, and requiring a minimum lot size of 10,000 sq. ft. and 100-foot frontage.

Response: Slope is calculated developed lot by developed lot, and not by averaging the slope across the Applicant's entire property pursuant to Section 21.07.020 (f) (5).

Accordingly, the Director approved lot sizes ranging in size from 7,125 sq. ft. to 9,995 sq. ft. for lots that have a lot slope ranging from 0% to 10% for eight of the 21 proposed lots. Seven of the eight lots also have a minimum lot width that would be less than 100 feet at the front setback line and range in width from 71.15 feet to 87.35 feet. The lot slope, size and width are shown in the table labeled Filings 1 & 2 Average Slope Table (attached).

Rationale: It is undisputed that Section 21.07.020 (f) (3) of the hillside development standards apply to this project. But to determine the applicable minimum lot size and lot width, the "Average Slope of Development Area" must be determined. To determine the slope of the development area, staff looked to Section 21.07.020 (f) (5) that provides "slopes shall be determined on a parcel by parcel basis if the slope is not generally uniform." In the case of this 45+ acre property, the Director found the slopes not to be uniform and as a result determined the slope on a parcel by parcel basis as proposed within the development. This created a preliminary plan with 26 lots that fell within the 0% to 10% average slope range, 39 lots within the 10.01% to 20% average slope, and 7 lots within the 20.01 to 30% average slope as provided in the Applicant's submittal information titled "The Limits of Development/Slope Analysis Sheet" attached and incorporated by reference.

For those lots with slopes of 20.01% to 30%, the minimum lot size, in accordance with the Code table *Single Family, Planned and Cluster Subdivision* (below) in Section 21.070.020 (f) is 15,000 sq. ft. with lot widths of at least 200. For those lots with slopes 10.01% to 20%, the minimum lot size is 10,000 sq. ft. with at least 100 feet of lot width.

To determine the minimum dimensions of lots within the 0% to 10% average slope, staff also used the Code table *Single Family, Planned and Cluster Subdivision* (below) in Section 21.070.020 (f). The table indicates that for lots with 0% to 10% average slope lot size and lot width defers to existing zoning "See Existing Zone." In this case, the existing zoning for the property is Residential-2 (R-2), however, in accordance with the Code, the Applicant can and has chosen to implement a design that utilizes the Cluster Subdivision Development regulations. Utilization of the Cluster Development regulation of the Code is encouraged to preserve environmentally sensitive areas and open space lands.

SINGLE-FAMILY, PLANNED AND CLUSTER SUBDIVISION DEVELOPMENT

Average Slope of Development Area	**Minimum Lot Size**	**Minimum Lot Width**
0% - 10%	See Existing Zone	See Existing Zone
10.01% - 20%	10,000 sq. ft.	At least 100 ft. at front setback line

20.01% - 30%	15,000 sq. ft.	At least 200 ft. at front setback line
30.01% +	Development Not Permitted	Development Not Permitted

The utilization of both the hillside development regulations and the cluster provisions on the same projects is clearly allowed and even encouraged given the table above, and the verbiage in each set of regulations that refers specifically to the other. Section 21.70.020 (f) (4) clearly states "(4) …development may, as determined by the Director, be clustered on the portion of the site with slopes less than 20 percent.Clustering may be achieved by concentrating the number of units or by concentrating the amount of square footage allowed for the entire site on that portion of the property with less than 20 percent slope. See also GJMC 21.03.060, Cluster developments."

Therefore, if an average slope of the development (lot) area is within the 0 – 10% slope, the minimum lot size and lot width would be reflective of the existing zone district or in this instance, those minimums allowed by the Cluster Development provisions of Section 21.03.060. Based on this section and other relevant sections of the Code, staff applied the cluster development provision to those lots with average slopes ranging from 0% to 10%. The Applicant proposed providing 33% of the project as open space. Utilizing the formula in Section 21.03.060, the resulting minimum lot size is 7,125 square feet. The dedication of 33% open space also resulted in the ability to apply the Residential-4 (R-4) zoning category bulk standards. The R-4 zone district allows a minimum lot width of 70 feet.

In conclusion, the Code allows for the calculation of slope to be averaged parcel by parcel resulting in each lot having its own specific "average slope" category. For those parcels with slopes 10% or less, this allows for a minimum lot size and width to be applied consistent with the Cluster Development Regulations. Therefore, this 21 lot project, allows for eight lots to be less than 10,000 square feet but no less than 7,125 square feet and seven of these eight lots to be less than 100 feet in width but at least 70 feet in width.

All documents referenced can be found in the project file #'s SUB-2017-271 and SUB-2017-273, which are incorporated herein in their entirety by this reference.

The Applicant's attorney has also provided a response to the Appellant's claims, which is attached.

FISCAL IMPACT:

This land use action does not have any direct fiscal impact. Subsequent actions such

as future development may have direct fiscal impact.

SUGGESTED MOTION:

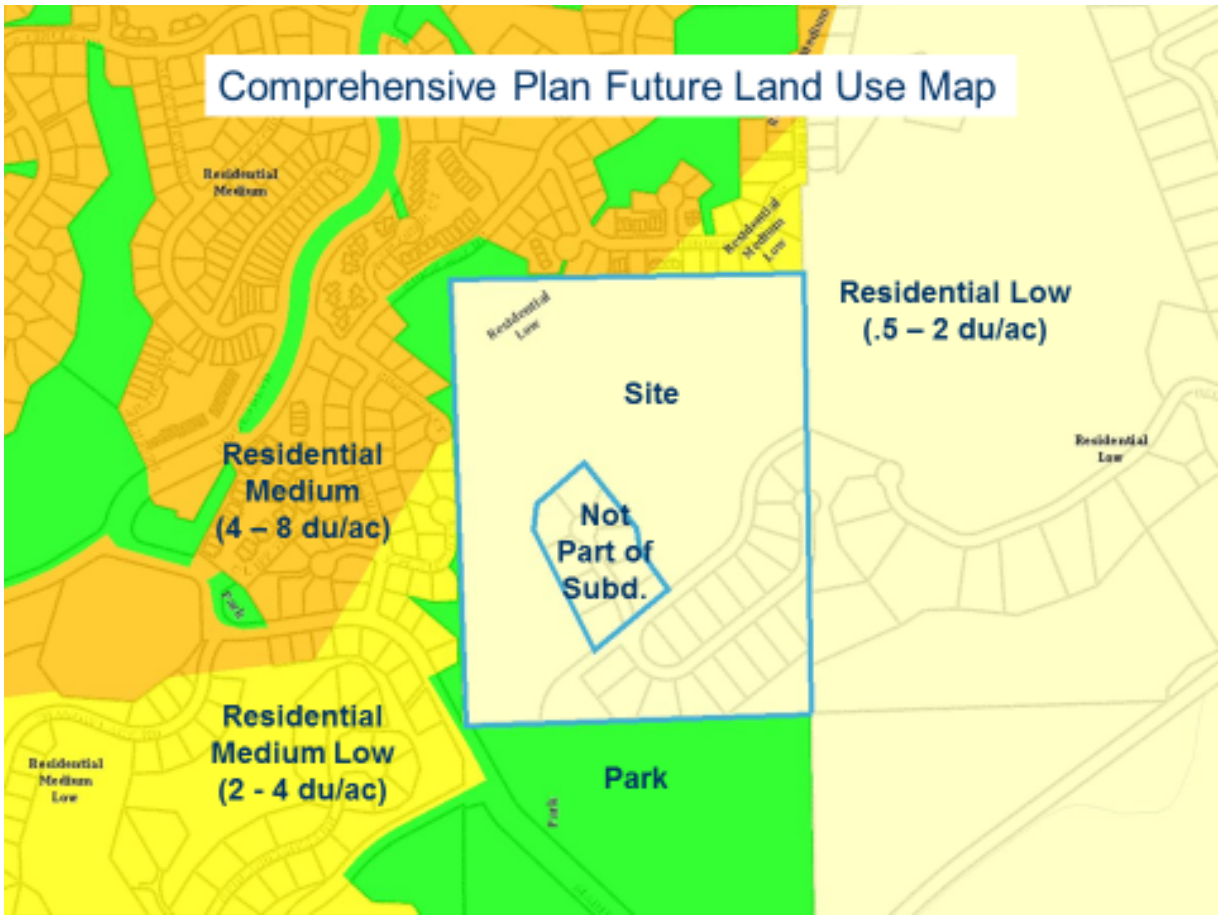
I move to approve/reverse/remand the Director's decision regarding the Pinnacle Ridge Subdivision.

Attachments

1. Site Location & Zoning Maps
2. Filings 1 & 2 Average Slope Table
3. Limits of Development / Slope Analysis Sheet
4. Appellant's Letter dated December 22, 2017
5. Applicant's Response Letter dated January 8, 2018
6. Director's Letter of Approval for Filing 1
7. Director's Letter of Approval for Filing 2
8. Subdivision Plat, Filing 1
9. Filing 1, Site Plan for Recording
10. Subdivision Plat, Filing 2
11. Filing 2, Site Plan for Recording
12. City Council Staff Report from April 19, 2017
13. Approved Preliminary Plan
14. Director's Letter of Approval for Preliminary Plan
15. Resolution 21-17

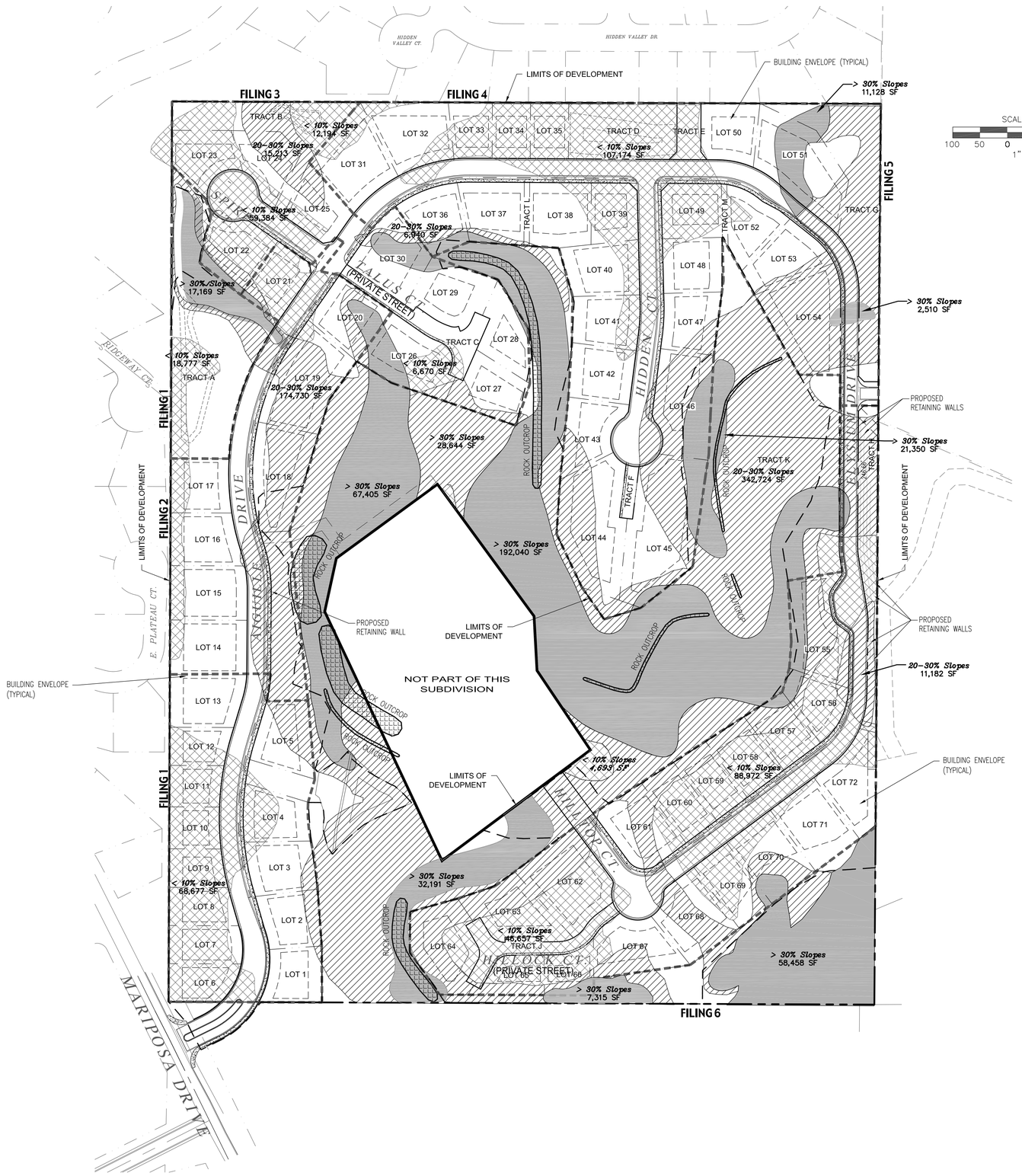

Site Location Map
Broadway
(Hwy 340)
W. Ridges Blvd
Site
Monument Road
Mariposa Drive
Redlands Mesa


Aerial Photo Map
Site
Not Part of Subd.
Bella Pago Dr.
Mariposa Drive
Monument Road


Comprehensive Plan Future Land Use Map
Residential Low
(.5 – 2 du/ac)
Site
Residential
Medium
(4 – 8 du/ac)
Not
Part of
Subd.
Residential
Medium Low
(2 - 4 du/ac)
Park


Existing Zoning Map
Site
R-2
PD
PD
County
RSF-4
County
RSF-4
CSR

Filing No.	Lot No.	Lot Area (SF)	Lot Area (AC)	Minimum Lot Size (SF)	Meets minimum Lot Area	Lot Width	Minimum Lot Width	Meets Minimum Lot Width	Average Slope (%)
1	1	10060	0.23	10,000	yes	100.70	100	yes	10-20
	2	10666	0.24	10,000	yes	101.72	100	yes	10-20
	3	11431	0.26	10,000	yes	100.00	100	yes	10-20
	4	10816	0.25	7,125	yes	101.97	70	yes	0-10
	5	12490	0.29	10,000	yes	117.84	100	yes	10-20
	6	8307	0.19	7,125	yes	87.35	70	yes	0-10
	7	9352	0.21	7,125	yes	71.15	70	yes	0-10
	8	8263	0.19	7,125	yes	72.78	70	yes	0-10
	9	7125	0.16	7,125	yes	71.92	70	yes	0-10
	10	7125	0.16	7,125	yes	77.16	70	yes	0-10
	11	7222	0.17	7,125	yes	76.47	70	yes	0-10
	12	7566	0.17	7,125	yes	72.09	70	yes	0-10
	13	12721	0.29	10,000	yes	100.17	100	yes	10-20
2	14	14123	0.32	10,000	yes	100.00	100	yes	10-20
	15	14020	0.32	10,000	yes	100.07	100	yes	10-20
	16	11990	0.28	10,000	yes	100.00	100	yes	10-20
	17	10768	0.25	10,000	yes	100.00	100	yes	10-20
	18	17533	0.40	15,000	yes	200.00	200	yes	20-30
	19	20699	0.48	15,000	yes	200.00	200	yes	20-30
	20	12214	0.28	10,000	yes	115.00	100	yes	10-20
	21	9995	0.23	7,125	yes	120.00	70	yes	0-10



Filing No.	Lot No.	Lot Area (SF)	Lot Area (AC)	Minimum Lot Size (SF)	Meets minimum Lot Area	Lot Width	Minimum Lot Width	Meets Minimum Lot Width	Average Slope (%)
1	1	10060	0.23	10,000	yes	100.70	100	yes	10-20
	2	10666	0.24	10,000	yes	101.72	100	yes	10-20
	3	11431	0.26	10,000	yes	100.00	100	yes	10-20
	4	10816	0.25	7,125	yes	101.97	70	yes	0-10
	5	12490	0.29	10,000	yes	117.84	100	yes	10-20
	6	8307	0.19	7,125	yes	87.35	70	yes	0-10
	7	9352	0.21	7,125	yes	71.15	70	yes	0-10
	8	8263	0.19	7,125	yes	72.78	70	yes	0-10
	9	7125	0.16	7,125	yes	71.92	70	yes	0-10
	10	7125	0.16	7,125	yes	77.16	70	yes	0-10
	11	7222	0.17	7,125	yes	76.47	70	yes	0-10
	12	7566	0.17	7,125	yes	72.09	70	yes	0-10
	13	12721	0.29	10,000	yes	100.17	100	yes	10-20
2	14	14123	0.32	10,000	yes	100.00	100	yes	10-20
	15	14020	0.32	10,000	yes	100.07	100	yes	10-20
	16	11990	0.28	10,000	yes	100.00	100	yes	10-20
	17	10768	0.25	10,000	yes	100.00	100	yes	10-20
	18	17533	0.40	15,000	yes	200.00	200	yes	20-30
	19	20699	0.48	15,000	yes	200.00	200	yes	20-30
	20	12214	0.28	10,000	yes	115.00	100	yes	10-20
	21	9995	0.23	7,125	yes	120.00	70	yes	0-10
3	22	12346	0.28	7,125	yes	128.09	70	yes	0-10
	23	10534	0.24	7,125	yes	106.25	70	yes	0-10
	24	10704	0.25	10,000	yes	120.49	100	yes	10-20
	25	10074	0.23	10,000	yes	106.95	100	yes	10-20
	26	16587	0.38	10,000	yes	200.00	100	yes	10-20
	27	11902	0.27	10,000	yes	103.81	100	yes	10-20
	28	10271	0.24	10,000	yes	112.69	100	yes	10-20
	29	13485	0.31	10,000	yes	185.06	100	yes	10-20
	30	14852	0.34	10,000	yes	132.79	100	yes	10-20
4	31	16526	0.38	10,000	yes	112.57	100	yes	10-20
	32	16057	0.37	10,000	yes	115.27	100	yes	10-20
	33	7750	0.18	7,125	yes	72.18	70	yes	0-10
	34	7168	0.16	7,125	yes	70.00	70	yes	0-10
	35	7184	0.16	7,125	yes	70.00	70	yes	0-10
	36	11407	0.26	10,000	yes	114.69	100	yes	10-20
	37	12514	0.29	10,000	yes	119.01	100	yes	10-20
	38	13288	0.31	10,000	yes	113.30	100	yes	10-20
	39	9128	0.21	7,125	yes	105.60	70	yes	0-10
	40	12970	0.30	10,000	yes	100.00	100	yes	10-20
	41	11487	0.26	10,000	yes	100.00	100	yes	10-20
	42	11586	0.27	10,000	yes	100.00	100	yes	10-20
	43	11471	0.26	10,000	yes	111.64	100	yes	10-20
	44	25644	0.59	15,000	yes	259.55	200	yes	20-30
	45	31162	0.72	15,000	yes	296.30	200	yes	20-30
	46	18957	0.44	15,000	yes	200.00	200	yes	20-30
	47	11011	0.25	10,000	yes	104.65	100	yes	10-20
	48	11001	0.25	10,000	yes	100.17	100	yes	10-20
	49	10967	0.25	7,125	yes	110.74	70	yes	0-10
	50	10896	0.25	10,000	yes	100.00	100	yes	10-20
	51	22047	0.51	10,000	yes	200.00	100	yes	10-20
	52	10355	0.24	10,000	yes	118.26	100	yes	10-20
	53	11849	0.27	10,000	yes	106.31	100	yes	10-20
	54	21872	0.50	15,000	yes	200.00	200	yes	20-30
	55	17509	0.40	15,000	yes	221.79	200	yes	20-30
	56	9523	0.22	7,125	yes	105.06	70	yes	0-10
5	57	10021	0.23	7,125	yes	83.65	70	yes	0-10
	58	10500	0.24	7,125	yes	83.65	70	yes	0-10
	59	9154	0.21	7,125	yes	70.00	70	yes	0-10
	60	9489	0.22	7,125	yes	70.00	70	yes	0-10
	61	14533	0.33	10,000	yes	201.32	100	yes	10-20
	62	19525	0.45	7,125	yes	160.45	70	yes	0-10
	63	14232	0.33	7,125	yes	140.50	70	yes	0-10
	64	16631	0.38	10,000	yes	192.02	100	yes	10-20
	65	7654	0.18	7,125	yes	129.26	70	yes	0-10
	66	7360	0.17	7,125	yes	96.01	70	yes	0-10
	67	14001	0.32	10,000	yes	142.41	100	yes	10-20
	68	15145	0.35	10,000	yes	123.78	100	yes	10-20
	69	10500	0.24	7,125	yes	75.00	70	yes	0-10
	70	14000	0.32	10,000	yes	100.00	100	yes	10-20
	71	14000	0.32	10,000	yes	100.00	100	yes	10-20
	72	13346	0.31	10,000	yes	138.68	100	yes	10-20

LEGEND:

- 0-10%
- 10.01-20%
- 20.01-30%
- 30%> NO BUILD ZONE
- ROCK CROPS NOT TO BE DISTURBED

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
PRELIMINARY PLAN

	REV. DATE	COMMENT	BY
4	03/09/16	REVISED PER CITY COMMENT ROUND NO.4 DATED 02/29/16	JSY
3	12/16/15	REVISED PER CITY COMMENT ROUND NO.3 DATED 11/19/15	DLS
2	10/14/15	REVISED PER CITY COMMENT ROUND NO.2 DATED 08/12/15	DLS
1	07/14/15	REVISED PER CITY COMMENT ROUND NO.1 DATED 04/27/15	DLS

Limits of Development/Slope Analysis

Pinnacle Ridge Subdivision

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **03/19/15**
SCALE: **1"=40'**
CAD ID: **0cover.dwg**

~SHEET~
4

Richard Wihera
2427 Bella Pago Drive
Grand Junction, CO 81507
970.270.9666

RECEIVED
DEC 22 2017
CITY PLANNING DIVISION

December 22, 2017
rec'd

City of Grand Junction
250 North 5th Street
Grand Junction, CO 81501

Re: Appeal of Community Development Director's Approval of SUB-2017-271 and SUB-2017-273

Dear Sirs/Madams:

Pursuant to the provisions of Grand Junction Municipal Code (GJMC) 21.02.210 (c) and 21.02.60, I am appealing the Community Development Director's decision to approve the proposed Pinnacle Ridges subdivision in its current form. I have never been involved in this type of process before, and thus I ask in advance for your leniency for any minor omissions or failure to conform with the necessary format.

As an overview, the proposed Pinnacle Ridges subdivision consists of approximately 72 houses in a steep and hilly section of the Redlands. Data provided by the developer in its filing for Limits of Development/Slope Analysis show that the average slope of the land in the proposed development is 16.06%. The GJMC Development Regulations specify the minimum lot sizes and density for developments having this degree of slope, yet the Community Development Director has approved a plan for this subdivision with lots that do not meet the minimum Hillside Development Regulations. I am appealing the Director's approval because the Director: a) acted in a manner which is inconsistent with the provisions of GJMC Development Regulations, b) made erroneous findings based on the information on record, and c) has acted arbitrarily.

Before proceeding, there are two definitions from the GJMC Development Code which are critical to this review. These definitions are provided below with emphasis added:

> 21.10.002 Terms Defined: *Development* includes all property adjacent or abutting, whether or not to be then planned or developed, owned by the same owner. Includes any of the following: the division of a parcel of land into two or more parcels; the construction, reconstruction, conversion, structural alteration, relocation or enlargement of any structure; any mining, drilling, excavation, clearing of roadways or building sites, landfill or land disturbance and any use or extension of the use of land, the placement of a use on any property, or any planned development.

21.10.010 Rules of Construction: (c) The words "shall" and "must" are always mandatory. The words "may" and "should" are permissive and are at the discretion of the decision-maker.

The GJMC states that the purpose of the Hillside Development Regulations is to minimize soil and slope instability, minimize the adverse effects of grading and cut and fill operations, preserve the character of the City's hillsides, and protect the public safety interests by minimizing potential hazards and allow for adequate emergency vehicle access (GJMC 21.07.020(f)). To achieve these goals, the Hillside Development Standards were developed to limit density and set minimum lot dimensions in this sensitive environment. Per the Code, these minimum standards are:

21.07.020 Environmental/sensitive lands Regulations

(3) Hillside Development Standards. In furtherance of the purposes set forth, any hillside development shall comply with the tables below. Any portion of a development having a slope greater than 30 percent with an elevation change of 20 feet or greater shall not be included in calculation of the area of such parcel for the purposes of determining conformity with the minimum lot parcel size and density requirements below.

SINGLE-FAMILY, PLANNED AND CLUSTER SUBDIVISION DEVELOPMENT		
Average Slope of Development Area	**Minimum Lot Size[1]**	**Minimum Lot Width**
0% – 10%	See Existing Zone	See Existing Zone
10.01% – 20%	10,000 sq. ft.	At least 100 ft. at front setback line
20.01% – 30%	15,000 sq. ft.	At least 200 ft. at front setback line
30.01% +	Development Not Permitted[2]	Development Not Permitted[2]

Please note that the regulation states that "any hillside development shall comply with the tables below" and thus per GJMC definition this regulation is mandatory. However, nine of the lots in Filings 1 and 2 of this development do not meet the mandatory Hillside Development Regulations, and the most recent maps available from the developer show that at least one-third of all of the lots in the proposed development do not meet the mandatory Hillside Development Regulations.

This writer has shared concerns about this issue with the Community Development staff on multiple occasions both verbally and in writing. On 12/19/17, this writer met with Community Development Director Tamra Allen and staff members Scott Peterson and Rick Dorris, to again review this issue. The Director and staff said that they are aware of these Regulations and that they have reviewed this issue in detail. They then proceeded to provide

two opposing rationales for why Pinnacle Ridges does not have to meet the minimum lot size as required by the Hillside Development Regulations.

Mr. Peterson said that rather than applying the minimum lot sizes to all of the property in the development as required by Code, that they were allowing the developer to set lot sizes on a lot-by-lot basis depending on the slope of different areas in the proposed development. Mr. Peterson acknowledged he knew of nothing in the Code which allowed staff to arbitrarily divide a development into areas that would be held to different standards. Without pointing to any authority in the Code for so doing, Mr. Peterson said only that the Community Development staff had decided to interpret the Code in this manner.

In contrast to what Mr. Peterson presented, Director Allen then said the Pinnacle Ridges plan was approved with smaller lot sizes because the Division chose to use the lot sizes as listed under the Cluster Development Regulations. The Director said that Hillside Development Regulations and Cluster Development Regulations are "competing" and there was no way to tell which should take precedence. Director Allen said she elected to use the Cluster Development Regulations lot dimensions because they were "more flexible" than the Hillside Regulations.

Taking Director Allen at her word that her decision to approve this plan was based on applying the lot dimensions provided by the Cluster Development Regulations rather than the Hillside Development Regulations, this action is clearly inconsistent with the Development Code. The Cluster Development Regulations state in part:

21.03.060 Cluster developments (c)(2):

> "Minimum lot size shall also be subject to other provisions, such as GJMC 21.07.020(f), Hillside Development, which might further restrict lot size."

Consistent with the Cluster Development Regulations specifically deferring to the Hillside Development Regulations, one can also refer back to the Environmental/Sensitive Lands Regulations 21.07.020 with its accompanying table which was provided on the previous page. The title of the table providing lot dimensions for hillside developments specifically indicates that the lot dimensions provided apply to "Single-Family, Planned, and Cluster Subdivision Development." Given that the Hillside Development Regulations specifically include cluster developments, there can be no debate that the Director's use of Cluster Development lot dimensions in approving this plan is inconsistent with the Code.

There is no support in the Code for the Director's stance that Cluster Development Regulations should be applied over Hillside Regulations. Absent any authority or support in the Code, the Director's decision to ignore the mandatory Hillside Development Regulations and allow lot dimensions based on the Cluster Development Regulations shows that: 1) The Director acted in a manner which is inconsistent with GJMC Development Code; 2) The Director's finding that the Code does not provide specific guidance on which Regulations take precedence is clearly erroneous; and 3) Due to the above it can only be concluded that the Director acted arbitrarily.

It should also be noted that Mr. Peterson's rationale is inconsistent with the plain language of the Development Code. The Hillside Development Regulations state that "any development shall comply with the tables below." The Code definition of "development" specifically includes "all property adjacent or abutting, whether or not to be then planned or developed, owned by the same owner" or "any planned development." There is nothing in the Code which even suggests that that Hillside Development Regulations should be applied to only a section or portion of the development. Further, the use of "shall" means that the Hillside Development Regulations are mandatory and not discretionary.

The Division staff has acknowledged that there is nothing in the Code that would allow the breaking down all property of the proposed "development" on a lot-by-lot basis to determine lot size. In fact, setting lot size on a lot-by-lot basis would defeat the primary purpose of the Hillside Development Regulations which is to minimize density in this sensitive and protected area. It should also be remembered that the Colorado Geological Survey (CGS) review of this development raised serious concerns about the stability of the hillside project. The most recent CGS of the entire hillside development on 2/29/16 noted:

> "The applicant and its geotechnical consultant have not demonstrated that the planned cut slopes will be stable."
>
> "The geologic materials present on this property, especially sand, gravel and claystone, cannot be assumed to be stable at the slope angles proposed."
>
> "CGS remains concerned about the overall viability of the project at the proposed density."

CGS has since approved Filings 1 and 2 which are the flattest sections of entire proposed development. [Note, this is not approval per requirements of the Development Code, only approval of the flat sections of the development on a geological basis.] However, this writer contacted the CGS staff working on this project by telephone, and it was confirmed that there has been no additional CGS review of the entire project and that the comments provided on 2/29/16 remain the opinion of CGS at this time. In brief, the concerns expressed about the density of this project by CGS are entirely consistent with the Hillside Development Regulations which were developed to minimize density on this type of terrain. Any decision or action which ignores the mandated minimum lot sizes provided in the Hillside Development Regulations would be arbitrary and inconsistent with the Development Code.

In summary:

- A hillside development has been proposed with lot sizes that do not meet the minimum lot dimensions mandated by the Development Code.
- The Director stated that she approved this variance based on the Cluster Development provisions, despite the fact that the Cluster Development provisions specifically defer to the mandated Hillside Development Regulations.
- The decision to approve this plan is inconsistent with the Development Code, was arbitrarily decided, and is clearly erroneous.

I understand this project will eventually proceed and my goal is not to stop development. However, there are serious public safety, environmental, and aesthetic issues at stake if the development proceeds in its current form. I am not asking for exceptions. I am not asking for exemptions. I am not asking for special treatment. My request is simple: I ask that you enforce the Development Code as it is written.

I respectfully request that the Director's decision to approve the Pinnacle Ridge plan be reversed, and that no future plans for this development be approved until the plan meets all requirements of the GJMC Development Code, including but not limited to the Hillside Development Regulations.

Thank you for your careful consideration of this issue. I would welcome the opportunity to meet with the Counsel to discuss this matter and answer any questions you might have.

Richard Wihera

SPIECKER, HANLON, GORMLEY & VOLKMANN, LLP
ATTORNEYS AT LAW

FRANK F. SPIECKER (1932 - 2014)
CLAY E. HANLON (RETIRED)

JOHN P. GORMLEY
THOMAS C. VOLKMANN

January 8, 2018

HAND DELIVERY

City of Grand Junction
250 North 5th Street
Grand Junction, CO 81501

Re: Wihera Appeal/Pinnacle Ridge

Dear Sirs:

This office represents Two R&D, LLC, the Applicant on the Pinnacle Ridge subdivisions (the "Applicant"). This letter is the Applicant's response to the Notice of Appeal, filed by Mr. Richard Wihera (the "Appellant"), filed with the City Planning Division on December 22, 2017 (the "Appeal").

At the outset, it is noted that the Appeal cites three alleged bases: (a) the Director acted in a manner inconsistent with the provisions of the Development Code (the "Code)", (b) the Director made erroneous findings based on the information in the record, and (c) the Director acted arbitrarily in approving the subject subdivisions. However, the actual scope of the Appeal appears to be limited to a claim that certain lots within Pinnacle Ridge were improperly approved by the Director in sizes smaller than those provided for in the Hillside Development standards of §21.07.020 of the Code. The Appellant's argument is that the lot size table within that section of the Code supersedes and invalidates the application of the Cluster Development standards of the Code, including §21.03.060. For the reasons set forth herein, the Applicant submits that the Director's approval of Pinnacle Ridge was in compliance with the Director's expressly granted authority in, and the intent of, the applicable provisions of the Code. Accordingly, this Appeal of that approval should be denied.

Appeal Criteria

The appeal criteria for an Administrative Development Permit such as the one at issue here are set forth in code §21.02.210(c). Those criteria are limited to whether the Director:

> (i) Acted in a manner inconsistent with the provisions of this code or other applicable local, State of federal law; or
>
> (ii) Made erroneous findings of fact based on the evidence and testimony on the record; or
>
> (iii) Failed to fully consider mitigating measures or revisions offered by the applicant that would have brought the proposed project into compliance; or
>
> (iv) Acted arbitrarily, or capriciously.

Although the Appeal appears to reference the appeal criteria in subsections (i), (ii), and (iv) of that provision, it is unclear what erroneous findings of fact (subsection (ii)) are claimed in the Appeal. Rather, the Appeal claims the Director misapplied sections of the Code or acted arbitrarily in approving Pinnacle Ridge, and that contention (arguably within (i) and (iv), above) will be the focus of this Response.

Applicable Code Provisions

It is beneficial to an analysis of a claim that the Code provisions are in conflict, such as the argument made in this Appeal, to review §21.01.040 of the Code. It provides as follows:

> **21.01.040 Purpose.**
>
> The code is intended to enable the City to uniformly and consistently evaluate, improve and approve, as appropriate, development, changes to existing uses, future uses and activities and to promote the health, safety and general welfare of the citizens and residents of the City. *Not all situations will fall into easily identifiable processes and requirements. This code provides flexibility in dealing with situations in general, and especially those which do not fit well with typical processes and standard requirements. The elements that make up this code are interrelated and cannot be taken in isolation; all provisions and regulations must be taken within the context and intent of the entire code.*
> (*Emphasis added.*)

Although the Code is a complex document with numerous interrelationships, resulting in the analysis of all such interrelationships being similarly complex, the Applicant submits that the Appeal fails to apply the concepts within the italicized language above in its objections to this administrative approval.

The primary thrust of the Appeal is that the lot size table contained in the Hillside Development provisions of §21.07.020(f)(3) govern this development in its entirety so as to effectively preclude the application of the Cluster Development provisions of §21.03.060 of the Code. In making this argument, the Appeal contends that the Director lacks the discretion to apply the clustering provisions in the analysis of lot sizes within Pinnacle Ridge. However, that is not the case.

Contrary to the Appeal Claim, the Clustering Provisions May Supersede the Hillside Lot Size Provisions

The Appeal relies on a cross-reference within §21.03.060(c)(2) to the effect that the Hillside Development standards "might further restrict lot size." (Appeal, at p. 3.) Although the Hillside Development standards "might" further restrict such lot sizes, subsections (a) and (b) of the Clustering provisions of §21.03.060 specifically contemplate the application of cluster development concepts to environmentally sensitive areas (including Hillside Development areas) and expressly provide that the Director "may approve lots that are smaller and arranged differently than otherwise allowed under this code."

Therefore, although the Director was to consider the Hillside Development standards in reviewing and approving Pinnacle Ridge, and did so, the Hillside Development standards are merely factors to be applied by the Director in making her analysis. If, and to the extent, the Hillside Development standards in the table on which the Appeal relies are deemed to represent "allowed lot sizes," §21.03.060(b) thereof expressly provides the Director with the authority and

discretion to approve "lots that are smaller and arranged differently than otherwise allowed under this code." The Director's authority and discretion in this regard is therefore clearly provided in the same Clustering section of the Code on which the Appeal relies.

The Hillside Development Standards Encourage Clustering

The Hillside Development provisions of §21.07.020(f)(2) expressly contemplate and encourage clustering as follows:

> (2) The provisions hereof are designed to accomplish the following:
>
> ⋮
>
> (v) Encourage the location, design and development of building sites in a manner that will provide for greater aesthetic appeal, blend with the slopes and hillside terrain, minimize the scarring and erosion effects of cutting, filling and grading of hillsides and prohibit development of ridge lines as defined; and
> (vi) Encourage preservation of open space by encouraging clustering or other design techniques to preserve natural terrain, views and vistas.

Therefore, as with the Code provisions governing the Clustering provisions, above, the standards applicable to the Hillside Development subset of environmentally sensitive areas expressly encourage clustering such as that proposed and approved in the Pinnacle Ridge subdivision. Appellant's argument regarding the interplay between the Hillside Development and Clustering provisions of the Code is unfounded for it would expressly prevent such encouraged clustering.

The Hillside Development Standards Provide for the Lot By Lot Analysis Applied by the Director

Appellant objects to what is described in the Appeal as a "lot-by-lot" analysis in considering lot sizes and slopes in the Director's analysis. However, that analysis is expressly authorized and directed by the following provisions in the Hillside Development standards of §21.07.020(f):

1. Subsection (4) thereof provides that "for property with slopes in excess of 20 percent, development may, *as determined by the Director*, be clustered on the portion of the site with slopes less than 20 percent. Clustering may be achieved by concentrating the number of units or by concentrating the amount of square footage allowed for the entire site on that portion of the property with less than 20 percent slope."

2. Subsection (5) thereof provides the *"[S]lope shall be determined on a parcel by parcel basis if the slope is not generally uniform."* (*Emphasis added.*)

These subsections provide for exactly the lot by lot analysis applied by the Director, and objected to in the Appeal. It is noted that the term "parcel" is defined in §21.10.020 of the Code as "an area of land defined by a legal description and recorded with the County Clerk and Recorder." Therefore, the "lots" constitute "parcels" and the Director's "lot by lot" analysis to which the Appeal objects is authorized and directed by these provisions.

The Director's Approval is Neither Arbitrary Nor Inconsistent with the Provisions of the Code

Appellant contends that the Director's approval of Pinnacle Ridge was arbitrary. (Appeal, at pp. 1, 3 and 4.) However, this is, and should be, a difficult standard to meet and is not met in this Appeal.

An administrative decision is arbitrary if the decision is not supported by any competent evidence in the record. "No competent evidence" is defined by the Colorado courts to mean that the decision "was so devoid of evidentiary support that it can only be explained as an arbitrary and capricious exercise of authority." (Rangeview, LLC v. City of Aurora, 381 P.3d 445, 450 (Colo. App. 2016), citing Ross v. Fire & Pension Ass'n, 713 P.2d 1304, 1309 (Colo. 1986).) The Appeal fails to identify any lack of evidentiary support in the record, relying instead on challenging the Director's analysis of applicable provisions of the Code. The Pinnacle Ridge project has been extensively reviewed, analyzed, and commented upon by City staff, and the

Applicant submits that the record accurately and completely sets forth all information necessary and appropriate to support the Director's approval. No lack of evidentiary support exists.

As to the Director's approval being claimed in the Appeal to be inconsistent with the provisions of the Code, the Applicant submits, for the reasons set forth above, that the Director's decision in determining and applying both the Hillside Development provisions and the Clustering provisions of the Code was entirely consistent with the provisions of the Code and within the defined scope of her discretion provided therein. For the above reasons, the Appeal should be denied and the approval should stand as properly made by the Director.

Very truly yours,

SPIECKER, HANLON, GORMLEY & VOLKMANN, LLP

Thomas C. Volkmann

TCV:jmd

cc: Vortex Engineering and Architecture, Inc.

CITY OF Grand Junction COLORADO

COMMUNITY DEVELOPMENT

RECORD OF DECISION/FINDINGS OF FACT

DATE: December 11, 2017

FILE: SUB-2017-271 – Pinnacle Ridge Subdivision, Filing 1

LOCATION: East of Mariposa Drive

PETITIONER: Two R & D LLC, Owner

PLANNER: Scott D. Peterson, Senior Planner

REQUEST: Approval of the Final Subdivision Plan for Pinnacle Ridge Subdivision, Filing 1

DECISION: **CONDITIONALLY APPROVED** - Administratively

In accordance with Section 21.02.070 (s) of the Zoning & Development Code, the Final Subdivision Plan for Pinnacle Ridge Subdivision, Filing 1 has been approved administratively with the following conditions:

The following items must be completed before the final plat may be recorded:

1. Submit an original mylar of the Final Plat and Site Plan with owner signatures, Title Commitment dated within 5 days of anticipated recording, Surveyor Verification Final Mylar Checklist and a check made payable to the "City of Grand Junction" in the amount of $33.00. Please note that all property corner pins must be set in concrete and inspected by the City Surveyor before the plat and Site Plan may be recorded. The electronic version of the plat must be emailed to chrisd@gjcity.org

2. Submit original/signed Development Improvements Agreement (DIA), Exhibit A, Exhibit B, Exhibit D along with financial security (Check, Letter of Credit, Disbursement Agreement or Plat Hold). Recording fee for Exhibit D (Recording Memorandum) will be $26.00 (check made payable to the City of Grand Junction). FYI. Applicant may propose a "Plat Hold" for the financial security to begin infrastructure construction and record the subdivision plat at a later date.

3. Submit final signed/stamped construction plan set drawings for City Signatures. Please have Ute Water sign drawings prior to submittal to the City. Once drawings are signed, submit one paper copy 24" x 36" for City Inspector's use and one electronic PDF copy.

4. Landscaping Plan:
   The Community Development Director, in accordance with Section 21.06.040 (b) (19) of the Zoning and Development Code, has approved the submitted landscaping plan for Pinnacle Ridge for the use of xeric and low water plants with no long term water supply being provided. Applicant has stated that they will install a temporary drip irrigation system with irrigation water being provided by trucking it to the site and a pump will pressurize the system. The Plan includes the provision that watering will continue to occur until all vegetation is firmly established. This landscaping plan was prepared and designed by a Licensed Landscape Architect. As such, based on staff's review and that of the Licensed Landscape Architect that this plan meets the intent of the City's landscaping code. Once proposed landscaping is installed, the Landscape Architect must provide a letter to the City Project Manager stating that all landscaping in the HOA tracts and rights-of-way has been installed per the approved Landscaping Plan

5. Pay applicable fees and submit original documents as follows at time of subdivision plat recording:
   - Recording fee for Warranty Deed for private drainage easements, Ingress/Egress Easement and dedication of tracts to HOA will be $13.00.
   - Recording fee for CCR's will be ($13.00 for the first page with each additional page $5.00 per page).
   - Recording fee for Grant of Easement - Temporary Turn-Around Easement will be $13.00.
   - Recording fee for Grant of Easement for off-site Drainage and Agreement will be $28.00.
   - Recording fee for Revocable Permit for Sign/Landscaping will be $48.00.
   - Recording fee for Statement of Authority document will be $13.00.
   - For all recording fees, please make check payable to the "City of Grand Junction."

6. City Park Fee: $2,925.00 (13 new lots @ $225 per new lot payable at time of subdivision plat recording). Check made payable to the City of Grand Junction prior to subdivision plat recording.

7. City Open Space Fee: 10% of the value of the raw land. Applicant's submitted Appraisal Report appraised the entire property at $820,000, therefore, applicant's Open Space Fee will be $82,000.00 total for all filings (check made payable to the City of Grand Junction) payable prior to subdivision plat recording for Filing 1. However, applicant is currently working with the City Parks Board in order to obtain a recommendation to City Council for proposed Tract B and future Tracts (15.06 acres total) to be dedicated to the City of Grand Junction. If a recommendation for approval is obtained, City Project Manager will

schedule review for an upcoming City Council meeting. If the City would accept the land dedication of 15.06 acres, applicant would owe no additional Open Space Fees ($820,000 appraised value of vacant land for the property / 45.36 acres total = $18,077 per acre. $18,077 per acre x 15.06 acres for Tract B and future tracts = $272,240, which exceeds the 10% Open Space Fee).

8. School Impact Fee: $920 per dwelling unit payable at time of Planning Clearance issuance for each individual dwelling unit.

9. Plant Investment Fees (Water and Sewer Impact): Contact City Customer Service at (970) 244-1579 for applicable sewer tap fees payable at time of Planning Clearance issuance for each dwelling unit. Contact Ute Water Conservancy District for water tap fees payable at time of Planning Clearance issuance for each dwelling unit.

10. Transportation Capacity Payment (TCP): To be determined and collected at time of Planning Clearance for individual building permits.

11. City Inspection Fee will be $1,170.00 ($90/lot x 13 lots), payable at time of subdivision plat recording (check made payable to the City of Grand Junction).

12. There is no Storm Drainage Fee nor Utility Undergrounding Fee.

13. See Round 4 Review Comments dated December 11, 2017 for additional changes and revisions required as part of project approval.

If you should have any further questions, please feel free to contact me at (970) 244-1447.

Scott D. Peterson
Senior Planner

CITY OF Grand Junction COLORADO

COMMUNITY DEVELOPMENT

RECORD OF DECISION/FINDINGS OF FACT

DATE: December 11, 2017

FILE: SUB-2017-273 – Pinnacle Ridge Subdivision, Filing 2

LOCATION: East of Mariposa Drive

PETITIONER: Two R & D LLC, Owner

PLANNER: Scott D. Peterson, Senior Planner

REQUEST: Approval of the Final Subdivision Plan for Pinnacle Ridge Subdivision, Filing 2

DECISION: **CONDITIONALLY APPROVED** - Administratively

In accordance with Section 21.02.070 (s) of the Zoning & Development Code, the Final Subdivision Plan for Pinnacle Ridge Subdivision, Filing 2 has been approved administratively with the following conditions:

The following items must be completed before the final plat may be recorded:

1. Submit an original mylar of the Final Plat and Site Plan with owner signatures, Title Commitment dated within 5 days of anticipated recording, Surveyor Verification Final Mylar Checklist and a check made payable to the "City of Grand Junction" in the amount of $23.00. Please note that all property corner pins must be set in concrete and inspected by the City Surveyor before the plat and Site Plan may be recorded. The electronic version of the plat must be emailed to chrisd@gjcity.org

2. Submit original/signed Development Improvements Agreement (DIA), Exhibit A, Exhibit B, Exhibit D along with financial security (Check, Letter of Credit, Disbursement Agreement or Plat Hold). Recording fee for Exhibit D (Recording Memorandum) will be $26.00 (check made payable to the City of Grand Junction). FYI. Applicant may propose a "Plat Hold" for the financial security to begin infrastructure construction and record the subdivision plat at a later date.

3. Submit final signed/stamped construction plan set drawings for City Signatures. Please have Ute Water sign drawings prior to submittal to the City. Once drawings are signed, submit one paper copy 24" x 36" for City Inspector's use and one electronic PDF copy.

CITY OF Grand Junction COLORADO

COMMUNITY DEVELOPMENT

4. Pay applicable fees and submit original documents as follows at time of subdivision plat recording:
   - Recording fee for Quit Claim Deed for private drainage easements to the HOA will be $13.00.
   - For all recording fees, please make check payable to the "City of Grand Junction."

5. City Park Fee: $1,800.00 (8 new lots @ $225 per new lot payable at time of subdivision plat recording). Check made payable to the City of Grand Junction prior to subdivision plat recording.

6. City Open Space Fee: 10% of the value of the raw land. See Approval Letter for Filing 1 for additional information.

7. School Impact Fee: $920 per dwelling unit payable at time of Planning Clearance issuance for each individual dwelling unit.

8. Plant Investment Fees (Water and Sewer Impact): Contact City Customer Service at (970) 244-1579 for applicable sewer tap fees payable at time of Planning Clearance issuance for each dwelling unit. Contact Ute Water Conservancy District for water tap fees payable at time of Planning Clearance issuance for each dwelling unit.

9. Transportation Capacity Payment (TCP): To be determined and collected at time of Planning Clearance for individual building permits.

10. City Inspection Fee will be $720.00 ($90/lot x 8 lots), payable at time of subdivision plat recording (check made payable to the City of Grand Junction).

11. There is no Storm Drainage Fee nor Utility Undergrounding Fee.

12. See Round 4 Review Comments dated December 11, 2017 for additional changes and revisions required as part of project approval.

If you should have any further questions, please feel free to contact me at (970) 244-1447.

Scott D. Peterson
Senior Planner

PINNACLE RIDGE SUBDIVISION, FILING 1

W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.
City of Grand Junction, Mesa County, Colorado

DEDICATION

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, TWO R & D, LLC a Colorado limited liability company is the owner of that real property situate in the SW 1/4 NW 1/4, the south 10 acres of the NW 1/4 NW 1/4, Section 21, Township 1 South, Range 1 West of the Ute Meridian and a portion of the Energy Center Subdivision recorded under Reception No. 644620, City of Grand Junction, Mesa County, Colorado; being more particularly described as follows:

Beginning at the W 1/4 corner of said Section 21;
thence N00°16'04"E, being the basis of bearing, a distance of 1317.18 feet to the N 1/16 corner of said Section 21;
thence N00°15'21"E a distance of 334.95 feet along the west line of said south 10 acres;
thence S89°46'08"E a distance of 1300.69 feet along the north line of said south 10 acres;
thence S00°32'00"W a distance of 335.15 feet to the NW 1/16 corner of said Section 21;
thence S00°25'55"W a distance of 240.76 feet along the east line of said SW 1/4 NW 1/4;
thence S61°16'33"W a distance of 124.51 feet;
thence along the arc of a curve to the left 266.66 feet, having a central angle of 61°00'00" and a radius of 250.47 feet, the chord of which bears S30°46'33"W a distance of 254.25 feet;
thence along the arc of a curve to the right 208.13 feet, having a central angle of 53°00'00" and a radius of 225.00 feet, the chord of which bears S26°46'33"W a distance of 200.79 feet;
thence S53°16'33"W a distance of 249.38 feet;
thence N33°55'49"W a distance of 175.52 feet;
thence N03°09'01"W a distance of 100.00 feet;
thence N36°13'28"W a distance of 300.00 feet;
thence S53°46'33"W a distance of 230.00 feet;
thence S12°16'33"W a distance of 100.00 feet;
thence S25°13'27"E a distance of 505.16 feet;
thence S53°16'33"W a distance of 157.53 feet;
thence along the arc of a curve to the left 195.51 feet, having a central angle of 53°00'29" and a radius of 211.33 feet, the chord of which bears S26°46'23"W a distance of 188.61 feet to the south line of said SW 1/4 NW 1/4;
thence N89°43'25"W a distance of 290.18 feet to the point of beginning.
Said parcel contains 32.70 acres more or less.

Said Owner has by these presents laid out, platted and subdivided the above-described real property into Lots, and Tracts as shown hereon, and designated the same as PINNACLE RIDGE SUBDIVISION, FILING 1 in the City of Grand Junction, County of Mesa, State of Colorado, and does hereby offer the following dedications and grants:

All streets, roads and Rights-of-Way are dedicated to the City of Grand Junction for the use of the public forever.

All Multipurpose Easements are dedicated to the City of Grand Junction as perpetual easements for City approved utilities including the installation, operation, maintenance and repair of said utilities and appurtenances which may include but are not limited to, electric lines, cable TV lines, natural gas pipelines, sanitary sewer lines, storm sewers, water lines, telephone lines, traffic control facilities, street lighting, landscaping, trees and grade structures.

All Utility Easements are dedicated to the City of Grand Junction as perpetual easements for City approved utilities including the installation, operation, maintenance and repair of said utilities and appurtenances which may include but are not limited to, electric lines, cable TV lines, natural gas pipelines, sanitary sewer lines, storm sewers, water lines, telephone lines, equivalent other public utility providers and appurtenant facilities.

A Drainage Easement over Tract A is dedicated to the City of Grand Junction as a perpetual easement for the inspection, installation, operation, maintenance and repair of detention and drainage facilities and appurtenants thereto. The City of Grand Junction is dedicated reasonable ingress/egress access to the drainage/detention easement areas. The owner(s) and/or the property owners' association, if one exists, is not relieved of its responsibility to inspect, install, operate, maintain and repair the detention and drainage facilities.

All other Drainage easement are granted to the Homeowner's Association by separate instrument.

_____
Robert W. Jones II, Managing Member

STATE OF COLORADO)
)ss
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____ 2017 A.D. by TWO R & D, LLC, Robert W. Jones II, Managing Member.

Witness my hand and official seal: _____
Notary Public

My commission expires: _____

CITY APPROVAL

This plat of PINNACLE RIDGE SUBDIVISION, FILING 1, a subdivision of the City of Grand Junction, County of Mesa, State of Colorado, is approved and accepted on the ____ day of _____, 2017 A.D.

_____ _____
City Manager City Mayor

NOTICE: According to Colorado law you must commence any legal action based upon any defect in the survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of this certification/statement shown hereon.

TITLE CERTIFICATION

State of Colorado
County of Mesa

We, Heritage Title Company, a title insurance company, as duly licensed in the State of Colorado, hereby certify that we have examined the title to the hereon described property, that we find the title to the property is vested to Two R & D, LLC, a Colorado limited liability company ; that the current taxes have been paid; that all mortgages not satisfied or released of record or otherwise terminated by law are shown hereon and that there are no other encumbrances of record; that all easements, reservations and right-of-ways of record are shown hereon.

Date: _____ By: _____

LIENHOLDERS RATIFICATION OF PLAT

The undersigned, hereby certifies that it is a holder of a security interest upon the property hereon described and does hereby join in and consent to the dedication of the land described in said dedication by the owners thereof and agree that its security interest which is recorded under Reception No. 2236040, 2310515, 2422221, 2422230, 2439195, 2488454, 2654494, 2351449, 2351450, 2439196, 2488467, 2654493 of the public records of Mesa County, Colorado shall be subordinated to the dedications shown hereon.

BY: _____ FOR: Alpine Bank

STATE OF COLORADO)
)ss
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____ 2017 A.D. by

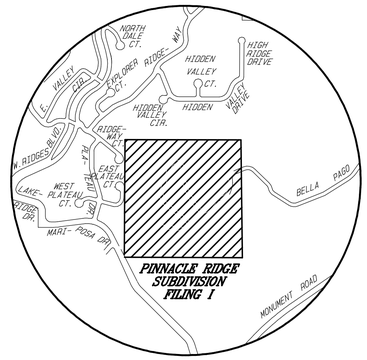
Witness my hand and official seal: _____
Notary Public

My commission expires: _____

CLERK AND RECORDER'S CERTIFICATE

This plat was accepted for filing in the office of the Clerk and Recorder of Mesa County, Colorado at _____ o'clock__M., on this ____ day of _____ 2017 A.D., and was recorded at Reception No. _____, Drawer No. _____, and Fees _____.

_____ _____
Clerk and Recorder Deputy



VICINITY MAP
N.T.S.

To be completed by the City of Grand Junction personnel. The accuracy of this information is the responsibility of the City of Grand Junction.

Declaration of Covenants, Restrictions and Conditions of the Pinnacle Ridge Homeowner's Association, Inc.

recorded under Reception No. _____.

Tracts A and B are conveyed to the Pinnacle Ridge Homeowner's Association, Inc.

recorded under Reception No. _____.

Drainage and Ingress & Egress Easements are conveyed to the Pinnacle Ridge Homeowner's Association

recorded under Reception No. _____.

SURVEYOR'S STATEMENT

I, Michael W. Drissel, a registered Professional Land Surveyor in the State of Colorado, do hereby state that this survey was performed by me or under my direct responsibility, supervision, and checking. It is based upon my professional knowledge, information and belief according to applicable standards of practice. This is not a guarantee or warranty, either expressed or implied. Title research was supplied by Heritage Title Company under FILE NUMBER: 598-H0502023-900-GTO.

FOR REVIEW

REVISED 07/27/17
REVISED 08/24/17
REVISED 09/27/17

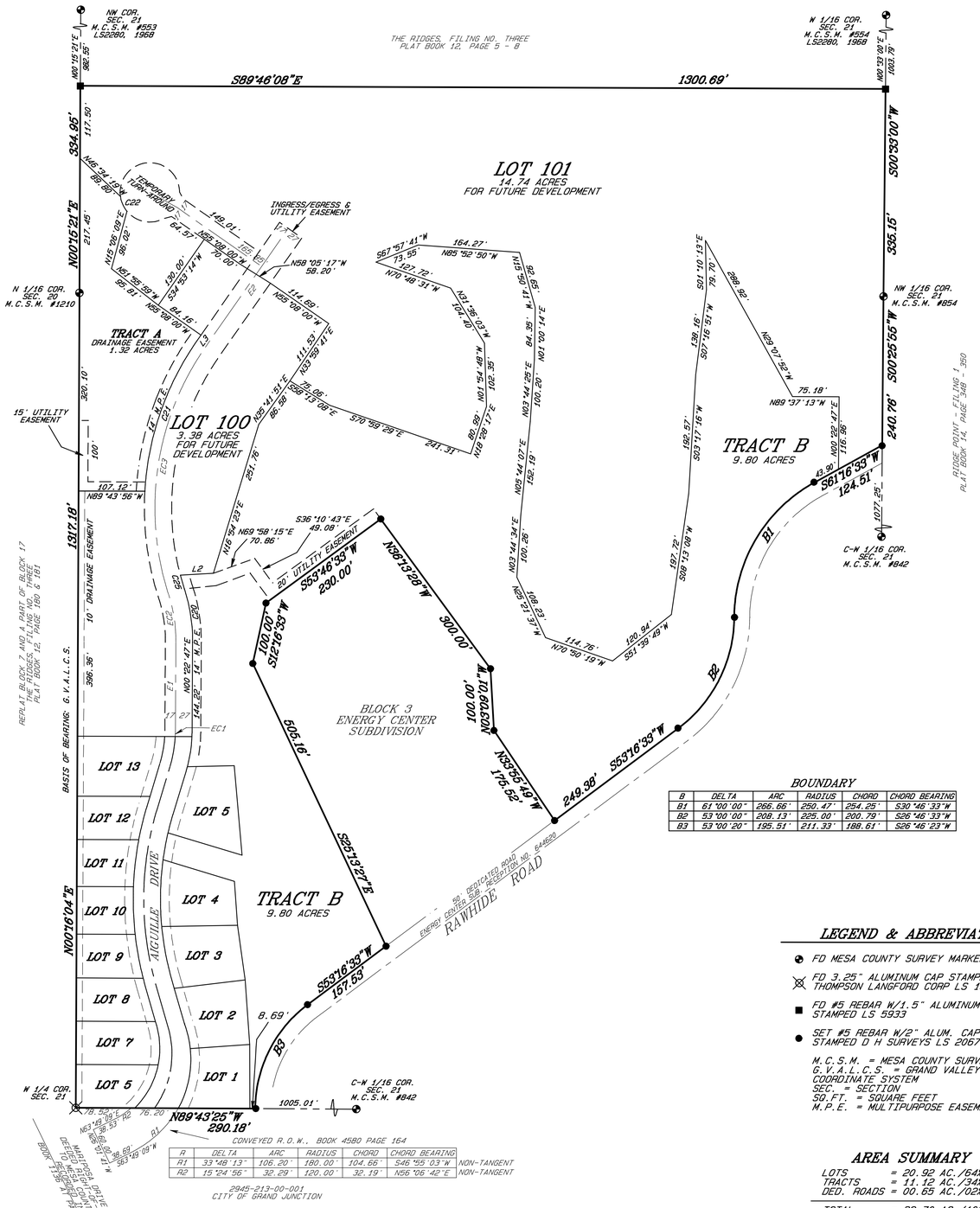
PINNACLE RIDGE SUBDIVISION
FILING 1
LOCATED IN THE
W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.

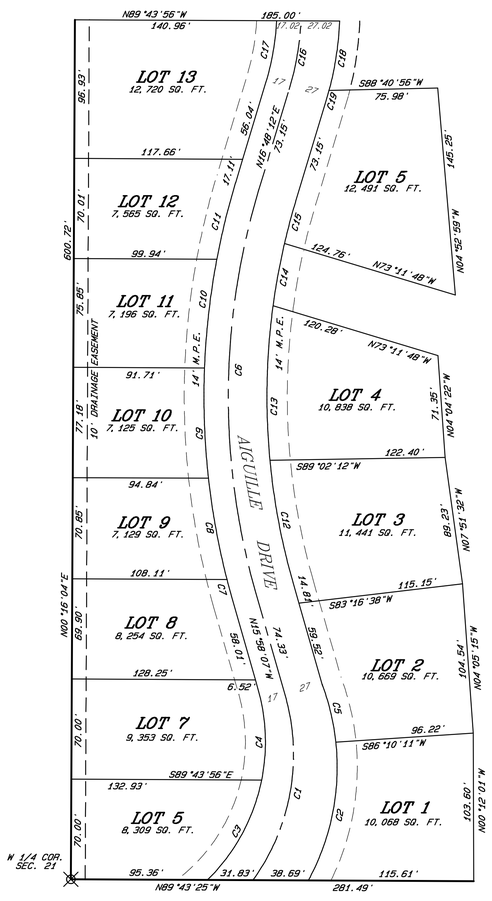
D H SURVEYS INC.
118 OURAY AVE. - GRAND JUNCTION, CO.
(970) 245-8749

Designed By M.W.D.	Checked By E.E.B.	Job No. 129-04-03
Drawn By TMODEL	Date MAY 2017	Sheet 1 OF 2

PINNACLE RIDGE SUBDIVISION, FILING 1

W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M., City of Grand Junction, Mesa County, Colorado





LOT & CENTER LINE DIMENSIONS

L/C	DELTA	ARC	RADIUS	CHORD	CHORD BEARING	
C1	51°45'39"	135.51	150.00'	130.95'	S09°54'43"W	
C2	34°44'09"	100.03'	165.00'	98.51'	S11°15'38"W	NON-TANGENT
C3	34°13'41"	80.65'	135.00'	79.45'	N28°28'58"E	
C4	27°20'14"	64.41'	135.00'	63.80'	N02°18'00"W	
C5	14°18'25"	41.20'	165.00'	41.09'	S13°15'41"E	NON-TANGENT
C6	32°46'18"	285.99'	500.00'	282.11'	S00°25'03"W	
C7	1°38'41"	14.84'	517.00'	14.84'	N15°08'46"W	
C8	7°59'00"	72.04'	517.00'	71.98'	N10°19'55"W	
C9	8°33'07"	77.17'	517.00'	77.10'	N02°03'52"W	
C10	8°28'47"	76.51'	517.00'	76.44'	N06°27'05"E	
C11	6°06'43"	55.15'	517.00'	55.12'	N13°44'50"E	
C12	10°33'49"	87.21'	473.00'	87.08'	S10°41'12"E	
C13	13°26'47"	108.25'	473.00'	108.02'	S01°09'06"W	
C14	5°21'55"	44.29'	473.00'	44.28'	S10°23'27"W	
C15	3°43'47"	30.79'	473.00'	30.79'	S14°56'18"W	
C16	13°59'35"	48.84'	200.00'	48.72'	S09°48'24"W	
C17	13°45'24"	43.94'	183.00'	43.83'	N09°55'30"E	
C18	12°25'26"	49.22'	227.00'	49.13'	S08°43'11"W	
C19	1°52'18"	7.42'	227.00'	7.42'	N15°52'03"E	
C20	18°18'09"	86.88'	271.98'	86.51'	S08°46'17"E	
C21	31°36'19"	260.36'	472.00'	257.07'	S19°03'51"W	
L2		53.58'			S86°44'38"W	
C22	31°33'47"	26.44'	48.00'	26.11'	N24°00'53"W	
L3		11.70'			N34°52'00"E	
C23	14°45'44"	58.74'	228.00'	58.58'	S46°08'11"W	
C25	03°11'16"	23.81'	428.00'	23.81'	S16°19'43"E	

INGRESS/EGRESS EASEMENT (varied width)

#	DELTA	ARC	RADIUS	CHORD	CHORD BEARING
EC1	2°25'50"	8.48'	200.00'	8.48'	N01°35'42"E
E1		144.22'			S00°22'47"W
EC2	18°18'09"	78.26'	244.98'	77.93'	S08°46'17"E
EC3	52°47'22"	419.21'	455.00'	404.54'	S08°28'20"W
E2		233.78'			N34°52'00"E

BOUNDARY

B	DELTA	ARC	RADIUS	CHORD	CHORD BEARING
B1	61°00'00"	266.66'	250.47'	254.25'	S30°46'33"W
B2	53°00'00"	208.13'	225.00'	200.79'	S26°46'33"W
B3	53°00'20"	195.51'	211.33'	188.61'	S26°46'23"W

LEGEND & ABBREVIATIONS

- FD MESA COUNTY SURVEY MARKER
- FD 3.25" ALUMINUM CAP STAMPED THOMPSON LANGFORD CORP LS 18480
- FD #5 REBAR W/1.5" ALUMINUM CAP STAMPED LS 5933
- SET #5 REBAR W/2" ALUM. CAP STAMPED D H SURVEYS LS 20677

M.C.S.M. = MESA COUNTY SURVEY MARKER
C.V.A.L.C.S. = GRAND VALLEY AREA LOCAL COORDINATE SYSTEM
SEC. = SECTION
SQ.FT. = SQUARE FEET
M.P.E. = MULTIPUAPOSE EASEMENT

AREA SUMMARY

LOTS	= 20.92 AC./64%
TRACTS	= 11.12 AC./34%
DED. ROADS	= 00.65 AC./02%
TOTAL	= 32.70 AC./100%

GRAPHIC SCALE 1"=100'
0 100 200 300
LINEAR UNITS = U.S. SURVEY FEET

FOR REVIEW

PINNACLE RIDGE SUBDIVISION FILING 1

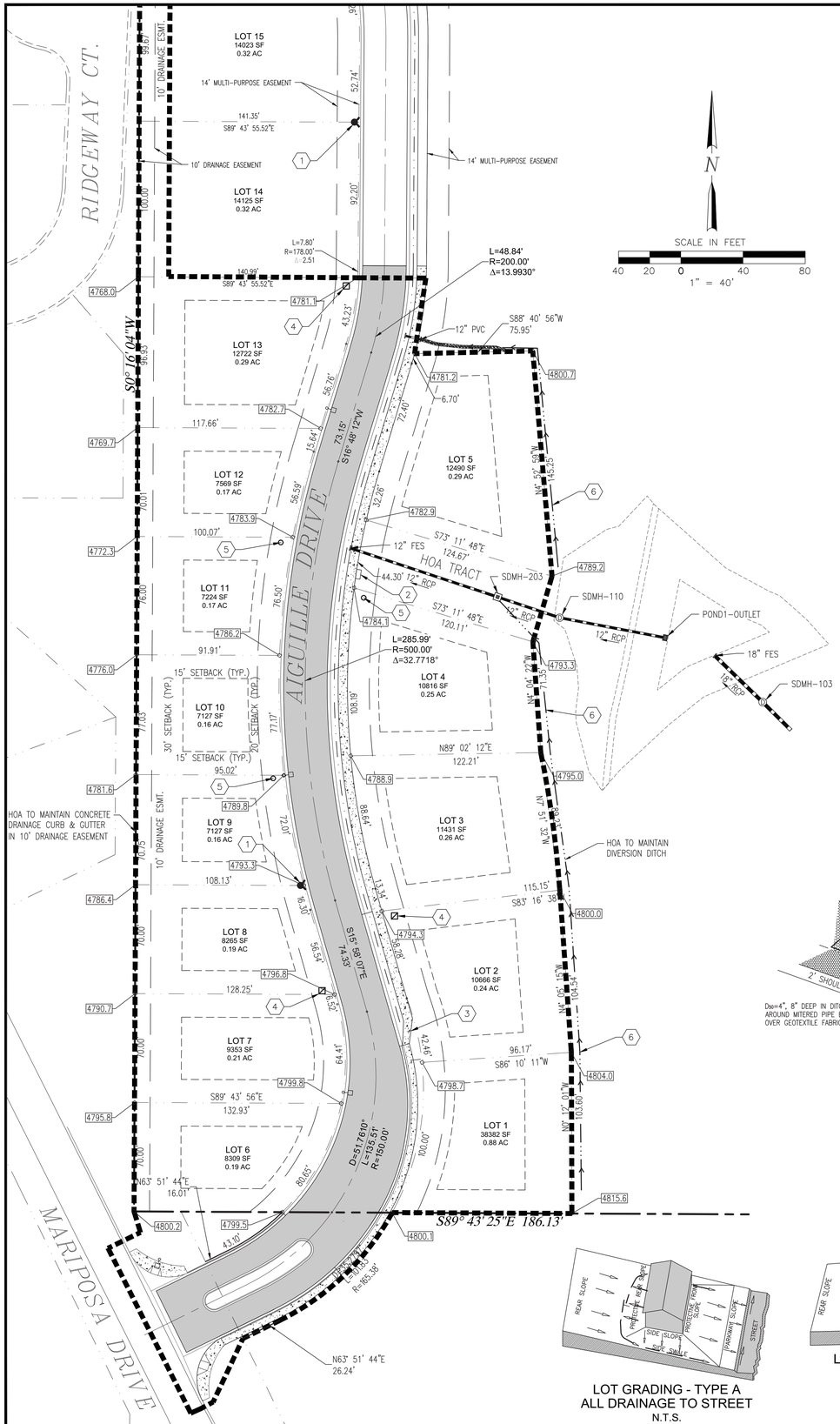
LOCATED IN THE

W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.

D H SURVEYS INC.
118 OURAY AVE. - GRAND JUNCTION, CO.
(970) 245-8749

REVISED 07/27/17
REVISED 09/27/17
REVISED 11/10/17

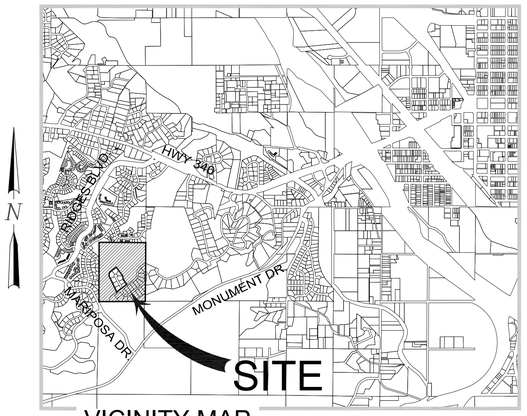
Designed By M.W.D.	Checked By E.E.B.	Job No. 129-04-03	
Drawn By TMODEL	Date MAY 2017	Sheet 2 OF 2	



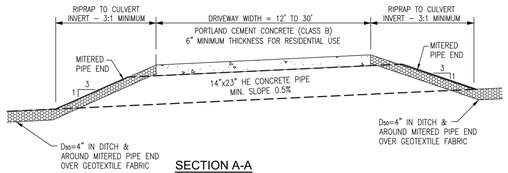
CONSTRUCTION NOTES:

1. PROPOSED FIRE HYDRANT
2. PROPOSED MAILBOX PAD
3. 15' TRANSITION FROM ATTACHED SIDEWALK TO DETACHED SIDEWALK
4. PROPOSED ELECTRIC TRANSFORMER BY XCEL ENERGY
5. PROPOSED ELECTRIC PEDESTAL BY XCEL ENERGY
6. PROPOSED DIVERSION DITCHES DO NOT DISTURB

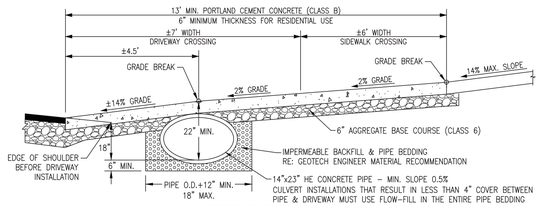
FILING 1 TOF TABLE			
Lot	*Grading*	*Min. TOF*	*Max. TOF*
1	Type A	4801.00	4801.50
2	Type A	4798.70	4799.20
3	Type A	4793.30	4793.80
4	Type A	4787.90	4788.40
5	Type A	4783.60	4784.10
6	Type C	4801.60	4802.10
7	Type C	4799.30	4799.80
8	Type C	4796.00	4796.50
9	Type C	4792.50	4793.00
10	Type C	4789.00	4789.50
11	Type C	4786.00	4786.50
12	Type C	4784.30	4784.80
13	Type C	4783.10	4783.60



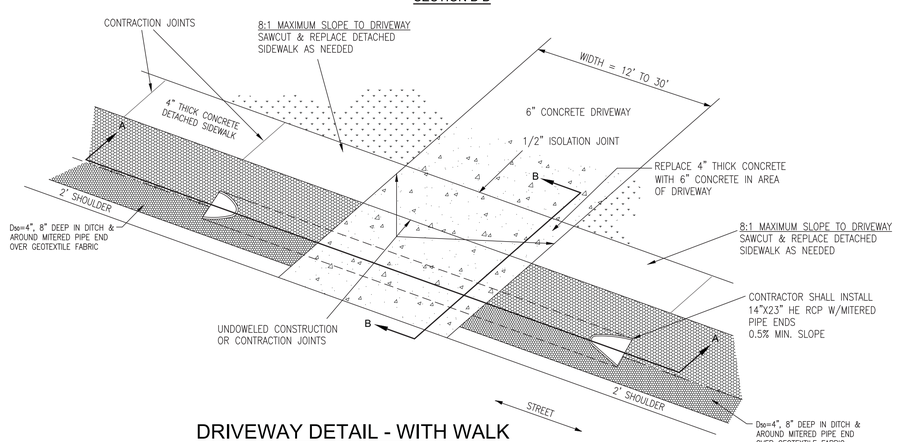
VICINITY MAP



SECTION A-A



SECTION B-B



DRIVEWAY DETAIL - WITH WALK
N.T.S.

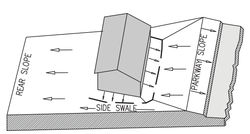
GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. ALL LOTS MUST HAVE AN INDIVIDUAL GEOTECHNICAL INVESTIGATION PERFORMED AND A SITE SPECIFIC ENGINEERING FOUNDATION.
3. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL.
4. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
5. ALL WATER SERVICES SHALL HAVE A PRESSURE REGULATED YOKE INSTALLED BASED ON PRESSURE LIMITS AS DETERMINED IN THE HYDRAULIC ANALYSIS.
6. DIVERSION DITCHES SHOWN ON THIS PLAN SHALL NOT BE DISTURBED AT ANY TIME.
7. DRIVEWAYS SHALL CONFORM TO THE DETAIL SHOWN ON THIS PLAN.
8. HOA SHALL MAINTAIN ALL CONCRETE CURBS, DETENTION PONDS, OUTLET STRUCTURES, RIPRAP, CULVERTS, DRAINAGE DITCHES, EASEMENTS AND TRACTS LOCATED OUTSIDE OF PUBLIC RIGHTS-OF-WAY. IMPROVEMENTS LOCATED WITHIN PUBLIC RIGHTS-OF-WAY ARE TO BE MAINTAINED BY THE CITY OF GRAND JUNCTION.

LEGEND

- PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- 4550.00 LOT CORNER SPOT ELEVATION
- PROPOSED FIRE HYDRANT

LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.



LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.

PROPOSED LAND USE TABLE				
USE	*AREA*	*AC*	*% OF TOTAL*	*OWNER*
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. – 45.11 AC			

CLERK AND RECORDER'S CERTIFICATE

STATE OF COLORADO } ss
COUNTY OF MESA }

I hereby certify that this instrument was filed in my office at _____o'clock__M., this _____ day of _____ A.D. 2017, and is duly recorded in Book No. _____, at page _____, Reception No. _____, Drawer No. _____ Fees $ _____

_____
Clerk and Recorder

By:_____
Deputy

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS & CSI
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED
JAMES C. ATKINSON
18828
11-20-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	JSY

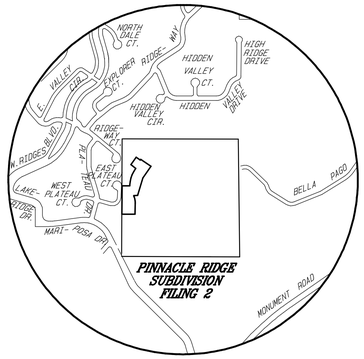
Site Plan for Recording
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 60'**
CAD ID: **pinnacle-sfr.dwg**

~SHEET~
1

PINNACLE RIDGE SUBDIVISION, FILING 2

A REPLAT OF LOT 100, PINNACLE RIDGE SUBDIVISION FILING 1, Reception No. *******, W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.
City of Grand Junction, Mesa County, Colorado



VICINITY MAP
N.T.S.

LEGEND & ABBREVIATIONS

- FD MESA COUNTY SURVEY MARKER
- FD 3.25" ALUMINUM CAP STAMPED THOMPSON LANGFORD CORP LS 18480
- FD #5 REBAR W/1.5" ALUMINUM CAP STAMPED LS 5933
- SET #5 REBAR W/2" ALUM. CAP STAMPED D H SURVEYS LS 20677

M.C.S.M. = MESA COUNTY SURVEY MARKER
G.V.A.L.C.S. = GRAND VALLEY AREA LOCAL COORDINATE SYSTEM
M.P.E. = MULTIPURPOSE EASEMENT
SEC. = SECTION
DED. = DEDICATED
SQ.FT. = SQUARE FEET

To be completed by the City of Grand Junction personnel.
The accuracy of this information is the responsibility of the City of Grand Junction.

Declaration of Covenants, Restrictions and Conditions of the Pinnacle Ridge Homeowner's Association, Inc.

recorded under Reception No. _____.

Drainage Easements are conveyed to the Pinnacle Ridge Homeowner's Association

recorded under Reception No. _____.

CITY APPROVAL

This plat of PINNACLE RIDGE SUBDIVISION, FILING 2, a subdivision of the City of Grand Junction, County of Mesa, State of Colorado, is approved and accepted

on the ____ day of _____, 2017 A.D.

_____ City Manager

_____ City Mayor

CLERK AND RECORDER'S CERTIFICATE

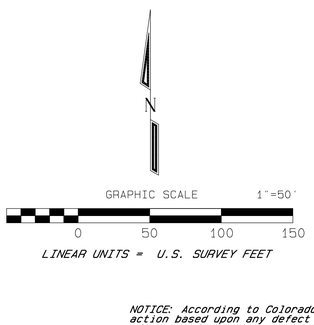
This plat was accepted for filing in the office of the Clerk and Recorder of Mesa County, Colorado at _____ o'clock__M., on this ____ day of _____ 2017 A.D., and was recorded at Reception No. _____, Drawer No. _____, and Fees _____.

_____ Clerk and Recorder

_____ Deputy

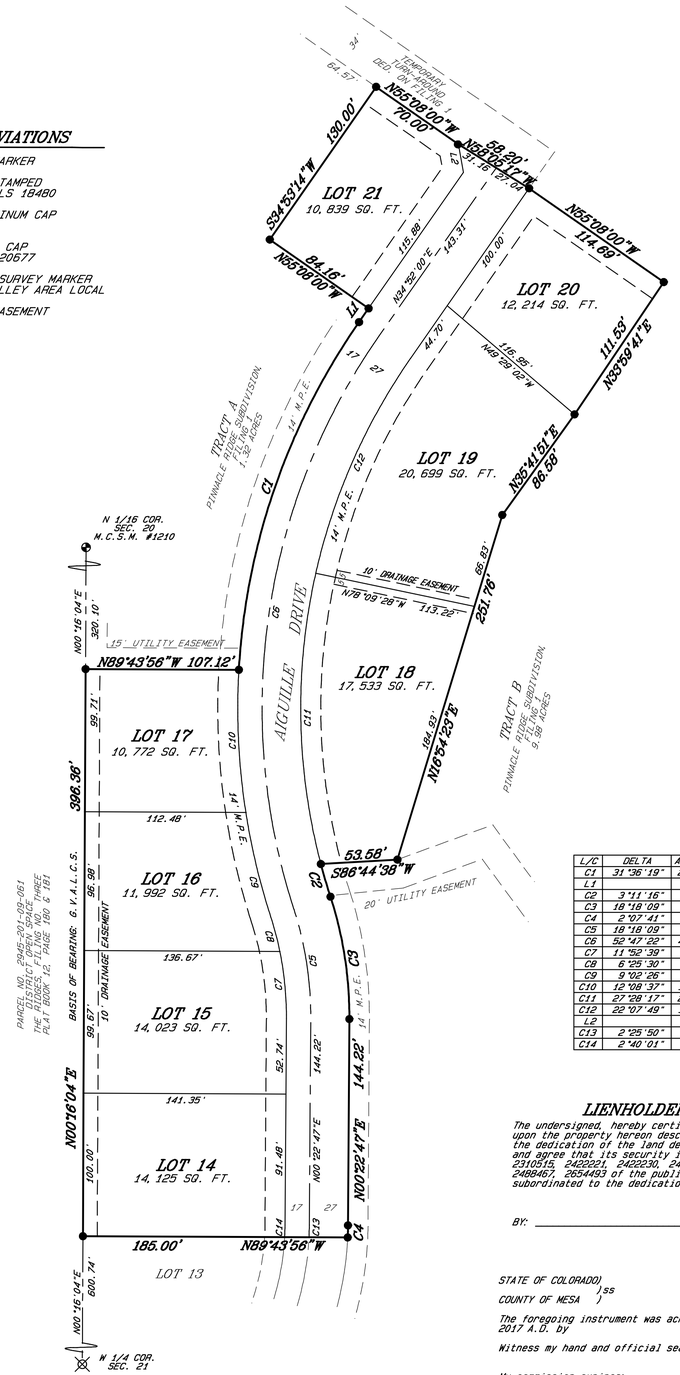
AREA SUMMARY

LOTS	= 2.58 AC./ 77%
DED. ROADS	= 0.80 AC./ 23%
TOTAL	= 3.38 AC./100%



LINEAR UNITS = U.S. SURVEY FEET

NOTICE: According to Colorado law you must commence any legal action based upon any defect in the survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of this certification/statement shown hereon.



L/C	DELTA	ARC/TANG	RADIUS	CHORD	CHORD BEARING
C1	31°36'19"	260.36'	472.00'	257.07'	N19°03'51"E
L1		11.70'			S34°52'00"W
C2	3°11'16"	23.81'	428.00'	23.81'	S16°19'43"E
C3	18°18'09"	86.88'	271.98'	86.51'	S08°46'17"E
C4	2°07'43"	8.43'	227.00'	8.43'	S01°26'37"W
C5	18°18'09"	78.26'	244.98'	77.93'	S08°46'17"E
C6	52°47'29"	419.21'	455.00'	404.54'	S08°29'29"W
C7	11°52'39"	47.26'	227.98'	47.18'	N05°33'32"W
C8	6°25'30"	25.57'	227.98'	25.55'	N14°42'35"W
C9	9°02'26"	74.48'	472.00'	74.40'	N13°24'08"W
C10	12°08'37"	100.04'	472.00'	99.85'	N02°48'37"W
C11	27°28'17"	205.21'	428.00'	203.26'	S00°59'52"E
C12	22°07'49"	165.31'	428.00'	164.29'	S23°48'06"W
L2		19.97'			S10°08'00"E
C13	2°25'50"	8.48'	200.00'	8.48'	S01°35'42"W
C14	2°40'01"	8.52'	183.00'	8.52'	N01°42'47"E

DEDICATION

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, TWO R & D, LLC a Colorado limited liability company is the owner of that real property situate in the W 1/2 NW 1/4 of Section 21, Township 1 South, Range 1 of the Ute Meridian, City of Grand Junction, Mesa County, Colorado; being more particularly described as follows:

Lot 100, Pinnacle Ridge Subdivision, Filing 1, Reception No.

Said parcel contains 3.37 acres more or less.

Said Owner has by these presents laid out, platted and subdivided the above-described real property into Lots, and Tracts as shown hereon, and designated the same as PINNACLE RIDGE SUBDIVISION, FILING 2 in the City of Grand Junction, County of Mesa, State of Colorado, and does hereby offer the following dedications and grants:

All streets, roads and Rights-of-Way are dedicated to the City of Grand Junction for the use of the public forever.

All Multipurpose Easements are dedicated to the City of Grand Junction as perpetual easements for City approved utilities including the installation, operation, maintenance and repair of said utilities and appurtenances which may include but are not limited to, electric lines, cable TV lines, natural gas pipelines, sanitary sewer lines, storm sewers, water lines, telephone lines, traffic control facilities, street lighting, landscaping, trees and grade structures.

All Drainage Easements are granted to the Homeowner's Association by separate instrument.

_____ Robert W. Jones II, Managing Member

STATE OF COLORADO)
)ss
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____ 2017 A.D. by TWO R & D, LLC, Robert W. Jones II, Managing Member.

Witness my hand and official seal: _____ Notary Public

My commission expires: _____

TITLE CERTIFICATION

State of Colorado
County of Mesa

We, Heritage Title Company, a title insurance company, as duly licensed in the State of Colorado, hereby certify that we have examined the title to the hereon described property, that we find the title to the property is vested to Two R & D, LLC, a Colorado limited liability company ; that the current taxes have been paid; that all mortgages not satisfied or released of record or otherwise terminated by law are shown hereon and that there are no other encumbrances of record; that all easements, reservations and right-of-ways of record are shown hereon.

Date: _____ By: _____

SURVEYOR'S STATEMENT

I, Michael W. Drissel, a registered Professional Land Surveyor in the State of Colorado, do hereby state that this survey was performed by me or under my direct responsibility, supervision, and checking. It is based upon my professional knowledge, information and belief according to applicable standards of practice. This is not a guarantee or warranty, either expressed or implied. Title research was supplied by Heritage Title Company under FILE NUMBER: 599-H0502823-900-GTO.

FOR REVIEW

LIENHOLDERS RATIFICATION OF PLAT

The undersigned, hereby certifies that it is a holder of a security interest upon the property hereon described and does hereby join in and consent to the dedication of the land described in said dedication by the owners thereof and agree that its security interest which is recorded under Reception No. 2236040, 2310515, 2420221, 2455030, 2439195, 2488454, 2654494, 2351455, 2351450, 2439196, 2488467, 2654493 of the public records of Mesa County, Colorado shall be subordinated to the dedications shown hereon.

BY: _____ FOR: Alpine Bank

STATE OF COLORADO)
)ss
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____ 2017 A.D. by

Witness my hand and official seal: _____ Notary Public

My commission expires: _____

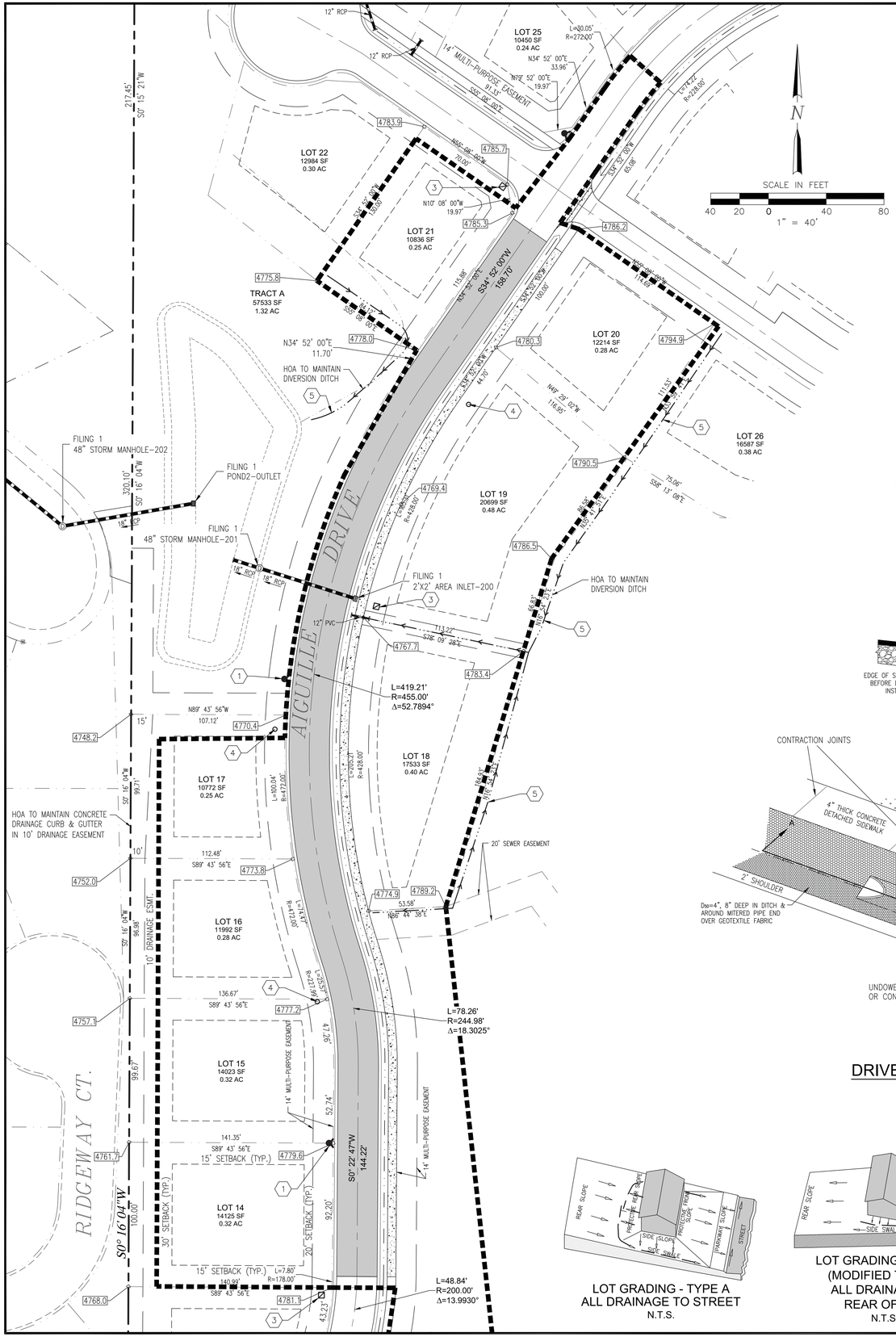
REVISED 07/28/17
REVISED 09/27/17
REVISED 11/20/17

PINNACLE RIDGE SUBDIVISION FILING 2

LOCATED IN THE
W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.

D H SURVEYS INC.
118 OURAY AVE. - GRAND JUNCTION, CO.
(970) 245-8749

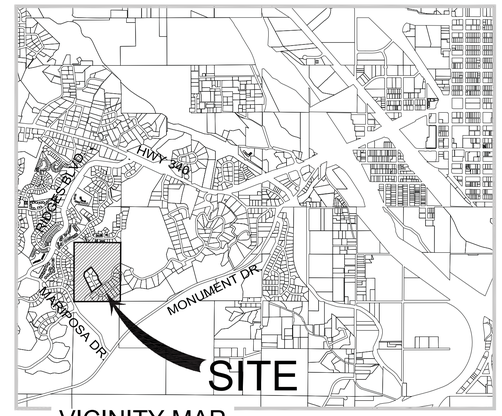
Designed By M.W.D.	Checked By E.E.B.	Job No.	129-04-03
Drawn By TMODEL	Date MAY 2017	Sheet	1 OF 1



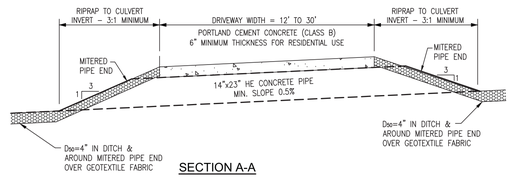
CONSTRUCTION NOTES:

1. PROPOSED FIRE HYDRANT
2. PROPOSED MAILBOX PAD
3. PROPOSED ELECTRIC TRANSFORMER BY XCEL ENERGY
4. PROPOSED ELECTRIC PEDESTAL BY XCEL ENERGY
5. PROPOSED DIVERSION DITCHES DO NOT DISTURB

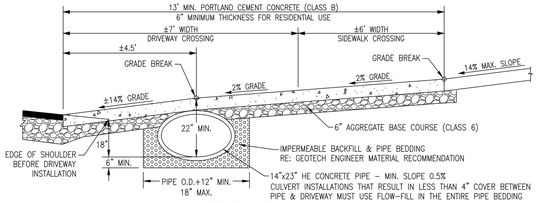
FILING 2 TOF TABLE			
Lot	*Grading*	*Min. TOF*	*Max. TOF*
14	Type C	4781.40	4781.90
15	Type C	4779.40	4779.90
16	Type C	4776.50	4777.00
17	Type C	4773.40	4773.90
18	Type A	4773.00	4773.50
19	Type A	4774.50	4775.50
20	Type A	4782.50	4784.50
21	Type C	4784.50	4786.50



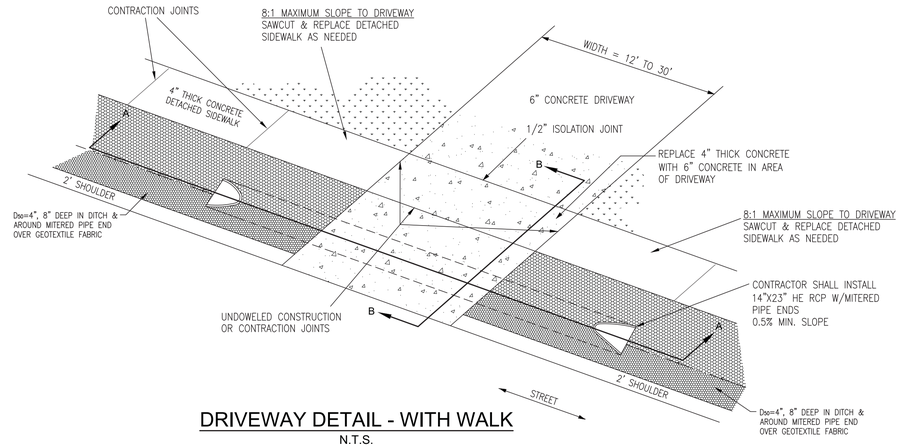
VICINITY MAP



SECTION A-A



SECTION B-B



DRIVEWAY DETAIL - WITH WALK
N.T.S.

LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.

LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.

PROPOSED LAND USE TABLE				
USE	*AREA*	*AC*	*% OF TOTAL*	*OWNER*
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. – 45.11 AC			

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. ALL LOTS MUST HAVE AN INDIVIDUAL GEOTECHNICAL INVESTIGATION PERFORMED AND A SITE SPECIFIC ENGINEERING FOUNDATION.
3. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL.
4. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
5. ALL WATER SERVICES SHALL HAVE A PRESSURE REGULATED YOKE INSTALLED BASED ON PRESSURE LIMITS AS DETERMINED IN THE HYDRAULIC ANALYSIS.
6. DIVERSION DITCHES SHOWN ON THIS PLAN SHALL NOT BE DISTURBED AT ANY TIME.
7. DRIVEWAYS SHALL CONFORM TO THE DETAIL SHOWN ON THIS PLAN.
8. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.
9. HOA SHALL MAINTAIN ALL CONCRETE CURBS, DETENTION PONDS, OUTLET STRUCTURES, RIPRAP, CULVERTS, DRAINAGE DITCHES, EASEMENTS AND TRACTS LOCATED OUTSIDE OF PUBLIC RIGHTS-OF-WAY. IMPROVEMENTS LOCATED WITHIN PUBLIC RIGHTS-OF-WAY ARE TO BE MAINTAINED BY THE CITY OF GRAND JUNCTION.

LEGEND

- PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- 4550.00 LOT CORNER SPOT ELEVATION
- PROPOSED FIRE HYDRANT

CLERK AND RECORDER'S CERTIFICATE

STATE OF COLORADO } ss
COUNTY OF MESA }

I hereby certify that this instrument was filed in my office at _____o'clock__M., this _____ day of _____ A.D. 2017, and is duly recorded in Book No. _____, at page _____, Reception No. _____, Drawer No. _____ Fees $ _____

_____
Clerk and Recorder

By:_____
Deputy

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 11-20-17 PROFESSIONAL ENGINEER

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY
1	8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS
2	10/11/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	JSY

Site Plan for Recording
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 60'**
CAD ID: **pinnacle-sfr-f2.dwg**

~SHEET~
1 of 1

Grand Junction City Council

Regular Session

Item #6.a.

Meeting Date: April 19, 2017

Presented By: Scott D. Peterson, Senior Planner

Department: Admin - Community Development

Submitted By: Scott D. Peterson, Senior Planner, Rick Dorris, City Development Engineer

Information

SUBJECT:

Resolution Granting Conditional Approval of Private Streets and also Public Streets and Residential Lots Traversing Greater than 30% Slopes for the Proposed Pinnacle Ridge Subdivision in an existing R-2 (Residential - 2 du/ac) Zone District, Located East of Mariposa Drive in the Redlands.

RECOMMENDATION:

Planning Commission heard this item at its March 28, 2017 meeting and forwarded a recommendation of approval to City Council (5 - 0).

EXECUTIVE SUMMARY:

The applicant, Two R & D LLC, requests approval of certain items under City Codes and regulations that require either Planning Commission or City Council action regarding their proposed Preliminary Plan application. These actions include City Council approval of; 1) proposed private streets and 2) subdivision lots and public streets traversing greater than 30% slopes.

BACKGROUND OR DETAILED INFORMATION:

The property is located east of Mariposa Drive in the Redlands and contains 45.11 +/- acres. The applicant has submitted for a Preliminary Plan subdivision review in order to develop 72 single-family detached lots to be developed in five phases/filings. Proposed residential density would be 1.59 dwelling units to the acre. Zoning for the property is R-2 (Residential – 2 du/ac). The property consists of both unplatted and platted properties. The platted properties are remnants of the old Energy Center Subdivision,

Phase 1 that were platted in 1955. Today these lots still have no legal access and are not developed. Nine of the 28 total platted lots from the Energy Center Subdivision, Phase 1 are currently not owned by the applicant and are not included within the proposed Preliminary Plan application. However, the applicant is providing access to the nine existing lots as part of their Filing Five for Pinnacle Ridge. At a later date and as a condition of approval of the Preliminary Plan, the applicant will need to request to vacate a portion of the Energy Center Subdivision Phase 1, that is owned by the applicant for existing right-of-way and utility easements located within Blocks 1 and 2. This will need to occur prior to final plan approval for Filing Five.

Under the Preliminary Plan application, the applicant has proposed to utilize the cluster provisions of the Zoning and Development Code (Section 21.03.060) to utilize and preserve existing open space in order to be able to have smaller lot sizes than what the Zoning Code requires for the R-2 zone district. The applicant is proposing 15.06 +/- acres (33% of the development) for open space within the development, which under the clustering provision would allow lot sizes of a minimum 7,125 sq. ft. and bulk standards found in the R-4 zone district. Without clustering, the minimum required lot size in the R-2 zone district is 15,000 sq. ft. Utilization of the cluster development provisions of the Code is to encourage the preservation of environmentally sensitive areas and open space lands.

Mariposa Drive is classified as a Major Collector on the Grand Valley Circulation Plan, meaning it collects traffic from neighborhoods and moves it to a higher classification street, in this case Monument Road which is classified as a Minor Arterial. Mariposa Drive, south of the existing median near the W. Ridges Blvd entrance is 28' of asphalt width with attached curb and gutter with a detached 10' wide concrete path located on the west side. Mariposa Drive was intentionally built narrower than the standard collector street to keep speeds lower.

On March 25th, 26th and 27th, 2017 the City conducted traffic counts on Monument Road and Marioposa. Monument Road had less than 4700 Average Daily Trips (ADT) measured northeast of the Mariposa intersection and less than 4200 ADT measured southwest of the Mariposa intersection. Mariposa Drive itself had less than 1100 ADT, south of the intersection with W. Ridges Blvd. Given its width and lack of driveways, Mariposa has a capacity of 3000 ADT in this area. Monument Road has a capacity of 10,000 ADT. The Pinnacle Ridge project will add approximately 720 ADT at full build-out which is well within the capacity of both Mariposa and Monument Roads. The majority of Pinnacle Ridge traffic is expected to travel to Monument Road.

The intersection of Monument and Mariposa will eventually need to be improved with right and left turn lanes on Monument and possibly a left turn lane on Mariposa. Because both streets are classified as Collector or above, it is the City's financial responsibility for these improvements.

History and TEDS (Transportation Engineering Design Standards) Exceptions:

The applicant obtained Transportation Engineering Design Standards (TEDS) exceptions in 2007 when a previous Preliminary Plan was reviewed and approved. They are being honored with the current application regarding maximum block length, maximum street grade, maximum grades through an intersection and maximum cul-de-sac length and are conditioned as follows:

1. Exceeding the 1200' maximum block length with the condition an intermediate connection be made to either the north or west.
2. Exceeding the maximum 750' cul-de-sac length with the requirement to sprinkle houses past the street connection to the east and provide an intermediate turnaround for the Fire Department.
3. Exceeding the maximum allowable 12% street grade with the requirement to sprinkle all houses on the 13% grade along Elysium Drive.
4. Exceeding the maximum grade through an intersection on Elysium Drive at the connection to the east.

The TEDS exception granting the 13% street slope is only 1% over the allowable TEDS grade but for a longer distance, 800' instead of the allowed 500'. This steep slope is on a north facing street and will be an issue during periods of snow. The City isn't equipped to and does not plow residential streets. Consequently, the City has required the applicant to make the Homeowner's Association responsible for snow removal and to post conspicuous signs along the steep slope stating such.

Alternative Street Standard:

The City has agreed to an alternative street standard for this subdivision that uses roadside ditches instead of attached curb, gutter, and sidewalk over much of the subdivision. There is still some attached concrete in isolated areas for specific reasons. This approach will hopefully reduce the differential movement problem (asphalt and concrete move in different ways).

Public Versus Private Streets and Ute Water:

Several projects have been built in the City in the past where the streets moved vertically and continue to move. Multiple repairs over long time periods are required.

The proposed Pinnacle Ridge project would build approximately two miles of streets with significant lengths in cuts and fills up to 20' deep. Deep fills will settle over time and may continue to move as water is introduced by rainfall or urban development. Large cuts may actually heave.

The City's initial approach was for all streets to be private but Ute Water won't allow their water mains in private streets. The Developer objected to the private street requirement and to solve this, the City has agreed to accept the streets as public with conditions, including a seven-year warranty.

There are two areas of the project where private streets are requested by the Developer to optimize their project layout. Water can be provided by individual services. These two areas are the private street request presented herein.

Extended Warranty:

The City has agreed to accept public streets with a financially secured seven-year warranty. The Developer objects to the condition and is appealing this condition to City Council.

FISCAL IMPACT:

This action does not have direct fiscal impact. As residential development occurs construction materials will be subject to sales and use taxes and land and improvements will be subject to property tax.

SUGGESTED MOTION:

I move to (approve or deny) Resolution No. 21-17 - A Resolution Granting Conditional Approval of Private Streets and also Public Streets and Residential Lots Traversing Greater than 30% Slopes for the Proposed Pinnacle Ridge Subdivision, Located East of Mariposa Drive in The Redlands.

Attachments

1. Planning Commission Staff Report
2. DRAFT - Planning Commission Minutes - 3-28-17
3. Mattson Email
4. Wihera Letter
5. Wihera Letter (2)
6. Robinson Letter
7. Phillips Email
8. Resolution

Date: February 17, 2017
Author: Scott D. Peterson
Title/ Phone Ext: Senior Planner/1447
Proposed Schedule: March 28, 2017
File #: SUB-2015-120

PLANNING COMMISSION AGENDA ITEM

Subject: Pinnacle Ridge Subdivision, Preliminary Plan, Located East of Mariposa Drive
Action Requested/Recommendation: Forward a recommendation of conditional approval to City Council for review of private streets and also public streets and residential lots traversing greater than 30% slopes for the proposed Pinnacle Ridge Subdivision in an existing R-2 (Residential – 2 du/ac) zone district located east of Mariposa Drive.
Presenters Name & Title: Scott D. Peterson, Senior Planner; Rick Dorris, City Development Engineer

Executive Summary:

The applicant, Two R & D LLC, requests approval of certain items under City Codes and regulations that require either Planning Commission or City Council action regarding their proposed Preliminary Plan application. These actions include Council approval of; 1) proposed private streets and 2) subdivision lots and public streets traversing greater than 30% slopes.

Background, Analysis and Options:

The property is located east of Mariposa Drive in the Redlands and contains 45.11 +/- acres. The applicant has submitted for a Preliminary Plan subdivision review in order to develop 72 single-family detached lots to be developed in five phases/filings. Proposed residential density would be 1.59 dwelling units to the acre. Zoning for the property is R-2 (Residential – 2 du/ac). The property consists of both Unplatted and platted properties. The platted properties are remnants of the old Energy Center Subdivision, Phase 1 that were platted in 1955. Today these lots still have no legal access and are not developed. Nine of the 28 total platted lots from the Energy Center Subdivision, Phase 1 are currently not owned by the applicant and are not included within the proposed Preliminary Plan application. However, the applicant is providing access to the nine existing lots as part of their Filing Five for Pinnacle Ridge. At a later date and as a condition of approval of the Preliminary Plan, the applicant will need to request to vacate a portion of the Energy Center Subdivision Phase 1, that is owned by the applicant for existing right-of-way and utility easements located within Blocks 1 and 2. This will need to occur prior to final plan approval for Filing Five.

Under the Preliminary Plan application, the applicant has proposed to utilize the cluster provisions of the Zoning and Development Code (Section 21.03.060) to utilize and preserve existing open space in order to be able to have smaller lot sizes than what the Zoning Code requires for the R-2 zone district. The applicant is proposing 15.06 +/- acres (33% of the development) for open space within the development, which under the clustering provision would allow lot sizes of a minimum 7,125 sq. ft. and bulk

standards found in the R-4 zone district. Without clustering, the minimum required lot size in the R-2 zone district is 15,000 sq. ft. Utilization of the cluster development provisions of the Code is to encourage the preservation of environmentally sensitive areas and open space lands.

History and TEDS (Transportation Engineering Design Standards) Exceptions:

The applicant obtained Transportation Engineering Design Standards (TEDS) exceptions in 2007 when a previous Preliminary Plan was reviewed and approved. They are being honored with the current application regarding maximum block length, maximum street grade, maximum grades through an intersection and maximum cul-de-sac length and are conditioned as follows:

1. Exceeding the 1200' maximum block length with the condition an intermediate connection be made to either the north or west.
2. Exceeding the maximum 750' cul-de-sac length with the requirement to sprinkle houses past the street connection to the east and provide an intermediate turnaround for the Fire Department.
3. Exceeding the maximum allowable 12% street grade with the requirement to sprinkle all houses on the 13% grade along Elysium Drive.
4. Exceeding the maximum grade through an intersection on Elysium Drive at the connection to the east.

The TEDS exception granting the 13% street slope is only 1% over the allowable TEDS grade but for a longer distance, 800' instead of the allowed 500'. This steep slope is on a north facing street and will be an issue during periods of snow. The City isn't equipped to and does not plow residential streets. Consequently, the City has required the applicant to make the Homeowner's Association responsible for snow removal and to post conspicuous signs along the steep slope stating such.

Alternative Street Standard:

The City has agreed to an alternative street standard for this subdivision that uses roadside ditches instead of attached curb, gutter, and sidewalk over much of the subdivision. There is still some attached concrete in isolated areas for specific reasons. This approach will hopefully reduce the differential movement problem (asphalt and concrete move in different ways).

Public Versus Private Streets and Ute Water:

Several projects have been built in the City in the past where the streets moved vertically and continue to move. Multiple repairs over long time periods are required.

The proposed Pinnacle Ridge project would build approximately two miles of streets with significant lengths in cuts and fills up to 20' deep. Deep fills will settle over time and may continue to move as water is introduced by rainfall or urban development. Large cuts may actually heave.

The City's initial approach was for all streets to be private but Ute Water won't allow their water mains in private streets. The Developer objected to the private street

requirement and to solve this, the City has agreed to accept the streets as public with conditions, including a seven-year warranty.

There are two areas of the project where private streets are requested by the Developer to optimize their project layout. Water can be provided by individual services. These two areas are the private street request presented herein.

Extended Warranty:

The City has agreed to accept public streets with a financially secured seven-year warranty. The Developer objects to the condition and is appealing this condition to City Council.

Neighborhood Meeting:

The applicant held a Neighborhood Meeting on March 11, 2015 prior to submittal of the Preliminary Plan application (City file # MTG-2015-85). Over 24 citizens attended along with City Staff and the applicant. Neighborhood concerns expressed at the meeting were mainly in regards to additional traffic to the area, subdivision lot layout and design and drainage concerns.

Board or Committee Recommendation:

There is no other committee of board recommendation.

Financial Impact/Budget:

No direct financial impact on the City budget for this item.

Other issues:

There are no other issues identified.

Previously presented or discussed:

This has not been previously discussed by the Planning Commission.

Attachments:

1. Staff Report/Background Information
2. Applicant's Response to 10-Year Warranty Period Request
3. Site Location Map
4. Aerial Photo Map
5. Comprehensive Plan Future Land Use Map
6. Existing Zoning Map
7. Preliminary Plan
8. Limits of Development
9. Grading Cut & Fill
10. Resolution

BACKGROUND INFORMATION					
Location:		NE of Mariposa Drive and Monument Road			
Applicant:		Two R & D LLC, Owner			
Existing Land Use:		Vacant land			
Proposed Land Use:		72 lot, single-family detached residential subdivision			
Surrounding Land Use:	**North**	Two-Family and Single-Family Detached			
	South	Vacant land (Owned by City of Grand Junction)			
	East	Single-Family Detached and Vacant Land			
	West	Single-Family Detached			
Existing Zoning:		R-2 (Residential – 2 du/ac)			
Proposed Zoning:		N/A			
Surrounding Zoning:	**North**	PD (Planned Development)			
	South	CSR (Community Service & Recreation)			
	East	PD (Planned Development) & County RSF-4 (Residential Single Family – 4 du/ac)			
	West	PD (Planned Development)			
Future Land Use Designation:		Residential Low (.5 – 2 du/ac)			
Zoning within density range?		X	**Yes**		**No**

The proposed subdivision plan has two proposals which require Planning Commission and City Council review and action which are as follows:

1. Proposed Private Streets.

2. Subdivision lots and public rights-of-way traversing greater than 30% slopes.

Private Streets: In accordance with Section 21.06.060 (g) (5) of the Zoning and Development Code, only City Council may authorize a subdivision to be served by private streets. The applicant requests the use of private streets in two areas of the subdivision (See Preliminary Plan for additional information), Talus Court (proposed Tract C) and Hillock Court (proposed Tract J). Talus Court is proposed to be developed in Filing 3 and Hillock Court is proposed to be developed in Filing 5. The reason that the applicant is proposing private streets in two areas are for the fact that they do not meet either the shared driveway standards or public street standards.

Private streets may be considered as an alternative to residential public streets. Private streets have historically posed problems over time as they deteriorate and property owners do not realize the burden of maintenance is theirs. In order to approve a private street, the City shall take the following criteria under review in approving a private street.

Section 21.06.100 (b) of the Zoning and Development Code:

1. The maximum annual average daily traffic (AADT) shall not exceed 250 trips per day.

   The maximum AADT is less than 250 trips per day for each private street. ITE – trip generation: 10 trips per day/house and the private streets serve 10 houses (10 x 10 = 100 trips per day, which is less than 250).

   Therefore, this criterion has been met.

2. All traffic, including vehicular and pedestrian, exiting from private streets shall not adversely impact the existing and proposed transportation network. Pedestrian connections accessible by the general public shall be required within the proposed development. Pedestrian facilities shown on the Urban Trails Master Plan shall be provided by the developer.

   Traffic exiting the private streets will enter the existing road network at a 90° angle and will not impact traffic flow of the residential streets. Pedestrian access is by a designated concrete sidewalk that ties to the sidewalk network within the public right-of-way for the rest of the development.

   Therefore, this criterion has been met.

3. A turnaround (i.e., cul-de-sac or other applicable and acceptable improvement) shall be required per the City's or County's adopted street standard in effect at the time of the development. A "Y" or "T" turnaround may be acceptable if designed according to Fire Department access requirements.

   The end of each private street contains a "hammer head" turn-around with specific geometry required by the City of Grand Junction Fire Department and IFC requirements.

   Therefore, this criterion has been met.

4. Street cross sections shall conform to the adopted street standards. Streets with a minimum 20-foot-wide pavement section may be allowed, if on-street parking is prohibited and adequate off-street parking is provided. The developer shall execute and record an irrevocable covenant running with the land granting the City or County the right and power to enter the street for the purpose of enforcing the parking restriction.

   The street cross-section for the private drives is a minimum 20' wide with wider areas to accommodate off-street parking and an adjacent sidewalk. The proposed CCR's document will include language that will allow the City Police Department to enter the private streets to enforce parking restrictions.

   Therefore, this criterion has been met.

5. If off-street parking is utilized, it shall conform to the following:

(i) It shall be provided at a rate of one space per two units plus at least four on-site parking spaces per dwelling. Two of these spaces may be in a garage or carport.

(ii) Off-street parking shall be located within 200 feet of any unit the private street serves.

(iii) Off-street parking shall be included within the same tract as the private street and shall be maintained by the homeowners' association.

Off-street parking spaces for lots off the private streets are provided at two (2) locations. A total of seven (7) spaces for 8 lots have been provided, which exceeds the 1 per 2 dwelling units. A note on the plans for Lots 44 and 45 will require 3-car garages on those lots to satisfy the parking requirements.

Therefore, this criterion has been met.

6. The finished surface of the private street may be composed of variable surfaces such as brick, interlocking pavers, cobblestones or other similar finishes, designed by a professional engineer and as approved by the City or County Engineer.

   The finished surface of the private streets will be concrete or asphalt.

   Therefore, this criterion has been met.

7. Any and all private streets shall include concrete curb and gutter constructed to the City Standard Details.

   The private streets will have a 2% cross-slope to the center of the driving surface for drainage. No curb and gutter is proposed. Curb and gutter is not necessary in this instance because drainage is handled with an inverted street.

   Therefore, this criterion has been met.

8. A pedestrian trail system may be substituted for an attached sidewalk if adjacent properties could easily access the trail and the trail system links to other transportation and recreational trails or facilities within and outside of the immediate development. Trail width shall be no less than equal to the standard for a two-way off-street bicycle path and shall be designed to the City Standard Details.

   The sidewalk within the private streets will connect to the proposed public sidewalk for the entire subdivision.

   Therefore, this criterion has been met.

9. All entrances to garages shall be set back from the private street or pedestrian trail a minimum distance of 20 feet.

   The applicant is proposing that all garages will be set-back from the property line a minimum of 20'.

Therefore, this criterion has been met.

10. Utility and/or multipurpose easements may be required for a portion of, or the full width adjacent to, the street section when necessary.

    The applicant is proposing a 14' wide multi-purpose easement to be located along the frontage of all lots adjacent to the private streets.

    Therefore, this criterion has been met.

11. Private streets shall be platted in a tract dedicated to the homeowners' association.

    Each of the private streets will be platted as Tracts C and J, and will be dedicated to the HOA.

    Therefore, this criterion has been met.

12. A single homeowners' association for all phases of the development shall be formed and established with the Secretary of State's Office prior to the recordation of a final plat that contains a private street.

    An HOA is being established for the subdivision.

    Therefore, this criterion has been met.

13. The homeowners' association shall establish an annual maintenance fund for the private street.

    The HOA will be required to establish an annual maintenance fund for the private streets.

    Therefore, this criterion has been met.

14. The homeowners' association shall be responsible to maintain a vegetation-free zone along the private street that is 20 feet in width (10 feet each side from the center of the street).

    A vegetation free zone for the private streets will be provided with a minimum of 10' each side of the center line.

    Therefore, this criterion has been met.

15. Each residential structure accessed from a private street shall have landscaped areas of at least 10 feet in width between the street and the structure except for the driveway to the garage.

    Depending on how the proposed home is situated on the property and the drive-way location, landscaping will be provided by the individual homeowner on each lot.

    Therefore, this criterion has been met.

16. An entrance design feature such as decorative paving, special signage or other conspicuous improvement shall be incorporated into the final design of the private street such that the design clearly distinguishes the private street from the public street.

    An entrance design feature will be incorporated into the final plan set to distinguish the private streets from the public streets.

    Therefore, this criterion has been met.

Slopes Greater than 30%: Under the Hillside Development Standards of Section 21.07.020 (f) of the Zoning and Development Code, development on slopes of greater than 30% is not permitted unless, after review and recommendation by the Planning Commission and approval by the City Council, it is determined that, appropriate engineering measures will be taken to minimize the impact of cuts, fills, erosion and stormwater runoff and that the developer has taken reasonable steps to minimize the amount of hillside cuts and also has taken measures to mitigate the aesthetic impact of cuts through landscaping or other steps.

The applicant is proposing to minimize the amount of hillside cuts, fills, erosion and stormwater runoff, by proposing a ring-type road configuration, traversing only a few small areas of greater than 30% slope and leaving a majority of the subdivision of areas greater than 30% slope preserved and not adversely affected. Engineering measures will be taken to minimize the impacts of cuts, fills, erosion and storm water runoff where 30% or greater slopes are proposed to be impacted. Exact measures that will be taken will be determined and approved at final plan stage. It should be noted that these Zoning Code requirements were established to limit and allow for development in a responsible manner on steep slopes, not to preclude development on steep slopes. Improvements have been proposed with the subdivision in the form of retaining walls. Retaining walls will also limit the amount of cut/fill to the minimum required.

The section of Elysium Drive that traverses slopes greater than 30% is relatively small, to be exact about 350' in length. In order to minimize hillside cuts in this area, retaining walls are planned, not to exceed 6' in height. The retaining wall will be approximately 100' long on the north side of the street, behind the curb. On the south side of the street, the retaining wall will be approximately 450' long, behind the sidewalk. To minimize cut/fill, another variation of a typical road design utilized was the elimination of the sidewalk on the north side of the road and approved by the City through an Alternative Street Standard.

It should be noted, only about 12% of the subdivision proposal has slopes greater than 30%. These areas are predominantly located around the large plateau of the site. The actual impact to the slopes greater than 30% is minimal and has been mitigated by the use of retaining walls and other engineering measures.

Proposed Lots 20, 30, and 51 have the steepest slopes within the subdivision. On average, the applicant has stated that Lot 51 is around 10% slope at the lower end. Lot 30 is less than 10% across the length of the lot and Lot 20 has an average slope of 14%. The applicant believes that a future builder of the various lots can accommodate that kind of slope fairly easily with the design of the house and use of some retaining

walls. As an example, a walk-out or reverse walk-out with the garage under the house can accommodate approximately 10'-12' of slope across the lot without much impact. In addition, the lots are large enough, providing surface area along the side of the building pads to accommodate grade changes. Small 2' to 4' retaining walls at the rear of the lots can also mitigate slope issues so that a building pad can developed.

Alternative Street Design

As proposed, the subdivision alternative streets will incorporate use of concrete curb and gutter with attached sidewalks, as well as provide more shoulder and borrow ditch design with detached sidewalks. The utilization of these alternative sections throughout the project is an attempt to address some of the recent problems experienced with projects where differential settlement and movement between the concrete curb, gutter, sidewalks and the pavement have occurred. The proposed street sections will reduce chances of differential settlement and movement between the concrete curbs and sidewalks and asphalt sections of the roadway. The goal is to build as uniform a section of road as possible, thus preventing movement of the roadway material at different rates and magnitudes. In addition, should movement occur, the sidewalk is not integral to the street, therefore maintaining its functionality without having to be replaced. The proposed borrow ditches create a drainage relief for underlying moisture that may be trapped in the base course beneath the pavements; thus helping to maintain the longevity of the pavement structure.

A 34' wide ROW section is to be utilized in areas where the road is following the perimeter boundary and is adjacent to open space, follows a natural ridge line, and has unique topographic features. This section is proposed to preserve the natural topography and aesthetics of the area, by not performing excessive grading and installation of unnecessary retaining walls.

The integrity of through traffic lanes will not be compromised; thus, maintaining the safety of the roadway. By providing a detached trail on the lot side of the road cross section the integrity of the pedestrian walkways and access is maintained. In addition, this segment of the project has steep grades (approx 13%). This roadway section is well suited for this type of localized rural steep terrain.

City staff has also required other conditions of approval for the alternative streets, such as adding provisions through the CCR's for additional winter maintenance provisions by the HOA and signage for the one (1) steep section of road.

Extended Warranty Justification

The City is requiring the applicant provide a seven-year secured warranty due to soil conditions and the site grading design. As seen with Exhibits 1, 2 & 3 at the end of this report, there are several projects built in recent years where the streets moved vertically and continue to move.

The proposed Pinnacle Ridge Project would build approximately two miles of streets with significant lengths in cuts and fills up to 20' deep. Deep fills will settle over time and may continue to move as water is introduced by rainfall or urban development. Large cuts may actually heave.

The original geotechnical report, by Geotechnical Engineering Group, is a Preliminary Report from 2002 and identifies expansive claystone. The Applicant hired Huddleston-Berry Engineering and Testing, LLC (HBET) to address review comments generated with this application. They have not performed further field investigation but have performed engineering calculations based on data contained in the original report. HBETs July 2, 2015 letter says:

"In general, it is difficult to define what is considered a "normal" amount of movement for a pavement over time. Particularly a period as long as 10-years. Given the geology at the site and experience in the vicinity of the site, pavement heave is possible in some areas of the site. However, the risk may be able to be reduced by the use of structural fill, impermeable membrane, etc. In fact, the referenced preliminary Geotechnical Investigation report states that "we anticipate large cut areas and fill areas in the pavement areas across the site. It may be a prudent measure to reevaluate pavement sections when a rough final grade is established on site. We should be called to observe subgrade to help delineate areas of potentially swelling soils where an increased pavement section may be necessary. It may also be feasible to overexcavate areas of expansive claystone and replace with similar on-site granular materials". "

There are several ways to engineer and construct streets and utilities to "minimize" movement. Some of these measures were used on the Spyglass Ridge Subdivision on Orchard Mesa, but there has been substantial movement and expensive repair is needed.

City policy has always been for Development to pay its own way. When streets move, and the warranty is over, taxpayers spend thousands of dollars to fix problems. Multiple repairs over long time periods are often required. The City's standard warranty is only one year. The movement seen at Spyglass and Mariposa took a few years to manifest themselves. With the on-site soils, the magnitude of site grading, and the City's recent experience, the risk to the taxpayer is too great to accept the standard one-year warranty for Pinnacle Ridge. The City has agreed to accept the streets as public streets with the condition listed below.

At final design, perform an in depth geotechnical engineering investigation and report with proper slope stability, rockfall, and earthwork analysis and requirements. This can be incremental to the phases where final design approval is being requested; however, if slope stability and/or rockfall analyses prove problematic, the Preliminary Plan could be nullified or may need to be redesigned and reapproved.

a. The geotechnical report must design the earthwork and streets to minimize vertical movement and construction must strictly adhere to the report and be documented by daily observations and proper testing during construction. A secured seven-year warranty will be required.
b. Landscaping shall be limited to low water requirement plants and irrigation systems. The details will be defined in conjunction with the geotechnical engineer at final design.
c. A site specific slope and rockfall analysis (based on field investigation) in the areas of concern will be required with each filing.
d. Lot specific grading and drainage plans will either be required with the final design for each filing or with each planning clearance.

FINDINGS OF FACT/CONCLUSIONS AND CONDITIONS:

After reviewing the Pinnacle Ridge Preliminary Plan subdivision application, SUB-2015-120, a request for review of private streets and also public streets and residential lots traversing greater than 30% slopes, City Staff makes the following findings of fact/conclusions and conditions of approval:

1. At final design, perform an in depth geotechnical engineering investigation and report with proper slope stability, rockfall, and earthwork analysis and requirements. This can be incremental to the phases where final design approval is being requested; however, if slope stability and/or rockfall analyses prove problematic, the Preliminary Plan could be nullified or may need to be redesigned and reapproved.
    a. The geotechnical report must design the earthwork and streets to minimize vertical movement and construction must strictly adhere to the report and be documented by daily observations and proper testing during construction.
    b. A secured seven-year warranty will be required.
    c. Landscaping shall be limited to low water requirement plants and irrigation systems. The details will be defined in conjunction with the geotechnical engineer at final design.
    d. A site specific slope and rockfall analysis (based on field investigation) in the areas of concern will be required with each filing.
    e. Lot specific grading and drainage plans will either be required with the final design for each filing or with each planning clearance.
2. Perfect an intermediate connection to Hidden Valley Drive, with Filing 4 according to the current phasing plan, as required by the January 2007 TEDS exception.
3. Perfect the ability to loop water lines, if needed, and provide sanitary sewer to portions of the project via the Hidden Valley Drive connection with Filing 4 according to the current phasing plan.
4. The HOA is required to remove snow along the north facing slope on Elysium Drive. Provide proper language and assessments in the CC & R's and signs must be conspicuously placed on the street stating such.
5. Approval of the request to use private streets in two areas of the subdivision, Talus Court and Hillock Court.

The Developer is proposing appropriate engineering measures to minimize the impact of cuts, fills, erosion and stormwater by incorporating retaining walls, detention and water quality basins, and proper site grading in their design, based on Preliminary Geotechnical Investigation. If subsequent Geotechnical Investigation reveals significant slope instability issues, as determined by City staff based on input from the Colorado Geologic Survey, redesign of the Preliminary Plan will be required. If a minor revision is required, the review of the revised preliminary subdivision plan may, at the discretion of the Director, proceed concurrently with final plat review. Nullification/revocation of this approval shall require review by the Planning Commission.

STAFF RECOMMENDATION:

I recommend that the Planning Commission forward a recommendation of conditional approval to the City Council of the requested review of private streets and also public streets and residential lots traversing greater than 30% slopes for the proposed

Pinnacle Ridge Subdivision, SUB-2015-120, to the City Council with findings of fact/conclusions and conditions as stated in the staff report.

RECOMMENDED PLANNING COMMISSION MOTION:

Madam Chairman, on item SUB-2015-120, I move that the Planning Commission forward a recommendation of conditional approval of the requested review of private streets and also public streets and residential lots traversing greater than 30% slopes for the proposed Pinnacle Ridge Subdivision, SUB-2015-120, to the City Council with findings of fact/conclusions and conditions as stated in the staff report.

Exhibit 1

RECENT STREET PROBLEMS

Spyglass Ridge Subdivision

- Original engineering and construction included substantial expense (up to 3.5' deep of soils work and geo grid plus the normal street section) to stabilize difficult soils and It worked pretty well for most of the subdivision. There are however isolated areas where significant problems exist.
- Lookout lane, built 2006/2007. At least 4" of movement in places, rebuilt about 200' by 2014 and more needed.
- Gunnison Ridge Ct. Paved 2007 to 2008. By 2012 already substantial movement and repair needed. Some repair already done by 2010, presumably by the Developer.
- It took several years for the movement to manifest.
- The pictures below were taken in February 2017 and show different movement areas.



Exhibit 2

Redlands Mesa Subdivision, Filing 1

- Shadow lake court and Shadow Lake Circle, built in 2000, failed almost immediately and was rebuilt by the Developer. All of Shadow Lake Court is in poor condition and will require significant maintenance (probably mill and overlay) in the near future. The pictures below show significant movement between the concrete and asphalt at the lip of concrete gutter.





Exhibit 3

Mariposa Drive

- Mariposa is an old gravel road from at least 1994, but probably late 70s to early 80s, which was improved with curb, gutter, sidewalk and paved in 2005 to 2006. It is located on the southern edge of Pinnacle Ridge and its primary access is Mariposa. GIS aerial pictures show distress by 2010 and google street view shows substantial movement in 2012.



Applicant's Response to proposed City Public Works Staff request for a 7-year subdivision warranty period for the public streets in-lieu of the normal one-year warranty period.

Response:

Extensive Engineering and Analysis has been completed for this project with various local Geotechnical and Civil Engineers. The Developer does not agree with, nor will they accept, the 10-year warranty program as outlined by the City Development Engineer. No specific Engineering studies have been provided by the City to validate this unprecedented request. Further, the applicant has gone above and beyond the standard requirements of a Preliminary Plan application in order to refute the consideration of a 10-year warranty. This has never, in the known history of Development applications in the City of Grand Junction, been required.

The concept of "perceived" future liability that "may" occur does not provide the legal basis by which to make the requirement that has been proposed by City staff. The applicant agreed to provide an extended warranty twice the amount of time required under the current Zoning and Development Code of two (2) years. This will be more than an adequate amount of time to determine if there will be any issues with the road construction.

Further, the applicant, in conjunction with their Geotechnical Engineer, has outlined a set of additional guidelines that will be followed during construction to mitigate the potential of future maintenance issues. This will be adhered to and will result in an end product which will not be any more of a future financial liability on the City than any other road that is constructed with development. See attached letter describing the street soil subgrades, and additional construction measures to be implemented to mitigate potential swelling soil issues.

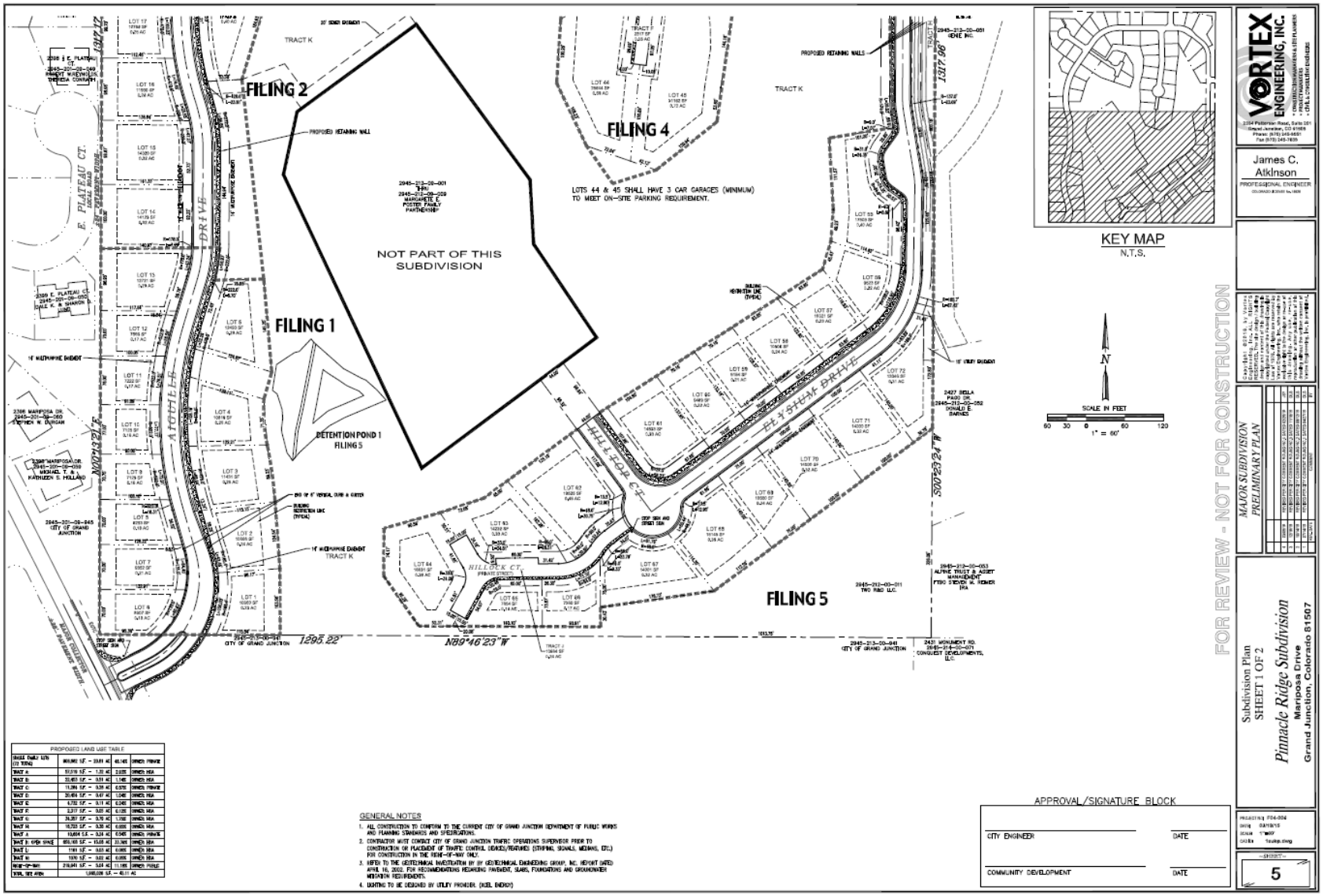
It is unprecedented for such a requirement to be placed upon an applicant.


Site Location Map
Broadway
(Hwy 340)
W. Ridges Blvd.
Site
Monument Road
Mariposa Drive
Redlands Mesa

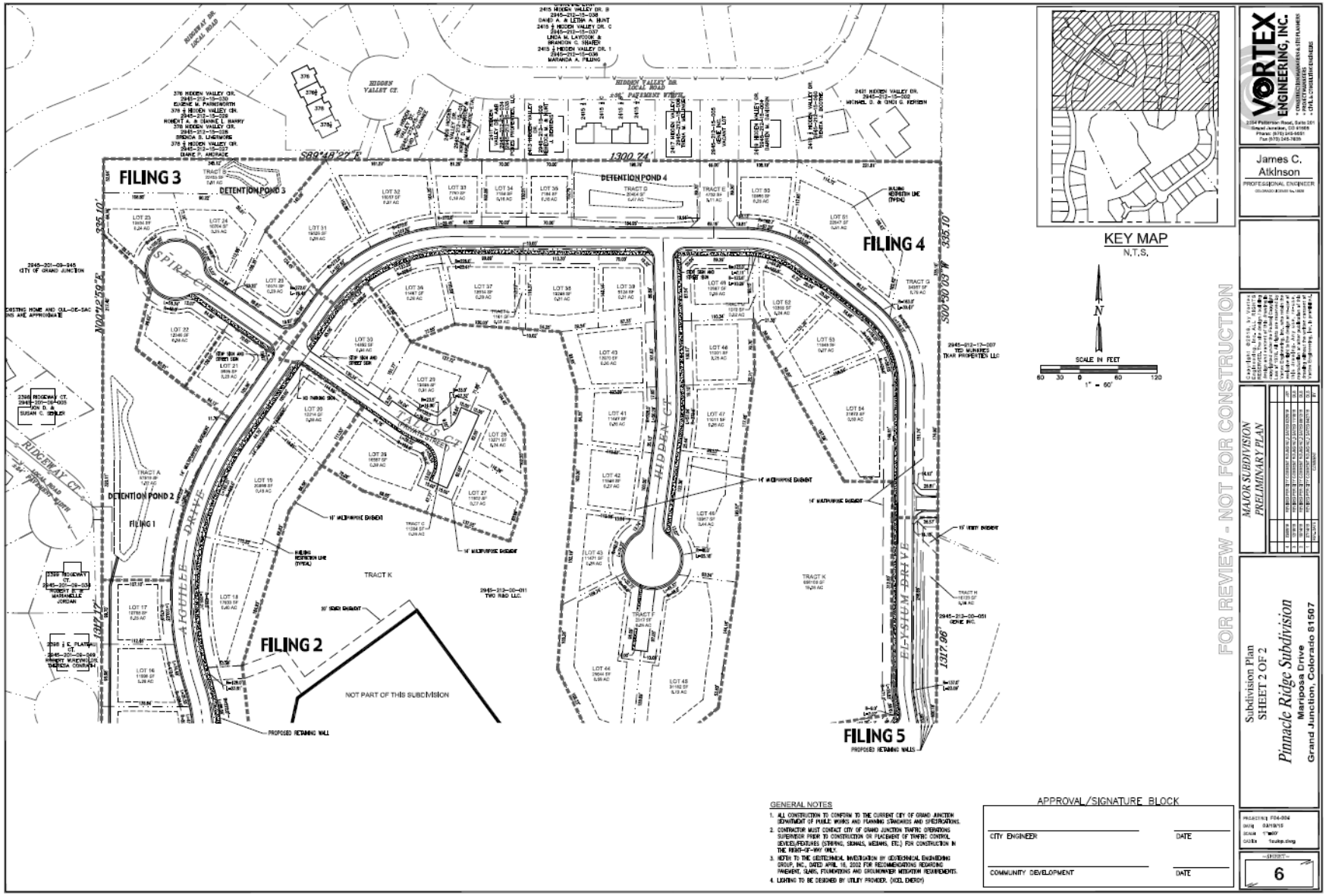

Aerial Photo Map
Site
Not Part of Subd.
Bella Pago Dr.
Mariposa Drive
Monument Road


Comprehensive Plan Future Land Use Map
Residential Low
(.5 – 2 du/ac)
Site
Residential
Medium
(4 – 8 du/ac)
Not
Part of
Subd.
Residential
Medium Low
(2 - 4 du/ac)
Park

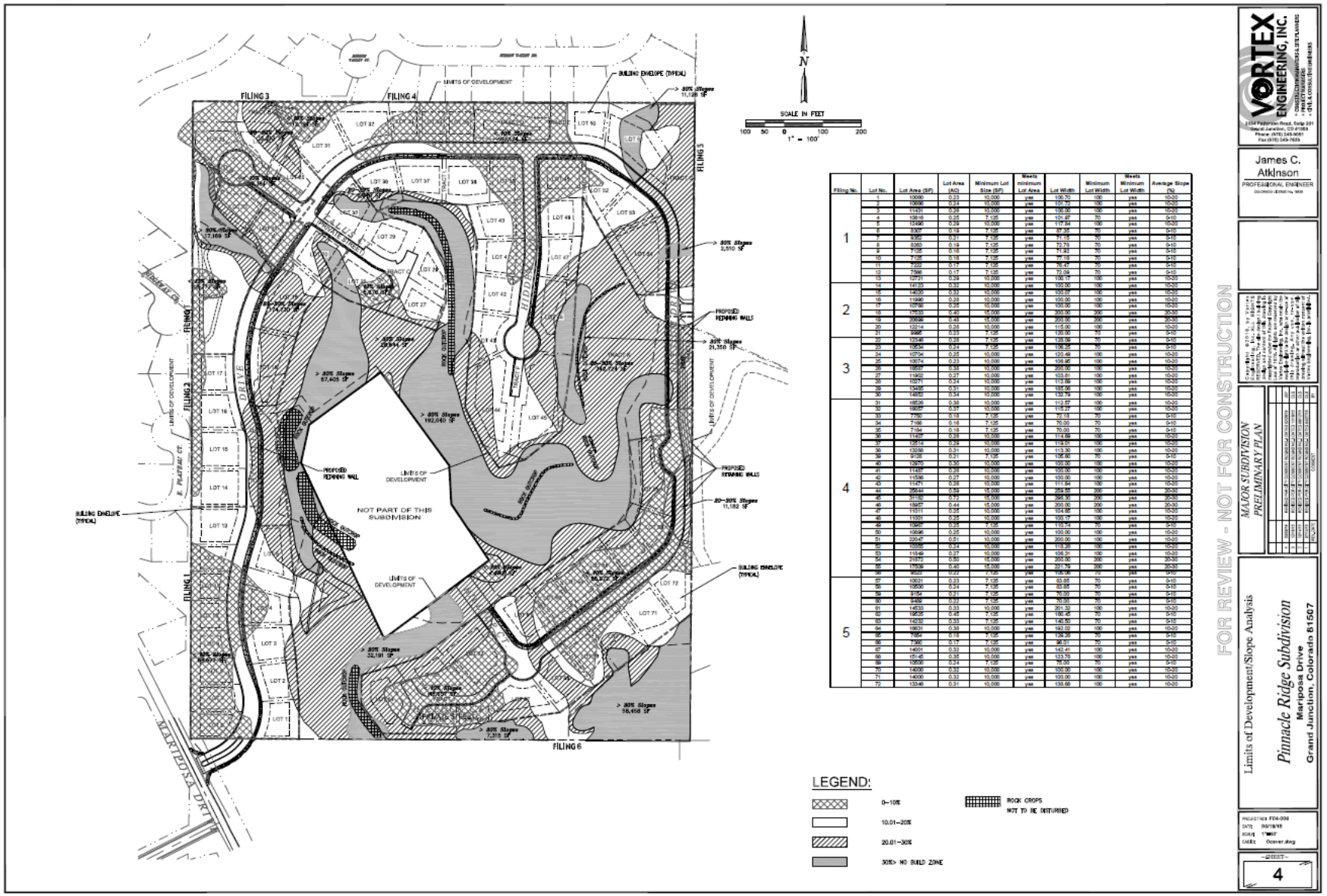

Existing Zoning Map
Site
R-2
PD
PD
County
RSF-4
County
RSF-4
CSR



Preliminary Plan (Sheet 1)

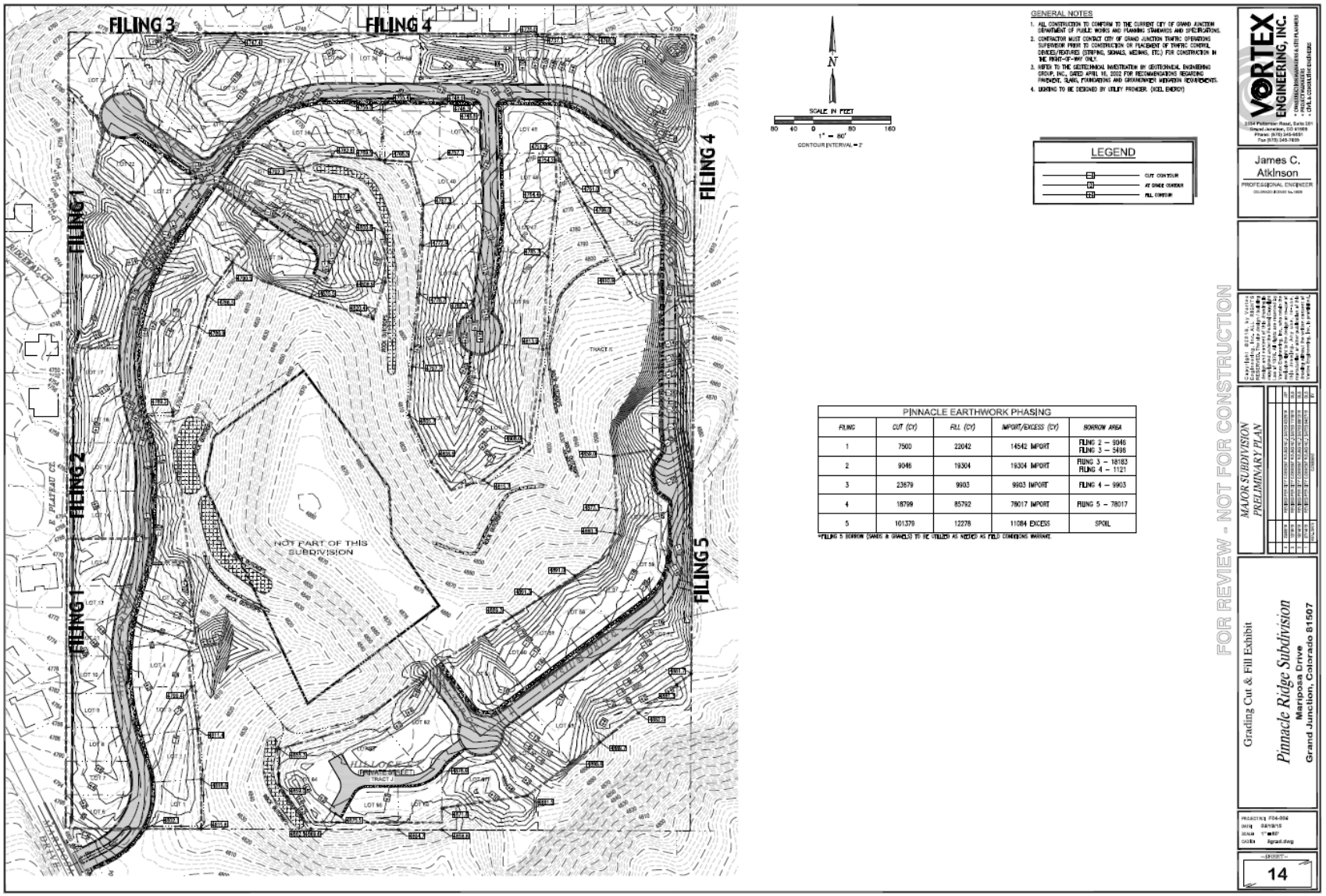


Preliminary Plan (Sheet 2)



Filing No.	Lot No.	Lot Area (SF)	Lot Area (AC)	Minimum Lot Size (SF)	Meets minimum Lot Area	Lot Width	Minimum Lot Width	Meets Minimum Lot Width	Average Slope (%)
1	1	10060	0.23	10,000	yes	100.70	100	yes	10-20
	2	10696	0.24	10,000	yes	101.72	100	yes	10-20
	3	11431	0.26	10,000	yes	100.00	100	yes	10-20
	4	10818	0.25	7,125	yes	155.47	70	yes	0-10
	5	12490	0.29	10,000	yes	117.54	100	yes	10-20
	6	8307	0.19	7,125	yes	87.35	70	yes	0-10
	7	9362	0.21	7,125	yes	71.15	70	yes	0-10
	8	8363	0.19	7,125	yes	72.79	70	yes	0-10
	9	7125	0.16	7,125	yes	71.80	70	yes	0-10
	10	7125	0.16	7,125	yes	77.18	70	yes	0-10
	11	7322	0.17	7,125	yes	76.47	70	yes	0-10
	12	7366	0.17	7,125	yes	72.09	70	yes	0-10
	13	12721	0.29	10,000	yes	100.17	100	yes	10-20
	14	14123	0.32	10,000	yes	100.00	100	yes	10-20
2	15	14035	0.32	10,000	yes	100.00	100	yes	10-20
	16	11990	0.28	10,000	yes	100.00	100	yes	10-20
	17	10790	0.25	10,000	yes	100.00	100	yes	10-20
	18	17533	0.40	15,000	yes	200.00	200	yes	20-30
	19	20569	0.48	15,000	yes	200.00	200	yes	20-30
	20	12214	0.28	10,000	yes	115.00	100	yes	10-20
	21	9965	0.23	7,125	yes	126.00	70	yes	0-10
3	22	12346	0.28	7,125	yes	128.09	70	yes	0-10
	23	10634	0.24	7,125	yes	106.26	70	yes	0-10
	24	10754	0.25	10,000	yes	125.49	100	yes	10-20
	25	10074	0.23	10,000	yes	106.95	100	yes	10-20
	26	19557	0.36	15,000	yes	200.00	200	yes	20-30
	27	11902	0.27	10,000	yes	103.61	100	yes	10-20
	28	10271	0.24	10,000	yes	112.89	100	yes	10-20
	29	13485	0.31	10,000	yes	105.06	100	yes	10-20
	30	14852	0.34	10,000	yes	132.79	100	yes	10-20
4	31	18526	0.38	15,000	yes	112.57	100	yes	10-20
	32	18257	0.37	10,000	yes	118.27	100	yes	10-20
	33	7750	0.18	7,125	yes	72.18	70	yes	0-10
	34	7166	0.16	7,125	yes	70.00	70	yes	0-10
	35	7164	0.16	7,125	yes	70.00	70	yes	0-10
	36	11429	0.26	10,000	yes	114.89	100	yes	10-20
	37	12814	0.29	10,000	yes	114.01	100	yes	10-20
	38	13286	0.31	10,000	yes	113.30	100	yes	10-20
	39	9138	0.21	7,125	yes	105.90	70	yes	0-10
	40	12870	0.30	10,000	yes	100.00	100	yes	10-20
	41	11487	0.26	10,000	yes	100.00	100	yes	10-20
	42	11536	0.27	10,000	yes	100.00	100	yes	10-20
	43	11471	0.26	10,000	yes	111.54	100	yes	10-20
	44	25544	0.59	15,000	yes	259.55	200	yes	20-30
	45	31152	0.72	15,000	yes	296.30	200	yes	20-30
	46	19457	0.44	15,000	yes	200.00	200	yes	20-30
	47	11011	0.25	10,000	yes	104.85	100	yes	10-20
	48	11001	0.25	10,000	yes	100.17	100	yes	10-20
	49	10967	0.25	7,125	yes	110.74	70	yes	0-10
	50	10896	0.25	10,000	yes	100.00	100	yes	10-20
	51	22047	0.51	10,000	yes	200.00	100	yes	10-20
	52	10255	0.24	10,000	yes	113.94	100	yes	10-20
	53	11849	0.27	10,000	yes	108.31	100	yes	10-20
	54	21277	0.49	15,000	yes	200.00	200	yes	20-30
	55	17508	0.40	15,000	yes	221.79	200	yes	20-30
	56	9027	0.22	7,125	yes	106.06	70	yes	0-10
5	57	10631	0.25	7,125	yes	93.65	70	yes	0-10
	58	10530	0.24	7,125	yes	83.66	70	yes	0-10
	59	9154	0.21	7,125	yes	70.00	70	yes	0-10
	60	9499	0.22	7,125	yes	70.00	70	yes	0-10
	61	14533	0.33	10,000	yes	201.32	100	yes	10-20
	62	19035	0.45	7,125	yes	190.45	70	yes	0-10
	63	14233	0.33	7,125	yes	146.50	70	yes	0-10
	64	10831	0.38	10,000	yes	192.02	100	yes	10-20
	65	7454	0.18	7,125	yes	139.26	70	yes	0-10
	66	7360	0.17	7,125	yes	96.01	70	yes	0-10
	67	14001	0.32	10,000	yes	142.41	100	yes	10-20
	68	15145	0.35	10,000	yes	123.79	100	yes	10-20
	69	10800	0.24	7,125	yes	75.00	70	yes	0-10
	70	14000	0.32	10,000	yes	100.00	100	yes	10-20
	71	14000	0.32	10,000	yes	100.00	100	yes	10-20
	72	13346	0.31	10,000	yes	138.66	100	yes	10-20

Limits of Development/Slope Analysis



Grading Cut & Fill

March 28, 2017 Planning Commission Minutes

Pinnacle Ridge Subdivision [SUB-2015-120]

Request approval for a review of private streets and also public streets and residential lots traversing greater than 30% slopes for the proposed Pinnacle Ridge Subdivision in an existing R-2 (Residential – 2 du/ac) zone district located east of Mariposa Drive.

Action: Recommendation to City Council

Applicant:	Two R & D LLC, Owner
Location:	NE of Mariposa Drive and Monument Road
Staff Presentation:	Scott Peterson, Sr. Planner

STAFF PRESENTATION

Mr. Peterson (Senior Planner) stated that the applicant, Two R & D LLC, requests approval of certain items under City Codes and regulations that require either Planning Commission or City Council action regarding their proposed Preliminary Plan application. These actions include Council approval of; 1) proposed private streets and 2) subdivision lots and public streets traversing greater than 30% slopes.

The applicant has submitted for a Preliminary Plan subdivision review in order to develop 72 single-family detached lots to be developed in five phases/filings. Proposed residential density would be 1.59 dwelling units to the acre.

Mr. Peterson noted that the applicant held a Neighborhood Meeting on March 11, 2015 prior to submittal of the Preliminary Plan application. Over 24 citizens attended along with City Staff and the applicant. Neighborhood concerns expressed at the meeting were mainly in regards to additional traffic to the area, subdivision lot layout and design and drainage concerns.

Mr. Peterson displayed an aerial photo and site location of the property. The property is located east of Mariposa Drive, north of Monument Road in the Redlands and contains 45.11 +/- acres.

This is a closer aerial photo of the area. The property consists of both unplatted and platted properties. The platted properties are remnants of the old Energy Center Subdivision, Phase 1 that were platted in 1955. Today these lots still have no legal access and are not developed. Nine of the 28 total platted lots from the Energy Center Subdivision, Phase 1 are currently not owned by the applicant and are not included within the proposed Preliminary Plan application. However, the applicant is providing access to the nine existing lots as part of their Filing Five for Pinnacle Ridge. At a later date and as a condition of approval of the Preliminary Plan, the applicant will need to request to vacate a portion of the Energy Center Subdivision Phase 1, that is owned by

the applicant for existing right-of-way and utility easements located within Blocks 1 and 2.
Comprehensive Plan Future Land Use Map identifies the property as Residential Low which is .5-acre lot size to 2 dwelling units to the acre. Current zoning for the property is R-2 (Residential – 2 du/ac).

Mr. Peterson displayed a slide showing the southern half of the development. Under the Preliminary Plan application, the applicant has proposed to utilize the cluster provisions of the Zoning and Development Code to utilize and preserve existing open space in order to be able to have smaller lot sizes than what the Zoning Code requires for the R-2 zone district.

Mr. Peterson explained that the applicant is proposing 15.06 +/- acres (33% of the development) for open space within the development, which under the clustering provision would allow lot sizes of a minimum 7,125 sq. ft. and bulk standards found in the R-4 zone district. Without clustering, the minimum required lot size in the R-2 zone district is 15,000 sq. ft. Utilization of the cluster development provisions of the Code is to encourage the preservation of environmentally sensitive areas and open space lands.

Mr. Peterson displayed a slide showing the northern half of the development. In accordance with the Zoning and Development Code, only City Council may authorize a subdivision to be served by private streets. The applicant requests the use of private streets in two areas of the subdivision, Talus Court (proposed Tract C) and Hillock Court (proposed Tract J). Talus Court is proposed to be developed in Filing 3 and Hillock Court is proposed to be developed in Filing 5.

The reason that the applicant is proposing private streets in two areas are for the fact that they do not meet either the shared driveway standards or public street standards. Private streets may be considered as an alternative to residential public streets. Private streets have historically posed problems over time as they deteriorate and property owners do not realize the burden of maintenance is theirs.

In looking at the review criteria for a private street, Mr. Peterson explained that an HOA will be created for ownership and maintenance responsibilities. Average trips per day would be less than 250 trips. The end of each private street contains a hammerhead turnaround which has been reviewed and approved by the Grand Junction Fire Department.

Mr. Peterson noted that additional off-street parking spaces are provided at two separate locations to accommodate 7 additional parking spaces. Cross-section of the private street would be a minimum of 20’ wide. A pedestrian sidewalk within the private street would connect to the proposed public sidewalk located within the subdivision among meeting other requirements.

Mr. Peterson displayed a slide that identifies the slopes on the property. Under the Hillside Development Standards of the Zoning and Development Code, development on

slopes of greater than 30% is not permitted unless, after review and recommendation by the Planning Commission and approval by the City Council, it is determined that, appropriate engineering measures will be taken to minimize the impact of cuts, fills, erosion and stormwater runoff and that the developer has taken reasonable steps to minimize the amount of hillside cuts and also has taken measures to mitigate the aesthetic impact of cuts through landscaping or other steps.

The applicant is proposing to minimize the amount of hillside cuts, fills, erosion and stormwater runoff, by proposing a ring-type road configuration, traversing only a few small areas of greater than 30% slope and leaving a majority of the subdivision of areas greater than 30% slope preserved and not adversely affected.

Engineering measures will be taken to minimize the impacts of cuts, fills, erosion and storm water runoff where 30% or greater slopes are proposed to be impacted. Exact measures that will be taken will be determined and approved at final plan stage. It should be noted that these Zoning Code requirements were established to limit and allow for development in a responsible manner on steep slopes, not to preclude development on steep slopes. Improvements have been proposed with the subdivision in the form of retaining walls. Retaining walls will also limit the amount of cut/fill to the minimum required.

The section of Elysium Drive that traverses slopes greater than 30% is relatively small, to be exact about 350' in length. In order to minimize hillside cuts in this area, retaining walls are planned, not to exceed 6' in height.

It should be noted, only about 12% of the subdivision proposal has slopes greater than 30%. These areas are predominantly located around the large plateau of the site. The actual impact to the slopes greater than 30% is minimal and has been mitigated by the use of retaining walls and other engineering measures.

Mr. Peterson explained that proposed Lots 20, 30, and 51 have the steepest slopes within the subdivision. On average, the applicant has stated that Lot 51 is around 10% slope at the lower end. Lot 30 is less than 10% across the length of the lot and Lot 20 has an average slope of 14%. The applicant believes that a future builder of the various lots can accommodate that kind of slope fairly easily with the design of the house and use of some retaining walls. As an example, a walk-out or reverse walk-out with the garage under the house can accommodate approximately 10'-12' of slope across the lot without much impact.

In addition, Mr. Peterson noted that the lots are large enough, providing surface area along the side of the building pads to accommodate grade changes. Small 2' to 4' retaining walls at the rear of the lots can also mitigate slope issues so that a building pad can developed.

Mr. Peterson then introduced, Rick Dorris, Development Engineer, who stated that the applicant obtained Transportation Engineering Design Standards (TEDS) exceptions in

2007 when a previous Preliminary Plan was reviewed and approved. They are being honored with the current application regarding maximum block length, maximum street grade, maximum grades through an intersection and maximum cul-de-sac length.

Regarding the Alternative Street Standard, Mr. Dorris clarified that the City has agreed to an alternative street standard for this subdivision that uses roadside ditches instead of attached curb, gutter, and sidewalk over much of the subdivision. There is still some attached concrete in isolated areas for specific reasons where narrower roads were needed. This approach will hopefully reduce the differential movement problem (asphalt and concrete move in different ways). Mr. Dorris noted that the City is concerned about the streets moving vertically.

Mr. Dorris explained that the City's initial approach was for all streets to be private but Ute Water won't allow their water mains in private streets. The Developer objected to the private street requirement and to solve this, the City has agreed to accept the streets as public with conditions, including a seven-year warranty.

There are two areas of the project where private streets are requested by the Developer to optimize their project layout. Water can be provided by individual services. These two areas are the private street request presented herein.

Mr. Dorris noted that the City has agreed to accept public streets with a financially secured seven-year warranty due to soil conditions and the site grading design. The Developer objects to the condition and states it is unprecedented. Mr. Dorris agreed that it is indeed unprecedented and he will show slides and explain why it is needed.

The proposed Pinnacle Ridge Project would build approximately two miles of streets with significant lengths in cuts and fills up to 20' deep. Deep fills will settle over time and may continue to move as water is introduced by rainfall or urban development. Large cuts may actually heave.

The original geotechnical report, is a Preliminary Report from 2002 and identifies expansive claystone. The Applicant hired another geotechnical engineer to address review comments generated with this application. Their July 2, 2015 letter states:

> "In general, it is difficult to define what is considered a "normal" amount of movement for a pavement over time. Particularly a period as long as 10-years. Given the geology at the site and experience in the vicinity of the site, pavement heave is possible in some areas of the site. However, the risk may be able to be reduced by the use of structural fill, impermeable membrane, etc."

Mr. Dorris stated that, being a licensed engineer, he agrees with the statement and understands why it was made. It is difficult to predict what can happen in the future regarding soils. Mr. Dorris explained that one of his main responsibilities is to minimize costs to the City and the taxpayers. This project is different due to site soils, steep topography and extensive dirt work and presents the possibility of expensive repair to

the street system.

City policy has always been for Development to pay its own way. When streets move, and the warranty is over, taxpayers spend thousands of dollars to fix problems. Multiple repairs over long time periods are often required. The City's standard warranty is only one year which isn't enough time for these problems to manifest, therefore the seven-year warranty is being required.

There are several ways to engineer and construct streets and utilities to "minimize" movement. Some of these measures were used on the Spyglass Ridge Subdivision on Orchard Mesa, but there has been substantial movement and expensive repair is needed.

Mr. Dorris displayed a slide with pictures of Lookout Lane in Spyglass Ridge Subdivision as a recent example since it has topography similar to Pinnacle Ridge, however they did not do the cuts and fill as deep as Pinnacle Ridge is proposing. Lookout Lane was paved in 2006 and has at least 4 inches of movement in places. The City rebuilt about 200 feet of it by 2014 and more is needed. In addition, Gunnison Ridge Ct. was paved in 2007 and by 2012 there was already substantial movement and repairs were needed.

The next slide showed Shadow Lake Circle in Redlands Mesa Subdivision (Filing 1) that connects to Mariposa Dr. Shadow Lake Circle and Shadow Lake Ct. were built in 2000. That intersection failed almost immediately and was rebuilt by the developer. The pictures in the slide showed significant movement between the concrete and asphalt at the lip of concrete gutter.

The next example was photos of Mariposa Dr. that connects to Monument Rd. and is a back-door access to The Ridges and Redlands Mesa and will be a primary access for Pinnacle Ridge. Mr. Dorris explained that Mariposa is an old gravel road from at least 1994, but probably late 70s to early 80s, which was improved with curb, gutter, sidewalk and paved in 2005 to 2006. It is located on the southern edge of Pinnacle Ridge. GIS aerial pictures show distress by 2010 and google street view shows substantial movement in 2012.

FINDINGS OF FACT/CONCLUSIONS & CONDITIONS

Mr. Peterson stated that after reviewing the Pinnacle Ridge Preliminary Subdivision Plan application, two proposals require Planning Commission and City Council review and action which are as follows:

1. Proposed Private Streets
2. Subdivision Lots and Public Rights-of-Way traversing greater than 30% slopes.

Mr. Peterson stated that the conditions are as follows:

1. At final design, perform an in depth geotechnical engineering investigation and report with proper slope stability, rock-fall, and earthwork analysis and requirements. This can be incremental to the phases where final design approval is being requested; however, if slope stability and/or rockfall analyses prove problematic, the Preliminary Plan could be nullified or may need to be redesigned and reapproved.
    a. The geotechnical report must design the earthwork and streets to minimize vertical movement and construction must strictly adhere to the report and be documented by daily observations and proper testing during construction.
    b. A secured seven-year warranty will be required.
    c. Landscaping shall be limited to low water requirement plants and irrigation systems. The details will be defined in conjunction with the geotechnical engineer at final design.
    d. A site specific slope and rock-fall analysis (based on field investigation) in the areas of concern will be required with each filing.
    e. Lot specific grading and drainage plans will either be required with the final design for each filing or with each planning clearance.
2. Perfect an intermediate connection to Hidden Valley Drive, with Filing 4 according to the current phasing plan, as required by the January 2007 TEDS exception.
3. Perfect the ability to loop water lines, if needed, and provide sanitary sewer to portions of the project via the Hidden Valley Drive connection with Filing 4 according to the current phasing plan.
4. The HOA is required to remove snow along the north facing slope on Elysium Drive. Provide proper language and assessments in the CC & R's and signs must be conspicuously placed on the street stating such.
5. Approval of the request to use private streets in two areas of the subdivision, Talus Court and Hillock Court.

Mr. Peterson noted that he would like to amend the staff report to include another paragraph as follows:

The Developer is proposing appropriate engineering measures to minimize the impact of cuts, fills, erosion and stormwater by incorporating retaining walls, detention and water quality basins, and proper site grading in their design, based on Preliminary Geotechnical Investigation. If subsequent Geotechnical Investigation reveals significant slope instability issues, as determined by City staff based on input from the Colorado Geologic Survey, redesign of the Preliminary Plan will be required. If a minor revision is required, the review of the revised preliminary subdivision plan may, at the discretion of the Director, proceed concurrently with final plat review. Nullification/revocation of this approval shall require review by the Planning Commission.

Mr. Peterson added that two letters were submitted that were not received in time to be included into the staff report. Mr. Peterson noted that they were handed out to the Planning Commissioners before the meeting.

QUESTIONS FOR STAFF

Noting that Mariposa was mentioned as a back-door entrance to Redlands Mesa, Commissioner Wade asked Mr. Dorris if any official traffic studies were done there. Mr. Dorris clarified that his mention of the back-door was the fact that Mariposa is the second entrance. Commissioner Wade asked if the only access to Filing 1,2, and 3 of this subdivisions is off of Mariposa Dr. Mr. Dorris confirmed that it is and that the City is not concerned about its ability to carry capacity. Although there was not a traffic study done, Mr. Dorris explained that the City has conducted daily counts. Mr. Dorris added that there are no driveways coming off Mariposa and it will need to be repaired in the near future.

Commissioner Ehlers asked what the classification was for Mariposa Dr. Mr. Dorris stated that it is classified as a local street. Commissioner Ehlers asked what the classification was for Monument Rd. that intersects with Mariposa Dr. Mr. Dorris said he believed it was a minor arterial.

Chairman Reece noted that she has concerns about the maintenance agreement between the builder and the City. Chairman Reece asked what actions will be taken if the HOA fails to perform winter maintenance adequately. Mr. Peterson replied that the CCRs will need to be reviewed and addressed to reflect that snow removal will be the responsibility of the HOA, specifically the area of Elysium Drive which will be developed with Filing 5. Mr. Dorris added that if there is a problem, the City will get phone calls about it and they will refer calls to the President of the HOA.

Mr. Dorris added that most HOAs have little responsibilities other than to maintain the detentions areas and landscape tracts along street frontage. Mr. Dorris explained that this subdivision will have a significant amount of responsibilities because of the two private street sections, a lot of open space and several water quality basins. Chairman Reece asked if there are other subdivisions with similar responsibilities. Mr. Dorris stated he was not aware of any others.

Commissioner Ehlers commented that he is familiar of situations where an HOA may have an irrigation or drainage or similar structures that go under roads and if they fail, the HOA is responsible to repair them and return the road surface to City standards. Commissioner Ehlers asked Ms. Beard if the City has the tools to enforce the obligations of the HOA if they are not able to meet their obligations. Ms. Beard stated that as far as snow removal, by the time the City would get involved, most likely the snow would have melted. Regarding repairs, Ms. Beard stated it is possible that an HOA may be in a position that they are not able to financially handle a repair. The City may have to get involved, but it would depend on the situation.

Noting that one of the conditions was for snow removal along the north face along

Elysium Dr., Commissioner Wade asked why that section is being called out. Mr. Peterson stated because there is a 13% slope. Chairman Reece asked if these concerns have been worked out the builder and documented in a formal agreement. Mr. Peterson stated that what is before the Commission is the result of a two-year process. Staff has worked with the builder on the conditions and they are in agreement with all of them with the exception of the 7-year warranty period.

Commissioner Ehlers asked about the Transportation Engineering and Design Standards (TEDS) exceptions. Mr. Peterson stated that the TEDS exceptions were reviewed and approved in 2007 when the application came through at that time. City staff has honored those exceptions after recent review by the City Development Engineer, and Transportation Engineer and the Fire Department.

Commissioner Deppe asked how the timeline works for the warranty period. Mr. Dorris explained that each filing would have its own timeframe. As a plat gets recorded, the security is in place, typically for one year. After one year, the infrastructure is inspected and if it meets the standards, then the money is released. The City is asking for the builder to agree to a seven-year warranty period.

Commissioner Wade asked about the requirement that some of the houses have internal sprinkler systems. Mr. Dorris explained that the Fire Department made that a condition due to the elongated configuration of the cul-de-sac and access/turn-around limitations.

APPLICANTS PRESENTATION

Robert Jones II, Vortex Engineering, stated that he was the owner's representative. Mr. Jones displayed an aerial photo of the site and noted that the site was originally platted in 1955 as the Energy Center Subdivision but was never developed in accordance with the plat. This project was approved as a preliminary plan in 2008/2009 however, due to the economy downturn, it was tabled and the preliminary plan approvals expired after a lapse of five years.

The proposed subdivision has public and private streets and utilizes the Cluster and Hillside Development standards of the City Zoning Code.

Mr. Jones showed a slide with the applicant's request as follows:

1) Planning Commission recommendation of approval to City Council for use of private streets per 21.06.060 (g)(5)
2) Planning Commission recommendation of approval to City Council for development of small area with greater than 30% slope on Elysium Drive and limited number of lots per 21.07.020 (f)(3)

Mr. Jones displayed a slide of the site design and explained that the road design utilized the natural contours to minimize the impacts of cuts and fill. Most of the streets are public, however two private streets will be used to provide access to lots and parking.

The next slide displayed was of the design profile for the private streets. Mr. Jones explained that CC&R provisions for maintenance of private streets shall be recorded with the final plat. In addition, signage will be posted on each private street to distinguish them from public streets.

Mr. Jones next slide showed the site plan with areas with greater than 30% slope in right-of-way highlighted. These areas account for 3778 sf or 0.19% of total site.

In the next slide, Mr. Jones had highlighted areas with greater than 30% slope in building envelope which accounted for 12,603 sf or 0.64% of total site. This slide also illustrated areas with greater than 30% slope within lots. 35,291 sf or 1.80% of total site. The total area of greater than 30% slope, including both right-of-way and lots is 2.6% of the total site.

Mr. Jones explained that all of the homes will be custom homes and will take advantage of the views and topography. All the homes will have engineered foundations and lot specific grading plans.

Mr. Jones displayed a slide with the Goals and Policies of the Comprehensive Plan that they have addressed in the project. In addition, the Hillside Development section of the code was displayed.

QUESTIONS FOR APPLICANT

Commissioner Wade asked if there was an anticipated timeframe for the development of each of the filings. Mr. Jones stated the initial filing would start this summer or fall. Subsequent filings would probably take 12 to 18 months depending on market conditions.

Commissioner Wade asked about the HOA maintenance of the private streets. Mr. Jones stated that typically a maintenance agreement would be signed and recorded by the homeowners along the private street as part of the title work.

Noting that the staff report states that the developer is not in agreement with the 7-year warranty period and plans to appeal to City Council, Commissioner Wade asked what Mr. Jones thought would be an acceptable timeframe for the warranty period. Mr. Jones stated that the code requires one year and they feel they should be able to get the same one-year warranty period that other developers in the area have. After discussions with staff, Mr. Jones stated that they would be willing to double that time to a two-year warranty.

PUBLIC COMMENTS

Janice Burtis, Remax 4000, 120 West Park Dr., STE 200, stated that two years ago, in the Redlands only, they sold 49 residential lots at approximately $109,000 per lot. One

year ago, they sold 46 lots with an average of $138,000 per lot. Currently, Ms. Burtis stated that there are 111 lots available with the average price of $246,000. Ms. Burtis explained that there is a need for lots in the price range of two years ago.
Ms. Burtis explained that she has personally developed three subdivisions in Mesa County and does not feel it is fair to hold the developer to a 7-year warranty period. Ms. Burtis stated that there is a private engineer, a City engineer and a geotechnical engineer all looking at the construction of the project. Ms. Burtis stated that if the developer is held to a 7-year warranty period, the lots would no longer be affordable to the buyers that need the lots.

Jeffery Fleming, 305 Main St., stated that he is an urban planner and thinks this proposal is a fabulous one. Mr. Fleming stated that anytime development can happen in the Redlands, it helps prevent urban sprawl. Less traffic, accidents, pollution were some of the reasons Mr. Fleming wanted to support an infill development.

Mr. Fleming suggested that the City take a wait and see approach and see how the first 1-4 filings perform. Mr. Fleming voiced his concern that additional requirements such as the 7-year warranty period may deter developers from developing in the community.

Richard Wihera, 2427 Bella Pago Dr., stated that he had a letter and a petition to enter into the record. Mr. Wihera handed the Commissioners the letter and noted that the petition contains 24 names of residents in the area that have concerns about the property.

Mr. Wihera stated the development does not meet code in several areas. Mr. Wihera noted that when the Colorado Geological Survey reviewed the plan in 2015, they noted concerns about the stability of the terrain and said they cannot recommend preliminary plans and plat approval unless the applicant demonstrates that the slopes and proposed cuts would be stable. In the second and third round of comments, none of the concerns were addressed by the developer. Mr. Wihera stated that he called the Colorado Geological Survey a week ago and asked if they have any new information about the project that would address the stability and they said no.

Mr. Wihera stated that although the proposed development meets the Cluster Development standards of the code, it does not meet the Hillside Development standards. Mr. Wihera stated that the developer's proposal does not meet the TEDS exception standards. Mr. Wihera noted that the City originally wanted a 10-year warranty and now they are settling for a 7-year.

Regarding Ridgeline Development standards, Mr. Wihera expressed concern about what would happen to the hillside when Filing 5 is developed. Mr. Wihera stated that the equivalence of 16,000 dump trucks of soil will be disturbed.

In conclusion, Mr. Wihera feels the viability of the entire project should be looked at as a whole and not focus on snow removal or one street in particular.

Sarah Robinson, 385 Explorer Ct. #19, stated that she agrees with Mr. Wihera. Ms. Robinson felt that there is a particular onus placed on the HOA to protect the land underneath this development. Ms. Robinson stated that a dysfunctional or inefficient HOA happens more often than is recognized and that can pose a danger. Ms. Robinson expressed concern that the TEDS exception is over 10 years old. With the expansion of the lunch loop, there are significantly more bicyclists on the road especially since the access to the development is on a blind hill.

Ms. Robinson noted that she lives downhill and there have been runoff issues on Ridgeway Drive. More driveways and rooftops will create more runoff.

William Powers, 367 Plateau Dr., expressed concern about the issues that were listed in the staff report and stated that he agrees with many of the points Mr. Wihera brought up. Mr. Powers does not feel the density and clustering of this project is compatible with the adjacent developments. He noted concerns regarding the grade, slope, soil stability and safety of the proposed development and supports a longer warranty period.

Odis Schroeder, 2409 Hidden Valley, stated that he did not live in the area but his mother-in-law is 92 and has lived in the Ridges since 1987. He noted the poor condition of Mariposa Dr. and said Monument Rd. had to be rebuilt in parts because of unstable conditions. Mr. Schroeder stated that he thinks that 7-year warranty may not be long enough of a time period.

Mike Holland, 2398 Mariposa Dr., stated that he has lived in his home 20 years and he is concerned about the clay soil and runoff. Mr. Holland is in support of the 7-year warranty. He stated some of the roads are bad especially Mariposa. Mr. Holland understands they have a right to develop, but he has enjoyed the open space.

Stephanie Marsicovetere, 382 Ridgeway Dr., stated she is concerned about the water and soil stability. Ms. Marsicovetere explained she walks in that area 4 or 5 times a week and has noticed that rocks come down on the road all the time. Ms. Marsicovetere is concerned about the maintenance of the roads when they start to build, and noted that she agrees with the previous comments.

QUESTIONS FOR STAFF

Noting that there is an out-lot in the middle of the project area that is zoned for residential, Commissioner Ehlers asked if this proposal would impact that lot requiring future homes to internally sprinkle as well. Mr. Peterson explained that since there is no second access to the south, he would assume the fire department would treat that area the same.

Commissioner Ehlers asked if this project would be considered infill. Mr. Peterson stated that it would be considered infill due to its close proximity to the center of Grand Junction.

Commissioner Buschhorn asked if the Fire Department agreed to the 13% grade. Mr. Peterson stated that the Fire Department did agree as it was part of the TEDS exception committee.

Commissioner Wade asked if the layout looked the same when the TEDS exception was granted in 2007. Mr. Peterson noted that it was the same concept and that 79 lots had been proposed at that time and the current proposal is for 72 lots. Commissioner Wade asked if TEDS exceptions that are approved previously would be allowed to move forward without additional review. Mr. Peterson responded that it was re-reviewed as part of this proposal because they had lost their entitlements of the previously approved preliminary plan.

Commissioner Wade asked Mr. Peterson if he has seen the report that Mr. Wihera had provided to the Commissioners that evening. Mr. Peterson stated that he had not seen the report prior to the meeting, however, he has had discussions with Mr. Wihera in the past two years. Mr. Peterson stated that he has kept Mr. Wihera apprised of the proposal and comments via email as it worked through the review process.

Regarding the Colorado Geological Survey's (CGS) responses, Commissioner Ehlers asked if they will have the opportunity to have their concerns addressed at the time of the final plan. Commissioner Ehlers noted that significant Geotechnical reporting will need to be done regarding the earthwork and asked Mr. Dorris if CGS will have the opportunity to comment after the reports are done. Mr. Dorris stated that they will have the opportunity to comment during the final plan process and they welcome their input. Mr. Dorris added that City staff had put a long condition on the project requiring extensive geotechnical study at final design.

Discussion continued regarding references to overall slope noted in Mr. Wihera's letter and Mr. Peterson clarified that the slope percentage is based on each lot and not an average over the whole project.

Commissioner Ehlers noted that the City has identified specific ridgelines and view corridors that need to be protected and asked if this development falls into that requirement. Mr. Peterson stated that the Ridgeline Development Standards apply to this project because it can be seen from Monument Rd. which is one of the criteria. Mr. Peterson explained that the applicant will limit the homes to one story in the view corridor and little of the house can be seen. Commissioner Ehlers noted that South Camp Rd. and areas of Spyglass had similar restrictions as well.

Commissioner Ehlers stated that several concerns will be addressed by the design standards and he relies on experts such as the review of the TEDS exception committee to help make his decision. Commissioner Ehlers noted that he supports the infill development aspect of the project. He stated that he is concerned with the financial burden that a failed road can place on the City and at the same time he does not want to negatively impact the property values of the existing homes in the area.

Mr. Ehlers asked if options other than the 7-year warranty had been considered. Mr. Dorris said there were other alternatives, but then noted that in his research of the requirements placed on Spyglass, there are parts that failed even with extensive earthwork done. The costs of those repairs could be five to six figures. Mr. Dorris noted that he has worked on many projects and looked at many geotechnical reports and this particular subdivision has him concerned enough that he feels the 7-warranty period in needed.

APPLICANTS REBUTTAL

Mr. Jones felt that the concept of the 7-year warranty was an extraordinary step taken by the City out of an abundance of caution. Mr. Jones feels there is no empirical evidence to support the need. Mr. Jones stated his staff conducted a survey of other communities in Colorado and cannot find such an extraordinary warranty ever being required. Mr. Jones stated that the City requires a one-year warranty but he did not find anything in the development code that allows a 7-year warranty. Mr. Jones noted that they have offered a 2-year warranty period. Mr. Jones objects to the warranty period and considers it a substantial burden and hardship that is being placed on the developer.

Mr. Jones explained that the City does not implement the warranty period until almost one year after construction is completed, therefore with a 2-year warranty period, there will actually be a 3-year timeframe. Mr. Jones feels that there is extensive oversight with the geotechnical engineers during the construction process.

Mr. Jones feels imposing a 7-year warranty is arbitrary, premature and not warranted. Mr. Jones stated that if the City feels a 7-year warranty is justified, they should amend the development code so developers know what is required. Mr. Jones speculated that if the City imposes this type of warranty on owners, they will stop development in Grand Junction.

Mr. Jones presented slides with photos of the three areas of street failure that had been mentioned by staff. In Spyglass subdivision, there are a few areas of road failing, however there are several miles of road in the subdivision. Shadow Lake Road in Redlands Mesa Subdivision was constructed 17 years ago. The next slide was Mariposa Drive, just west and south of the proposed site. Mr. Jones stated that he could not find evidence of a geotechnical report that had been completed or of any borings done for Mariposa Drive.

Mike Berry, 640 White Avenue, Unit B, stated he is representing Huddleston-Berry Engineering and Testing, LLC, and is part of the design team on the project. Mr. Berry gave a brief overview of his education and extensive experience in the field of geotechnical engineering.

Mr. Berry displayed typical pavement cross sections of Spyglass Hill Subdivision and the Ledges as well as a cross section for Pinnacle Ridge for comparison. Mr. Berry

explained the mitigation measures that will be used. Mr. Berry displayed several slides that illustrated the level of detail regarding compaction, fills, grading, and lab test results.

Mr. Berry noted that the CGS base their review on geologic borings reports, geologic maps and topographic maps and are not experts in the geology and engineering properties of materials in the Grand Valley and therefore make conservative assessments based on a limited set of data.

In conclusion, Mr. Berry stated that he feels that a 7-year warranty is excessive and not reasonable and appropriate for this project.

COMMISSIONER DISCUSSION

Commissioner Ehlers noted that he had asked about alternatives because to go beyond the code and apply a 7-year warranty is concerning. Commissioner Ehlers explained that he depends on the professional opinions of experts in the field. Commissioner Ehlers stated that he would like to support the project and have it move forward.

Chairman Reece asked Ms. Beard if Commissioner Ehlers chose to, could he make a motion that would modify the warranty period. Ms. Beard stated that if he would like to make a motion that would modify what is currently before him, then he would need to be clear as to what he is suggesting to be included.

Commissioner Deppe stated that over the years she has witnessed HOAs in the Valley become defunct. Commissioner Deppe asked what would happen if the HOA failed. Commissioner Deppe struggles with the building of homes on unstable soils and on ridges.

Commissioner Wade noted that as he reviews a project for compliance with the development codes, he relies on the subject matter expert of the staff and review agencies. Commissioner Wade stated that he feels the City should be able to add conditions that protect the City and make specific requirements such as an extended warranty. Commissioner Wade noted that the conditions placed on this development is as good as they can get and still give the developer an opportunity to develop a property with those challenges. Commissioner Wade urged citizens to stay on top of the project. Commissioner Wade stated that he is concerned about the traffic, but is in support of the project in general.

Commissioner Buschhorn agreed with Commissioner Wade and thought the one-year warranty is probably not enough and he does not believe the code says it is required to only be a one-year period and it does not negate the ability to go beyond that. Given the topography, Commissioner Buschhorn feels that a longer warranty period makes sense. Commissioner Buschhorn feels that this proposal with the conditions, strikes a balance that allows a developer to develop the project while also protecting the City.

Chairman Reece voiced her concern regarding what would happen if the HOA is disbanded or does not do an adequate job. Chairman Reece noted the fact that this is an infill project and would like to see those types of projects be encouraged. In addition, Chairman Reece was concerned that all the conditions of approval had not been agreed upon in writing with the developer.

MOTION: **(Commissioner Wade)** "Madam Chairman, on item SUB-2015-120, I move that the Planning Commission forward a recommendation of conditional approval of the requested review of private streets and also public streets and residential lots traversing greater than 30% slopes for the proposed Pinnacle Ridge Subdivision, SUB-2015-120, to the City Council with findings of fact/conclusions and conditions as stated in the staff report."

Commissioner Buschhorn seconded the motion. A vote was called and the motion passed unanimously by a vote of 5-0.

Other Business

None

Adjournment

The Planning Commission meeting was adjourned at 10:17 p.m.

From: David Mattson <davidatthepiano@gmail.com>
To: "scottp@gjcity.org" <scottp@gjcity.org>
Date: 4/3/2015 3:38 PM
Subject: Fwd: SUB-2015-120

Begin forwarded message:

> From: David Mattson <davidatthepiano@gmail.com>
> Date: April 3, 2015 11:31:46 MDT
> To: "ssottp@gjcity.org" <ssottp@gjcity.org>
> Subject: SUB-2015-120
>
> Dear Scott Peterson,
>
> I own a home at 360 Plateau Drive, near the proposed development: Pinnacle Ridge Subdivision, (SUB-2015-120). I have lived at this address since June 1980, and know the area well.
>
> These are my concerns about the proposed subdivision:
>
> 1. Drainage of surface water.
> Are the proposed methods of handling runoff adequate to accommodate downpours of rain occurring during the "monsoon" season in late July and August. Large amounts of water flow off the soil in this area at times, and flow through the area where many lots are proposed along the western edge of the proposed development. Where will water flow after the "holding ponds" are full? Will the proposed ponds become places friendly to mosquito growth?
>
> 2. Safe egress.
> As planned there is only one street available to enter and leave the proposed development.
> Several years ago I witnessed a grass fire which engulfed several acres in the south-east corner of the proposed development. The fire occurred in early July, spreading quickly in a south-easterly direction. If such a fire were to occurs again, residents in the area north of the fire would not be able to exit in vehicles.
>
> 3. Sewer drainage.
> Are the sewer pipes that will catch the sewer drainage located in the Ridges Development adequate to handle the extra sewage from 79 homes?
>
> 4. Safety of traffic.
> Need to address the safety of the new intersection created due to the short distance between the crest of the hill on Mariposa Drive and the entrance/exit point of the proposed development. Will a street light be indicated at this intersection?
>
> Respectfully submitted,
>
> David W. Mattson
>
> (970) 986-2229

April 05, 2015

Mr. Scott Peterson, Senior Planner
City of Grand Junction Planning Division
250 North 5th Street
Grand Junction, CO 81501

Re: Proposed Pinnacle Ridge Preliminary Subdivision Plan

Dear Mr. Peterson:

This letter is in follow-up to a meeting with you and Rick Dorris, Development Engineer, on 3/27/15, and a meeting at the development site with Rick Dorris on 4/1/15. This letter is my own product and I take full responsibility for the views and opinions expressed herein. However, a quick canvas of the surrounding neighborhoods found many residents and homeowners who are very concerned about the Plans for the proposed Pinnacle Ridge development. Attached in Appendix A are the signatures of 17 homeowners and residents who are within 500 feet of the proposed development. These signatures were collected in less than three hours on a single day, and thus there is no doubt that they represent only a fraction of those who share concerns similar to mine about this proposed project.

Throughout this document any references to "the Code" are referring to the Grand Junction Municipal Code, which is incorporated into this document in its entirety by reference. All references to "the Plan" refer to the Preliminary Subdivision Plan submitted for the Pinnacle Ridge Subdivision (SUB-2015-120).

I. OVERVIEW

The proposed Plan for the Pinnacle Ridge Subdivision does not meet Code requirements in multiple respects:

- The Plan does not meet the intent for being classified as suitable for a "cluster development."
- The Plan does not meet hillside development requirements.
- The Plan does not meet open space requirements.
- The Plan does not meet traffic safety requirements as defined by the Traffic Engineering Design Standards (TEDS) manual.

II. MISAPPLICATION OF "CLUSTER DEVELOPMENT" STANDARDS

The plan development area is zoned R-2 which has a minimum lot size of 15,000 sq ft and a minimum width of 100 feet. However, this development is being presented as a

"cluster development" due to a certain percentage of the development area being designated as open space. While some of the property is allotted for open space, what is missing is an appreciation for the intent of cluster developments. As noted in the Code on the section regarding cluster developments, the purpose of cluster developments is for the preservation of environmentally sensitive areas and open space:

> **21.03.060 Cluster developments.**
> (a) To preserve environmentally sensitive areas, open space and agricultural lands, cluster development is encouraged. (Emphasis added)

The concept of cluster developments is illustrated in a couple of simple diagrams from the *Rural Cluster Development Guide* which are provided in Appendix B. It should be noted that in each sample the use of a cluster development preserves and creates open space without the loss of density. At the same time, the streets in the cluster designs are determined by the environment and are designed to protect the existing natural features.

Just the opposite is true in the proposed Plan for Pinnacle Ridge. The Pinnacle Ridge development flattens ridgelines, carves through hillsides and fills natural depressions. The only places where the Pinnacle Ridge Plan does not build are where the slopes are too steep to build. The critical question here is:

How much open space is preserved or created in the development area by use of the "cluster development" standards?

The answer is absolutely none. The Pinnacle Ridges cluster plan does not create or preserve any open space; in truth, the Plan requires extensive grading, excavation and fills to make room for the cluster development. The use of cluster development standards in this situation does nothing but allow the developer to put a higher density on the land than would allowed by straight zoning. As is, the developer is being rewarded by not building on land which is impossible to build upon. Given that the Plan does not meet the intent of the cluster development standards to "preserve" open space, R-2 zoning standards should apply to this development area.

III. FAILURE TO MEET HILLSIDE DEVELOPMENT STANDARDS

Even if Pinnacle Ridge is considered to be a cluster development, the Plan must still comply with the Hillside Development standards. In the section of the Code regarding cluster developments it is noted:

> Minimum lot size shall also be subject to other provisions, such as GJMC 21.07.020(f), Hillside Development, which might further restrict lot size (Section 21.03.060(c)(2)) .

Section 21.07.020(f) then provides the following for hillside development standards, which include cluster developments:

SINGLE-FAMILY, PLAN AND CLUSTER SUBDIVISION DEVELOPMENT		
Average Slope of Development Area	**Minimum Lot Size[1]**	**Minimum Lot Width**
0% – 10%	See Existing Zone	See Existing Zone
10.01% – 20%	10,000 sq. ft.	At least 100 ft. at front setback line
20.01% – 30%	15,000 sq. ft.	At least 200 ft. at front setback line
30.01% +	Development Not Permitted[2]	Development Not Permitted[2]

[1] Minimum lot size as finally approved.

[2] Development on slopes of greater than 30 percent is not permitted unless, after review and recommendation by the Planning Commission and approval by the City Council, it is determined that: a. Appropriate engineering measures will be taken to minimize the impact of cuts, fills, erosion and stormwater runoff consistent with the purpose of this section; and b. The developer has taken reasonable steps to minimize the amount of hillside cuts and also has taken measures to mitigate the aesthetic impact of cuts through landscaping or other steps.

It should be noted that the Code definition of “development” includes all property “owned by the same owner” (Chapter 21.10). Thus, these hillside development standards are for the entire Pinnacle Ridge development area and not just to the area where homes might be placed.

Determining the slope of a flat area is a relatively simple task. On the other hand, calculating the average slope of land is admittedly difficult when there are as many hills and valleys as in the planned development area. Slopes are calculated by using the high points and low points of the terrain, and thus one must go perpendicular to the map contours in making any measurements. Going parallel to the contours does not indicate slope. Measuring parallel to the contours would be as if one was traversing a hill on a steep slope; the trail can be relatively level on a switchback but the slope of the hill remains steep. Added to this one cannot go from the highest point to the lowest point without taking intervening hills into account. A simple illustration is provided in Appendix C. A flat slope of a 20 foot rise in 100 feet produces a 20% slope, yet the same total rise with steep intervening hills could have an average slope of 50%.

To deal with these issues, multiple measurements of the development area were taken from the Grand Junction Geographic Information System (GIS). The measurements were selected by going from identified high points to low points with no intervening hills, and without crossing any property boundaries of the development. Printouts from all of these measurements are offered in Appendix C, and are summarized below:

Start Point	End Point	Slope
Highest point on property	West property edge	23.3%
Highest point on property	Southeast property corner	31.1%
Highest point on property	North property edge	11.9%
High point on north end of center area not owned by developer	West property edge	24.1%
High point on north end of center area not owned by developer	Northwest property edge	11.1%
High point on north end of center area not owned by developer	North property edge	15.5%
High point on northwest corner of center area not owned by developer	West property edge	22.0%
High point on west side of center area not owned by developer	West property edge	21.7%
Knoll on east side of property	North property edge	16.0%
Knoll on east side of property	Gully to west	22.8%

Another method of determining slope would be to follow naturally established gullies as they clearly go from the highest point to lowest point without any intervening hills. To do this, all identified gullies were mapped and the average slopes of the gullies were calculated. This map is also provided in Appendix C and is summarized in the table below:

Location of Gully	Slope
Southwest corner going to the west	12.6%
Northwest corner going to the west	18.0%
Northwest corner going to the north	10.7%
Long gully from center going to the north	12.2%
Upper tributary to long gully	21.0%
Lower tributary to long gully	12.4%
Southeast corner going to the southeast	40.0%
Southeast corner going to the south	16.5%

As noted, measuring average slope on a very hilly area is difficult and some could dispute where these lines were drawn. However, the point is that none of these measurements going from high points to low points on the proposed development area found a slope of less than 10%, and one has to search hard to try to find even a small area where the slope is 10% or less.

At the very minimum the average slope of the development area is in the 10.01% to 20% range with significant areas in the 20% to 30% range. Given the slopes of this area, many of the proposed lots do not meet the size and width Code for hillside development and the thus the entire proposed Plan does not meet Code for hillside development.

IV. MISALLOCATION OF OPEN SPACE

This item is short and requires no interpretation or calculations. Section 21.03.060(i)(2) of the Code regarding cluster developments and open space requires:

> All, or a portion of, the open space shall be located between the clustered development and adjoining development.

This Plan does not comply with Code in that it provides no open space between the proposed Pinnacle Ridge and adjoining development at The Ridges, and the Plan provides no open space between Pinnacle Ridge and the Bella Pago Development.

V. FAILURE TO MEET ROAD SAFETY STANDARDS

The Grand Junction Municipal Code incorporates the traffic safety requirements as defined by the Traffic Engineering Design Standards (TEDS) manual. Section 29.20.070 on vertical alignment reads:

> (a) **Grades.** Design grades and vertical sight distance address drainage and/or safety concerns for vehicles and pedestrians. Grades of streets shall not be less than 0.5 percent, nor more than eight percent. In hilly terrain (defined as having grades of 10 percent or greater, as defined in GJMC 21.07.020), the maximum grade for local residential streets is 12 percent for a maximum distance of 500 feet.

Despite these requirements, the Plans for Pinnacle Ridge show a street of 12% grade for over 1,000 feet. This writer was informed verbally by the Planning Department staff that the Plan development has already been given an exemption for the requirement of a 12% grade for a maximum of 500 feet. The rationale for this exemption remains unclear, yet there are several issues involved with this exemption.

First, the exemption is required only for hilly terrain with grades of 10 % or greater. The fact that the Planners required the exemption and that the developer applied for the exemption is acknowledgement by both parties that the slope in the area exceeds 10% as was discussed in detail in Section II regarding hillside development standards.

Second, it is noted that the TEDS Exemption Exhibit of 12/5/14 submitted by Vortex Engineering lists the minimum lot size as “17,000 SF.” It turns out that less than 10% of the lots in the Plan have a minimum size of 17,000 SF.

Third and most important are the safety issues involved with this exemption. This exemption more than doubles what is considered the maximum safe length for a road with a 12% grade. This issue is compounded by the fact that the exemption granted to the developer for this project also reduced the width of the road from the standard 28 foot wide urban residential street to only 22 feet wide (which is 79% of the standard width). A final factor is that this creates a steep road which will face due north. As anyone with a sloped, north-facing driveway can attest, this can be a significant issue during the winter months with ice and snow. In short, this exemption results in a north-facing road significantly reduced in width and at the same time more than doubled in what is considered to be safe in length for its grade.

In regard to TEDS exceptions, the Code states:

> No exception shall be allowed if the resulting design is dangerous or otherwise fails to meet the fundamental needs of the community. The fundamental needs of the community shall be determined by the City or County, but primarily are the provision of safe, efficient and effective transportation. (29.64.010(d))

In this case, the TEDS exceptions have nothing to do with the needs of the community or in the provision of safe, efficient and effective transportation. Instead, these exemptions serve only the need of the developer by providing access to more land to build upon by filling and carving to create a long, steep and narrow road into the hillside which does not comply with existing safety standards.

VI. ENVIRONMENTAL CONSIDERATIONS

In addition to the many areas in which this Plan is not in strict conformance with the Code, I would also like to draw attention to the multiple aspects of the Code which address the purpose and intent of the various specific sections. For example:

> Hillside development standards are applicable to hillside development and excavation of hillside so that the character of the City’s hillsides is preserved (21.07.020(f)(1)(iii)). (Emphasis added)

> The provisions hereof are designed to accomplish the following: Encourage the location, design and development of building sites in a manner that will provide for greater aesthetic appeal, blend with the slopes and hillside terrain, minimize the scarring and erosion effects of cutting, filling and grading of hillsides and prohibit development of ridge lines as defined (21.07.020(f)(2)(v)).
>
> Development on steep slopes, including the bluffs overlooking the Colorado River, should be avoided or minimized and follow the requirements of the hillside development regulations in the City Zoning and Development Code, GJMC Title 21, and the slope conditions standards in the County's Land Development Code (34.16.010(a)). (Emphasis added)
>
> Roadway and other public improvement design shall respect and enhance the character of the Redlands (34.16.040(b)(3). (Emphasis added)

None of these development principles have been applied in the planning for Pinnacle Ridge. This project calls for shaving flat the top of a prominent hill in the area. This means that bikers and hikers looking over from the Lunch Loop and Three Sisters area will no longer see a natural ridgeline but instead will see a string of homes. This project also requires making vertical cuts in the hillsides as much as 30 feet high, and filling vast areas to generate building sites. The Pinnacle Ridge development does not work with the existing environment, but instead is moving massive amounts of earth to create enough flat ground upon which they can place the cluster development.

In closing, it is recognized that development will occur but this is not the right development for this terrain. These hillsides might be able to support approximately one-half of the proposed density if the existing Codes as noted above are enforced as intended, which is to preserve environmentally sensitive areas and develop safe and stable developments that respect the natural environment.

Thank you for your consideration of my concerns. I am happy to make myself available to you to discuss these issues in more detail if you desire.

Richard Wihera
2427 Bella Pago Drive
Grand Junction, CO 81507
970.270.9666

Appendix A

Neighborhood Petitions

To: City of Grand Junction Planning Commission
250 N. 5th Street
Grand Junction, CO 81501

Re: Proposed Pinnacle Ridge Subdivision

The undersigned are property owners and/or residents of property within 500 feet of the proposed Pinnacle Ridge subdivision of "Cluster Homes." We urge the Grand Junction Planning Commission to deny approval of this plan until the developer proves compliance with the purpose and all specific sections of the Grand Junction Development Code and Comprehensive Plan. This includes but it not limited to:

- The impact on the natural environment
- Proper application of zoning regulations
- Conformance with hillside development requirements
- Appropriation of open space
- Roadway safety
- Compatibility with existing adjacent properties

Print Name BRYCE CASEBOLT	
Address 362 PLATEAU DR	
Signature	Date 4 APR 15

Print Name HOLLY MATTSON	
Address 360 PLATEAU DRIVE GJ	CO 81507
Signature Holly J. Mattson	Date April 5, 2015

Print Name Terrence D. Mueller	
Address 370 Plateau Drive	
Signature Terrence D Mueller	Date 4/4/15

To: City of Grand Junction Planning Commission
250 N. 5th Street
Grand Junction, CO 81501

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- Proper application of zoning regulations
- Conformance with hillside development requirements
- Appropriation of open space
- Roadway safety
- Compatibility with existing adjacent properties

720-201-8079

Print Name William Powers	
Address 367 Plateau Dr, GJ 81507	
Signature	Date 4/4/2015

Print Name Mary Orn	
Address 361 Plateau Dr	
Signature MKOrn	Date 4/4/15

Print Name Josh Painter	
Address 2397 Mariposa Dr	
Signature Josh Painter	Date 4/4/15

To: City of Grand Junction Planning Commission
250 N. 5th Street
Grand Junction, CO 81501

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- Conformance with hillside development requirements
- Appropriation of open space
- Roadway safety
- Compatibility with existing adjacent properties

Print Name Steve Donivan	
Address 2397 E. Plateau Ct.	
Signature Steve Donivan	Date 4-4-2015

Print Name Mary Donivan	
Address 2397 E Plateau Ct	
Signature Mary Donivan	Date 4/4/15

Print Name JASON WHITESIDES 270 7223	
Address 2399 E. Plateau CT 81507	
Signature	Date 4/4/15

To: City of Grand Junction Planning Commission
250 N. 5th Street
Grand Junction, CO 81501

Re: Proposed Pinnacle Ridge Subdivision

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- The impact on the natural environment
- Proper application of zoning regulations
- Conformance with hillside development requirements
- Appropriation of open space
- Roadway safety
- Compatibility with existing adjacent properties

Print Name Joseph M. Wezensky (970) 261-2592	
Address 372 Plateau Dr	
Signature	Date 4/4/15

Print Name Cathy Roberts	
Address 2397 Ridgeway Ct.	
Signature Cathy Roberts	Date 4/4/15

Print Name Keely Danielson	
Address 371 Plateau Dr.	
Signature Keely Danielson	Date 4/4/15

To: City of Grand Junction Planning Commission
250 N. 5th Street
Grand Junction, CO 81501

Re: Proposed Pinnacle Ridge Subdivision

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- The impact on the natural environment
- Proper application of zoning regulations
- Conformance with hillside development requirements
- Appropriation of open space
- Roadway safety
- Compatibility with existing adjacent properties

Print Name Cinda Kerbein	
Address 2421 Hidden Valley Dr. GJ	
Signature	Date 4/4/15

Print Name Michael Kerbein	
Address 2421 Hidden Valley Dr. GJ CO	
Signature	Date 4/4/15

Print Name Alice Kerbein	
Address 2421 Hidden Valley Dr. GJ CO 81507	
Signature Akerbein	Date 4/4/15

To: City of Grand Junction Planning Commission
250 N. 5th Street
Grand Junction, CO 81501

Re: Proposed Pinnacle Ridge Subdivision

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- Proper application of zoning regulations
- Conformance with hillside development requirements
- Appropriation of open space
- Roadway safety
- Compatibility with existing adjacent properties

Print Name CYNTHIA BALDWIN	
Address 2409 HIDDEN VALLEY DR	
Signature Cynthia M. Baldwin	Date 4/4/15

Print Name MARIE MONROE	
Address 2409 HIDDEN VALLEY DR	
Signature Marie L. Monroe	Date 4-4-15

Print Name RICHARD WIKERA	
Address 2427 BELLA PAGO	
Signature	Date 4.4.15

Appendix B

Cluster Development Samples

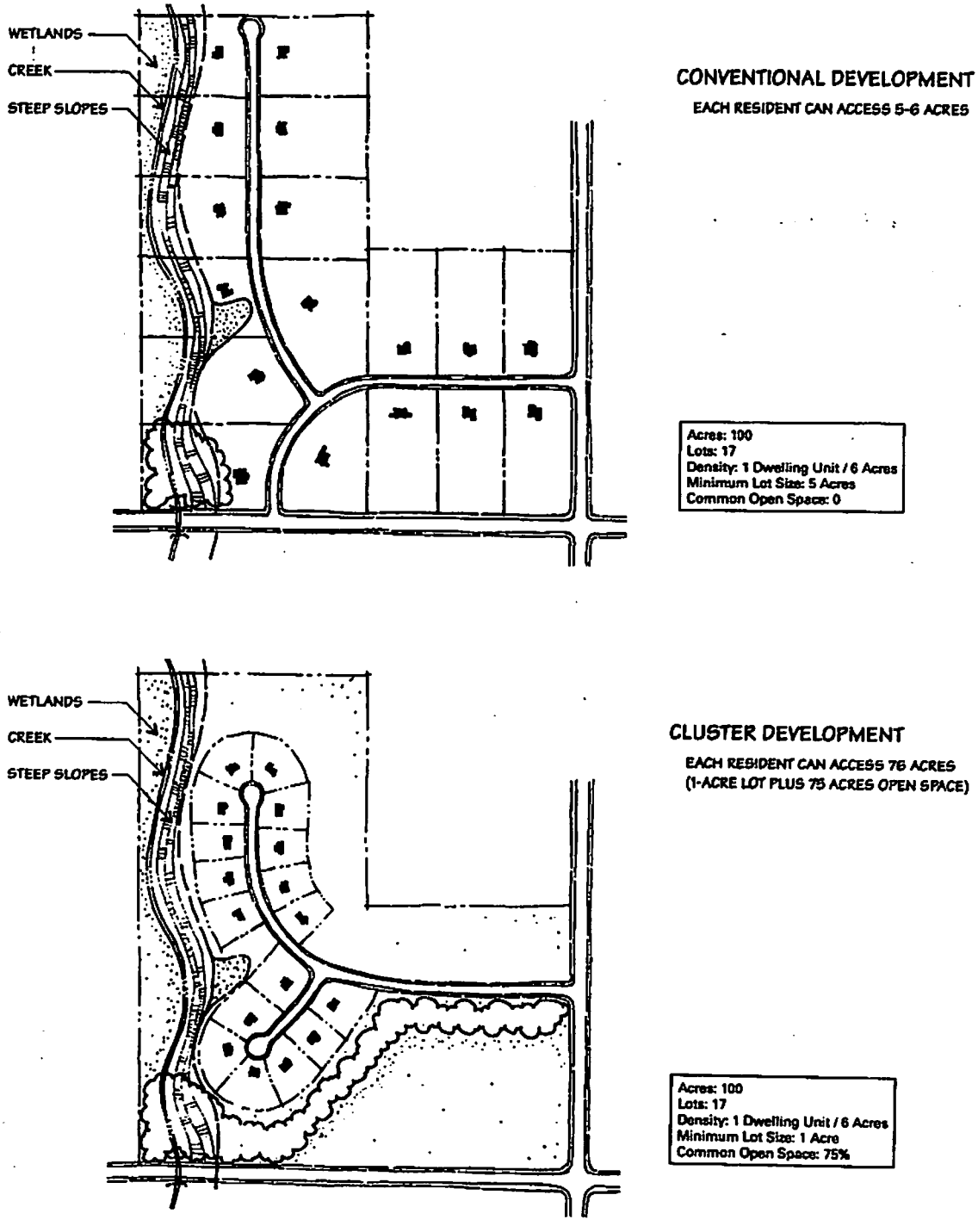


Figure I-1. Through a reduction in lot size, open space can be created without losing density.

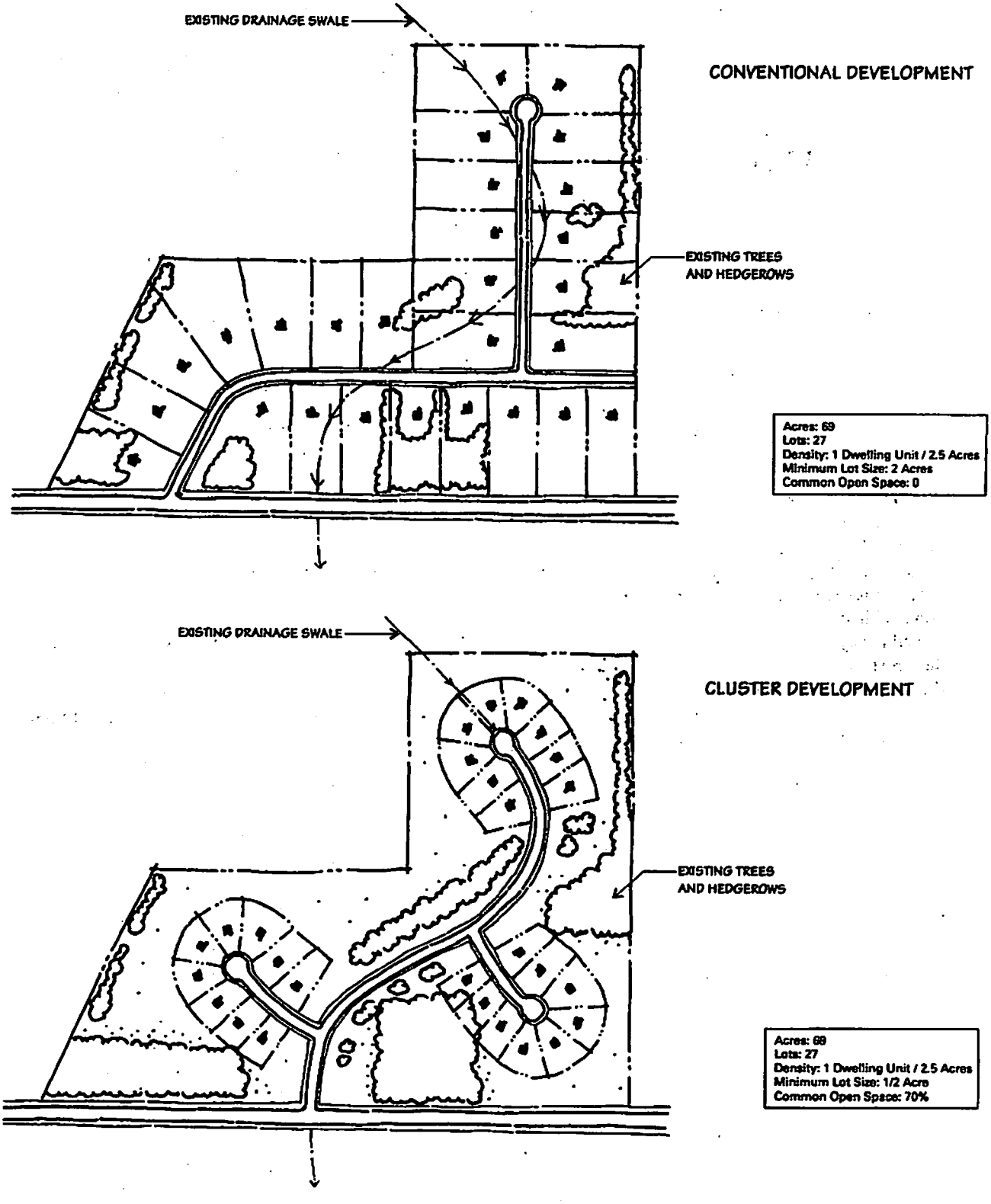
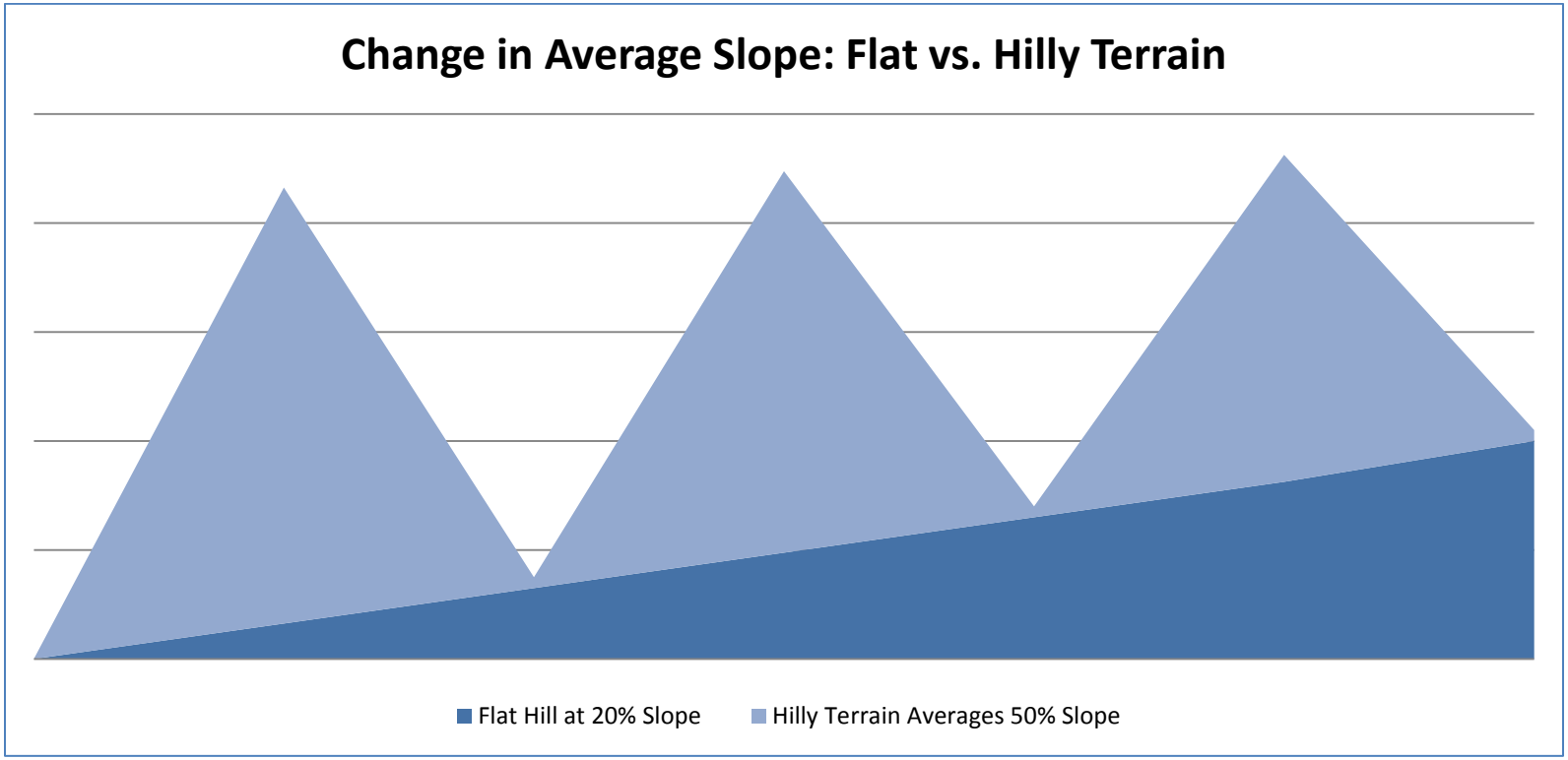


Figure III-1. In conventional development, street alignment is often determined by the shape of the development parcel. But with cluster development, natural features can determine street alignment.

Appendix C

Development Area Slope Maps


Change in Average Slope: Flat vs. Hilly Terrain
Flat Hill at 20% Slope
Hilly Terrain Averages 50% Slope

City of Grand Junction



N

0 0.075 0.15 Miles

Printed: 4/4/2015

1 inch = 335 feet

CITY OF Grand Junction COLORADO GEOGRAPHIC INFORMATION SYSTEM

City of Grand Junction



N

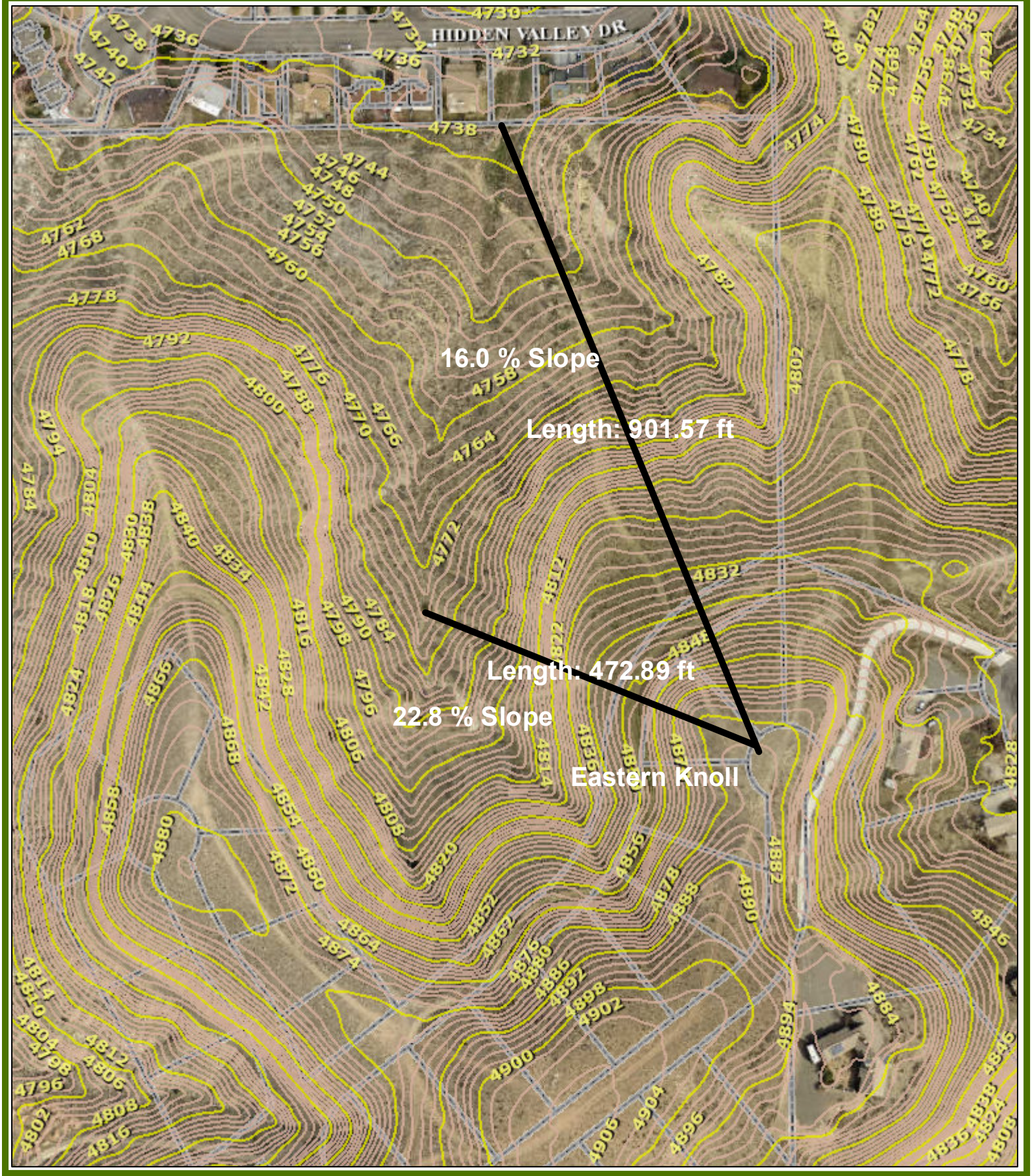
0 0.05 0.1 Miles

Printed: 4/4/2015

1 inch = 168 feet

CITY OF Grand Junction COLORADO GEOGRAPHIC INFORMATION SYSTEM

City of Grand Junction



N

0 0.05 0.1 Miles

Printed: 4/4/2015

1 inch = 168 feet

CITY OF Grand Junction COLORADO GEOGRAPHIC INFORMATION SYSTEM

City of Grand Junction



N

0 0.075 0.15 Miles

Printed: 4/4/2015

1 inch = 335 feet

CITY OF Grand Junction COLORADO GEOGRAPHIC INFORMATION SYSTEM

Pinnacle Ridge:
Failure to Meet Code Requirements

The Commission's Decision on the Proposed Pinnacle Ridge Development Will Have Long-Term Consequences for Homeowners, Taxpayers, and All Citizens and Visitors Who Love the Beauty of Our Grand Valley.

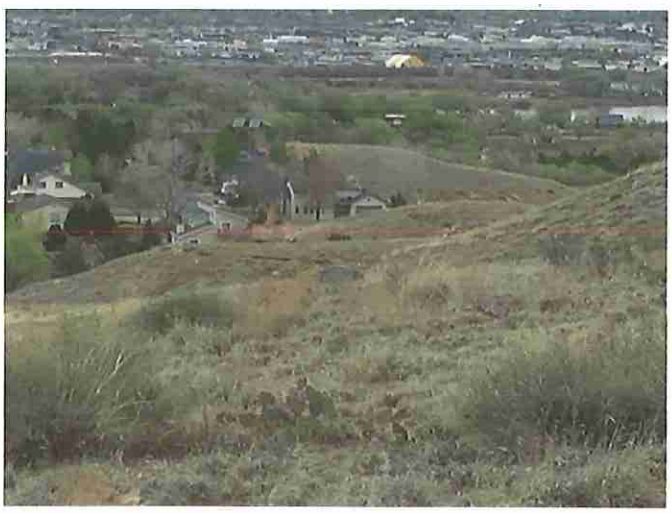
It is Understood that Development Will Occur, but We Must Oppose This Project as Proposed Because:

Expert Concerns Regarding Stability of the Terrain Have Gone Unanswered
... Page 1

Multiple Lots Do Not Meet Code Requirements for Hillside Development
...Page 2

The Proposed Road is Too Steep and Too Long to Meet Fire Access Code Requirements
...Page 3

The Project Does Not Meet Code Requirements for Sensitive Lands and Ridgeline Protection
...Page 4





Richard Wihera

Presented to Grand Junction Planning Commission
3/28/17

Terrain Stability of the Development Area Has Not Been Established

Excerpts from repeated Colorado Geological Survey (CGS) Reviews Show the Developer Has Failed to Address the Problem to the Satisfaction of Independent Reviewers
(All emphasis from original reports)

2/27/2015

- **"CGS cannot recommend preliminary plat/plan approval** unless and until the applicant demonstrates that existing slopes and proposed temporary and permanent cut slopes will be stable, and that any proposed development will not be impacted by, nor exacerbate, potential slope instability."

8/12/2015

- CGS repeats the concerns about stability of the terrain and for a second time lists the analyses needed to assess the terrain's stability.
- **"To establish the overall project's viability from a slope stability perspective, this level of investigation (detailed in comments) must be done at the preliminary plan stage, prior to platting of individual lots."**

11/18/2015

- CGS repeats its concerns and for the third time lists the various analyses needed to determine if the terrain is suitable for development.

2/29/2016

- "The applicant and its geotechnical consultant have not demonstrated that the planned cut slopes will be stable."
- "The geologic materials present on this property, especially sand, gravel and claystone, cannot be assumed to be stable at the slope angles proposed."
- "CGS remains concerned about the overall viability of the project at the proposed density."
- "In the absence of the analyses we have previously requested, the applicant's 'acknowledgment' of this and other CGS comments is meaningless."

In a telephone contact last week, CGS reported they still have not received any additional studies or analyses on this project, and their assessment of February 2016 remains their opinion now.

The Proposed Development Does Not Meet Municipal Code Requirements for Hillside Development

Grand Junction Municipal Code 21.07.020 (f) **Hillside Development**

(1) Hillside development standards are applicable to hillside development and excavation of hillside so that:

(i) Soil and slope instability and erosion is minimized;
(ii) The adverse effects of grading, cut and fill operations are minimized;
(iii) The character of the City's hillsides is preserved; and
(iv) The public's interest is protected.

(3) Hillside Development Standards. In furtherance of the purposes set forth, any hillside development shall comply with the tables below. Any portion of a development having a slope greater than 30 percent with an elevation change of 20 feet or greater shall not be included in calculation of the area of such parcel for the purposes of determining conformity with the minimum lot parcel size and density requirements below.

SINGLE-FAMILY, PLANNED AND CLUSTER SUBDIVISION DEVELOPMENT		
Average Slope of Development Area	**Minimum Lot Size[1]**	**Minimum Lot Width**
0% – 10%	See Existing Zone	See Existing Zone
10.01% – 20%	10,000 sq. ft.	At least 100 ft. at front setback line
20.01% – 30%	15,000 sq. ft.	At least 200 ft. at front setback line
30.01% +	Development Not Permitted[2]	Development Not Permitted[2]

Data provided by developer on Limits of Development/Slope Analysis (Sheet 4), shows that the slope of the development area is:

0 – 10%	413,198 sf
10.01-20%	562,829 sf
20.01-30%	579,433 sf
30.01%+	409,566 sf

Leaving out the area 30.01%+ area, the average slope of the development is 16.06%. Code requires a minimum lot size of 10,000 sq. ft. and at least 100 ft. minimum lot width for this slope.

Per developer's plans (Sheets 5 and 6), 26 of the 72 lots (36%) in the proposed development do not meet the Code requirements for the minimum lot size and/or minimum lot width for this slope.

The Proposed Development Does Not Meet Municipal Code Requirements for Transportation Engineering Design Standards (TEDS) for Fire Access

Grand Junction Municipal Code

29.20.070 Vertical alignment

a) **Grades.** Design grades and vertical sight distance address drainage and/or safety concerns for vehicles and pedestrians. Grades of streets shall not be less than 0.5 percent, nor more than eight percent. In hilly terrain (defined as having grades of 10 percent or greater, as defined in GJMC 21.07.020), the maximum grade for local residential streets is 12 percent for a maximum distance of 500 feet.

29.64.010 Design exceptions

(d) The burden in the development process shall be on the applicant to demonstrate that the proposed exception, if granted, will not result in a dangerous condition as determined by the City or County. No exception shall be allowed if the resulting design is dangerous or otherwise fails to meet the fundamental needs of the community. The fundamental needs of the community shall be determined by the City or County, but primarily are the provision of safe, efficient and effective transportation.

Developer is proposing a road with 13% grade for 833 feet, which is an 8% increase in slope and 67% longer than allowed by TEDS standards. In regard to Design Exceptions, nothing is found in the in the applicant's plans which demonstrates that this will not result in a dangerous condition.

City Fire Department Review:

"Grades exceed maximum of 12% permitted by fire access requirements. The submittal of plans with grades not exceeding 12% will be required." (Emphasis in original)

And a note on the issue of warranty in the Colorado Geological Survey (CGS) Review:

"Due to significant slope stability and expansive soil concerns, CGS continues to support the City in its insistence on a ten-year warranty for all improvements in the public right-of-way."

The Proposed Development Does Not Meet Municipal Code Requirements for Sensitive Lands and Ridgeline Protection

21.07.020 Environmental/sensitive lands regulations. (g) Ridgeline Development. The City recognizes the value of its visual resources and amenities. The purpose of the ridgeline development standards is to preserve the character of the identified ridgelines and to minimize soil and slope instability and erosion.

34.16.010 (a) Hills, Bluffs, and Other Visually Prominent Areas. The Grand Junction Zoning and Development Code (GJMC Title 21) identifies key ridgelines along Monument Road, South Camp Road and South Broadway on which new development must maintain sufficient setbacks as to not be visible on the horizon, or provide mitigation through design to minimize the visibility of development along the corridors.

Monument Road has been identified as a visually important corridor on the Redlands, providing access to the Tabeguache trailhead and a gateway to the Colorado National Monument. In addition to the ridgeline views along the corridor, the views on either side of the roadway are also of importance to maintain the open vistas to the Monument.

(b) (1) Development on prominent ridgelines along the major corridors of Highway 340, South Broadway, South Camp Road and Monument Road shall be minimized to maintain the unobstructed view of the skyline.



View of Filing 5, looking north across Monument Road from Lunch Loop/Three Sisters parking area. 17 homes are planned for the ridge area along the horizontal rock outcroppings. The houses may not be visible from the road but they would be prominent features when viewed from the Lunch Loop, and the hill and ridgeline behind the homes will be flattened. The magnitude of the excavation becomes more clear when looking at the amount of earth that would be removed from the hillsides for this project.

Total Amount of Earth to Be Moved by this Development Plan

	Total Development	Average Per Lot
Total Cubic Yards of Cuts (per the Developer, Sheet 14)	160,403 CY	2,228 CY
Total Tons of Earth Moved	224,564 Tons	3,119 Tons
# of Dump Trucks at 10 CY per load	16,040 loads	223 loads

March 28, 2017

TO: Grand Junction Planning Commission
Community Development Division
250 North 5th Street, Grand Junction, CO 81501
c/o Planner, Scott Peterson (scottp@gjcity.org)

RE: Planning Commission Notice of Public Hearing for March 28, 2017
Request to Approve Preliminary Subdivision Plan, SUB-2015-120,
Pinnacle Ridge Subdivision, East of Mariposa Drive

My wife and I are neighborhood residents who have the following concerns and objections over the proposed new 79 house lot subdivision.

(1) Risk of dangerous vehicle traffic with a Mariposa Drive access to the proposed 79 home subdivision. Mariposa Drive receives a high volume of user traffic – drivers, bicyclists, and pedestrians – traveling from the Ridges/Redlands neighborhood to and from Monument Road to access downtown Grand Junction, the Tabeguache trail system, and the Colorado National Monument. Where the potential subdivision road access is desired (which google-maps labels "Rawhide Rd") near the intersection of Mariposa Drive and West Ridges Boulevard, Mariposa Drive presents a "blind hill" so that drivers/users on one side of the hill cannot see the drivers/users on the other side of the hill. The addition of 79 new homes could add 158 new vehicles driving that risky blind hill on Mariposa Drive (79 proposed house lots multiplied by an average 2 vehicles per household). The proposed 79 home subdivision presents an unsafe combination between the existing high volume of neighborhood drivers, bicyclists, and pedestrians on Mariposa Drive traveling to and from Monument Road, and the potential new high volume of vehicle traffic on Mariposa Drive driving to and from the 79 home subdivision. Additionally, a new golf course condominium complex on West Ridges Boulevard is being constructed near Mariposa Drive, which will increase the vehicle, bicycle, and pedestrian traffic on Mariposa Drive and so increase the dangers posed by the additional vehicle traffic from a new 79 home subdivision.

(2) Need for traffic light at the intersection of Ridges Boulevard and Broadway Road. We witnessed numerous vehicle crashes at this intersection over the years. It's a dangerous intersection. The vehicle traffic driving to and from the Ridges/Redlands neighborhood is increasing. The new condominium complex on West Ridges Boulevard will increase the vehicle traffic, making the intersection more dangerous. So adding a 79 home subdivision to the neighborhood with the potential of 158 additional vehicles will make the intersection even more dangerous, and should require the installation of a traffic light to help the intersection become safer.

(3) Need for traffic light at the intersection of Mariposa Drive and Monument Road. The intersection of Mariposa Drive and Monument Road is next to the recently expanded Lunch Loop parking lot for the popular Tabeguache hiking and biking trails. A high volume of vehicle, bicycle, and pedestrian traffic passes through the intersection. The potential for 158 more vehicles from the proposed 79 home subdivision should require the installation of a safety traffic light at that intersection.

(4) Risk of water damage to properties down-slope from the proposed 79 home subdivision. The proposed 79 home subdivision would basically rest on an eroding hill of dirt. Over the years, portions of this hill have even eroded, fallen onto, and damaged a section of Ridgeway Drive that exists down-slope from the hill. The addition of 79 new homes with irrigated lawns will require a lot of water. Everyone knows water naturally drains and erodes downhill. Our property is downhill from the proposed 79 new houses. I'm concerned that the irrigated water drainage from 79 new houses will worsen the existing erosion problems in the area, and damage our property and the other neighboring down-slope properties.

The proposed 79 home subdivision is neither safe nor appropriate for the neighborhood. 79 new houses is too many. My wife and I object to the proposed new subdivision, and respectfully request that Planning Commission does not approve it.

Sincerely,

Whitman & Sarah Robinson
385 Explorer Court #19
Grand Junction, CO 81507
(970) 433-7699

Scott Peterson

From: John Phillips <phillipsgj66@gmail.com>
Sent: Monday, March 27, 2017 6:22 PM
To: Scott Peterson
Cc: John Phillips; John Phillips
Subject: Pinnacle ridge Subdivision input March 2017

Dear Mr. Peterson,
In regard to this subdivision, we have several concerns and they were not addressed the last two times Vortex Engineering tried to get this subdivision approved.

1) How many houses are along the boundary of the Ridges specifically from Mariposa to Ridgeway Court. There are way too many. We don't see how that meets the 2 residences per acre requirement.

2) The issue of flooding. The response to this concern last time was " This is the desert. It doesn't flood." In light of the pictures I submitted last time and the subsequent flooding that occurred during the last few summers thunderstorm along Monument and Ridges Blvd as well as the waterfalls that were coming off the hillside next to us that is definitely not a true statement, and shows the ignorance of Jones Jr. The house next to us had water in their garage. Their idea of a fix is to have water containment areas?

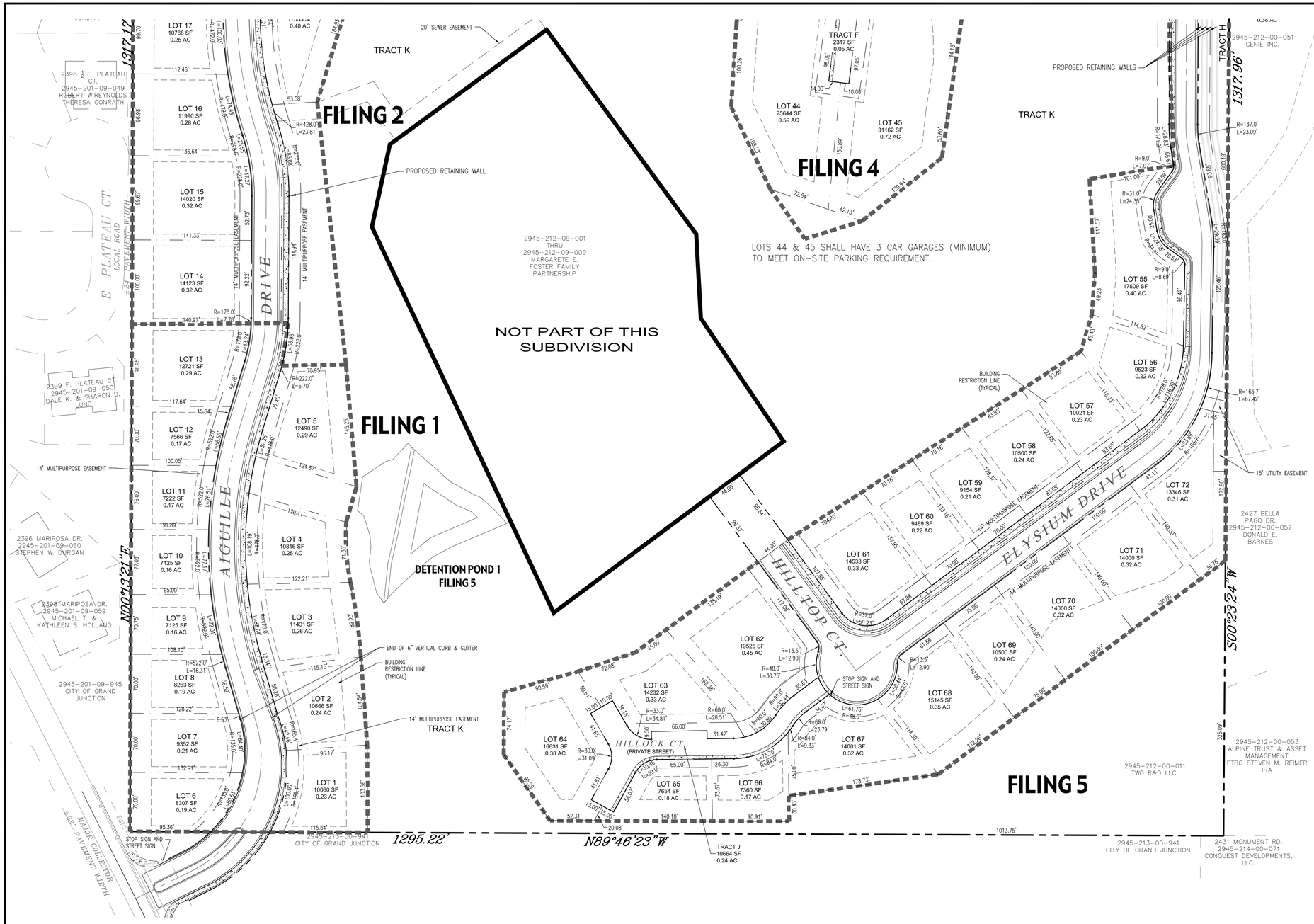
3) The grade of the road going uphill was an issue for city planners last time. Has this been addressed with the new plan?

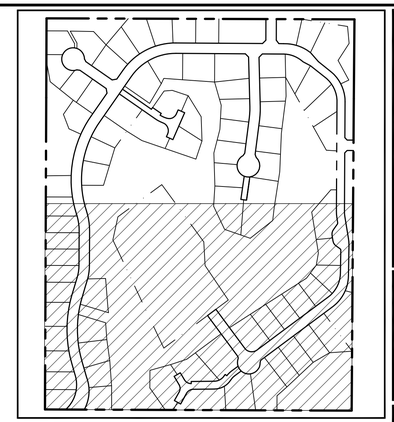
4) Foundation issues and ground movement concerns. I know for a fact that many of the houses along Bella Pago and the Redlands Mesa Golf Course have had many foundations and other settlement issues. How do we know that there will not be house movement/ ground movement issues. This is a concern since we are downhill.

5) How do we know that Vortex Engineering is solvent enough to build this subdivision? We do not want what has happened with the condo development Cliff View and the development further up on Ridges Blvd that had the hillside destroyed and left barren because of lack of funding to happen to the property adjacent to ours.

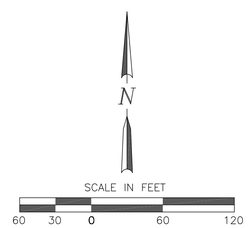
We understand that any vacant land is a builders paradise, but there are smart ways of planning a development. We would like to see a bigger green belt or have a green belt between our subdivision and this proposed subdivision. To Vortex this is just a plan to make more money, to us, who have lived here for a decade or more, it has been a place of wonder for our children and wildlife. We were told when we bought our house, as were our neighbors, that this space was "open space" that could not be built on or that only the top of the hill was for development. The area would be better served as a planned open space like the Three Sisters or Tabaquache/ Lunch Loop with biking trails that connect to those areas and City of Grand Junction.

Sincerely,
Erin and John Phillips





KEY MAP
N.T.S.



PROPOSED LAND USE TABLE			
SINGLE FAMILY LOTS (72 TOTAL)	906,662 S.F. – 20.81 AC	46.14%	OWNER: PRIVATE
TRACT A:	57,519 S.F. – 1.32 AC	2.93%	OWNER: HOA
TRACT B:	22,403 S.F. – 0.51 AC	1.14%	OWNER: HOA
TRACT C:	11,264 S.F. – 0.26 AC	0.57%	OWNER: PRIVATE
TRACT D:	20,404 S.F. – 0.47 AC	1.04%	OWNER: HOA
TRACT E:	4,732 S.F. – 0.11 AC	0.24%	OWNER: HOA
TRACT F:	2,317 S.F. – 0.05 AC	0.12%	OWNER: HOA
TRACT G:	34,357 S.F. – 0.79 AC	1.75%	OWNER: HOA
TRACT H:	16,723 S.F. – 0.38 AC	0.85%	OWNER: HOA
TRACT J:	10,664 S.F. – 0.24 AC	0.54%	OWNER: PRIVATE
TRACT K: OPEN SPACE	656,108 S.F. – 15.06 AC	33.39%	OWNER: HOA
TRACT L:	1161 S.F. – 0.03 AC	0.06%	OWNER: HOA
TRACT M:	1070 S.F. – 0.02 AC	0.05%	OWNER: HOA
RIGHT-OF-WAY:	219,641 S.F. – 5.04 AC	11.18%	OWNER: PUBLIC
TOTAL SITE AREA:	1,965,026 S.F. – 45.11 AC		

GENERAL NOTES

1. ALL CONSTRUCTION TO CONFORM TO THE CURRENT CITY OF GRAND JUNCTION DEPARTMENT OF PUBLIC WORKS AND PLANNING STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR MUST CONTACT CITY OF GRAND JUNCTION TRAFFIC OPERATIONS SUPERVISOR PRIOR TO CONSTRUCTION OR PLACEMENT OF TRAFFIC CONTROL DEVICES/FEATURES (STRIPING, SIGNALS, MEDIANS, ETC.) FOR CONSTRUCTION IN THE RIGHT-OF-WAY ONLY.
3. REFER TO THE GEOTECHNICAL INVESTIGATION BY BY GEOTECHNICAL ENGINEERING GROUP, INC. REPORT DATED APRIL 16, 2002. FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)

APPROVAL/SIGNATURE BLOCK

CITY ENGINEER _____ DATE _____

COMMUNITY DEVELOPMENT _____ DATE _____

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
PRELIMINARY PLAN

	REV. DATE	COMMENT	BY
4	03/09/16	REVISED PER CITY COMMENT ROUND NO.4 DATED 02/29/16	JSY
3	12/16/15	REVISED PER CITY COMMENT ROUND NO.3 DATED 11/19/15	DLS
2	10/14/15	REVISED PER CITY COMMENT ROUND NO.2 DATED 09/10/15	DLS
1	07/14/15	REVISED PER CITY COMMENT ROUND NO.1 DATED 04/27/15	DLS

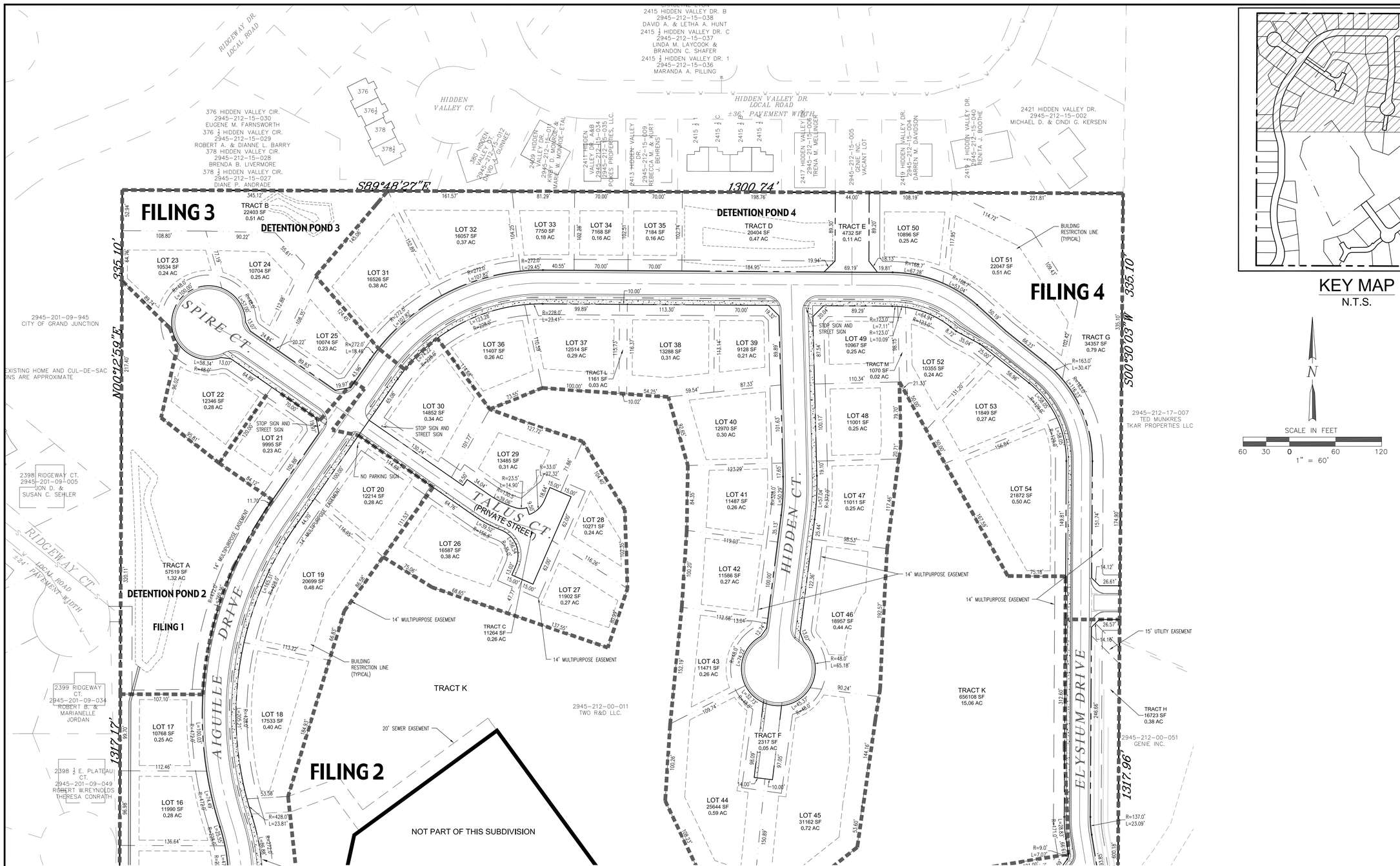
Subdivision Plan
SHEET 1 OF 2

Pinnacle Ridge Subdivision

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **03/19/15**
SCALE: **1"=60'**
CAD ID: **1subp.dwg**

~SHEET~
5



KEY MAP
N.T.S.

N

SCALE IN FEET
60 30 0 60 120
1" = 60'

GENERAL NOTES

1. ALL CONSTRUCTION TO CONFORM TO THE CURRENT CITY OF GRAND JUNCTION DEPARTMENT OF PUBLIC WORKS AND PLANNING STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR MUST CONTACT CITY OF GRAND JUNCTION TRAFFIC OPERATIONS SUPERVISOR PRIOR TO CONSTRUCTION OR PLACEMENT OF TRAFFIC CONTROL DEVICES/FEATURES (STRIPING, SIGNALS, MEDIANS, ETC.) FOR CONSTRUCTION IN THE RIGHT-OF-WAY ONLY.
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4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)

APPROVAL/SIGNATURE BLOCK

CITY ENGINEER _____ DATE _____

COMMUNITY DEVELOPMENT _____ DATE _____

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
PRELIMINARY PLAN

	REV. DATE	COMMENT	BY
4	03/09/16	REVISED PER CITY COMMENT ROUND NO.4 DATED 02/29/16	JSY
3	12/18/15	REVISED PER CITY COMMENT ROUND NO.3 DATED 11/18/15	DLS
2	10/14/15	REVISED PER CITY COMMENT ROUND NO.2 DATED 09/14/15	DLS
1	07/14/15	REVISED PER CITY COMMENT ROUND NO.1 DATED 04/27/15	DLS

Subdivision Plan
SHEET 2 OF 2

Pinnacle Ridge Subdivision

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **03/19/15**
SCALE: **1"=60'**
CAD ID: **1subp.dwg**

~SHEET~
6

CITY OF Grand Junction COLORADO

COMMUNITY DEVELOPMENT

RECORD OF DECISION

DATE:	May 17, 2017
FILE:	SUB-2015-120
LOCATION:	East of Mariposa Drive
PETITIONER:	Two R & D LLC, Owner
PLANNER:	Scott D. Peterson, Senior Planner
REQUEST:	Approval of Preliminary Subdivision Plan for Pinnacle Ridge Subdivision
DECISION:	**CONDITIONAL APPROVAL**

At their April 19, 2017 meeting, the Grand Junction City Council considered a request to approve private streets and also public streets and residential lots traversing greater than 30% slopes as part of the Preliminary Subdivision Plan application for the Pinnacle Ridge Subdivision. After reviewing the requests, the City Council conditionally approved the requests finding that the proposals satisfied the goals and policies of the Comprehensive Plan, Future Land Use Map, and Sections 21.06.060 (g) (5) & 21.07.020 (f) of the Zoning and Development Code. In accordance with Section 21.02.070 (r) of the Zoning and Development Code, the Preliminary Subdivision Plan was approved administratively.

The following are the identified Conditions of Approval that were reviewed and approved by the City Council:

1. At final design, perform an in depth geotechnical engineering investigation and report with proper slope stability, rockfall, and earthwork analysis and requirements. This can be incremental to the phases where final design approval is being requested; however, if slope stability and/or rockfall analyses prove problematic, the Preliminary Plan could be nullified or may need to be redesigned and reapproved.
   a. The geotechnical report must design the earthwork and streets to minimize vertical movement and construction must strictly adhere to the report and be documented by daily observations and proper testing during construction.

   b. A secured two-year warranty will be required as offered by the developer.
   c. Landscaping shall be limited to low water requirement plants and irrigation systems. The details will be defined in conjunction with the geotechnical engineer at final design.
   d. A site specific slope and rockfall analysis (based on field investigation) in the areas of concern will be required with each filing.
   e. Lot specific grading and drainage plans will either be required with the final design for each filing or with each planning clearance.
2. Perfect an intermediate connection to Hidden Valley Drive, with Filing 4 according to the current phasing plan, as required by the January 2007 TEDS exception.
3. Perfect the ability to loop water lines, if needed, and provide sanitary sewer to portions of the project via the Hidden Valley Drive connection with Filing 4 according to the current phasing plan.
4. The HOA will be required to remove snow along the north facing slope on Elysium Drive. Provide proper language and assessments in the CC & R's and signs must be conspicuously placed on the street stating such.
5. Private streets will be allowed in two areas of the subdivision, Talus Court and Hillock Court.

The Developer is proposing appropriate engineering measures to minimize the impact of cuts, fills, erosion and stormwater by incorporating retaining walls, detention and water quality basins, and proper site grading in their design, based on Preliminary Geotechnical Investigation. If subsequent Geotechnical Investigation reveals significant slope instability issues, as determined by City staff based on input from the Colorado Geologic Survey, redesign of the Preliminary Plan will be required. If a minor revision is required, the review of the revised preliminary subdivision plan may, at the discretion of the Director, proceed concurrently with final plat review. Nullification/revocation of this approval shall require review by the Planning Commission.

In accordance with Section 21.02.070 (r) (6) of the Zoning and Development Code, the applicant will have two (2) years from the date of Preliminary Plan Approval (April 19, 2017) to obtain/record Final Plan approval for Filing 1 or the Preliminary Plan approval shall be considered null and void.

If you should have any further questions, please feel free to contact me at (970) 244-1447.

CITY OF GRAND JUNCTION, COLORADO

RESOLUTION NO. 21-17

A RESOLUTION GRANTING CONDITIONAL APPROVAL OF PRIVATE STREETS AND ALSO PUBLIC STREETS AND RESIDENTIAL LOTS TRAVERSING GREATER THAN 30% SLOPES FOR THE PROPOSED PINNACLE RIDGE SUBDIVISION

LOCATED EAST OF MARIPOSA DRIVE IN THE REDLANDS

Recitals:

A request for approval of certain items under City Codes and regulations that require either Planning Commission or City Council action regarding the Preliminary Plan application for the proposed Pinnacle Ridge Subdivision. These actions include Council approval of; 1) proposed private streets and 2) subdivision lots and public streets traversing greater than 30% slopes.

In a public hearing, the City Council reviewed the requests and determined that it satisfied the criteria as set forth and established in Sections 21.06.060 (g) (5) and 21.07.020 (f) of the Zoning and Development Code, where only City Council may authorize a subdivision to be served by private streets and Hillside Development Standards regarding development on slopes of greater than 30% is not permitted unless, after review and recommendation by the Planning Commission and approval by the City Council that the proposed development is consistent with the purpose and intent of the Zoning and Development Code.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GRAND JUNCTION THAT THE AREA DESCRIBED BELOW IS APPROVED FOR DEVELOPMENT AS THE PINNACLE RIDGE SUBDIVSION UNDER THE FOLLOWING CONDITIONS:

1. At final design, perform an in depth geotechnical engineering investigation and report with proper slope stability, rockfall, and earthwork analysis and requirements. This can be incremental to the phases where final design approval is being requested; however, if slope stability and/or rockfall analyses prove problematic, the Preliminary Plan could be nullified or may need to be redesigned and reapproved.
    a. The geotechnical report must design the earthwork and streets to minimize vertical movement and construction must strictly adhere to the report and be documented by daily observations and proper testing during construction.
    b. A secured one-year warranty will be required and accepting an additional one-year warranty that was offered by the developer.
    c. Landscaping shall be limited to low water requirement plants and irrigation systems. The details will be defined in conjunction with the geotechnical engineer at final design.

d. A site specific slope and rockfall analysis (based on field investigation) in the areas of concern will be required with each filing.
e. Lot specific grading and drainage plans will either be required with the final design for each filing or with each planning clearance.

2. Perfect an intermediate connection to Hidden Valley Drive, with Filing 4 according to the current phasing plan, as required by the January 2007 TEDS exception.
3. Perfect the ability to loop water lines, if needed, and provide sanitary sewer to portions of the project via the Hidden Valley Drive connection with Filing 4 according to the current phasing plan.
4. The HOA is required to remove snow along the north facing slope on Elysium Drive. Provide proper language and assessments in the CC & R's and signs must be conspicuously placed on the street stating such.
5. Approval of the request to use private streets in two areas of the subdivision, Talus Court and Hillock Court.

The Developer is proposing appropriate engineering measures to minimize the impact of cuts, fills, erosion and stormwater by incorporating retaining walls, detention and water quality basins, and proper site grading in their design, based on Preliminary Geotechnical Investigation. If subsequent Geotechnical Investigation reveals significant slope instability issues, as determined by City staff based on input from the Colorado Geologic Survey, redesign of the Preliminary Plan will be required. If a minor revision is required, the review of the revised preliminary subdivision plan may, at the discretion of the Director, proceed concurrently with final plat review. Nullification/revocation of this approval shall require review by the Planning Commission.

PINNACLE RIDGE PROPERTY LEGAL DESCRIPTION

A parcel of land situated in the W ½ NW ¼ of Section 21, Township 1 South, Range 1 West of the Ute Meridian, Mesa County, Colorado, being described as follows:

The south 10 acres of the NW ¼ NW ¼ and the SW ¼ NW ¼ of said Section 21.

EXCEPTING THEREFROM: Lots 1-9, Block 3 and the adjoining dedicated right-of-way know as Spur Drive and Lot 2, Block 2, Energy Center Subdivision, Phase I as platted and recorded in Plat Book 8 at Page 55 with a Reception Number 644620 of the Mesa County records.

Said parcels contains 45.11 +/- acres, more or less, as described.

PASSED on this 19th day of April, 2017.

ATTEST:

Stephanie Tuin
City Clerk

Bunny Morris
President of Council

CITY OF Grand Junction COLORADO

COMMUNITY DEVELOPMENT

RECORD OF DECISION/FINDINGS OF FACT

DATE: December 11, 2017

FILE: SUB-2017-271 – Pinnacle Ridge Subdivision, Filing 1

LOCATION: East of Mariposa Drive

PETITIONER: Two R & D LLC, Owner

PLANNER: Scott D. Peterson, Senior Planner

REQUEST: Approval of the Final Subdivision Plan for Pinnacle Ridge Subdivision, Filing 1

DECISION: **CONDITIONALLY APPROVED** - Administratively

In accordance with Section 21.02.070 (s) of the Zoning & Development Code, the Final Subdivision Plan for Pinnacle Ridge Subdivision, Filing 1 has been approved administratively with the following conditions:

The following items must be completed before the final plat may be recorded:

1. Submit an original mylar of the Final Plat and Site Plan with owner signatures, Title Commitment dated within 5 days of anticipated recording, Surveyor Verification Final Mylar Checklist and a check made payable to the "City of Grand Junction" in the amount of $33.00. Please note that all property corner pins must be set in concrete and inspected by the City Surveyor before the plat and Site Plan may be recorded. The electronic version of the plat must be emailed to chrisd@gjcity.org

2. Submit original/signed Development Improvements Agreement (DIA), Exhibit A, Exhibit B, Exhibit D along with financial security (Check, Letter of Credit, Disbursement Agreement or Plat Hold). Recording fee for Exhibit D (Recording Memorandum) will be $26.00 (check made payable to the City of Grand Junction). FYI. Applicant may propose a "Plat Hold" for the financial security to begin infrastructure construction and record the subdivision plat at a later date.

3. Submit final signed/stamped construction plan set drawings for City Signatures. Please have Ute Water sign drawings prior to submittal to the City. Once drawings are signed, submit one paper copy 24" x 36" for City Inspector's use and one electronic PDF copy.

4. Landscaping Plan:
   The Community Development Director, in accordance with Section 21.06.040 (b) (19) of the Zoning and Development Code, has approved the submitted landscaping plan for Pinnacle Ridge for the use of xeric and low water plants with no long term water supply being provided. Applicant has stated that they will install a temporary drip irrigation system with irrigation water being provided by trucking it to the site and a pump will pressurize the system. The Plan includes the provision that watering will continue to occur until all vegetation is firmly established. This landscaping plan was prepared and designed by a Licensed Landscape Architect. As such, based on staff's review and that of the Licensed Landscape Architect that this plan meets the intent of the City's landscaping code. Once proposed landscaping is installed, the Landscape Architect must provide a letter to the City Project Manager stating that all landscaping in the HOA tracts and rights-of-way has been installed per the approved Landscaping Plan

5. Pay applicable fees and submit original documents as follows at time of subdivision plat recording:
   - Recording fee for Warranty Deed for private drainage easements, Ingress/Egress Easement and dedication of tracts to HOA will be $13.00.
   - Recording fee for CCR's will be ($13.00 for the first page with each additional page $5.00 per page).
   - Recording fee for Grant of Easement - Temporary Turn-Around Easement will be $13.00.
   - Recording fee for Grant of Easement for off-site Drainage and Agreement will be $28.00.
   - Recording fee for Revocable Permit for Sign/Landscaping will be $48.00.
   - Recording fee for Statement of Authority document will be $13.00.
   - For all recording fees, please make check payable to the "City of Grand Junction."

6. City Park Fee: $2,925.00 (13 new lots @ $225 per new lot payable at time of subdivision plat recording). Check made payable to the City of Grand Junction prior to subdivision plat recording.

7. City Open Space Fee: 10% of the value of the raw land. Applicant's submitted Appraisal Report appraised the entire property at $820,000, therefore, applicant's Open Space Fee will be $82,000.00 total for all filings (check made payable to the City of Grand Junction) payable prior to subdivision plat recording for Filing 1. However, applicant is currently working with the City Parks Board in order to obtain a recommendation to City Council for proposed Tract B and future Tracts (15.06 acres total) to be dedicated to the City of Grand Junction. If a recommendation for approval is obtained, City Project Manager will

schedule review for an upcoming City Council meeting. If the City would accept the land dedication of 15.06 acres, applicant would owe no additional Open Space Fees ($820,000 appraised value of vacant land for the property / 45.36 acres total = $18,077 per acre. $18,077 per acre x 15.06 acres for Tract B and future tracts = $272,240, which exceeds the 10% Open Space Fee).

8. School Impact Fee: $920 per dwelling unit payable at time of Planning Clearance issuance for each individual dwelling unit.

9. Plant Investment Fees (Water and Sewer Impact): Contact City Customer Service at (970) 244-1579 for applicable sewer tap fees payable at time of Planning Clearance issuance for each dwelling unit. Contact Ute Water Conservancy District for water tap fees payable at time of Planning Clearance issuance for each dwelling unit.

10. Transportation Capacity Payment (TCP): To be determined and collected at time of Planning Clearance for individual building permits.

11. City Inspection Fee will be $1,170.00 ($90/lot x 13 lots), payable at time of subdivision plat recording (check made payable to the City of Grand Junction).

12. There is no Storm Drainage Fee nor Utility Undergrounding Fee.

13. See Round 4 Review Comments dated December 11, 2017 for additional changes and revisions required as part of project approval.

If you should have any further questions, please feel free to contact me at (970) 244-1447.

Scott D. Peterson
Senior Planner

Final Plan of Subdivision

Pinnacle Ridge Subdivision

Filing 1

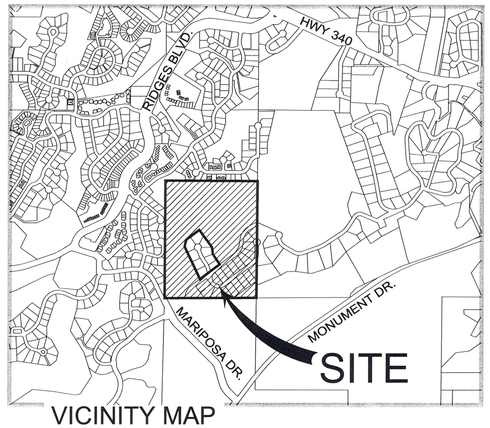
Grand Junction, Colorado

LEGEND

- EXISTING CONTOUR (4560)
- PROPERTY BOUNDARY
- OLD PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE (W)
- EXISTING WATER LINE (W)
- PROPOSED IRRIGATION (IRR)
- EXISTING FENCE (X)
- PROPOSED DRY UTILITIES (BY OTHERS) (EGTC)
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- LOT CORNER SPOT ELEVATION (4550.00)
- PROPOSED SWALE/BERM ELEVATION. (G 4550.00)
- PROPOSED FL CURB/V-PAN (FL 4550.00)
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER METER
- PROPOSED IRRIGATION RISER (I)
- PROPOSED IRRIGATION VALVE (V)
- PROPOSED IRRIGATION CLEANOUT (CO)
- EXISTING CONTOUR LABEL (4550.00)
- PROPOSED CONTOUR LABEL (4550.00)

UTILITY PROVIDERS INFORMATION

UTILITY	PROVIDER	PHONE NUMBER
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626



VICINITY MAP

ABBREVIATION LEGEND

&	AND	MCSM	MESA COUNTY SURVEY MONUMENT
℄	CENTERLINE	MFG'S	MANUFACTURER'S
ø	DIAMETER	M.P.E.	MULTI-PURPOSE EASEMENT
'	FEET	MPH	MILES PER HOUR
"	INCHES	NE COR	NORTHEAST CORNER
±	PLUS OR MINUS	N&S&E	NORTH AND SOUTH AND EAST
APPROX.	APPROXIMATELY	NO.	NUMBER
BRL	BUILDING RESTRICTION LINE	N.T.S.	NOT TO SCALE
BVCS	BEGIN VERTICAL CURVE STATION	PROP.	PROPOSED
BVCE	BEGIN VERTICAL CURVE ELEVATION	PRV	PRESSURE REDUCING VALVE
CB	CATCH BASIN	PSI	POUNDS PER SQUARE INCH
CL III	CLASS 3	PVC	POLYVINYL CHLORIDE
CMP	CORRUGATED METAL PIPE	PVI	POINT OF VERTICAL INTERSECTION
CR	CURB RETURN	PVMT	PAVEMENT
CT.	COURT	O.C. E.W.	ON CENTER EACH WAY
DR.	DRIVE	RCP	REINFORCED CONCRETE PIPE
EL.	ELEVATION	RD	ROAD
ELEV	ELEVATION	RET. WALL	RETAINING WALL
EX.	EXISTING	R.O.W.	RIGHT-OF-WAY
EXIST.	EXISTING	RT	RIGHT
EVCS	END VERTICAL CURVE STATION	SCH	SCHEDULE
EVCE	END VERTICAL CURVE ELEVATION	SD	STORM DRAIN
FL	FLOWLINE	SEC	SECTION
FH	FIRE HYDRANT	SF	SQUARE FEET
FT	FEET	SQ. FT.	SQUARE FEET
GPM	GALLONS PER MINUTE	SS	SANITARY SEWER
GV	GAS VALVE	ST.	STREET
G.V.A.L.C.S.	GRAND VALLEY ALIQUOT LOCAL COORDINATE SYSTEM	STA	STATION
		THRU	THROUGH
HGL	HYDRAULIC GRADE LINE	TYP.	TYPICAL
HI PT	HIGH POINT	TW	TOP OF WALL
HP	HORSE POWER	U.W.C.D.	UTE WATER CONSERVANCY DISTRICT
INV	INVERT	VC	VERTICAL CURVE
LT	LEFT	VCP	VITRIFIED CLAY PIPE
MAX	MAXIMUM	W/	WITH
MIN	MINIMUM	WM	WATER METER
MH	MANHOLE	WV	WATER VALVE

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

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SHEET NUMBER	SHEET TITLE
C0.0	COVER
C0.1	PROJECT NOTES
C0.2	OVERALL SITE PLAN AND FILING PLAN
C1.0	COMPOSITE SITE PLAN - LAYOUT AND GEOMETRY PLAN
C1.1	COMPOSITE SITE PLAN - SIGNAGE & LIGHTING PLAN
C2.0 - C2.2	COMPOSITE SITE PLAN - GRADING PLAN, ROAD CROSS SECTIONS
C3.0	COMPOSITE SITE PLAN - OVERALL UTILITY AND WATER PLAN
C4.0	ROAD AND SEWER PLAN AND PROFILE - AIGUILLE DRIVE
C4.1	ROAD AND SEWER PLAN AND PROFILE - SPIRE CT. & TALUS CT.
C5.0 - C5.2	STORM SEWER PLAN & PROFILE
C6.0 - 6.2	CONSTRUCTION STORM WATER MANAGEMENT PLAN

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21. TOWNSHIP 1 SOUTH. RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM. LOTS 1 ~ 9. BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK 8 AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = R-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'/25'
   REAR = 30'/5'
   SIDE = 15'/3'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1890 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER — DATE 12-28-17

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 11-20-17 PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	JSY
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
1	8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 19, 2017	DLS
	REV. DATE	COMMENT	BY

Cover
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/08/17
SCALE:
CAD ID: 0.0cover-f1.dwg

~SHEET~
C0.0

LOCAL CONTACT INFORMATION
GRAND JUNCTION DEVELOPMENT INSPECTOR: MARK BARSLUND 970-201-1362

GENERAL NOTES:

1. THESE GENERAL NOTES SHALL BE APPLICABLE TO ALL SHEETS WITHIN THIS SET OF DRAWINGS.
2. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE GOVERNING AGENCY. CONTRACTOR MUST CONTACT THE APPROPRIATE AGENCY PRIOR TO CONSTRUCTION IN THE RIGHT-OF-WAY.
3. PLANNING PERMIT APPROVAL MUST BE OBTAINED BY INDIVIDUAL LOT OWNERS PRIOR TO CONSTRUCTION. THE LOT OWNER MUST SUBMIT A PROPOSED DRAINAGE PLAN OF EACH SITE TO THE GOVERNING AGENCY FOR REVIEW.
4. EXISTING WATER, SANITARY, AND STORM SEWER LINES ARE SHOWN BASED ON BEST AVAILABLE INFORMATION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS SPECIFICALLY AT CONNECTION POINTS AND AT POTENTIAL POINTS OF CONFLICT. ALL INFORMATION SHALL BE SUPPLIED TO THE ENGINEER PRIOR TO CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR:
   (A) CONTACTING THE APPROPRIATE AGENCY TO ARRANGE A PRE-CONSTRUCTION MEETING AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
   (B) OBTAINING ALL PERMITS FOR STREET CUTS, UTILITIES CONSTRUCTION AND GRADING. THE COST OF ALL PERMITS SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S BID.
   (C) COORDINATING WITH ALL UTILITY COMPANIES INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. ADVANCE COORDINATION BY THE CONTRACTOR TO ALL UTILITY COMPANIES INVOLVED SHALL BE REQUIRED FOR ANY SERVICE INTERRUPTIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER, PROJECT MANAGER AND THE UTILITY COMPANY 48 HOURS PRIOR TO START OF CONSTRUCTION. NO UTILITY TAPS SHALL BE MADE WITHOUT WRITTEN AUTHORIZATION BY THE UTILITY COMPANY AND THE CITY.
   (D) VERIFICATION OF ALL OTHER UNDERGROUND FACILITIES WHICH MAY BE AFFECTED BY THIS PROJECT AND REPAIR THEREOF IN CASE OF DAMAGE.
   (E) CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO OBTAIN TEMPORARY POWER AND TELEPHONE SERVICE DURING CONSTRUCTION. ALL COST FOR TEMPORARY SERVICES SHALL BE THE CONTRACTORS RESPONSIBILITY.
   (F) RESTORATION OF DISTURBED STREET PAVEMENT AS REQUIRED BY THE CITY AND THE STATE'S DEPARTMENT OF TRANSPORTATION.
   (G) ALL PROJECT SAFETY INCLUDING, BUT NOT LIMITED TO, TRENCH EXCAVATION AND SHORINGS, TRAFFIC CONTROL, AND SECURITY.
   (H) COORDINATING ALL WORK AND INSPECTIONS AS REQUIRED BY THE CITY OR THE STATE.
   (I) OBTAINING NECCESSARY PERMITS FROM THE DEPARTMENT OF TRANSPORTATION FOR ALL WORK IN AND ADJACENT TO STATE RIGHT-OF-WAY.
   (J) RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE. AS-BUILTS SHALL INCLUDE UNDERGROUND UTILITIES AS WELL AS ANY FIELD MODIFICATIONS OF THE PLANS.
   (K) KEEPING ADJACENT STREETS FREE AND CLEAN OF ALL DEBRIS AND DIRT FROM THE JOB SITE.
   (L) THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED AT THE JOB SITE AT ALL TIMES. EACH SUBCONTRACTOR (INCLUDING THE SURVEYOR) SHALL HAVE A SIGNED COPY OF THE PLANS AND THE APPROPRIATE STANDARDS AND SPECIFICATIONS IN HIS POSSESSION AT ALL TIMES WHEN IMPROVEMENTS ARE BEING INSTALLED.
   (M) THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR COMPLETION OF INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED BY NOTE TO BE "PROVIDED," "INSTALLED" OR "CONSTRUCTED" UNLESS SPECIFICALLY NOTED OTHERWISE.
   (N) CONTRACTOR WILL HAVE A COPY OF APPROVED SOILS REPORTS FOR PAVEMENT DESIGN AND COMPACTION REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL RECOMMENDATIONS CONTAINED WITHIN THE SOILS REPORT.
   (O) VERIFYING THE ACCURACY OF THE VERTICAL BENCHMARK INFORMATION. CONTRACTOR SHALL USE BENCHMARKS AND DATUMS SHOWN HEREON TO SET PROJECT BENCHMARK(S), BY RUNNING A LEVEL LOOP BETWEEN AT LEAST TWO BENCHMARKS, AND SHALL PROVIDE SURVEY NOTES OF SUCH TO PROJECT ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
6. IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
7. TWO WORKING DAYS BEFORE YOU DIG, GRADE, OR EXCAVATE, CALL THE APPROPRIATE UTILITY NOTIFICATION CENTER FOR THE MARKING OF MEMBER UNDERGROUND UTILITIES. THE UTILITIES SHOWN ON THESE PLANS ARE PLOTTED BASED ON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION, AND REPAIR OF ANY EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. ANY UTILITY DAMAGED BY CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
8. THIS PLAN WAS PREPARED BASED ON SURVEY INFORMATION PROVIDED BY A LICENSED SURVEYOR. VORTEX ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR ERRORS DUE TO INCOMPLETE OR INACCURATE SURVEY INFORMATION.
9. SUBGRADE DENSITY SHALL BE TESTED BY A PRIVATE SOILS TESTING FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING BASE COURSE OR CONCRETE. BASE COURSE DENSITY SHALL ALSO BE TESTED BY THE PRIVATE GEOTECHNICAL FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING PAVEMENT.
10. THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM ALL UTILITY COMPANIES PRIOR TO ANY DEMOLITION WORK OR DISCONNECTION OF ANY SERVICE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANIES.
2. ALL UTILITIES INCLUDING STORM SEWER, SANITARY SEWER AND WATER MAINS SHALL BE COMPLETELY REMOVED FROM THE GROUND UNLESS OTHERWISE SPECIFIED. NO EXISTING UTILITY, STRUCTURES OR UNDERGROUND IMPROVEMENT SHALL BE ABANDONED IN PLACE WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER, OWNER AND GOVERNING AGENCY.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES WHICH ARE TO REMAIN IN SERVICE, INCLUDING BUT NOT LIMITED TO GAS, ELECTRIC, CABLE AND TELEPHONE SERVICES.
4. ALL STRUCTURE INCLUDING BASEMENT WALLS AND FLOOR SLABS SHALL BE COMPLETELY REMOVED FROM THE SITE.
5. ALL DEMOLITION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS INCLUDING BUT NOT LIMITED TO HAZARDOUS MATERIALS, DISPOSAL, HOURS OF OPERATION.
6. ALL EROSION CONTROL MEASURES DESIGNED FOR THE SITE PERIMETER OR TO PROTECT EXISTING IMPROVEMENTS SHALL BE IN PLACE PRIOR TO THE START OF ANY DEMOLITION ACTIVITIES.
7. THE CONTRACTOR SHALL OBTAIN AND REVIEW THE ENVIRONMENTAL STUDIES PROVIDED BY THE OWNER AND TAKE ALL NECESSARY PRECAUTIONS FOR ENVIRONMENTAL SAFETY DURING DEMOLITION ACTIVITIES. IT SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE EXISTING STRUCTURES FOR ANY OTHER CONDITIONS WHICH MAY AFFECT THE DEMOLITION PROCEDURES.
8. ANY CONDITIONS WHICH MAY BE UNCOVERED DURING THE PROCESS OF DEMOLITION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER IMMEDIATELY. ADDITIONAL EXPENSES INCURRED BY UNFORESEEN CONDITIONS SHALL BE APPROVED BY THE OWNER PRIOR TO THE ADDITIONAL WORK.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE PROPERTY FOR THE TYPE AND QUANTITY OF DEMOLITION REQUIRED, PRIOR TO SUBMISSION OF A BID.
10. THE CONTRACTOR SHALL HAVE WATER ON SITE FOR DUST ABATEMENT AT ALL TIMES DURING DEMOLITION ACTIVITIES.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF ALL DEBRIS. BURNING ON SITE SHALL NOT BE PERMITTED. NO DEBRIS INCLUDING CONCRETE OR ASPHALT MAY BE PLACED IN ANY FILL AREA.
12. ANY DAMAGE TO PUBLIC UTILITIES OR ADJACENT PROPERTIES AS A RESULT OF THE DEMOLITION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. REPAIRS SHALL BE MADE IN A TIMELY MANNER TO THE SATISFACTION OF THE DAMAGED PARTY.
13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH DOCUMENTATION OF THE CONDITION OF EXISTING IMPROVEMENTS TO REMAIN IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS NOT DOCUMENTED AS PRE-EXISTING. DOCUMENTATION SHALL BE PROVIDED PRIOR TO COMMENCEMENT OF WORK.
14. ALL EXISTING UTILITY SERVICES SHALL BE COMPLETELY REMOVED FROM THE SITE. SERVICE SHALL BE CUT AND PLUGGED AT THE PROPERTY LINE IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS. THE DEMOLITION CONTRACTOR SHALL CLEARLY MARK ALL STUBS AT THE PROPERTY LINE WITH A 4 X 4 WOOD POST (MINIMUM 4' ABOVE GRADE, 4' BELOW GRADE) MARKED WITH THE SERVICE TYPE.
15. ALL EXISTING WELLS SHALL BE CAPPED AND ABANDONED IN ACCORDANCE WITH ALL STATE REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL REQUIRED PROCEDURES, FILE ALL REQUIRED FORMS, APPLICATIONS AND REPORTS, AND OBTAIN ALL REQUIRED APPROVALS FROM THE STATE ENGINEER'S OFFICE.
16. DURING THE COURSE OF DEMOLITION, CONTRACTOR SHALL PROVIDE SECURITY FENCING AND OTHER PRECAUTIONARY SAFETY MEASURE AS NECESSARY.

EROSION CONTROL NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL FACILITIES SHOWN.
3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORESEEN PROBLEMS OR IF THE PLAN DOES NOT FUNCTION AS INTENDED. A JURISDICTION REPRESENTATIVE MAY REQUIRE ADDITIONAL CONTROL DEVICES UPON INSPECTION OF PROPOSED FACILITIES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED, STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM TRAFFIC FROM THE SITE.
5. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE PAVED, SEEDED WITH NATIVE VEGETATION OR LANDSCAPED. REFER TO LANDSCAPE PLANS FOR SEED MIX AND PLANTING SPECIFICATIONS.
6. EROSION CONTROL STRUCTURES BELOW SODDED AREAS MAY BE REMOVED ONCE SOD AND FINAL LANDSCAPING IS IN PLACE. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION. EROSION CONTROL IN PROPOSED PAVED AREAS SHALL REMAIN IN PLACE UNTIL PAVEMENT IS COMPLETE.
7. THIS PLAN IS ONLY TO BE USED FOR INSTALLATION OF EROSION CONTROL FACILITIES. DO NOT USE THIS PLAN FOR GRADING OR STORM SEWER CONSTRUCTION.
8. CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLE WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES WILL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS, MOVED WHEN NECESSARY AND REMOVED WHEN THE SITE IS PAVED.
9. INLET PROTECTION DEVICES SHALL BE INSTALLED IMMEDIATELY UPON INDIVIDUAL INLET'S BECOMING FUNCTIONAL.
10. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH GRADING AND/OR UTILITY CONSTRUCTION SHALL OBTAIN A COPY OF THE STORM WATER MANAGEMENT PLAN (SWMP) AND ANY OTHER DOCUMENTATION REGARDING "STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY" AND BECOME FAMILIAR WITH THEIR CONTENTS.
11. THE TEMPORARY PARKING AND STORAGE AREA SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AREA, EQUIPMENT CLEANING AREA, EMPLOYEE BREAK AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
12. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, ETC.) SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT WITH STORM WATER DISCHARGES FROM THE SITE.
13. MAINTAIN ON THE SITE OR HAVE READILY AVAILABLE SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
14. FUGITIVE DUST BLOWING FROM THE SITE SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS ABSOLUTELY PROHIBITED.
15. NO RUBBISH, TRASH, GARBAGE, OR OTHER SUCH MATERIALS SHALL BE DISCHARGED INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
16. ALL MEASURES PRESENTED IN THE SWMP SHALL BE INITIATED AS SOON AS PRACTICABLE.
17. IF THE GRAVEL CONSTRUCTION ENTRANCES ARE NOT EFFECTIVE IN REMOVING THE MAJORITY OF DIRT OR MUD FROM THE TIRES OF THE CONSTRUCTION VEHICLES, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP AND THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.
18. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
19. IF SOIL STOCKPILING IS EMPLOYED ON THE SITE, SILT FENCES SHALL BE USED TO HELP CONTAIN THE SEDIMENT.
20. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
21. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN 30 DAYS AFTER FINAL STABILIZATION. FINAL STABILIZATION HAS OCCURRED WHEN ALL SOIL DISTURBING ACTIVITIES ARE COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OF THE COVER FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES HAS BEEN EMPLOYED.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) DUE TO GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT.
23. ALL OFF-SITE CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR STORM DRAIN CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.

EROSION CONTROL MAINTENANCE NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL MEASURES CONTAINED IN THIS PLAN SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT, AND SHOULD BE CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:
3. STRAW BALE INLET PROTECTION DEVICES AND BARRIERS SHALL BE FIXED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR SHALL BE REPLACED IF THEY SHOW SIGNS OF DETERIORATION.
4. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, RE-SEEDED, AND WATERED AS NEEDED.
5. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-THIRD TO ONE-HALF THE HEIGHT OF THE SILT FENCE.
6. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
7. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
8. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES, SEDIMENT IN THE SEDIMENTATION BASINS SHALL NOT EXCEED THE SEDIMENTATION CLEANOUT LEVEL.
9. IF THE STONES IN THE GRAVEL CURB INLET SEDIMENT FILTERS BECOME CLOGGED WITH SEDIMENT, THE STONES MUST BE PULLED AWAY, CLEANED AND REPLACED.
10. THE EMBANKMENT OF THE SEDIMENTATION BASIN SHALL BE CHECKED REGULARLY TO INSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
11. THE TEMPORARY SEDIMENT TRAP AND SEDIMENTATION BASIN STRUCTURES SHALL BE CHECKED REGULARLY TO INSURE THAT THEY ARE STRUCTURALLY SOUND AND HAVE NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. SEDIMENT DEPOSITION SHALL BE REMOVED PERIODICALLY TO ENSURE FULL VOLUME IS AVAILABLE IN THE POND.

GRADING NOTES:

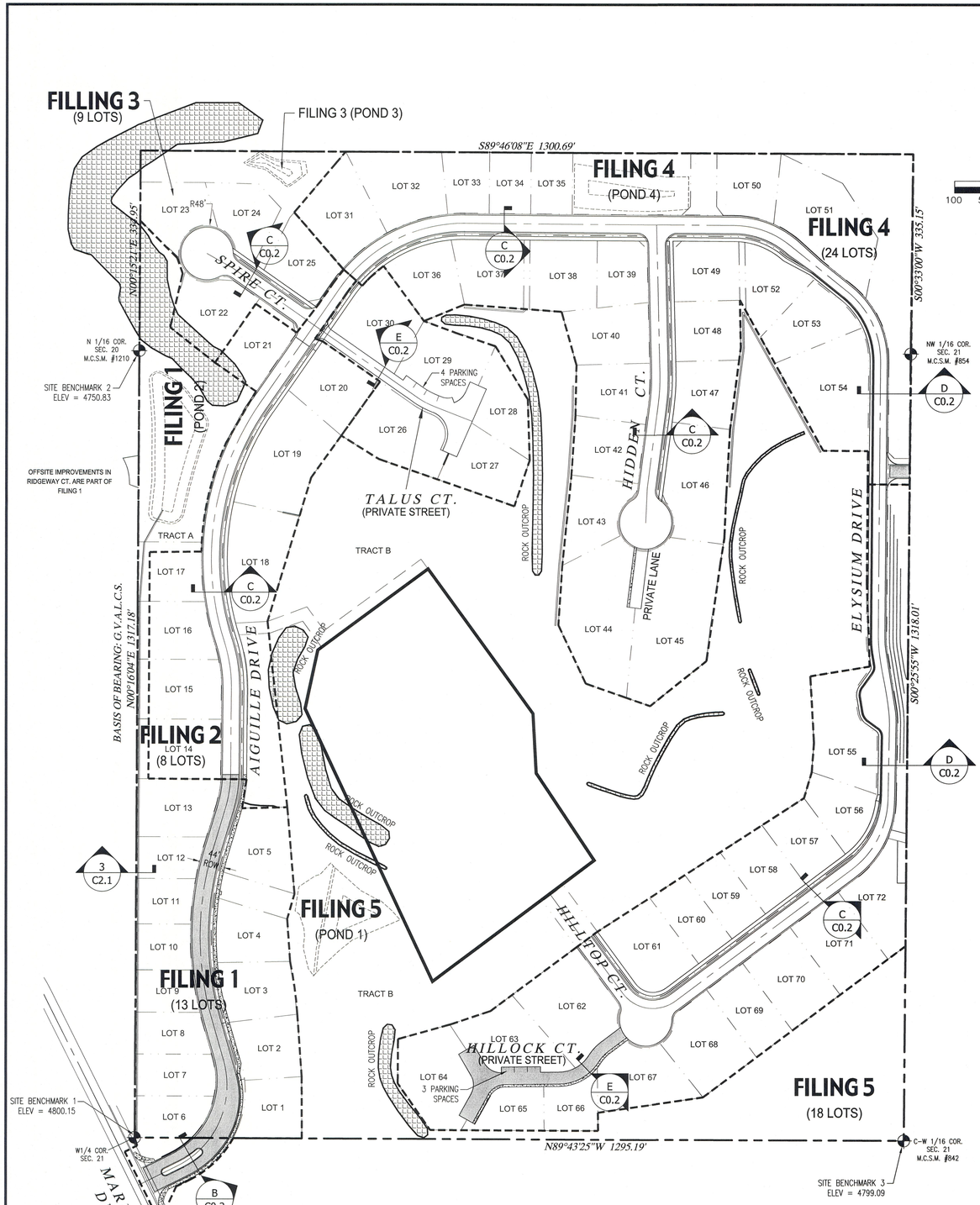
1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. CONTOURS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY. CONTOUR INTERVAL = 1 FOOT UNLESS OTHERWISE NOTED ON PLANS.
3. ALL DISTURBED AREAS THAT ARE UNSURFACED OR ARE NOT DESIGNATED AS LANDSCAPE AREAS ARE TO BE RE-SEEDED WITH DRY NATIVE GRASS SEED MIX.
4. IF DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE SOILS ENGINEER SHALL BE CONTACTED FOR RECOMMENDATIONS.
5. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND STANDARDS OF THE GOVERNING AGENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED AS SPECIFIED BY THE GEOTECH REPORT. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED, LICENSED, SOILS ENGINEER, CERTIFYING THAT THE SUBBASE WITHIN THE AREAS TO BE PAVED HAS BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECS.
6. NO PROPOSED SLOPE SHALL EXCEED TWO (2) HORIZONTAL TO ONE (1) VERTICAL, EXCEPT FOR DIVERSION DITCHES. ALL SLOPED AREAS MUST BE PROTECTED FROM EROSION.
7. IF STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS ARE STOCKPILED ON THE SITE. TOPSOIL MAY BE PLACED TO A HEIGHT OF FIVE FEET. SILT FENCE SHALL BE PLACED AROUND THE BASE OF THE STOCKPILE AND THE STOCKPILE SHALL BE SEEDED WITH NATIVE SEED MIX IMMEDIATELY AFTER STRIPING OPERATIONS ARE COMPLETE.
8. ON-SITE MATERIALS SUITABLE FOR FILL BENEATH DRIVES, AND PARKING AREAS BEYOND 5' OF THE BUILDING SHALL BE COMPACTED IN ACCORDANCE WITH THE GUIDELINES PRESENTED IN THE SOILS REPORT.
9. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHY AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO ENSURE 0.75% MIN. SLOPE AGAINST ALL GUTTERS TO PREVENT PUDDLING. ANY DISCREPANCIES SHALL BE PROVIDED TO THE ENGINEER IN WRITING IMMEDIATELY.
10. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED AS SPECIFIED IN THE GEOTECH REPORT.
11. SPOT ELEVATIONS REPRESENT FLOWLINE OR TOP OF ASPHALT UNLESS OTHERWISE NOTED.
12. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS WHICH DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB AND GUTTER AND UTILITIES.
13. ALL UTILITIES (MANHOLES, VALVE COVERS, CLEANOUTS, VAULTS, BOXES, ETC.) SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
14. ALL EARTH MOVING AND PLACEMENT OPERATIONS SHALL BE IN CONFORMANCE WITH THE RECOMMENDATIONS IDENTIFIED IN THE SOILS REPORT. THE CONTRACTOR SHALL HAVE A SIGNED AND SEALED COPY OF THE SOILS REPORT ON THE SITE AT ALL TIMES.
15. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.
16. WHERE NEW CURB AND GUTTER IS BEING CONSTRUCTED ADJACENT TO EXISTING ASPHALT, THE FOLLOWING SHALL APPLY: PRIOR TO PLACEMENT OF ANY CONCRETE THE CONTRACTOR SHALL HAVE A LICENSED SURVEYOR VERIFY GRADE AND CROSS SLOPE OF THE CURB AND GUTTER FORMS. THE CONTRACTOR SHALL SUBMIT THE SLOPES AND GRADES TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY SECTION WHICH DOES NOT CONFORM TO THE DESIGN OR THE TYPICAL SECTION.
17. MAINTENANCE OF ANY STORMWATER MANAGEMENT FACILITY SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL GUIDELINES FOR PRIVATE STORMWATER MANAGEMENT FACILITIES AND SHALL BE THE RESPONSIBILITY OF THE OWNER AND THE ASSIGNEES.
18. SURFACE RESTORATION SHALL BE AS FOLLOWS:
   (A) FINE GRADE ALL AREAS DISTURBED BY THE CONSTRUCTION OPERATIONS AFTER COMPLETION OF BACKFILLING AND COMPACTING. AREAS WHICH ARE TO RECEIVE PAVEMENTS, SURFACING, TOPSOIL OR LANDSCAPING SHALL BE GRADED AS REQUIRED TO ALLOW INSTALLATION OF THE SPECIFIC SURFACE TREATMENT. GRADE ALL OTHER AREAS TO MATCH THE EXISTING GROUND LINE.
   (B) REPLACE AND REPAIR ANY SURFACE IMPROVEMENTS DAMAGED OR REMOVED. CONFORM TO CITY STANDARDS & SPECIFICATIONS.
19. BITUMINOUS PAVEMENT
   (A) BITUMINOUS PAVEMENT SHALL BE REMOVED TO CLEAN STRAIGHT LINES AT THE LOCATIONS INDICATED ON PLANS. WIDTH OF REMOVAL FOR PIPELINES SHALL BE KEPT TO A MINIMUM AS DICTATED BY TRENCHING OPERATIONS, BUT SHALL EXTEND AT LEAST 6 INCHES BEYOND THE LIMITS OF TRENCH EXCAVATION.
   (B) THE CUT SHALL BE MADE WITH PAVEMENT CUTTING WHEEL, SAW OR OTHER APPROVED METHOD, SO AS TO PROVIDE A REASONABLY STRAIGHT AND SQUARE EDGE.

SANITARY SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL GRAVITY SANITARY SEWER LINES SHALL BE POLYVINYL CHLORIDE PIPE (PVC), ASTM D-3034 SDR.35, SEWER LINE MATERIALS AND CONSTRUCTION SHALL CONFORM TO ASTM STANDARDS AND SPECIFICATIONS.
3. DISTANCES FOR SANITARY SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. THEREFORE, DISTANCES SHOWN ON PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT.
4. RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATION. PIPELINE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT AND STEEL SHIMS TO ADJUST THE MANHOLE FRAME TO THE REQUIRED FINAL GRADE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS. ALL FRAMES SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
5. ALL SANITARY SEWER MAINS TESTING SHALL BE IN ACCORDANCE WITH LOCAL SPECIFICATIONS. COPIES OF ALL TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER, THE OWNER AND THE GOVERNING AUTHORITY PRIOR TO THE START OF THE WARRANTY PERIOD.
6. COMPACTION OF ALL TRENCHES WITHIN THE PROJECT SITE MUST BE ATTAINED AND COMPACTION RESULTS SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE. .
7. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING STRUCTURES AND IMPROVEMENTS DURING INSTALLATION OF THE SANITARY SEWER LINE.
8. THE CONTRACTOR SHALL POTHOLE THE EXISTING SEWER MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
9. SANITARY SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.

STORM SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING:
   (A) OBTAINING ALL REQUIRED PERMITS FROM THE CITY, THE DOT, OR ANY REGULATORY AUTHORITY AT THE CONTRACTOR'S COST INCLUDING PERMITS REQUIRED FOR WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
   (B) RESTORATION OF ANY EXISTING IMPROVEMENTS INCLUDING (BUT NOT LIMITED TO) FENCES, SOD, LANDSCAPING, PAVEMENT, SPRINKLER SYSTEMS.
   (C) VERIFICATION AND PROTECTION OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF THE PROJECT.
   (D) PROVIDING AS-BUILT DRAWINGS TO THE CITY AND ENGINEER.
   (E) ALL PERMITTING, DEVELOPMENT, CONNECTION, LOCATION INSPECTION AND TESTING FEES REQUIRED FOR STORM SEWER CONSTRUCTION.
   (F) VERIFYING ALL STANDARD DETAILS CONFORM TO CURRENT CITY/COUNTY STANDARDS AND SPECIFICATIONS.
   (G) FOR OBTAINING AND UNDERSTANDING ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THE CONSTRUCTION OF THE STORM SEWER IMPROVEMENTS.
   (H) FOR SCHEDULING ALL REQUIRED INSPECTIONS.
3. THE CONTRACTOR SHALL POTHOLE THE EXISTING STORM MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
4. STORM SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.
5. THE CONTRACTOR SHALL COORDINATE HIS WORK SCHEDULE WITH THE DITCH COMPANY TO ENSURE ALL DITCH FACILITIES ARE CONSTRUCTED WITHOUT DISRUPTION TO DITCH COMPANY OPERATIONS.
6. ALL STORM SEWER CONSTRUCTION SHALL BE IN CONFORMANCE WITH LOCAL STANDARDS AND SPECIFICATIONS.
7. DISTANCES FOR STORM SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE OR INLET TO CENTER OF MANHOLE OR INLET. THEREFORE, DISTANCES SHOWN ON PLANS ARE APPROXIMATE



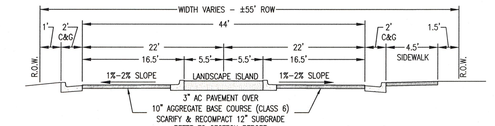
N

SCALE IN FEET

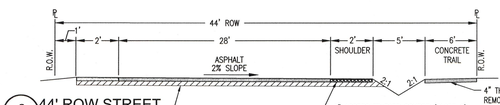
100 50 0 100 200

1" = 100'

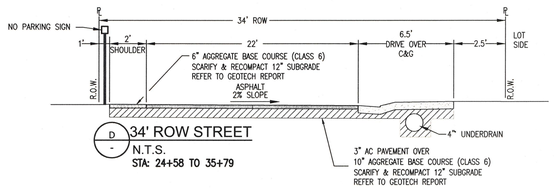
PROPOSED LAND USE TABLE			
SINGLE FAMILY LOTS (72 TOTAL)	934,944 S.F. – 21.46 AC	47.58%	OWNER: PRIVATE
TRACT A:	57,533 S.F. – 1.32 AC	2.93%	OWNER: HOA
TRACT B: OPEN SPACE	658,275 S.F. – 15.11 AC	33.50%	OWNER: HOA
FUTURE TRACTS	122,687 S.F. – 2.82 AC	6.24%	OWNER: HOA
RIGHT-OF-WAY:	191,434 S.F. – 4.39 AC	9.74%	OWNER: PUBLIC
TOTAL SITE AREA:	1,964,873 S.F. – 45.11 AC		



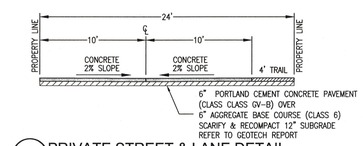
B
-
MARIPOSA DRIVE ENTRANCE
N.T.S.
STA: 0+24 TO STA: 2+56.85
(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 3+42)



C
-
44' ROW STREET
N.T.S.
STA: 2+56.85 TO 24+58
STA: 35+79 TO 41+50



D
-
34' ROW STREET
N.T.S.
STA: 24+58 TO 35+79



E
-
PRIVATE STREET & LANE DETAIL
N.T.S.
TRACTS C,F,J

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21. TOWNSHIP 1 SOUTH. RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM. LOTS 1 – 9, BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK 8 AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = R-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'/25'
   REAR = 30'/5'
   SIDE = 15'/3'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

LEGEND

FILING & LIMITS OF DEVELOPMENT DESIGNATION

PROJECT BENCHMARK

PROJECT BENCHMARK #1
LOCATED AT THE SOUTHWEST CORNER OF THE SITE.
MONUMENT ID: PLS 18480, THE W1/4 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31563.18 EASTING: 78944.74 ELEV: 4800.15 (NAVD88)

PROJECT BENCHMARK #2
LOCATED AT THE WEST PROPERTY LINE, NEAR OUTLOOK COURT.
MONUMENT ID: NCSN #1210, THE N1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 32880.35 EASTING: 78949.85 ELEV: 4750.83 (NAVD88)

PROJECT BENCHMARK #3
LOCATED AT THE SOUTHEAST CORNER OF THE SITE.
MONUMENT ID: NCSN #842, THE W1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31558.05 EASTING: 80239.95 ELEV: 4799.09 (NAVD88)

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED
JAMES C. ATKINSON
18828
11-20-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 19, 2017	DLS
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
2	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	JSY

Filing Plan
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

ACCEPTANCE BLOCK

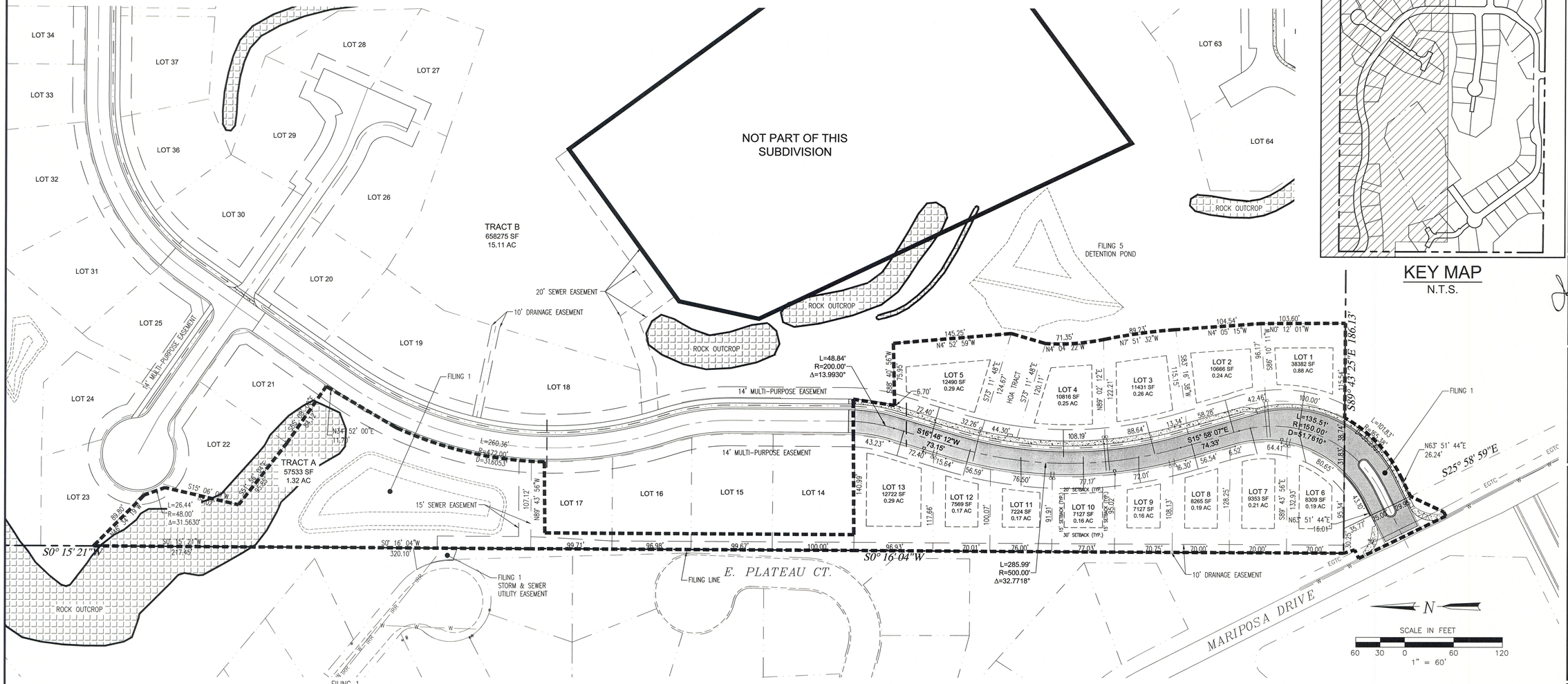
THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

RAD 12-28-17
CITY DEVELOPMENT ENGINEER DATE

PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1" = 100'
CAD ID: 0.0cover-f1.dwg

~SHEET~
C0.2



KEY MAP
N.T.S.

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED
JAMES C. ATKINSON
18828
11-20-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

NO.	DATE	REVISION
4	11/20/17	REVISED PER CITY COMMENTS
3	10/9/17	REVISED PER CITY COMMENTS
2	8/9/17	REVISED PER CITY COMMENTS
1	REV. DATE	COMMENT
		BY

3	11/20/17	REVISED PER CITY COMMENTS	SH	
2	10/9/17	REVISED PER CITY COMMENTS	SH	
1	8/9/17	REVISED PER CITY COMMENTS	SH	
	REV. DATE	COMMENT	BY	

Composite Site Plan - Layout and Geometry Plan

Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROPOSED LAND USE TABLE				
USE	*AREA*	*AC*	*% OF TOTAL*	*OWNER*
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. – 45.11 AC			

UTILITY PROVIDERS INFORMATION		
UTILITY	*PROVIDER*	*PHONE NUMBER*
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET C0.2

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.
Colorado 811
1-800-922-1987
co811.org

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

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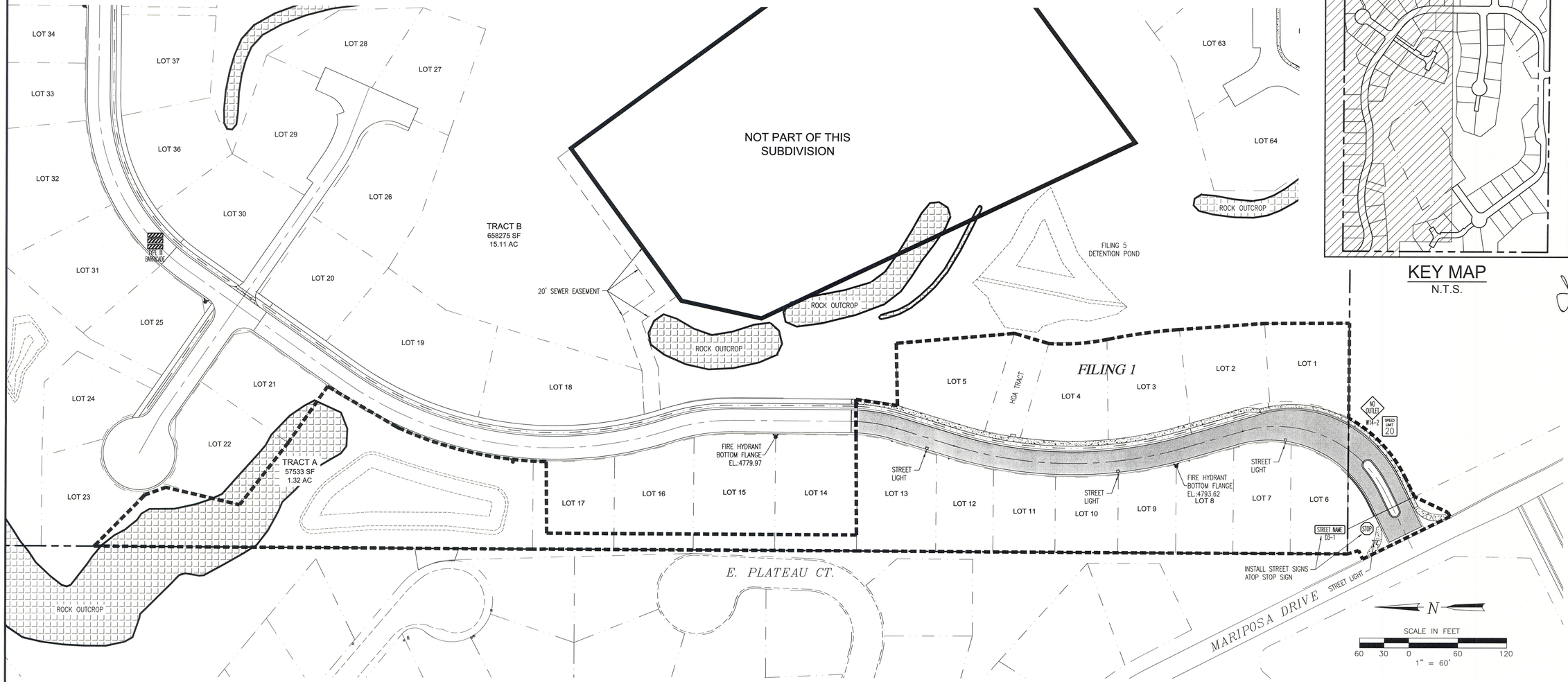
RAD
CITY DEVELOPMENT ENGINEER

12-28-17
DATE

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 60'**
CAD ID: **1.0layout-f1.dwg**

~SHEET~
C1.0



KEY MAP
N.T.S.

SIGN SCHEDULE

- STOP SIGN (30"x30")
- STREET NAME SIGN D3-1
- NO OUTLET SIGN W14-2
- FIXED TYPE III CDOT ROAD BARRICADES (3' x 8' SECTIONS, SEE STD. S-630-2)
- NO TRESPASSING SIGN
- SPEED LIMIT SIGN R2-1

ALL SIGN POST MOUNTING AND PLACEMENT SHALL BE PER MUTCD OR MESA COUNTY SPECIFICATIONS. CONTRACTOR TO CONTACT MESA COUNTY TRAFFIC PRIOR TO INSTALLATION OF SIGNS. (ph. 970-244-1817)

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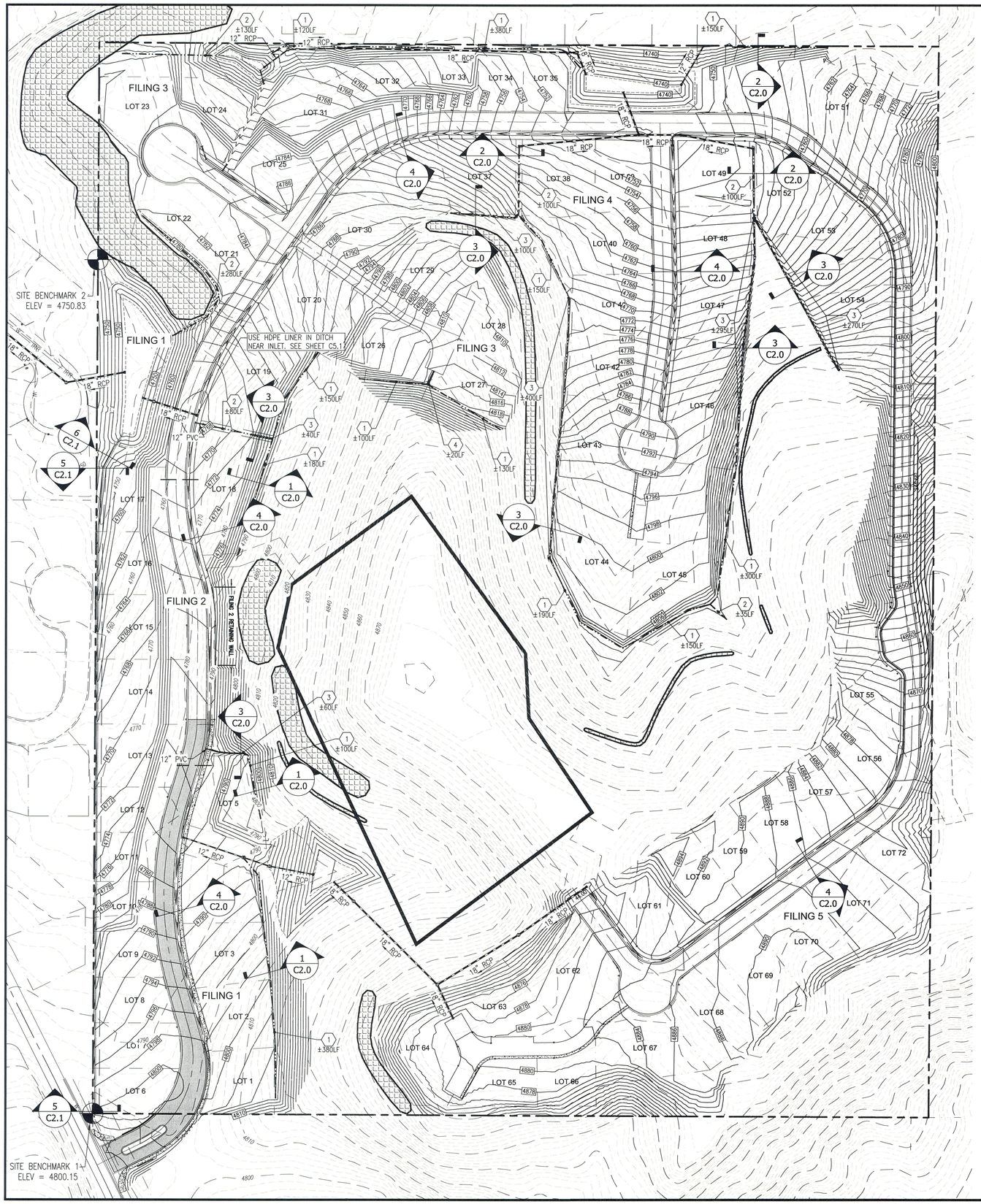
MAJOR SUBDIVISION
FINAL PLAN

Signage & Lighting Plan
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1" = 60'
CAD ID: 1.0layout-f1.dwg

~SHEET~
C1.1



N

SCALE IN FEET

80 40 0 80 160

1" = 80'

CONTOUR INTERVAL = 2'

CONSTRUCTION NOTES:

1. CONSTRUCT DIVERSION DITCH W/ BERM SEE DETAIL 1 THIS SHEET
2. CONSTRUCT DIVERSION DITCH SEE DETAIL 2 THIS SHEET
3. CONSTRUCT ROCK LINED DIVERSION DITCH SEE DETAIL 3 THIS SHEET
4. CONSTRUCT 2' CONCRETE V-PAN (FILING 3)

GRADING NOTE:

FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

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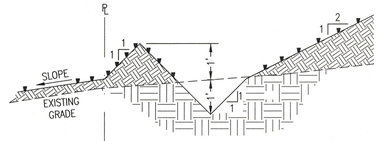
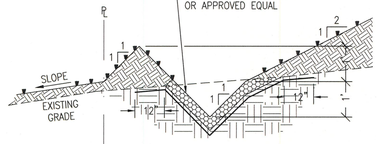
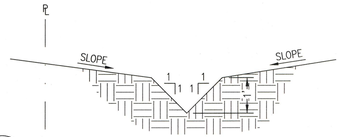
4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE STORM SEWER, SEE SHEET C5.0 & C5.1.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE FILING PLAN.
8. REFER TO SHEETS C0.1, C6.0, THRU C6.2 FOR STORMWATER MANAGEMENT CONTROL PLANS AND EROSION CONTROL NOTES.
9. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
10. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL.



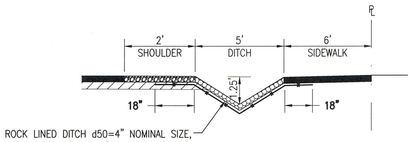
1 / C2.0 DIVERSION DITCH SECTION W/ BERM
N.T.S.



3 / C2.0 ROCK LINED DIVERSION DITCH SECTION
N.T.S.



2 / C2.0 DIVERSION DITCH SECTION
N.T.S.



ROCK LINED DITCH d50=4" NOMINAL SIZE, ANGULAR ROCK, 8" DEEP (MIN.) WITH GEOTEXTILE FABRIC LINER MIRAFI 180N OR APPROVED EQUAL

4 / C2.0 ROCK LINED ROADSIDE DITCH
N.T.S.

PROJECT BENCHMARK

PROJECT BENCHMARK #1
LOCATED AT THE SOUTHWEST CORNER OF THE SITE.
MONUMENT ID: PLS 18480, THE W1/4 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31563.18 EASTING: 78944.74 ELEV: 4800.15 (NAVD88)

PROJECT BENCHMARK #2
LOCATED AT THE WEST PROPERTY LINE, NEAR OUTLOOK COURT.
MONUMENT ID: NCSN #1210, THE N1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 32880.35 EASTING: 78949.85 ELEV: 4750.83 (NAVD88)

PROJECT BENCHMARK #3
LOCATED AT THE SOUTHEAST CORNER OF THE SITE.
MONUMENT ID: NCSN #842, THE W1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31558.05 EASTING: 80239.95 ELEV: 4799.09 (NAVD88)

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RAD 12-28-17
CITY DEVELOPMENT ENGINEER DATE

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
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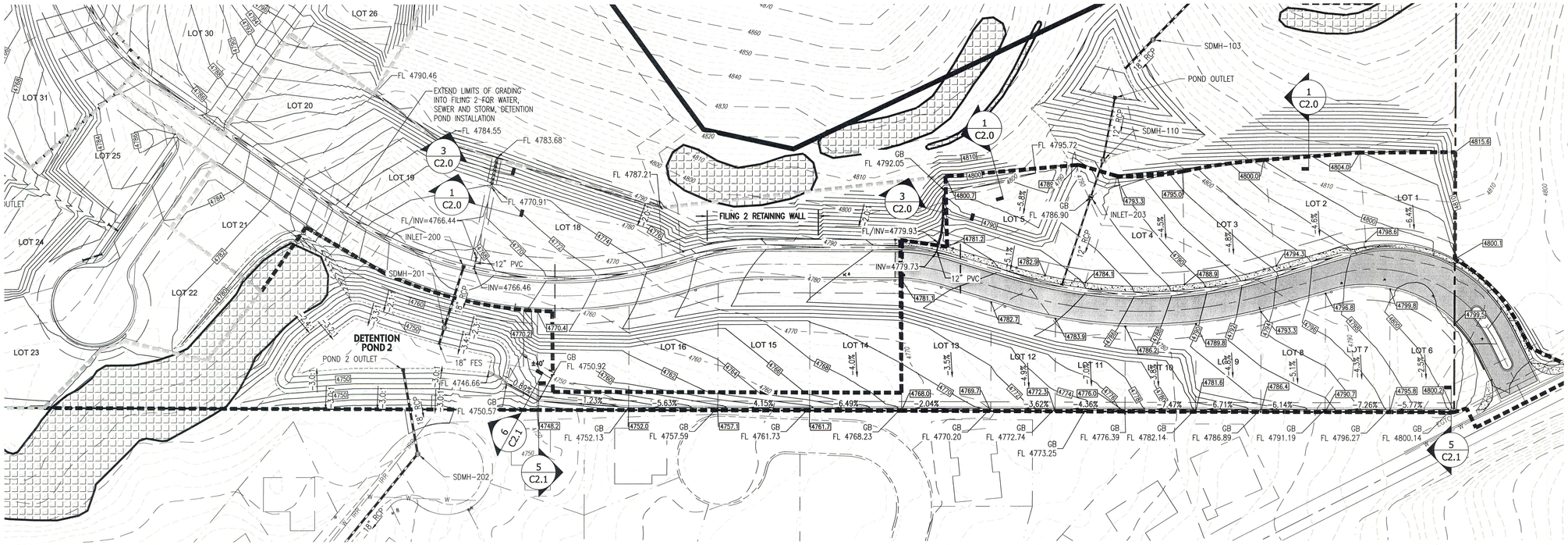
Overall Grading Plan Filings 1 - 5

Pinnacle Ridge Subdivision
Filing 1

Mariposa Drive
Grand Junction, Colorado

PROJECT NO. F04-006
DATE: 06/08/17
SCALE: 1"= 80'
CAD ID: 2.0grad-f1.dwg

~SHEET~
C2.0



N

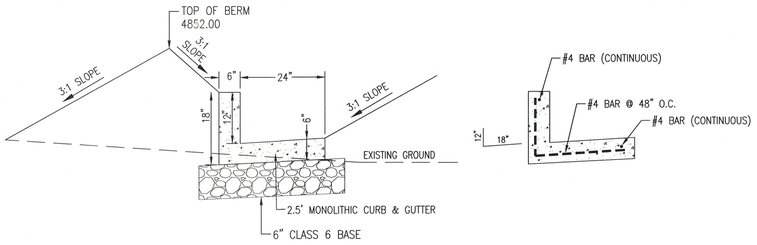
SCALE IN FEET

60 30 0 60 120

1" = 60'

CONTOUR INTERVAL = 2'

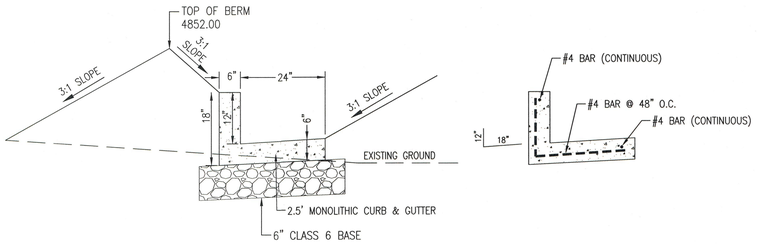
FILING 1 TOF TABLE			
Lot	Grading	Min. TOF	Max. TOF
1	Type A	4801.00	4801.50
2	Type A	4798.70	4799.20
3	Type A	4793.30	4793.80
4	Type A	4787.90	4788.40
5	Type A	4783.60	4784.10
6	Type C	4801.60	4802.10
7	Type C	4799.30	4799.80
8	Type C	4796.00	4796.50
9	Type C	4792.50	4793.00
10	Type C	4789.00	4789.50
11	Type C	4786.00	4786.50
12	Type C	4784.30	4784.80
13	Type C	4783.10	4783.60



WEST PROPERTY LINE SECTION - FINAL 45 LF TO DETENTION POND

5 / C2.1 CONCRETE CURB & GUTTER DETAIL

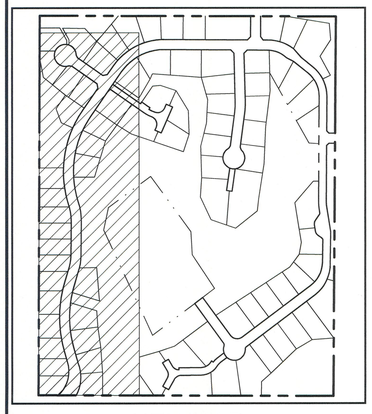
N.T.S.



WEST PROPERTY LINE SECTION - FINAL 45 LF TO DETENTION POND

6 / C2.1 CONCRETE CURB & GUTTER DETAIL

N.T.S.



KEY MAP

N.T.S.

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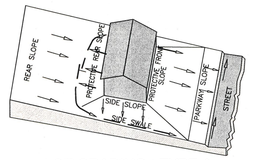
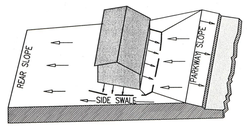


LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.



LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.

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Grading Plan Filing 1

Pinnacle Ridge Subdivision Filing 1

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/08/17
SCALE: SEE PLAN
CAD ID: 2.0grad-f1.dwg

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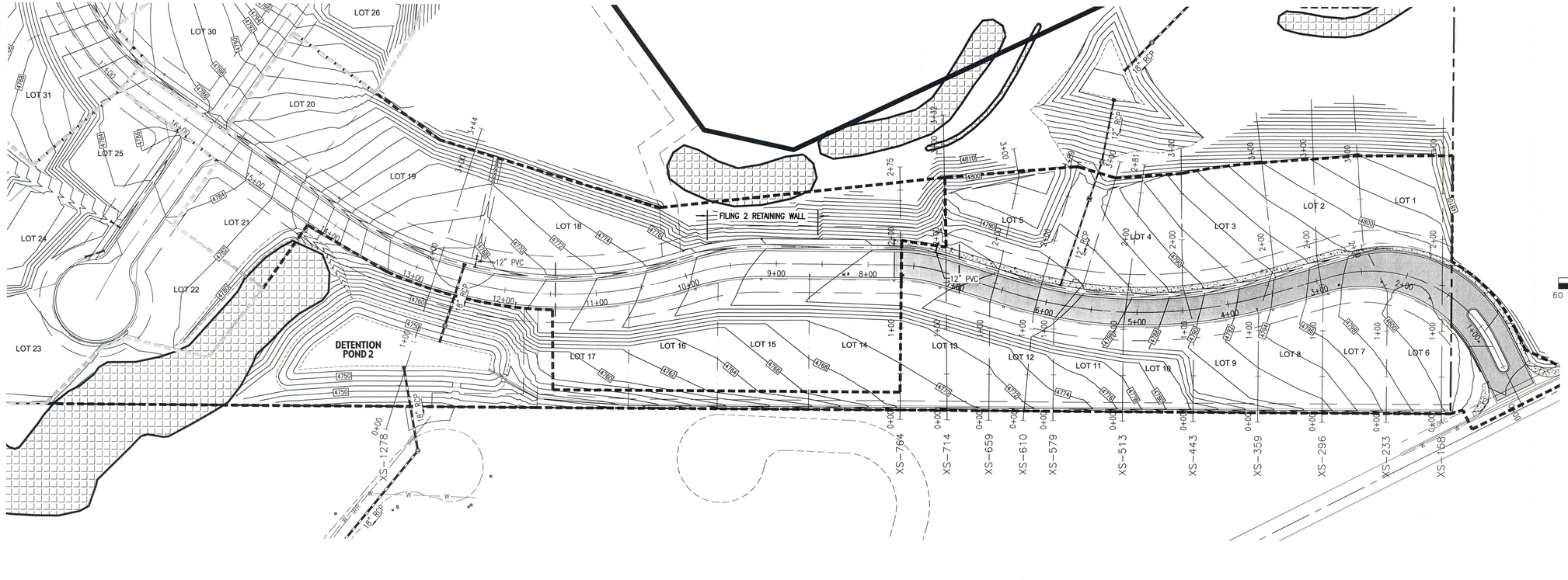
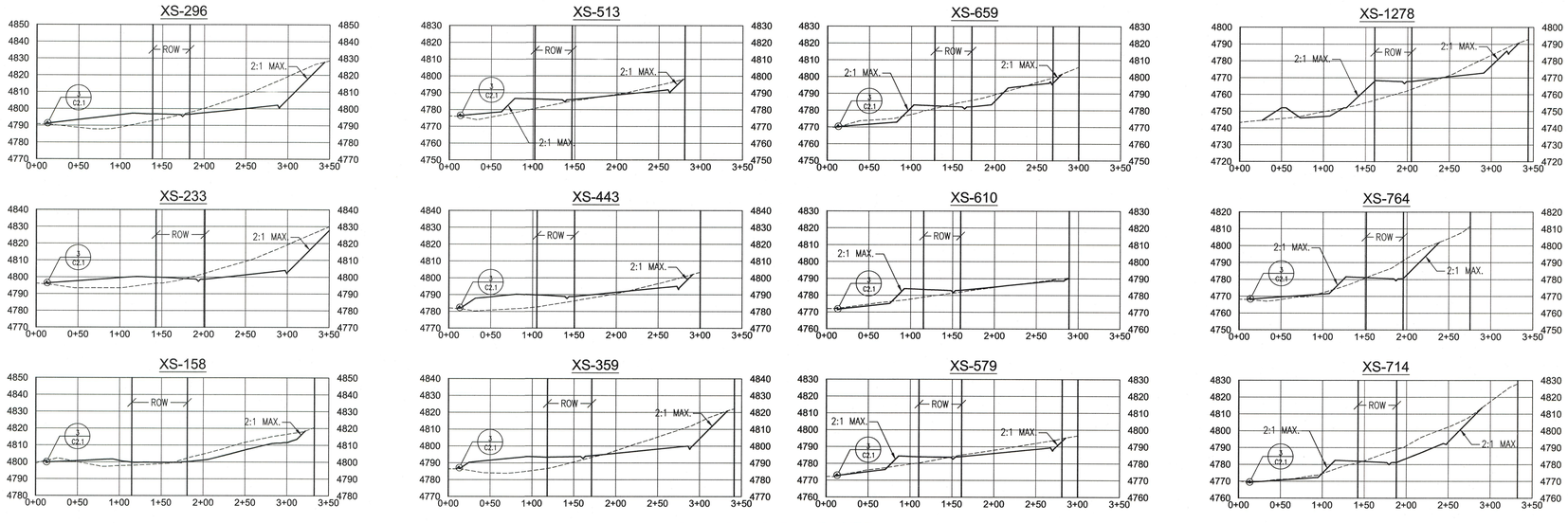
C2.1



SECTIONS ALONG LOT LINES

SCALE: 1" = 80' HORIZONTAL
1" = 40' VERTICAL



ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

RAD
CITY DEVELOPMENT ENGINEER

12-28-17
DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 11-20-17 PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 15, 2017
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017

Grading Plan Filing 1 - Road Cross Sections

Pinnacle Ridge Subdivision
Filing 1

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/08/17
SCALE: SEE PLAN
CAD ID: 2.0grad-f1.dwg

~SHEET~
C2.2

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET 3
6. HOUSES CONSTRUCTED ON LOTS 26-29 AND LOTS 55-72 SHALL HAVE SPRINKLER SYSTEMS INSTALLED. A 1" CUSTOMER WATER SERVICE LINE AND ¾" WATER METER WILL BE UTILIZED IN ACCORDANCE WITH UTE WATER CONSERVANCY DISTRICT STANDARDS & SPECIFICATIONS.
7. ALL WATER SERVICES SHALL HAVE A PRESSURE REGULATED YOKE INSTALLED BASED ON PRESSURE LIMITS AS DETERMINED IN THE HYDRAULIC ANALYSIS.

FILING NOTES

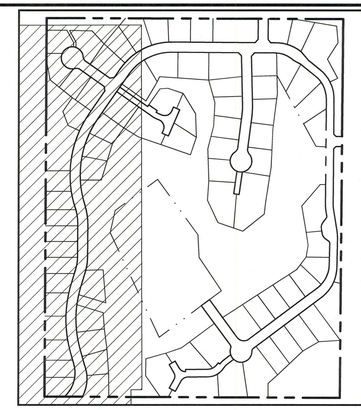
1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
2. INSTALL SANITARY SEWER FROM SSMH-A9 TO EXISTING MAN-HOLE IN RIDGEWAY COURT AS SHOWN INCLUDING LINE TO MAN-HOLE B-1.
3. END WATER LINE CONSTRUCTION AT THE MIDDLE OF LOT 14 AS SHOWN.
4. ASPHALT PAVEMENT TO END AT THE NORTH END OF LOT 13 FOR FILING 1.
5. ROAD ALIGNMENT TO BE GRADED AND BASE COURSE INSTALLED TO THE NORTH END OF LOTS 20 & 21.

N

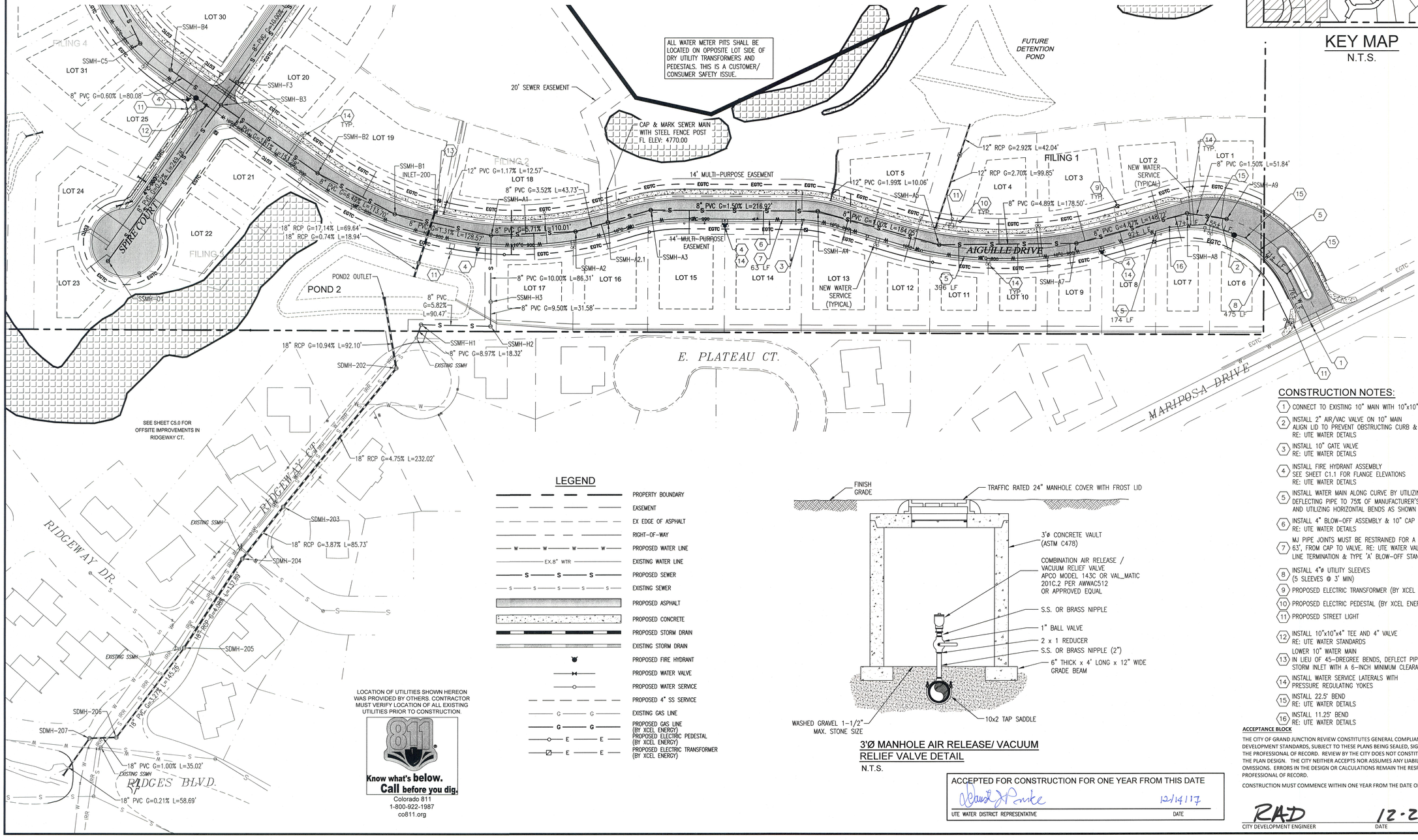
SCALE IN FEET

60 30 0 60 120

1" = 60'



KEY MAP
N.T.S.



LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE
- EXISTING WATER LINE
- PROPOSED SEWER
- EXISTING SEWER
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER SERVICE
- PROPOSED 4" SS SERVICE
- EXISTING GAS LINE
- PROPOSED GAS LINE (BY XCEL ENERGY)
- PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
- PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.
Colorado 811
1-800-922-1987
co811.org

3'Ø MANHOLE AIR RELEASE/ VACUUM RELIEF VALVE DETAIL
N.T.S.

CONSTRUCTION NOTES:

1. CONNECT TO EXISTING 10" MAIN WITH 10"x10" WET TAP
2. INSTALL 2" AIR/VAC VALVE ON 10" MAIN ALIGN LID TO PREVENT OBSTRUCTING CURB & GUTTER RE: UTE WATER DETAILS
3. INSTALL 10" GATE VALVE RE: UTE WATER DETAILS
4. INSTALL FIRE HYDRANT ASSEMBLY SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL WATER MAIN ALONG CURVE BY UTILIZING FITTINGS & DEFLECTING PIPE TO 75% OF MANUFACTURER'S RECOMMENDATIONS AND UTILIZING HORIZONTAL BENDS AS SHOWN
6. INSTALL 4" BLOW-OFF ASSEMBLY & 10" CAP W/ THRUSTBLOCK RE: UTE WATER DETAILS
7. MJ PIPE JOINTS MUST BE RESTRAINED FOR A MINIMUM OF 63', FROM CAP TO VALVE. RE: UTE WATER VALVE INSTALLATION, LINE TERMINATION & TYPE 'A' BLOW-OFF STANDARD
8. INSTALL 4"ø UTILITY SLEEVES (5 SLEEVES @ 3' MIN)
9. PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)
10. PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
11. PROPOSED STREET LIGHT
12. INSTALL 10"x10"x4" TEE AND 4" VALVE RE: UTE WATER STANDARDS
13. LOWER 10" WATER MAIN IN LIEU OF 45-DREGREE BENDS, DEFLECT PIPE TO DIP UNDER STORM INLET WITH A 6-INCH MINIMUM CLEARANCE BETWEEN PIPES.
14. INSTALL WATER SERVICE LATERALS WITH PRESSURE REGULATING YOKES
15. INSTALL 22.5° BEND RE: UTE WATER DETAILS
16. INSTALL 11.25° BEND RE: UTE WATER DETAILS

ACCEPTED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE

Robert J. Burke — 12/14/17

UTE WATER DISTRICT REPRESENTATIVE — DATE

ACCEPTANCE BLOCK

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RAD — CITY DEVELOPMENT ENGINEER

12-28-17 — DATE

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• PROJECT MANAGERS
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Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 PROFESSIONAL ENGINEER
12-14-17

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MAJOR SUBDIVISION
FINAL PLAN

BY	COMMENT	REV. DATE
JSV	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	11/20/17
DLS	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	10/09/17
DLS	REVISED PER CITY COMMENT ROUND 1, DATED JULY 19, 2017	8/08/17

Composite Site Plan - Utility and Water Plan
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1"= 60'
CAD ID: 3.0utility-f1.dwg

~SHEET~
C3.0

FILING NOTES

1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
2. INSTALL SANITARY SEWER FROM SSMH-A9 TO EXISTING MAN-HOLE IN RIDGEWAY COURT AS SHOWN INCLUDING LINE TO MAN-HOLE B-1.
3. END WATER LINE CONSTRUCTION AT THE MIDDLE OF LOT 14 AS SHOWN.
4. ASPHALT PAVEMENT TO END AT THE NORTH END OF LOT 13 FOR FILING 1.
5. ROAD ALIGNMENT TO BE GRADED AND BASE COURSE INSTALLED TO THE NORTH END OF LOTS 20 & 21.

CONSTRUCTION NOTES:

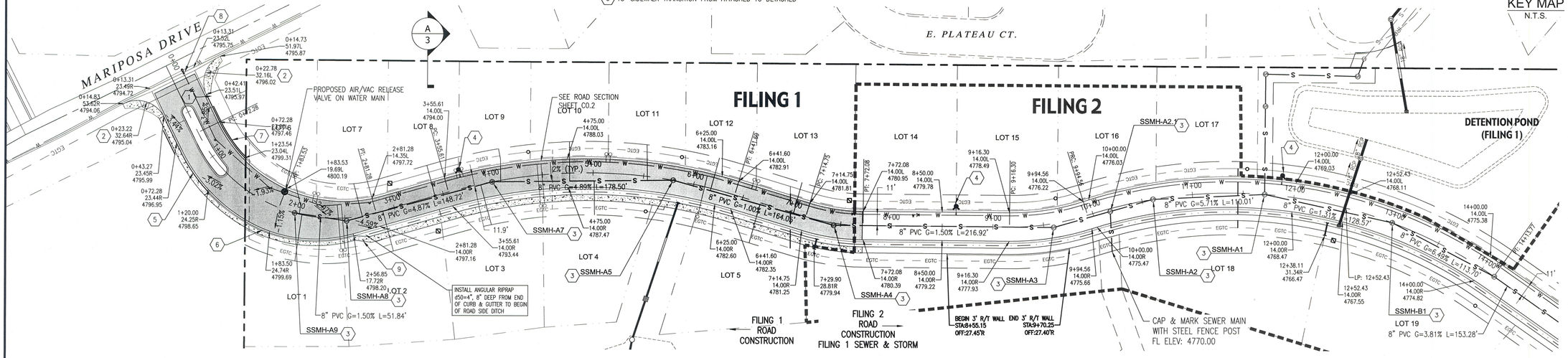
1. INSTALL STOP SIGN & STREET SIGN RE: MUTCD
2. CONSTRUCT HANDICAPPED RAMP RE: CITY OF GJ DETAILS
3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL 6" STANDARD CURB & GUTTER W/ATTACHED SIDEWALK – 87 LF
6. INSTALL 6" DRIVE-OVER CURB & GUTTER W/ATTACHED SIDEWALK – 158 LF
7. INSTALL 6" STANDARD CURB & GUTTER 74 LF
8. SAWCUT & REMOVE ±106 LF EXISTING CONCRETE CURB USE CARE TO ENSURE PAVEMENT EDGE PROVIDES A CLEAN JOIN FOR INSTALL OF NEW CONCRETE VALLEY PAN
9. 15' SIDEWALK TRANSITION FROM ATTACHED TO DETACHED

GENERAL NOTES:

1. REFERENCE SHEET C0.1 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET C0.2 FOR STREET SECTIONS
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION

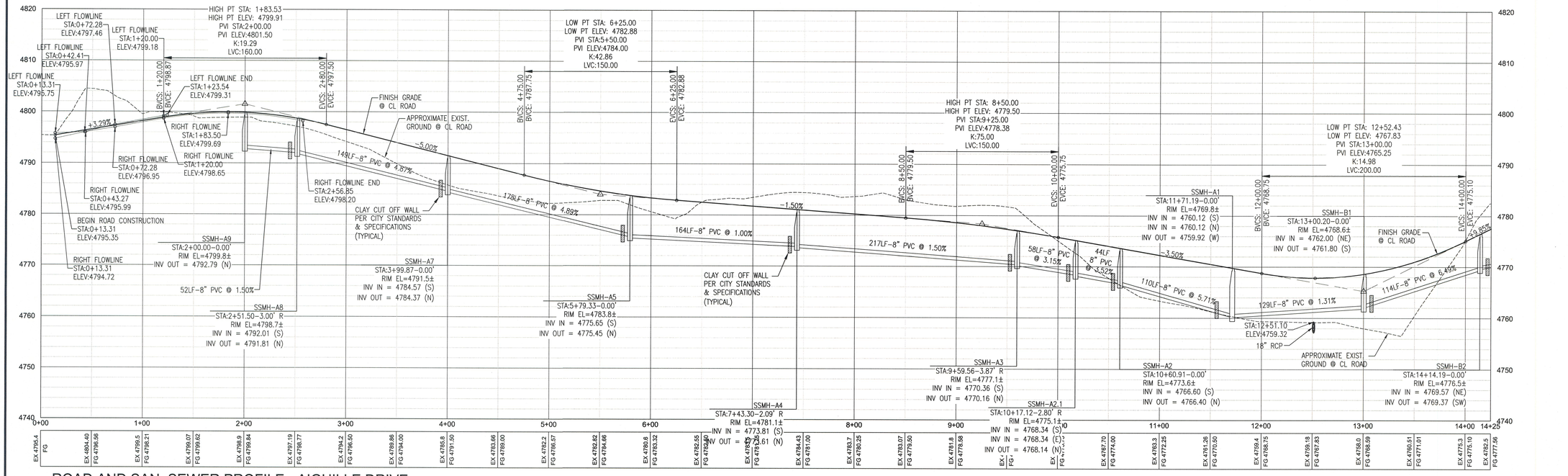
ROAD AND SAN. SEWER PLAN - AIGUILLE DRIVE

SCALE: 1" = 50'



ROAD AND SAN. SEWER PROFILE - AIGUILLE DRIVE

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



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REV.	DATE	COMMENT	BY
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MAJOR SUBDIVISION
FINAL PLAN

Road & Sanitary Sewer Plan & Profile
Aiguille Drive
Pinnacle Ridge Subdivision Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

ACCEPTANCE BLOCK

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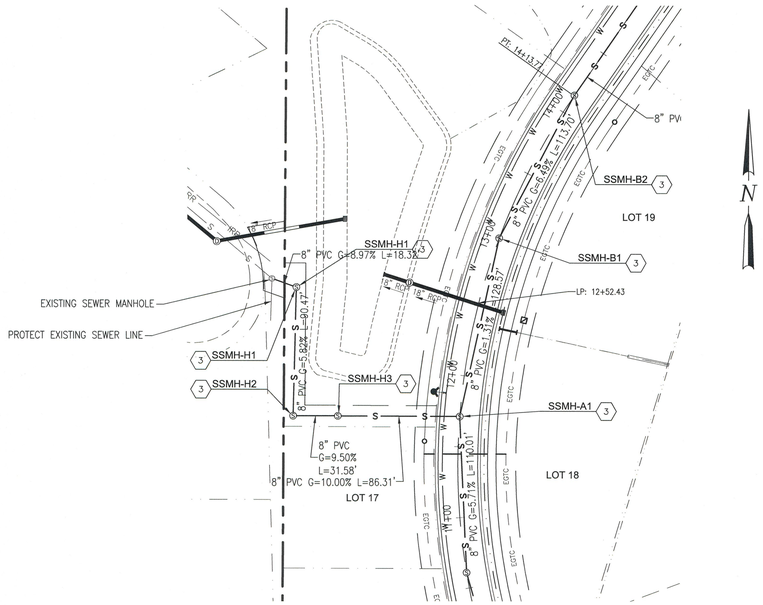
RAD
CITY DEVELOPMENT ENGINEER

12-28-17
DATE

PROJECT NO: F04-006
DATE: 06/02/17
SCALE: 1" = 50'
CAD ID: 4.0ss-road-f1.dwg

~SHEET~
C4.0



ROAD AND SAN. SEWER PLAN - RIDGEWAY CT. CONNECTION

SCALE: 1" = 50'

FILING NOTES

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4. PROPOSED FIRE HYDRANT SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL 6" STANDARD CURB & GUTTER W/ATTACHED SIDEWALK – 87 LF
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7. INSTALL 6" STANDARD CURB & GUTTER 74 LF
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GENERAL NOTES:

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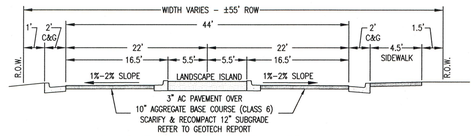
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET C0.2 FOR STREET SECTIONS
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION

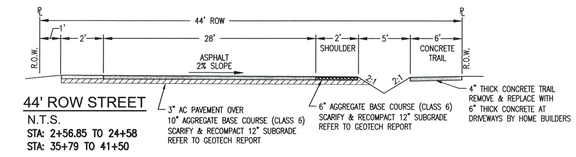


MARIPOSA DRIVE ENTRANCE

N.T.S.

STA: 0+24 TO STA: 2+56.85

(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 3+42)

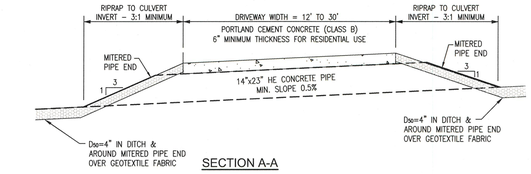


44' ROW STREET

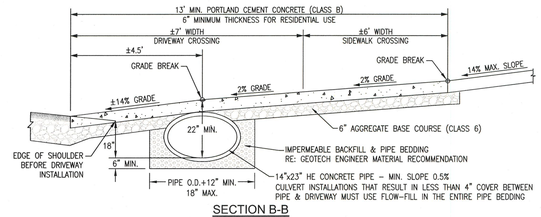
N.T.S.

STA: 2+56.85 TO 24+58

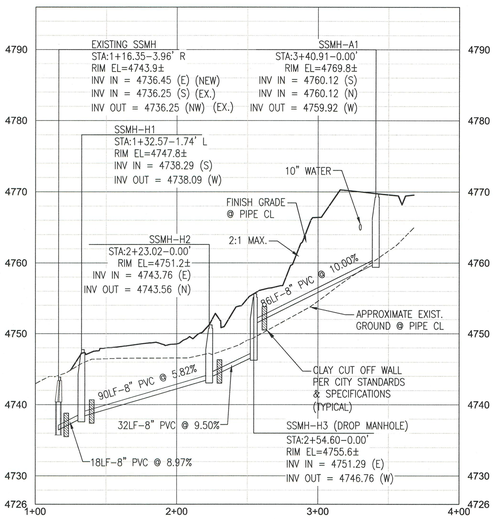
STA: 35+79 TO 41+50



SECTION A-A



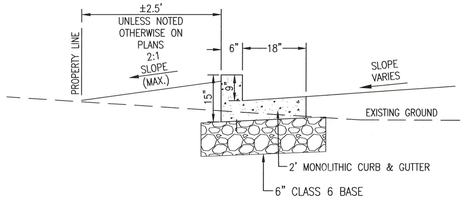
SECTION B-B



ROAD AND SAN. SEWER PROFILE - RIDGEWAY CT. CONNECTION

HORIZONTAL SCALE: 1" = 50'

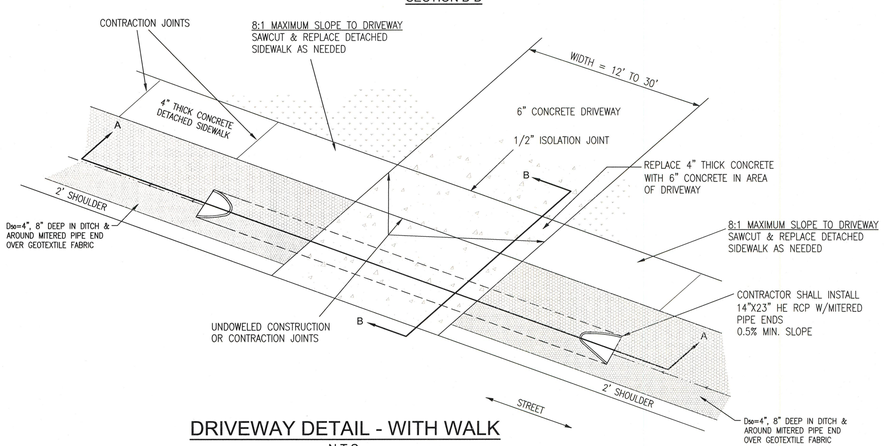
VERTICAL SCALE: 1" = 5'



WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

CONCRETE CURB DETAIL

N.T.S.



DRIVEWAY DETAIL - WITH WALK

N.T.S.

NOTE:

CARE SHALL BE TAKEN TO REMOVE EXISTING ROCK LINING AND GEOTEXTILE FABRIC PRIOR TO NEW CULVERT INSTALLATION. FABRIC AND ROCK TO BE CAREFULLY REPLACED AROUND NEW CULVERT.

ACCEPTANCE BLOCK

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RAD — CITY DEVELOPMENT ENGINEER

12-28-17 — DATE

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18828
11-20-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

NO.	DATE	REVISION	BY
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	JSY
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	REC. DATE	COMMENT	

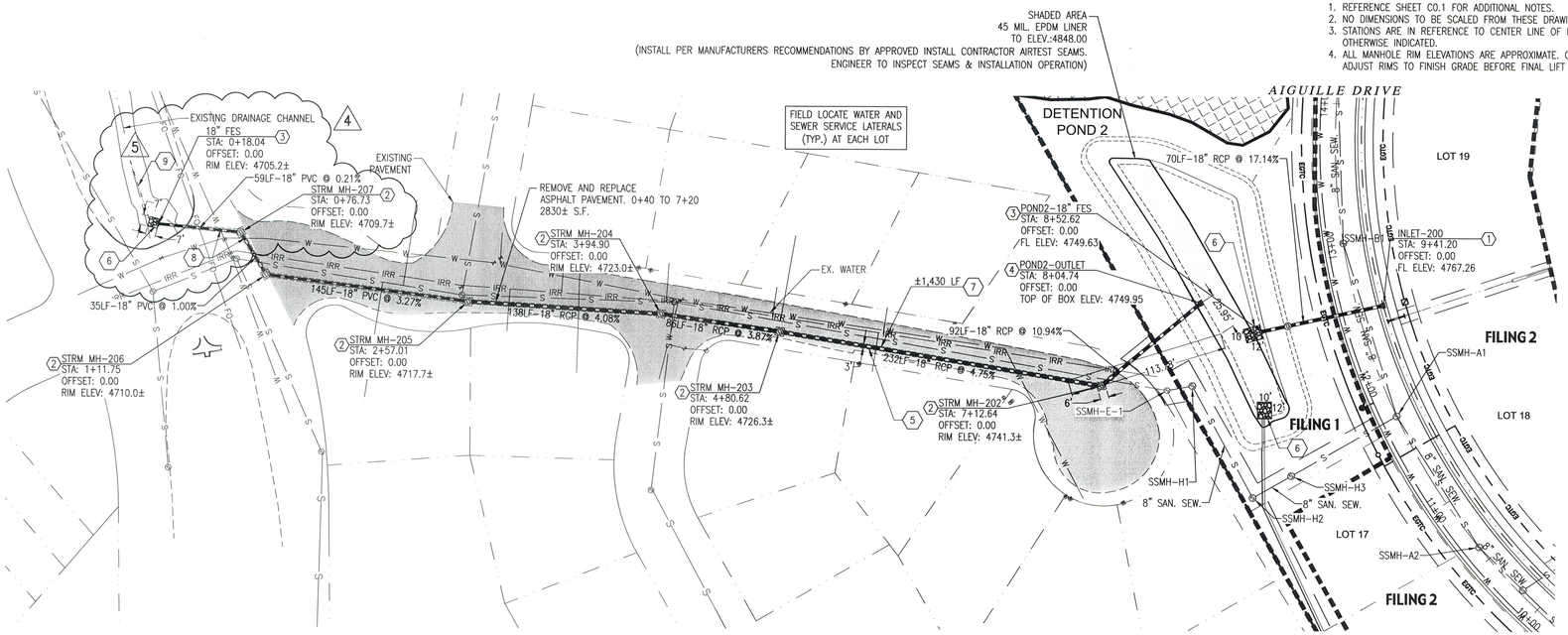
Road & Sanitary Sewer Plan & Profile

Ridgeway Court Sewer Connection
Pinnacle Ridge Subdivision Filing 1

Mariposa Drive
Grand Junction, Colorado 81507

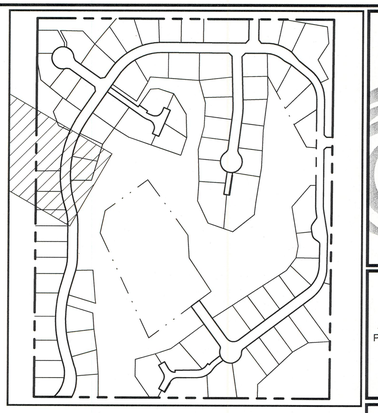
PROJECT NO: **F04-006**
DATE: **06/02/17**
SCALE: **1" = 50'**
CAD ID: **4.0ss-road-f1.dwg**

~SHEET~
C4.1



GENERAL NOTES:

1. REFERENCE SHEET C0.1 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. STATIONS ARE IN REFERENCE TO CENTER LINE OF ROAD, UNLESS OTHERWISE INDICATED.
4. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.



KEY MAP
N.T.S.

CONSTRUCTION NOTES:

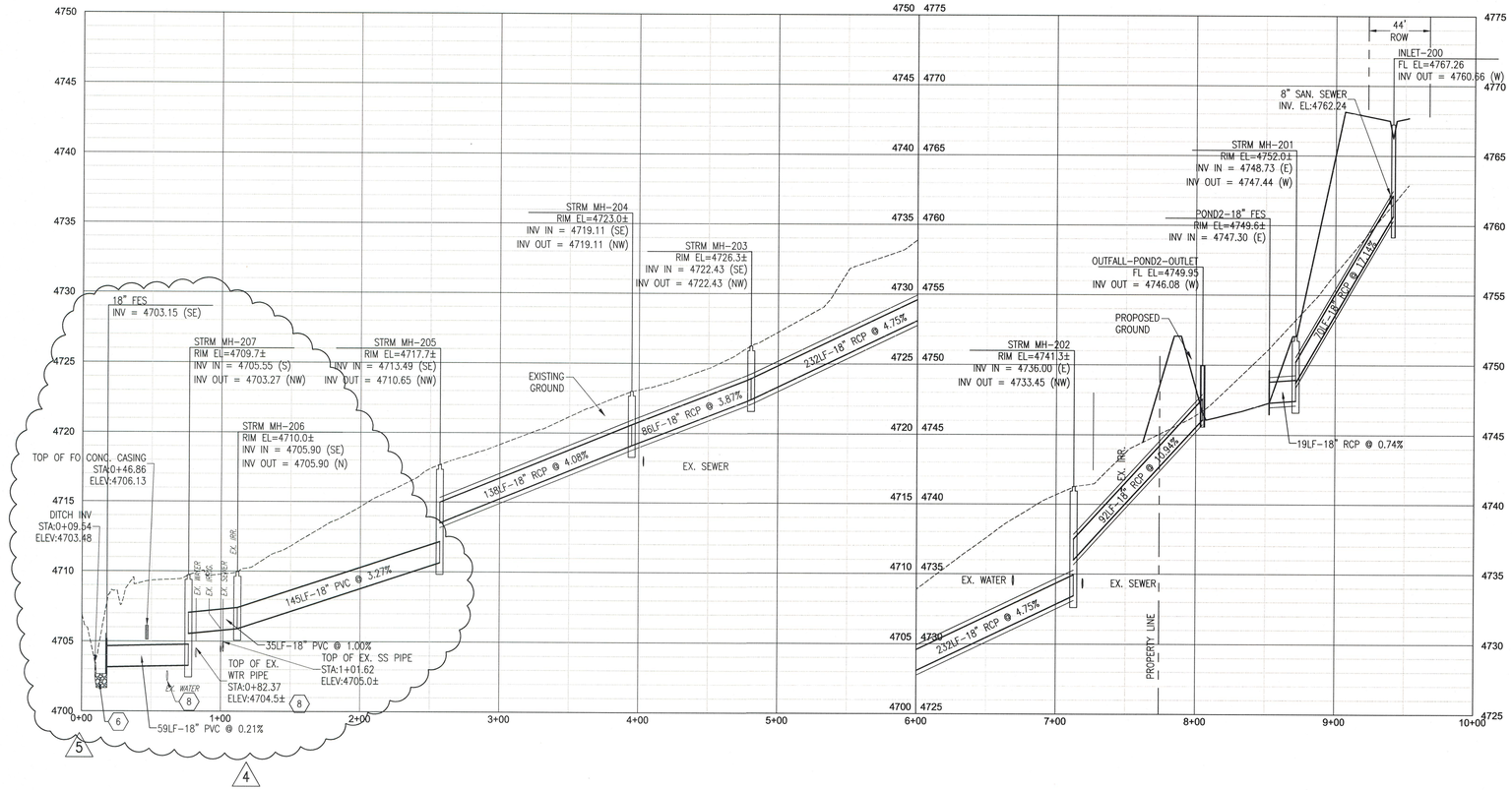
1. INSTALL/MODIFY 2'x3' AREA INLET RE: CITY STD. DETAILS, & THIS SHEET
2. INSTALL 48"ø MANHOLE RE: CITY STD. DETAILS
3. INSTALL FES WITH RIP RAP AT SHOWN SIZE RE: CITY STD. DETAILS
4. INSTALL POND OUTLET STRUCTURE RE: SEE DETAIL ON SHEET 21
5. PAVEMENT PATCH BACK AT SHOWN DIMENSIONS RE: CITY OF CJ DETAILS
6. INSTALL D_{50}=6", 12" DEEP RIPRAP BASIN OVER GEOFABRIC AT SHOWN DIMENSIONS RE: DETAIL THIS SHEET.
7. SAWCUT LINE
8. WATER CROSSING. COORDINATE WITH UTE WATER FOR ENCASEMENT REQUIREMENTS
9. TIE TO EX. DITCH INVERT WITH POSITIVE GRADE

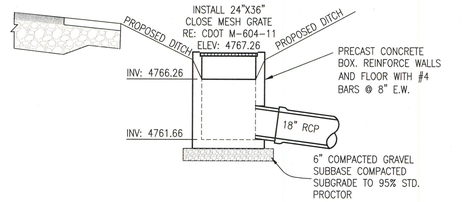
NOTE:

CONTRACTOR TO LOCATE INDIVIDUAL WATER AND SANITARY SEWER LATERALS TO EACH HOUSE PRIOR TO BEGINNING CONSTRUCTION. NOTIFY ENGINEER IF CONFLICTS ARE FOUND.

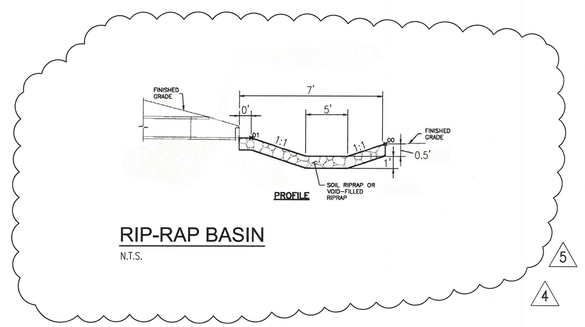
STORM SEWER PLAN AND PROFILE - POND 2 OUTFALL

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'





MODIFIED STORM DRAIN AREA INLET-200
N.T.S.



RIP-RAP BASIN
N.T.S.

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Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED
JAMES C. ATKINSON
18828
11-20-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

NO.	DATE	REV. DATE	COMMENT	BY
1	8/08/17		REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS
2	10/09/17		REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
3	10/24/17		REVD MH–206, 206 AND 207 TO AVOID CONFLICTS	BW
4	11/08/17		REVISED MH 207 TO AVOID FO CONFLICTS	BW
5	11/09/17		REVISE PIPE TYPE US FROM MH 206	sam
6	11/20/17		REVISED PER CITY COMMENT ROUND 3, DATED NOV. 13, 2017	sam

Storm Sewer Plan and Profile
Pond 2 Outfall

Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

ACCEPTANCE BLOCK

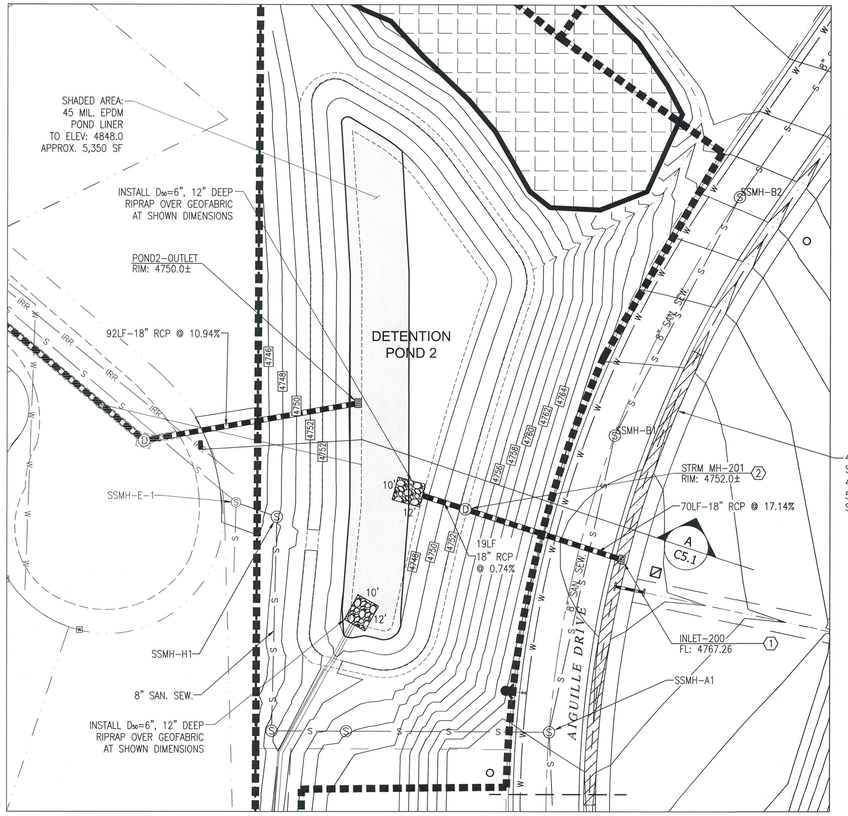
THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

RAD — 12-28-17
CITY DEVELOPMENT ENGINEER — DATE

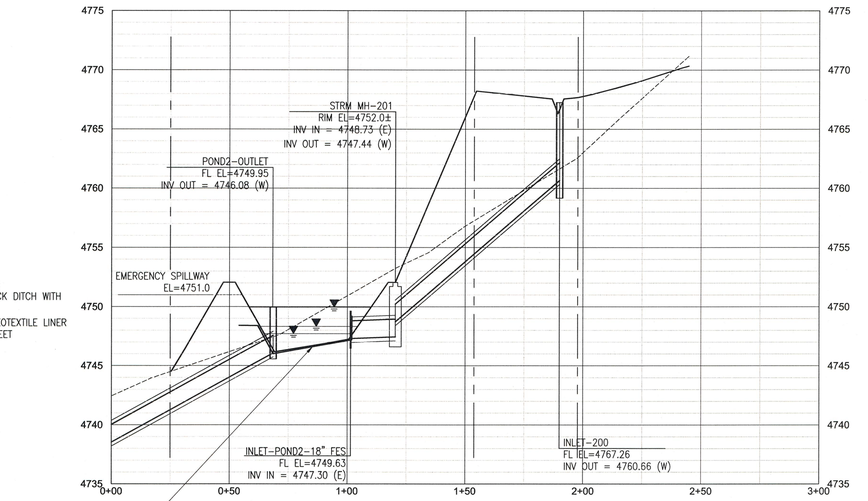
PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1" = 50'
CAD ID: 5.0storm-f1.dwg

~SHEET~
C5.0



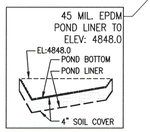
POND 2 - PLAN

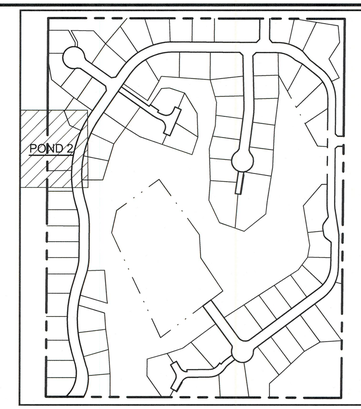
SCALE: 1" = 30'



A / C5.1 POND 2 SECTION

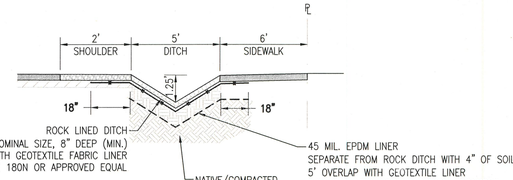
H: 1"=30'
V: 1"=1.5'





KEY MAP

N.T.S.

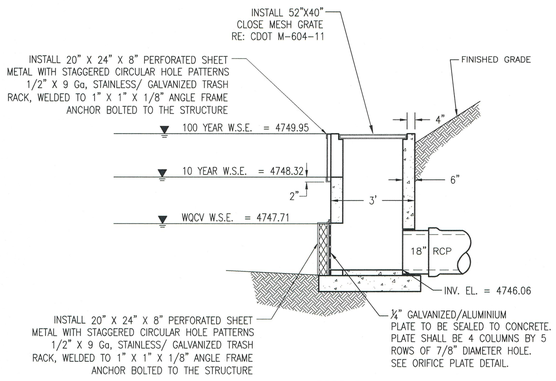


ROCK LINED ROADSIDE DITCH
WITH EPDM LINER

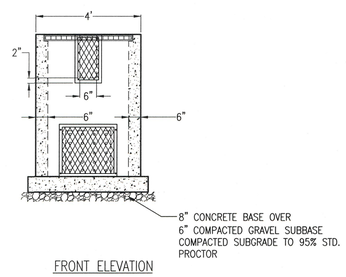
N.T.S.

CONSTRUCTION NOTES:

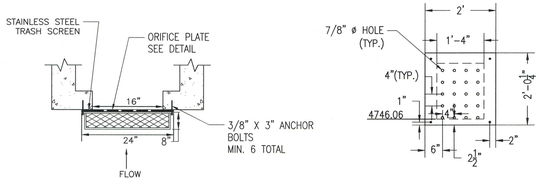
1. INSTALL/MODIFIY 3'X4' AREA INLET
   RE: CITY STD. DETAILS, & THIS SHEET
2. INSTALL 48"ø MANHOLE
   RE: CITY STD. DETAILS



PROFILE



FRONT ELEVATION



POND OUTLET STRUCTURE DETAIL

N.T.S.

POND 2 - SUMMARY TABLES

POND 2	VOLUME (CF)	WSEL (FT)	PEAK DISCHARGE FLOW (CFS)	ALLOWABLE PEAK DISCHARGE FLOW (CFS)
WQCV	7,575	4747.71	NA	NA
10 YEAR	13,992	4748.32	0.52	1.87
100 YEAR	31,059	4749.95	4.21	7.79

GENERAL NOTES:

1. REFERENCE SHEET C0.2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. STATIONS ARE IN REFERENCE TO CENTER LINE OF ROAD, UNLESS OTHERWISE INDICATED.
4. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
5. REFER TO SHEET C5.0 FOR CONSTRUCTION KEY NOTES.
6. POND LINER TO BE INSTALLED PER MANUFACTURES RECOMMENDATIONS BY APPROVED INSTALL CONTRACTOR AIRTEST SEAMS. ENGINEER TO INSPECT SEAMS & INSTALLATION OPERATION.

ACCEPTANCE BLOCK

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RAD — CITY DEVELOPMENT ENGINEER

12-28-17 — DATE

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11-20-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 13, 2017	JRV
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 19, 2017	DLS
	REV. DATE	COMMENT	BY

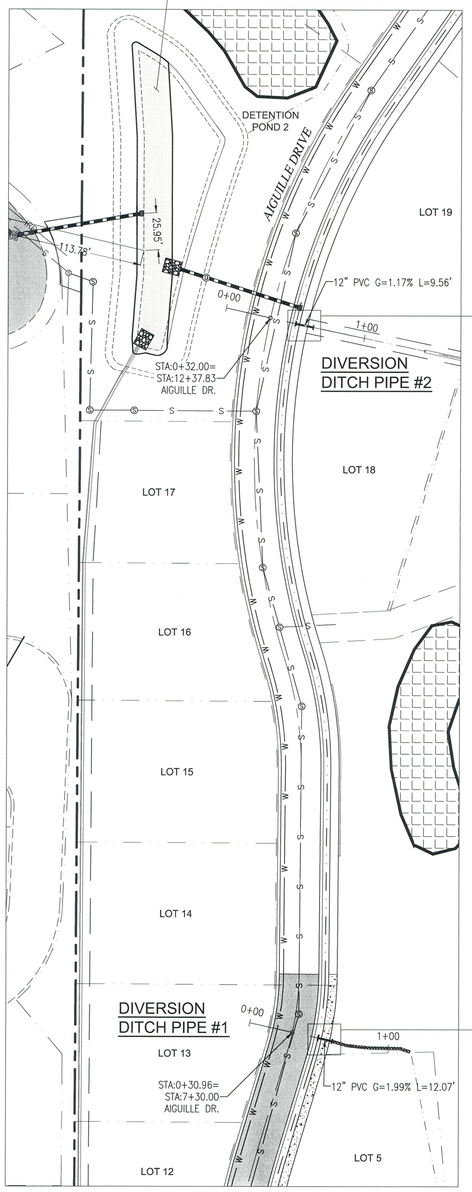
Storm Sewer Plan
Pond 1 and 2 Details

Pinnacle Ridge Subdivision

Mariposa Drive
Grand Junction, Colorado 81507

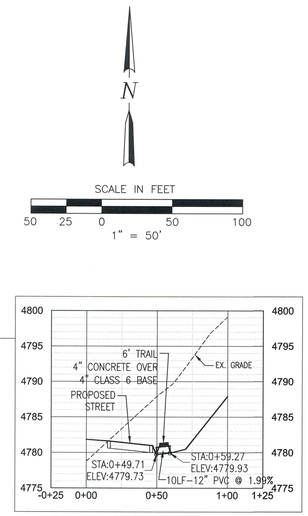
PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1" = 30'
CAD ID: 5.0storm-f1.dwg

~SHEET~
C5.1



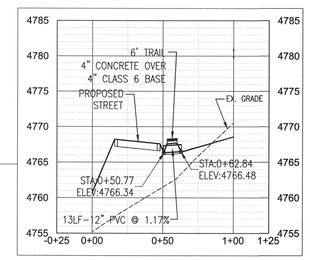
STORM SEWER PLAN - DIVERSION DITCH PIPES

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



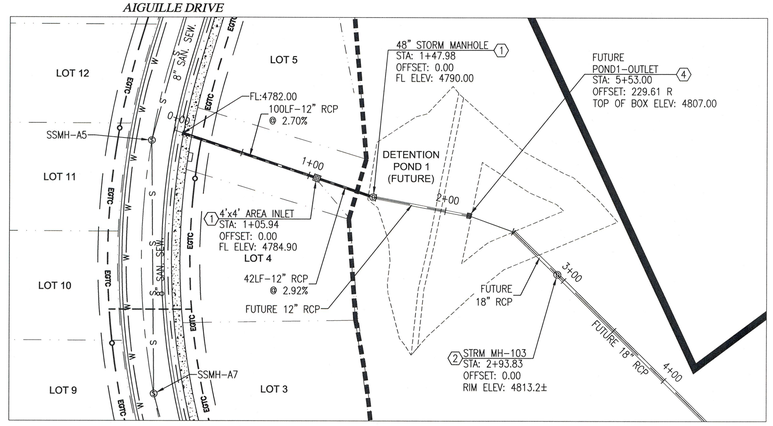
DIVERSION DITCH PIPE #2

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



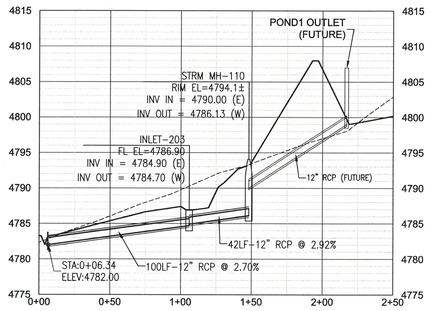
DIVERSION DITCH PIPE #1

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



STORM SEWER PLAN - POND 1 OUTLET

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



STORM SEWER PROFILE - POND 1 OUTLET

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



KEY MAP

N.T.S.

CONSTRUCTION NOTES:

1. INSTALL 4'X4' AREA INLET
   RE: CITY STD. DETAILS
2. INSTALL 48"ø MANHOLE
   RE: CITY STD. DETAILS
3. MITER PIPE END
   RE: CITY STD. DETAILS
4. INSTALL POND OUTLET STRUCTURE.
   RE: SEE DETAIL ON SHEET 21

RAD 12-28-17

GENERAL NOTES:

1. REFERENCE SHEET C0.2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. STATIONS ARE IN REFERENCE TO CENTER LINE OF ROAD, UNLESS OTHERWISE INDICATED.
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James C. Atkinson
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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	JBY

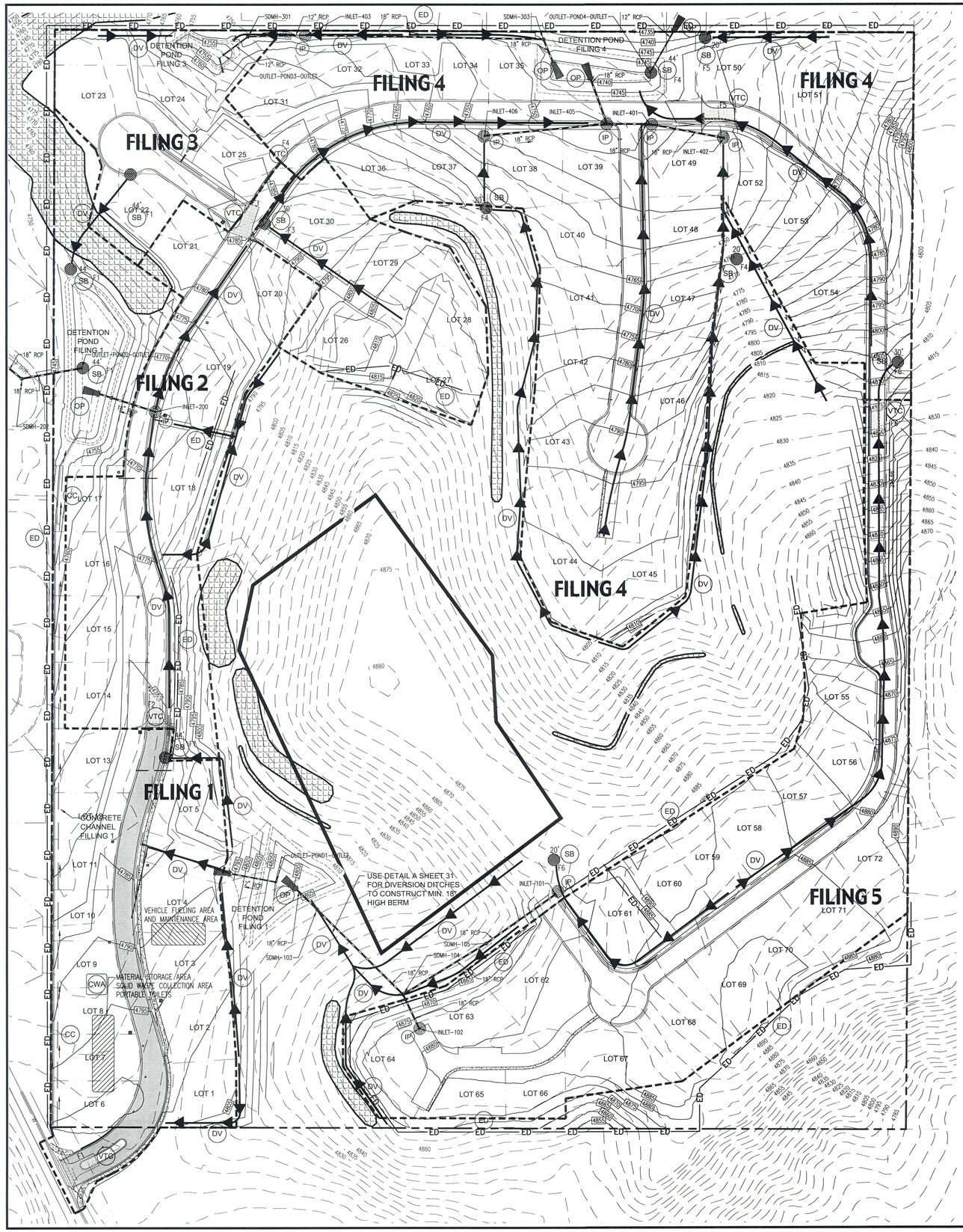
Storm Sewer Plan and Profile
Pond 3 & 4 Outlet

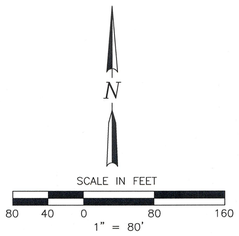
Pinnacle Ridge Subdivision

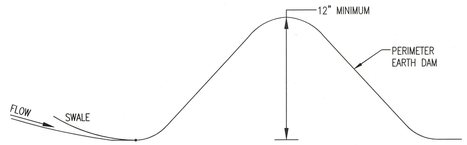
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 50'**
CAD ID: **5.0storm-f1.dwg**

~SHEET~
C5.2







EARTH DAM SECTION
SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
EARTHEN DAM	ED	ED
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
SEDIMENT BASIN	SB	25' — INVERT DIAMETER
		F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

GRADING NOTE:

FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

GENERAL NOTES:

1. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL REQUIRED EASEMENTS, RIGHT AND/OR RIGHTS-OF-WAY PURSUANT TO THE DISCHARGE FROM THE SEDIMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS AND GRADING OR OTHER WORK TO BE PERFORMED ON ADJACENT OR DOWNSTREAM PROPERTIES AFFECTED BY THE PLAN.
2. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1); FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE, THE IN-PLACE SEDIMENT CONTROL MEASURES WILL BE MAINTAINED ON A CONTINUING BASIS UNTIL THE SITE IS PERMANENTLY STABILIZED AND ALL PERMIT REQUIREMENTS ARE MET.
3. REFER TO CITY OF GRAND JUNCTION STANDARD DRAWINGS AND SPECIFICATIONS.
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE 5-2-1 DRAINAGE AUTHORITY. CONTACT MARK BARSLUND 970-201-1362

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

N/A

CITY DEVELOPMENT ENGINEER DATE

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT
1	8/28/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017

BY: DLS DLS JSY

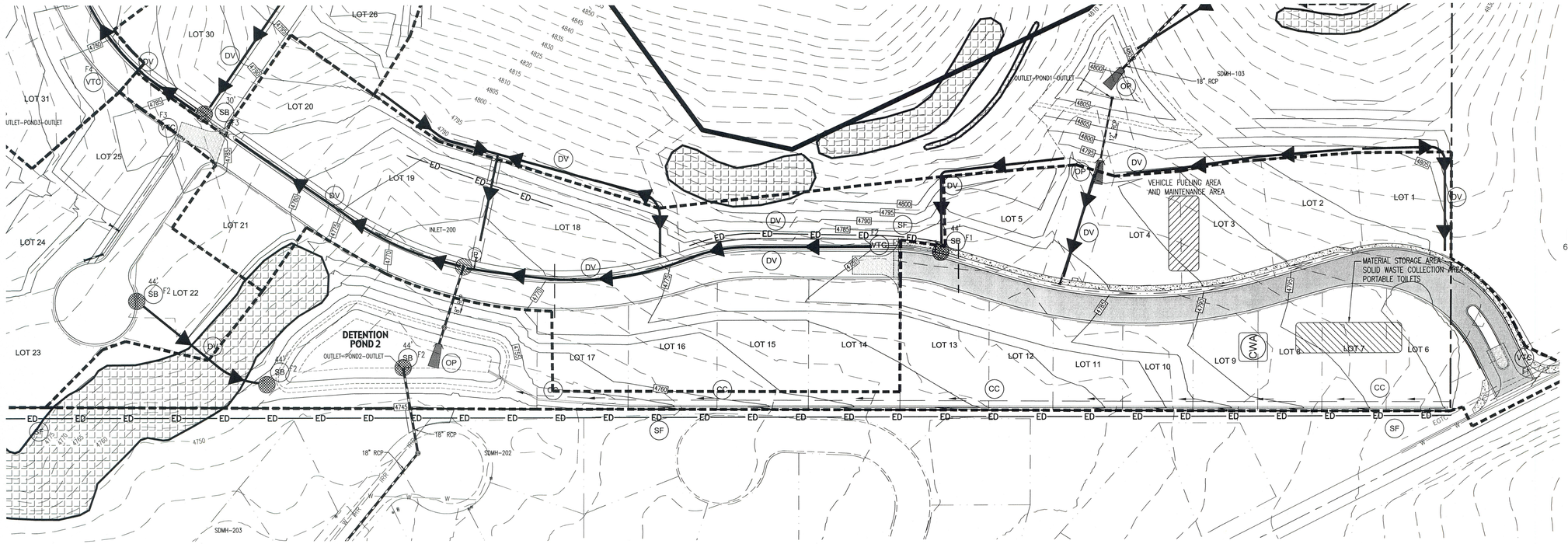
Overall Construction Stormwater Management Plan

Pinnacle Ridge Subdivison Filing 1

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 07/08/15
SCALE:
CAD ID: 6.0swm-f1.dwg

~SHEET~
C6.0



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FINAL PLAN

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2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 13, 2017

Construction Stormwater Management Plan Filling 1

Pinnacle Ridge Subdivison Filing 1

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **SEE PLAN**
CAD ID: **6.0swm-f1.dwg**

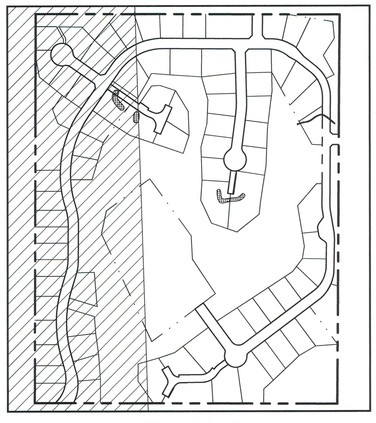
~SHEET~
C6.1

GRADING NOTE:

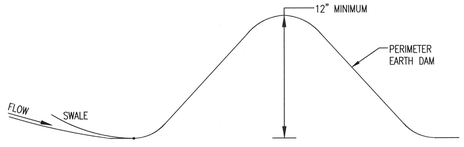
FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

GENERAL NOTES:

1. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL REQUIRED EASEMENTS, RIGHT AND/OR RIGHTS-OF-WAY PURSUANT TO THE DISCHARGE FROM THE SEDIMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS AND GRADING OR OTHER WORK TO BE PERFORMED ON ADJACENT OR DOWNSTREAM PROPERTIES AFFECTED BY THE PLAN.
2. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1); FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE, THE IN-PLACE SEDIMENT CONTROL MEASURES WILL BE MAINTAINED ON A CONTINUING BASIS UNTIL THE SITE IS PERMANENTLY STABILIZED AND ALL PERMIT REQUIREMENTS ARE MET.
3. REFER TO CITY OF GRAND JUNCTION STANDARD DRAWINGS AND SPECIFICATIONS.
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE 5-2-1 DRAINAGE AUTHORITY. CONTACT MARK BARSLUND 970-201-1362



KEY MAP
N.T.S.



EARTH DAM SECTION
SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
EARTHEN DAM	ED	ED
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
SEDIMENT BASIN	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

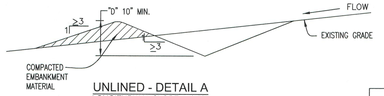
CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

N/A

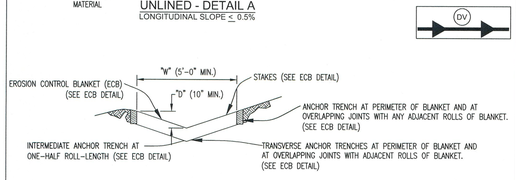
CITY DEVELOPMENT ENGINEER DATE

DIVERSION DITCH DETAIL A

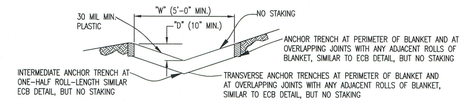
DV



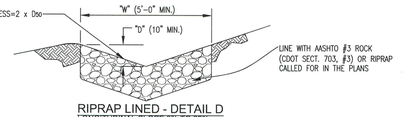
UNLINED - DETAIL A
LONGITUDINAL SLOPE < 0.5%



EROSION CONTROL BLANKET (ECB) LINED - DETAIL B
LONGITUDINAL SLOPE 0.5% TO 3 %



PLASTIC LINED - DETAIL C
LONGITUDINAL SLOPE 3% TO 33%



RIPRAP LINED - DETAIL D
LONGITUDINAL SLOPE 3% TO 33%

DIVERSION DITCH INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF DIVERSION DITCH.
   - TYPE OF DITCH (UNLINED, ECB PLASTIC LINED OR RIPRAP LINED).
   - LENGTH OF EACH TYPE OF DITCH.
   - DEPTH, "D", AND WIDTH, "W" DIMENSIONS.
   - FOR ECB LINED DITCH, EROSION CONTROL BLANKET TYPE (SEE ECB DETAIL).
   - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, "D 50 ".
2. SEE DRAINAGE PLANS FOR DETAILS OF ANY PERMANENT CONVEYANCE FACILITIES OR DIVERSION DITCHES EXCEEDING A 2 YEAR FLOOD 10 CFS.
3. DIVERSION DITCHES INDICATED ON INITIAL SWMP PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES..
4. FOR ECB LINED DITCHES, INSTALLATION OF EROSION CONTROL BLANKET SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.
5. IN LOCATIONS WHERE CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION DITCH, THE PERMITTEES SHALL INSTALL A TEMPORARY CULVERT WITH A MINUM DIAMETER OF 12-INCHES.

DIVERSION DITCH MAINTENANCE NOTES

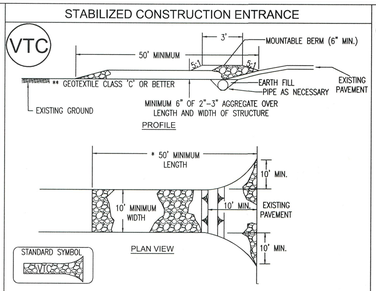
1. THE SWMP MANAGER SHALL INSPECT DIVERSION DITCHES WEEKLY AND DURING AND AFTER ANY STORM. MAKE REPAIRS AS NECESSARY.
2. DIVERSION DITCHES ARE TO REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION, OR IF APPROVED BY LOCAL JURISDICTION MAY BE LEFT IN PLACE.
3. IF DIVERSION DITCHES ARE REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, DRILL SEEDED, HAY CRIMPED MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

DETAIL BASED ON DETAILS PROVIDED BY DOUGLAS COUNTY

Urban Drainage and Flood Control District Drainage Criteria Manual (V.3)	Figure C5-3 DIVERSION DITCH AND DIKE

STABILIZED CONSTRUCTION ENTRANCE

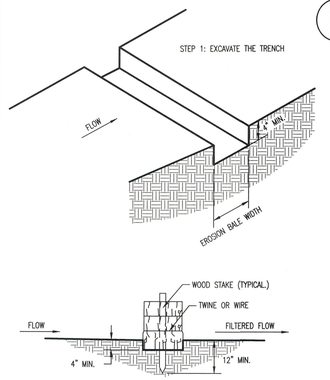
VTC



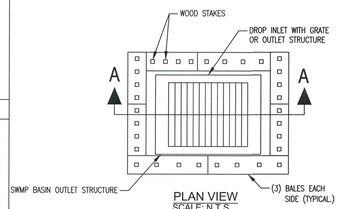
Construction Specification

1. Length – minimum of 50' (*30' for single residence lot).
2. Width – 10' minimum, should be flared at the existing road to provide a tuning radius
3. Geotextile fabric (filter cloth) shall placed over the exiting ground prior to placing stone. **This plan approval authority may not require single family residence to use geotextile.
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water – all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location – A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

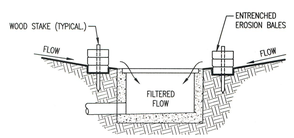
IP



EROSION BALE TRENCHING AND STAKING
SCALE: N.T.S.



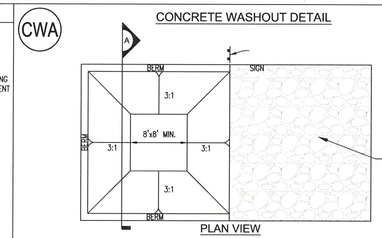
PLAN VIEW
SCALE: N.T.S.



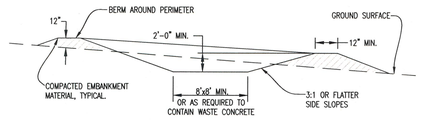
SECTION A-A
EROSION FILTER AT DROP INLET
SCALE: N.T.S.

CWA

CONCRETE WASHOUT DETAIL



PLAN VIEW



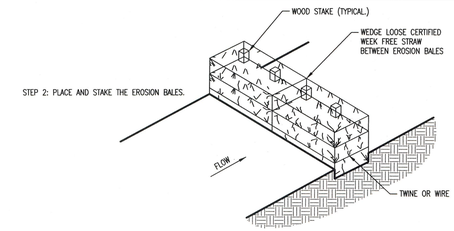
SECTION A

CONCRETE WASHOUT AREA INSTALLATION NOTES

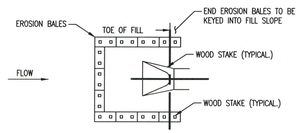
1. SEE PLAN VIEW FOR LOCATIONS OF CONCRETE WASHOUT AREA
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL IS REQUIRED AT THE ACCESS POINT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION

CONCRETE WASHOUT AREA MAINTENANCE NOTES

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, DRILL SEED AND CRIMP MULCH OR OTHERWISE STABILIZE IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
4. INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.



EROSION BALE BMP
SCALE: N.T.S.

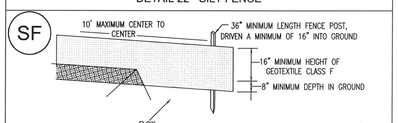


PLAN VIEW
EROSION BALE CULVERT INLET PROTECTION
SCALE: N.T.S.

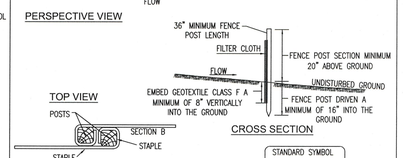
NOTES
1. STAKES SHALL BE WOOD AND SHALL BE 2" X 2" NOMINAL.
2. EROSION BALES SHALL BE 18" X 18" X 36".
3. EROSION BALES SHALL BE ENTRENCHED 4 IN. MINIMUM INTO THE SOIL TIGHTLY ABUTTED WITH NO GAPS, STAKED, AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERIMETER.

SF

DETAIL 22 - SILT FENCE



PERSPECTIVE VIEW



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
2. Geotexile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength:	50 lbs./in. (min.)	Test: MSMT 509
Tensile Modulus:	20 lbs./in. (min.)	Test: MSMT 509
Flow Rate	0.3 gal. ft. / minute (max.)	Test MSMT 322
Efficiency	75% (min.)	Test: MSMT 322

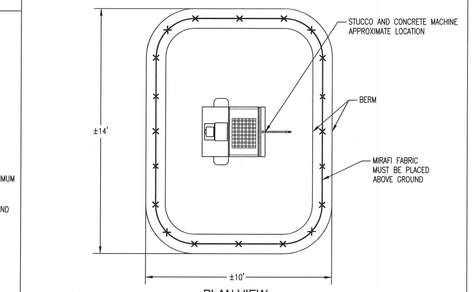
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

SILT FENCE

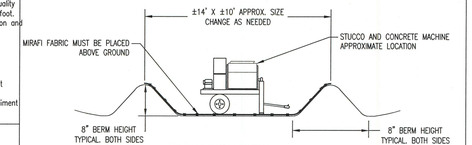
Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

NOTE:
In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.



PLAN VIEW
SCALE: N.T.S.



ELEVATION VIEW
SCALE: N.T.S.

STUCCO & CONCRETE MACHINE BMP
SCALE N.T.S.

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828
COLORADO LICENSED 18828 PROFESSIONAL ENGINEER
11-20-17

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MAJOR SUBDIVISION
FINAL PLAN

3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017 JSV
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017 DLS
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017 DLS
	REV. DATE	COMMENT BY

Construction Stormwater Management Plan Details

Pinnacle Ridge Subdivison
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 07/06/15
SCALE:
CAD ID: 6.0swm-f1.dwg

~SHEET~
C6.2

DEVELOPMENT IMPROVEMENTS AGREEMENT

Planning File No. SUB-2017-271

1. **Parties:** The parties to this Development Improvements Agreement (Agreement) are **Two R & D, LLC.**, a limited liability company (Developer) and the **City of Grand Junction**, Colorado (City).

For valuable consideration, the receipt and adequacy of which is acknowledged, the Parties agree as follows:

2. **Effective Date:** The Effective Date of this Agreement shall be the date that it is signed by the Community Development Director.

RECITALS

The Developer seeks approval to develop property described on Exhibit A (Property). The Property, known as **Pinnacle Ridge Subdivision, Filing 1**, has been reviewed and approved under the above-referenced planning file number (Development).

The City seeks to protect the health, safety and general welfare of the community by requiring the completion of various improvements to the Property and limiting the harmful effects of substandard development.

A further purpose of this Agreement is to protect the City from the cost of completing necessary improvements itself; this Agreement is not executed for the benefit of materialmen, laborers or others providing work, services or material to the Developer and/or the Property or for the benefit of the owner(s), purchaser(s) or user(s) of the Property.

The mutual promises, covenants and obligations contained in this Agreement are authorized by state law, the Colorado Constitution and City's land development ordinances and regulations.

DEVELOPER'S OBLIGATION

3. **Improvements:** The Developer shall design, construct and install, at its own expense, those on- and off-site improvements listed on Exhibit B (Improvements).

3a. Developer agrees to pay the City for its Administration of the Development. The hourly rate for those services is $45.00/hour. Administration includes but is not limited to the time expended by the City's planner, engineer and attorney in directing, advising, correcting and enforcing (by means other than litigation) this Agreement and/or the approved development plan. Making disbursements and calling/collecting security are administration services and shall be charged at $45.00/hour. See paragraph 19 concerning attorneys' fees and litigation costs.

3b. The Developer agrees to pay a flat fee of **$1,170.00** for construction inspection. If in the City's determination the scope of this project is such that the City needs to engage independent consultants to adequately provide inspection services, Developer agrees to pay such costs in addition to all others for which Developer is responsible hereunder.

3c. The Developer's obligation to complete the Improvements is and shall be independent of any obligations of the City contained herein.

4. **Security:** To secure the performance of its obligations under this Agreement the Developer shall supply a financial guarantee. The Developer is required to post security in an amount of **$569,217.30** in a form and with terms acceptable to the City (Security). The Security shall be in the form of a cash deposit made to the city, a letter of Credit, a disbursement agreement or other form approved by the City Attorney. The Security specific to this Agreement is attached as Exhibit C and is incorporated by this reference as if fully set forth.

Form of Security: Disbursement Agreement

5. **Standards:** The Developer shall construct the Improvements in accordance with the City's standards and specifications.

6. **Warranty:** The Developer shall warrant the Improvements for two years following Acceptance by the City. "Warrant" or "Warranty" as used herein means the Developer shall take such steps and incur such costs as may be needed so that the Improvements or any part or phase thereof as repaired and/or replaced, shall comply with the Development's construction plans and/or site plan and City standards and specifications in effect as of the Effective Date of this Agreement.

6a. Upon acceptance of the Improvements by the City, the Developer shall provide a Maintenance Guarantee in an amount of **$94,869.55** (Line G2, Exhibit B).

6b. The Maintenance Guarantee shall be secured by a letter of credit, cash escrow or other form acceptable to the City.

7. **Commencement, Completion and Abandonment Periods:** The Developer shall commence work on the Improvements within 30 days from the Effective Date of this Agreement; that date is known as the Commencement Date.

7a. The Developer shall complete the Improvements by the end of the twelfth month from the Commencement Date; that date is known as the "Completion Date."

7b. The Developer shall not cease construction for any period of more than 60 consecutive days. If construction is ceased for 60 or more consecutive days, the Director may deem the Development abandoned.

8. **Compliance with Law:** The Developer shall comply with all applicable federal, state and local laws, ordinances and regulations when fulfilling its obligations under this Agreement. When necessary to protect the public health, safety or welfare, the Developer shall be subject to laws, ordinances and regulations that become effective after the Effective Date.

9. **Notice and Correction of Defect:** The Developer by and through its engineer shall provide timely written notice to the issuer of the Security and the Director when the Developer and/or its engineer has knowledge, that an Improvement does not conform to City standards or is otherwise defective, in whole or in part. The Developer shall correct all non-conforming construction and/or defects within thirty (30) days from the issuance of the notice by its engineer of a/the defect.

10. **Acceptance of Improvements:** The City will not accept Improvements until the Developer documents that the Developer owns the Improvements free and clear of any liens, encumbrances or other restrictions on the Improvements other than those that have been accepted by the City Attorney.

10a. The City shall have no responsibility or liability with respect to any street or other Improvement, notwithstanding the use of the same by the public, unless the street or other Improvement has been accepted in writing by the City.

10b. The City will not issue written acceptance with regard to any Improvement, including any street, storm drainage facility, sewer, water facility or other required Improvement, until the Developer:

(i) furnishes to the City Engineer as-built drawings in appropriate electronic form, stamped and sealed by a professional engineer and copies of results of all construction control tests required by City specification or by a City inspector or engineer;

(ii) provides written evidence to the City Engineer under signature of a qualified expert that the earth, soils, lands and surfaces upon, in and under which the Improvements have been constructed or which are necessary for the Improvements are free from toxic, hazardous and other regulated substances or materials;

(iii) provides written evidence to the City Attorney that the title to lands underlying the Improvements are free and clear from all liens and encumbrances, except those items and encumbrances which may be approved in writing by the City Attorney; and

(iv) provides written evidence, certified by the Developer's engineer, that the work was systematically inspected and tested and that the materials and construction were in conformance with City-approved plans and specifications.

10c. Acceptance by the City shall only occur when the City Engineer, sends a writing to such effect.

10d. Approval and/or acceptance of any Improvement(s) does not constitute a waiver by the City of any right(s) that it may have to demand correction of a defect in or failure of Improvements detected or occurring after acceptance.

11. **Reduction of Security:** Upon acceptance of Improvements, the City will release **$474,347.75** (Line G1, Exhibit B, Total Improvement Costs) of the Security, except that a Developer in default under this Agreement has no right to a release of the Security in any amount.

12. **Use of Proceeds:** The City shall use Security funds only to complete Improvements, correct failed or defective Improvements, or pay administration, inspection, development or impact fees.

13. **Events of Default:** The following shall constitute a default by the Developer:

13a. Developer's failure to complete each portion of the Improvements on or before the Completion Date;

13b. Developer's failure to demonstrate reasonable intent to correct defective construction of any Improvements within the applicable warranty period;

13c. Developer's insolvency, the appointment of a receiver for the Developer or the filing of a voluntary or involuntary petition in bankruptcy respecting the Developer;

13d. Notification to the City, by any lender with a lien on the Property, of a default by Developer on any obligation to such lender;

13e. With regard to the Property or any portion thereof, initiation of any foreclosure action regarding any lien or encumbrance, initiation of mechanics lien procedure, or assignment or conveyance of the Property in lieu of foreclosure;

13f. Notification to the City from the bank issuing the Security that it will not renew the Security at a time when security is still required hereunder and no substitute collateral acceptable to the City has been provided by the Developer.

Except in the event of 13c, 13d and 13e above, in which the City may immediately declare a default without prior notice to the Developer, the City may not declare a default until written notice has been sent to the Developer in accordance with section 26 below.

14. **Measure of Damages:** The measure of damages for breach of this Agreement by the Developer shall be the reasonable cost of satisfactorily completing the Improvements, plus reasonable expenses. Expenses may include but are not limited to contracting costs, collection costs and the value of planning, engineering, legal and administrative staff time devoted to the collection/completion of the Improvements. For Improvements upon which construction has not begun, the estimated costs of the Improvements as shown on Exhibit B shall be *prima facie* evidence of the minimum cost of completion; however, the maximum amount of the Developer's liability shall not be established by that amount or the amount of the Guarantee. In no event shall Developer be liable to the City for consequential damages including, but not limited to, lost profits or advantage.

15. **City's Rights Upon Default:** Upon default the City may draw on or proceed to collect the Security up to the full face amount. The City may also exercise its rights to disbursement of loan proceeds or other funds under the disbursement agreement.

15a. The City shall have the right to complete Improvements itself or it may contract with a third party for completion.

15b. The Developer grants to the City, its successors, assigns, agents, contractors and employees, a nonexclusive right and easement to enter the Property for the purposes of constructing, reconstructing, maintaining, inspecting and repairing the Improvements.

15c. The City may assign the proceeds of the Security or other funds or assets that it may receive in accordance with this Agreement to another developer or lender that has acquired the Property by purchase, foreclosure or other lawful means. That developer or lender shall then have the same rights of completion as the City hereunder if any only if the subsequent developer or lender agrees in writing to complete or correct the Improvements and provides to the City reasonable security for that obligation.

15d. These remedies are cumulative in nature and are in addition to any other remedies the City has at law or in equity.

16. **Indemnification:** The Developer expressly agrees to indemnify and hold harmless the City, its officers, employees, agents and assigns from and against all claims, costs and liabilities of every kind and nature, for injury or damage received or sustained by any person or entity in connection with or on account of the performance or non-performance of work at the Property and/or the Improvements and/or the Development that is being done pursuant to this Agreement.

16a. The Developer further agrees to aid and defend the City in the event that the City and/or the Improvements is named as a defendant in an action concerning the performance of work pursuant to this Agreement except for a suit wherein the Developer states claim(s) against the City.

16b. The Developer is not an agent, partner, joint venturer or employee of the City.

17. **No Waiver:** No waiver of any provision of this Agreement by the City shall be deemed to be a waiver of any other provision nor shall it be deemed a continuing waiver unless expressly provided for by a written amendment to this Agreement signed by both the City and the Developer; nor shall the waiver of any default under this Agreement be deemed a waiver of any subsequent default or defaults of the same type. The City's failure to exercise any right under this Agreement shall not constitute the approval of any wrongful or other act by the Developer or the acceptance of any Improvement.

18. **Amendment or Modification:** The parties to this Agreement may amend or modify this Agreement only by written instrument executed on behalf of the City by the City Manager or his designee and by the Developer or its authorized officer. Such amendment or modification shall be properly notarized before it may be deemed effective.

19. **Attorney's Fees:** Should either party be required to resort to litigation to enforce the terms of this Agreement, the prevailing party shall be entitled to recover litigation costs, including but not limited to reasonable attorney's fees and expert witness fees, from the opposing party. The City shall be entitled to claim the value of its in-house attorneys at the rate of $150.00 per hour. If relief is awarded to both parties the attorney's fees may be equitably divided between the parties by the decision maker.

20. **Vested Rights:** This Agreement does not guarantee, represent or certify that the Developer is entitled to any approval(s) required by the City before the Developer is entitled to commence development beyond the scope of this Agreement or to transfer ownership of the Property being developed.

21. **Integration:** This Agreement, together with the exhibits and attachments thereto constitutes the entire Agreement between the parties. No statement(s), promise(s) or inducements(s) that is/are not contained in this Agreement shall be binding on the parties.

22. **Third Party Rights:** No person or entity who or which is not a party to this Agreement shall have any right of action under or be a beneficiary of this Agreement.

23. **Time:** For the purpose of computing any period of abandonment, the completion date or other date hereunder, such times in which war, civil disasters or acts of God occur or exist shall not be included if such prevents the Developer or City from performing its obligations under this Agreement. The Developer must notify the City in writing if/when it asserts impossibility of performance under this paragraph. The City may reject the Developer's assertion in writing if it finds that the condition(s) that the Developer asserts do not exist or do not reasonably justify work stoppage.

24. **Severability:** If any part, term or provision of this Agreement is held by a court of competent jurisdiction to be illegal or otherwise unenforceable, such illegality or

unenforceability shall not affect the validity of any other part, term or provision. The rights of the parties shall be construed as if the part, term or provision was never part of the Agreement.

25. **Benefits:** The benefits of this Agreement to the Developer are personal and may not be assigned without the express written approval of the City. Such approval may not be unreasonably withheld but any unapproved assignment is void.

25a. Notwithstanding the foregoing, the burdens of this Agreement are personal obligations of the Developer and also shall be binding on the heirs, successors and assigns of the Developer and shall be covenants running with the Property.

25b. The City may assign its rights under this Agreement.

25c. The City shall expressly release the Security and/or contract obligations if it accepts new security in the same or greater amount from any developer or lender who subsequently acquires the Property; however, no other act of the City shall constitute a release of the original Developer form his liability under this Agreement.

25d. When the City has issued its Acceptance regarding the Improvements, the City agrees to state the same in writing, with appropriate acknowledgments.

25e. The City shall sign a release only after all warranty periods, as extended by litigation, repair or alteration work, have expired.

26. **Notice:** Any notice required or permitted by this Agreement shall be deemed effective five calendar days after deposit with the United States Postal Service, first class certified mail, return receipt requested, postage prepaid and addressed as follows:

If to Developer: **Two R & D, LLC**
Attention: Robert W. Jones, II
PO Box 39
Fruita, CO 81521

Cc:

If to City: Office of the City Attorney
250 North 5th Street
Grand Junction, CO 81501

Cc: Community Development Department
250 North 5th Street
Grand Junction, CO 81501

27. **Recordation:** Developer shall pay the costs to record a memorandum of this Agreement (Exhibit D) in the records of the Mesa County Clerk and Recorder's Office. The Developer may record the entire Agreement.

28. **Immunity:** Nothing contained in this Agreement constitutes a waiver of the City's sovereign or other immunity under any applicable law.

29. **Personal Jurisdiction and Venue:** Personal jurisdiction and venue for any action commenced by either party to this Agreement whether arising out of or relating to the Agreement, the Security, the Maintenance Guarantee or any action based arising out of or under this Agreement shall be deemed to be proper only if such action is commenced in Mesa County, Colorado. The Developer expressly waives its right to bring such action in or to remove such action to any other court whether state or federal.

DEVELOPER:

By: Robert W. Jones II 12/18/17
Robert W. Jones, II Date

Community Development Dept.
City of Grand Junction
250 North Fifth Street
Grand Junction, CO 81501

[signature] 12-20-17
Planner Date

[signature] 12-20-17
Development Engineer Signature Date

[signature] 12-21-17
Community Development Director Date

EXHIBIT A

Property

The SW1/4 of the NW1/4 and the South 10 Acres of the NW1/4 of the NW1/4 of said Section 21, EXCEPT Blocks 1, 2, and 3 of The Energy Center Subdivision Phase 1.
AND
Lots 1-9, Block 1, Lots 1, 3-10, Block 2, The Energy Center Subdivision Phase 1.

EXHIBIT B

IMPROVEMENTS COST ESTIMATE

DATE: December 15, 2017
DEVELOPMENT NAME: **PINNACLE RIDGE FILING 1**
LOCATION: Mariposa Drive, Grand Junction, CO
PERSON PREPARING:

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
A.	**SANITARY SEWER**				
1	8" PVC Sanitary Sewer Main	LF	1,438	$ 26.00	$ 37,388.00
2	10" PVC Sanitary Sewer Main	LF		$ 30.00	$ -
3	4 " PVC Sanitary Sewer Main	LF		$ 6.00	$ -
4	Sewer services	EA	13	$ 620.00	$ 8,060.00
5	Sanitary Sewer Manhole	EA	11	$ 3,668.28	$ 40,351.08
6	Sanitary Sewer Drop Manhole	EA	1	$ 9,271.09	$ 9,271.09
7	Connection to Existing Manhole	EA	1	$ 500.00	$ 500.00
8	Concrete Encasement	LF		$ 20.00	$ -
	Subtotal Part A Sanitary Sewer				**$ 95,570.17**
B.	**DOMESTIC WATER**				
1	Air Vacuum Release Valve	EA	1	$ 5,254.00	$ 5,254.00
2	8" PVC Water Main	LF		$ 30.00	$ -
3	10" PVC Water Main	LF	776	$ 33.00	$ 25,608.00
4	_4__" Gatevalve	EA			$ -
5	8" Gatevalve	EA		$ 1,200.00	$ -
6	10" Gatevalve	EA	2	$ 2,500.00	$ 5,000.00
7	Water Services (copper)	EA	13	$ 820.00	$ 10,660.00
8	Connect to Existing Water Line	EA	1	$ 4,822.71	$ 4,822.71
9	Fire Hydrant with Valve	EA	2	$ 4,000.00	$ 8,000.00
10	Utility Adjustments	EA			$ -
11	Blowoff	EA	1	$ 500.00	$ 500.00
12	UTE Water Tap Fee	EA		$ 3,100.00	$ 3,100.00
	Subtotal Part B - Domestic Water				**$ 62,944.71**
C1	**STREETS**				
1	4" PVC Utility sleeves	LF	250	$ 15.00	$ 3,750.00
2	8" & 12" PVC irr. Sleeves	LF		$ 20.00	$ -
3	Xcel (Gas & Electric) Services	EA	13		$ -
4	Qwest and Charter Services	EA	13		$ -
5	Aggregate Base Course (Class 6) (_6" Compacted Thickness)	ton		$ 22.00	$ -
6	Aggregate Base Course (Class 6) (12" Compacted Thickness)	ton	2,216	$ 20.00	$ 44,320.00
7	Hot Bituminous Paving, Grading (3" thick)	TON	409	$ 92.00	$ 37,628.00
8	Hot Bituminous Paving, Grading__ (5" thick)	TON		$ 92.00	$ -
9	Hot Bituminous Paving, Patching (3" Thick)	SY	400	$ 14.00	$ 5,600.00
10	EPDM Ditch Liner	SY	125	$ 13.00	$ 1,625.00
11	spill curb and gutter	LF	320	$ 15.00	$ 4,800.00

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
12	Concrete Curb and Gutter (2' wide)	LF		$ 22.00	$ -
13	Concrete Curb & Gutter (2' wide X 12" high)	LF	1,032	$ 25.00	$ 25,800.00
14	Monolithic, Vertical Curb, Gutter and Sidewalk (6.5' Wide)	LF	196	$ 43.00	$ 8,428.00
15	Drive Over Curb, Gutter, and Sidewalk (6.5' Wide)	LF	158	$ 43.00	$ 6,794.00
16	Detached Concrete Sidewalk (6' Wide)	LF	507	$ 28.00	$ 14,196.00
17	Concrete Gutter and Driveway Section (6" Thick)	SY			
18	Concrete Drainage Pan (6' Wide, 6" Thick)	LF		$ 15.00	$ -
19	Concrete Corner Fillet	EA	2	$ 5,000.00	$ 10,000.00
20	Concrete Curb Ramp	SY			$ -
21	8" Comb. Cross pans, Fillets & ADA Ramps	SF			$ -
22	Concrete Driveway (_6" Thick)	SY			$ -
23	Driveway/Concrete Repair	SY			$ -
24	Retaining Walls	LF	0	$ 25.00	$ -
25	Street Signs	EA	5	$ 400.00	$ 2,000.00
26	Striping (New, Remove/Replace)	LF			$ -
27	Street Lights	EA	3	$ 2,500.00	$ 7,500.00
28	Signal Construction or Reconstruction	LS			$ -
29	Flowable Fill	CY			$ -
30	End of the Road Barrier	EA	1	$ 1,000.00	$ 1,000.00
C2	**BRIDGES**				
					$ -
1	Box Culvert Pre-Cast	LS			$ -
2	Box Culvert Cast-in-Place	LS			$ -
3	Wingwalls	LS			$ -
4	Parapet Wall	LS			$ -
5	Railing (handrail, guardrail)	LS			$ -
	Subtotal Part C - Streets and Bridges				**$ 173,441.00**
D1	**EARTHWORK**				
1	Mobilization	LS	0	$ 14,500.00	$ -
2	Clearing and Grubbing	AC	0	$ 400.00	$ -
3	Unclassified Excavation	CY	0	$ 4.00	$ -
4	Unclassified Embankment	CY	0	$ 4.00	$ -
5	Import Material	CY	0	$ 3.00	$ -
6	Dry utilities trenching	LF	1,450	$ 4.00	$ 5,800.00
7	Re-condition / Subgrade Prep.	SY	400	$ 1.25	$ 500.00
8	Rock in Ditch	LF	497	$ 5.00	$ 2,485.00
D2	**REMOVALS AND RESETTING**				
1	Removal of Asphalt	SY			$ -
2	Removal of Miscellaneous Concrete	SY			$ -
3	Remove Curb and Gutter	LF	107	$ 5.00	$ 535.00
4	Removal of Culverts	LF			$ -
5	Remove Structures	EA		$ 400.00	$ -
6	Remove Signs	EA			$ -
7	Remove Fence	LF			$ -
8	Adjust Manhole	EA	13	$ 500.00	$ 6,500.00
9	Adjust Valvebox	EA	4	$ 100.00	$ 400.00
10	Relocate or Adjust Utilities	LS		$ 1,000.00	$ -
11	House & Garage Demo	LS			$ -

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
D3	**EROSION CONTROL, SEEDING, AND SOIL RETENTION**				
1	Sod	SY			$ -
2	Seeding (Native)	AC	7	$ 500.00	$ 3,500.00
3	Seeding (Bluegrass/Lawn)	SY or AC			$ -
4	Hydraulic Seed and Mulching	SY or AC			$ -
5	Soil Retention Blanket	SY			$ -
6	Silt Fence	LF			$ -
7	Straw Waddles	LF			$ -
8	Temporary Berms	LF	0	$ 1.75	$ -
9	Inlet Protection	EA	1	$ 500.00	$ 500.00
10	Sediment Trap/Basin	EA	0	$ 500.00	$ -
11	Monthly Maintenance/Inspection	Month			$ -
12	Watering (Dust Control)	LS	0	$ 3,500.00	$ -
13	Temporary Irrigation	LS	0	$ 3,500.00	$ -
14	Tracking Pad	EA	1	$ 1,200.00	$ 1,200.00
D4	**STORM DRAINAGE FACILITIES**				
1	Finish Grading (incl. Swales, and Ponds)	LS	0	$ 5,000.00	$ -
2	18" ADS Storm Drain Pipe	LF		$ 20.00	$ -
3	15" RCP Storm Drain Pipe	LF		$ 35.00	$ -
4	18" RCP Storm Drain Pipe	LF	875	$ 45.00	$ 39,375.00
5	24" RCP Storm Drain Pipe	LF		$ 40.00	$ -
6	30" RCP Storm Drain Pipe	LF		$ 50.00	$ -
7	18" RCP Flared End Section	EA	2	$ 680.00	$ 1,360.00
8	30" Flared End Section	EA		$ 2,000.00	$ -
9	48" Storm Drain Manhole	EA	6	$ 3,000.00	$ 18,000.00
10	60" Storm Drain Manhole	EA		$ 3,500.00	$ -
11	72" Storm Drain Manhole	EA		$ 4,000.00	$ -
12	Manhole with Box Base	EA			$ -
13	Connection to Existing MH	EA			$ -
14	Single Curb Opening Storm Drain Inlet	EA		$ 1,000.00	$ -
15	Double Curb Opening Storm Drain Inlet	EA		$ 2,000.00	$ -
16	Triple Curb Opening Storm Drain Inlet	EA		$ 3,000.00	$ -
17	Area Inlet - large	EA	1	$ 2,000.00	$ 2,000.00
18	Detention Area Outlet structure	EA	1	$ 5,000.00	$ 5,000.00
19	EPDM Pond Liner	SY	500	$ 13.00	$ 6,500.00
20	Pump Systems including Electrical	LS		$ 2,000.00	$ -
21	Concrete V-pan (2' wide x 6" thick)	LF	150	$ 4.00	$ 600.00
22	seep drains	LF		$ -	$ -
23	Install Diversion Ditches	LF	0	$ 4.00	$ -
	Subtotal Part D - Grading and Drainage				**$ 94,255.00**
E1	**IRRIGATION**				
1	Connect to Existing Pipe	LS			$ -
2	4" PVC Irrigation Pipe	LF		$ 3.00	$ -
3	8" PVC Irrigation Pipe	LF		$ 4.00	$ -
4	Fittings and Valves	LS			$ -
5	Services	EA		$ 10.00	$ -
6	Pump System and Concrete Vault	LS			$ -
7	Irrigation Structure	EA		$ 1,800.00	$ -
8	Vacuum Relief and/or Air Release Valve	EA			$ -
E2	**LANDSCAPING**				
1	Design/Architecture	LS			$ -
2	Earthwork	CY			$ -
3	Hardscape Features	LS			$ -
4	Plant Material & Planting	LS	1	$ 13,000.00	$ 13,000.00
5	Irrigation System	LS			$ -

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
6	Curbing	LF			$ -
7	Retaining Walls & Structures	LF			$ -
8	1 Year Maintenance Agrmnt.	LS			$ -
9	Topsoil	CY			$ -
	Subtotal Part E - Landscaping and Irrigation				**$ 13,000.00**
	Subtotal Construction Costs				**$ 439,210.88**
F.	**MISCELLANEOUS ITEMS**				
1	Construction staking/surveying	%	2.00%	$ 439,210.88	$ 8,784.22
2	Developer's inspection cost	%	2.00%	$ 439,210.88	$ 8,784.22
3	General construction supervsion	%		$ 439,210.88	$ -
4	Quality control testing	%	2.00%	$ 439,210.88	$ 8,784.22
5	Construction traffic control	%	0.00%	$ 439,210.88	$ -
6	City inspection fees	%	0.00%	$ 439,210.88	$ -
7	As-builts	%	2.00%	$ 439,210.88	$ 8,784.22
	Subtotal Part F - Miscellaneous Items				**$ 35,136.87**

% = Percentage of total site construction costs

G.	**COST SUMMARY**		
1	**Total Improvement Costs**		**$ 474,347.75**
2	**City Security (20%)**		**$ 94,869.55**
3	**Total Guarantee Amount**		**$ 569,217.30**

NOTES
1. All prices shall be for items complete in place and accepted.
2. All pipe prices shall include excavation, pipe, bedding, backfill, and compaction.
3. Water main shall include pipe, excavation, bedding, backfill, bends, and appurtenances not itemized elsewhere.
4. All concrete items shall include Aggregate Base Course where required by the drawings.
5. Fill in the pipe type for irrigation pipe and sleeves.
6. Reconditioning shall be calculated to at least 6" outside of back of walk on both sides.
7. Units can be changed if desired, simply annotate what is used.
8. Additional lines or items may be added as needed.

Robert W. Jan 12/18/17
Signature of Developer Date
(If corporation, to be signed by President and attested to by Secretary together with the corporate seals.)

I have reviewed the estimated costs and time schedule shown above and, based on the construction drawings submitted to date and the current cost of construction, I take no exception to the above.

[signature] 12-20-17
City Development Engineer Date

[signature] 12-21-17
Community Development Date

Grand Junction COLORADO
PLANNING DIVISION

Updated: 1/1/2013

RECEPTION#: 2825781
12/28/2017 12:54:51 PM, 1 of 1
Recording: $13.00,
Sheila Reiner, Mesa County, CO.
CLERK AND RECORDER

RECORDING MEMORANDUM

Exhibit D

City of Grand Junction

Planning Division

File Number: **SUB-2017-271**

This memorandum relates to and confirms that certain Development Improvements Agreement and/or Maintenance Guarantee concerning land in Mesa County, Colorado is by and between **Two R&D, LLC** (Developer) and the City of Grand Junction (City) pertaining to **Pinnacle Ridge Subdivision, Filing 1** (Project), located at **NE of Mariposa Dr., 1/4 mi north of Monument Rd**

The Developer of the Project was required by law to install and construct certain public and private improvements, the completion of which was guaranteed by a Development Improvements Agreement and/or Maintenance Guarantee. The Project is required to be constructed in accordance with the approval by the City pursuant to and in accordance with the Zoning and Development Code all as more fully detailed and described in City of Grand Junction development file number **SUB-2017-271**

The Developer and the City of Grand Junction by and through the signatures of the undersigned have determined and agreed to the type, quality and amount of improvements required and/or necessitated by the approval of the Project and that the improvements are guaranteed by and through the Development Improvements Agreement and /or Maintenance Guarantee. Furthermore, the Developer and the City agree that the Development Improvements Agreement and/or Maintenance Guarantee are contractual in nature and that the obligations under the Development Improvements Agreement and/or Maintenance Guarantee shall not be assigned except as provided in the agreement(s).

By virtue of this notice being recorded in the land records of the Mesa County Clerk and Recorder, subsequent owners and/or those that claim by, through or under the Developer are on notice of the Developer's obligations under the agreement(s).

NOW THEREFORE, the Developer and an official of the City of Grand Junction, both possessing and representing by their signatures that they possess sufficient authority, do hereby memorialize the relative, rights and obligations contained in the Development Improvement Agreement and/or Maintenance Guarantee herein characterized.

DEVELOPER:

By: Robert W. Jones II Date: 12/14/17

Type Name: **Robert W. Jones, II**
Managing Member, Two R&D, LLC

CITY OF GRAND JUNCTION:

In accordance with the above, I hereby certify that the Development Improvement Agreement and/or Maintenance Guarantee are made of record by this memorandum and that the same may be inspected and/or copied at the City of Grand Junction, Planning Division, 250 North 5th Street, Grand Junction Colorado.

Date: 12-21-17

Planning Division

Grand Junction COLORADO
COMMUNITY DEVELOPMENT

Updated: 6/14/2017

DISBURSEMENT AGREEMENT

(Improvements Guarantee)

Planning File No. SUB-2017-271

DEVELOPER: TWO R&D,LLC
BANK: ALPINE BANK
PROPERTY: PINNACLE RIDGE SUBDIVISION-FILING 1

DISBURSEMENT AMOUNT: For the construction of improvements to the Property in an amount not to exceed $ **569,217.30**.

This Agreement is entered into by and between **TWO R&D, LLC** ("Developer"), **ALPINE BANK** ("Bank") and the City of Grand Junction, Colorado ("City").

RECITALS

Developer has been required by the City to construct certain improvements to **STREETS AND UTILITIES-FILING 1** ("Improvements") in accordance with the Zoning and Development Code, Improvements Agreement and subdivision approval.

The Bank has agreed to loan funds to the Developer for construction of the improvements.

The City Engineer has approved an estimate of the costs of the Improvements and that amount or an amount not to exceed $ **569,217.30**, whichever is greater, shall be referred to as the "Funds."

The parties desire to secure the full and complete performance of the Developer's obligations and to secure that the Funds are disbursed only to pay for the Improvements.

NOW, THEREFORE, THE PARTIES AGREE:

1. **BANK PROMISES.** Bank shall dedicate or set aside the Funds on behalf of Developer and for the City's benefit within twenty-four hours of execution of this Disbursement Agreement.

Bank warrants: that the Funds are to be held in trust solely to secure Developer's obligations under the Improvements Agreement; that the Bank shall act as agent of the City in holding the Funds; that the Funds will not be paid out or disbursed to, or on behalf of, the Developer except as set forth in this document and/or as set forth in the Improvements Agreement; and that the Bank may not modify or revoke its obligation to

disburse funds to or on behalf of the Developer or the City. The Bank warrants that the Funds are and will be available exclusively for payment of the costs of satisfactory completion of the Improvements.

2. **DISBURSEMENT PROCEDURES.** The Funds shall be advanced for payment of costs incurred for the construction of Improvements on the Property in accordance with the Improvements List/Detail attached to the Improvements Agreement, the terms of which are incorporated by this reference. All disbursements must comply with the following procedures:

a) **Request for Advance.** Developer shall deliver to the Bank a written request for the disbursement of funds on forms acceptable to the Bank. Such requests shall be signed by Developer, Developer's General Contractor, Project Engineer and Architect, if applicable, and the City Engineer. By signing the request for disbursement the Developer is certifying: that all costs for which the advance is being requested have been incurred in connection with the construction of the Improvements on the Property; that all work performed and materials supplied are in accordance with the plans and specifications submitted to and approved by the City; that the work has been performed in a workmanlike manner; that no funds are being requested for work not completed, nor for material not installed; the Project Engineer has inspected the Improvements for which payment is requested; and that such improvements have been completed in accordance with all terms, specifications and conditions of the approved plans. Attached hereto is the list of those individuals, and their respective signatures, required to sign the above described request(s) for disbursement of funds.

(b) **Documentation, Waivers and Checks.** Each request for disbursement of funds shall be accompanied by: *(i)* one original and one copy of each invoice to be paid; *(ii)* checks drawn on Developer's construction loan account with the Bank, made payable to the payee(s) and for the amount of each invoice presented for payment; *(iii)* lien waivers in a form approved by the Bank prepared for signature by each payee; and *(iv)* postage paid envelopes addressed to each payee for the mailing of checks presented to the Bank.

The Bank shall verify its receipt of all lien waivers relating to any prior disbursements, which lien waivers shall be properly executed and contain no alterations or modifications from those lien waivers that have been previously presented to the Bank.

Upon approval by Developer, the Project Engineer and the Bank of the invoices being presented to the Bank, the Bank shall advance funds into the checking account designated for the payment of the invoices and mail the checks to the payee(s) in the envelopes presented to the Bank, together with lien waivers and copies of supporting invoices.

Under no circumstances shall the Bank make a disbursement for the payment of an invoice if it in good faith believes that: *(i)* the work has not been completed; *(ii)* the work has not been completed in a workmanlike manner; *(iii)* written approval has not been received from the Project Engineer; or *(iv)* any lien waiver has been altered or modified or has not been returned to the Bank.

(c) **Default.** Upon default of the Developer on any obligation to the Bank or under the Improvements Agreement, the Bank shall disburse no funds to, or at the direction of, the Developer except to the City under the terms of the Improvements Agreement. The Bank shall immediately notify the City, in writing, of any event of default or event of default as provided for in the Improvements Agreement and/or as provided herein.

(d) **Disbursement to City.** In the event the Improvements are not satisfactorily and timely constructed, or upon any default or event of default, the City Engineer shall notify the Bank to immediately cease disbursement of funds to the Developer and disburse the full amount of the remaining undisbursed funds to the City. Upon such notice, the Bank shall promptly honor the demand of the City Engineer to disburse the Funds to the City or a third party or parties designated in writing by the City. Upon final completion and acceptance of the performance required under the Improvements Agreement, the City shall refund to the Bank any funds disbursed, if any, which are not actually expended to pay all costs, expenses and liabilities, including attorney fees, incurred in completing the Improvements.

3. **DEVELOPER CONSENT:** The Developer, **TWO R&D, LLC** consents to disbursements and other actions authorized and provided for by the terms of this Agreement and/or the Improvements Agreement.

4. **LIABILITY FOR LOSS:** If the Bank fails to disburse funds in accordance with the procedures set forth, and the City suffers loss or damage, the Bank shall be liable to the City for the City's direct and consequential damages and all fees, costs and expenses, including attorney's fees.

5. **BINDING EFFECT:** This Agreement shall be binding on the heirs, successors, receivers and assigns of all parties and shall terminate when the City has accepted the Improvements and has recorded a release of the Improvements Agreement.

6. **IMMUNITY:** Nothing contained in this Agreement constitutes a waiver of the City's sovereign immunity under applicable state law.

Dated: 12-18-17

By (Bank): Address:



225 N 5th St
Grand Junction, CO 81501

Banker's Signature

Banker's Name and title: Aaron Miller, President

By (Developer): Address:



1168 E. VIA LE PAZ DR.
FRUITA, CO 81521

Developer's Signature

Developer's Name and title: ROBERT W. JONES II, MANAGING MEMBER

By (City of Grand Junction):

Community Development

Pursuant to the terms of the foregoing Disbursement Agreement (Improvements Guarantee) by and between **TWO R&D, LLC** Developer, **ALPINE BANK** as Bank and the City of Grand Junction, the following are the individuals authorized to sign written requests for the disbursement of the Funds:

Developer:

Name: ROBERT W. JONES II

Signature

Name: HEATHER JONES

Signature

Name:

Signature

Developer's General Contractor:

Name: ROBERT W. JONES II

Signature

Developer's Project Engineer:

Name: ROBERT W. JONES II

Signature

Developer's Architect:

Name:

Signature

City Development Engineer:

Name: RICK DORRIS

Signature

GRANT OF EASEMENT FOR DRAINAGE AND AGREEMENT

THE CITY OF GRAND JUNCTION, a Colorado home rule municipality, whose address is 250 N. 5th Street, Grand Junction, Colorado 81501 ("Grantor") owns the following described real property:

DISTRICT OPEN SPACE LYG BET BLK 16 & 17 THE RIDGES FIL NO 3 SEC 20 & 21 1S 1W EXC BEG N 26DEG04' W 211.36FT FR E4 COR SD SEC 20 N 32DEG10'54SEC E 150.86FT S 0DEG 13'43SEC W 88.56FT S 63DEG56'18SEC W 89.05FT TO BEG

also known by Parcel Number 2945-201-09-061 and as Ridges Metropolitan District Open Space (Burdened Property). **PINNACLE RIDGE HOME OWNERS ASSOCIATION, a Colorado nonprofit corporation** ("Grantee"), owns adjacent property described as Tract A, Pinnacle Ridge Subdivision Filing 1, (Benefitting Property). Grantor, for good and valuable consideration the receipt of which the parties acknowledge, grants and conveys to Grantee a perpetual, non-exclusive easement for installation, use and maintenance of a stormwater drainage pipe and related facilities on, over, under, through and across the Burdened Property in the specific location depicted on Exhibit A and described in Exhibit B attached hereto and made part hereof by this reference (Easement Area).

This easement shall be appurtenant to and shall run with the land and shall benefit the Benefitted Property and burden the Burdened Property in perpetuity. The use of the Easement Area by Grantee shall be limited to activities necessary for the construction, installation, use, maintenance, repair, removal, replacement, and/or improvement of a drainage pipe conveying stormwater and runoff from the drainage pond in Tract A. The easement includes the right of reasonable access to and from the Easement Area from the public street and/or from Tract A and the right to cut, remove, trim or otherwise control trees, brush, and other growth in the Easement Area that unreasonably interferes Grantee's use of the easement and rights under this Grant and Agreement.

Grantee shall be responsible for constructing, installing, maintaining, repairing and improving the drainage facilities in the Easement Area at its sole expense. Grantee shall not overburden the easement by increasing runoff beyond that associated with the development and use in accordance with the approved Pinnacle Ridge Subdivision Prelminary Plan. Grantee shall install, maintain and repair the drainage pipe/facilities so as not to cause damage to or interfere with the sewer line located in the Easement Area. Grantor may make use of the Burdened Property in any manner so long as such use does not unreasonably interfere with the easement for drainage granted hereby.

The grant described in this instrument is without warranty of title and is subject to all prior encumbrances, easements, restrictions, reservations and rights-of-way, if any, affecting the Burdened Property. Grantor covenants that it is seized of the Burdened Property and has the right and authority to grant the easement and rights described herein. Grantee shall indemnify and hold harmless the Grantor for legal actions, losses, damages and suits arising from Grantee's use of the Easement Area.

DATED: _____, 2017.

GRANTOR: City of Grand Junction, a Colorado home rule municipality

GRANTEE: Pinnacle Ridge Home Owners Association, a Colorado non-profit corporation

By: _____
Greg Caton, City Manager

By: _____
Robert W. Jones, II, Declarant

STATE OF COLORADO)
) ss.
COUNTY OF MESA)

Subscribed and sworn to before me the _____ day of _____, 2017, by Greg Caton, as City Manager of the City of Grand Junction, a Colorado home rule municipality.

Witness my hand and official seal.

My commission expires: _____

_____
Notary Public

STATE OF COLORADO)
) ss.
COUNTY OF MESA)

Subscribed and sworn to before me this ____ day of _____, 2017 by Robert W. Jones II as Declarant for Pinnacle Ridge Home Owners Association, a Colorado non-profit corporation.

Witness my hand and official seal.

My commission expires: _____

_____
Notary Public

LANDSCAPE LEGEND



Evergreen Trees

Large Deciduous Shrubs

Small Deciduous Shrubs

Landscape Boulders Optional

UTILITY NOTIFICATION CENTER OF COLORADO
CALL 811
LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

PLANT LIST

No.	Sym.	Common Name/ Biological Name	Planting Size/ Remarks	Mature Size
Trees:				
20	JUN	Utah Juniper/ Juniperus osteosperma	4'-5' Tall/ #5	15' Ht. & 15' Spd.
10	PIN	Pinon Pine/ Pinus edulis	6'-8' Tall/ B&B	25' Ht. & 15' Spd.
Shrubs:				
8	BLT	Broom Lilac Time/ Cytisus x 'Lilac Time'	18" -24" Spread/ #5	3' Ht. & 3' Spd.
9	MOR	Mormon Tea/ Ephedra virdis	15"-18" Spread/ #5	3' Ht. & 3' Spd.
40	MMA	Mountain Mohogany/ Cercocapus montanus	15"-18" Spread/ #5	10' Ht. & 6' Spd.
40	SSK	Saskatoon Serviceberry/ Amelanchier alnifolia	18"-24" Spread/ #5	10' Ht. & 8' Spd.
39	RDW	Rabbitbrush/ Chrysothamnus nauseosus	18"-24" Spread/ #5	4' Ht. & 4' Spd.
14	RSA	Russian Sage/ Perovskia artiplicifolia	18"-24" Spread/ #5	4' Ht. & 4' Spd.
28	TWS	Tall Western Sage/ Artemisia tridentata	18"-24" Spread/ #5	4' Ht. & 4' Spd.
30	YUF	Yucca Filamenentosa	15"-18" Spread/ #5	3' Ht. & 3' Spd.

*ALL PLANT TOTALS ON THE PLANT LIST SHALL BE VERIFIED WITH PLANT NUMBERS ON THE LANDSCAPE PLANS.

LANDSCAPE AND TEMPORARY IRRIGATION NOTES

1. The goal of the landscape plan is to create a natural landscape around the proposed detention ponds. Native and xeric plant materials are to be used in the landscape.
2. During excavation place all topsoil into proposed landscape areas prior to planting.
3. Planting beds are to have 3" of crushed buff landscape rock over landscape fabric. All plant material shall have a planting ring at the base of each plant with 3" of western red cedar mulch over landscape fabric
4. A temporary drip irrigation system should be provided to all plant material. Irrigation water will need to be trucked to the site and a pump will pressurize the temporary irrigation system. Each irrigation zone will need a point of connection for the water truck to hook into and deliver the necessary water to each drip zone.
5. Steel edging is to be installed along the edge of the planting beds.
6. Landscape boulders shall be 2' to 4' moss rock boulders.
7. Detention Ponds and drainage swales are to be 3" of Western Sunrise Shale. The shale shall be between 2" and 4" in size.

SOIL PREPARATION AND PLANTING SPECIFICATIONS

1.1 PREPARATION - GENERAL
A. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations and outline areas and secure Architect's acceptance before start of planting work. Make minor adjustments as may be required.

1.2 PREPARATION OF PLANTING SOIL
A. Before mixing, clean topsoil of roots, plants, stones, clay lumps, and other extraneous materials harmful or toxic to plant growth.
B. Mix soil amendments and fertilizers with topsoil as required based on existing soil conditions. Delay mixing of fertilizer if planting will not follow placing of planting soil within a few days.
C. For pit and trench type backfill, mix planting soil prior to backfilling, and stockpile at site.
D. For planting beds mix planting soil either prior to planting or apply on surface of topsoil and mix thoroughly before planting.

1.3 PREPARATION OF PLANTING BEDS
A. Spread planting soil mixture to minimum depth required to meet lines, grades, and elevations shown, after light rolling and natural settlement. Place approximately 1/2 of total amount of planting soil required. Work into top of loosened subgrade to create a transition layer, then place remainder of the planting soil.
B. Remove 8 inches to 10 inches of soil and replace with prepared planting soil mixture. Backfill for each bed with three parts topsoil and one part Cow Manure thoroughly mixed prior to placing.

1.4 EXCAVATION FOR TREES AND SHRUBS
A. Excavate pits, beds, and trenches with vertical sides and with bottom of excavation slightly raised at center to provide proper drainage. Loosen hard subsoil in bottom of excavation.
1. For balled and burlapped trees, make excavations at least half again as wide as the ball diameter and equal to the ball depth, plus following allowance for setting of ball on a layer of compacted backfill.
2. Allow for 3 inch thick setting layer of planting soil mixture.
3. For container grown stock, excavate as specified for balled and burlapped stock, adjusted to size of container width and depth.
B. Dispose of subsoil removed from planting excavations. Do not mix with planting soil or use as backfill.
C. Fill excavations for trees and shrubs with water and allow water to percolate out prior to planting.
D. Backfill pits with three parts topsoil and one part A-1 Compost thoroughly mixed prior to placing.
E. Place Agriform tablets in planting pit prior to backfilling at the following rate: three per each tree, one per each shrub.

1.5 PLANTING TREES AND SHRUBS
A. Set balled and burlapped (B&B) stock on layer of compacted planting soil mixture, plumb and in center of pit or trench with top of ball at same elevation as adjacent finished landscape grades. Remove burlap from sides of balls; retain on bottoms. When set, place additional backfill around base and sides of ball, and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill.
B. Set container grown stock, as specified, for balled burlapped stock, except cut cans on 2 sides with an approved can cutter an from plantball so as not to damage root balls.
C. Dish top of backfill to allow for mulching.
D. Apply anti-desiccant, using power spray, to provide an adequate film over trunks, branches, stems, twigs and foliage.
1. If deciduous trees or shrubs are moved when in full-leaf, spray with anti-desiccant at nursery before moving and spray again 2 weeks after planting.
E. Remove and replace excessively pruned or misformed stock resulting from improper pruning.
F. Wrap tree trunks of 2 inches caliper and larger. start at ground and cover trunk to height of first branches and securely attach. Inspect tree trunks for injury, improper pruning and insect infestation and take corrective measures before wrapping.
G. Guy and stake trees immediately after planting, as indicated .

NATIVE SEED MIX - DETENTION PONDS AND DISTURBED AREA

%	Species/ Common Name
25%	Oryzopsis hymenoides/ Indian Ricegrass
25%	Elymus lanceolatus/ Streambank Wheatgrass
25%	Hilaria jamesii/ Galleta
25%	Atriplex canescens/ Four-wing Saltbush

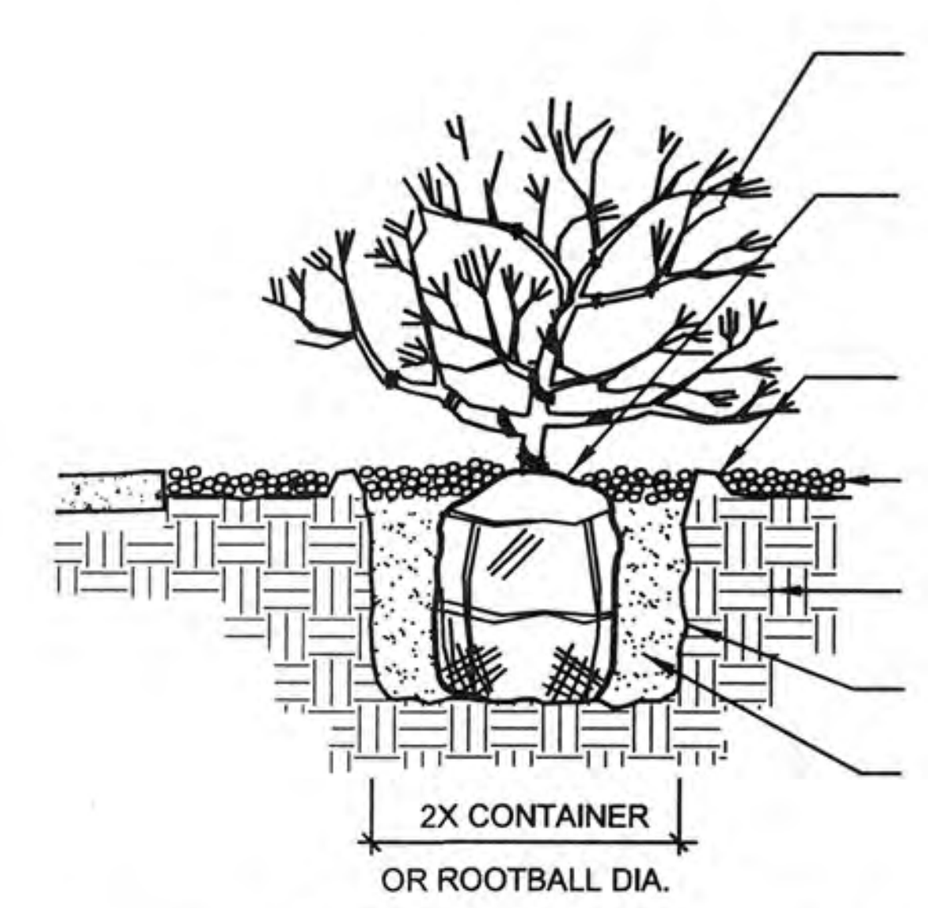
Seeding Rate: 1-2 lbs/ 1,000 sq. ft. or 25 lbs/ acre
Seed Mid-September to Mid-October or Mid-March to Mid-April

All seed needs to be well mixed, broadcast seeded, followed by hand raking to cover seed, and then an application of 800 pounds/acre of Biosol to improve germination. Hydromulch the seeded area with 2500 lbs/acre of virgin wood fiber hydromulch and 150 lbs/acre of organic tackifier. Do not hydroseed and do not seed if standing water or snow/frozen ground are present.

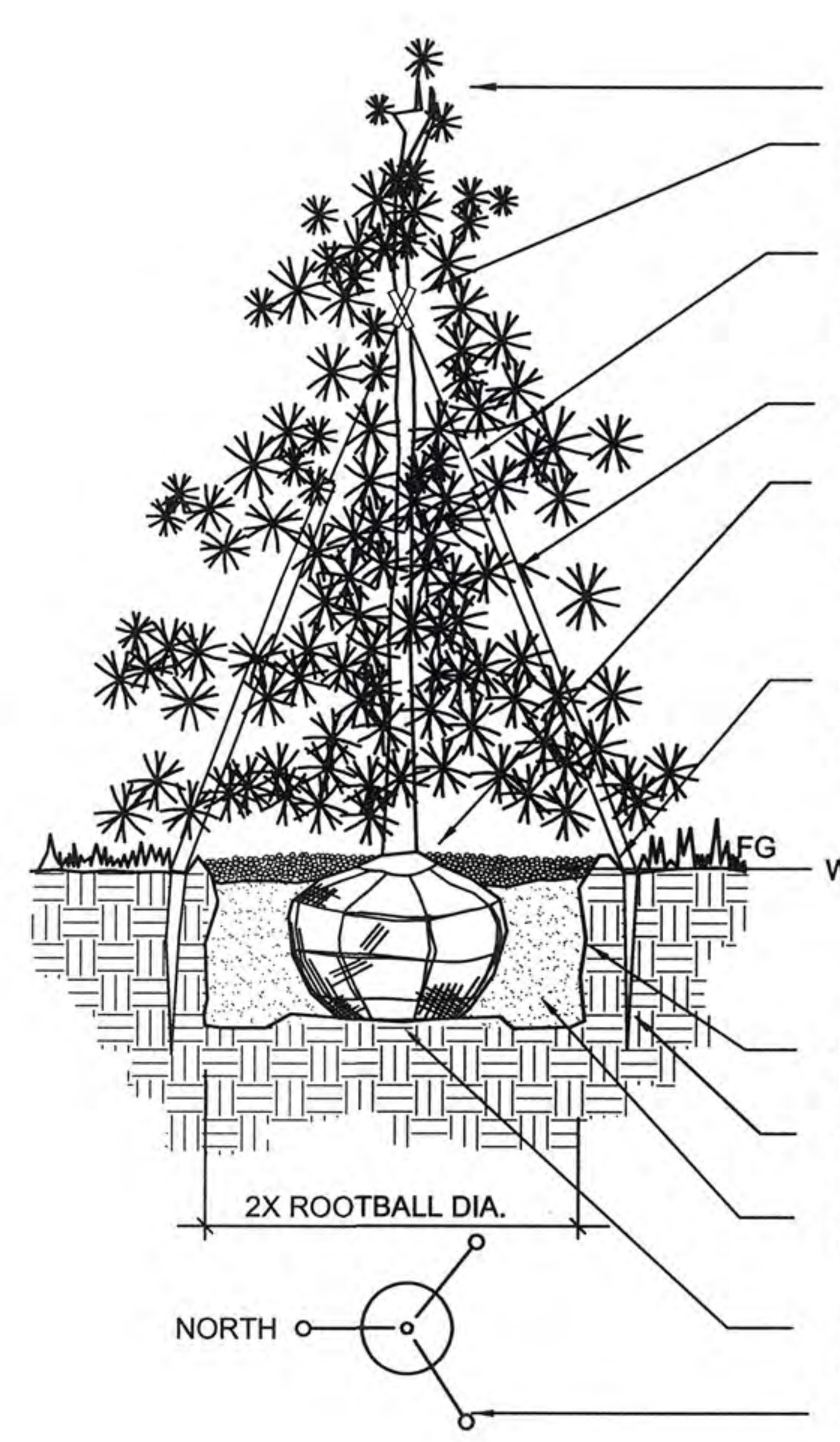
First year maintenance needed to establish good growth should include temporary irrigation and mowing to control annual weeds. Mowers should be rotary and the tractor small enough not to rut the soil and damage the vegetation. If needed, spot treat with approved herbicides to control noxious weeds. Reseed bare areas after the first growing season.

Following initial revegetation efforts, the revegetated area shall be maintained for a period of three years or until all vegetation is firmly established in the reclamation area.

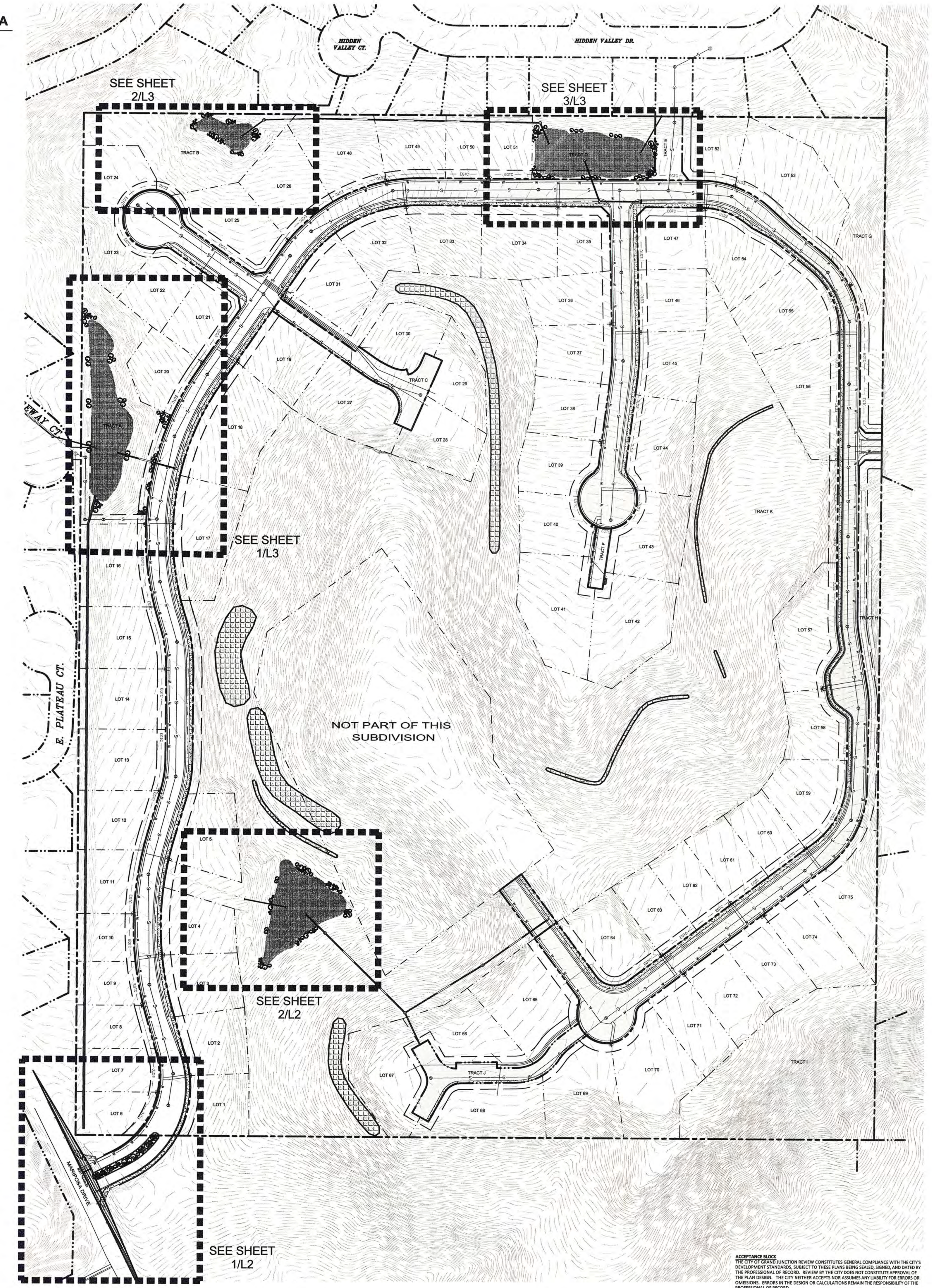
Irrigate with watering trucks as needed for the first two growing seasons.



2 Shrub Planting Detail
SCALE: NTS



3 Evergreen Tree Planting Detail
SCALE: NTS



1 Overall Landscape Key Plan
SCALE: 1" = 100'-0"

ACCEPTANCE BLOCK
THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.
CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY PLANNER [signature] DATE 12-28-17

VORTEX ENGINEERING, INC.
* CONSTRUCTION MANAGERS & SITE PLANNERS
* PROJECT MANAGERS
* CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

MRLA
MITCH REWOLD LANDSCAPE ARCHITECT
LANDSCAPE ARCHITECTURE AND LAND PLANNING
386 34 1/2 Road
Palisade, Colorado 81526 (970) 434-1155

MITCHELL L REWOLD 378
01/01/2008
Original Date of Licensure
STATE OF COLORADO
LICENSED LANDSCAPE ARCHITECT

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REV. DATE	COMMENT	BY

LANDSCAPE PLAN
PINNACLE RIDGE SUBDIVISION
Mariposa Drive
Grand Junction, Colorado

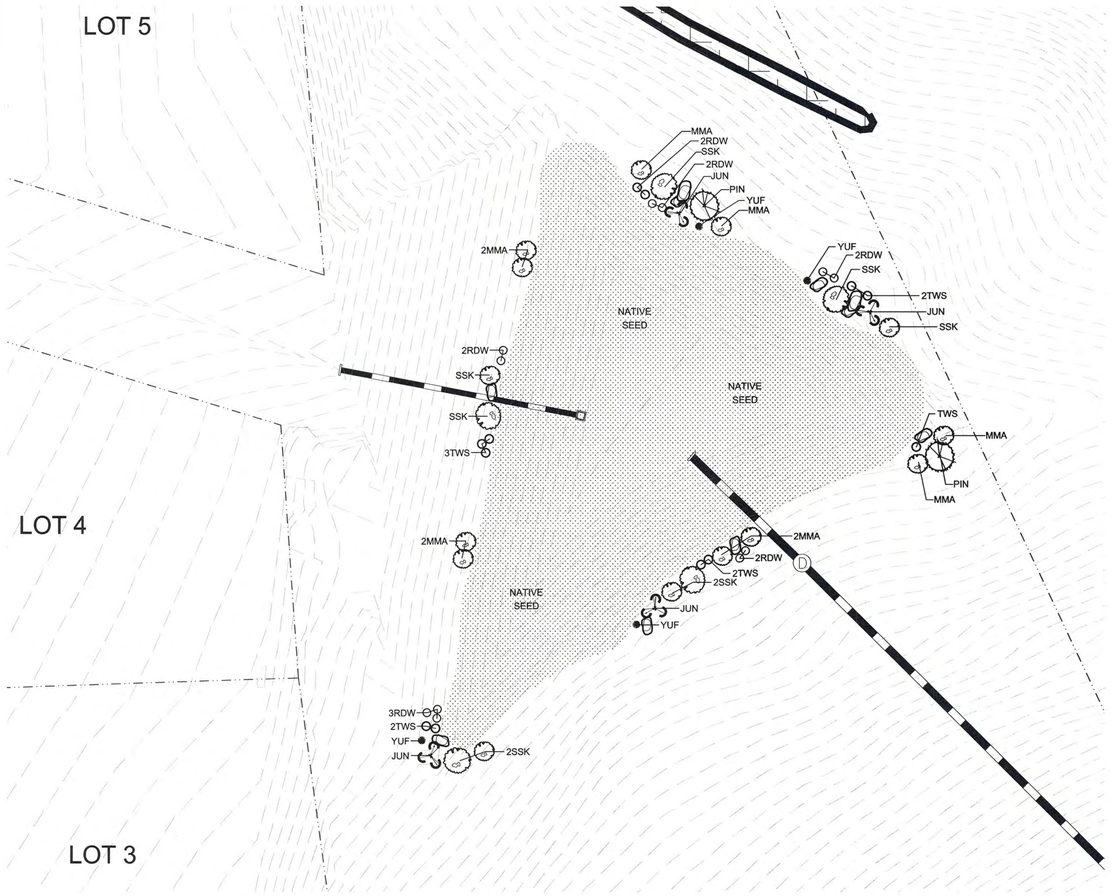
SCALE: 1"=20'	DATE: 09/26/17	DRAWN BY: MLR
CHECKED BY: MLR		PROJECT NO: F04-006

~SHEET~
L1 Of L3

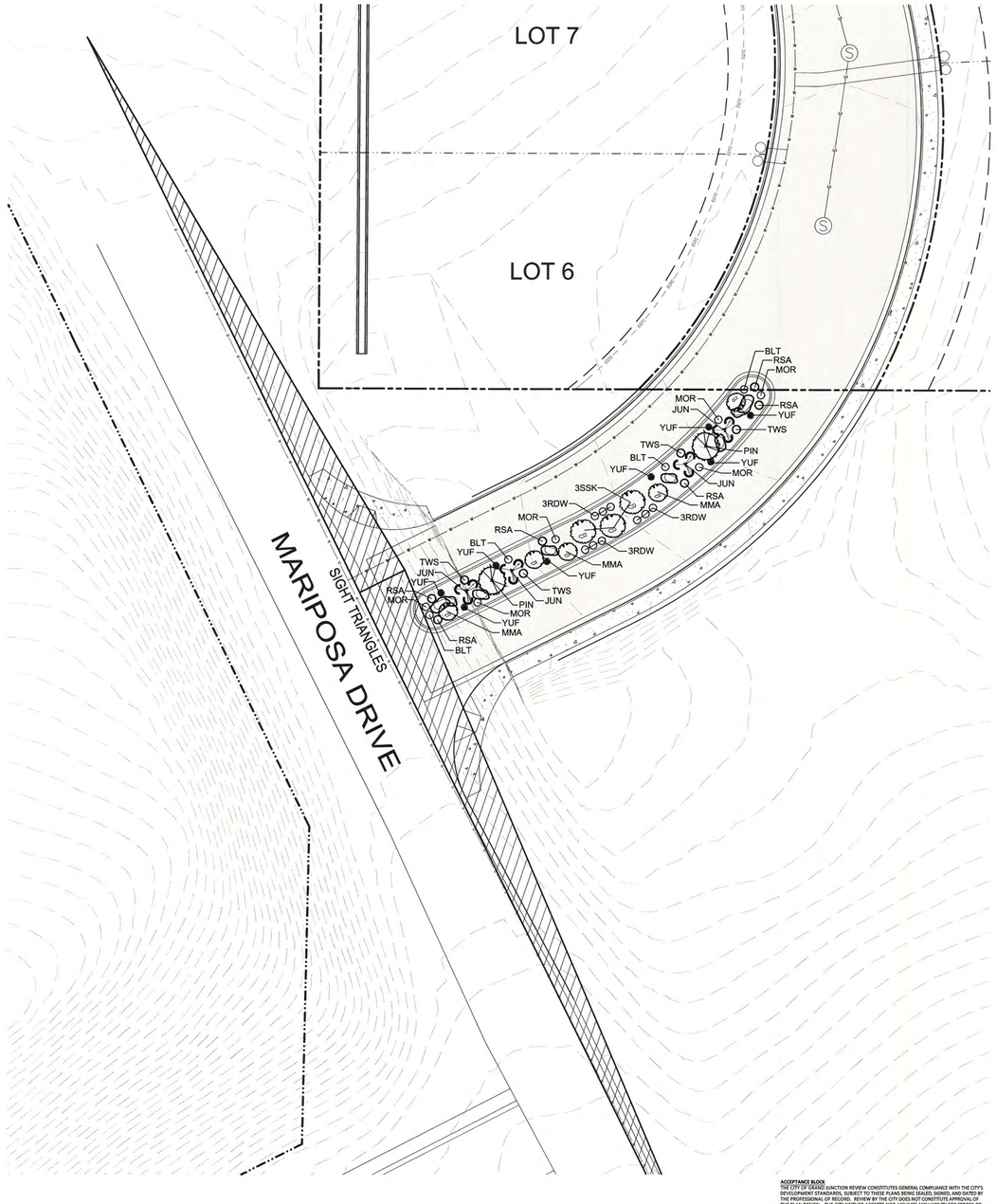
LANDSCAPE LEGEND

- Evergreen Trees
- Large Deciduous Shrubs
- Small Deciduous Shrubs
- Landscape Boulders Optional

UTILITY NOTIFICATION CENTER OF COLORADO
CALL 811
LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.



2 Landscape Plan - Detention Pond 1
SCALE: 1" = 20'-0"



1 Landscape Plan - Entry
SCALE: 1" = 20'-0"

NORTH 0 20' 40'

ACCEPTANCE BLOCK
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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY LANDSCAPE DATE 12-22-17

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

MRLA
MITCH REWOLD LANDSCAPE ARCHITECT
LANDSCAPE ARCHITECTURE AND LAND PLANNING
386 34 1/2 Road
Palisade, Colorado 81526 (970) 434-1155

MITCHELL L REWOLD
378
01/01/2008
Original Date of Licensure
STATE OF COLORADO
LICENSED LANDSCAPE ARCHITECT

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REV.	DATE	COMMENT	BY

LANDSCAPE PLAN
PINNACLE RIDGE SUBDIVISION
Mariposa Drive
Grand Junction, Colorado

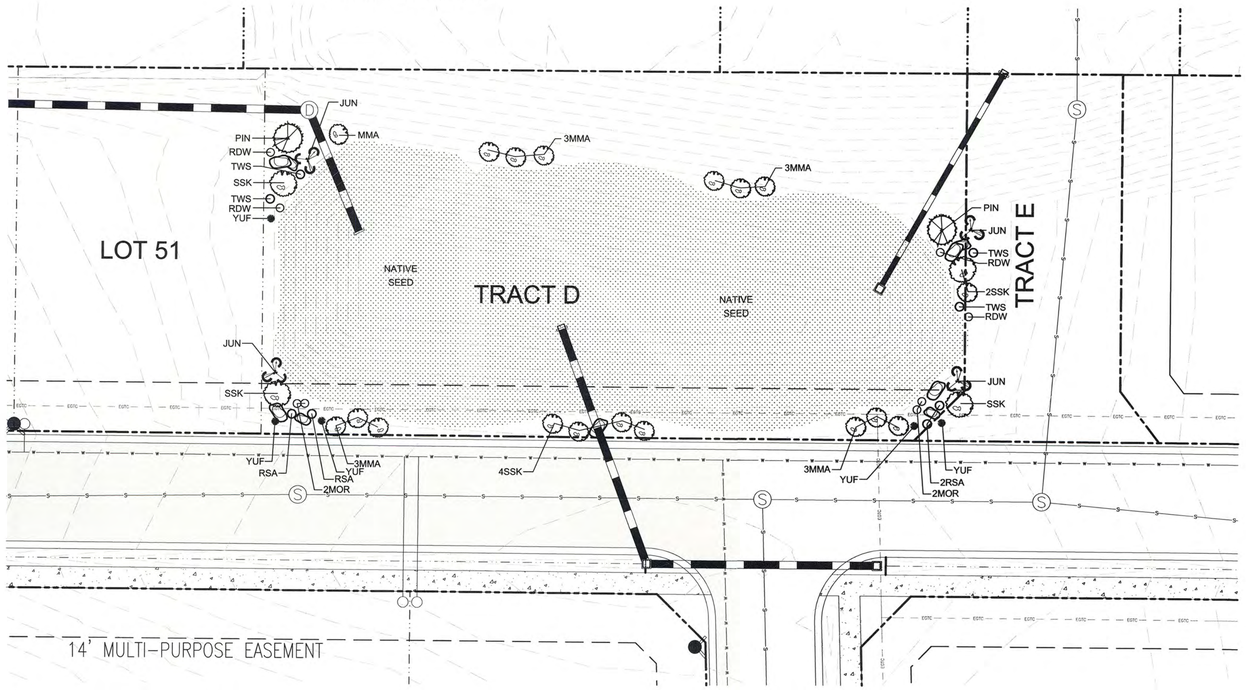
SCALE: 1"=20' DATE: 09/26/17 DRAWN BY: MLR
CHECKED BY: MLR PROJECT NO: F04-006

~SHEET~
L2 Of L3

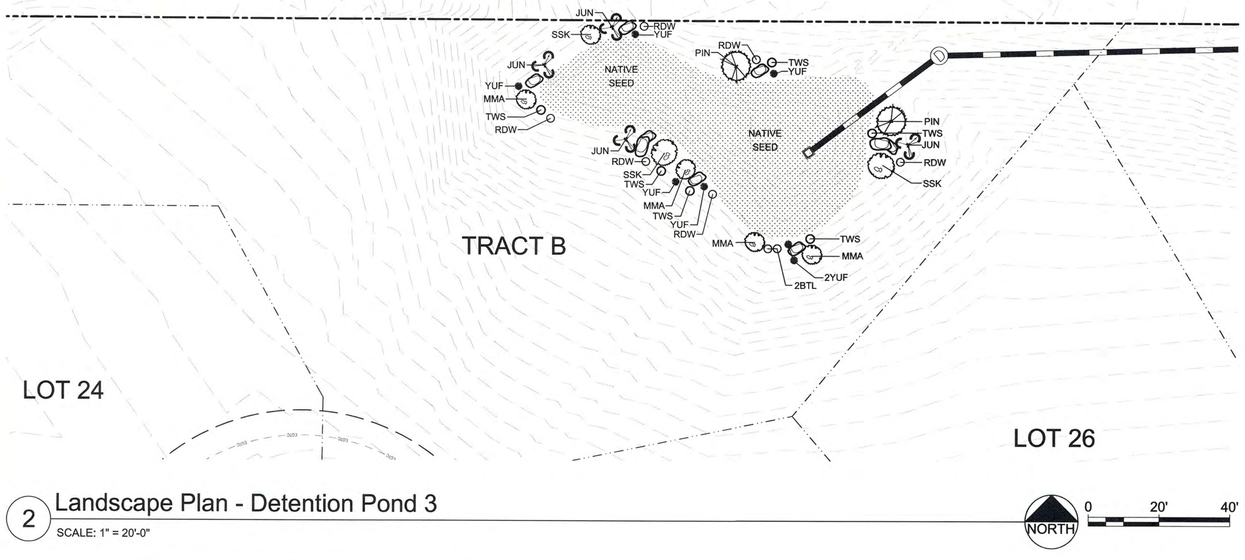
LANDSCAPE LEGEND

- Evergreen Trees
- Large Deciduous Shrubs
- Small Deciduous Shrubs
- Landscape Boulders Optional

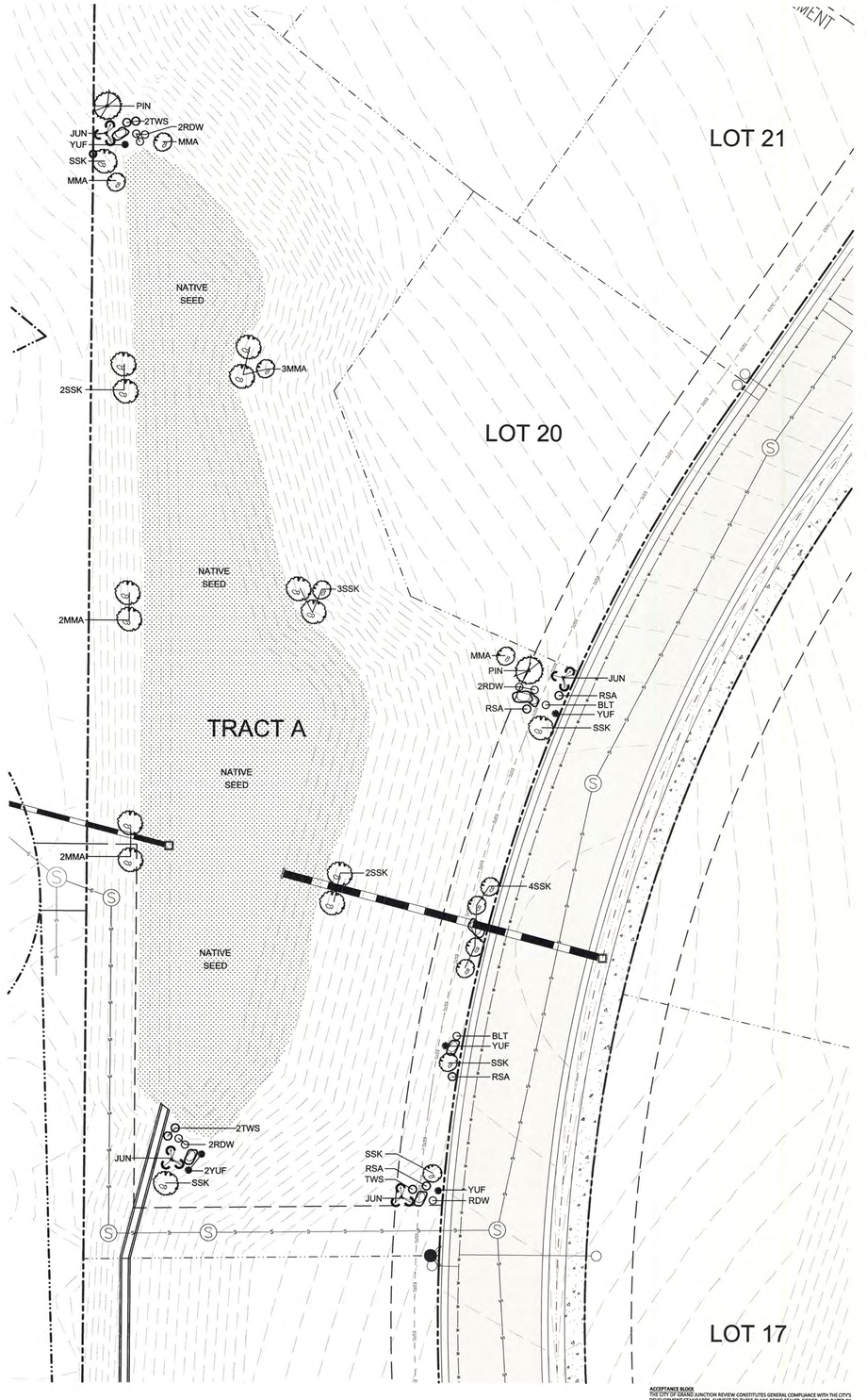
UTILITY NOTIFICATION CENTER OF COLORADO
CALL 811
LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.



3 Landscape Plan - Detention Pond 4
SCALE: 1" = 20'-0"



2 Landscape Plan - Detention Pond 3
SCALE: 1" = 20'-0"



1 Landscape Plan - Detention Pond 2
SCALE: 1" = 20'-0"

NORTH 0 20' 40'

ACCEPTANCE BLOCK
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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY PLANNER _____ DATE 12-28-17

VORTEX ENGINEERING, INC.
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MITCHELL L REWOLD 378 01/01/2008 Original Date of Licensure STATE OF COLORADO LICENSED LANDSCAPE ARCHITECT

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REV. DATE	COMMENT	BY

LANDSCAPE PLAN
PINNACLE RIDGE SUBDIVISION
Mariposa Drive
Grand Junction, Colorado

SCALE: 1"=20' | DATE: 09/26/17 | DRAWN BY: MLR
CHECKED BY: MLR | PROJECT NO: F04-006

~SHEET~ L3 Of L3

CITY OF
Grand Junction
COLORADO

COMMUNITY
DEVELOPMENT

January 12, 2018

Two R & D LLC
Attn: Robert W. Jones II
P. O. Box 39
Fruita, CO 81521

Sent via email: rjones@vortexeng.us

Dear Mr. Jones:

As you are aware, the City has received an appeal request for the administrative approval issued for the Pinnacle Ridge Subdivision, Filings 1 & 2 (City file numbers SUB-2017-271 & SUB-2017-273). It is anticipated that the City Council will hear this appeal at their February 7, 2018 meeting. However, until a final decision has been rendered by the Grand Junction City Council on this issue, please be aware that you are proceeding at your own risk on the infrastructure work that is currently under way at the site as allowed by your Development Improvements Agreement (DIA) and financial security. Should the decision of approval not be upheld, work on this project will need to cease immediately.

If you should have any further questions, please feel free to contact me.

Thank you.

Scott D. Peterson
Senior Planner
City of Grand Junction
scottp@gjcity.org
(970) 244-1447

GRANT OF EASEMENT – TEMPORARY

TWO R & D, LLC, a Colorado limited liability company, **Grantor**, the owner of that certain real property as evidenced by that certain Warranty Deed recorded at Book 3826, Page 220, Reception No. 2236038 (the Property) and platted as Pinnacle Ridge Subdivision, Filing 1 (the Plat) as recorded with the Mesa County Clerk and Recorder (the Property), for and in consideration of the sum of Ten and 00/100 Dollars and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, have sold, granted and conveyed, and by these presents do hereby sell, grant and convey, to **The City of Grand Junction, a Colorado home rule municipality**, **Grantee**, whose address is 250 North 5th Street, Grand Junction, Colorado 81501, its successors and assigns, a temporary turnaround easement over the Property as depicted on the Plat as TEMPORARY TURN-AROUND.

TO HAVE AND TO HOLD the premises aforesaid, with all and singular the rights, privileges, appurtenances and immunities thereunto belonging or in anywise appertaining, unto the said Grantee and unto its successors and assigns forever, the said Grantor hereby covenanting that Grantor will warrant and defend the title to said premises unto the said Grantee and unto its successors and assigns forever, against the lawful claims and demands of all persons whomsoever.

The purpose of the easement is to provide a turnaround area from Aiguille Drive and from the "Ingress/Egress & Utility Easement" shown on the Plat, with appropriate surfacing for large, heavy vehicles, including but not limited to fire department vehicles. The easement area shall be constructed and maintained by the Grantor at the Grantor's expense. Grantor shall not obstruct or interfere with the use of the easement nor permit any other entity to obstruct or interfere with such use; Grantor shall maintain the paved surface of the easement area free of obstructions, debris, weeds and dangerous conditions at all times.

The easement is required because there is at the time of the granting of the easement insufficient fire access point(s) connecting the subdivision to the public street system in accordance with the Zoning and Development and Fire Codes of the City of Grand Junction. The temporary turnaround access easement shall terminate when sufficient access point(s) to/from the subdivision to an external public street is established and fully constructed in accordance with the City's Zoning and Development Code and the applicable Fire Code, and to the satisfaction of the Grand Junction Fire Department. The parties hereto anticipate that this will be accomplished with the extension of Aiguille Drive to the east through subsequent phase(s) of the subdivision development, or with the construction of other temporary turnaround areas in the Subdivision, which the parties anticipate will occur with the platting and development of subsequent subdivision filing(s) in accordance with the approved Preliminary Plan for Pinnacle Ridge Subdivision.

Executed and delivered this _____ day of December, 2017.

GRANTORS: TWO R & D, LLC, a Colorado limited liability company

_____
Robert W. Jones, II, as managing member

State of Colorado)
)ss.
County of Mesa)

The foregoing instrument was acknowledged before me this _____ day of _____ 2017, by Robert W. Jones, II as managing member of Two R & D, LLC.

My commission expires _____.
Witness my hand and official seal.

_____
Notary Public

5-2-1 Drainage Authority

P.O. Box 3389, 250 N. 5th Street, Grand Junction, CO 81502
Ph. 970-263-7401 Fax 970-256-4022 www.521drainageauthority.org

Stormwater Construction Permit Application

For Office Use Only

Date: _____ CDPHE SW Permit #: _____ 5-2-1 Permit Number: _____

Project Name: _____

CSWMP Review Fee: $ _____ Permit/Inspection Fee: $ _____ Check #'s: _____

Final Construction SWMP & Maps: _____ Final Land Use Approval: _____

5-2-1 Drainage Authority Manager: _____ Date: _____

Notes and Directions:
* This application replaces Stormwater Construction Permit Applications formerly issued by the City of Grand Junction, Mesa County and the Town of Palisade. Complete this form and submit by email as an attachment. 521da@gjcity.org
* Both the Owner and the Permittee (if different than Owner) must complete and sign this Application.
* Please provide all information in the shaded areas.

Construction Stormwater Management Plan Review

Project Information:

Project Name: Pinnacle Ridge Subdivision

Project Address/Location: NE of Mariposa Drive and 1/4 mile north of Monument Road

Land Distribution Schedule:

Net Land Disturbance Area: 30 acres

Expected Start Date: August 1, 2017

Expected Final Stabilization Date: December 31, 2020

Legally Responsible Party - Permittee and Owner PERMITTEE:

Permittee Name: Two R & D, LLC

Address: PO Box 39, Fruita, CO 81521 Phone: 970-245-9051

Contact Name: Robert W. Jones, II Email: rjones@vortexeng.us

Legally Responsible Party - Permittee and Owner OWNER:

Owner Name: Two R & D, LLC

Address: PO Box 39, Fruita, CO 81521 Phone: 970-245-9051

Contact Name: Robert W. Jones, II Email: rjones@vortexeng.us

Designated CSWMP Administrator(s) - Primary Field Contact:

Primary Name: Bob Jones Title: Project Manager Cell Phone: 970-260-3006

Primary Name: _____ Title: _____ Cell Phone: _____

Primary Name: _____ Title: _____ Cell Phone: _____

5-2-1 Drainage Authority

P.O. Box 3389, 250 N. 5th Street, Grand Junction, CO 81502
Ph. 970-263-7401 Fax 970-256-4022 www.521drainageauthority.org

Stormwater Construction Permit Application

Legally Responsible Party - PERMITTEE Acknowledgement and Certifications

A) The undersigned hereby applies for a 5-2-1 Drainage Authority Stormwater Construction Permit for the aforementioned property and acknowledges that a Stormwater Construction Permit is granted with the explicit understanding that it is the Permittee's responsibility to:

1) Maintain the site in compliance with this permit, the Stormwater Management Manual (SWMM), and applicable Land Use Regulations of the governing jurisdiction (City, County, Town).
2) Allow personnel of the 5-2-1 Drainage Authority and the applicable governing jurisdiction (City, County, Town) reasonable access to the project site to conduct regular site inspections and enforcement activities.
3) Comply with any and all directives contained in any Compliance Advisory or written notification pertaining to the project site issued to the Permittee by the 5-2-1 Drainage Authority or the applicable governing jurisdiction (City, County, Town).
4) Immediately cease land-disturbing and all other construction activities upon receipt of a written notification from an authorized representative of the applicable governing jurisdiction (City, County, Town).

B) Furthermore, the undersigned certifies, and agrees:

1) To the best of my knowledge, the information provided herein is correct; and is consistent with the development plans approved by the planning and/or building departments of the applicable governing jurisdiction.
2) A Construction Stormwater Management Plan for the disturbed area on the project site was prepared and submitted in accordance with the SWMM and the applicable Land Use Regulations of the governing jurisdiction (City, County, Town).
3) If the Permittee abandons the site, or becomes insolvent or declares bankruptcy, such that the requirements of this Permit are not being met, the governing jurisdiction may perform any and all necessary corrective actions, at their sole and absolute discretion to provide sufficient remedies to correct project site deficiencies.
4) The governing jurisdiction (City, County, Town) may issue a Stop Work Order and/or a Notice of Violation and/or may revoke this Permit or pursue any other legal remedies available to it based on an enforcement referral request from the 5-2-1Drainage Authority, or if the governing jurisdiction determines the Permittee is not in compliance with the SWMM, Stormwater Construction Permit and applicable Land Use Regulations of the governing jurisdiction, or if the Permittee fails to take all corrective action requested within the time specified on any written notification issued to the Permittee by the governing jurisdiction.
5) That in addition to other remedies, a violation of the Permit shall constitute a violation of Land Use Regulations of the governing jurisdictions; and
6) Any approval obtained from the 5-2-1 Drainage Authority does not relieve the Permittee from complying with requirements of Sections 7 and 9 of the Endangered Species Act of 1973, 16 U.S.C. 11531, et seq., as amended, or with any other applicable federal, state, or local laws or regulations.

Signature of Legally Responsible Person	Robert W. Jones, II	6/7/17
	Printed Name	Date

Legally Responsible Party - Property OWNER Certifications

By signing below, I hereby certify that I am the owner of record, or am legally authorized to sign on behalf of and bind the owner of record. I agree to all of the acknowledgements and certifications of the Permittee listed in Section 5 above, and on behalf of the owner accept full responsibility for compliance with the terms and conditions of this Permit in the event that the Permittee fails to do so.

Two R & D, LLC	6/7/17
Owner of Record	Date

Original Signature of Owner or Official**	Robert W. Jones, II	Managing Member
	Printed Name	Title

***If the Owner of Record is a corporation, LLC or partnership, Mesa County requires a recorded Statement of Authority documenting the legal ability to the official to sign on behalf of the corporation. Corporate signers will need to submit the statement of Authority directly to Mesa County Planning before receiving Final Land Use Approval. Corporate signers must be the same person that signs the Final Plat.*

5-2-1 Drainage Authority

P.O. Box 3389, 250 N. 5th Street, Grand Junction, CO 81502
Ph. 970-263-7401 Fax 970-256-4022 www.521drainageauthority.org

Stormwater Construction Permit Application

Instructions

The Stormwater Construction Permit Application shall be submitted directly to the 5-2-1 Drainage Authority, along with the documentation required by Section 7, only after all reviews and approvals are in place, and just before the start of land disturbance activities.

Project Information

* Local Jurisdiction: This will be the City of Grand Junction, City of Fruita, Town of Palisade, or Mesa County. Write in the underlying jurisdiction that has "approval authority", whether it be for a development application, annexation proposal, building permit, surface alteration permit, Right of Way permit, etc.
* Project #: Use the Project # assigned by the local Jurisdiction.
* Project Name: Use the same name designation as on the development application.
* Project Address/Location: Use a specific address if there is one, particularly for commercial sites. For residential subdivisions, major street intersections are acceptable.

Land Disturbance Schedule

* Net Land Disturbance Area: Net area of land to be disturbed during construction, calculated to the nearest 0.1 acre. Generally equal to Gross size of the Filing of Phase being developed minus any designated protected (undisturbed) areas, plus off-site areas such as storage yards dedicated to the project. For help in determining Net Land Disturbance Area, contact Drainage Authority personnel. All fees are based on Net Land Disturbance Area.
* Start date is the date for <u>any</u> land disturbance activities including stockpiling, grubbing, demolition, excavating, grading, or any other activity that disturbs the ground.
* The date of final stabilization is the date when all disturbed areas have been built on and paved, and a uniform 70% re-vegetation is achieved on the remaining pervious ground. See the SWMM or State rules for details. Even if the Permittee is only doing one part of the project (for example a developer who does the site infrastructure but not the home construction) the estimated final stabilization date must be for the overall project, and Permit coverage must be maintained until final stabilization is achieved.

Legally Responsible Party - Permittee and Owner

* The Permittee (Legally Responsible Party) is <u>usually</u> the same as the permit applicant (Legally Responsible Entity) from the State General Permit Application. The Permittee may be a corporate or partnership entity, or a person. See below under Address. *For project under the land use jurisdiction of Mesa County only, the County <u>requires</u> the Permittee to be the Owner. If this is a project under County jurisdiction, the Owner should fill out ONLY the Permittee section.*
* The Owner is the entity or person who holds title to the property <u>at the time the SCP application is submitted</u>. *Caution: Sales and transfers of property title should be completed <u>before</u> submitting the application. Otherwise, an immediate Permit Transfer may be needed reflecting the ownership change.*
*Address: Please provide a physical mailing address for delivery of official correspondence, or process service, if needed.
* Permittee Contract Name: This should be the person who will serve as the primary point of contact for the Permittee with the responsibility to respond to inspection and compliance issues at the site. This person will usually be the same person that signs the certification under Designated SCWMP Administrator(s), but could be one of the CSWMP Administrators, if that person works <u>directly</u> for the Permittee. Contractors or subcontractors can not be the listed contact for the Permittee.
* Owner Contact Name: This should be the person who will serve as the primary point of contact for the Owner with the responsibility to respond to inspection and compliance issues at the site. This person will usually be the same person that signs the certifications under Permittee Acknowledgement and Certifications, but may also be an attorney or other designated Owner representative.

Designated CSWMP Administrator(s): At least one individual must be named as a primary contact for field issues and inspection notifications. Any individual named must be a Qualified Erosion Control Specialist. These individuals are responsible for day-to-day compliance, including self-inspections and record keeping. These individuals should be carefully selected by the Permittee and/or Owner, since the Permittee and Owner are ultimately liable for any compliance issues caused by the performance (or lack thereof) of the CSWMP Administrators.

Permittee Acknowledgement and Certification: This section acknowledges the Permittee's acceptance of responsibility and liability for stormwater compliance at the site. The actual signer must be an individual. Signature requirements are as follows:

* In the case of corporations, by a principal executive officer of at least the level of vice-president or his or her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge described in the application originates.
* In the case of a partnership, by a general partner.
* In the case of a sole proprietorship, by the proprietor.
* In the case of a municipal, state or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.
* *Specific to projects within the Land Use Jurisdiction of Mesa Count, the County requires the Permittee to be the Owner, and also requires a recorded Statement of Authority (SOA) verifying that a corporate, LLC or partnership officer signing on behalf of the corporation, LLC or partnership has the legal authority to do so. Submit the SOA to Mesa County Planning. The signer shall be the same person that signs the Final Plat for recording.*

Owner Certification: The Owner Certification is required because the Owner carries ultimate liability for the site when all other options or contacts are exhausted. A permit will NOT be issued without an Owner signature. The actual signer must be an individual. Signature requirements are identical to the signature requirements for the Permittee, with one exception:

* *If this project is within Mesa County jurisdiction, DO NOT sign this section. (See above Permittee Acknowledgement and Certification)*

Required Submittals: Before a permit is issued by the 5-2-1 Drainage Authority, we must have in our possession a copy of the State issued stormwater discharge permit, a complete copy of the final approved CSWMP and maps, and payment of the assessed inspection fees. Final Approval from the local land use jurisdiction to begin construction will be verified via mail.

END OF INSTRUCTIONS

5-2-1 Drainage Authority

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Ph. 970-263-7401 Fax 970-256-4022 www.521drainageauthority.org

Stormwater Construction Permit Application

Stormwater Construction Permit Fee Schedule

Disturbed Land Area (To the nearest 0.1 acre)	**Part A Review Fee**	**Part B SW Permit/ Inspection Fee**	**Additional Inspections**	**Fee**
1 - 7.9 Acres	$250.00	$250.00	Screening Inspection	$0.00
8.0 Acres to 19.9 Acres	$400.00	$500.00	Field Inspection w/ Follow-Up (Under 20 Acres)	$150.00
20 Acres and Above	$800.00	$900.00	Field Inspection w/ Follow-Up (Over 20 Acres)	$200.00
			Full Audit (Under 20 Acres)	$275.00
			Full Audit (20 Acres and Over)	$325.00

Disturbed Land Area includes all area of cut, fill, stockpile, staging, equipment and material storage, or any other project area associated with Construction Activity, as defined by State of Colorado stormwater regulations. No reductions are given for public land dedications such as streets and open space. Undisturbed land areas may be omitted from the calculations if they are specifically identified in the Construction Stormwater Management Plan as remaining in undisturbed natural conditions, and controls are specified in the Plan to ensure the area remains undisturbed during construction.

See Drainage Authority Resolution 2008-007 for a full description of the fee basis, including when fees for additional inspections are charged.

DECLARATION OF
COVENANTS, CONDITIONS AND RESTRICTIONS OF
PINNACLE RIDGE SUBDIVISION

THIS DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS OF PINNACLE RIDGE SUBDIVISON (the "Declaration"), is hereby declared effective this _____day of _____, 201__ by **Two R&D, LLC,** a Colorado limited liability company, hereafter referred to as "Declarant".

RECITALS

A. Declarant is the owner of that certain real property situated in the City of Grand Junction, Mesa County, Colorado, described as follows:

Tax Parcel No. – 2945-212-00-011, 2945-212-08-001-010, 2945-212-10-001-009

A parcel of land situated in the W ½ NW ½ of Section 21, Township 1 South, Range 1 West of the Ute Meridian, Mesa County, Colorado. The South 10 acres of the NW ¼ NW ¼ and the SW ¼ NW ¼ of said Section 21.

EXCEPTING THEREFROM:

Lots 1-9, Block 3 and the adjoining dedicated right-of-way known as Spur Drive and Lot 2, Block 2, Energy Center Subdivision, Phase I as platted and recorded in Plat Book 8 at Page 55 with a Reception Number 644620 of the Mesa County records.

To be platted as Lots _____ through _____, inclusive, and Tracts ____ and ____, Pinnacle Ridge Filing _____, hereinafter referred to as the "Property", and Lot _____, Pinnacle Ridge, Filing ____, hereinafter referred to as "Future Development Lots."

B. The Common Interest Community has been approved for development pursuant to a Plan for Pinnacle Ridge adopted by the City of Grand Junction, Colorado (the "Major Subdivision Plan for Pinnacle Ridge Subdivision").

C. Declarant desires to develop and improve the Property as a Common Interest Community as defined in Section 38-33.3-103(22), C.R.S., under the name and style of Pinnacle Ridge Subdivision and subject the same to the covenants, conditions and restrictions hereinafter set forth. Such development shall be in phases or filings for a total number of lots not to exceed seventy-two 72 residential lots.

D. Pinnacle Ridge Home Owners Association, a Colorado non-profit corporation, has been formed as a Home Owners Association to exercise the functions set forth herein and to own, lease, hold, operate, care for and manage certain property for the common benefit of Owners and Occupants of Lots within, and of any other person acquiring an interest in, the Common Interest Community.

E. Declarant desires to establish covenants, conditions and restrictions upon the Common Interest Community and all properties that may hereafter be included thereto, and certain mutually beneficial restrictions and limitations with respect to the proper use, occupancy, improvement and enjoyment thereof, all for the purposes of enhancing and protecting the value, desirability and attractiveness of the Common Interest Community and enhancing the quality of life within the Common Interest Community.

NOW, THEREFORE, for the purposes set forth above and herein, Declarant for itself and its successors and assigns hereby declares that the Common Interest Community and all other property which becomes subject to this Declaration in the manner hereinafter provided, and each part thereof, shall be owned, held, transferred, conveyed, sold, leased, rented, improved, altered, maintained and enjoyed subject to the covenants, conditions, restrictions, assessments, charges, liens, easements, privileges, rights and other provisions hereinafter set forth, for the duration hereof, all of which are declared to be pursuant to, and in furtherance of a common and general plan of development, improvement, enhancement, use, occupancy and enjoyment of the Common Interest Community, and all of which shall run with the land and be binding upon and inure to the benefit of the Common Interest Community and every part thereof. Provided always, that to the extent this Declaration provides that Declarant shall not be bound by or is exempt from the application of certain covenants, conditions and restrictions contained herein, Declarant shall not be considered subject to such covenants, conditions or restrictions.

This Declaration shall be recorded in Mesa County, Colorado and shall be indexed in the Grantee's index in the name of Pinnacle Ridge and the Home Owners Association and in the Grantor's Index in the name of Two R&D, LLC.

ARTICLE I
DEFINITIONS

Unless otherwise expressly provided herein, the following words and phases when used in this Master Declaration shall have the meanings hereafter specified.

1.1 **Act** - shall mean the Colorado Common Interest Ownership Act, section 38-33.3-101, et seq., C.R.S., as presently existing or subsequently amended from time to time.

1.2 **Allocated Interests** - shall means and refers to the common expense liability and the ownership interest and votes in the Home Owners Association as allocated to each Lot, which interest are allocated as follows:

(a) The Common Expenses liability for each Lot is calculated on the basis of a fraction, the numerator of which is one (1) and the denominator of which is the total number of Lots in the Common Interest Community as of the date of the calculation. The denominator may be increased from time to time upon the addition of Lots to the Common Interest Community, which can be conveyed to third parties. Such fraction is then multiplied by the Common Expense or the Assessment in question to determine that Lot's share. The Common Expense liability of a Lot is determined without reference to the size, location, value or use of the Lot.

(b) One (1) vote in the Home Owners Association is allocated to each Lot in the Common Interest Community.

1.3 **Article of Incorporation** - or "Articles" means the Articles of Incorporation of Pinnacle Ridge Home Owners Association, which have been or will be filed with the Office of the Secretary of State of the State of Colorado, as the same may be amended from time to time.

1.4 **Assessment** - shall mean a Regular Assessment, Special Assessment or Reimbursement Assessment.

1.5 **Association** - shall mean and refer to Pinnacle Ridge Subdivision Home Owners Association, a Colorado nonprofit corporation, formed for the purpose of being and constituting the entity for the furtherance of the interests of the owners of property in Pinnacle Ridge and performing duties and responsibilities and exercising the powers set forth in this Declaration.

1.6 **Budget** - shall mean a written itemized estimate of the Common Expenses to be incurred by the Association in performing its functions under this Declaration and adopted by the Executive Board pursuant to this Declaration.

1.7 **Building Envelope** - shall mean that portion of a Lot which may be depicted and designed as the "Building Envelope" on a Plat. If a Lot contains a platted Building Envelope, all Improvements on that Lot must be located entirely within the Building Envelope, including but not limited to dwellings, attached patios and decks, garages, swimming pools and storage building, but excluding roof overhangs, access driveways, underground utilities, and irrigation and drainage systems. The Design Review Committee may approve the location of certain Improvements outside the Building Envelope, such as landscaping and fences.

1.8 **Bylaws** - shall mean the Bylaws of the Association which have been or will be adopted by the Executive Board of the Association, and may be amended from time to time.

1.9 **City** - shall mean the City of Grand Junction, Colorado.

1.10 **Common Elements** - shall mean and refer to that portion of the Property designated as Tracts _____ on the Plat to be owned by the Association for the benefit of the Owners, including any Improvements and all easements and facilities for the benefit of the Property, as well as any common elements created in future subdivision filings.

1.11 **Common Expenses** - shall mean any expenditures made or liabilities incurred by or on behalf of the Association, together with any allocations to reserves, including, but not limited to the costs of maintenance, management, operation, repair and replacement of the Association Property, and of all other parts of the Common Interest Community which are managed or maintained by the Association, but excluding any areas being managed or maintained at the expense of a Sub association.

1.12 **Declarant** - shall mean Two R&D, LLC a Colorado limited liability company, its successors, assigns, and affiliates. A Person shall be deemed to be a "successor and assign" of Declarant if specifically designated in a duly Recorded instrument as a successor or assign of Declarant under this Declaration and shall be deemed a successor and assign of Declarant only as to the particular rights or interests of Declarant under this Declaration which are specifically designated in that written instrument. The term "affiliate of Declarant" shall have the meaning set forth in Section 38-33.3-103(1) of the Act.

1.13 **Declaration** - shall mean and refer to this Declaration of Covenants, Conditions and Restrictions for Pinnacle Ridge Subdivision.

1.14 **Design Guidelines** - shall mean the rules, procedures, standards, guidelines and requirements promulgated from time to time by the Design Review Committee, and all amendments thereto, governing the review and approval or disapproval of proposed Improvements within the Common Interest Community, the registration of Builders, and such other matters as the Design Review Committee considers necessary or appropriate.

1.15 **Design Review Committee** - shall mean the Committee provided for in this Declaration.

1.16 **Executive Board or Board** - shall mean the Executive Board of the Association.

1.17 **Household Pets** - shall mean generally recognized household pets such as dogs, cats, fish, birds, rodents, and non-poisonous reptiles.

1.18 **Improvements** - shall mean and refer to any and all buildings, parking areas, fences screening fences, retaining walls, stairs, decks, hedges, windbreaks, plants, trees, shrubs, berms, ponds, signs, objects of art, mailboxes, drainage facilities (including pumps, pipelines, drip lines and sprinklers) and other structures or landscaping of every type and kind situated on the property, and future lots created in subsequent replats.

1.19 **Lease** - shall mean and refers to any agreement for the leasing, rental, use or occupancy of a Unit, or of a residential dwelling located on a Lot, within the Common Interest Community.

1.20 **Limited Common Areas** - shall mean a Common area that is designated by this Declaration, by a Supplemental Declaration, on the Plat or on a Supplemental Plat, for the exclusive use of one or more Lots in the Common Interest Community but fewer than all of the Lots.

1.21 **Lot** - shall mean and refer to that part of the Property shown on the Plat as a Lot, as well as any lots created by future subdivision filings.

1.22 **Map** - shall mean any map that is incorporated in a Supplemental Declaration or amendment and that depicts a portion of the Common Interest Community in three dimensions. A Map is required for any portion of the Common Interest Community with Units having a horizontal boundary. A Map and a Plat may be combined in one instrument.

1.23 **Master Declaration** - shall mean this instrument and all Supplemental Declaration, as this instrument and such Supplemental Declarations may be amended from time to time.

1.24 **Master Rules and Regulations** - shall mean rules and regulations adopted from time to time by the Executive Board.

1.25 **Member** - shall mean each Lot also including the Declarant. Membership in the Home Owners Association shall be appurtenant to, and may not be separated from, ownership of a Lot.

1.26 **Mortgage** - shall mean any mortgage, deed of trust or other security instrument, given voluntarily by the Owner of a Lot, creating a real property security interest in a Lot and Recorded in the real property records of the Clerk and Recorder if Mesa County. "First Mortgage," means a mortgage, which are the first and most senior of the Mortgages on the same Lot. The term "Mortgage" does not mean a statutory, tax or judicial lien. The term "Deed of Trust" when used herein shall be synonymous with the term "Mortgage."

1.27 **Mortgagee** - shall mean a mortgagee under a Mortgage or a beneficiary under a Deed of Trust, as the case may be, and the assignees of such Mortgagee.

1.28 **Mortgagor** - shall mean the maker, obligator or grantor of a Mortgage. The term "Mortgagor" includes a trustor or grantor under a Deed of Trust.

1.29 **Notice and Hearing** - shall mean a written notice and public hearing before the Executive Board, or a panel appointed by the Executive Board, as set forth in the Bylaws.

1.30 **Occupant** - shall mean any Person who is a tenant in a residence on a Lot, pursuant to a Lease with the Owner thereof. "Occupant" also means any Person who is present within the Common Interest Community as a family member, guest or invitee of an Owner, an Occupant, the Declarant, or the Association.

1.31 **Owner** - shall mean the Person, including Declarant, or, if more than one, all Person collectively, who hold fee simple title of Record to a Lot, including sellers under executor contracts of

sale and excluding buyers there under. The term "Owner" shall be analogous to the term "Unit Owner", as that term is defined in the Act.

1.32 **Permitted Exceptions** - shall mean all liens, encumbrances, reservations, restrictions, conditions, easements and other matters of record which encumber the title to all or any part of the Common Interest Community, as of the date this Declaration or a Supplemental Declaration or Map is recorded. This Declaration and any Supplemental Declaration or Map shall be subject to such Permitted Exceptions.

1.33 **Persons** - shall mean a natural person, a corporation, a partnership, a limited liability company, a trust, or any other entity capable of holding title to real property pursuant to the laws of the State of Colorado.

1.34 **Plat** - shall mean and refer to that certain plat of the property or plat(s) upon future subdivision filings recorded (or to be recorded) in the Mesa County Clerk and Recorder's official records. The Plat is incorporated herein by this reference.

1.35 **Property** - shall mean and refer to all of the real estate situated and described in the recitals and any future additions of property to the Subdivision.

1.36 **Registered Builder** - shall mean a general contractor that has been registered to perform work within Pinnacle Ridge with the Design Review Committee pursuant to the guidelines and procedures set forth herein and in the Design Guidelines.

1.37 **Record or Recorded** - shall mean an instrument of record in, or the act of recording an instrument with, the office of the Clerk and Recorder of Mesa County.

1.38 **Regular Assessment** - shall mean a charge against an Owner and the Owner's Lot for purposes of covering the annual costs of operating and administering the Association and all other Common Expenses. Regular Assessments are based on a Budget adopted by the Executive Board and are allocated to the Lots in accordance with the Allocated Interests, except that Common Expenses that in the judgment of the Executive Board benefit fewer than all of the Lots shall be allocated exclusively to the Lots benefited.

1.39 **Reimbursement Assessment** - shall mean a charge against a particular Owner and the Owner's Lot for purpose of reimbursing the Association for costs and expenses incurred by the Association in connection with the enforcement of any provision hereof or the remedying of any violation by the Owner or an Occupant of this Declaration or any amendment hereto or any Supplemental Declaration, the Articles, Bylaws, Master Rules and Regulations, or Design Guidelines, or any approvals granted by the Design Review Committee, or for other purposes set forth in the Declaration, pursuant to Section 10.9 hereof, together with late charges and interest as provided for herein. Reimbursement Assessment shall include without limitation any Common Expense cause by the misconduct of any Lot Owner or of such Owner's Occupants.

1.40 **Special Assessment** - shall means a charge against an Owner and the Owner's Lot for purpose of reimbursing the Association for costs and expenses incurred or to be incurred by the Association for the purpose of paying for the construction, reconstruction, repair, maintenance or replacement of capital improvements to or upon serving the Common Interest Community, the costs of which were not included in a Regular Assessment, or for excess reconstruction costs or other extraordinary expenses, or to acquire Association Property, or for funding any operating deficit of the Association, as authorized by the Executive Board from time to time as provided herein. Special Assessment shall be based on a Budget adopted by the Executive Board in accordance with below.

1.41 **Sub Association** - shall mean any Colorado nonprofit corporation, and its successors and assigns, organized and established by Declarant pursuant to or in connection with any supplemental Declaration.

1.42 **Sub Association Common Areas** - shall mean all real property interests (not just fee title and leasehold interests) and the Improvements or amenities and personal property thereon which may from time to time be owned, leased or maintained by a Sub Association or otherwise held by a Sub Association for the use, enjoyment and benefit of the members of such Sub Association or some of them.

1.43 **Subdivision** - shall mean and refer to Pinnacle Ridge a residential subdivision in the City of Grand Junction, Mesa County, Colorado.

1.44 **Supplemental Declaration** - shall mean an amendment to this Declaration which adds real property to the Common Interest Community, subjects such real property to this Declaration, and sets forth such amendments to the Declaration and such additional covenants, conditions uses and restrictions as may be applicable to the acquired property, executed by Declarant and Recorded in the Office of the Clerk and Recorder of Mesa County, and any Recorded amendments thereto.

1.45 **Supplemental Plat**- shall mean any land survey plat which is Recorded by Declarant for the purpose of acquiring the real property described therein to the Common Interest Community, and any Recorded amendments to such Supplemental Plat. Supplemental Plats shall include, without limitation, those City-approved Plats or subsequent filings of Pinnacle Ridge, or those portions of such Plats, as are made subset to this Declaration from time to time by Supplemental Declaration.

ARTICLE II
GENERAL DECLARATION

2.1 **Intent** It is the intention of this Declarant is to enhance, perfect and preserve the value, desirability and attractiveness of the Property and the Common Elements, Improvements and Buildings thereon in a manner beneficial to all Owner and to subject the Subdivision to the Act as a Common Interest Community.

2.2 **Estate Subject to Declaration** Declarant does hereby subject the Property to the provisions of the Declaration. All easements, restrictions, conditions, covenants, reservations, liens, charges, right, benefits, and privileges which are granted, created, covenants reservations, liens, charges, rights, benefits, and privileges which are granted, created, reserved or declared by this Declaration shall be deemed to be covenants appurtenant to, touching and concerning and running with the land and shall at tall times inure to the benefit of and be binding upon any Person having at any time any interest or estate in the Property, and their respective heirs, successors, representatives or assigns. All of the easements, restrictions, conditions, covenants, reservations, liens, charges, rights, benefits and privileges which are granted, created, reserved or declared herein shall be fully and completely set forth in their entirety in any document or instrument filed for record in the Mesa County Clerk and Recorder's office subsequent to the recording of this Declaration or Supplemental Declaration.

2.3 **Owners' Rights to Common Elements** Every Owner, Mortgagee, Occupant and all other persons hereafter acquiring any interest in the Common Interest Community shall have a right and easement of enjoyment in and to the Common Elements which shall be appurtenant to and shall pass with the title to every Lot subject to the provisions of this Declaration, Supplemental Declaration, the Articles and Bylaws of the Association and any rules and regulations promulgated by the Association. Any Owner may delegate, in accordance with the Bylaws, his right of enjoyment to the Common Elements and facilities for the members of his family, his tenants, or occupants who reside on his Lot.

ARTICLE III
GENERAL RESTRICTIONS

3.1 **Master Development Control** Except as otherwise expressed in this Declaration or in any Supplemental Declaration, no residence, building, structure, fence, wall, landscaping or other Improvement shall be commenced, erected, improved, altered, made, done, permitted, located or removed within the Common Interest Community without the prior written approval of the Design Review Committee, and all subsequent additions to or changes or alterations in any residence, building structure, fence, wall, landscaping or other Improvement, including without limitation exterior color scheme, and all changes in the grade of Lots, shall also be subject to the prior written approval of the Design Review Committee.

No modifications from the approvals granted by the Design Review Committee shall be made without the prior written approval of the Design Review Committee. Notwithstanding the foregoing, in the event of an emergency or the sudden occurrence of unanticipated conditions which threaten the health, safety or physical well-being of Persons or property within the Common Interest Community, the Executive Board and/or the Design Review Committee shall have the authority (without the prior approvals described above), to take whatever remedial action may be necessary anywhere in the Common Interest Community to protect Persons and property until such time as applicable notice and/or approval procedures can reasonably be utilized. Further notwithstanding the foregoing, Design Review Committee approval shall not be required for Improvements made by Declarant in the exercise

of any development rights or special Declarant rights reserved by Declarant in this Declaration or in any Supplemental Declaration.

3.2 **Residential Use and Occupancy** All Lots shall be improved, occupied and used only for private single-family residential purposes. Only single-family dwellings, including a private garage which holds a minimum of two (2) automobiles, which garage shall be an enclosed structure, and other outbuildings directly incidental to single-family residential use shall be erected, altered, placed or permitted to remain on any Lot. No structures shall be permitted unless they meet the Pinnacle Ridge Design Guidelines and the requirements of these Covenants and which are constructed in accordance with City of Grand Junction zoning regulations .

3.3 **Vehicle Parking, Storage, Operation and Repair** Passenger automobiles and pick-up trucks not exceeding one ton owned by the Owner or occupant of a Lot shall be parked within the garage situate on the Lot or on the driveway of the Lot. No other portion of the Lot may be used by the Owner or the occupant for the parking or storage of automobiles or pick-ups except to the extent permitted under section 38-33.3-106.5(l)(d), C.R.S.

Recreational vehicles, boats, trailers, buses, motor homes, mobile homes, campers (on or off supporting vehicles), motorcycles, snowmobiles, recreational vehicles, all terrain vehicles, golf carts, trucks, industrial or commercial vehicles (both cabs or trailers), abandon or inoperable vehicles (as defined), or any other similar vehicles (excepting passenger automobiles and one ton or smaller pick-up trucks) may be stored on a Lot only if placed within a garage or placed in a Design Review committee approved outbuilding or screened storage facility. All recreation vehicle shall be behind fences and behind the front of the Residential Building on the Lot.

Notwithstanding the forgoing, vehicles may be temporarily parked on driveways on Lots and on public streets within the Common Interest Community for loading, delivery, services or emergency purposes, but only for the time required to accomplish such purpose, and as necessary on a daily basis for the construction, maintenance or servicing of Improvement within the Common Interest Community.

If Executive Board determines that a vehicle is abandoned, inoperable or improperly parked, a written notice of violation describing the vehicle shall be personally delivered to the vehicle owner, or notice may be sent by registered or certified mail or by email or facsimile, and shall be conspicuously placed upon the vehicle. If the offending vehicle is not removed within seventy-two (72) hours thereafter, the Executive Board or its agent shall have the right to remove and store the offending vehicle, or cause the vehicle to be removed and stored, at the sole expense of the owner of the vehicle. The Executive Board or its agent shall have the authority to enter upon an Owner's Lot for such purposes without liability on the part of the Executive Board .

Snowmobiles, motorcycles, trail bikes, mini bikes, dirt bikes, all-terrain vehicles, and similar motorized vehicles shall not be used or operated within the Common Interest Community, except that motorcycles properly licensed for operations on public roads may be used on public streets within the

Common Interest Community. The Association shall have the authority to adopt Master Rules and Regulations governing the type and use of golf carts on streets within the Common Interest Community, subject always to City rule, ordinance or regulation.

3.4 **New Construction Required: No Temporary Buildings or Occupancy** Only new I.R.C. (International Residential Code) residential buildings shall be permitted within the Common Interest Community. Furthermore, no pre-fabricated or manufactured housing, no mobile homes (single or double wide), and no used or temporary house, structure, or non-permanent out-buildings (specifically including mobile homes and trailers) shall ever be placed, erected or allowed to remain within the Common Interest Community except temporary structures or construction trailers approved in advance by the Design Review Committee which are used for construction purpose during the construction of a residence. Such temporary facilities shall be removed immediately following completion of construction or 18 months following commencement of construction, whichever first occurs, unless a written extension is granted by the Design Review Committee. No completed residence on a Lot shall be occupied in any manner until all provisions of the Declaration and the Design Guidelines and all conditions of development approval have been complied with and a Certificate of Compliance has been issued.

3.5 **House Size Regulations** Single-family residences in the Common Interest Community shall contain a minimum of 2,000 square feet and a maximum of 6,000 square feet of interior living space measured from the interior surfaces of the walls, excluding garages, patios, covered porches, and any walkouts that may be approved by the Design Review Committee.

3.6 **Structure Sprinkler Systems** Structures on Lots 26 through 29, 55 through 72 must have sprinkler systems installed for fire protection of the units. The sprinkler system shall be an approved fire sprinkler system designed to meet the minimum design standards of NFPA 13D and the International Fire Code, 2006 edition, as amended by the City of Grand Junction. The amendment prohibits the use of separate water supplies (such as tanks and pumps) when the home is served by a public water purveyor.

3.7 **Setbacks** The Subdivision is located in the City of Grand Junction, Colorado. All buildings shall meet or exceed setbacks established by the applicable zoning authority.

3.8 **Re-subdivision, Re-Platting, Rezoning or Combining** Except as expressly permitted in this Declaration or in a Supplemental Declaration by which additional property is added to the Common Interest Community, no Lot shall be subdivided or re-platted by an Owner into smaller lots or parcels, no Owner shall seek to change the zoning of such Owner's Lot, and no Lot may be combined with other Lots, except as related to the declarant's future development rights. There shall be no boundary line adjustment between any Lots, such that the original configuration is modified or altered; provided, however, underlying adjustment shall be permitted in the event there is an error in surveying the Plat, or error in the construction of the home such that a boundary line adjustment shall be reasonable and necessary to accommodate such error.

(a) Declarant reserves the right to subdivide a Lot, or to combine two (2) lots owned by Declarant, or to adjust or remove boundary lines between Lots owned by Declarant, provided any necessary City approvals are obtained, all Declaration and Plat amendments required by the Act and/or local land use laws are prepared, executed and Recorded, and any necessary reallocation of Allocated Interests of the Owners is accomplished. In the case of the combination of two or more Lots, no change in Allocated Interest shall occur. In other words, if two Lots are combined, the resulting Lot shall continue to constitute two (2) Lots for assessment and voting purposes. All costs relating to the foregoing activities shall be the sole responsibility and obligation of Declarant, or of the Owner performing the same. Declarant's rights under this subsection (a) shall terminate upon the first to occur of (i) the date which is 10 years after the Recording of this Declaration, or (ii) Declarant's relinquishing of these rights by a Recorded instrument.

(b) No further covenants, conditions, restrictions or easements shall be Recorded by any Owner (except Declarant in the exercise of its reserved rights) or other Person against any Lot without the provisions thereof having been first approved in writing by the Executive Board for consistency with the Declaration, any applicable Supplement Declaration, and the general plan of development for the Common Interest Community. Any covenants, conditions, restrictions or easements Recorded without such approvals being evidenced thereon shall be null and void. This provision does not apply to Mortgages.

3.9 **Fences Prohibited or Restricted** Perimeter fencing shall be limited to fences not exceeding six (6) feet in height and shall not extend beyond the front of the residential Building as approved by the Design Review Committee. Front yard perimeter fencing shall be as approved by the Design Review Committee and shall not exceed three (3) feet in height. Owner shall be responsible for obtaining a permit prior to construction of perimeter fencing from the City of Grand Junction.

3.10 **Annoying Light, Sound or Odor** All exterior lighting installed or maintained on a Lot is limited to six (6) feet or lower and placed so that the light source is screened or shielded from the residence on any other Lots. No light shall be emitted from any part of the Common Interest Community, which is unreasonably bright or causes unreasonable glare. Without limiting the generality of the foregoing, no spotlights, floodlights or other high-intensity lights shall be permitted within the Common Interest Community and will meet the City of Grand Junction lighting standards.

No sound shall be emitted from any part of the Common Interest Community which is unreasonably loud or annoying to others, and no odor shall be emitted from any part of the Common Interest Community which is noxious or unreasonably offensive to others. Again without limiting the generality of the foregoing, no exterior speakers, horns, whistles, bells, or other sound devices, other than security devices used exclusively for security purposes, shall be located or used within the Common Interest Community.

3.11 **Violation of Law, Insurance, Etc** No Owner or Occupant or Person shall do any act or cause or permit anything to be done or kept in or upon a Lot, Buildings or Improvements constructed thereon, or the Association Property which would result in the increase of, or cancellation of, insurance

maintained by the Association or would be in violation of any federal, state, city or other law, ordinance, regulation or code of any governmental body having jurisdiction, or of any Master Rule and Regulation promulgated by the Association, or of any provisions of this Declaration.

3.12 **General Maintenance of Lots, Buildings and Improvements**

(a) Maintenance The Owners shall keep, maintain and repair their Lots, Buildings and Improvements situated thereon, including any fencing or landscape Improvements installed by the Declarant in a neat, clean, cultivated, attractive and well maintained condition, free from the accumulation of trash or debris or visual deterioration. The Owners shall repair and maintain any fencing on the common boundary with other Owners, including fencing installed by the Declarant, and the costs and expenses therefore shall be shared equally between the Owners sharing the common boundary.

(b) Trash No Lot shall be used as a dumping ground for rubbish. No garbage, rubbish or trash shall be allowed to accumulate on any Lot. All garbage, rubbish and trash shall be placed and kept in covered containers. All containers shall be kept within garages or enclosed backyards so as to not be visible from neighboring property, except to make the same available for collection during regular trash collection days.

(d) Association Authority In the event any Owner fails to keep, maintain or repair such Owner's Lot or the Building(s) or Improvement(s) situated thereon, including landscape and fence Improvements installed by the Declarant, in accordance with this section, a written notice will be issued. If an Owner fails to perform any of such obligations within ten (10) days following the receipt of a written notice from the Association then the Association shall be authorized to conduct such maintenance, repairs or restoration and assess the cost thereof to Owners on whose Lot or for whose benefit such maintenance or repairs were conducted as a reimbursement assessment.

3.13 **Duty to Maintain: Erosion and Sediment Control** Each Lot owner shall be responsible for making certain that any builder who performs any construction on such Lot adheres to and regularly notifies suppliers and subcontractors of their obligation by virtue of this Declaration to adhere to the Stormwater Best Management Practices during construction activities.

The Owner or its contractor shall install silt fences or straw bales around the site at the beginning of construction as needed to prevent sediment from leaving or entering the Lot in any direction, and shall comply with the Subdivision drainage plans. Backfill and rough grade of the Lots shall be completed as soon as possible in the construction process and final grade shall be established as soon as practical.

Permanent erosion and sediment control measures shall be installed and functioning within 6 months of the issuance of the certificate of occupancy on a residential building.

3.14 **Design Guidelines** All excavation and other land disturbance, construction, landscaping and irrigation activities within the Common Interest Community shall be governed by the procedures, standards, guidelines, restrictions and requirements set forth in the Design Guidelines. A violation of the Design Guidelines shall constitute a violation of this Declaration and may be enforced in accordance with the terms thereof.

3.15 **Noxious or Offensive Activities; Nuisances; Construction Activities** No noxious or offensive activity shall occur or be allowed at anytime on any property within the Common Interest Community, nor shall anything be done or placed thereon which is or may become a nuisance or cause an unreasonable embarrassment, disturbance, or annoyance to Owners, Occupants, Declarant, or the Association, or which interferes with the peaceful enjoyment or possession and proper use of the Common Interest Community, or any part thereof, by Owners or Occupants. As used herein, the term "nuisance" shall not apply to any activities of Declarant, which are reasonable necessary or appropriate to the development, improvement, maintenance, marketing and/or sale of the Common Interest Community or any part thereof. The Executive Board, in its sole discretion, shall have the right and authority to determine the existence of any nuisance or unreasonable annoyance.

Each Owner shall comply with the Master Rules and Regulations and the requirements of all health authorities and other governmental authorities having jurisdiction over the Common Interest Community. Normal construction activities and parking, during normal working hours, in connection with the building of Improvements on a Lot shall not be considered a nuisance or otherwise prohibited by the Master Declaration unless they are in violation of the Design Guidelines or other requirements of the Design Review Committee, but Lots and Association Property shall be kept in a neat and tidy condition during construction periods, trash, and debris shall not be permitted to accumulate, and supplies of brick, block, lumber and other building materials shall be neatly piled. In addition, construction equipment and building materials may only be stored or kept within the Common Interest Community during and in connection with the construction of Improvements thereon. All such equipment and materials and equipment shall be removed immediately following completion of construction.

3.16 **No Hazardous or Unsafe Activities** No activity shall be conducted on, and no Improvement shall be constructed on, any property within the Common Interest Community, which is or might be unsafe or hazardous to any Person or property. Without limiting the generality of the foregoing, and except as allowed below, no explosives, gasoline, or other volatile and/or incendiary materials or devices or any materials deemed hazardous or toxic substances under applicable environmental laws, or regulations shall ever be used, kept, stored, permitted to remain or be released or disposed of on any Lot or elsewhere within the Common Interest Community. Gasoline or fuel for the Owner's lawn mower, snow blower, and the like may be maintained on an incidental basis in an enclosed structure on a Lot in an amount not to exceed 10 gallons, except for construction purposes.

3.17 **Outside Burning; Fire Hazards** No exterior fires shall be lighted or permitted on any property within the Common Interest Community except in a contained barbeque unit while attended

and in use for cooking purposes, or in a landscaped exterior fire pit. Notwithstanding the foregoing, the Declarant shall have the right to perform burning activities in connection with the development and marketing of the Common Interest Community.

3.18 **No Firearms or Hunting** The discharge of firearms and hunting on any part of the Common Interest Community is expressly prohibited.

3.19 **No Unsightliness** All unsightly structures, facilities, equipment, objects, and conditions sporting equipment (e.g., skis, snowboards, bikes, mountain bikes, kayaks, etc.) and snow removal, garden or maintenance equipment except when in actual use, shall be kept in an enclosed structure or in a screened area approved by the Design Review Committee. No laundry or wash shall be dried or hung outside any residence.

3.20 **Animals** Except as specifically permitted below or by the Master Rules and Regulations, no animals, reptiles, primates, fish, fowl or insects of any kind shall be kept, raised, bred, maintained or boarded within or upon any part of the Common Interest Community.

Each Lot shall be entitled to a Maximum of no more than two (2) dogs or cats (or one of each) and a reasonable number of other household Pets, so long as such dogs, cats and other Household Pets are not kept for any commercial purpose, are not kept in unreasonable numbers, do not cause an unreasonable amount of noise or odor, or do not otherwise become a nuisance or threat to other Lot Owners or Occupants. Permitted dogs, cats, and other Household Pets must be fenced or restrained at all times within the Owner's or Occupant's Lot and shall not be permitted outside such Lot except when leashed and accompanied by the pet's owner or the owner's representative. All Household Pets shall be properly immunized and otherwise maintained and cared for as a required by applicable laws.

The Owner of Lot where a Household Pet is kept, as well as the legal owner of the pet (if not such Owner), shall be jointly and severally liable for any and all damage and destruction caused by the pet, and for any clean-up on the Owner's Lot and of streets, sidewalks, Association Property or other Lots necessitated by such pet.

The Executive Board shall be responsible for enforcing the restrictions set forth in this Section, and shall have, and is hereby given, the right and authority to determine in its sole discretion that dogs, cats and other Household Pets are being kept for commercial purposes, or are being kept in unreasonable numbers, or are causing an unreasonable amount of noise or odor, or are a nuisance or threat to other Lot Owners or Occupants, or that a Lot Owner or Occupant is otherwise in violation of this Section, and to take such action or actions as it deems reasonably necessary to remedy the violation, including without limitation the levying of fines and/or Reimbursement Assessments as provided in hereof. Also, without limiting the generality of the foregoing, the Executive Board may require the owner or custodian of a dog that barks or howls excessively, or of a dog, cat or other Household Pet with other offensive habits or threatening behavior, to confine such animal indoors, or to permanently remove such animal from the Common Interest Community, and may adopt Master Rules and Regulations governing pets.

3.21 **Restriction on Equipment, Tanks, Antennae, Satellite Dishes, Etc.** Air movement, air conditioning (including swamp coolers), heating, wind collection, or refrigeration equipment must be screened from the view of neighboring properties. Solar power units meeting all governmental guidelines for residential uses may be incorporated into a residence if the solar power unit meets the same architectural criteria as are applied to other Improvements within the Common Interest Community, and the solar power unit is approved in advance by the Design Review Committee. No tanks of any kind, whether elevated or buried, shall be erected, placed or permitted to remain upon any Lot or Association Property except in compliance with applicable federal and state regulations, and then only with the prior written consent of the Design Review Committee.

Satellite dishes that exceed one meter in diameter, and MDS antennas that exceed one meter in diameter or diagonal measurement, shall not be allowed within the Common Interest Community. Mast antennas that are extended higher than 12 feet above the roof line and antennas that are not used to receive video programming shall only be permitted within the Common Interest Community if they receive the prior written approval of the Design Review Committee as to design, location and screening from neighboring Lots, Units, and the Association Property.

3.22 **Restrictions on Mining or Drilling** No Lot within the Subdivision shall be used for any exploration or extraction of oil, gas or other minerals, including but not limited to, the drilling mining, quarrying, boring or developing water, geothermal resources, hydrocarbons, minerals, rocks, stones, gravel, or underground water.

3.23 **Excavation; Natural Rock Features** No excavation or other earth disturbances shall be performed or permitted within the Subdivision except in connection with the construction of Improvements. Whenever possible significant natural rock features shall be preserved, and shall not in any event be disturbed unless the written approval of the Design Review Committee is first obtained. Upon completion of construction, openings in the ground shall be backfilled and compacted and all disturbed ground shall be graded and landscaped in accordance with the Design Guidelines and the requirements of the Design Review Committee.

3.24 **No Interference with Waterways or Drainage Systems** All runoff shall be properly channeled into a storm drain, storage area, or other storm water management facility in conformance with the drainage portion of the approved site plan. All elements of the drainage control system shall be constructed and maintained in accordance with the approved site plan.

No Owner or Lessee shall construct, install, maintain or permit any fence or other improvement or obstruction or plant trees or take any other action which damages or interrupts or interferes in any way with the normal flow of water through and along waterways and water features within the Subdivision, any ditch, lateral, pond or other water collection, storage or distribution system within or serving the Subdivision, or normal drainage patterns within the Subdivision, subject always to the rights of owners of ditches and other water rights and the requirements of the Design Review Committee.

The Association shall have the authority to take such action as may be necessary to abate any such damage or interference, and shall have the right to enter upon a Lot or Common Element for purposes of correcting or removing obstructions, and any costs incurred by the Association in connection with such abatement, injunctive or corrective activities shall be assessed to the responsible Lot Owner in the form of a Reimbursements Assessment.

3.25 **Ponds** No swimming or boating or ice-skating activities shall be conducted on any ponds within the Subdivision.

3.26 **Tree and Natural Shrub Preservation** All Improvements within the Subdivision shall be located, designed, and constructed so as to preserve and protect trees and natural shrubs. In order to conserve the natural shrubs (e.g., pine, cedar, pinon, other evergreens, and gamble oak or sage brush) may be removed or trimmed except with the prior written approval of the Design Review Committee. This restriction shall not apply to the removal or trimming of dead or diseased vegetation, or essential clearing by a Lot Owner in connection with the construction of a residence on a site previously approved by the Design Review Committee. Any violation of this Section shall subject the offending Lot Owner to such penalties, fines and/or other conditions as the Design Review Committee considers appropriate, including without limitation the withdrawal or modification of previously granted development approvals, or the requirement that replacement trees or shrubs or equivalent or different size and type be planted and maintained by the Lot Owner.

3.27 **Use of Easement Areas; Utility Installation** All easements shown on a Plat or Supplemental Plat covering any portion of the Subdivision have been created or reserved for the purposes indicated on such Plat and/or Article. No Lot Owner may erect any structure in such easement areas, nor may an Owner or Occupant use the surface of such easement areas for any private use, other than landscaping which will not interfere with the use of said easement by the Persons or entities for whose benefit it has been created or reserved and which received the prior written approval of the Design Review Committee.

With respect to easements created for access and/or utility purposes either by the terms of this Master Declaration or any other Recorded agreement or on a Plat, any and all bona fide public and private utility service companies, including special districts, shall have the right of access, ingress, egress, and use of such easement areas for the installation, operation and maintenance of utility facilities service the Subdivision.

3.28 **Landscaping and Irrigation Regulations** No landscaping shall be performed on any Lot or Common Element or on Association Property unless a landscaping plan has received prior written approval of the Design Review Committee, and all landscaping shall comply with the Design Guidelines. A landscaping plan for each Lot must be approved by the Design Review Committee before construction is commenced on the residence on that Lot. Any substantial change in the type or location of approved landscaping vegetation shall require the further approval of the Design Review Committee.

The only type of Turf Grass permitted to be installed in the Subdivision is low-maintenance turf. A maximum of fifteen percent (15%) green space of the Lot may be planted with turf grass configured and shall have a permanent irrigation system installed. Green space is defined as the entire parcel less any Improvement footprints, driveways, vehicle use areas, and other impervious areas. Storm water management system areas are excluded in the calculation of green space area.

The Planting of low water requirement plants, trees and shrubs shall be regulated by the Design Review Committee, and shall be limited in accordance with Design Guidelines. The preservation of the natural high desert look of Pinnacle Ridge and the views of each Lot owner shall be respected.

Subsurface and soils conditions may vary substantially from Lot to Lot in Pinnacle Ridge, ranging from sand to clay to rock. Over-watering under some soil conditions has the potential of causing damage to the Lot Owners' Improvements as well as to neighboring properties. Each Lot Owner shall obtain a soil and subsurface conditions report from an independent qualified geotechnical firm before constructing any improvements on his Lot. The Lot Owner shall comply with all restrictions and recommendations contained in the report with respect to construction and methods and practices appropriate for the specific soils and subsurface conditions encountered on the Lot. Irrigation plans and systems proposed within each Lot shall also be in compliance with the Design Guidelines and approved by the Design Review Committee. By virtue of the fact that neither the Declarant nor the Association shall have the means to monitor irrigation systems installed or actual irrigation practices, the assumption of risk, waiver and release provisions of Section below shall in all cases apply notwithstanding approval of a landscaping plan by the Design Review Committee.

Each Owner shall diligently maintain, trim, weed, cultivate, husbandry, protect, preserve and otherwise keep in a healthy and attractive condition of the low maintenance shrubs, trees, hedges, grass, planters, gardens and other landscaping upon the Owner's Lot, including, without limitation, the removal of dead and diseased branches and brush and the performance of other tasks necessary to remove or eliminate material which constitutes or creates a fire hazard or nuisance, and shall keep the Owner's Lot free of noxious weeds. Each Owner shall also maintain all paved, concrete and other synthetically surfaced areas within the Owner's Lot, including but not limited to, driveway and parking areas, in good condition and repair.

3.29 **Tennis Courts and Basketball Hoops** Tennis courts, and basketball hoops, backboards and nets shall not be allowed unless they comply with the Design Guidelines and the approval of the Design Review Committee is first obtained.

3.30 **Swimming Pools, Spas, and Related Equipment** Pools, spas or hot tubs may be erected, constructed or installed on Lots or Common Elements within the Subdivision, provided they comply with the Design Guidelines and that have received the prior written consent of the Design and Review Committee. If a pool, spa or hot tub is approved, all service equipment shall be fenced and located in either a side yard between the front and rear boundaries of the residence, or in the rear yard adjacent to

the residence, and shall be adequately screened from any neighboring Lot, the Association Property, and all streets in the Common Interest Community.

3.31 **Signs and Advertising** With the exception of one entry/identification sign per Lot during the period of actual construction on the Lot, which sign shall comply with the Design Guidelines, no sign, poster, billboard or advertising device of any kind shall be allowed or displayed upon any Lot or any Association Property within the Common Interest Community except:

(a) Such signs as may be used by the Declarant or builders approved by Declarant in connection with the development, marketing and sale of Lots in the subdivision;

(b) Such signs as may be required for traffic control and regulation of Association Property;

(d) Neighborhood monuments (e.g., entrance and directional signs) which are compatible with the architecture of the area;

(e) One security company sign;

(f) One "For Sale" or "For Rent" sign on any Lot,

(g) One "Private Residence" sign on any Lot. All such signs must comply with the Design Guidelines.

3.32 **Camping and Picnicking** No camping or picnicking shall be allowed on Association Property except in areas, designated for such purpose by the Association.

3.33 **No Individual Water Wells or Individual Sewage Disposal Systems** No individual water wells, and no cesspools, septic tanks or other individual sewage disposal systems, shall be drilled, constructed, maintained or permitted to remain within the Common Interest Community, except such water and/or septic systems as may be installed by Declarant or Declarant's successor, assign or agent or the Association to serve the Common Interest Community.

3.34 **Regulation of Pesticides** The Design Review Committee may adopt reasonable rules and regulations governing the use and application of pesticides, herbicides, fertilizers and fungicides within the subdivision.

3.35 **Untreated Water Irrigation System, Ditches, Laterals, Ponds, and Water Use Obligations** Declarant hereby discloses that certain irrigation systems, pipes, stub-outs, ditches, ditch laterals and ponds are currently located or may be constructed within ditch and irrigation easement areas located upon certain Lots in the Common Interest Community, upon Association Property, and/or within City-owned right-of-ways (collectively referred to as the "Untreated Water Irrigation System"). Declarant reserves the right, in its sole discretion, to extend said Untreated Water Irrigation System into the acquired property, as shall be more specifically set forth in the Supplement Declaration(s) therefore. Declarant further discloses that as of the date of this Master Declaration, the ownership of any and all water rights carried or to be carried in said Untreated Water Irrigation System is vested in the City of Grand Junction, and the City has no obligation to transfer ownership of any of such water rights to any

Lot Owner or the Association. In no event shall the Association or any Lot Owner be entitled to the right of use of the Untreated Water Irrigation System or any water flowing through said Untreated Water Irrigation System, except pursuant to the payment of fees and compliance with the rules and regulations of the City of Grand Junction. Furthermore, in no event shall any Lot Owner be entitled to install irrigation facilities, to divert water from the Untreated Water Irrigation System or to make Modifications to the Untreated Water Irrigation System for diversion purposes. In addition, in no event shall any Lot Owner or the Association obstruct or impede the flow of water through the Untreated Water Irrigation System.

The City's operation of the Untreated Water Irrigation System is solely pursuant to the Plan and Agreement between the City and the Ridges Metropolitan District, Dated November 1, 1991, approved by the District Court of Mesa County in Case No. 26330.

As long as the City operates the Untreated Water Irrigation System, the City will provide untreated water to Pinnacle Ridge for irrigation purposes through the Untreated Water Irrigation System. To the extent possible, all irrigation within Pinnacle Ridge shall be accomplished with untreated water from the Untreated Water Irrigation System. City will also provide untreated water for the Association for purposes of irrigating Association Property, and the Home Owners Association will pay the monthly fee associated therewith. The Association is responsible for irrigating Association Property and the landscaping along certain public roadways.

All Owners hereby assume any risk involved with respect to the operation of the Untreated Water Irrigation System and hereby acknowledge that the Association, the Declarant, and the City shall not have any responsibility or liability of any kind to any loss, damage, cost or expense arising from or relating to said Untreated Water Irrigation System, including, but not limited to, any loss or damage caused by over watering, failure of irrigation system components, flooding or the failure to deliver water. In accordance with the foregoing, such Owners, on behalf of themselves and their Occupants, successors and assigns, by acceptance of a deed acknowledge their assent to the provisions hereof, and hereby waive and release Declarant, the City, and the Association and each of their officers, directors, partners, trustees, members, agents, employees, stockholders, and contractors, from and against any and all obligations, claims, demands, liabilities, costs, expenses, attorneys' fees, or causes of action of any kind whatsoever, whether arising prior or subsequent to the date hereof, whether known or unknown, based upon, arising out of, or in any manner related to the Untreated Water Irrigation System.

3.36 **Restoration of Improvements in the Event of Damage or Destruction** In the event of damage to or destruction of any Improvement on any Lot, the Owner thereof shall cause the damaged or destroyed Improvement to be restored or replaced to its original condition or such other conditions as may be approved in writing by the Design Review Committee, or the Owner shall cause the damaged or destroyed Improvement to be demolished and the Lot to be suitably landscaped, subject to the approval of the Design Review Committee, so as to present a pleasing and attractive appearance. Such Improvements shall be repaired, restored, or otherwise demolished and suitably landscaped within such reasonable time frame as may be established by the Design Review committee.

3.37 **Leases** Any Owner shall have the right to Lease his Lot including the Improvements under the following conditions.

(a) All Leases shall be in writing.

(b) All Leases shall provide the terms of the lease and the tenant's (Occupant's) use of the Lot shall be subject in all respects to the provisions of this Declaration or any pertinent Supplemental Declaration, and the Articles, the Bylaws, and the Master Rules and Regulations, and the Design Guidelines, that the Occupant has received and reviewed copies of said documents, and any failure by the Occupant to comply with any of the aforesaid documents, in any respect, shall be a default by Occupant under the Lease and a default by Occupant and Owner under said documents which may be enforced against Occupant and/or Owner by the Executive Board.

(c) Each Owner who leases a Lot shall be responsible for assuring compliance by the Occupant with all of the provisions of this Declaration, any pertinent Supplemental Declaration, the Articles, the Bylaws, the Master Rules and Regulations, and the Design Guidelines, and shall be jointly and severally responsible with the Occupant of any violations thereof by the occupant.

(d) Each Lease shall expressly provide that the Association (via the Executive Board) shall have the right to give the Occupant written notice that the Occupant is in violation of one or more of the documents listed in subsection above, which notice shall specify a period of time (at least 5 days) in which the Occupant may cure the violation.

(e) All legal fees and costs incurred by the Association in connection with a Lease shall be the joint and several liabilities of the Lot Owner and the Occupant and may be collected by legal action in which the prevailing party shall be entitled to an award of its reasonable costs and attorney's fees.

3.38 **Right of Entry** During reasonable hours and upon notice to the Owner and Occupant of a Lot, any member of the Executive Board, shall have the right to enter upon and inspect any Lot, and the Improvements thereon, except for the interior portions of any occupied dwelling (which shall require the permission of the Owner or Occupant, except in case of emergency, when no notice or permission shall be required), for the purpose of ascertaining or not the provisions of the Declaration and of the Design Guidelines have been or are being complied with, or for the purpose of exercising any rights or performing any responsibilities (maintenance, repair, etc.) provided for in this Declaration or in any Supplemental Declaration, and such individuals shall not be deemed guilty of trespass by reason of entry.

3.39 **Damage by Owners During Construction** Each owner is responsible for any damage caused to roads, streets, ditches, fences, trails, natural drainage courses, utilities, Association Property, or to other Lots, Units, or Improvements thereon, during the construction or alteration of Improvements upon the Owner's Lot, including without limitation damage caused by any construction vehicles using the roads or streets within the Common Interest Community. Damage shall include any degradation in the appearance or condition of such roads, streets, Association Property, or other Lots, Units, or Improvements. The responsible Owner shall promptly repair and clean up any such damage, at its sole expense. Each Owner shall also be responsible for any damage caused by utility cuts in roads,

washouts and runoff damage caused by failure to properly install culverts, and to promptly repair any such damage. If the Owner fails to repair any such damage within 5 days following receipt of a written notice from the Executive Board requesting the same, the Executive Board shall have the right to perform such repairs on behalf of the Owner, and to levy a Reimbursement Assessment upon the Owner and its Lots to recover the costs thereof. All construction activity must maintain the integrity of the City's Stormwater Management Manual. All violations are subject to penalty under the City's ordinance.

3.40 **Health, Safety, and Welfare** In the event any uses, activities, and facilities within the Subdivision are deemed by the Executive Board to be an unreasonable annoyance or nuisance, or to adversely affect the health, safety or welfare of Owners or Occupants, the Executive Board may amend the Master Rules and Regulations In order to appropriately restrict and regulate such uses, activities or facilities within the Subdivision. Such rules shall be consistent with the purposes and provisions of this Declarations.

3.41 **Implementation and Variances** The Executive Board is charged with implementing and enforcing the restrictions in this Article, or otherwise restrict and regulate the use and occupancy of the Subdivision and the Lots by reasonable Master Rules and Regulations of general application adopted by the Executive Board from time to time. The Executive Board may, in its sole discretion and in extenuating circumstances, grant variances from any of the restrictions set forth in Article 3 (excepting any such restrictions with respect to which the Design Review Committee has the authority to grant variances under Article IV), if the Executive Board determines, in its discretion, (a) either (i) that a particular restriction a substantial hardship or burden on an Owner or Occupant, which hardship or burden was not caused by said Owner or Occupant, or (ii) that a change of circumstances since the Recordation of this Declaration has rendered such restriction obsolete, and (b) that the activity permitted under the variance, in the judgment of the Executive Board will not have any material adverse effect on the Owners and Occupants of the Subdivision (including neighboring Lots) and is consistent with the high quality of living intended to be promoted hereby throughout the Subdivision. When an Owner applies for a variance, the Board must give at least ten (10) days advance written notice of the variance hearing and the nature of the variance requested, postage paid, by certified mail, return receipt requested, to all Owners of Lots that are situated within a radius of 300 feet of the Lot for which the variance is sought, at current addresses for such Owner reflected in the Association files. The applying Owner must provide the Committee with an accurate list of the Owners to be so notified. If the foregoing notice requirements are complied with, it is not necessary that the Owners actually receive the notice that is mailed to them, such notices being deemed received upon mailing.

No variance shall conflict with the Master Subdivision Plan for Pinnacle Ridge or with ordinances or regulations of the City. If a variance from the Master Subdivision Plan or City laws or regulations is also required in connection with a matter for which a variance is desired, it shall be the Owner's responsibility to obtain such City variance before submitting a variance application to the Executive Board.

3.42 **Declarant Activities** Nothing contained in this Declaration is intended or shall be interpreted to prevent, regulate or delay or to restrict Declarant's right and ability to develop, improve, maintain, repair, regulate, operate, administer, manage, market, sell, lease, encumber or dispose of the Common Interest Community, the Lots, the Association Property, additional unspecified real estate, or any part thereof, including the right to construct Improvements, place a construction office, construction trailers, and install signs thereon, all in the discretion of Declarant.

ARTICLE IV
DESIGN REVIEW COMMITTEE

4.1 **Establishment of Design Review Committee** The Association shall establish and maintain the Design Review Committee, consisting of three (3) members, each of whom shall be appointed and removed by the Executive Board of the Association from time to time in its discretion. The qualifications for members of the DRC shall be set forth in the bylaws. The Design Review Committee and the members thereof shall not be liable for damage to any Person submitting requests for approval or to any Owner within the Property by reason of any act, omission, approval, disapproval or failure to approve or disapprove with regard to any request. The actions of the Design Review Committee shall be deemed conclusively binding upon the Owners.

4.2 **Meetings and Action of Committee** The Design Review Committee shall meet as often as necessary to review applications. The meetings shall be held at locations, times and dates determined by the Design Review Committee. Such meetings shall be conducted according to the procedures adopted by the Design Review Committee. The applicant may attend the meetings, and address the Committee or answer questions in the Design Review Committee's discretion. The majority vote of the Design Review Committee members shall be required to take any action on behalf of the Committee.

4.4 **Compensation of Committee Members** The Design Review Committee may be compensated for services performed pursuant to this Declaration within the discretion of the Executive Board.

4.5 **Records of Actions** The Design Review Committee shall keep a permanent record of all actions of the Design Review Committee.

4.6 **Design Guidelines** The Design Review Committee shall establish the initial set of rules, procedures, standards, guidelines and requirements, including without limitation architectural, design and development standards and guidelines, governing the review and approval or disapproval of all Improvements proposed for new construction or the restoration or modification of existing, roof construction within the Common Interest Community consistent with this Declaration. The design standards and guidelines may be amended from time to time as the Design Review Committee deems reasonable or necessary.

4.7 **Submission of Plan** Prior to commencement of any work to accomplish any proposed Improvements, the Owner proposing such Improvements shall submit three (3) sets of plans, designs,

drawings, specifications and samples as the Design Review Committee shall require pursuant to its design and development standards and guidelines, which may include, but are not necessarily limited to the following: construction plans and specifications, including floor plan and exterior elevations, site plan of house to be built on the Lot, sample of exterior colors; sample of trim and soffit colors, sample of roof shingle, landscape plan, including sprinkler system, drainage and grading, and application for Design Review Committee approval form required by the Design Review Committee.

From and after the day on which the Design Review Committee receives all required information and materials in connection with the proposed Improvements and Builder, The Design Review Committee shall have 30 calendar days in which to approve, approve with conditions, or deny the application. In the discretion of the Committee, one or more meetings may be held with the Owner during that period. If the Design Review Committee fails to approve or deny the application within said 30-day period, the final plans and specifications submitted to the Committee by the Owner shall be deemed approved.

4.8 **Design Review Fee** The Design Review Committee shall adopt a design review fee schedule for processing requests for the original construction of a residential improvement, and for subsequent requests for approval of Improvements on a Lot including remodels, renovations or other alterations of the original approval. No fee shall be charged for any proposed alteration or addition to an approved landscaping plan. The design review fee schedule may be modified from time to time and shall be set forth in the Design Guidelines.

4.10 **Design Review and Construction Process** Every owner proposing to make Improvements on its Lot must comply with the design review and construction procedures that are set forth in the Design Guidelines. The Declarant is exempt from this requirement.

4.11 **Approval of Plans** The Design Review Committee shall approve any plans submitted if it determines in its discretion that such plans comply with the Committee rules and procedures, the design and development standards and guidelines, and the requirements of the Plat and the Declaration. Upon approval of any plans, the Design Review Committee shall stamp both sets of the plans accordingly and return one set to the applicant. The other set shall be retained by the Design Review Committee, along with the application form. In the event of any later discrepancies between the set of plans given to the applicant and the set retained, the set of plans on file with the Design Review Committee shall control.

Approval by the Committee on any Improvement shall not imply or require that such approval will be granted again in the future for the same or similar Improvements, and the Committee shall have complete discretion, consistent with the standards and criteria contained herein and in the Design Guidelines, to grant or deny such approval in each instance on the merits of the particular application or proposal and considering the circumstances surrounding the same.

4.12 **Decisions of Committee** Decisions of the Design Review Committee shall be made in accordance with the procedures established in the Design Guidelines and shall be binding on all parties.

4.14 **Completion of Work After Approval** Following the approval of any proposed Improvements by the Design Review Committee, the proposed Improvements shall be completed by the Lot Owner: (a) as promptly and diligently as possible but in no event in excess of the time periods set forth below; (b) in compliance with the Design Guidelines and with all applicable laws, regulations and codes, (c) in strict conformance with all plans and specifications and other materials furnished to and approved by the Design Review Committee and with the Certificate of Approval; and (d) in accordance with any and all conditions imposed by the Design Review Committee. All Improvements approved be the Design Review Committee shall be completed, a Certificate of Compliance shall be obtained in accordance with Section 4.15 below, and all construction equipment, materials and debris shall be removed, (i) within 18 months from the date of approval of such Improvements by the Design Review Committee, or (ii) within such other time period as the Design Review Committee may prescribe. Provided, however, that any and all landscaping and/or gardening approved by the Design Review Committee which is related to the initial construction of a residence on a Lot shall be completed no later than 180 days immediately following the issuance of the Certificate of Occupancy for such residence. Failure to comply with the terms and conditions of this Section 4.14shall constitute noncompliance with the terms and provisions of this Declaration and the Design Review Committee and/or the Executive Board shall have the right to invoke all rights and remedies provided to them hereunder, including but not limited to, the right to seek injunctive relief and/or to impose fines and penalties.

4.13 **Right to Inspect** Designated members or authorized consultants of the Design Review Committee or of the Executive Board, or any authorized officer, agent of the Association, may with notice at any reasonable time enter upon any Lot without being deemed guilty of trespass, in order to inspect Improvements constructed or being constructed on such Lot, to ascertain whether such Improvements have been or are being built or changed in compliance with the Design Guidelines, the approvals granted by the Design Review Committee, and this Declaration.

4.14 **Notice of Completion; Inspection of Work; Correction of Defects**

(a) Upon completion of any Improvements (excepting the related landscaping) for which plans and specifications have been approved by the Design Review Committee, the Owner shall submit to the Committee a written Notice of Completion, on a one page form to be provided by the Committee, which Notice shall certify that the Improvements have been completed in accordance with all plans, specifications and other materials furnished to and approved by the Committee, the Certificate of Approval, any conditions imposed by the Committee, and with the Design Guidelines. Until receipt of such Notice, the Committee shall not be deemed to have any notice regarding completion of the Improvements.

(b) Within seven (7) days following the receipt of the Notice of Completion, the Design Review Committee or its duly authorized representative shall inspect the Improvements. If the Committee finds that the Improvements have not been completed at set forth in the Notice of Completion, it shall notify the Lot Owner in writing of such noncompliance within said seven (7) day

period, specifying the particulars of noncompliance, and shall require the Owner to remedy the same. If for any reason other than the Lot Owner's act or neglect, the Committee fails to notify the Owner of any noncompliance or to issue the Owner a Certificate of Compliance pursuant to Section4.15 below prior to the expiration of said seven (7) day period, the Improvements shall be deemed in compliance if the Improvements were, in fact, completed as of the date of the Notice of Completion and the Owner or Registered Builder may proceed to request a Certificate of Occupancy from the City.

(c) If upon the expiration of thirty (30) days from the date of such notification of noncompliance the Lot Owner shall have failed to remedy such noncompliance, the Design Review Committee shall notify the Executive Board in writing of such failure. The right of the Home Owners Association to remedy or remove any noncompliance shall be in addition to all other rights ad remedies which the Association may have at law, in equity, or under this Declaration or any Supplemental Declaration, and the Lot shall have no claim for damages or otherwise on account of the entry upon the property and remedying or removal of the non-complying Improvement.

4.15 **Certificate of Compliance** When the Design Review Committee is satisfied that the Improvements have completed in accordance with all plans, specifications and other materials furnished to the Design Review Committee, the Certificate of Approval, any conditions imposed by the Committee, and with the Design Guidelines, it shall issue within seven (7) days to the Owner a Certificate of Compliance with respect to said Improvements. Upon receipt of such Certificate, but not before, the Owner or Registered Builder may apply to the City for a Certificate of Occupancy. No newly-constructed residence on a Lot shall be occupied until a Certificate of Occupancy has been issued therefore by Mesa County.

4.16 **Improvements Must Conform to Approvals** No building, fence, landscaping, wall, structure or other Improvement shall be commenced, constructed, erected, placed, installed, located, maintained or removed within the Common Interest Community, nor shall there be any additions or changes to the exterior of any residence or other structure or Improvement upon a Lot or the landscaping, grading or drainage thereof, including without limitation, the painting or staining (other than painting or staining with the same color and type of paint or stain as previously existed) of exterior walls, patio covers and fences, except in accordance with plans and specifications therefore which have been submitted to and approved by the Design Review Committee and in compliance with the Design Guidelines.

4.17 **Committee Power to Grant Variances** The Design Review Committee may grant variances from any of the restrictions in this Declaration or any Supplemental Declaration or the Design Guidelines including restrictions upon height, size, floor area, setbacks, location or placement of structures, or similar restrictions, when unique circumstances not created by the Lot Owner, such as topography, natural obstructions, or aesthetic or environmental considerations would otherwise result in substantial hardship or burden which is not suffered by other similarly-situated Lots, or when a change of circumstances since the Recording of this Declaration has rendered such restriction obsolete. In granting a variance the Design Review Committee shall determine that the activity allowed by the

variance will not have any material adverse effect on the Owners and Occupants of the Common Interest Community (including neighboring Lots) and is consistent with the quality of living intended to be promoted throughout the Common Interest Community. When an Owner applies for a variance, the Committee must give at least seven (7) days written notice of the variance hearing, and of the nature of the variance requested, postage prepaid by certified mail, return receipt requested, or by other means provided for in the Bylaws, to all Owners of Lots that are situated within a radius of 300 feet of the Lot for which the variance is sought, at the current addresses for such Owners reflected in the Association files. The applying Owner must provide the Committee with an accurate list of the Owners to be so notified. If the foregoing notice requirements are complied with, it is not necessary that the Owners actually receive the notice that is mailed to them, such notices being deemed received upon mailing.

All variances granted by the Design Review Committee must be evidenced in writing, must specify the Lot for which the variance, and must be signed by at least the majority of the members of the Committee. If any such variance is granted, no violation of the covenants, conditions and restrictions contained in this Declaration or any Supplemental Declaration or the Design Guidelines shall be deemed to have occurred with respect to the matter for which the variance was granted. The granting of such a variance shall not operate to waive any of the terms and provisions of this Declaration or of any Supplemental Declaration or the Design Guidelines for any purpose except as to the particular property and particular provision hereof covered by the variance. A copy of each variance request and approval, or denial, will be kept on file at the Association offices.

The granting of a variance in a particular instance shall in no event imply or require that such a variance will be granted again in the future in a similar situation, and the Committee shall have complete discretion, consistent with the standards and criteria contained herein and in the Design Guidelines, to grant or deny a variance in each instance on the merits of the particular application and considering the circumstances surrounding the same.

No variance shall conflict with the Master Subdivision Plan for Pinnacle Ridge or with ordinances or regulations of the City. If a variance from the Master Subdivision Plan or City laws or regulations is also required in connection with a matter for which a variance is desired hereunder, it shall be the Owner's responsibility to obtain such City variance before submitting a variance application to the Design Review Committee.

4.18 **Non-liability for Approval or Disapproval of Plans and Specifications, for Issuance of Certificates of Approval or Compliance, or Restriction of Builders** The Design Review Committee shall not be responsible for reviewing plans and specifications with respect to engineering design or for compliance with zoning, building ordinances, environmental laws, or any other applicable laws or regulations. By its approval of any such plans and specifications, and by its issuance of a Certificate of Approval, neither the Design Review Committee, the members thereof, the Association, any member, the Executive Board not the Declarant assumes or shall have any liability or responsibility with respect to engineering design or for compliance with zoning, building ordinances, environmental laws, or any

other applicable laws or regulations, or for any defect in any Improvement constructed from such plans and specifications.

Likewise, Builders shall register with Design Review Committee in the manner set forth in the Design Guidelines. By registering a Builder, the Design Review Committee does not represent or warrant, either expressly or by implication, and hereby disclaims any representations or warranties, that the Registered Builder will in fact complete the Improvements on schedule, within the Owner's budget, or in a competent and workmanlike manner, or that the Registered Builder is or will remain financially sound, and the Lot Owner's assume all risks regarding such matters.

4.19 **Registration of Builders** The construction or renovation of Units or of residential improvements on Lots within the Common Interest Community shall be accomplished only by licensed general contractors.

ARTICLE V
THE ASSOCIATION

5.1 **General Powers** The Association's general purpose is to be and constitute the entity to further the mutual interests of the Declarant and the Owners pursuant to this Declaration, the Articles and Bylaws and the Act, including without limitation, enforcement of the Master Declaration; Owning, repairing and maintaining the Common Elements; Maintenance and use of any Lots, Buildings and Improvements as authorized in the Declaration; Levying and enforcing assessments to defray the cost and expenses of the Association's duties and responsibilities in this Declaration; and, providing other utilities and services pursuant to the Articles and Bylaws. The Association shall have and may exercise all of the powers and duties of the Colorado corporation formed under the Colorado Revised Nonprofit Corporation Act.

5.2 **Association Executive Board** The affairs of the Association shall be managed by an Executive Board of three (3) directors (the "Board") initially. When Declarant relinquishes control of the Board to the Owners pursuant to Section 5.5 below, the Board shall be managed by at least three (3) directors. Directors shall meet the qualifications described in the Articles of Incorporation and Bylaws of the Association.

A quorum shall be present throughout any meeting of the Executive Board, and all regular and special meetings of the Executive Board or any committee thereof shall be open to attendance by all members of the Association or their representatives. Without limiting the generality of the foregoing, no Master Rule or Regulation may be adopted during an executive session. Agendas for meetings of the Executive Board shall be made reasonably available for examination by all Members of the Association or their representatives.

The Executive Board may not act on behalf of the Association to amend this Declaration, terminate the Common Interest Community, elect members of the Executive Board or determine the qualifications, powers and duties, or terms of office of Executive Board members, but the Executive Board may fill vacancies in its membership for the unexpired portion of any term.

5.3 **Membership in Home Owners Association** By acceptance of a deed to a Lot within the Subdivision, each Owner shall be a Member of the Association. A membership shall be appurtenant to and may not be separated from ownership of any Lot. Declarant shall hold a Membership in the Association for each Lot owned by Declarant. Membership in the Association shall not be assignable separate and apart from fee simple title to a Lot, and may not otherwise be separated from ownership of a Lot.

5.4 **Voting Rights of Member** The Association shall have one class of voting membership, each Owner being entitled to vote one (1) vote for each Lot owned upon matters subject to vote by the Members as provided in the Articles and Bylaws of the Association. A vote for each Lot shall be exercised as the Owner or Owners may determine, but in no event shall more than one (1) vote be cast with respect to any Lot.

Provided a quorum of Members entitled to vote is present in person or by proxy, the affirmative vote of a majority of the Members so present shall constitute approval of any matter voted upon unless a different number is required on a particular matter by the Act, this Declaration, any Supplemental Declaration, the Articles, or the Bylaws.

The Lot Owners, by a vote of sixty-seven percent (67%) of all Members present and entitled to vote at any meeting of the Lot Owners at which a quorum is present, may remove any member of the Executive Board with or without cause, other than a member appointed by Declarant.

5.5 **Declarant Control of Association** From the date of the formation of the Association until termination of Declarant's control as provided below, Declarant shall have and hereby reserves the power to appoint and remove, in its sole discretion, the members of the Executive Board and the officers of the Association during the period commencing upon the Recording of this Declaration and terminating upon the first to occur of either sixty (60) days after conveyance of seventy-five percent (75%) of the Lots to Owners other than Declarant or two (2) years after the last conveyance of a Lot by Declarant in the ordinary course of business.

Declarant may voluntarily surrender the right to appoint and remove officers of the Association and members of the Board before termination of the period of Declarant's control, but in that event Declarant may require, for the duration of the period of Declarant's control, that specified actions of the Association or Board, as described in a recorded instrument executed by Declarant, be approved by Declarant before they become effective. Not later than sixty (60) days after conveyance of twenty-five percent (25%) of the Lots to Owners other than Declarant, at least one (1) member and not less than twenty-five percent (25%) of the members of the Executive Board must be elected by Lot Owners other than Declarant. Not later than sixty (60) days after conveyance of fifty percent (50%) of the Lots to Owners other than Declarant, not less than thirty-three and one-third percent (33%) of the members of the Executive Board must be elected by Lot Owners other than Declarant.

Within sixty (60) days after Lot Owners other than Declarant elect a majority of the members of the Executive Board, Declarant shall deliver to the Association all property of the Lot

Owners and of the Association held or controlled by Declarant, including, without limitation, those items specified in the Act.

5.6 **Termination of Contracts and Leases of Declarant** The following contracts and leases, if entered into before the Executive Board elected by the Lot Owners pursuant to Section 38-33.3-303(7) takes Office, may be terminated without penalty by the Association at any time after the Executive Board elected by the Lot Owners pursuant to said Section 38-33.3-303(7) takes office, upon not less than ninety (90) days notice to other party; (i) Any management contract, employment contract or lease of recreational or parking areas or facilities; (ii) Any other contract or lease between the Association and Declarant or an affiliate of Declarant; or (iii) Any contract or lease that is not bona fide or was unconscionable to the Lot Owners at the time entered into under the circumstances then prevailing.

ARTICLE VI
ASSOCIATION PROPERTY

6.1 **Use and Enjoyment of Association Property** With the exception of Limited Common Areas, and except as otherwise provided in the Declaration, in any Supplemental Declaration, or in the Master Rules and Regulations, each Owner shall have the non-exclusive right to use and enjoy Association Property in common with all other Owners. This right to use and enjoy Association Property shall extend to each Owner, Occupant, and the family members, guests and invitees of each Owner, and to such other users as may be authorized by this Declaration or by the Executive Board from time to time, and shall be appurtenant to each Lot, subject at all time to the provisions of the Declaration, the Articles, Bylaws, and the Master Rules and Regulations. No Owner or Occupant shall place any structure or store or leave any materials or personal property upon Association Property, nor shall any Owner or Occupant engage in any activity, which will temporarily or permanently impair free and unobstructed access to all parts of the Association Property by all Owners. Use of the Association Property is also subject to any applicable terms of the Declaration of Easements.

6.2 **Home Owners Association May Regulate Use of Association Property** The Association, acting through the Executive Board, shall have the right and authority to regulate the use of Association Property by the promulgation, enforcement and interpretation from time to time of such Master Rules and Regulations relating thereto as the Association considers necessary or appropriate for the protection and preservation of Association Property and the enhancement of the use and enjoyment thereof by Owners and Occupants and other authorized users.

The Association, acting through the Executive Board, may for good cause suspend the right of any person to use and enjoy the Association Property, including the right of a Member who or which is delinquent in the payment of any Assessments, and the right of any Member or other authorized user who is in violation of the terms and provisions of this Declaration or any Supplemental Declaration, the Articles, Bylaws, Master Rules and Regulations, Design Guidelines or the terms and provisions of any approvals granted by the Design Review Committee.

6.3 **Association to Maintain and Improve Association Property** The Association, its agents and employees, shall maintain and repair, snowplow as necessary, and otherwise manage the Association Property (including the Limited Common Area), including, but not limited to, any Improvements, landscaping, paths, trails, parking areas, drives, and recreational and other facilities located thereon. The Association may construct, alter and remove such Improvements and landscaping upon Association Property as the Association in its discretion considers necessary, desirable or appropriate from time to time, and may do all such other and further acts which the Executive Board deems necessary or appropriate to preserve, protect and enhance the Association Property and the beauty thereof in accordance with the general objectives for the Common Interest Community reflected in the Declaration. Separate bids shall be let for the maintenance of Limited Common Areas so that the costs thereof can be assessed exclusively to the Lots benefited thereby.

The Association shall take title to, own, manage and maintain the Common Areas, particularly the private streets, recreational areas, open space, and areas for storm water management, erosion and sediment control. The Association shall maintain the private streets, the parking areas included within the same tracts as the private streets and maintain a vegetation-free zone along the private streets that is 20 feet in width (10 feet each side from the center of the private street).

The Association shall grant the City of Grand Junction Police Department the right and power to enter the private streets for the purpose of enforcing parking restrictions.

6.4 **No Partition of Association Property** No Owner or other Person shall have any right to partition or to seek the partition of Association Property thereof.

6.5 **Owner Liability for Owner or Occupant Damage to Association Property** Each Owner shall be liable to the Association for any damage to Association Property of for any expense, loss or liability suffered or incurred by the Association in connection with Association Property arising from the negligence or willful misconduct of such Owner or of any Occupant, agent, employee, family member, guest or invitee of such Owner, or any violation by such Owner or any Occupant, agent, employee, family member, guest or invite of such Owner of any law, regulation, or code, including without limitation any environmental law, or of any provisions of this Declaration, and Supplemental Declaration, or the Master Rules and Regulations, relating to Association Property. Each Owner shall indemnify, defend and hold the Association harmless from any loss, damage, expense or liability arising from the circumstances described above. The Association shall have the power to levy and collect a Reimbursement Assessment against a Lot Owner to recover the costs, expenses, damages, losses or liabilities incurred by the Association as a consequence of any such negligence, willful misconduct or violations.

6.6 **Damage or Destruction to Association Property** In the event of damage to or destruction of Association Property, including Improvements thereon, by fire or other casualty, the Association shall repair or replace the same in accordance with the provisions in the Declaration. Repair, reconstruction, or replacement of Association Property shall be accomplished under such contacting

and bidding procedures as the Association shall determine are appropriate. If insurance proceeds available to the Association on account of damage or destruction exceed the maintenance, repair, improvement, and operation of Association Property or for any other use deemed appropriate by the Executive Board.

6.7 **Condemnation of Association Property** If any Association Property or part thereof or interest therein is taken under exercise of the power of eminent domain or by purchase in lieu thereof, the portion of any award in condemnation or the price payable for the deed in lieu that is attributable to the Association Property taken or purchased shall be paid to the Association. The Association shall have the exclusive right to participate in such condemnation proceedings and to represent the interest of all Owners and Occupants and other Persons therein. Any award or funds received by the Association shall be held by the Association for the purposes stated above or as a reserve for future maintenance, repair, reconstruction, or replacement of Association Property or may be used for Improvements or additions to or operation of Association Property or for such other uses as may be deemed appropriate by the Executive Board. Except as may otherwise be provided by the Act, no Owner or other Person shall be entitled to participate as a party or otherwise in any condemnation proceedings nor to receive any proceeds therefore.

6.8 **Title of Association Property Upon Dissolution of Association** In the event of dissolution of the Association, the Association Property shall, to the extent permitted by law and reasonably possible, be conveyed or transferred to an appropriate public, government or quasi-governmental agency or organization or to a nonprofit corporation, association, trust, or other organization, to be used, in any such event, for the common benefit of Owners for the purposes for which the Association Property was held by the Association. If the foregoing is not possible, the Association Property shall be sold or disposed of and the proceeds from the sale or disposition shall be distributed to Owners in proportion to each Owner's Allocated Interest in the Common Expense of the Association.

6.9 **Mechanic's Liens on Association Property** Declarant shall be responsible for the release of mechanics' liens filed with respect to Association Property, or any part thereof, if such liens arise from labor performed or materials furnished at the instance of Declarant, its agents, contractors or subcontractors. Likewise, the Association shall be responsible for the release of mechanics' liens filed with respect to Association Property, or any part thereof, is such liens arise from labor performed or material furnished at the instance of the Association, its directors, officers, agents, contractors or subcontractors. No labor performed or materials furnished with respect to Association Property at the instance of the Executive Board shall be the basis for filing a lien against any Lot.

ARTICLE VII
DECLARATION'S RESERVED RIGHTS

7.1 **Statement of Interest** Declarant hereby expressly reserves to itself and its successors and assigns the Development Rights set forth herein, any one or more of which rights may be exercised, in the sole and absolute discretion of Declarant, at any time and from time to time during the period

commencing upon the recording of this Declaration or in any Supplemental Declaration and ending on the date of termination of such rights established under Section below. It is expressly understood that Declarant shall not be obligated to exercise any of these Development Rights, and that no consent be required from any Owner, Mortgagee, or the Association for the effective exercise of any of the Development Rights. Declarant reserves the right to create up to 72 single family residential lots in one or more phasing's of the subdivision.

The Developer Rights hereinafter set forth shall be prior and superior to any other provisions of this Declaration and may not be amended, modified, terminated or otherwise altered in any way without the express prior written consent of Declarant. All conveyances of Lots, whether by Declarant or otherwise, shall be deemed and construed to reserve to Declarant and/or to grant to Declarant all of the Development Rights reserved by and to Declarant in this Article VI and elsewhere in this Declaration or in any Supplemental Declaration, even though no specific reference to such rights appears in the conveying instruments.

7.2 **Construction of Improvements** The Declarant reserves the right, but not obligation, to construct additional Improvements on the Common Elements at any time and from time to time for the improvement and enhancement thereof for the benefit of the Association and Lot Owners. The right to complete Improvements indicated on the Plat or this Declaration or in any Supplemental Declaration may be amended from time to time. The right to construct and complete Improvements required by the terms of any development improvements agreement with applicable governmental entity may be amended from time to time. The Declarant shall have the right to create, grant and/or use and enjoy additional nonexclusive easements, and to relocate existing platted or other easements, upon or across any portion of the Property (including Lots and Common Elements), as may be reasonably required for the construction by Declarant of Improvements to the Common Elements or the effective exercise by Declarant of any of the other Development Rights described in this Article.

7.3 **Sales, Marketing and Management** The Declarant shall have the right to construct, locate or operate, and to maintain upon, and to remove from any part of the Property, in the discretion of Declarant, and in such number, size and location as may be reasonably required by Declarant in connection with the completion of Improvements, the management of the development, and/or the promotion, marketing, sale or rental of Lots, the following:

(a) Sales offices, management offices, and/or construction offices, and structures containing or relating to the same, including without limitation mobile homes, office trailers and construction trailers. Such offices, to the extent they are not situated on a Lot, are hereby declared to be personal property of the Declarant and shall in any case be successors or assigns ceasing to be a Lot Owner;

(b) Signs identifying, advertising the Common Interest Community and the Lots therein, or relating to development or construction thereon;

(c) Model residences constructed or to be constructed on Lots;

(d) Parking areas and facilities and lighting necessary or desirable in the marking of the Property and the Lots; and

(e) Employees, equipment, vehicles and marketing and construction materials.

7.4 **Declarant Control of Association** Declarant shall have the right to appoint or remove any Executive Board member or officer of the Association as more specifically set forth in Article 5.5 above consistent with the Act.

7.5 **Other Reserved Development Rights** Subject to compliance with the requirements of the applicable governmental authority, the Declarant may as to all or any portion of the Declarant Owner Property; (a) create additional Lots; (b) subdivide Lots; (c) combine Lots; (d) create Common Elements; and (e) reconfigure Lots, or streets. Additionally, in order to effectively exercise the Development Rights reserved to Declarant under this Article VI, the Declarant may amend this Declaration or in any Supplemental Declaration and the Plat (without the consent of Owners, Mortgagees or the Association being required) for purposes of complying with or qualifying for any required federal or state registration of the project, satisfying title insurance requirements, bringing any provision or provisions of the Declaration or in any Supplemental Declaration or the Plat into compliance with the Act, or cure technical errors, typographical errors or deficiencies in the Declaration or Plat.

7.6 **Transfer of Declarant's Reserved Rights** Any one or more rights created or reserved for the benefit of Declarant under this Article VII or elsewhere in this Declaration or in any Supplemental Declaration may be transferred to any Person by an instrument describing the rights or rights transferred and recorded in Mesa County records. Such instrument shall be executed by the Declarant and the transferee. The provisions of Section 38-33.3-304 of the Act shall apply to any transfer of special Declarant reserved rights.

7.7 **Termination of Declarant's Reserved Rights** With the exception of Declarant's right to appoint or remove Executive Board members and officers of the Association, the rights reserved by Declarant in this Article VII shall automatically terminate and expire upon the first to occur of the date which is thirty (30) years after the recording of this Declaration or in any Supplemental Declaration, or Declarant's relinquishment and surrender of such rights by recorded instrument. The Association is authorized and empowered to extend the time period for Declarant's exercise of the Development Rights, or reinstate a lapsed Development Right, without requiring Lot Owner or Mortgagee approval thereof. The extension or renewal of a Development right shall be made as an amendment to the Declaration or in any Supplemental Declaration or Plat, as the circumstances require, and shall be executed by Declarant and the Association.

7.8 **Owner Acceptance and Waiver of Rights Regarding Declarant's Reserved Rights** Each Owner, by his/her acceptance of a deed to a Lot, acknowledges that the Owner has carefully read and understands the Declarant's reserved Development Rights as set forth in this Article VII or elsewhere in this Declaration or in any Supplemental Declaration, that the Owner accepts, approves and

understands the Declarant's reserved Development Rights and waives and releases any rights the Owner may have to object to or to interfere with the implementation or the exercise of the Development Rights reserved by the Declarant.

7.9 **Withdrawal Rights and Procedure** The right at any time and from time to time to withdraw from the Subdivision (and any additions thereto) any Declarant-owned Lot or Lots, or Association Property. Withdrawal may only be accomplished be the recording by Declarant of an amendment to this Declaration or any Supplemental Declaration affected by the withdrawal, and an amendment to the Plat or any Supplemental Plat affected by the withdrawal. Upon the recording of such amendments, the withdrawn Lots or Association Property shall no longer be part of the Subdivision or subject to this Declaration or any applicable Supplemental Declaration in any way.

Each Declarant-owned Lot, and each Declarant-owned Association Property, is hereby described and declared to be a separate portion of real estate that is subject to this right of withdrawal, and Declarant expressly reserves the right to withdraw one or more Declarant-owned Lots and/or portion of any Declarant-owned Association Property from the Subdivision. Once a Lot has been conveyed to a Lot Owner other than Declarant, that portion of the real estate is no longer subject to this right to withdrawal. Likewise, once an Association Property has been conveyed to the Association, that portion of the real estate is no longer subject to this right of withdrawal.

7.10 **Subdivision of Blocks or Lots** Declarant shall have and hereby reserves the right to subdivide any Declarant-owned Block or Lot located within the Subdivision to create additional Lots, Association Property, and/or streets, subject to the maximum number of Lots set forth in the Recitals to this Declaration; provided, however, that such subdivision is consistent with the Declaration Plan for Pinnacle Ridge or that said Master Subdivision Plan is amended if necessary, and that the subdivision of any Block or Lot in compliance with City subdivision requirements. Upon the subdivision of any Block, or Lot in accordance with the terms and conditions contained herein, the Allocated Interest contained in this Master Declaration.

7.11 **Declarant as Attorney-In-Face For Owners** Each Owner, by its acceptance of a deed or other conveyance vesting in the Owner on interest Lot in the Subdivision, does hereby irrevocably constitute and appoint Declarant (with full power of substitution) as said Owner's attorney-in-fact, in said Owner's name, place and stead, to take any and all actions and to execute and deliver any and all instruments as may be necessary or appropriate to Declarant's exercise of the various rights reserved Declarant under this Article VII or elsewhere in this Declaration or in any Supplemental Declaration specifically including without limitation Declarant's reserved right to use all existing easements within the Subdivision or to create, grant, use and/or replat and relocate additional or existing easements across any portion of the Subdivision excepting platted Building Envelopes.

ARTICLE VIII
GENERAL PROVISIONS

8.1 **Duration of Master Declaration** The term of this Declaration shall be perpetual.

8.2 **Enforcement** The provisions of the Declaration or in any Supplemental Declaration may be enforced by the Association or any Owner against any Person, including any Owner or the Association, as a result of any failure to comply with the terms of the Declaration or in any Supplemental Declaration, the Bylaws or the Act to the fullest extent permitted under the Act including the recovery of costs and attorney's fees with or without commencing legal proceedings. The failure by the Association or by any Owner to enforce any covenant or restriction herein contained shall in no event be deemed an estoppels or waiver of the right to enforce this Declaration, or a waiver of any other or subsequent breach of any covenant, condition or restriction herein contained.

(a) Acceleration The Association may elect to accelerate and declare immediately due and payable the remaining balance of any assessment payable in installments for such fiscal year.

(b) Collection The Association may bring a suit at law to collect delinquent assessments, including any accelerated assessment. Any judgment rendered in such action shall include a sum for costs of suite, including a reasonable attorney's fees.

(c) Lien All delinquent assessments shall be and constitute a lien upon the Owner's Lot in addition to being the personal obligation of the Owner. Such lien shall have the priority and shall be enforced in accordance with section 38-33.3-316 of the Act.

(d) Penalty Beginning with second month of delinquency, a five percent (5%) penalty will be added to all delinquent amounts each month until payments are current.

8.3 **Interpretation of Master Declaration and Supplemental Declaration; Conflicts with Act** The provisions of this Declaration and of all Supplemental Declaration shall be liberally construed to effectuate their purpose of creating a common and general plan for the development, improvement, enhancement, protection and enjoyment of the Common Interest Community, and to the extent possible, shall be construed so as to be consistent with the Act. In the event that any of the terms and conditions of this Declaration or of any Supplemental Declaration is determined to be inconsistent with the Act, the Act shall control. Notwithstanding anything to the contrary in this Declaration or in any Supplemental Declaration, no rights or powers reserved to Declarant hereunder or in any Supplemental Declaration shall exceed the time limitations upon or the permissible under the Act, and in the event any of such reserved rights or powers are determined to be inconsistent with the Act, the related provisions shall not be invalidated but shall be modified to the extent required to comply with the Act.

8.4 **Conflict With Plats** In the event of any conflict or inconsistency between the provisions of this Declaration or any Supplemental Declaration and the Plat, or any Supplemental Plat, including the Plat notes thereon, the provisions of said Plat or Supplemental Plat or Plat notes, as the case may be, shall govern and control and this Declaration or any Supplemental Declaration shall automatically be

amended, but only to the extent necessary to conform the conflicting provisions hereof with the provisions of said Plat or Plat notes.

8.5 **Costs and Attorneys' Fees** In any action or proceeding involving the interpretation or enforcement or any provision of the Declaration or of any Supplemental Declaration, the prevailing party shall be entitled to recover its reasonable attorneys' fees and costs incurred in connection therewith.

8.6 **No City Liability** Notwithstanding any other provisions therein to the contrary, no obligation, duty or liability including a duty to pay money, interest, attorneys' fees or other costs, shall be assumed by, transferred to, or imposed on the City of Grand Junction pursuant to this Declaration, or by virtue of the City's ownership of any Tract within Pinnacle Ridge.

8.7 **Disclaimer Regarding Safety** Declarant and the Association hereby disclaim any obligation regarding the security of any persons or property within the Common Interest Community. Any owner of property within the Common Interest Community acknowledges that Declarant and the Association are only obligated to do those acts specifically enumerated herein, or in the Articles of Incorporation and Bylaws, and are not obligated to do any other acts with respect to the safety or protection of persons or property within the Common Interest Community.

8.8 **Amendment of Master Declaration and Plat** The Declaration and/or the Plat may be amended by Declarant at any time and for any purpose to the conveyance of the first Lot to an Owner. Subsequent to the conveyance of the first Lot to an Owner, the Declarant may amend the Declaration or the Plat: (i) to correct any clerical, typographical or technical errors, (ii) to comply with the requirements, standards or guidelines of recognized secondary markets, the Department of Housing and Urban Development, the Federal Housing Administration, the Veterans Administration, the Federal Home Loan Mortgage Corporation, the Government National Mortgage Association, or the Federal National Mortgage Association, (iii) to exercise any of the reserved Development Rights as set forth in Article above or (iv) to effect the Declarant's intent as expressed in the Declaration or the Plat. This Declaration may also be amended at any time and for any purpose and in such manner as is provided in the Act.

This Declaration and any Supplemental Declaration (including the Plat and any Supplement Plats) may be amended by the vote or agreement of Owners of Lots to which at least fifty percent (50%) of the votes in the Association are allocated, provided such amendment does not impair, restrict or modify any of the reserved Development Rights of the Declarant, or conflicts with any provision of the Act. Any amendment must be recorded. The Declaration, Supplemental Declaration and Plat may not be amended without the approval of the City of Grand Junction in regard to amendments that relate to the Common Elements

8.9 **Governing Law; Jurisdiction** This Declaration shall control and govern over any conflicting provision of the Act, except to the extent that such conflicting provision in the Act is mandatory according to the terms of Sections -105, -106, and -107 of the Act. This Declaration shall

further control any conflicting term in the Articles, Bylaws or any rule or regulation promulgated by the Association or the Design Board.

8.10 **Resolution Procedures**

(a) Dispute Resolution All actions, disputes, claims or controversy between any Owner, the Design Review Board, the Association, the Declarant, and their respective agents, contractors, successors and assigns, whether in contract, tort or otherwise, shall be resolved by the procedures as set forth in this Section or as set forth in any limited warranty (if any), or any applicable agreement between Declarant and any Owner or his/her heirs, successors or assigns.

(b) Initial Notification; Negotiation For each claim governed by this section (a "Claim"), the claimant ("Claimant") shall give notice to the other party(ies) against whom the claim is asserted ("Respondent"), setting forth; the nature of the Claim; the basis or reason for the Claim; any other material information regarding the Claim; the specific relief and/or proposed remedy sought; and the intent to invoke this Section (the "Notice of Claim"). Claimant and Respondent shall use good faith efforts to resolve the Claim through negotiations following delivery of the notice, pending mediation pursuant to Section 7.2(c).

(c) Mediation The Claim shall first be mediated before a mediator jointly selected by the parties. Mediation is a process in which the parties meet with an impartial person who helps to resolve the dispute formally and confidentially. Mediators cannot impose binding decisions. The parties to the dispute must agree before any settlement is binding. The mediation shall occur within thirty (30) days following delivery of the Notice of Claim (the "Mediation Period"). Mediation shall be a condition precedent to arbitrating any dispute. In the event Claimant does not appear for mediation, Claimant shall be deemed to have irrevocably waived the Claim, and Respondent shall be released from any and all liability to Claimant on account of such Claim. The costs of the mediation shall be borne by Claimant and Respondent. In the event mediation is successful, the resolution shall be documented in writing and signed by the parties. Thereafter, if either party violates the resolution, the other party may apply immediately to a court for relief. The mediation, unless otherwise agreed, shall terminate in the event that the entire dispute is not resolved before the expiration of the Mediation Period. In the event the mediation is unsuccessful, then the Claimant may make written demand for arbitration pursuant to Section 7.2(d) within sixty (60) days following the expiration of the Mediation Period. If no written demand for arbitration is made within the specified time, Claimant shall irrevocably waiver the Claim and any and all right to proceed to arbitration regarding the Claim.

(d) Arbitration Following the Mediation Period and a written demand for arbitration, the Claim shall be resolved by binding arbitration administered by the American Arbitration Association (or any successor to such association) in accordance with the current American Arbitration Association Construction Industry Arbitration Rules in effect at the time of submission to arbitration, and as provided for in this subsection. In the event of any inconsistency between such rules and these arbitration provisions, these provisions shall supersede such rules. Should an action, dispute, claim or

controversy be brought against Declarant and or any builder by a third party who is not bound by a binding arbitration provision similar to the arbitration provision contained herein, the terms of this subsection shall apply to such action, dispute, claim or controversy. The Arbitrator shall be selected from a panel of Arbitrators from Mesa County, Colorado (or if such panel is available, from Denver County, Colorado), with an Arbiter mutually acceptable to the parties. If the parties are unable to jointly agree upon the Arbiter, then each party shall select an arbiter and the two arbiters shall select a third person to serve as the sole Arbiter. The parties agree that the Arbiter shall have substantial experience in the real estate field. The parties shall share equally in the arbitrator's fees and the costs of the arbitration. All parties shall have the right to be represented by legal, counsel. In determining any question, matter, or dispute before them, the Arbiter shall apply the provisions of the Declaration or in any Supplemental Declaration, and Articles and Bylaws, without varying from them in any respect, and they shall not have the power to add to, modify or change any of the provisions hereof. Any arbitration award may be enforced through entry of judgment by any court having jurisdiction there over. Exclusive venue for any arbitration proceeding shall be in Mesa County, Colorado. Except as may be required by law or for enforcement, neither a party nor the arbiter may disclose the existence, content, or results of any arbitration without the prior written consent of all parties to the Claim.

The Arbiter's decision may contain findings of fact and conclusions of law to the extent applicable and the Arbiter shall have the authority to rule on all post-hearing motions in the same manner as a trial judge. The statement of decision of the Arbiter upon all of the issues considered by the arbitrator is conclusive, final and binding upon the parties. Judgment upon any award rendered by the Arbiter may be entered by any State or Federal Court, as appropriate.

(e) Standards of Construction If any claim regarding defects in construction is made, each claim shall be specified with particularity. Each location of any claimed defect must be identified and all evidence supporting each claim, along with all repair methodologies and costs of repair, must be provided by the claimant in advance of any mediation hereunder. In any arbitration or other proceedings, it shall be rebuttably presumed that any construction done by the builder or Declarant was not defective, that the builder or Declarant adequately performed its obligations under its contract, and that the builder or Declarant was not negligent if the builder or Declarant's performance was substantially in accordance with any of the following: (A) the standards of trade in the Grand Junction Area on the date hereof or (B) Any applicable building code in Grand Junction on the date hereof; or (C) any applicable national association of home builders residential construction guidelines. In any such proceedings, evidence of any scientific, engineering, or technical advancements or other knowledge or techniques, where such advancements were discovered subsequent to the date hereof, shall not be admissible for any purpose. If any of Claimant's claims relate, in any way, to any work completed by any of Declarant's or builder's subcontractors or any materials and/or equipment provided by any suppliers, Declarant or builder, as applicable, in its sole discretion, may join such subcontractors and/or suppliers to any arbitration proceeding with Claimant. The sole manner which may be used to establish breach of any obligations under this Declaration, any obligations which may exist by law or reason of any statute, any applicable industry standards, and/or Claimant's damages, including, but not limited to, appropriate repair costs, shall be through the testimony of a homebuilder

with experience in Mesa County, Colorado. The Arbiter shall completely exclude the testimony of any tendered expert who does not meet the foregoing qualifications.

(f) Limitation of Remedies Each party hereby disclaims and waives any claims for the following remedies and damages for any matters related to any Claim, whether a Claim is made on the basis of contract, tort or any other theory or basis at law or in equity; (i) punitive or exemplary damages, (ii) claims for emotional distress or pain and suffering and/or (iii) claims for incidental and/or consequential damages (except as otherwise provided herein). Claimant further agrees that, subject to the other limitations contained herein, Respondent's total liability to Claimant shall be limited to, and in no event exceed, the amount of any insurance proceeds actually available with respect to any and all Claims, whether in contract, tort or otherwise.

(g) Acknowledge of Waivers of Rights to Jury Trail Each party understands that by using binding arbitration to resolve disputes they are voluntarily waiving and giving up any right that they may have to a judge or jury trial with regard to all issues concerning the Lot, Home, Common Elements, the Property, Improvements, and matters related thereto.

8.11 **Severability** Invalidation of any one of these covenants or restrictions by judgment or court order shall not affect any other provisions which shall remain in full force and effect.

8.12 **Limitation on Association** Any action, resolution or attempted action of the Association in conflict with any term or provision of this Declaration shall be void and of no force and effect whatsoever.

ARTICLE IX
POWERS AND DUTIES OF HOME OWNERS ASSOCIATION

9.1 **General Powers & Duties of the Home Owners Association** The Association shall have and may exercise all of the powers and rights and duties of a Colorado corporation formed under the Colorado Revised Nonprofit Corporation Act, and all of the powers and duties provided for in the Act including those enumerated in Section 38-33.3-302 of the Act, as such laws may be amended from time to time, subject only to the limitations upon such powers as are contained in this Declaration. More Specifically, and without limiting the generality of the foregoing, the Association shall have all of the powers and duties necessary (i) for the administration, management, governance and operation of the Common Interest Community and the Association, (ii) to own, operate, improve, maintain, repair, manage, lease, encumber, and otherwise deal with Association Property, (iii) to improve, maintain and repair the Limited Common Areas, and (iv) to do any and all lawful things that may be authorized, required or permitted to be done by the Association under the Act and/or under the provisions of this Declaration and of any Supplemental Declarations.

9.2 **Power to Grant Easements** The Association shall have the power to grant access, utility, drainage, irrigation, and such other easements upon, over, across or under Association Property as it deems necessary or desirable for the benefit of the Common Interest Community or parts thereof, or for

the benefit of all or less than all of the Lot Owners, or for the benefit of lands situated outside the Common Interest Community.

9.3 **Power to Convey or Encumber Association Property** The Association shall have the power to convey, or subject to a security interest, portion of the Association Property if Owners entitled to cast at least sixty-seven percent (67%) of the votes in the Association, including sixty-seven percent (67%) of the votes allocated to Lots not owned by the Declarant, agree to that action, except that all Owner(s) of Lots to which any Limited Common Area is allocated must agree in order to convey that Limited Common Area or to subject it to a security interest. Proceeds of the sale are an asset of the Association.

An agreement to convey, or subject to a security interest, Association Property must be evidenced by the execution of an agreement, in the same manner as a deed, by the Association. The agreement must specify a date after which the agreement will be void unless approve by the required percentage of Lot Owners. Any grant, conveyance or deed executed by the Association must be recorded in the County, and is effective only upon Recordation. The Association, on behalf of the Lot Owners, may contract to convey an interest in at Association Property, but the contract is not enforceable against the Association until approved, executed and ratified pursuant to this Section.

Thereafter, the Association shall have all the powers necessary and appropriate to affect the conveyance or encumbrance, including the power to execute deeds or other instruments. Unless in compliance with this Section, any purported conveyance, encumbrance, judicial sale, or other transfer of Association Property is void. A conveyance or encumbrance of Association Property pursuant to this Section shall not deprive any Lot of its rights of (i) access, ingress and egress to the Lot, and (ii) support of the Lot. A conveyance or encumbrance of Association Property pursuant to this Section shall not affect the priority or validity of pre-existing encumbrance.

9.4 **General Power to Provide Services and Facilities to Owners** The Association shall have the power, but not the obligation, to acquire, construct, operate, manage, maintain, repair and administer services and facilities for the benefit of the Owners, or some of them, including, without limitation, security, animal control, vegetation control, insect and pest control, television service, parking facilities, transportation facilities, snow removal, signage, (including entry monuments), lighting, (including seasonal lighting), interior and perimeter fencing, landscape walls, landscaping services and facilities, drainage facilities, including retention and detention pods, irrigation facilities, water features, trash and sold waste disposal services, including recycling programs, utility services, recreational facilities and services, maintenance, and such other service, functions and facilities as are deemed appropriate by the Executive Board. The foregoing list shall not be deemed to be a representation by Declarant of services or facilities that will in fact be available for use by the Owners. The Association may enter into such agreements and arrangements as it may deem appropriate with any provider of utilities or services to the Common Interest Community or any portion thereof, including any special district that provides such services, and may form or join any districts created to provide such services.

9.5 **Power to Provide Special Services to Owners** The Association shall have the power to provide services to an Owner or group of Owners. Any service or services to an Owner or group of Owners shall be provided pursuant to an agreement in writing, or through one (1) or more Supplemental Declarations, which shall provide for payment to the Association by such Owner or group of Owners of the costs and expenses of the Association in providing such services, including a fair share of the overhead expenses of the Association, and shall contain reasonable provisions assuring that the obligation to pay for such services shall be binding upon any heirs, personal representatives, successors and assigns of the Owner or group of Owners and that the payment for such service shall be secured by a lien on the Lot(s) of the Owner or group of Owners.

9.6 **Power to Charge for Special Association Property Uses and Special Association Services** The Association shall have to power to establish reasonable admission or other fees or charges for any special or extraordinary Association Property uses or Association services such as special parking privileges, special recreation facilities, conference rooms, instruction, or similar uses beyond the ordinary use of Association Property and ordinary Association services. Such charges or fees shall be set forth-in schedules of charges and fees adopted from time to time by the Executive Board.

9.7 **Power to Adopt Master Rules and Regulations** The Association may adopt, amend, repeal, and enforce such reasonable Master Rules and Regulations as the Executive Board may consider necessary, desirable or appropriate from time to time with respect to the interpretation and implementation of this Declaration, the operation of the Association, the use and enjoyment of Association Property (including Limited Common Areas), and the use of any other property within the Common Interest Community, including Lots. Any such Master Rules and Regulations shall be effective only upon adoption by resolution at an open meeting of the Executive Board. Notice of the adoption, amendment, or repeal of any Master Rule or Regulation shall be given in writing to each Owner, and copies of the currently effective Master Rules and Regulations shall be made available to each Owner and Occupant upon request and payment of the reasonable expense of copying the same. Each Owner and Occupant (and all other Persons who are authorized users of Association Property) shall comply with such Master Rules and Regulations, and each Owner shall see that Occupant claiming through such Owner comply with such Master Rules and Regulations. Such Master Rules and Regulations shall have the same force and affect as if they were set forth in and were part of this Declaration. In the event of conflict between the Master Rules and Regulations and the provisions of this Declaration, the provisions of this Master Declaration shall govern. Such Master Rules and Regulations may establish reasonable and uniformly applied penalties (including the levying and collection of fines) for the violation of such Master Rules and Regulations or of any provisions of this Declaration, the Articles, or the Bylaws.

9.8 **Power to Contract with Employees, Agents, Contractors, Districts, Consultants and Managers** The Association shall have the power to contract with, and/or to employ and discharge employees, agents, independent contractors and consultants, including lawyers and accountants, and special districts, to perform any of the responsibilities of the Association under this Declaration, including without limitation maintenance responsibilities. The Association shall also have the power to

retain and pay for the services of a manager or managers, which may be an affiliate of Declarant, to undertake any of the administrative or managerial responsibilities for which the Association may have responsibility under this Declaration, to the extent deemed advisable by the Association, and may delegate any of its duties, powers, or functions to any such manager. Notwithstanding and delegation to a manager of any duties, powers, or functions of the Association, the Association and its Executive Board shall remain ultimately responsible for the performance and exercise of such duties, powers, and functions.

9.9 **Power to Assign Future Income** The Association shall have the power to assign its right to future income, including the right to receive Regular Assessments, but only following the affirmative vote of the Owners Lots to which at least fifty-one percent (51%) of the votes in the Home Owners Association are allocated, at a dully-called meeting of the Members of the Association.

9.10 **Duty to Accept Property and Facilities Transferred by Declarant** The Association shall accept title to any real property, or interests in real property, including any Improvements and personal property thereon, and including water rights and related facilities, transferred to the Association by Declarant, or Declarant's successors or assigns. Property interests transferred to the Association by Declarant or its successors or assigns may include fee simple title, undivided interests, easements, leasehold interest and licenses to use. Except as may otherwise be approved by the Executive Board, any property or interest in property transferred to the Association by Declarant to its successors or assigns shall be within the boundaries of the Common Interest Community. Provided, however, the Declarant shall be entitled to transfer and convey the beneficial use of an easement, subject to any obligations there under, located outside of the Common Interest Community but which benefits the Association and the Owners.

Any property or interest in property transferred to the Association by Declarant shall, except to the extent otherwise specifically approved by resolution of the Executive Board, be transferred to the Association free and clear of all monetary obligations, liens and encumbrances (other than the lien of property taxes and assessments not then due and payable), but shall be subject to the terms of this Declaration, and easements, covenants, conditions, restrictions, and equitable servitudes or other encumbrances of record or otherwise in existence. Except as otherwise specifically approved by resolution of the Executive Board, no property or interest in property transferred to the Association by Declarant shall impose upon the Association any obligation to make monetary payments to Declarant or any affiliate of Declarant, including but not limited to, any purchase price, rent, charge, or fee.

Any Improvements or personal property transferred to the Association by Declarant shall be in good working order, ordinary wear and tear excepted, and at the time of transfer Declarant shall make any repairs reasonably required to bring the transferred property into good working order. Subject only to the foregoing, the Association shall accept all properties transferred to it by Declarant in their "Where is, As is" condition, without recourse of any kind, and Declarant disclaims and shall not be deemed to make or have made any representations or warranties, express or implied, by fact or law,

with respect to the transferred properties or any aspect or element thereof, including without limitation warranties of merchantability, fitness for a particular purpose, or workman like construction.

9.11 **Duty to Mange and Care for Association Property** The Association shall manage, care for, operate, maintain, repair and replace all Association Property and keep the same in a functional, clean and attractive condition for the benefit and enjoyment of the Owners.

9.12 **Duty to Provide Winter Snow Removal for a portion of Elysium Drive** The Association shall be responsible for snow removal along the north facing slope on Elysium Drive generally located between lots 54 and 55. The Association shall maintain signage along this portion of Elysium Drive stating that the Association is responsible for snow removal and not the City of Grand Junction.

9.13 **Duty to Pay Taxes** The Association shall pay any taxes and assessments levied upon Association Property (excepting Limited Common Area) and any other taxes and assessments payable by the Association before they become delinquent. The Association shall have the right to contest any such taxes or assessments by appropriate legal proceedings provided no sale or foreclosure of any lien for such tax or assessment occurs and provided further that the Association shall keep and hold sufficient funds to pay and discharge the taxes and assessments, together with any other interest and penalties which may accrue with respect thereto, if the contest of such taxes in unsuccessful.

9.14 **Duty to Keep Association Records** The Association shall keep financial records in sufficient detail to enable the Association to carry out its responsibilities under this Declaration and to comply with the requirements of the Act, including, but not limited to, current records of paid and unpaid Assessments for each Lot. All financial and other records of the Association shall be made reasonably available for examination by the Owners and the authorized agents of the Owners.

9.15 **Duty to Support the Design Review Committee** The Association shall take such actions, provide such funds, and do such other things as may be necessary or appropriate from time to time to support and assist the Design Review Committee in the performance of its responsibilities under this Declaration, and shall cooperate with said Committee to the fullest extent possible in such matters.

9.16 **Insurance** Commencing not later than the time of the first conveyance of a Lot to a Person other than Declarant, the Home Owners Association shall maintain and keep in effect at all times the following types of insurance, and the cost of said coverage shall be paid by the Association as a Common Expense:

(a) *Casualty Insurance*. To the extent reasonably available, property insurance on all Association Property, including but limited to Improvements and personality, owned or lease by the Association, and on all property that must become Association Property. Such insurance shall be for broad form covered causes of loss, including casualty, fire, and extended insurance including, if available at reasonable cost, coverage for vandalism and malicious mischief and, if available and if deemed appropriate, coverage for flood, earthquake, and war risk. Such insurance shall, to the extent reasonably, obtainable, be for the full insurable replacement cost of the insured property, less applicable

deductibles at the time the insurance is purchased and at each renewal date, exclusive of land, excavation, foundations and other items normally excluded from property policies.

(b) *Liability Insurance*. Comprehensive general liability insurance against claims and liabilities arising in connection with the ownership, existence, use, maintenance or management of the Association Property (including the Limited Common Areas), and covering public liability or clams of liability for injury to persons and/or property, and death of any person or persons, and, if the Association owns or operates motor vehicles, public liability or claims of liability for bodily injury (including death) and property damage arising as a result of the ownership and operation of motor vehicles. Such liability insurance shall be in such amounts as deemed advisable by the Executive Committee and shall (a) insure the Executive Board, the Design Review Committee, the Association and its officers, the manager, if any, and their respective employees, agents and all Persons acting as agents; (b) include the Declarant as an additional insured as its interest may appear; (c) include the Owners as insured's, but only for claims and liabilities arising in connection with the ownership, existence, use, maintenance or management of Association Property; (d) cover claims of one or more insured parties against other insured parties; (e) be written on an occurrence basis; and (f) shall name as additional insured's such other parties as may be required by specific agreements.

(c) *Contractual Liability Insurance*. To the extent reasonably available, contractual liability insurance covering such contractual obligations and liabilities, indemnifications, hold harmless agreements, and agreements to defend, and the Association may have or be party to from time to time, with coverage in amounts determined by the Executive Committee.

(d) *Fidelity Bonds*. To the extent reasonably available, fidelity bond coverage against dishonest act on the part of directors, officers, managers, trustees, agents, employees or volunteers responsible for handling funds belonging to or administered by the Association. If funds of the Home Owners Association are handled by a management agent, then fidelity bond coverage may also be obtained for the officers, employees, or agents thereof handling or responsible for Association funds. The fidelity bond or insurance must name the Association as the named insured and shall be written to provide protection in an amount no less than the lesser of (a) fifty thousand dollars, (b) a sum equal to two (2) months aggregate Regular Assessments, plus reserves, as calculated from the current Budget of the Association; or (c) the estimated maximum amount of funds, including reserves, in the custody of the Association (and its management agent) at any one time. In connection with such coverage, an appropriate endorsement to the policy to cover any person who serves without compensation shall be added if the policy would not otherwise cover volunteers.

(e) *Worker's Compensation*. A Worker's Compensation policy, if necessary, to meet the requirements of law.

(f) *Directors and Officers Liability Insurance.* Directors and officers liability insurance with coverage as the Executive Board shall approve for all Association, Executive Board and Design Review Committee directors, officers, members and managers, for any and all errors and/or

omissions and other covered actions that occur during their tenure in office or employment. This insurance coverage shall be mandatory.

(g) *Other Insurance*. Such other insurance in such amounts as the Executive Board shall determine, from time to time, to be appropriate to protect the Association or the Lot Owners, or as may be required by the Act.

(h) *General Provisions Respecting Insurance*. Insurance obtained by the Association may contain such deductible provisions as good business practice may dictate. If the insurance described is not reasonably available, or if any policy of such insurance is canceled or not renewed without a replacement policy therefore having been obtained by it, the Association shall promptly cause notice of that fact to be delivered or sent prepaid by U.S. Mail to all Owners.

Insurance policies carried pursuant to Sections 9.16(a) and 9.16(b) above shall provide that each Owner is an insured Person under the policy with respect to liability arising out of such Owner's interest in the Association Property or membership in the Association; the insurer waives its rights of subrogation under the policy against the Association, each Owner, and any Person claiming by, through, or under such Owner or any other director, agent, or employee of the foregoing; no act or omission by any Owner, unless acting within the scope of such Owner's authority on behalf of the Association, will void the policy or be a condition to recovery under the policy; if at the time of a loss under the policy, there is other insurance in the name of an Owner covering the same risk covered by the policy, the Association's policy shall be the primary insurance. An insurer that has issued an insurance policy for the insurance described above shall issue certificates or memoranda of insurance to the Association and, upon request, to any Lot Owner or holder of a security interest. Unless otherwise provided by statute, the insurer issuing the policy may not cancel or refuse to renew it until thirty (30) days after the notice of the proposed cancellation or nonrenewal has been mailed to the Association, and each Lot Owner and holder of a security interest to whom a certificate or memorandum of insurance has been issued, at their respective last-known addresses.

Any loss covered by the property insurance policy described above must be adjusted with the Association, but the insurance proceeds for that loss shall be payable to any insurance trustee designated for that purpose, or otherwise to the Association, and not to any holder of security interest. The insurance trustee or the Association shall hold any insurance proceeds in trust for the Association Lot Owners and lien holders as their interests may appear. Subject to the provisions of Section 38.33.3-313(9) of the Act, the proceeds must be disbursed first for the repair or restoration of the damage property, and the Association, Lot Owners, and lien holders are not entitled to receive payment of any portion of the proceeds unless there is a surplus of proceeds after the property has been completely repaired or restored or the Common Interest Community is terminated.

The Association may adopt and establish written nondiscriminatory policies and procedures relating to the submittal of claims, responsibility for deductibles, and any other matters of claims adjustment. To the extent of the Association settles claims for damages to real property, it shall have

the authority to assess negligent Owners causing such loss or benefiting from such repair or restoration for all deductibles paid by the Association. In the event more than on Lot is damaged by loss, the Association in its reasonable discretion may assess each Lot Owner a pro rata share of any deductible paid by the Association. Insurance obtained by the Association shall, to the extent reasonably possible, and provided Declarant reimburses the Association for any additional premium payable on account thereof, name Declarant as an additional insured and shall contain a waiver or rights of subrogation as against Declarant.

Insurance policies and insurance coverage shall be reviewed at least annually by the Executive Board to ascertain whether coverage under the policies is sufficient in light of the current values of the Association Property and in light of the possible or potential liabilities of the Association and other insured parties. The aforementioned insurance may be provided under blanket policies covering the Association Property and property of Declarant.

In no event shall insurance coverage obtained or maintained by the Association obviate the need for Owners and Occupants to obtain insurance for their own benefit.

Furthermore, to the extent reasonable available, insurance policies obtained by the Association shall contain the following provisions:

(a) The coverage afforded by such policies shall not be brought into contribution or proration with any insurance which may be purchased by a Lot Owner, Occupant or Mortgagee.

(b) The conduct of any one or more Lot Owners or Occupants shall not constitute grounds for avoiding liability on any such policies.

(c) Each policy must contain a waiver of any defenses based on co-insurance or on invalidity arising from the acts of the insured.

(d) A "severability if interest" endorsement shall be obtained which shall prelude the insurer from denying the claim of a Lot Owner or Occupant because of the conduct or negligent acts of the Association and its agents or other Lot Owners or Occupants.

(e) Any "no other insurance" clause shall exclude insurance purchased by Lot Owners, Occupants or Mortgagees.

(f) Coverage must not be prejudice by any act or neglect of Lot Owners or Occupants when such act or neglect is not within the control of the Association, or any failure of the Association to comply with any warranty or condition regarding any portion of the Common Interest Community over which the Association had no control.

(g) Coverage may not be canceled or substantially modified without at least thirty (30) days (or such lesser period as the Association may reasonably deem appropriate) prior written notice to the Association.

(h) Any policy of property insurance which give the carrier the right to elect to restore damage in lieu of a cash settlement must provide that such election is not exercisable without the prior written approval of the Association, or when in conflict with the insurance trust provisions contained herein, or any requirement of law.

(i) A recognition of any insurance trust agreement entered into by the Association.

(j) Each hazard insurance policy shall be written by a hazard insurance carrier, which has a financial rating as designated in *Best's Key Rating Guide* of Class VI or better, or if such rating service be discontinued, an equivalent rating by a successor thereto or a similar such rating service. Each insurance carrier must be specifically licensed or authorized by law to transact business within the State of Colorado.

(k) *Nonliability of Association or Executive Board.* Notwithstanding the duty of the Association to obtain insurance coverage, as stated herein, neither the Association nor Executive Board member, nor the Declarant, shall be liable to any Lot Owner, Occupant, Mortgagee or other Person, if any risks or hazards are not covered by insurance, or if the appropriate insurance is not obtained because such insurance coverage is not reasonably obtainable on the Association's behalf, or if the amount of insurance is not adequate, and it shall be the responsibility of each Lot Owner and Occupant to ascertain the coverage and protection afforded by the Association's insurance and to procure and pay for such additional insurance coverage and protection as the Lot Owner or Occupant may desire.

(j) *Master Premiums*. Premiums for insurance policies purchased by the Association and other expenses connected with acquiring such insurance shall be paid by the Association as a Common Expense, except that (i) liability insurance on Limited Common Areas shall be separately bid and the cost thereof shall only be included in the Regular Assessments of the Lots entitled to use such Limited Common Areas, and (ii) the amount of increase over any annual or other premium occasioned by the use, misuse, occupancy or abandonment of a Lot or its appurtenances, or Association Property, by a Lot Owner or Occupant, may at the Executive Board's election, be assessed against that particular Lot Owner and its Lot as a Reimbursement Assessment.

(l) *Insurance Claims*. The Association is hereby irrevocably appointed and authorized, subject to the provisions contained herein, to adjust all claims arising under insurance policies purchased by the Association and to executive and deliver releases upon the payment of claims, and to do all other acts reasonable necessary to accomplish any of the foregoing. The Executive Board has full and complete power to act for the Association in this regard, and may, in its discretion, appoint an authorized representative, or enter into an insurance trust agreement, wherein the trustee shall have the authority to negotiate losses under any policy purchased by the Association.

(m) *Benefit***.** Except as otherwise provided herein, all insurance policies purchased by the Association shall be for the benefit of, and any proceeds of insurance received by the Association or any insurance trustee shall be held or disposed of in trust for the Association, the Lot Owners, or the Occupants, as their interest may appear.

(n) *Other Insurance to be Carried by Lot Owners*. Insurance coverage on the furnishings and other personal property owned by a Lot Owner or Occupant, public liability insurance coverage upon each Lot, and casualty insurance coverage on the Improvements constructed on Lots, shall be the responsibility of the Owner or Occupant of the Lot. No Lot Owner or Occupant shall maintain any insurance, whether on its Lot or otherwise, which would limit or reduce the insurance proceeds payable under casualty insurance maintained by the Association in the event damage to the Improvements or fixtures on Association Property.

9.17 **Damage to Common Interest Community** Any portion of the Common Interest Community for which insurance is required under Section 39-33.3-313 of the Act (except any portion on which insurance is carried by a Sub association) which is damaged or destroyed must be repaired or replaced promptly by the Association unless; repair or replacement is the responsibility of a Sub association under a Supplemental Declaration, the Common Interest Community is terminated; repair or replacement would be illegal under any state or local statue or ordinance governing health or safety; seventy-six percent (76%) of the Lot Owners, including owners of every Lot that will not be rebuilt, vote not to rebuild; or prior to the conveyance of any Lot to a person other than Declarant, a Mortgagee on the damaged portion of the Common Interest Community rightfully demands all or substantial part of the insurance proceeds.

The cost of repair or replacement in excess of insurance proceeds and reserves is a Common Expense. If the entire Common Interest Community is not repaired or replaced, the insurance proceeds attributable to the damaged Association Property must be used to restore the damaged area to a condition compatible with the remainder of the Common Interest Community, and, except to the extent that other Persons will be distributes, the insurance proceeds attributable to Lots that are not rebuilt must be distributed to the Owners of those Lots, or to lien holders, as their interests may appear, and the remainder of the proceeds must be distributed to all Lot Owners or lien holders as their interest may appear in proportion to the Common Expense liabilities of all the Lots.

In the event of damage to or destruction of all or a portion of the Association Property due to fire or other adversity or disaster, the insurance proceeds, if sufficient to reconstruct or repair the damage, shall be applied by the Association to such reconstruction and repair. If the insurance proceeds with respect to such Association Property damage or destruction area insufficient to repair and reconstruct the damage or destruction, the Association may levy a Special Assessment in the aggregate amount of such deficiency, or if any Owner group of Owners responsible therefore, and shall proceed to make such repairs or reconstruction. Such Assessment shall be due and payable as provided by resolution of the Executive Board, but no sooner than sixty (60) days after written notice thereof. The Assessment provided for herein shall be a debt of each Lot Owner assessed and a lien on his Lot, and may be enforced and collected in the same manner as any Assessment Lien provided for in this Declaration. In the entire damaged Association Property is not repaired or replaced, the insurance proceeds attributable to the damaged Association Property must be used to restore the damaged area to a condition compatible with the remainder of the Common Interest Community. No distributions of

insurance proceeds shall be made unless made jointly payable to the Lot Owner and first Mortgagees of their respective Lots.

9.18 **Limited Liability** Neither the Association nor its past, present or future officers or directors, nor any other employee, agent or committee member or the Association shall be liable to any Owners or Occupant or to any other Person for actions taken or omissions made except for wanton and willful acts or omissions. Without limiting the generality of the foregoing, the Association, the Executive Board and the Design Review Committee shall not be liable to any Owner or Occupant or other Person for any action or for any failure to act with respect to any matter in the action taken or failure to act was in good faith and without malice. Acts taken upon the advice of legal counsel, certified public accountants, registered or licensed engineers, architects or surveyors shall conclusively be deemed to be in good faith without malice. To the extent insurance carried by the Association for such purposes shall not be adequate, the Owners severally agree to indemnify and to defend the Association, the Executive Board and the Design Review Committee against claims, damages or other liabilities resulting from such good faith action or failure to act.

ARTICLE X
ASSESSMENTS

10.1 **Owner's Obligation** By accepting a deed to any Lot, each Owner agrees to pay to the Association all the assessments, to be fixed and levied from time to time as provided in the Declaration, the Articles and Bylaws. Such assessments, together with interest accruing thereon and the costs of collection in the event of delinquency of payment, shall be the personal obligation of the person who is the Owner, or the Persons who are jointly and severally the Owner, at the time the assessment was made.

10.2 **Regular Assessments**

(a) At least thirty (30) days prior to the commencement of each fiscal year, the Executive Board shall estimate the cost and expenses to be incurred by the Association during such fiscal year in performing its functions, and shall subtract from such estimate an amount equal to the anticipated balance (exclusive of any reserves) in the operating fund at the state of such fiscal year which is attributable to the operation and maintenance assessments for the prior fiscal year. The annual assessments made or common expense shall be based upon the advance estimate of the cash requirements by the Association to provide for the payment of all common expenses growing out of or connected with the maintenance and operation of the Common Elements, or the other duties and obligations of the Association as provided in the Declaration, Articles or Bylaws, which sums may include, among other things, expenses of management, taxes and special assessments, premiums for all insurance which the Association is required or permitted to maintain, care of grounds, landscape improvements, common lighting and heating, repairs and renovations, legal and accounting fees, management fees, expenses and liabilities incurred by the Association under or by reasons of this Declaration, the Articles of Incorporation and the Bylaws of the Association, any deficit remaining

from a previous assessment, the creation of a reasonable contingency or other reserve or surplus fund and any other expenses and liabilities which may be incurred by the Association for the benefit of the Owners. Subject to Section 10.2(b) hereof, the sum or net estimate so determined shall be allocated to the Owners by dividing the total estimate by the total number of single family residential Lots and assessing the resulting amount to the Owner of each Lot equally. Assessment shall be paid in one (1) or more installments and be due on such date(s) as the Association shall determine.

(b) Within ninety days after adoption of any proposed budget for the Association, the executive board shall mail, by ordinary first-class mail, or otherwise deliver a summary of the budget to all the unit owners and shall set a date for a meeting of the unit owners to consider the budget not less than fourteen (14) days nor more than sixty (60) days after the mailing or other delivery of the summary. Such meeting shall occur within a reasonable time after mailing or other delivery of the summary, or as allowed for in the bylaws. The executive board shall give notice to the unit owners of the meeting as allowed for in the bylaws. The budget proposed by the executive board does not require approval from the unit owners and it will be deemed approved by the unit owners in the absence of a veto at the noticed meeting by a majority of all unit owners. If the proposed budget is vetoed, the periodic budget last proposed by the executive board and not vetoed by the unit owners must be continued until a subsequent budget proposed by the executive board is not vetoed by the unit owners.

10.3 **Special Assessments** If at any time during the fiscal year the regular assessment proves inadequate for any reason, including nonpayment of any Owner's share thereof, the Board may levy a special assessment in the amount of such actual or estimated inadequacy. The special assessment shall be assessed to the Owners by dividing the total estimate by the total number of residential Lots and assessing the resulting amount equally to the Owner of each Lot, such assessment to be paid either in equal monthly installments over the balance of the remaining fiscal year, or in a lump sum upon billing as the Board shall determine.

10.4 **Reimbursement Assessments** The Association may levy an assessment against any Owner or Owners as a result of such Owner's failure to landscape such Owner's Lot, or failure to repair, maintain or restore the Improvements and Buildings situated on such Owner's Lot including landscape or fence Improvements installed by the Declarant or as is otherwise authorized by this Declaration. Such assessment shall be for the purpose of reimbursing the Association for its actual costs and expenses paid or incurred for such purposes and shall be due and payable to the Association when levied, or at such time or times as the Association shall determine.

10.5 **Reserve Fund** The Association may establish a reserve fund for the maintenance, repair and replacement of the Common Elements. The amount of such fund shall be determined by the Association and shall be funded through annual payments of the common assessments and shall be held by the Association in a separate account, which may be an interest-bearing account, to be held in trust for the Owners for such purposes.

10.6 **Capital Improvements** In addition to regular and special assessments, the Association may levy, in any assessment year, a special assessment for the purposes of defraying in whole or in part the cost of any capital improvement upon the Common Elements, including fixtures, landscape improvements, personal property related thereto or the Irrigation Facilities, provided that such assessment shall have the affirmative vote of a majority of the Members of the Association approving the assessment.

10.8 **Out-of-State Owners Who Are Not Occupants** If an Owner does not occupy the residence and maintains his or her principal residence outside of the State of Colorado, the Board may at its discretion require a guarantee of payment of the assessments by (a) posting a surety bond with the Association indemnifying the Association against the default of such Owner in the payment of assessment the amount of two times the amount of the regular assessment for the preceding fiscal year, or (b) payment of the regular assessment pursuant in advance by the 10th days of the first month of the fiscal year.

ARTICLE XI
EMINENT DOMAIN

11.1 **Definition of Taking** The term "taking" shall mean condemnation by eminent domain or sale under threat of condemnation.

11.2 **Representation in Condemnation Proceeding of Association Property** In the event of a threatened taking of all or any portion of the Association Property, the Lot Owners hereby appoint the Association through such persons as the Executive Board may designate to represent the Association and all of the Lot Owners in connection therewith. The Association shall act in its sole discretion with respect to any awards being made in connection with the taking and shall be entitled to make voluntary sale to the condemner in lieu of engaging in a condemnation action. Service of process on the Association shall constitute sufficient notice to all Lot Owners, and service of process on each individual Lot Owner shall not be necessary.

11.3 **Award for Association Property** Any awards received by the Association on account of taking of Association Property shall be paid to the Association. The Association may, in its sole discretion, retain any award in the general funds of the Association or distribute all or any portion thereof to the Lot Owners as their interest may appear. The Rights of a Lot Owner and the Mortgagee of a Lot as to any such distribution shall be governed by the provisions of the Mortgage encumbering the Lot.

11.4 **Taking Of Lots** If a Lot is acquired by eminent domain or part of a Lot is acquired by eminent domain leaving the Lot Owner with a remnant which may not practically or lawfully be used for any purpose permitted by this Declaration, the award must include compensation to the Lot Owner for that Lot and its Allocated Interests whether or not any Association Property was acquired. Upon acquisition, unless the decree otherwise provides, that Lots in proportion to the respective Allocated Interests of those Lots before the taking. Any remnant of a Lot remaining after part of the Lot is taken

is thereafter Association Property. Otherwise, if part of a Lot is acquired by eminent domain, the award must compensate the Lot Owner for the reduction in value of the Lot and its interest in the Association Property whether or not any Association Property was acquired. Upon acquisition, unless the decree otherwise provides:

(a) That Lot's Allocated Interests are reduce in proportion to the reduction in the size of the Lot; and

(b) The portion of Allocated Interests divested from the partially acquired Lot is automatically reallocated to that Lot and to the remaining Lots (as appropriate) in proportion to the respective interest of those Lots before taking, with the partially acquired Lot participating in the reallocation on the basis of its reduced Allocated Interests.

11.5 **Governing Clause** This Declaration shall control and govern over any conflicting provision of the Act, except to the extent that such conflicting provisions in the Act is mandatory according to the terms of Sections -105, -106, -106.5 and -107 of the Act. This Declaration shall further control any conflicting term in the Articles, Bylaws or any rule or regulation promulgated by the Association or the Design Review Board.

IN WITNESS WHEREOF, Declarant sets its hand and seal the _____ day of _____, 2017.

Two R&D, LLC

By: _____

Title: _____

STATE OF COLORADO)
) ss.
COUNTY OF MESA)

The foregoing Declaration was acknowledged before me this _____ day of _____,

2017 by _____the_____

of Two R&D, LLC a Colorado limited liability company.

Witness my hand and official seal.

_____
Notary Public

Final Plan of Subdivision

Pinnacle Ridge Subdivision

Filing 1

Grand Junction, Colorado

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 15828

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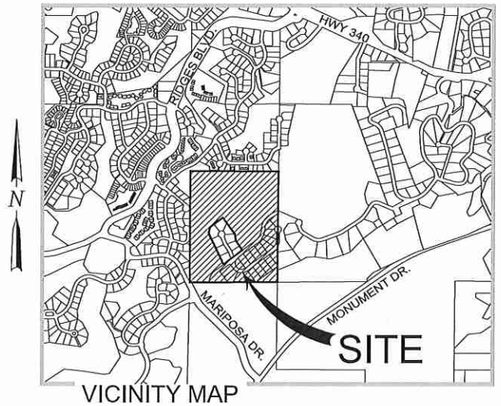
FOR REVIEW - NOT FOR CONSTRUCTION

LEGEND

4560	EXISTING CONTOUR
	PROPERTY BOUNDARY
	OLD PROPERTY BOUNDARY
	BUILDING ENVELOPE
	PROPOSED LOT LINE
	EASEMENT
	EX EDGE OF ASPHALT
	RIGHT-OF-WAY
W W W	PROPOSED WATER LINE
W W W	EXISTING WATER LINE
IRR IRR IRR	PROPOSED IRRIGATION
X X X	EXISTING FENCE
EGTC	PROPOSED DRY UTILITIES (BY OTHERS)
	PROPOSED ASPHALT
	PROPOSED CONCRETE
	PROPOSED STORMDRAIN
	DIVERSION/INTERCEPT DITCH
	DRAINAGE DIRECTION
4550.00	LOT CORNER SPOT ELEVATION
G 4550.00	PROPOSED SWALE/BERM ELEVATION.
FL 4550.00	PROPOSED FL CURB/V-PAN
	PROPOSED FIRE HYDRANT
	PROPOSED WATER VALVE
	PROPOSED WATER METER
	PROPOSED IRRIGATION RISER
	PROPOSED IRRIGATION VALVE
CO	PROPOSED IRRIGATION CLEANOUT
4550.00	EXISTING CONTOUR LABEL
4550.00	PROPOSED CONTOUR LABEL



VICINITY MAP

SHEET NUMBER	SHEET TITLE
C0.0	COVER
C0.1	PROJECT NOTES
C0.2	OVERALL SITE PLAN AND FILING PLAN
C1.0	COMPOSITE SITE PLAN - LAYOUT AND GEOMETRY PLAN
C2.0 - C2.2	COMPOSITE SITE PLAN - GRADING PLAN, ROAD CROSS SECTIONS
C3.0	COMPOSITE SITE PLAN - OVERALL UTILITY AND WATER PLAN
C4.0 - C4.1	ROAD AND SEWER PLAN AND PROFILE - AIGUILLE DRIVE
C5.0 - C5.1	STORM SEWER PLAN & PROFILE
C6.0 - 6.2	CONSTRUCTION STORM WATER MANAGEMENT PLAN

ABBREVIATION LEGEND

&	AND	MCSM	MESA COUNTY SURVEY MONUMENT
℄	CENTERLINE	MFG'S	MANUFACTURER'S
Ø	DIAMETER	M.P.E.	MULTI-PURPOSE EASEMENT
'	FEET	MPH	MILES PER HOUR
"	INCHES	NE COR	NORTHEAST CORNER
±	PLUS OR MINUS	N&S&E	NORTH AND SOUTH AND EAST
APPROX.	APPROXIMATELY	NO.	NUMBER
BRL	BUILDING RESTRICTION LINE	N.T.S.	NOT TO SCALE
BVCS	BEGIN VERTICAL CURVE STATION	PROP.	PROPOSED
BVCE	BEGIN VERTICAL CURVE ELEVATION	PRV	PRESSURE REDUCING VALVE
CB	CATCH BASIN	PSI	POUNDS PER SQUARE INCH
CL. III	CLASS 3	PVC	POLYVINYL CHLORIDE
CMP	CORRUGATED METAL PIPE	PVI	POINT OF VERTICAL INTERSECTION
CR	CURB RETURN	PVMT	PAVEMENT
CT.	COURT	O.C. E.W.	ON CENTER EACH WAY
DR.	DRIVE	RCP	REINFORCED CONCRETE PIPE
EL.	ELEVATION	RD	ROAD
ELEV	ELEVATION	RET. WALL	RETAINING WALL
EX.	EXISTING	R.O.W.	RIGHT-OF-WAY
EXIST.	EXISTING	RT	RIGHT
EVCS	END VERTICAL CURVE STATION	SCH	SCHEDULE
EVCE	END VERTICAL CURVE ELEVATION	SD	STORM DRAIN
FL	FLOWLINE	SEC	SECTION
FH	FIRE HYDRANT	SF	SQUARE FEET
FT	FEET	SQ. FT.	SQUARE FEET
GPM	GALLONS PER MINUTE	SS	SANITARY SEWER
GV	GAS VALVE	ST.	STREET
G.V.A.L.C.S.	GRAND VALLEY ALIQUOT LOCAL COORDINATE SYSTEM	STA	STATION
		THRU	THROUGH
HGL	HYDRAULIC GRADE LINE	TYP.	TYPICAL
HI PT	HIGH POINT	TW	TOP OF WALL
HP	HORSE POWER	U.W.C.D.	UTE WATER CONSERVANCY DISTRICT
INV	INVERT	VC	VERTICAL CURVE
LT	LEFT	VCP	VITRIFIED CLAY PIPE
MAX	MAXIMUM	W/	WITH
MIN	MINIMUM	WM	WATER METER
MH	MANHOLE	WV	WATER VALVE

UTILITY PROVIDERS INFORMATION

UTILITY	PROVIDER	PHONE NUMBER
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	REDLANDS IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-0173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.

Colorado 811
1-800-922-1987
co811.org

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM. LOTS 1 – 9. BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK B AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = RSF-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'
   REAR = 25'
   SIDE = 7'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY GEOTECHNICAL ENGINEERING GROUP, INC. REFER TO REPORT DATED APRIL 16, 2002.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

latest geotech

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY

Cover
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/08/17
SCALE:
CAD ID: 0.0cover-f1.dwg

–SHEET–
C0.0

don't think this is true

seed mix & soil prep.

conflict w/ Geotech I think.

LOCAL CONTACT INFORMATION
GRAND JUNCTION DEVELOPMENT INSPECTOR: MARK BARSLUND 970-201-1362

GENERAL NOTES:

1. THESE GENERAL NOTES SHALL BE APPLICABLE TO ALL SHEETS WITHIN THIS SET OF DRAWINGS.
2. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE GOVERNING AGENCY. CONTRACTOR MUST CONTACT THE APPROPRIATE AGENCY PRIOR TO CONSTRUCTION IN THE RIGHT-OF-WAY.
3. PLANNING PERMIT APPROVAL MUST BE OBTAINED BY INDIVIDUAL LOT OWNERS PRIOR TO CONSTRUCTION. THE LOT OWNER MUST SUBMIT A PROPOSED DRAINAGE PLAN OF EACH SITE TO THE GOVERNING AGENCY FOR REVIEW.
4. EXISTING WATER, SANITARY, AND STORM SEWER LINES ARE SHOWN BASED ON BEST AVAILABLE INFORMATION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS SPECIFICALLY AT CONNECTION POINTS AND AT POTENTIAL POINTS OF CONFLICT. ALL INFORMATION SHALL BE SUPPLIED TO THE ENGINEER PRIOR TO CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR:
   (A) CONTACTING THE APPROPRIATE AGENCY TO ARRANGE A PRE-CONSTRUCTION MEETING AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
   (B) OBTAINING ALL PERMITS FOR STREET CUTS, UTILITIES CONSTRUCTION AND GRADING. THE COST OF ALL PERMITS SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S BID.
   (C) COORDINATING WITH ALL UTILITY COMPANIES INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. ADVANCE COORDINATION BY THE CONTRACTOR TO ALL UTILITY COMPANIES INVOLVED SHALL BE REQUIRED FOR ANY SERVICE INTERRUPTIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER, PROJECT MANAGER AND THE UTILITY COMPANY 48 HOURS PRIOR TO START OF CONSTRUCTION. NO UTILITY TAPS SHALL BE MADE WITHOUT WRITTEN AUTHORIZATION BY THE UTILITY COMPANY AND THE CITY.
   (D) VERIFICATION OF ALL OTHER UNDERGROUND FACILITIES WHICH MAY BE AFFECTED BY THIS PROJECT AND REPAIR THEREOF IN CASE OF DAMAGE.
   (E) CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO OBTAIN TEMPORARY POWER AND TELEPHONE SERVICE DURING CONSTRUCTION. ALL COST FOR TEMPORARY SERVICES SHALL BE THE CONTRACTORS RESPONSIBILITY.
   (F) RESTORATION OF DISTURBED STREET PAVEMENT AS REQUIRED BY THE CITY AND THE STATE'S DEPARTMENT OF TRANSPORTATION.
   (G) ALL PROJECT SAFETY INCLUDING, BUT NOT LIMITED TO, TRENCH EXCAVATION AND SHORINGS, TRAFFIC CONTROL, AND SECURITY.
   (H) COORDINATING ALL WORK AND INSPECTIONS AS REQUIRED BY THE CITY OR THE STATE.
   (I) OBTAINING NECESSARY PERMITS FROM THE DEPARTMENT OF TRANSPORTATION FOR ALL WORK IN AND ADJACENT TO STATE RIGHT-OF-WAY.
   (J) RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE. AS-BUILTS SHALL INCLUDE UNDERGROUND UTILITIES AS WELL AS ANY FIELD MODIFICATIONS OF THE PLANS.
   (K) KEEPING ADJACENT STREETS FREE AND CLEAN OF ALL DEBRIS AND DIRT FROM THE JOB SITE.
   (L) THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED AT THE JOB SITE AT ALL TIMES. EACH SUBCONTRACTOR (INCLUDING THE SURVEYOR) SHALL HAVE A SIGNED COPY OF THE PLANS AND THE APPROPRIATE STANDARDS AND SPECIFICATIONS IN HIS POSSESSION AT ALL TIMES WHEN IMPROVEMENTS ARE BEING INSTALLED.
   (M) THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR COMPLETION OF INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED BY NOTE TO BE "PROVIDED," "INSTALLED" OR "CONSTRUCTED" UNLESS SPECIFICALLY NOTED OTHERWISE.
   (N) CONTRACTOR WILL HAVE A COPY OF APPROVED SOILS REPORTS FOR PAVEMENT DESIGN AND COMPACTION REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL RECOMMENDATIONS CONTAINED WITHIN THE SOILS REPORT.
   (O) VERIFYING THE ACCURACY OF THE VERTICAL BENCHMARK INFORMATION. CONTRACTOR SHALL USE BENCHMARKS AND DATUMS SHOWN HEREON TO SET PROJECT BENCHMARK(S), BY RUNNING A LEVEL LOOP BETWEEN AT LEAST TWO BENCHMARKS, AND SHALL PROVIDE SURVEY NOTES OF SUCH TO PROJECT ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
6. IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
7. TWO WORKING DAYS BEFORE YOU DIG, GRADE, OR EXCAVATE, CALL THE APPROPRIATE UTILITY NOTIFICATION CENTER FOR THE MARKING OF MEMBER UNDERGROUND UTILITIES. THE UTILITIES SHOWN ON THESE PLANS ARE PLOTTED BASED ON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION, AND REPAIR OF ANY EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. ANY UTILITY DAMAGED BY CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
8. THIS PLAN WAS PREPARED BASED ON SURVEY INFORMATION PROVIDED BY A LICENSED SURVEYOR. VORTEX ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR ERRORS DUE TO INCOMPLETE OR INACCURATE SURVEY INFORMATION.
9. SUBGRADE DENSITY SHALL BE TESTED BY A PRIVATE SOILS TESTING FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING BASE COURSE OR CONCRETE. BASE COURSE DENSITY SHALL ALSO BE TESTED BY THE PRIVATE GEOTECHNICAL FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING PAVEMENT.
10. THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM ALL UTILITY COMPANIES PRIOR TO ANY DEMOLITION WORK OR DISCONNECTION OF ANY SERVICE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANIES.
2. ALL UTILITIES INCLUDING STORM SEWER, SANITARY SEWER AND WATER MAINS SHALL BE COMPLETELY REMOVED FROM THE GROUND UNLESS OTHERWISE SPECIFIED. NO EXISTING UTILITY, STRUCTURES OR UNDERGROUND IMPROVEMENT SHALL BE ABANDONED IN PLACE WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER, OWNER AND GOVERNING AGENCY.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES WHICH ARE TO REMAIN IN SERVICE. INCLUDING BUT NOT LIMITED TO GAS, ELECTRIC, CABLE AND TELEPHONE SERVICES.
4. ALL STRUCTURE INCLUDING BASEMENT WALLS AND FLOOR SLABS SHALL BE COMPLETELY REMOVED FROM THE SITE.
5. ALL DEMOLITION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS INCLUDING BUT NOT LIMITED TO HAZARDOUS MATERIALS, DISPOSAL, HOURS OF OPERATION.
6. ALL EROSION CONTROL MEASURES DESIGNED FOR THE SITE PERIMETER OR TO PROTECT EXISTING IMPROVEMENTS SHALL BE IN PLACE PRIOR TO THE START OF ANY DEMOLITION ACTIVITIES.
7. THE CONTRACTOR SHALL OBTAIN AND REVIEW THE ENVIRONMENTAL STUDIES PROVIDED BY THE OWNER AND TAKE ALL NECESSARY PRECAUTIONS FOR ENVIRONMENTAL SAFETY DURING DEMOLITION ACTIVITIES. IT SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE EXISTING STRUCTURES FOR ANY OTHER CONDITIONS WHICH MAY AFFECT THE DEMOLITION PROCEDURES.
8. ANY CONDITIONS WHICH MAY BE UNCOVERED DURING THE PROCESS OF DEMOLITION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER IMMEDIATELY. ADDITIONAL EXPENSES INCURRED BY UNFORESEEN CONDITIONS SHALL BE APPROVED BY THE OWNER PRIOR TO THE ADDITIONAL WORK.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE PROPERTY FOR THE TYPE AND QUANTITY OF DEMOLITION REQUIRED, PRIOR TO SUBMISSION OF A BID.
10. THE CONTRACTOR SHALL HAVE WATER ON SITE FOR DUST ABATEMENT AT ALL TIMES DURING DEMOLITION ACTIVITIES.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF ALL DEBRIS. BURNING ON SITE SHALL NOT BE PERMITTED. NO DEBRIS INCLUDING CONCRETE OR ASPHALT MAY BE PLACED IN ANY FILL AREA.
12. ANY DAMAGE TO PUBLIC UTILITIES OR ADJACENT PROPERTIES AS A RESULT OF THE DEMOLITION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. REPAIRS SHALL BE MADE IN A TIMELY MANNER TO THE SATISFACTION OF THE DAMAGED PARTY.
13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH DOCUMENTATION OF THE CONDITION OF EXISTING IMPROVEMENTS TO REMAIN IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS NOT DOCUMENTED AS PRE-EXISTING. DOCUMENTATION SHALL BE PROVIDED PRIOR TO COMMENCEMENT OF WORK.
14. ALL EXISTING UTILITY SERVICES SHALL BE COMPLETELY REMOVED FROM THE SITE. SERVICE SHALL BE CUT AND PLUGGED AT THE PROPERTY LINE IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS. THE DEMOLITION CONTRACTOR SHALL CLEARLY MARK ALL STUBS AT THE PROPERTY LINE WITH A 4 X 4 WOOD POST (MINIMUM 4' ABOVE GRADE, 4' BELOW GRADE) MARKED WITH THE SERVICE TYPE.
15. ALL EXISTING WELLS SHALL BE CAPPED AND ABANDONED IN ACCORDANCE WITH ALL STATE REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL REQUIRED PROCEDURES, FILE ALL REQUIRED FORMS, APPLICATIONS AND REPORTS, AND OBTAIN ALL REQUIRED APPROVALS FROM THE STATE ENGINEER'S OFFICE.
16. DURING THE COURSE OF DEMOLITION, CONTRACTOR SHALL PROVIDE SECURITY FENCING AND OTHER PRECAUTIONARY SAFETY MEASURE AS NECESSARY.

EROSION CONTROL NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL FACILITIES SHOWN.
3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORESEEN PROBLEMS OR IF THE PLAN DOES NOT FUNCTION AS INTENDED. A JURISDICTION REPRESENTATIVE MAY REQUIRE ADDITIONAL CONTROL DEVICES UPON INSPECTION OF PROPOSED FACILITIES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED, STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM TRAFFIC FROM THE SITE.
5. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE PAVED, SEEDED WITH NATIVE VEGETATION OR LANDSCAPED. REFER TO LANDSCAPE PLANS FOR SEED MIX AND PLANTING SPECIFICATIONS.
6. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MAY BE REMOVED ONCE 500 AND FINAL LANDSCAPING IS IN PLACE. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION. EROSION CONTROL IN PROPERLY PAVED AREAS SHALL REMAIN IN PLACE UNTIL PAVEMENT IS COMPLETE.
7. THIS PLAN IS ONLY TO BE USED FOR INSTALLATION OF EROSION CONTROL FACILITIES. DO NOT USE THIS PLAN FOR GRADING OR STORM SEWER CONSTRUCTION.
8. CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLE WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES WILL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS, MOVED WHEN NECESSARY AND REMOVED WHEN THE SITE IS PAVED.
9. INLET PROTECTION DEVICES SHALL BE INSTALLED IMMEDIATELY UPON INDIVIDUAL INLET'S BECOMING FUNCTIONAL.
10. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH GRADING AND/OR UTILITY CONSTRUCTION SHALL OBTAIN A COPY OF THE STORM WATER MANAGEMENT PLAN (SWMP) AND ANY OTHER DOCUMENTATION REGARDING "STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY" AND BECOME FAMILIAR WITH THEIR CONDITIONS.
11. THE TEMPORARY PARKING AND STORAGE AREA SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AREA, EQUIPMENT CLEANING AREA, EMPLOYEE BREAK AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
12. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, ETC.) SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT WITH STORM WATER DISCHARGES FROM THE SITE.
13. MAINTAIN ON THE SITE OR HAVE READILY AVAILABLE SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
14. FUGITIVE DUST BLOWING FROM THE SITE SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS ABSOLUTELY PROHIBITED.
15. NO RUBBISH, TRASH, GARBAGE, OR OTHER SUCH MATERIALS SHALL BE DISCHARGED INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
16. ALL MEASURES PRESENTED IN THE SWMP SHALL BE INITIATED AS SOON AS PRACTICABLE.
17. IF THE GRAVEL CONSTRUCTION ENTRANCES ARE NOT EFFECTIVE IN REMOVING THE MAJORITY OF DIRT OR MUD FROM THE TIRES OF THE CONSTRUCTION VEHICLES, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP AND THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.
18. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
19. IF SOIL STOCKPILING IS EMPLOYED ON THE SITE, SILT FENCES SHALL BE USED TO HELP CONTAIN THE SEDIMENT.
20. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
21. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN 30 DAYS AFTER FINAL STABILIZATION. FINAL STABILIZATION HAS OCCURRED WHEN ALL SOIL DISTURBING ACTIVITIES ARE COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OF THE COVER FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES HAS BEEN EMPLOYED.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) DUE TO GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT.
23. ALL OFF-SITE CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR STORM DRAIN CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.

EROSION CONTROL MAINTENANCE NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL MEASURES CONTAINED IN THIS PLAN SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT, AND SHOULD BE CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:
3. STRAW BALE INLET PROTECTION DEVICES AND BARRIERS SHALL BE FIXED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR SHALL BE REPLACED IF THEY SHOW SIGNS OF DETERIORATION.
4. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, RE-SEEDED, AND MATERED AS NEEDED.
5. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-THIRD TO ONE-HALF THE HEIGHT OF THE SILT FENCE.
6. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
7. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
8. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES, SEDIMENT IN THE SEDIMENTATION BASINS SHALL NOT EXCEED THE SEDIMENTATION CLEANOUT LEVEL.
9. IF THE STONES IN THE GRAVEL CURB INLET SEDIMENT FILTERS BECOME CLOGGED WITH SEDIMENT, THE STONES MUST BE PULLED AWAY, CLEANED AND REPLACED.
10. THE EMBANKMENT OF THE SEDIMENTATION BASIN SHALL BE CHECKED REGULARLY TO INSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
11. THE TEMPORARY SEDIMENT TRAP AND SEDIMENTATION BASIN STRUCTURES SHALL BE CHECKED REGULARLY TO INSURE THAT THEY ARE STRUCTURALLY SOUND AND HAVE NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. SEDIMENT DEPOSITION SHALL BE REMOVED PERIODICALLY TO ENSURE FULL VOLUME IS AVAILABLE IN THE POND.

GRADING NOTES:

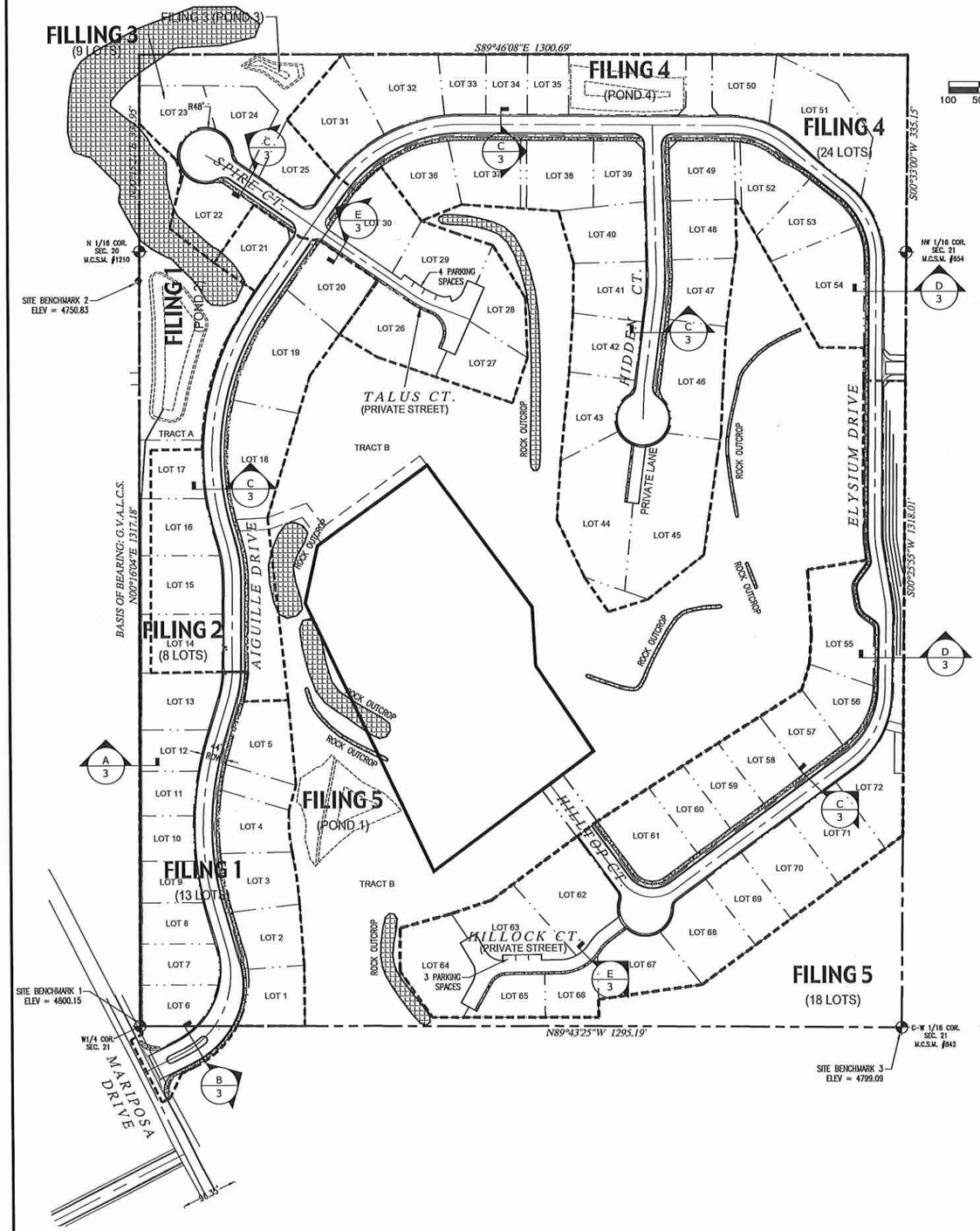
1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. CONTOURS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY. CONTOUR INTERVAL = 1 FOOT UNLESS OTHERWISE NOTED ON PLANS.
3. ALL DISTURBED AREAS THAT ARE UNSURFACED OR ARE NOT DESIGNATED AS LANDSCAPE AREAS ARE TO BE SEEDED, FERTILIZED, AND WATERED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
4. IF DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE SOILS ENGINEER SHALL BE CONTACTED FOR RECOMMENDATIONS.
5. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND STANDARDS OF THE GOVERNING AGENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DENSITY PER A.S.T.M. TEST D-1557. MOISTURE CONTENT AT TIME OF PLACEMENT SHALL NOT EXCEED 2% ABOVE NOR 3% BELOW OPTIMUM. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED, LICENSED, SOILS ENGINEER, CERTIFYING THAT THE SUBBASE WITHIN THE AREAS TO BE PAVED HAS BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECS.
6. NO PROPOSED SLOPE SHALL EXCEED THREE (3) HORIZONTAL TO ONE (1) VERTICAL. ALL SLOPED AREAS MUST BE PROTECTED FROM EROSION.
7. IF STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS ARE STOCKPILED ON THE SITE. TOPSOIL MAY BE PLACED TO A HEIGHT OF FIVE FEET. SILT FENCE SHALL BE PLACED AROUND THE BASE OF THE STOCKPILE AND THE STOCKPILE SHALL BE SEEDED WITH NATIVE SEED MIX IMMEDIATELY AFTER STRIPPING OPERATIONS ARE COMPLETE.
8. ON-SITE MATERIALS SUITABLE FOR FILL BENEATH DRIVES, AND PARKING AREAS BEYOND 5' OF THE BUILDING SHALL BE COMPACTED IN ACCORDANCE WITH THE GUIDELINES PRESENTED IN THE SOILS REPORT.
9. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHY AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO ENSURE 0.75% MIN. SLOPE AGAINST ALL GUTTERS TO PREVENT PUDDLING. ANY DISCREPANCIES SHALL BE PROVIDED TO THE ENGINEER IN WRITING IMMEDIATELY.
10. SUBBASE MATERIAL FOR SIDEWALKS, CURB AND GUTTER, AND ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED TO 95% OPTIMUM DENSITY (AS DETERMINED BY MODIFIED PROCTOR METHOD).
11. SPOT ELEVATIONS REPRESENT FLOWLINE OR TOP OF ASPHALT UNLESS OTHERWISE NOTED.
12. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS WHICH DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB AND GUTTER AND UTILITIES.
13. ALL UTILITIES (MANHOLES, VALVE COVERS, CLEANOUTS, VAULTS, BOXES, ETC.) SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
14. ALL EARTH MOVING AND PLACEMENT OPERATIONS SHALL BE IN CONFORMANCE WITH THE RECOMMENDATIONS IDENTIFIED IN THE SOILS REPORT. THE CONTRACTOR SHALL HAVE A SIGNED AND SEALED COPY OF THE SOILS REPORT ON THE SITE AT ALL TIMES.
15. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.
16. WHERE NEW CURB AND GUTTER IS BEING CONSTRUCTED ADJACENT TO EXISTING ASPHALT, THE FOLLOWING SHALL APPLY: PRIOR TO PLACEMENT OF ANY CONCRETE THE CONTRACTOR SHALL HAVE A LICENSED SURVEYOR VERIFY GRADE AND CROSS SLOPE OF THE CURB AND GUTTER FORMS. THE CONTRACTOR SHALL SUBMIT THE SLOPES AND GRADES TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY SECTION WHICH DOES NOT CONFORM TO THE DESIGN OR TYPICAL CROSS SECTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CURB AND GUTTER POURS WITHOUT APPROVAL OF THE ENGINEER.
17. MAINTENANCE OF ANY STORMWATER MANAGEMENT FACILITY SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL GUIDELINES FOR PRIVATE STORMWATER MANAGEMENT FACILITIES AND SHALL BE THE RESPONSIBILITY OF THE OWNER AND THE ASSIGNEES.
18. SURFACE RESTORATION SHALL BE AS FOLLOWS:
   (A) FINE GRADE ALL AREAS DISTURBED BY THE CONSTRUCTION OPERATIONS AFTER COMPLETION OF BACKFILLING AND COMPACTING. AREAS WHICH ARE TO RECEIVE PAVEMENTS, SURFACING, TOPSOIL OR LANDSCAPING SHALL BE GRADED AS REQUIRED TO ALLOW INSTALLATION OF THE SPECIFIC SURFACE TREATMENT. GRADE ALL OTHER AREAS TO MATCH THE EXISTING GROUND LINE.
   (B) REPLACE AND REPAIR ANY SURFACE IMPROVEMENTS DAMAGED OR REMOVED. CONFORM TO CITY STANDARDS & SPECIFICATIONS.
19. BITUMINOUS PAVEMENT
   (A) BITUMINOUS PAVEMENT SHALL BE REMOVED TO CLEAN STRAIGHT LINES AT THE LOCATIONS INDICATED ON PLANS. WIDTH OF REMOVAL FOR PIPELINES SHALL BE KEPT TO A MINIMUM AS DICTATED BY TRENCHING OPERATIONS, BUT SHALL EXTEND AT LEAST 6 INCHES BEYOND THE LIMITS OF TRENCH EXCAVATION.
   (B) THE CUT SHALL BE MADE WITH PAVEMENT CUTTING WHEEL, SAW OR OTHER APPROVED METHOD, SO AS TO PROVIDE A REASONABLY STRAIGHT AND SQUARE EDGE.

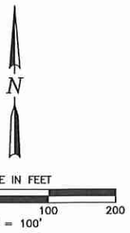
SANITARY SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL GRAVITY SANITARY SEWER LINES SHALL BE POLYVINYL CHLORIDE PIPE (PVC), ASTM D-3034 SDR.35, SEWER LINE MATERIALS AND CONSTRUCTION SHALL CONFORM TO ASTM STANDARDS AND SPECIFICATIONS.
3. DISTANCES FOR SANITARY SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. THEREFORE, DISTANCES SHOWN ON PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT.
4. RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATION. PIPELINE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT AND STEEL SHIMS TO ADJUST THE MANHOLE FRAME TO THE REQUIRED FINAL GRADE IN CONFORMANCE WITH STANDARD SPECIFICATIONS.
5. ALL SANITARY SEWER MAINS TESTING SHALL BE IN ACCORDANCE WITH LOCAL SPECIFICATIONS. COPIES OF ALL TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER, THE OWNER AND THE GOVERNING AUTHORITY PRIOR TO THE START OF THE WARRANTY PERIOD.
6. COMPACTION OF ALL TRENCHES WITHIN THE PROJECT SITE MUST BE ATTAINED AND COMPACTION RESULTS SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE. .
7. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING STRUCTURES AND IMPROVEMENTS DURING INSTALLATION OF THE SANITARY SEWER LINE.
8. THE CONTRACTOR SHALL POTHOLE THE EXISTING SEWER MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
9. SANITARY SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.

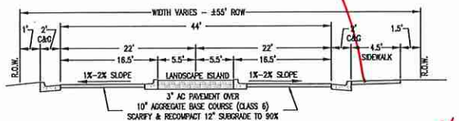
STORM SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING:
   (A) OBTAINING ALL REQUIRED PERMITS FROM THE CITY, THE DOT, OR ANY REGULATORY AUTHORITY AT THE CONTRACTOR'S COST INCLUDING PERMITS REQUIRED FOR WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
   (B) RESTORATION OF ANY EXISTING IMPROVEMENTS INCLUDING (BUT NOT LIMITED TO) FENCES, SOD, LANDSCAPING, PAVEMENT, SPRINKLER SYSTEMS.
   (C) VERIFICATION AND PROTECTION OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF THE PROJECT.
   (D) PROVIDING AS-BUILT DRAWINGS TO THE CITY AND ENGINEER.
   (E) ALL PERMITTING, DEVELOPMENT, CONNECTION, LOCATION INSPECTION AND TESTING FEES REQUIRED FOR STORM SEWER CONSTRUCTION.
   (F) VERIFYING ALL STANDARD DETAILS CONFORM TO CURRENT CITY/COUNTY STANDARDS AND SPECIFICATIONS.
   (G) FOR OBTAINING AND UNDERSTANDING ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THE CONSTRUCTION OF THE STORM SEWER IMPROVEMENTS.
   (H) FOR SCHEDULING ALL REQUIRED INSPECTIONS.
3. THE CONTRACTOR SHALL POTHOLE THE EXISTING STORM MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
4. STORM SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.
5. THE CONTRACTOR SHALL COORDINATE HIS WORK SCHEDULE WITH THE DITCH COMPANY TO ENSURE ALL DITCH FACILITIES ARE CONSTRUCTED WITHOUT DISRUPTION TO DITCH COMPANY OPERATIONS.
6. ALL STORM SEWER CONST

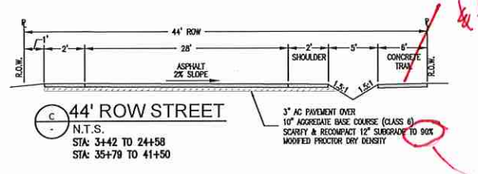




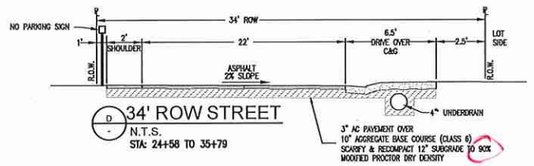
PROPOSED LAND USE TABLE			
SINGLE FAMILY LOTS (72 TOTAL)	934,944 S.F. – 21.46 AC	47.58%	OWNER: PRIVATE
TRACT A:	57,533 S.F. – 1.32 AC	2.93%	OWNER: HOA
TRACT B: OPEN SPACE	658,275 S.F. – 15.11 AC	33.50%	OWNER: HOA
FUTURE TRACTS	122,687 S.F. – 2.82 AC	6.24%	OWNER: HOA
RIGHT-OF-WAY:	191,434 S.F. – 4.39 AC	9.74%	OWNER: PUBLIC
TOTAL SITE AREA:	1,964,873 S.F. – 45.11 AC		



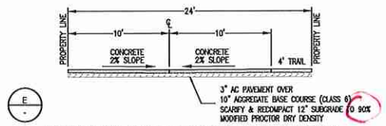
B – MARIPOSA DRIVE ENTRANCE
N.T.S.
STA: 0+24 TO STA: 1+52
(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 3+42)



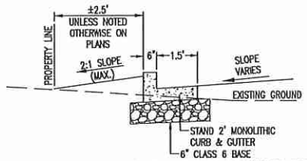
C – 44' ROW STREET
N.T.S.
STA: 3+42 TO 24+58
STA: 35+79 TO 41+50



D – 34' ROW STREET
N.T.S.
STA: 24+58 TO 35+79



E – PRIVATE STREET & LANE DETAIL
N.T.S.
TRACT C,F,J



WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

A – CONCRETE CURB DETAIL
N.T.S.

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM. LOTS 1 – 9. BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK B AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = RSF-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'
   REAR = 25'
   SIDE = 7'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY GEOTECHNICAL ENGINEERING GROUP, INC. REFER TO REPORT DATED APRIL 16, 2002.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

LEGEND

▬▬▬▬▬▬▬▬ FILING & LIMITS OF DEVELOPMENT DESIGNATION

PROJECT BENCHMARK

PROJECT BENCHMARK #1
LOCATED AT THE SOUTHWEST CORNER OF THE SITE.
MONUMENT ID: PLS 18480, THE W1/4 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31563.18 EASTING: 78944.74 ELEV: 4800.15 (NAVD88)

PROJECT BENCHMARK #2
LOCATED AT THE WEST PROPERTY LINE, NEAR OUTLOOK COURT.
MONUMENT ID: NCSN #1210, THE N1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 32880.35 EASTING: 78949.85 ELEV: 4750.83 (NAVD88)

PROJECT BENCHMARK #3
LOCATED AT THE SOUTHEAST CORNER OF THE SITE.
MONUMENT ID: NCSN #842, THE W1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31558.05 EASTING: 80239.95 ELEV: 4799.09 (NAVD88)

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 16828

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FOR REVIEW - NOT FOR CONSTRUCTION

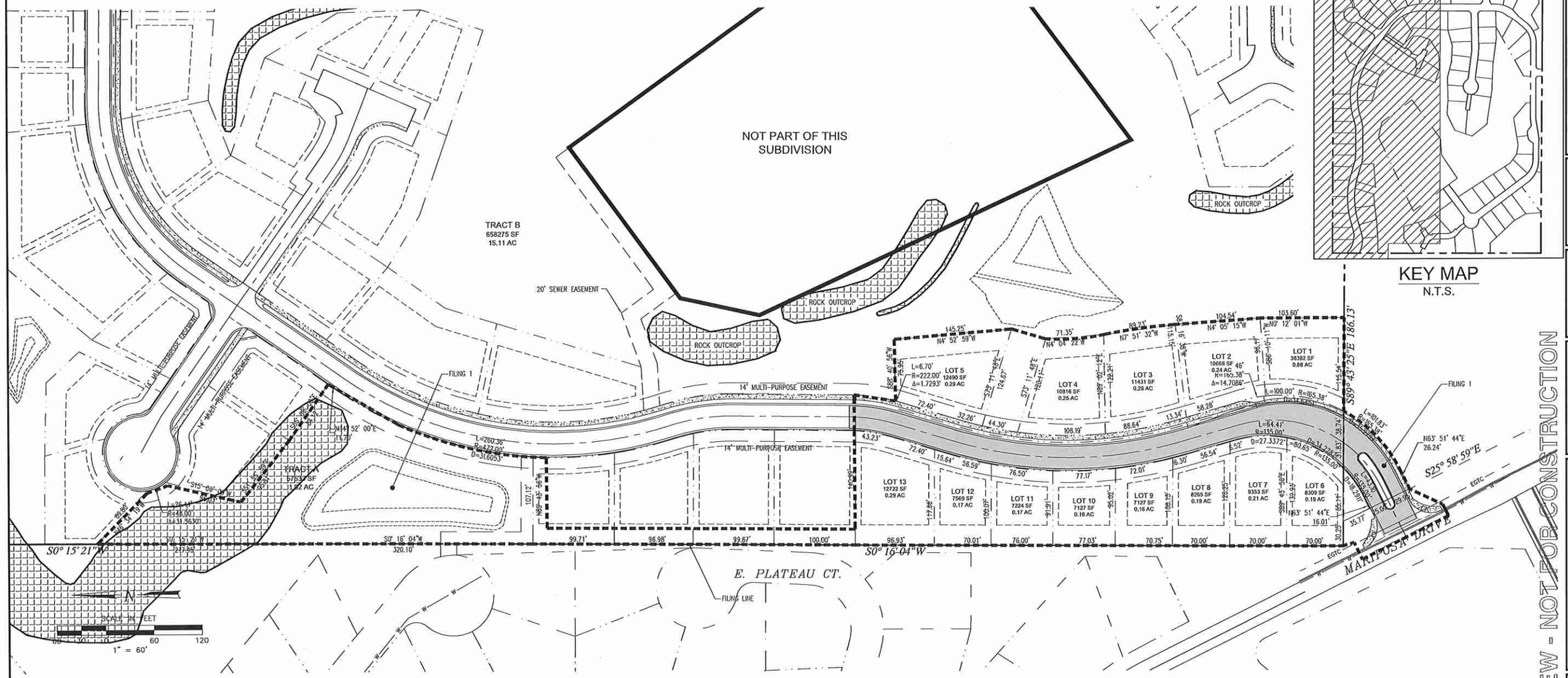
MAJOR SUBDIVISION
FINAL PLAN

NO.	DESCRIPTION	BY	DATE

Filing Plan
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO. F04-006
DATE 06/08/17
SCALE 1" = 100'
CAD ID 0.0cover-f1.dwg

~SHEET~
C0.2



KEY MAP
N.T.S.

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 19829

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY

Composite Site Plan - Layout and Geometry Plan

Filing 1
Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO:	F04-006
DATE:	06/08/17
SCALE:	1" = 60'
CAD ID:	1.0layout-f1.dwg

–SHEET–
C1.0

UTILITY PROVIDERS INFORMATION

UTILITY	PROVIDER	PHONE NUMBER
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

PROPOSED LAND USE TABLE

USE	AREA	AC	% OF TOTAL	OWNER
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. – 45.11 AC			

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811
Know what's **below.**
Call before you dig.
Colorado 811
1-800-922-1987
co811.org

current

GENERAL NOTES

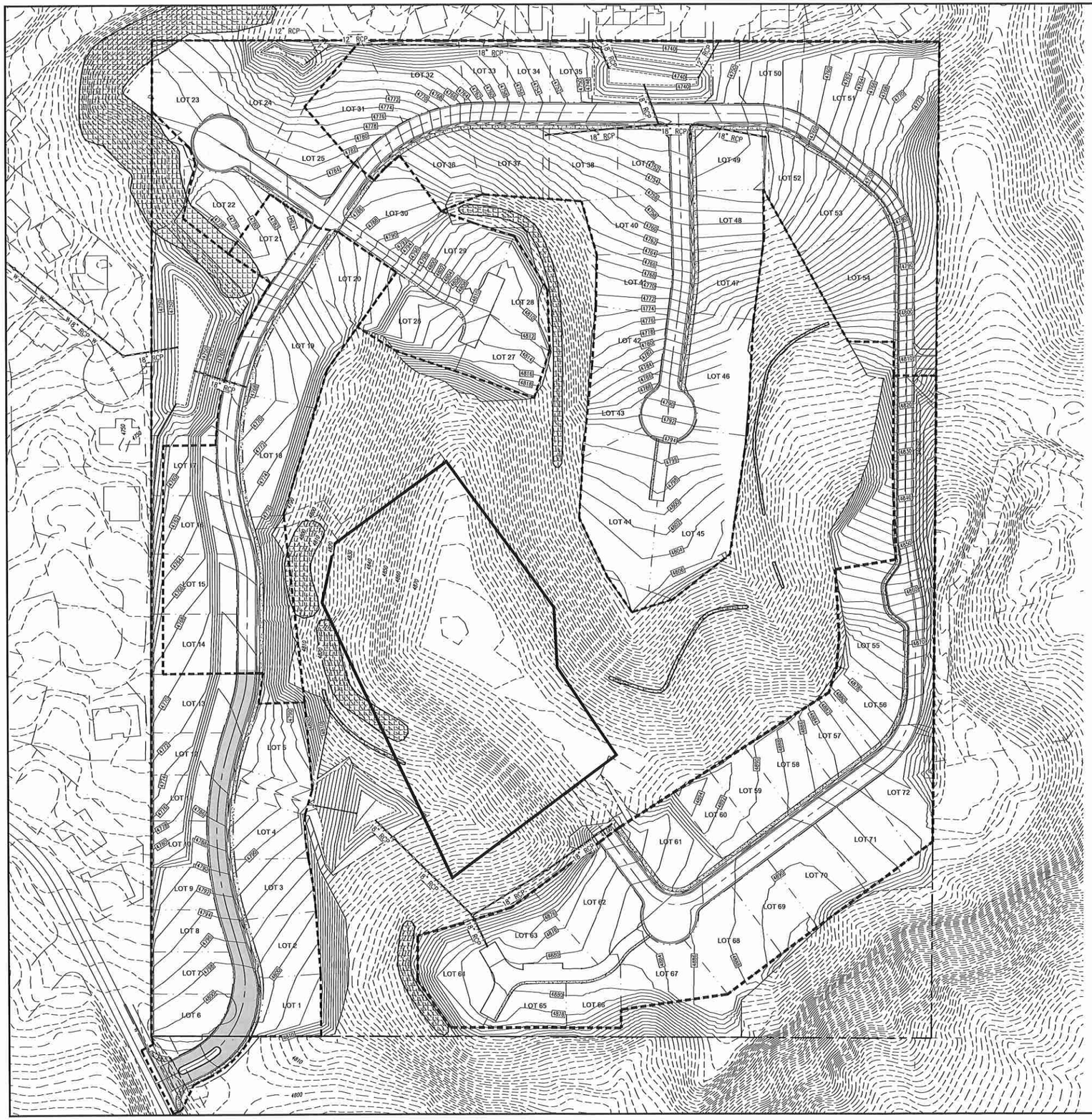
1. REFER TO THE GEOTECHNICAL INVESTIGATION BY GEOTECHNICAL ENGINEERING GROUP, INC., DATED APRIL 16, 2002 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X–OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET C0.2

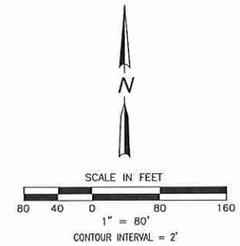
ACCEPTANCE BLOCK

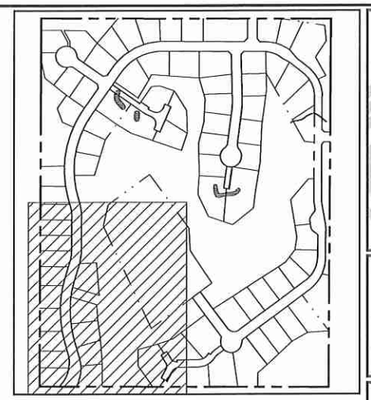
THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____







KEY MAP
N.T.S.

also storm?

GENERAL NOTES

1. ALL CONSTRUCTION TO CONFORM TO THE CURRENT CITY OF GRAND JUNCTION DEPARTMENT OF PUBLIC WORKS AND PLANNING STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR MUST CONTACT CITY OF GRAND JUNCTION TRAFFIC OPERATIONS SUPERVISOR PRIOR TO CONSTRUCTION OR PLACEMENT OF TRAFFIC CONTROL DEVICES/FEATURES (STRIPING, SIGNALS, MEDIANS, ETC.) FOR CONSTRUCTION IN THE RIGHT-OF-WAY ONLY.
3. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY, DATED 8/2/12 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE SANITARY SEWER, SEE SANITARY SEWER PLAN & PROFILE.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE FILING PLAN.
8. REFER TO SHEETS C0.1, C6.0 AND C6.2 FOR STORMWATER MANAGEMENT CONTROL PLANS AND EROSION CONTROL NOTES.

current

where is grading proposed for filing 1 construction?

FOR REVIEW - NOT FOR CONSTRUCTION

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

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CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 15329

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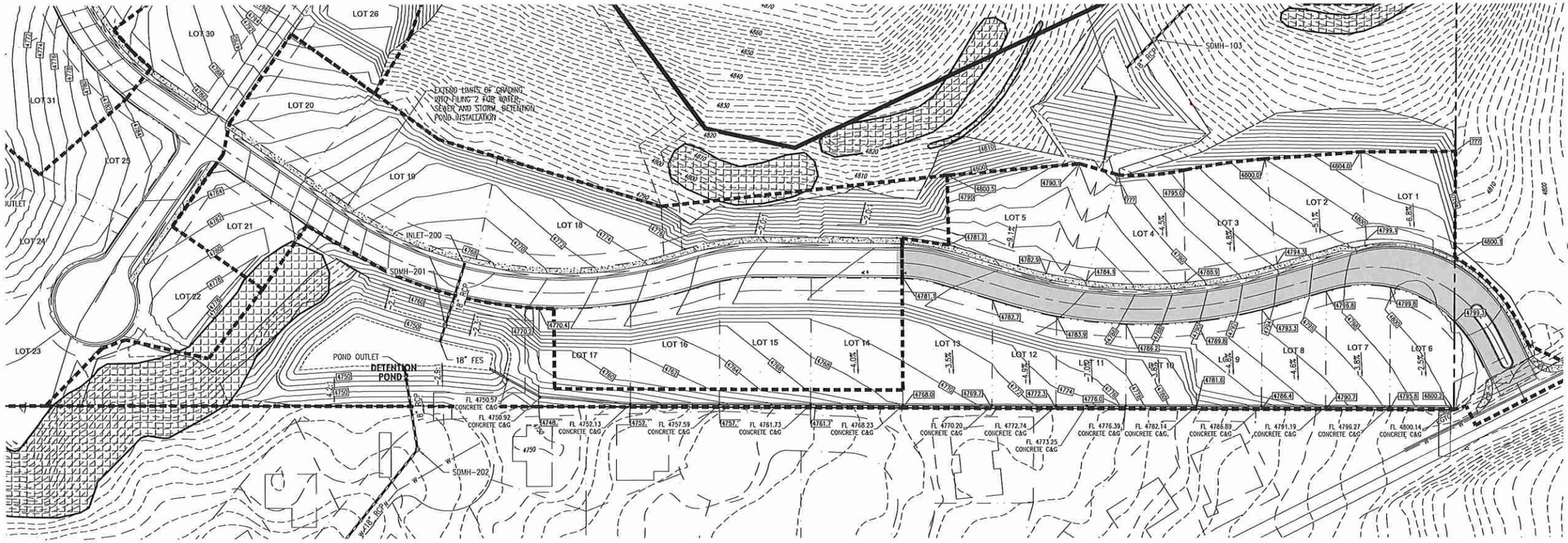
MAJOR SUBDIVISION FINAL PLAN

REV. DATE	COMMENT	BY

Overall Grading Plan Filings 1 - 5
Pinnacle Ridge Subdivision Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1"= 80'
CAD ID: 2.0grad-f1.dwg

-SHEET-
C2.0



FILING 1 TOF TABLE			
Lot	Grading	Min. TOF	Max. TOF
1	Type A	4801.00	4801.50
2	Type A	4798.70	4799.20
3	Type A	4793.30	4793.80
4	Type A	4787.90	4788.40
5	Type A	4783.60	4784.10
6	Type C	4801.60	4802.10
7	Type C	4799.30	4799.80
8	Type C	4796.00	4796.50
9	Type C	4792.50	4793.00
10	Type C	4789.00	4789.50
11	Type C	4786.00	4786.50
12	Type C	4784.30	4784.80
13	Type C	4783.10	4783.60

GENERAL NOTES:

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2. CONTRACTOR MUST CONTACT CITY OF GRAND JUNCTION TRAFFIC OPERATIONS SUPERVISOR PRIOR TO CONSTRUCTION OR PLACEMENT OF TRAFFIC CONTROL DEVICES/FEATURES (STRIPING, SIGNALS, MEDIANS, ETC.) FOR CONSTRUCTION IN THE RIGHT-OF-WAY ONLY.
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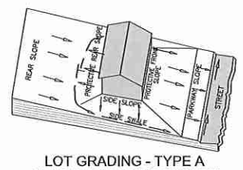
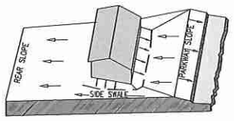
4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE SANITARY SEWER, SEE SANITARY SEWER PLAN & PROFILE.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE SHEETS C2.2

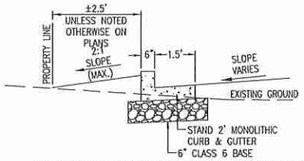
current.



LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.

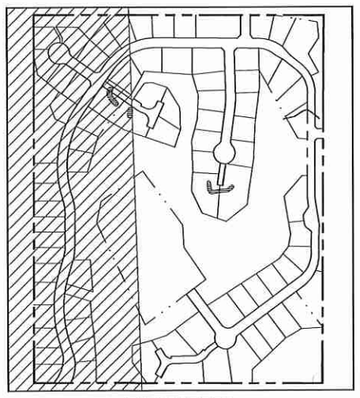


LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.



WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

CONCRETE CURB DETAIL
N.T.S.



KEY MAP
N.T.S.

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

FOR REVIEW - NOT FOR CONSTRUCTION

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
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Grand Junction, CO 81505
Phone: (970) 245-9051
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 15329

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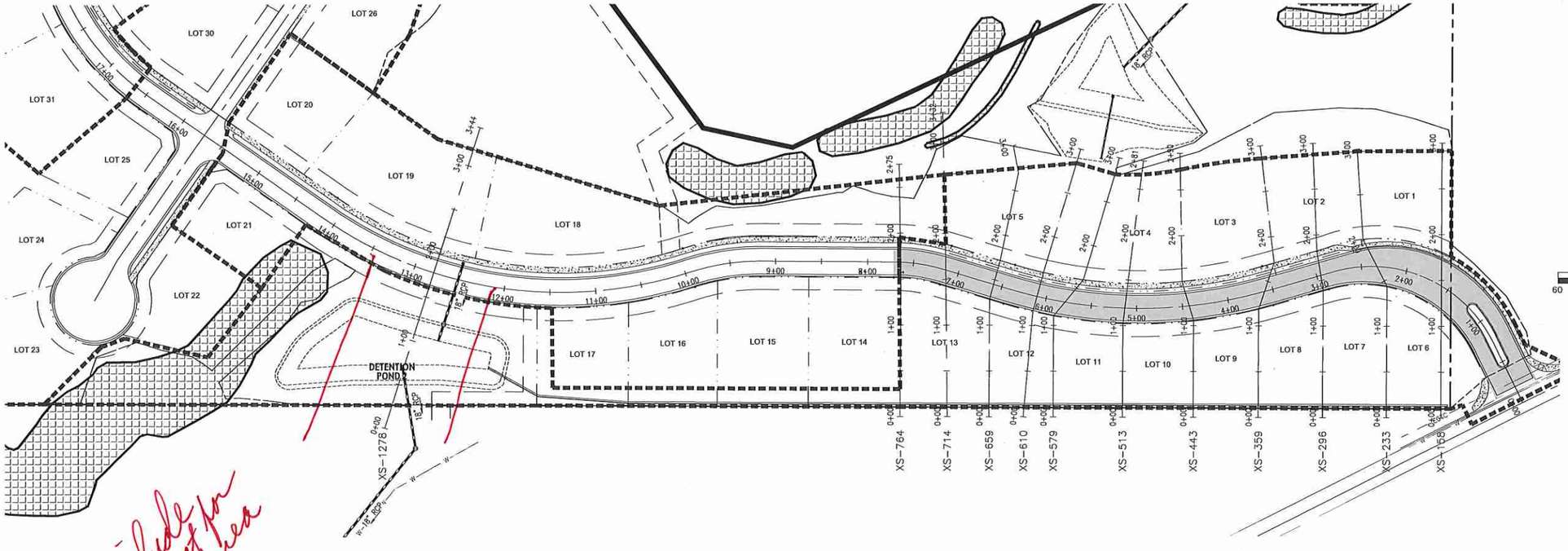
MAJOR SUBDIVISION
FINAL PLAN

REV. DATE	COMMENT	BY

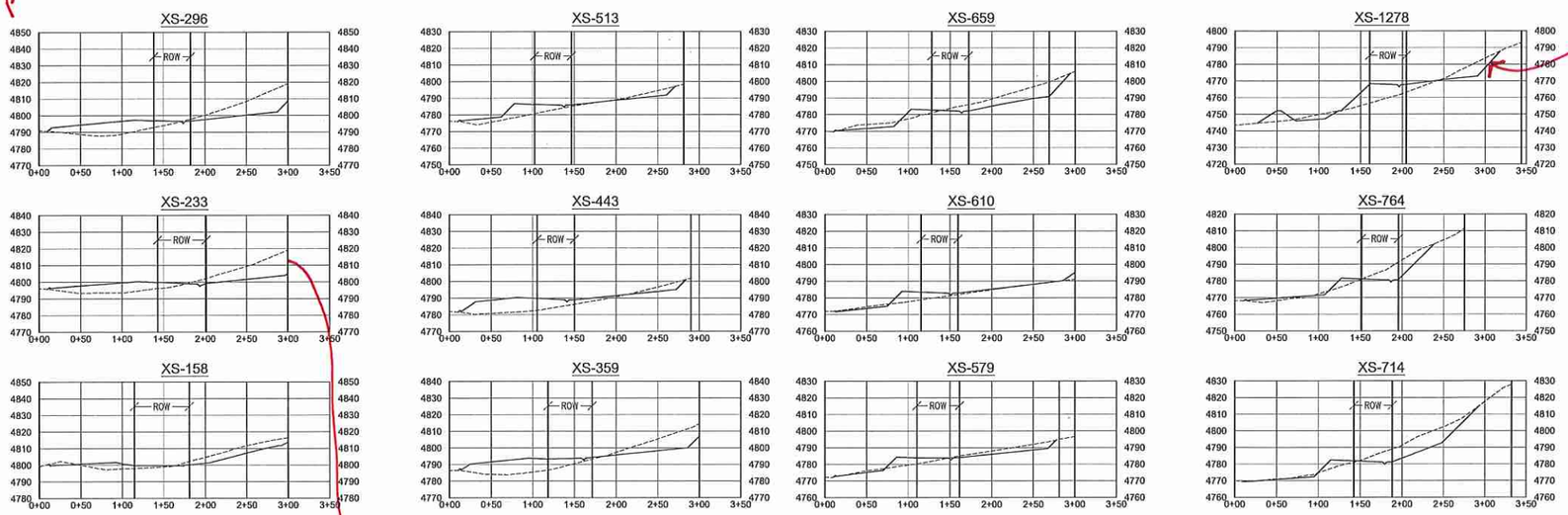
Grading Plan Filing 1
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-008
DATE: 06/08/17
SCALE: SEE PLAN
CAD ID: 2.0grad-f1.dwg

-SHEET-
C2.1



include x-sect for pond area



call out slopes, typical

show catch points

SECTIONS ALONG LOT LINES

SCALE: 1" = 80' HORIZONTAL
1" = 40' VERTICAL

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

FOR REVIEW - NOT FOR CONSTRUCTION

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MAJOR SUBDIVISION
FINAL PLAN

REV. DATE	COMMENT	BY

Grading Plan Filing 1 - Road Cross Sections
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO. F04-006
DATE 06/08/17
SCALE SEE PLAN
CAD ID 2.0grad-f1.dwg

~SHEET~
C2.2

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY GEOTECHNICAL ENGINEERING GROUP, INC., DATED APRIL 16, 2002 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET 3
6. HOUSES CONSTRUCTED ON LOTS 26-29 AND LOTS 55-72 SHALL HAVE SPRINKLER SYSTEMS INSTALLED. A 1" CUSTOMER WATER SERVICE LINE AND ¾" WATER METER WILL BE UTILIZED IN ACCORDANCE WITH UTE WATER CONSERVANCY DISTRICT STANDARDS & SPECIFICATIONS.

FILING NOTES

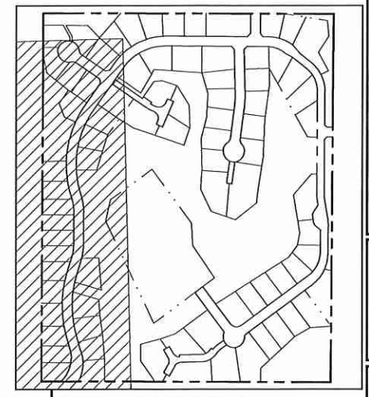
1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
2. INSTALL SANITARY SEWER FROM SSMH-A9 TO EXISTING MAN-HOLE IN RIDGEWAY COURT AS SHOWN INCLUDING LINE TO MAN-HOLE B-1.
3. END WATER LINE CONSTRUCTION AT THE MIDDLE OF LOT 14 AS SHOWN.

N

SCALE IN FEET

60 30 0 60 120

1" = 60'



KEY MAP

N.T.S.

VORTEX ENGINEERING, INC.

• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS

2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18523

make wide ring & cover all out of curb & gutter

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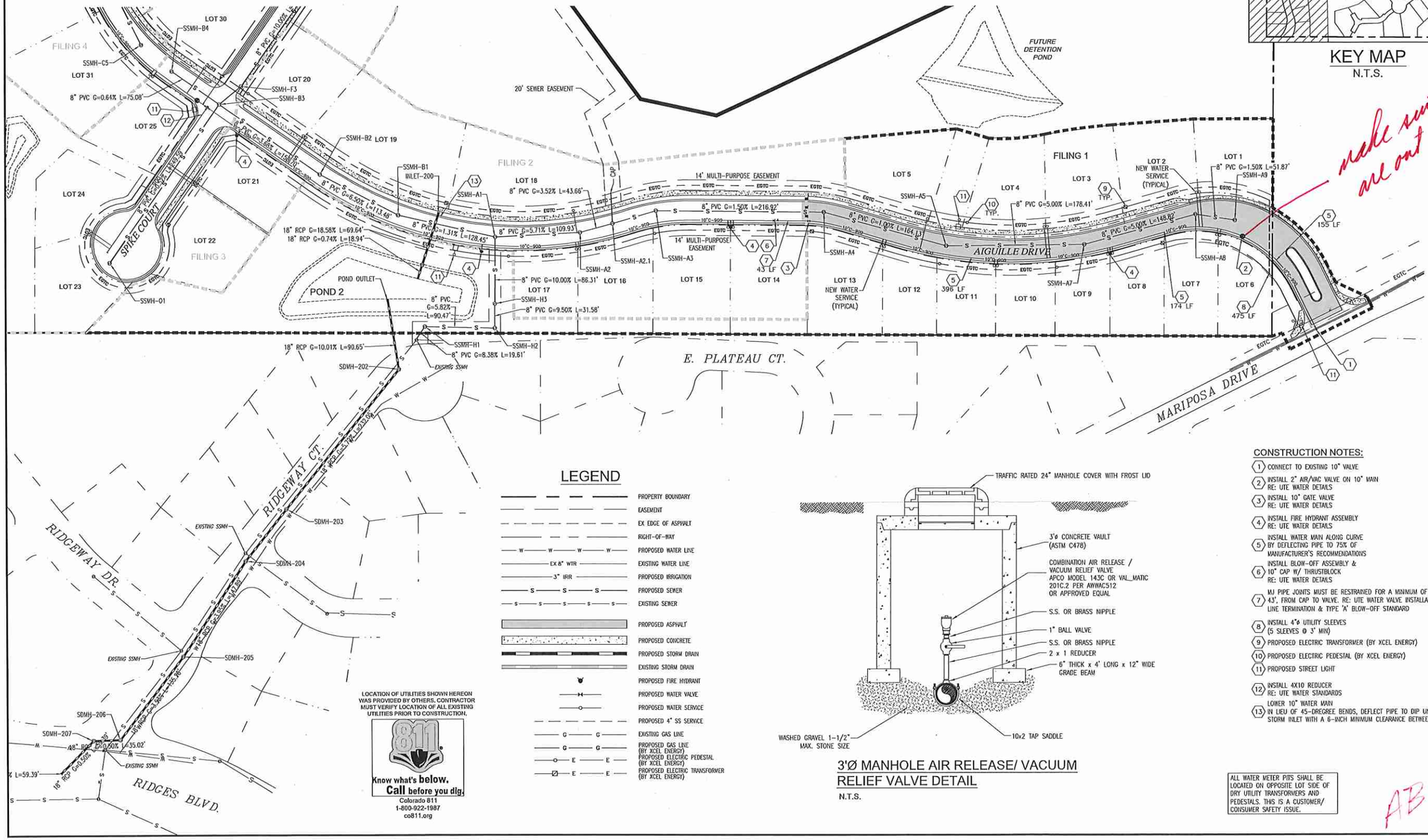
FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAT

REV.	DATE	COMMENT	BY



LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE
- EXISTING WATER LINE
- PROPOSED IRRIGATION
- PROPOSED SEWER
- EXISTING SEWER
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER SERVICE
- PROPOSED 4" SS SERVICE
- EXISTING GAS LINE
- PROPOSED GAS LINE (BY XCEL ENERGY)
- PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
- PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.
Colorado 811
1-800-922-1987
co811.org

3'Ø MANHOLE AIR RELEASE/ VACUUM RELIEF VALVE DETAIL

N.T.S.

CONSTRUCTION NOTES:

1. CONNECT TO EXISTING 10" VALVE
2. INSTALL 2" AIR/VAC VALVE ON 10" MAIN RE: UTE WATER DETAILS
3. INSTALL 10" GATE VALVE RE: UTE WATER DETAILS
4. INSTALL FIRE HYDRANT ASSEMBLY RE: UTE WATER DETAILS
5. INSTALL WATER MAIN ALONG CURVE BY DEFLECTING PIPE TO 75% OF MANUFACTURER'S RECOMMENDATIONS
6. INSTALL BLOW-OFF ASSEMBLY & 10" CAP W/ THRUSTBLOCK RE: UTE WATER DETAILS
7. MJ PIPE JOINTS MUST BE RESTRAINED FOR A MINIMUM OF 43', FROM CAP TO VALVE. RE: UTE WATER VALVE INSTALLATION, LINE TERMINATION & TYPE 'A' BLOW-OFF STANDARD
8. INSTALL 4"ø UTILITY SLEEVES (5 SLEEVES @ 3' MIN)
9. PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)
10. PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
11. PROPOSED STREET LIGHT
12. INSTALL 4X10 REDUCER RE: UTE WATER STANDARDS
13. LOWER 10" WATER MAIN IN LIEU OF 45-DREGREE BENDS, DEFLECT PIPE TO DIP UNDER STORM INLET WITH A 6-INCH MINIMUM CLEARANCE BETWEEN PIPES.

ALL WATER METER PITS SHALL BE LOCATED ON OPPOSITE LOT SIDE OF DRY UTILITY TRANSFORMERS AND PEDESTALS. THIS IS A CUSTOMER/ CONSUMER SAFETY ISSUE.

AB

Composite Site Plan - Utility and Water Plan

Pinnacle Ridge Subdivision
Filing 1

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1"= 60'
CAD ID: 3.0utility-f1.dwg

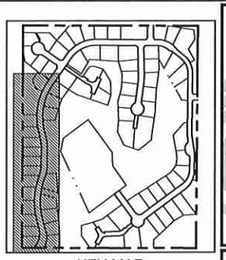
SHEET
C3.0

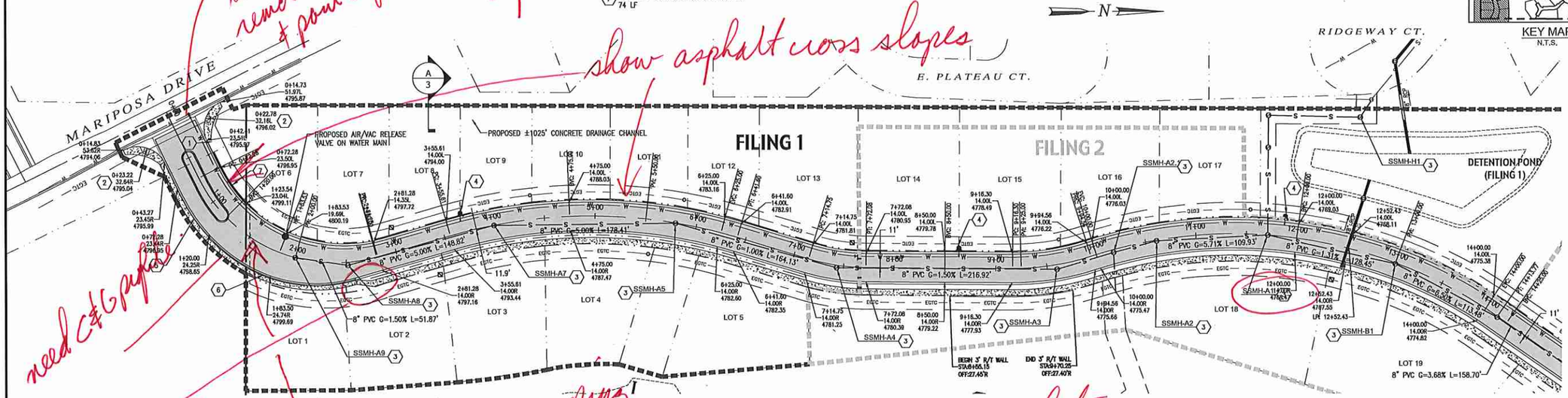
CONSTRUCTION NOTES:

1. INSTALL STOP SIGN & STREET SIGN RE: MUTCD
2. CONSTRUCT HANDICAPPED RAMP RE: CITY OF GJ DETAILS
3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT RE: UTE WATER DETAILS
5. INSTALL 6" STANDARD CURB & GUTTER W/ATTACHED SIDEWALK – 87 LF
6. INSTALL 6" DRIVE-OVER CURB & GUTTER W/ATTACHED SIDEWALK – 158 LF
7. INSTALL 6" STANDARD CURB & GUTTER 74 LF

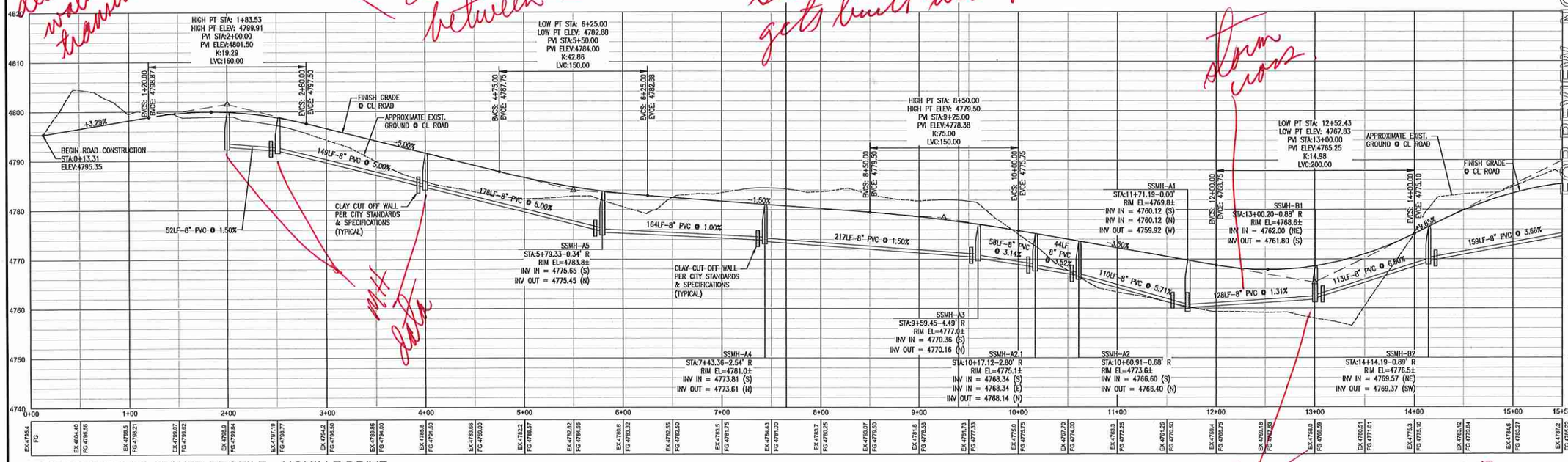
GENERAL NOTES:

1. REFERENCE SHEET 2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET C0.2 FOR STREET SECTIONS
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION





ROAD AND SAN. SEWER PLAN - AIGUILLE DRIVE
SCALE: 1" = 50'



ROAD AND SAN. SEWER PROFILE - AIGUILLE DRIVE
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

VORTEX ENGINEERING, INC.
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FOR REVIEW - NOT FOR CONSTRUCTION

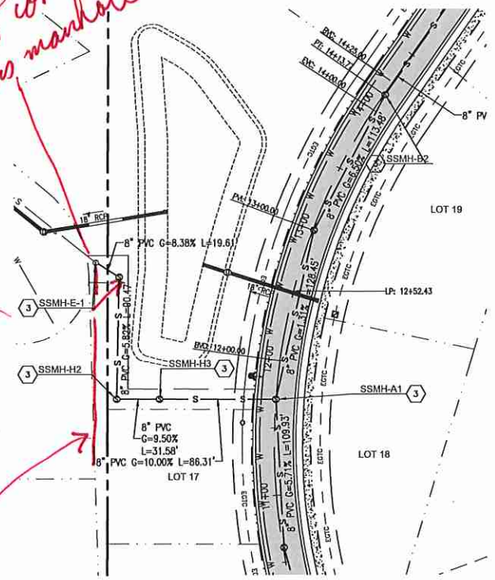
MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT

Road & Sanitary Sewer Plan & Profile
Aiguille Drive
Pinnacle Ridge Subdivision Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

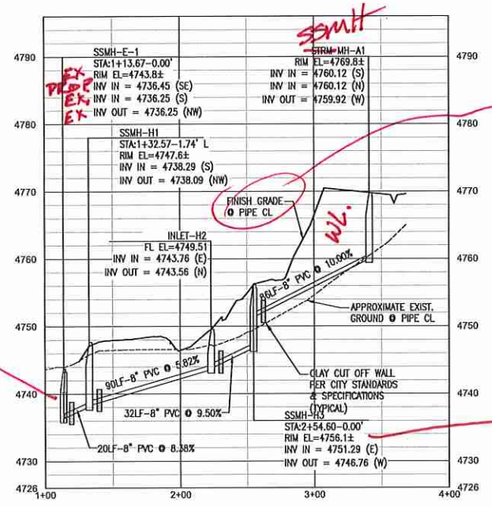
PROJECT NO. F04-006
DATE 06/02/17
SCALE 1" = 50'
CAD ID. 4.0ss-road-f1.dwg

SHEET
C4.0



ROAD AND SAN. SEWER PLAN - RIDGEWAY CT. CONNECTION

SCALE: 1" = 50'



ROAD AND SAN. SEWER PROFILE - RIDGEWAY CT. CONNECTION

HORIZONTAL SCALE: 1" = 50'

VERTICAL SCALE: 1" = 5'

GENERAL NOTES:

1. REFERENCE SHEET 2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET ➔ FOR STREET SECTIONS
10. SEE SHEETS 4 & 5 FOR ALL EASEMENT INFORMATION

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

REV. DATE	COMMENT

Road & Sanitary Sewer Plan & Profile

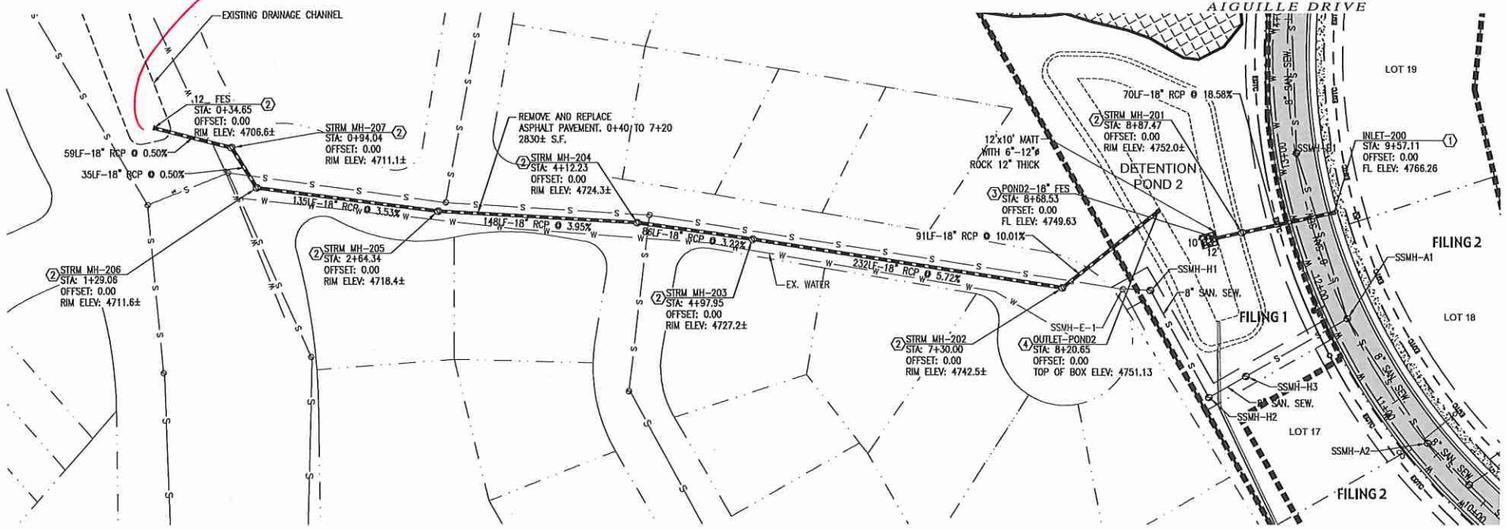
Ridgeway Court Sewer Connection
Pinnacle Ridge Subdivision Filing 1

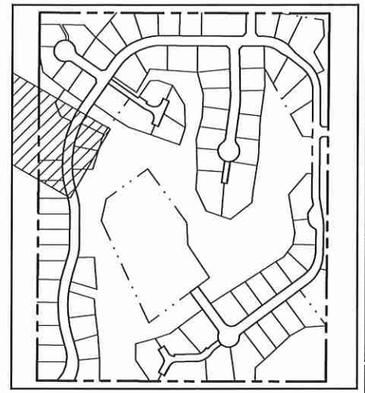
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO. F04-006
DATE 06/02/17
SCALE 1" = 50'
CAD ID 4.0ss-road-f1.dwg

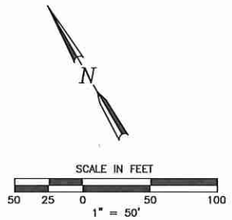
SHEET
C4.1

FES.
erosion control.





KEY MAP
N.T.S.



GENERAL NOTES:

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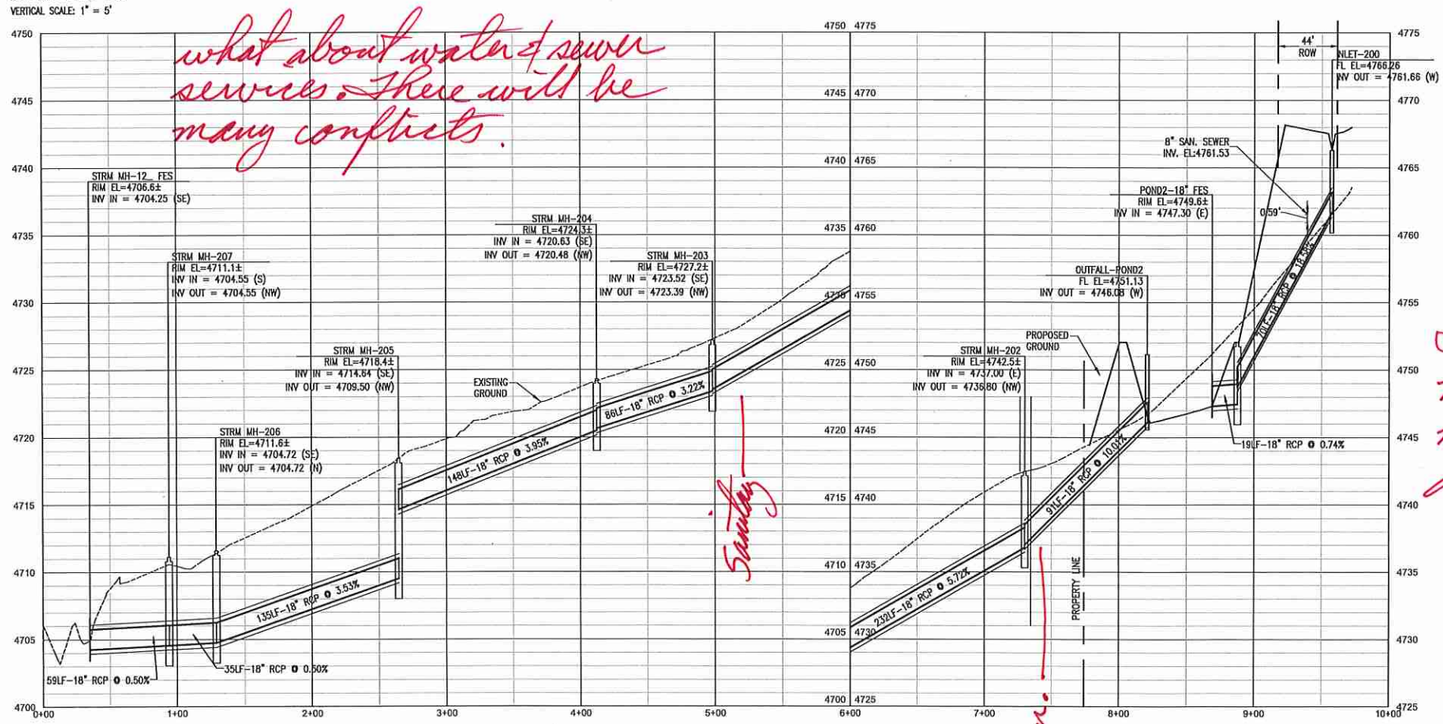
3. STATIONS ARE IN REFERENCE TO CENTER LINE OF ROAD, UNLESS OTHERWISE INDICATED.
4. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.

CONSTRUCTION NOTES:

1. INSTALL 3'X4' AREA INLET RE: CITY STD. DETAILS
2. INSTALL 48"ø MANHOLE RE: CITY STD. DETAILS
3. INSTALL FES WITH RIP RAP AT SHOWN SIZE RE: CITY STD. DETAILS
4. INSTALL POND OUTLET STRUCTURE. RE: SEE DETAIL ON SHEET 21

STORM SEWER PLAN AND PROFILE - POND 2 OUTFALL

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



what about water & sewer services. There will be many conflicts.

Sanitary

San.

This sheet needs a lot more detail. Will review more thoroughly when more detail is provided.

- typical cross section
- limits of street repair
- identify existing asphalt
- see the SSID manual.

AB

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REV.	DATE	COMMENT	BY

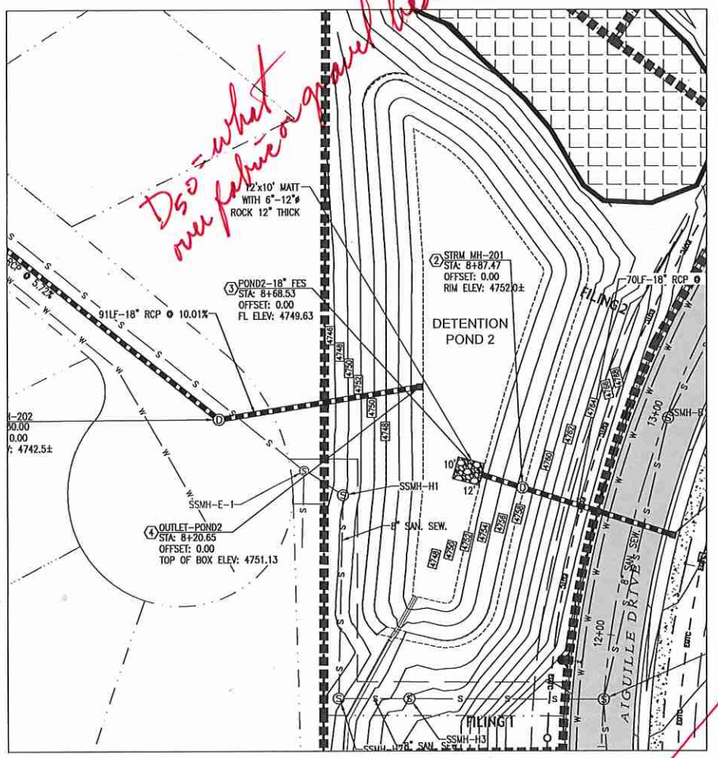
MAJOR SUBDIVISION
FINAL PLAN

Storm Sewer Plan and Profile
Pond 2 Outfall

Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

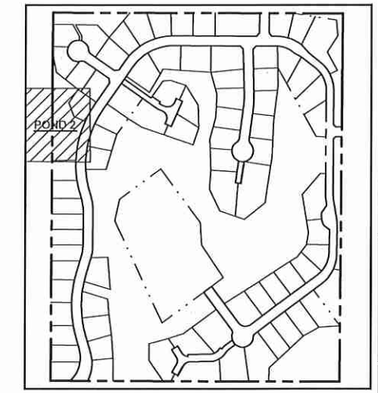
PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1" = 50'
CAD ID: 5.0storm-f1.dwg

~SHEET~
C5.0



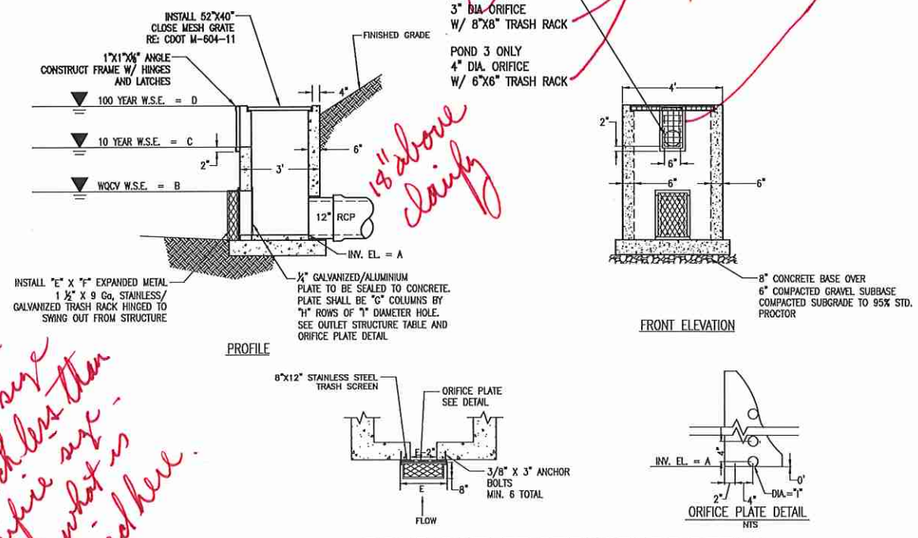
POND 2 - PLAN

SCALE: 1" = 30'



KEY MAP

N.T.S.



POND OUTLET STRUCTURE DETAIL

N.T.S.

OUTLET STRUCTURE TABLES

POND	A	B	C	D	E	F	G	H	I
POND 1	4799.00	4801.50	4802.31	4804.31	6"	32"	1	7	5/8"
POND 2	4747.00	4748.83	4749.39	4750.94	20"	21"	1	4	7/8"
POND 3	4751.00	4752.64	4752.88	4754.06	6"	21"	1	4	5/16"
POND 4	4739.00	4742.19	4742.73	4745.13	20"	35"	1	8	13/16"

PONDS' SUMMARY TABLES

POND 2	VOLUME (CF)	WSEL (FT)	PEAK DISCHRGE FLOW (CFS)	ALLOWABLE PEAK DISCHRGE FLOW (CFS)
WQCV	7,575	4848.83	NA	NA
10 YEAR	13,992	4748.32	0.52	1.87
100 YEAR	31,059	4749.95	4.21	7.79

GENERAL NOTES:

1. REFERENCE SHEET 2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. STATIONS ARE IN REFERENCE TO CENTER LINE OF ROAD, UNLESS OTHERWISE INDICATED.
4. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
5. REFER TO SHEET C5.0 FOR CONSTRUCTION KEY NOTES.

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION FINAL PLAN

BY	COMMENT	REV. DATE

Storm Sewer Plan
Pond 1 and 2 Details

Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1" = 30'
CAD ID: 5.0storm-f1.dwg

~SHEET~
C5.1

D50 = what over future gravel building

what about other ponds?

opening size removable

need plate detail for 10 & 100 yr.

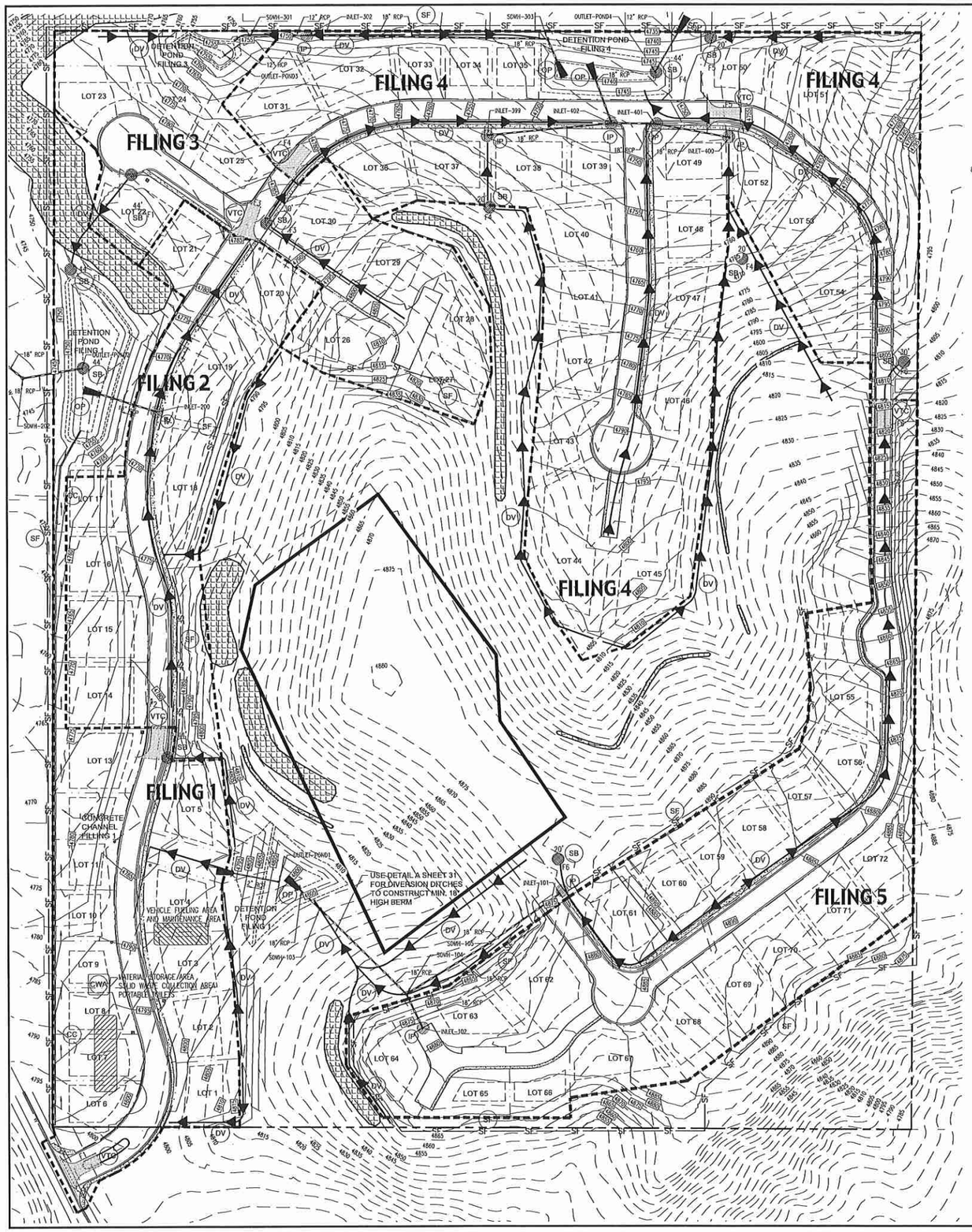
Got it.

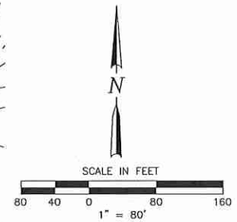
13" above daily

opening size to be smaller than WQ orifice size - Unsure what is specified here.

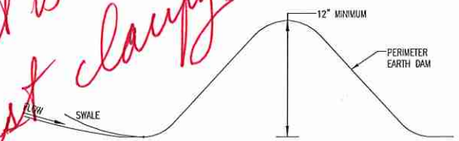
These conflict with above table

AB





- what is disturbed w/ each phase?
- Must clarify.



EARTH DAM SECTION
SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
SILT FENCE	SF	SF
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
VEHICLE TRACKING CONTROL	SB	25" — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

GENERAL NOTES:

1. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL REQUIRED EASEMENTS, RIGHT AND/OR RIGHTS-OF-WAY PURSUANT TO THE DISCHARGE FROM THE SEDIMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS AND GRADING OR OTHER WORK TO BE PERFORMED ON ADJACENT OR DOWNSTREAM PROPERTIES AFFECTED BY THE PLAN.
2. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1); FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE, THE IN-PLACE SEDIMENT CONTROL MEASURES WILL BE MAINTAINED ON A CONTINUING BASIS UNTIL THE SITE IS PERMANENTLY STABILIZED AND ALL PERMIT REQUIREMENTS ARE MET.
3. REFER TO CITY OF GRAND JUNCTION STANDARD DRAWINGS AND SPECIFICATIONS.
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE 5-2-1 DRAINAGE AUTHORITY. CONTACT MARK BARSLUND 970-201-1362

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

FOR REVIEW

MAJOR SUBDIVISION
FINAL PLAN

BY	COMMENT	REV. DATE

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PROFESSIONAL ENGINEER
COLORADO LICENSE No. 15629

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Overall Construction Stormwater Management Plan

Pinnacle Ridge Subdivison
Filing 1

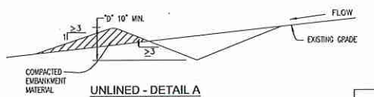
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 07/08/15
SCALE:
CAD ID: 6.0swm-f1.dwg

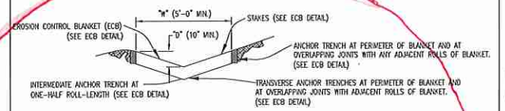
-SHEET-
C6.0

DIVERSION DITCH DETAIL A

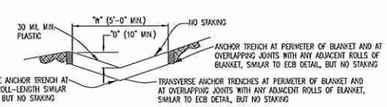
DV



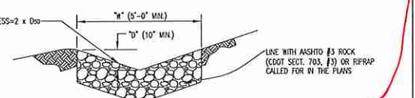
UNLINED - DETAIL A
LONGITUDINAL SLOPE < 0.5%



EROSION CONTROL BLANKET (ECB) LINED - DETAIL B
LONGITUDINAL SLOPE 0.5% TO 3 %



PLASTIC LINED - DETAIL C
LONGITUDINAL SLOPE 3% TO 33%



RIPRAP LINED - DETAIL D
LONGITUDINAL SLOPE 3% TO 33%

DIVERSION DITCH INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF DIVERSION DITCH.
   - TYPE OF DITCH (UNLINED, ECB PLASTIC LINED OR RIPRAP LINED).
   - LENGTH OF EACH TYPE OF DITCH.
   - DEPTH, "D", AND WIDTH, "w" DIMENSIONS.
   - FOR ECB LINED DITCH, EROSION CONTROL BLANKET TYPE (SEE ECB DETAIL).
   - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, "D 50 ".
2. SEE DRAINAGE PLANS FOR DETAILS OF ANY PERMANENT CONVEYANCE FACILITIES OR DIVERSION DITCHES EXCEEDING A 2 YEAR FLOOD 10 CFS.
3. DIVERSION DITCHES INDICATED ON INITAL SWMP PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES..
4. FOR ECB LINED DITCHES, INSTALLATION OF EROSION CONTROL BLANKET SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.
5. IN LOCATIONS WHERE CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION DITCH, THE PERMITTEES SHALL INSTALL A TEMPORARY CULVERT WITH A MINIMUM DIAMETER OF 12-INCHES.

DIVERSION DITCH MAINTENANCE NOTES

1. THE SWMP MANAGER SHALL INSPECT DIVERSION DITCHES WEEKLY AND DURING AND AFTER ANY STORM. MAKE REPAIRS AS NECESSARY.
2. DIVERSION DITCHES ARE TO REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION, OR IF APPROVED BY LOCAL JURISDICTION MAY BE LEFT IN PLACE.
3. IF DIVERSION DITCHES ARE REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, DRILL SEEDED, HAY CRIMPED MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

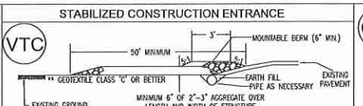
DETAIL BASED ON DETAILS PROVIDED BY DOUGLAS COUNTY

Urban Drainage and Flood Control District Drainage Criteria Manual (V.3)	Figure CS-3 DIVERSION DITCH AND DIKE

are these used anywhere?

STABILIZED CONSTRUCTION ENTRANCE

VTC

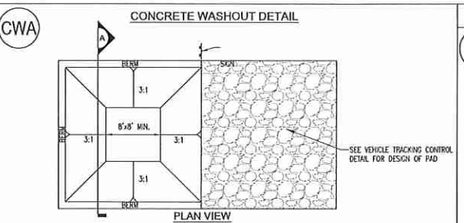


Construction Specification

1. Length – minimum of 50' (*30' for single residence lot).
2. Width – 10' minimum, should be flared at the existing road to provide a turning radius
3. Geotextile fabric (filter cloth) shall placed over the exiting ground prior to placing stone. **This plan approval authority may not require single family residence to use geotextile.
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water – all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location – A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

CONCRETE WASHOUT DETAIL

CWA



SECTION A

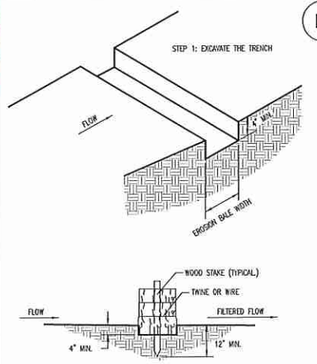
CONCRETE WASHOUT AREA INSTALLATION NOTES

1. SEE PLAN VIEW FOR LOCATIONS OF CONCRETE WASHOUT AREA
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL IS REQUIRED AT THE ACCESS POINT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION

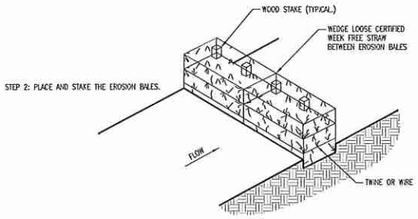
CONCRETE WASHOUT AREA MAINTENANCE NOTES

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, DRILL SEED AND CRIMP MULCH OR OTHERWISE STABILIZE IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
4. INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.

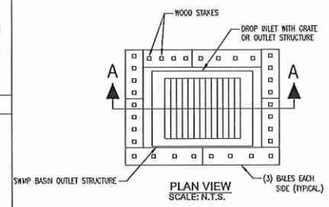
IP



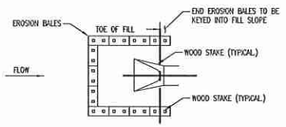
EROSION BALE TRENCHING AND STAKING
SCALE: N.T.S.



EROSION BALE BMP
SCALE: N.T.S.

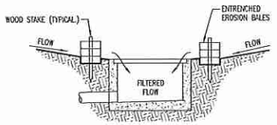


PLAN VIEW
SCALE: N.T.S.



PLAN VIEW
EROSION BALE CULVERT INLET PROTECTION
SCALE: N.T.S.

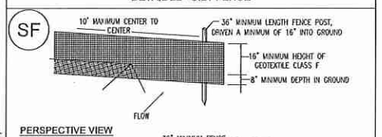
NOTES
1. STAKES SHALL BE WOOD AND SHALL BE 2" X 2" NOMINAL.
2. EROSION BALES SHALL BE 16" X 18" X 36".
3. EROSION BALES SHALL BE ENTRENCHED 4 IN. MINIMUM INTO THE SOIL TIGHTLY ABUTTED WITH NO GAPS, STAKED, AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERIMETER.



SECTION A-A
EROSION FILTER AT DROP INLET
SCALE: N.T.S.

DETAIL 22 - SILT FENCE

SF



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength:	50 lbs./in. (min.)	Test: MSMT 509
Tensile Modulus:	20 lbs./in. (min.)	Test: MSMT 509
Flow Rate	0.3 gal. ft. / minute (max.)	Test MSMT 322
Efficiency	75% (min.)	Test: MSMT 322

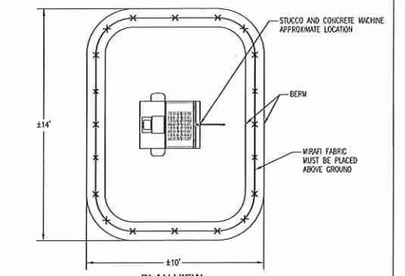
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

SILT FENCE

Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

NOTE:
In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.



STUCCO & CONCRETE MACHINE BMP
SCALE N.T.S.

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James C. Atkinson
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FOR REVIEW

MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY

Construction Stormwater Management Plan Details
Pinnacle Ridge Subdivison
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 07/06/15
SCALE:
CAD ID: 6.0swm-f1.dwg

--SHEET--
C6.2

Huddleston-Berry
Engineering & Testing, LLC

CONSTRUCTION MATERIALS TESTING AND ENGINEERING OVERSIGHT PLAN
PINNACLE RIDGE SUBDIVISION
FILINGS 1, 2, AND 3
GRAND JUNCTION, COLORADO
PROJECT#00545-0022

VORTEX ENGINERING & ARCHITECTURE, INC.
2394 PATTERSON ROAD, SUITE 201
GRAND JUNCTION, COLORADO 81505

JUNE 7, 2017

Huddleston-Berry Engineering and Testing, LLC
640 White Avenue
Grand Junction, Colorado 81501

TABLE OF CONTENTS

1.0 INTRODUCTION 2

1.1 Site Location and Description 2
1.2 Proposed Construction 2
1.3 Referenced Documents 2

2.0 CONSTRUCTION MATERIALS TESTING 3

2.1 Structural and Grading Fill Materials 3
2.2 Structural and Grading Fill Placement 3
2.3 Utility Trenches 3
2.4 Hot Mix Asphalt 4
2.5 Concrete 4

3.0 ENGINEERING OVERSIGHT 4

4.0 REPORTING 5

5.0 GENERAL 5

1.0 INTRODUCTION

As part of extensive development in Western Colorado, the new Pinnacle Ridge residential subdivision is proposed in Grand Junction, Colorado. As part of the development process, Huddleston-Berry Engineering and Testing, LLC (HBET) prepared a report titled *Final Geotechnical Report, Pinnacle Ridge Subdivision, Filings 1, 2, and 3, Grand Junction, Colorado*. The project will include significant grading and the referenced report recommended substantial engineering oversight during the construction. The purpose of this document is to outline the specific recommendations for construction materials testing and engineering oversight during the earthwork phases of the Pinnacle Ridge project.

1.1 Site Location and Description

The site encompasses approximately 45 acres north of Mariposa Drive and west of Monument Road in Grand Junction, Colorado. The project location is shown on Figure 1 – Site Location Map. A site plan is included as Figure 2.

At the time of the investigation, the site was open. The terrain was variable with the western portion of Filings 1 and 2 generally consisting of slightly sloping ground and the eastern portion rising moderately to the west to the top of a ridge. Filing 3 sat on the end of a ridge with moderate slopes falling to the north and south and slight to moderate slopes rising to the east.

1.2 Proposed Construction

Filings 1, 2, and 3 are anticipated to include residential structures on 30 lots. The development will also include approximately 2,150 linear feet of new roadways and utilities. Significant cuts and fills are anticipated as shown on the roadway profiles included as Figures 3 and 4.

1.3 Referenced Documents

The following documents were referenced in preparation of the CQA/CQC plan:

1. *Final Geotechnical Report, Pinnacle Ridge Subdivision, Filings 1, 2, and 3, Grand Junction, Colorado* by Huddleston-Berry Engineering & Testing, LLC for Vortex Engineering, Inc., June 7, 2017.
2. Plans titled *Pinnacle Ridge Subdivision, Grand Junction, Colorado* by Vortex Engineering, Inc., March 19, 2015.
3. City of Grand Junction, Colorado *Standard Specifications for Road and Bridge Construction*, July 2010.
4. City of Grand Junction, Colorado *Standard Specifications for Construction of Underground Utilities – Waterlines, Sanitary Sewers, Storm Drains, Underdrains, and Irrigation Systems* July 2010.

2.0 CONSTRUCTION MATERIALS TESTING

In general, construction materials testing will be conducted in accordance with the *City of Grand Junction Standard Specifications* referenced above. However, due to the significant earthwork on this project, the frequency of testing may be increased as outlined in the following sections.

2.1 Structural and Grading Fill Materials

As outlined in the referenced *Final Geotechnical Report*, some of the native materials may be suitable for reuse as structural and/or grading fill. However, due to the wide variability in materials across the site, individual materials proposed to be used as fill should be stockpiled separately for testing and evaluation by HBET. Testing on the proposed structural and grading fill materials will be conducted in accordance with the following table.

Testing	**Frequency**
Atterberg Limits	1 per material + 1 per 10,000 yd^3
Grain Size Distribution	1 per material + 1 per 10,000 yd^3
Proctor(1)	1 per material + 1 per 10,000 yd^3

(1) Proctor testing will only be completed on testable materials

2.2 Structural and Grading Fill Placement

Testing on all structural and grading fill during placement will be conducted in accordance with the following table.

Testing	**Minimum Frequency**
Compaction of Subgrade in Cut or Fill Areas	*Soil Subgrade* - 1 per 300 yd^2 + 1 per change in material *Bedrock Subgrade* - Proofroll to Engineer's satisfaction
Compaction of Structural and/or Grading Fill	1 per 300 yd^2 + 1 per change in material Proofroll non-testable materials to Engineer's satisfaction
Compaction of Base Course under Curb/Gutter/Sidewalk	1 per 200 LF + proofroll to verify subgrade stability
Compaction of Base Course under Fillets/Drain Pans	1 per fillet 1 per 50 LF drain pan
Compaction of Base Course under Roadways	1 per 400 yd^2 + proofroll to verify subgrade stability

2.3 Utility Trenches

Testing of utility trenches will be conducted in accordance with the following table.

Testing	Minimum Frequency
Compaction of Bedding, Haunch, and Initial Backfill	1 per 400 LF trench + 1 per change in material for each 2 feet vertical depth of backfill
Compaction of Trench Backfill	1 per 400 LF trench + 1 per change in material for each 2 feet vertical depth of backfill
Compaction of Base Course in Trench	1 per 200 yd^2
Compaction of Structural Fill within 2 Feet of Structures	1 per each 2 feet vertical depth per structure or 1 per 100 LF of structure perimeter

2.4 Hot Mix Asphalt

Testing of hot mix asphalt pavement will be conducted in accordance with the following table.

Testing	Minimum Frequency
Asphalt Content	1 per 1000 Ton (minimum 1 per day)
Gradation of Aggregate	1 per 1000 Ton
Air Voids	1 per 1000 Ton
Voids in Mineral Aggregate	1 per 1000 Ton
Relative Compaction	1 per 500 yd^2

2.5 Concrete

Testing of concrete will be conducted in accordance with the following table.

Testing	Minimum Frequency
Compressive Strength	1 set of 4 cylinders per 100 yd^3 (minimum 1 per day)
Air Content	1 per 100 yd^3 (minimum 1 per day)
Slump	1 per 100 yd^3 (minimum 1 per day)

3.0 ENGINEERING OVERSIGHT

As outlined in the referenced *Final Geotechnical Report*, the earthwork for the project will include significant grading. In addition, the subsurface materials across the site change. In general, HBET recommends engineering oversight/observation at the frequencies outlined below. However, additional oversight/observations may be necessary depending upon the pace of construction and/or information which suggests that additional oversight/observations are warranted.

Item	Observation/Frequency
General Earthwork Operations	During active earthwork operations, HBET should conduct site observation at a minimum of once per day.
Subgrade in Fill Areas	Prior to placement of any structural and/or grading fill, HBET should observe subgrade to determine if the subgrade is suitable for accepting fill.
Finished Pavement Subgrade in Cut/Fill Areas	Prior to placement of pavement section materials, HBET should observe finished subgrade to determine if the subgrade is suitable for pavement section construction.
Cut Slopes	HBET should observe cut slopes to verify assumptions used in slope stability analyses.
Grading Completion	Upon completion of grading, but prior to pavement construction, HBET should observe site conditions above and below roadways to verify that the grading work did not create new slope stability and/or rockfall hazards.
Pavement Construction	During pavement construction, HBET should observe pavement subgrade, underdrains, roadside ditches, etc. to verify conformance with design.
Additional Oversight	Additional observations/oversight will be completed where site conditions warrant and/or at the request of Owner, Contractor, and/or City of Grand Junction.

4.0 REPORTING

Upon completion of the development, HBET will prepare a report in accordance with City of Grand Junction requirements. The report will include:

a) Materials testing reports.

b) Laboratory testing reports.

c) Plot of testing locations.

d) Engineering oversight/observation reports.

5.0 GENERAL

The testing and observation program above is based upon the referenced documents and upon our local experience. This document is valid only for the subject project.

Huddleston-Berry Engineering and Testing, LLC is pleased to be of service to your project. Please contact us if you have any questions or comments regarding the contents of this report.

Respectfully Submitted:
Huddleston-Berry Engineering and Testing, LLC



Michael A. Berry, P.E.
Vice President of Engineering

FIGURES

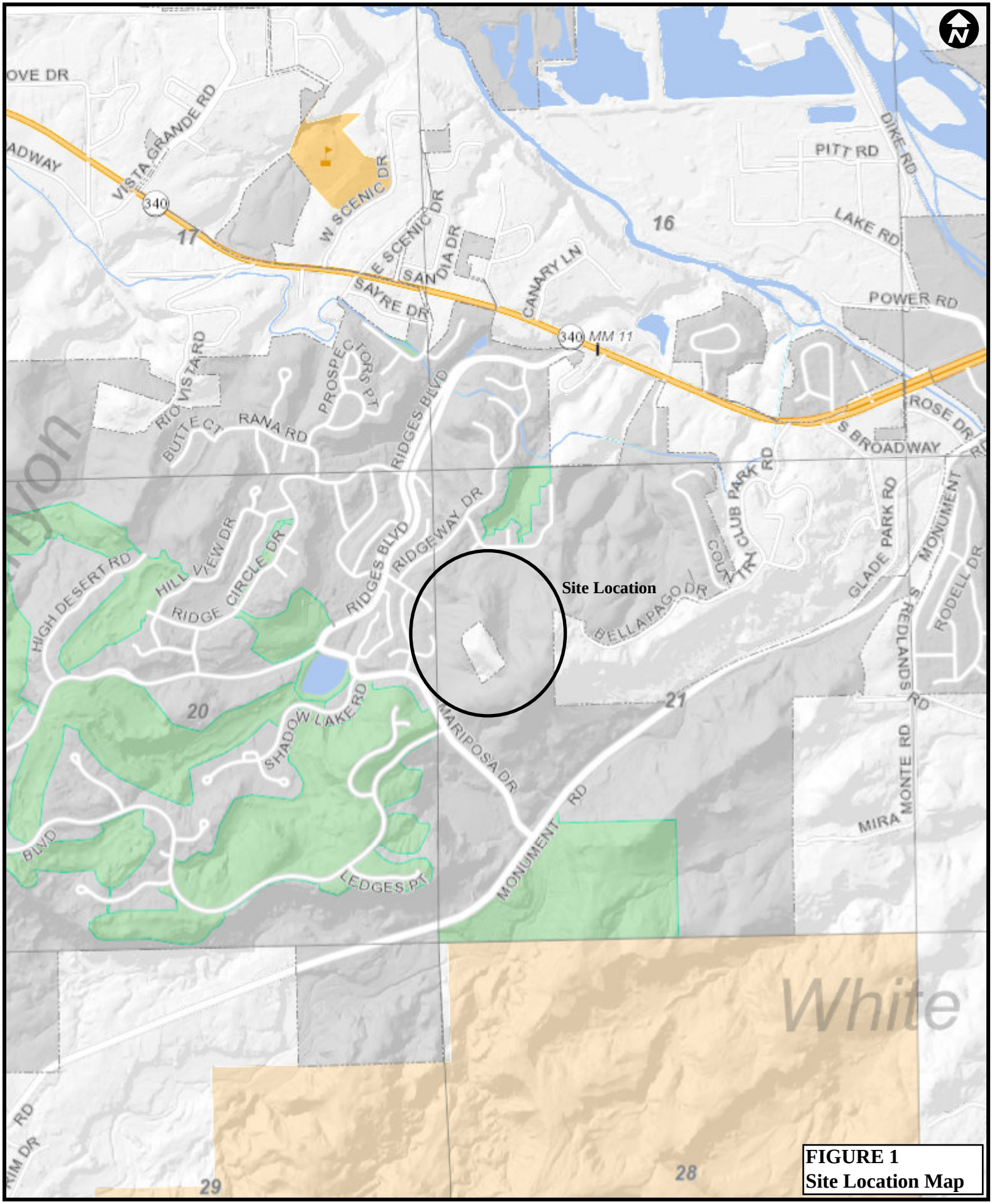

FIGURE 1
Site Location Map

Mesa County Map

The Geographic Information System (GIS) and its components are designed as a source of reference for answering inquiries, for planning and for modeling. GIS is not intended or does not replace legal description information in the chain of title and other information contained in official government records such as the County Clerk and Recorders office or the courts. In addition, the representations of location in this GIS cannot be substitute for actual legal surveys.
The information contained herein is believed accurate and suitable for the limited uses, and subject to the limitations, set forth above. Mesa County makes no warranty as to the accuracy or suitability of any information contained herein. Users assume all risk and responsibility for any and all damages, including consequential damages, which may flow from the user's use of this information.

0 0.125 0.25 0.5 mi
0 0.15 0.3 0.6 km

Print Date: May 19, 2017

Mesa County, Colorado
GIS/IT Department
gis.mesacounty.us

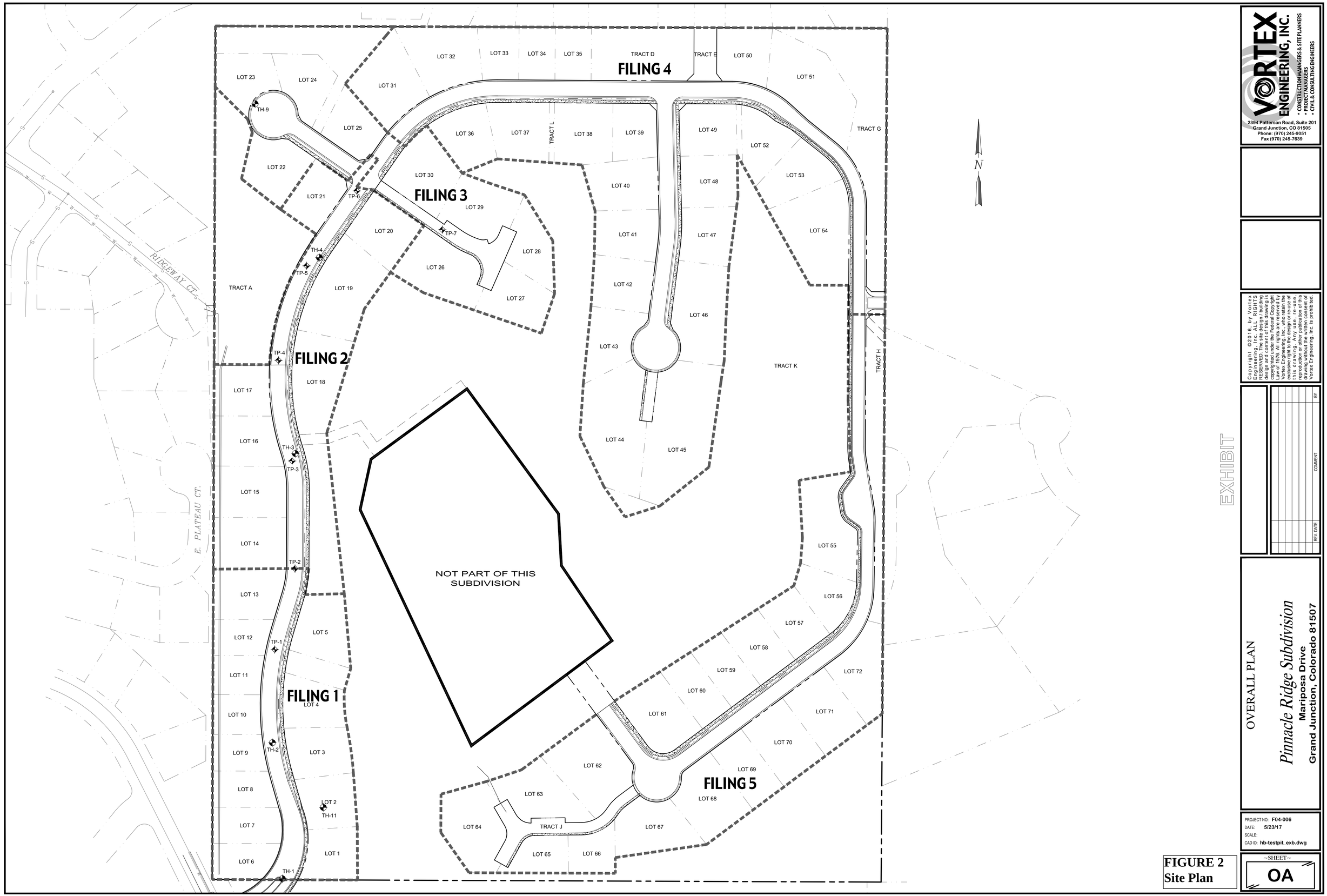

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EXHIBIT

REV. DATE	COMMENT	BY

OVERALL PLAN

Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **5/23/17**
SCALE:
CAD ID: **hb-testpit_exb.dwg**

~SHEET~
OA

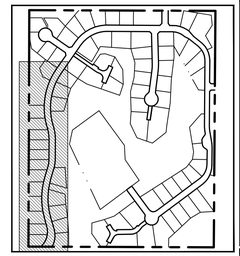
FIGURE 2
Site Plan

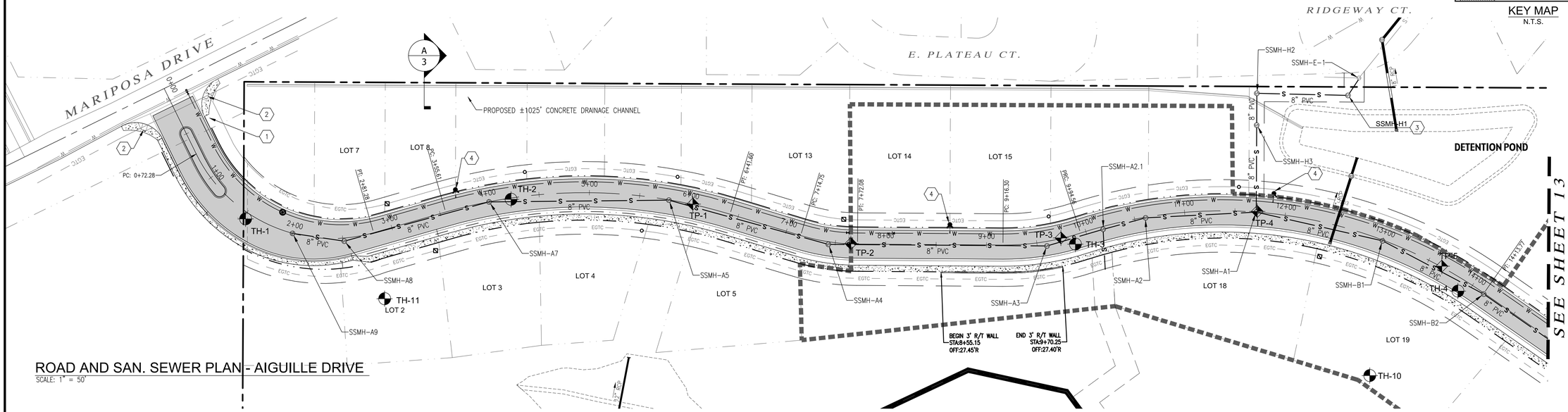
CONSTRUCTION NOTES:

1. INSTALL STOP SIGN & STREET SIGN RE: MUTCD
2. CONSTRUCT HANDICAPPED RAMP RE: CITY OF GJ DETAILS
3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT RE: UTE WATER DETAILS

GENERAL NOTES:

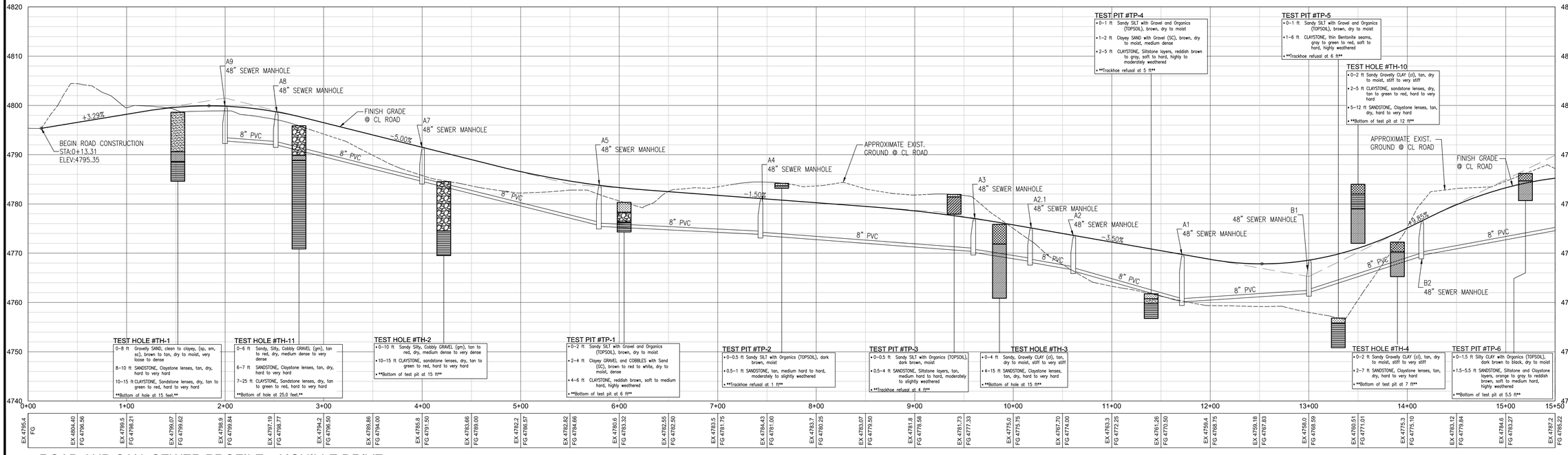
1. REFERENCE SHEET 2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET 3 FOR STREET SECTIONS
10. SEE SHEETS 4 & 5 FOR ALL EASEMENT INFORMATION





ROAD AND SAN. SEWER PLAN - AIGUILLE DRIVE

SCALE: 1" = 50'



ROAD AND SAN. SEWER PROFILE - AIGUILLE DRIVE

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

FIGURE 3

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

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REV	DATE	COMMENT	BY

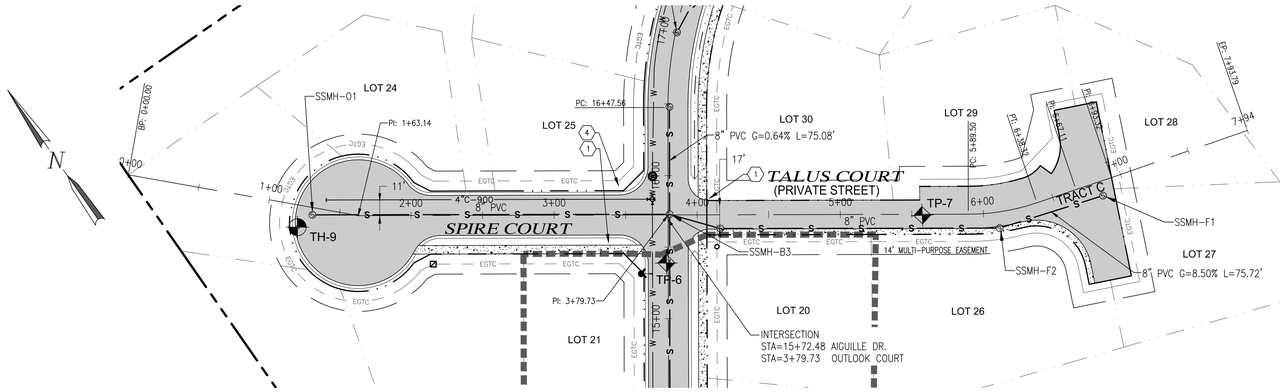
Pinnacle Ridge Subdivision

Road & Sanitary Sewer Plan & Profile
Aiguille Drive

Mariposa Drive
Grand Junction, Colorado 81507

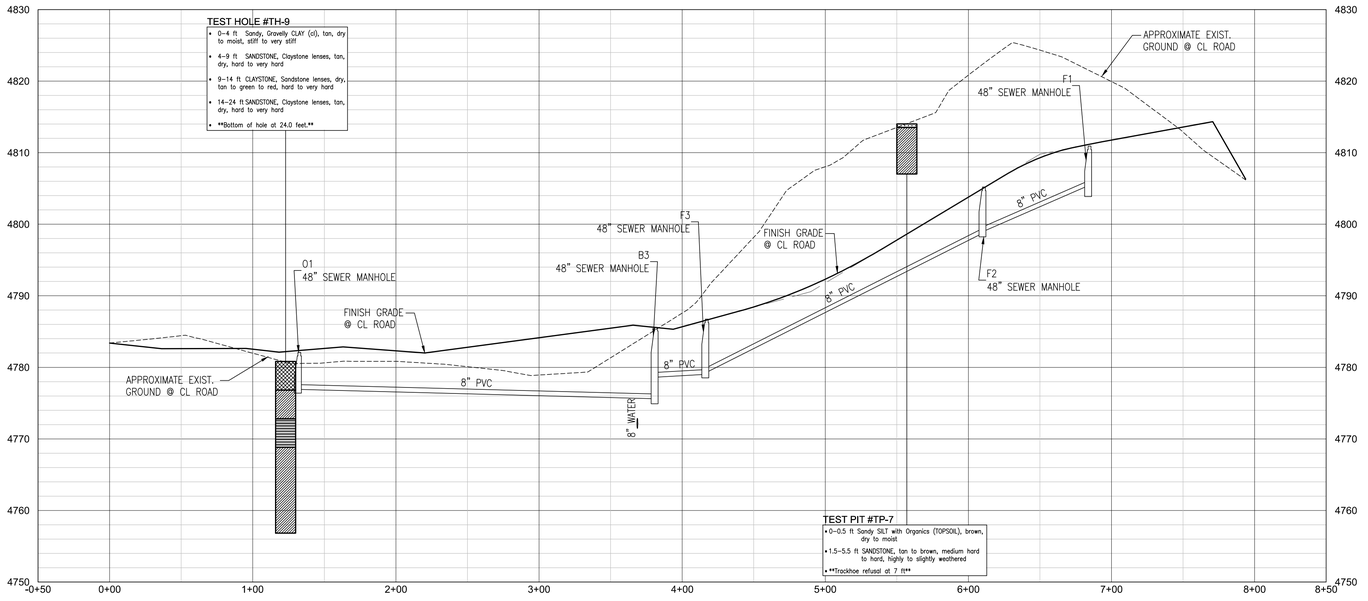
PROJECT NO: **F04-006**
DATE: **5/23/17**
SCALE: **1" = 50'**
CAD ID: **hb-testpit_exb.dwg**

~SHEET~
1 of 2



ROAD AND SAN. SEWER PLAN - SPIRE COURT □ TALUS COURT

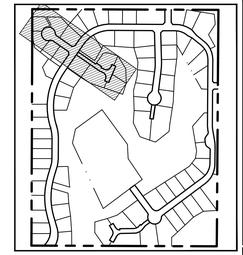
SCALE: 1" = 50'



ROAD AND SAN. SEWER PROFILE - SPIRE COURT □ TALUS COURT

HORIZONTAL SCALE: 1" = 50'

VERTICAL SCALE: 1" = 5'



KEY MAP

N.T.S.

CONSTRUCTION NOTES:

1. INSTALL STOP SIGN & STREET SIGN
   RE: MUTCD
2. CONSTRUCT HANDICAPPED RAMP
   RE: CITY OF GJ DETAILS
3. CONSTRUCT 48"ø SEWER MANHOLE
   RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT
   RE: UTE WATER DETAILS

GENERAL NOTES:

1. REFERENCE SHEET 2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET 3 FOR STREET SECTIONS
10. SEE SHEETS 4 & 5 FOR ALL EASEMENT INFORMATION

EXHIBIT

FIGURE 4

VORTEX ENGINEERING, INC.
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REV. DATE	COMMENT	BY

Road and Sanitary Sewer Plan and Profile
Spire Court & Talus Court

Pinnacle Ridge Subdivision

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **5/23/17**
SCALE: **1" = 50'**
CAD ID: **hb-testpit_exb.dwg**

~SHEET~

Final Plan of Subdivision

Pinnacle Ridge Subdivision

Filing 1

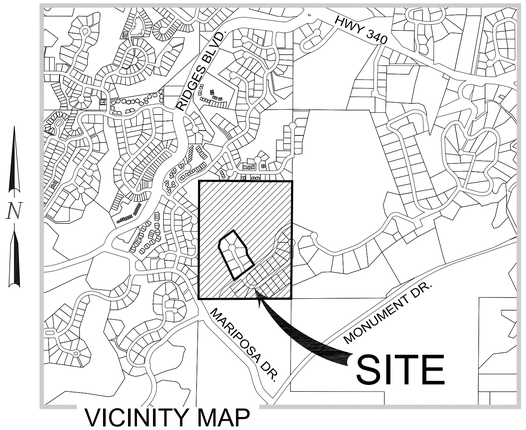
Grand Junction, Colorado

LEGEND

- 4560 — EXISTING CONTOUR
- PROPERTY BOUNDARY
- OLD PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT–OF–WAY
- W W W — PROPOSED WATER LINE
- W W W — EXISTING WATER LINE
- IRR IRR IRR — PROPOSED IRRIGATION
- X X X — EXISTING FENCE
- EGTC — PROPOSED DRY UTILITIES (BY OTHERS)
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- 4550.00 — LOT CORNER SPOT ELEVATION
- G 4550.00 — PROPOSED SWALE/BERM ELEVATION.
- FL 4550.00 — PROPOSED FL CURB/V–PAN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER METER
- PROPOSED IRRIGATION RISER
- PROPOSED IRRIGATION VALVE
- CO — PROPOSED IRRIGATION CLEANOUT
- 4550.00 — EXISTING CONTOUR LABEL
- 4550.00 — PROPOSED CONTOUR LABEL

UTILITY PROVIDERS INFORMATION

UTILITY	*PROVIDER*	*PHONE NUMBER*
SANITARY SEWER	CITY OF GRAND JUNCTION	970–244–1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970–242–7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970–244–1572
	THE REDLANDS WATER & POWER CO.	970–243–2173
ELECTRICITY	XCEL ENERGY	800–895–4999
NATURAL GAS	XCEL ENERGY	800–895–4999
TELEPHONE	CENTURYLINK	800–603–6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877–273–7626



VICINITY MAP

ABBREVIATION LEGEND

&	AND	MCSM	MESA COUNTY SURVEY MONUMENT
℄	CENTERLINE	MFG'S	MANUFACTURER'S
Ø	DIAMETER	M.P.E.	MULTI–PURPOSE EASEMENT
'	FEET	MPH	MILES PER HOUR
"	INCHES	NE COR	NORTHEAST CORNER
±	PLUS OR MINUS	N&S&E	NORTH AND SOUTH AND EAST
APPROX.	APPROXIMATELY	NO.	NUMBER
BRL	BUILDING RESTRICTION LINE	N.T.S.	NOT TO SCALE
BVCS	BEGIN VERTICAL CURVE STATION	PROP.	PROPOSED
BVCE	BEGIN VERTICAL CURVE ELEVATION	PRV	PRESSURE REDUCING VALVE
CB	CATCH BASIN	PSI	POUNDS PER SQUARE INCH
CL. III	CLASS 3	PVC	POLYVINYL CHLORIDE
CMP	CORRUGATED METAL PIPE	PVI	POINT OF VERTICAL INTERSECTION
CR	CURB RETURN	PVMT	PAVEMENT
CT.	COURT	O.C. E.W.	ON CENTER EACH WAY
DR.	DRIVE	RCP	REINFORCED CONCRETE PIPE
EL.	ELEVATION	RD	ROAD
ELEV	ELEVATION	RET. WALL	RETAINING WALL
EX.	EXISTING	R.O.W.	RIGHT–OF–WAY
EXIST.	EXISTING	RT	RIGHT
EVCS	END VERTICAL CURVE STATION	SCH	SCHEDULE
EVCE	END VERTICAL CURVE ELEVATION	SD	STORM DRAIN
FL	FLOWLINE	SEC	SECTION
FH	FIRE HYDRANT	SF	SQUARE FEET
FT	FEET	SQ. FT.	SQUARE FEET
GPM	GALLONS PER MINUTE	SS	SANITARY SEWER
GV	GAS VALVE	ST.	STREET
G.V.A.L.C.S.	GRAND VALLEY ALIQUOT LOCAL COORDINATE SYSTEM	STA	STATION
		THRU	THROUGH
HGL	HYDRAULIC GRADE LINE	TYP.	TYPICAL
HI PT	HIGH POINT	TW	TOP OF WALL
HP	HORSE POWER	U.W.C.D.	UTE WATER CONSERVANCY DISTRICT
INV	INVERT	VC	VERTICAL CURVE
LT	LEFT	VCP	VITRIFIED CLAY PIPE
MAX	MAXIMUM	W/	WITH
MIN	MINIMUM	WM	WATER METER
MH	MANHOLE	WV	WATER VALVE

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

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SHEET NUMBER	SHEET TITLE
C0.0	COVER
C0.1	PROJECT NOTES
C0.2	OVERALL SITE PLAN AND FILING PLAN
C1.0	COMPOSITE SITE PLAN - LAYOUT AND GEOMETRY PLAN
C2.0 - C2.2	COMPOSITE SITE PLAN - GRADING PLAN, ROAD CROSS SECTIONS
C3.0	COMPOSITE SITE PLAN - OVERALL UTILITY AND WATER PLAN
C4.0 - C4.1	ROAD AND SEWER PLAN AND PROFILE - AIGUILLE DRIVE
C5.0 - C5.1	STORM SEWER PLAN & PROFILE
C6.0 - 6.2	CONSTRUCTION STORM WATER MANAGEMENT PLAN

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM. LOTS 1 – 9. BLOCK 3 AND THE ADJOINING DEDICATED RIGHT–OF–WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK 8 AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = RSF–2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'
   REAR = 25'
   SIDE = 7'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY GEOTECHNICAL ENGINEERING GROUP, INC. REFER TO REPORT DATED APRIL 16, 2002.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON–SITE PARKING REQUIREMENT.

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

REV. DATE	COMMENT	BY

Cover
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/08/17
SCALE:
CAD ID: 0.0cover-f1.dwg

~SHEET~
C0.0

LOCAL CONTACT INFORMATION
GRAND JUNCTION DEVELOPMENT INSPECTOR: MARK BARSLUND 970-201-1362

GENERAL NOTES:

1. THESE GENERAL NOTES SHALL BE APPLICABLE TO ALL SHEETS WITHIN THIS SET OF DRAWINGS.
2. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE GOVERNING AGENCY. CONTRACTOR MUST CONTACT THE APPROPRIATE AGENCY PRIOR TO CONSTRUCTION IN THE RIGHT-OF-WAY.
3. PLANNING PERMIT APPROVAL MUST BE OBTAINED BY INDIVIDUAL LOT OWNERS PRIOR TO CONSTRUCTION. THE LOT OWNER MUST SUBMIT A PROPOSED DRAINAGE PLAN OF EACH SITE TO THE GOVERNING AGENCY FOR REVIEW.
4. EXISTING WATER, SANITARY, AND STORM SEWER LINES ARE SHOWN BASED ON BEST AVAILABLE INFORMATION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS SPECIFICALLY AT CONNECTION POINTS AND AT POTENTIAL POINTS OF CONFLICT. ALL INFORMATION SHALL BE SUPPLIED TO THE ENGINEER PRIOR TO CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR:
   (A) CONTACTING THE APPROPRIATE AGENCY TO ARRANGE A PRE-CONSTRUCTION MEETING AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
   (B) OBTAINING ALL PERMITS FOR STREET CUTS, UTILITIES CONSTRUCTION AND GRADING. THE COST OF ALL PERMITS SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S BID.
   (C) COORDINATING WITH ALL UTILITY COMPANIES INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. ADVANCE COORDINATION BY THE CONTRACTOR TO ALL UTILITY COMPANIES INVOLVED SHALL BE REQUIRED FOR ANY SERVICE INTERRUPTIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER, PROJECT MANAGER AND THE UTILITY COMPANY 48 HOURS PRIOR TO START OF CONSTRUCTION. NO UTILITY TAPS SHALL BE MADE WITHOUT WRITTEN AUTHORIZATION BY THE UTILITY COMPANY AND THE CITY.
   (D) VERIFICATION OF ALL OTHER UNDERGROUND FACILITIES WHICH MAY BE AFFECTED BY THIS PROJECT AND REPAIR THEREOF IN CASE OF DAMAGE.
   (E) CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO OBTAIN TEMPORARY POWER AND TELEPHONE SERVICE DURING CONSTRUCTION. ALL COST FOR TEMPORARY SERVICES SHALL BE THE CONTRACTORS RESPONSIBILITY.
   (F) RESTORATION OF DISTURBED STREET PAVEMENT AS REQUIRED BY THE CITY AND THE STATE'S DEPARTMENT OF TRANSPORTATION.
   (G) ALL PROJECT SAFETY INCLUDING, BUT NOT LIMITED TO, TRENCH EXCAVATION AND SHORINGS, TRAFFIC CONTROL, AND SECURITY.
   (H) COORDINATING ALL WORK AND INSPECTIONS AS REQUIRED BY THE CITY OR THE STATE.
   (I) OBTAINING NECESSARY PERMITS FROM THE DEPARTMENT OF TRANSPORTATION FOR ALL WORK IN AND ADJACENT TO STATE RIGHT-OF-WAY.
   (J) RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE. AS-BUILTS SHALL INCLUDE UNDERGROUND UTILITIES AS WELL AS ANY FIELD MODIFICATIONS OF THE PLANS.
   (K) KEEPING ADJACENT STREETS FREE AND CLEAN OF ALL DEBRIS AND DIRT FROM THE JOB SITE.
   (L) THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED AT THE JOB SITE AT ALL TIMES. EACH SUBCONTRACTOR (INCLUDING THE SURVEYOR) SHALL HAVE A SIGNED COPY OF THE PLANS AND THE APPROPRIATE STANDARDS AND SPECIFICATIONS IN HIS POSSESSION AT ALL TIMES WHEN IMPROVEMENTS ARE BEING INSTALLED.
   (M) THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR COMPLETION OF INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED BY NOTE TO BE "PROVIDED," "INSTALLED" OR "CONSTRUCTED" UNLESS SPECIFICALLY NOTED OTHERWISE.
   (N) CONTRACTOR WILL HAVE A COPY OF APPROVED SOILS REPORTS FOR PAVEMENT DESIGN AND COMPACTION REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL RECOMMENDATIONS CONTAINED WITHIN THE SOILS REPORT.
   (O) VERIFYING THE ACCURACY OF THE VERTICAL BENCHMARK INFORMATION. CONTRACTOR SHALL USE BENCHMARKS AND DATUMS SHOWN HEREON TO SET PROJECT BENCHMARK(S), BY RUNNING A LEVEL LOOP BETWEEN AT LEAST TWO BENCHMARKS, AND SHALL PROVIDE SURVEY NOTES OF SUCH TO PROJECT ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
6. IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
7. TWO WORKING DAYS BEFORE YOU DIG, GRADE, OR EXCAVATE, CALL THE APPROPRIATE UTILITY NOTIFICATION CENTER FOR THE MARKING OF MEMBER UNDERGROUND UTILITIES. THE UTILITIES SHOWN ON THESE PLANS ARE PLOTTED BASED ON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION, AND REPAIR OF ANY EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. ANY UTILITY DAMAGED BY CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
8. THIS PLAN WAS PREPARED BASED ON SURVEY INFORMATION PROVIDED BY A LICENSED SURVEYOR. VORTEX ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR ERRORS DUE TO INCOMPLETE OR INACCURATE SURVEY INFORMATION.
9. SUBGRADE DENSITY SHALL BE TESTED BY A PRIVATE SOILS TESTING FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING BASE COURSE OR CONCRETE. BASE COURSE DENSITY SHALL ALSO BE TESTED BY THE PRIVATE GEOTECHNICAL FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING PAVEMENT.
10. THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM ALL UTILITY COMPANIES PRIOR TO ANY DEMOLITION WORK OR DISCONNECTION OF ANY SERVICE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANIES.
2. ALL UTILITIES INCLUDING STORM SEWER, SANITARY SEWER AND WATER MAINS SHALL BE COMPLETELY REMOVED FROM THE GROUND UNLESS OTHERWISE SPECIFIED. NO EXISTING UTILITY, STRUCTURES OR UNDERGROUND IMPROVEMENT SHALL BE ABANDONED IN PLACE WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER, OWNER AND GOVERNING AGENCY.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES WHICH ARE TO REMAIN IN SERVICE. INCLUDING BUT NOT LIMITED TO GAS, ELECTRIC, CABLE AND TELEPHONE SERVICES.
4. ALL STRUCTURE INCLUDING BASEMENT WALLS AND FLOOR SLABS SHALL BE COMPLETELY REMOVED FROM THE SITE.
5. ALL DEMOLITION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS INCLUDING BUT NOT LIMITED TO HAZARDOUS MATERIALS, DISPOSAL, HOURS OF OPERATION.
6. ALL EROSION CONTROL MEASURES DESIGNED FOR THE SITE PERIMETER OR TO PROTECT EXISTING IMPROVEMENTS SHALL BE IN PLACE PRIOR TO THE START OF ANY DEMOLITION ACTIVITIES.
7. THE CONTRACTOR SHALL OBTAIN AND REVIEW THE ENVIRONMENTAL STUDIES PROVIDED BY THE OWNER AND TAKE ALL NECESSARY PRECAUTIONS FOR ENVIRONMENTAL SAFETY DURING DEMOLITION ACTIVITIES. IT SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE EXISTING STRUCTURES FOR ANY OTHER CONDITIONS WHICH MAY AFFECT THE DEMOLITION PROCEDURES.
8. ANY CONDITIONS WHICH MAY BE UNCOVERED DURING THE PROCESS OF DEMOLITION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER IMMEDIATELY. ADDITIONAL EXPENSES INCURRED BY UNFORESEEN CONDITIONS SHALL BE APPROVED BY THE OWNER PRIOR TO THE ADDITIONAL WORK.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE PROPERTY FOR THE TYPE AND QUANTITY OF DEMOLITION REQUIRED, PRIOR TO SUBMISSION OF A BID.
10. THE CONTRACTOR SHALL HAVE WATER ON SITE FOR DUST ABATEMENT AT ALL TIMES DURING DEMOLITION ACTIVITIES.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF ALL DEBRIS. BURNING ON SITE SHALL NOT BE PERMITTED. NO DEBRIS INCLUDING CONCRETE OR ASPHALT MAY BE PLACED IN ANY FILL AREA.
12. ANY DAMAGE TO PUBLIC UTILITIES OR ADJACENT PROPERTIES AS A RESULT OF THE DEMOLITION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. REPAIRS SHALL BE MADE IN A TIMELY MANNER TO THE SATISFACTION OF THE DAMAGED PARTY.
13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH DOCUMENTATION OF THE CONDITION OF EXISTING IMPROVEMENTS TO REMAIN IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS NOT DOCUMENTED AS PRE-EXISTING. DOCUMENTATION SHALL BE PROVIDED PRIOR TO COMMENCEMENT OF WORK.
14. ALL EXISTING UTILITY SERVICES SHALL BE COMPLETELY REMOVED FROM THE SITE. SERVICE SHALL BE CUT AND PLUGGED AT THE PROPERTY LINE IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS. THE DEMOLITION CONTRACTOR SHALL CLEARLY MARK ALL STUBS AT THE PROPERTY LINE WITH A 4 X 4 WOOD POST (MINIMUM 4' ABOVE GRADE, 4' BELOW GRADE) MARKED WITH THE SERVICE TYPE.
15. ALL EXISTING WELLS SHALL BE CAPPED AND ABANDONED IN ACCORDANCE WITH ALL STATE REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL REQUIRED PROCEDURES, FILE ALL REQUIRED FORMS, APPLICATIONS AND REPORTS, AND OBTAIN ALL REQUIRED APPROVALS FROM THE STATE ENGINEER'S OFFICE.
16. DURING THE COURSE OF DEMOLITION, CONTRACTOR SHALL PROVIDE SECURITY FENCING AND OTHER PRECAUTIONARY SAFETY MEASURE AS NECESSARY.

EROSION CONTROL NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL FACILITIES SHOWN.
3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORESEEN PROBLEMS OR IF THE PLAN DOES NOT FUNCTION AS INTENDED. A JURISDICTION REPRESENTATIVE MAY REQUIRE ADDITIONAL CONTROL DEVICES UPON INSPECTION OF PROPOSED FACILITIES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED, STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM TRAFFIC FROM THE SITE.
5. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE PAVED, SEEDED WITH NATIVE VEGETATION OR LANDSCAPED. REFER TO LANDSCAPE PLANS FOR SEED MIX AND PLANTING SPECIFICATIONS.
6. EROSION CONTROL STRUCTURES BELOW SODDED AREAS MAY BE REMOVED ONCE SOD AND FINAL LANDSCAPING IS IN PLACE. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION. EROSION CONTROL IN PROPOSED PAVED AREAS SHALL REMAIN IN PLACE UNTIL PAVEMENT IS COMPLETE.
7. THIS PLAN IS ONLY TO BE USED FOR INSTALLATION OF EROSION CONTROL FACILITIES. DO NOT USE THIS PLAN FOR GRADING OR STORM SEWER CONSTRUCTION.
8. CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLE WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES WILL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS, MOVED WHEN NECESSARY AND REMOVED WHEN THE SITE IS PAVED.
9. INLET PROTECTION DEVICES SHALL BE INSTALLED IMMEDIATELY UPON INDIVIDUAL INLET'S BECOMING FUNCTIONAL.
10. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH GRADING AND/OR UTILITY CONSTRUCTION SHALL OBTAIN A COPY OF THE STORM WATER MANAGEMENT PLAN (SWMP) AND ANY OTHER DOCUMENTATION REGARDING "STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY" AND BECOME FAMILIAR WITH THEIR CONTENTS.
11. THE TEMPORARY PARKING AND STORAGE AREA SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AREA, EQUIPMENT CLEANING AREA, EMPLOYEE BREAK AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
12. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, ETC.) SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT WITH STORM WATER DISCHARGES FROM THE SITE.
13. MAINTAIN ON THE SITE OR HAVE READILY AVAILABLE SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
14. FUGITIVE DUST BLOWING FROM THE SITE SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS ABSOLUTELY PROHIBITED.
15. NO RUBBISH, TRASH, GARBAGE, OR OTHER SUCH MATERIALS SHALL BE DISCHARGED INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
16. ALL MEASURES PRESENTED IN THE SWMP SHALL BE INITIATED AS SOON AS PRACTICABLE.
17. IF THE GRAVEL CONSTRUCTION ENTRANCES ARE NOT EFFECTIVE IN REMOVING THE MAJORITY OF DIRT OR MUD FROM THE TIRES OF THE CONSTRUCTION VEHICLES, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP AND THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.
18. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
19. IF SOIL STOCKPILING IS EMPLOYED ON THE SITE, SILT FENCES SHALL BE USED TO HELP CONTAIN THE SEDIMENT.
20. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
21. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN 30 DAYS AFTER FINAL STABILIZATION. FINAL STABILIZATION HAS OCCURRED WHEN ALL SOIL DISTURBING ACTIVITIES ARE COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OF THE COVER FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES HAS BEEN EMPLOYED.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) DUE TO GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT.
23. ALL OFF-SITE CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR STORM DRAIN CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.

EROSION CONTROL MAINTENANCE NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL MEASURES CONTAINED IN THIS PLAN SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT, AND SHOULD BE CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:
3. STRAW BALE INLET PROTECTION DEVICES AND BARRIERS SHALL BE FIXED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR SHALL BE REPLACED IF THEY SHOW SIGNS OF DETERIORATION.
4. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, RE-SEEDED, AND WATERED AS NEEDED.
5. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-THIRD TO ONE-HALF THE HEIGHT OF THE SILT FENCE.
6. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
7. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
8. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES, SEDIMENT IN THE SEDIMENTATION BASINS SHALL NOT EXCEED THE SEDIMENTATION CLEANOUT LEVEL.
9. IF THE STONES IN THE GRAVEL CURB INLET SEDIMENT FILTERS BECOME CLOGGED WITH SEDIMENT, THE STONES MUST BE PULLED AWAY, CLEANED AND REPLACED.
10. THE EMBANKMENT OF THE SEDIMENTATION BASIN SHALL BE CHECKED REGULARLY TO INSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
11. THE TEMPORARY SEDIMENT TRAP AND SEDIMENTATION BASIN STRUCTURES SHALL BE CHECKED REGULARLY TO INSURE THAT THEY ARE STRUCTURALLY SOUND AND HAVE NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. SEDIMENT DEPOSITION SHALL BE REMOVED PERIODICALLY TO ENSURE FULL VOLUME IS AVAILABLE IN THE POND.

GRADING NOTES:

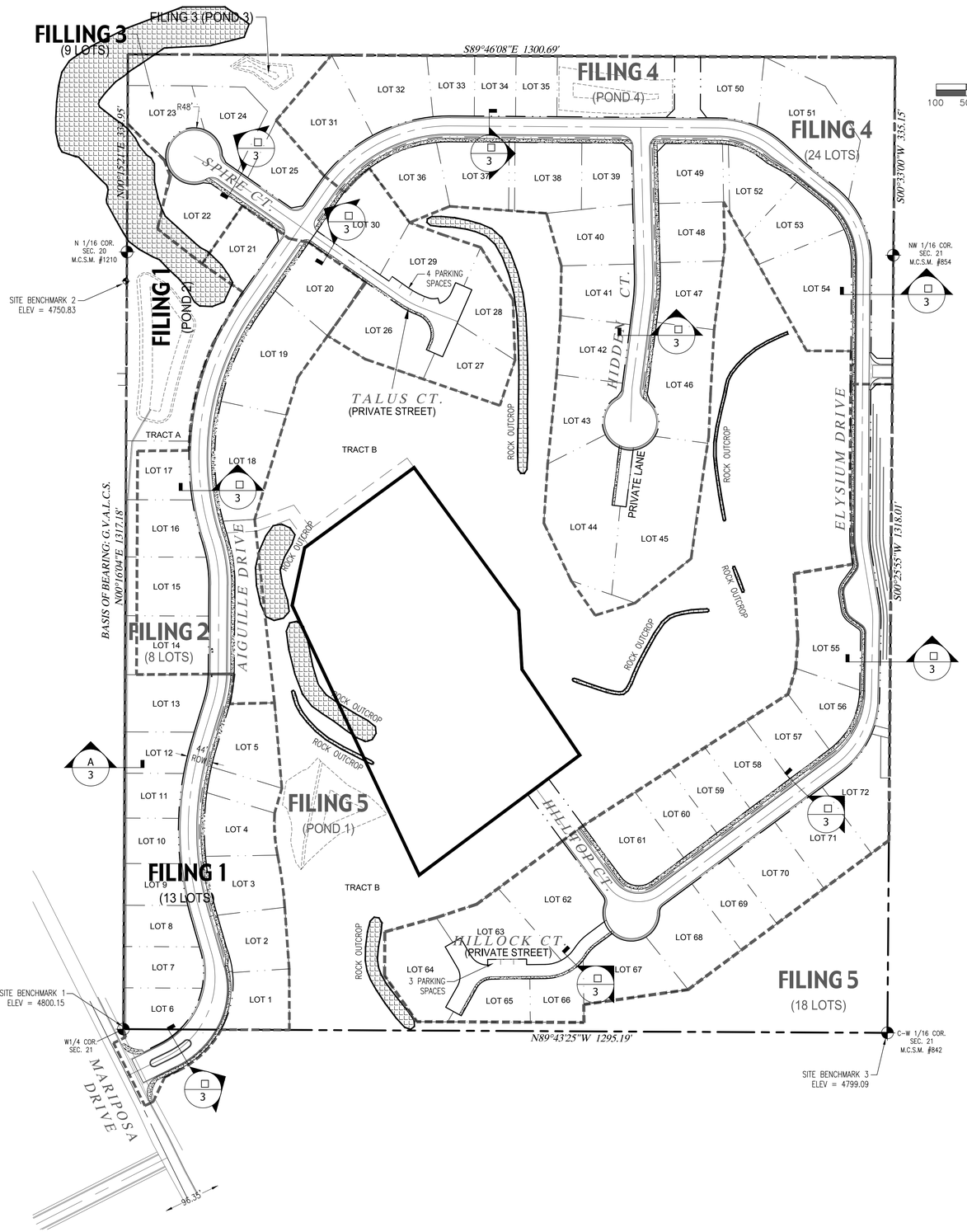
1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. CONTOURS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY. CONTOUR INTERVAL = 1 FOOT UNLESS OTHERWISE NOTED ON PLANS.
3. ALL DISTURBED AREAS THAT ARE UNSURFACED OR ARE NOT DESIGNATED AS LANDSCAPE AREAS ARE TO BE SEEDED, FERTILIZED, AND WATERED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
4. IF DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE SOILS ENGINEER SHALL BE CONTACTED FOR RECOMMENDATIONS.
5. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND STANDARDS OF THE GOVERNING AGENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DENSITY PER A.S.T.M. TEST D-1557. MOISTURE CONTENT AT TIME OF PLACEMENT SHALL NOT EXCEED 2% ABOVE NOR 3% BELOW OPTIMUM. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED, LICENSED, SOILS ENGINEER, CERTIFYING THAT THE SUBBASE WITHIN THE AREAS TO BE PAVED HAS BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECS.
6. NO PROPOSED SLOPE SHALL EXCEED THREE (3) HORIZONTAL TO ONE (1) VERTICAL. ALL SLOPED AREAS MUST BE PROTECTED FROM EROSION.
7. IF STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS ARE STOCKPILED ON THE SITE, TOPSOIL MAY BE PLACED TO A HEIGHT OF FIVE FEET. SILT FENCE SHALL BE PLACED AROUND THE BASE OF THE STOCKPILE AND THE STOCKPILE SHALL BE SEEDED WITH NATIVE SEED MIX IMMEDIATELY AFTER STRIPING OPERATIONS ARE COMPLETE.
8. ON-SITE MATERIALS SUITABLE FOR FILL BENEATH DRIVES, AND PARKING AREAS BEYOND 5' OF THE BUILDING SHALL BE COMPACTED IN ACCORDANCE WITH THE GUIDELINES PRESENTED IN THE SOILS REPORT.
9. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHY AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO ENSURE 0.75% MIN. SLOPE AGAINST ALL GUTTERS TO PREVENT PUDDLING. ANY DISCREPANCIES SHALL BE PROVIDED TO THE ENGINEER IN WRITING IMMEDIATELY.
10. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED TO 95% OPTIMUM DENSITY (AS DETERMINED BY MODIFIED PROCTOR METHOD).
11. SPOT ELEVATIONS REPRESENT FLOWLINE OR TOP OF ASPHALT UNLESS OTHERWISE NOTED.
12. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS WHICH DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB AND GUTTER AND UTILITIES.
13. ALL UTILITIES (MANHOLES, VALVE COVERS, CLEANOUTS, VAULTS, BOXES, ETC.) SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
14. ALL EARTH MOVING AND PLACEMENT OPERATIONS SHALL BE IN CONFORMANCE WITH THE RECOMMENDATIONS IDENTIFIED IN THE SOILS REPORT. THE CONTRACTOR SHALL HAVE A SIGNED AND SEALED COPY OF THE SOILS REPORT ON THE SITE AT ALL TIMES.
15. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.
16. WHERE NEW CURB AND GUTTER IS BEING CONSTRUCTED ADJACENT TO EXISTING ASPHALT, THE FOLLOWING SHALL APPLY: PRIOR TO PLACEMENT OF ANY CONCRETE THE CONTRACTOR SHALL HAVE A LICENSED SURVEYOR VERIFY GRADE AND CROSS SLOPE OF THE CURB AND GUTTER FORMS. THE CONTRACTOR SHALL SUBMIT THE SLOPES AND GRADES TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY SECTION WHICH DOES NOT CONFORM TO THE DESIGN OR TYPICAL CROSS SECTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CURB AND GUTTER POURS WITHOUT APPROVAL OF THE ENGINEER.
17. MAINTENANCE OF ANY STORMWATER MANAGEMENT FACILITY SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL GUIDELINES FOR PRIVATE STORMWATER MANAGEMENT FACILITIES AND SHALL BE THE RESPONSIBILITY OF THE OWNER AND THE ASSIGNEES.
18. SURFACE RESTORATION SHALL BE AS FOLLOWS:
   (A) FINE GRADE ALL AREAS DISTURBED BY THE CONSTRUCTION OPERATIONS AFTER COMPLETION OF BACKFILLING AND COMPACTING. AREAS WHICH ARE TO RECEIVE PAVEMENTS, SURFACING, TOPSOIL OR LANDSCAPING SHALL BE GRADED AS REQUIRED TO ALLOW INSTALLATION OF THE SPECIFIC SURFACE TREATMENT. GRADE ALL OTHER AREAS TO MATCH THE EXISTING GROUND LINE.
   (B) REPLACE AND REPAIR ANY SURFACE IMPROVEMENTS DAMAGED OR REMOVED. CONFORM TO CITY STANDARDS & SPECIFICATIONS.
19. BITUMINOUS PAVEMENT
   (A) BITUMINOUS PAVEMENT SHALL BE REMOVED TO CLEAN STRAIGHT LINES AT THE LOCATIONS INDICATED ON PLANS. WIDTH OF REMOVAL FOR PIPELINES SHALL BE KEPT TO A MINIMUM AS DICTATED BY TRENCHING OPERATIONS, BUT SHALL EXTEND AT LEAST 6 INCHES BEYOND THE LIMITS OF TRENCH EXCAVATION.
   (B) THE CUT SHALL BE MADE WITH PAVEMENT CUTTING WHEEL, SAW OR OTHER APPROVED METHOD, SO AS TO PROVIDE A REASONABLY STRAIGHT AND SQUARE EDGE.

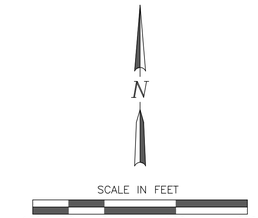
SANITARY SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL GRAVITY SANITARY SEWER LINES SHALL BE POLYVINYL CHLORIDE PIPE (PVC), ASTM D-3034 SDR.35, SEWER LINE MATERIALS AND CONSTRUCTION SHALL CONFORM TO ASTM STANDARDS AND SPECIFICATIONS.
3. DISTANCES FOR SANITARY SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. THEREFORE, DISTANCES SHOWN ON PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT.
4. RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATION. PIPELINE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT AND STEEL SHIMS TO ADJUST THE MANHOLE FRAME TO THE REQUIRED FINAL GRADE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS. ALL FRAMES SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
5. ALL SANITARY SEWER MAINS TESTING SHALL BE IN ACCORDANCE WITH LOCAL SPECIFICATIONS. COPIES OF ALL TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER, THE OWNER AND THE GOVERNING AUTHORITY PRIOR TO THE START OF THE WARRANTY PERIOD.
6. COMPACTION OF ALL TRENCHES WITHIN THE PROJECT SITE MUST BE ATTAINED AND COMPACTION RESULTS SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE. .
7. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING STRUCTURES AND IMPROVEMENTS DURING INSTALLATION OF THE SANITARY SEWER LINE.
8. THE CONTRACTOR SHALL POTHOLE THE EXISTING SEWER MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
9. SANITARY SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.

STORM SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING:
   (A) OBTAINING ALL REQUIRED PERMITS FROM THE CITY, THE DOT, OR ANY REGULATORY AUTHORITY AT THE CONTRACTOR'S COST INCLUDING PERMITS REQUIRED FOR WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
   (B) RESTORATION OF ANY EXISTING IMPROVEMENTS INCLUDING (BUT NOT LIMITED TO) FENCES, SOD, LANDSCAPING, PAVEMENT, SPRINKLER SYSTEMS.
   (C) VERIFICATION AND PROTECTION OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF THE PROJECT.
   (D) PROVIDING AS-BUILT DRAWINGS TO THE CITY AND ENGINEER.
   (E) ALL PERMITTING, DEVELOPMENT, CONNECTION, LOCATION INSPECTION AND TESTING FEES REQUIRED FOR STORM SEWER CONSTRUCTION.
   (F) VERIFYING ALL STANDARD DETAILS CONFORM TO CURRENT CITY/COUNTY STANDARDS AND SPECIFICATIONS.
   (G) FOR OBTAINING AND UNDERSTANDING ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THE CONSTRUCTION OF THE STORM SEWER IMPROVEMENTS.
   (H) FOR SCHEDULING ALL REQUIRED INSPECTIONS.
3. THE CONTRACTOR SHALL POTHOLE THE EXISTING STORM MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
4. STORM SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.
5. THE CONTRACTOR SHALL COORDINATE HIS WORK SCHEDULE WITH THE DITCH COMPANY TO ENSURE ALL DITCH FACILITIES ARE CONSTRUCTED WITHOUT DISRUPTION TO DITCH COMPANY OPERATIONS.





PROPOSED LAND USE TABLE			
SINGLE FAMILY LOTS (72 TOTAL)	934,944 S.F. – 21.46 AC	47.58%	OWNER: PRIVATE
TRACT A:	57,533 S.F. – 1.32 AC	2.93%	OWNER: HOA
TRACT B: OPEN SPACE	658,275 S.F. – 15.11 AC	33.50%	OWNER: HOA
FUTURE TRACTS	122,687 S.F. – 2.82 AC	6.24%	OWNER: HOA
RIGHT-OF-WAY:	191,434 S.F. – 4.39 AC	9.74%	OWNER: PUBLIC
TOTAL SITE AREA:	1,964,873 S.F. – 45.11 AC		

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21. TOWNSHIP 1 SOUTH. RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM. LOTS 1 – 9. BLOCK 3 AND THE ADJOINING DEDICATED RIGHT–OF–WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK 8 AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = RSF–2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'
   REAR = 25'
   SIDE = 7'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY GEOTECHNICAL ENGINEERING GROUP, INC. REFER TO REPORT DATED APRIL 16, 2002.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON–SITE PARKING REQUIREMENT.

LEGEND

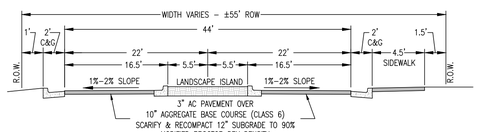
FILING & LIMITS OF DEVELOPMENT DESIGNATION

PROJECT BENCHMARK

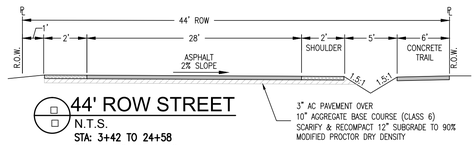
PROJECT BENCHMARK #1
LOCATED AT THE SOUTHWEST CORNER OF THE SITE.
MONUMENT ID: PLS 18480, THE W1/4 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31563.18 EASTING: 78944.74 ELEV: 4800.15 (NAVD88)

PROJECT BENCHMARK #2
LOCATED AT THE WEST PROPERTY LINE, NEAR OUTLOOK COURT.
MONUMENT ID: NCSN #1210, THE N1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 32880.35 EASTING: 78949.85 ELEV: 4750.83 (NAVD88)

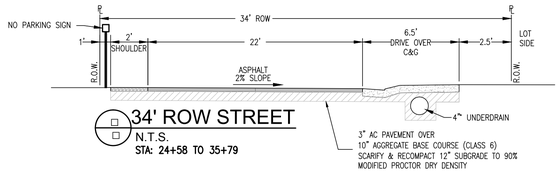
PROJECT BENCHMARK #3
LOCATED AT THE SOUTHEAST CORNER OF THE SITE.
MONUMENT ID: NCSN #842, THE W1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31558.05 EASTING: 80239.95 ELEV: 4799.09 (NAVD88)



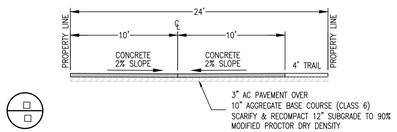
MARIPOSA DRIVE ENTRANCE
N.T.S.
STA: 0+24 TO STA: 1+52
(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 3+42)



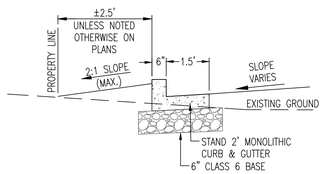
44' ROW STREET
N.T.S.
STA: 3+42 TO 24+58
STA: 35+79 TO 41+50



34' ROW STREET
N.T.S.
STA: 24+58 TO 35+79



PRIVATE STREET ▢ LANE DETAIL
N.T.S.
TRACT C,F,J



WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

CONCRETE CURB DETAIL
N.T.S.

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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FOR REVIEW - NOT FOR CONSTRUCTION

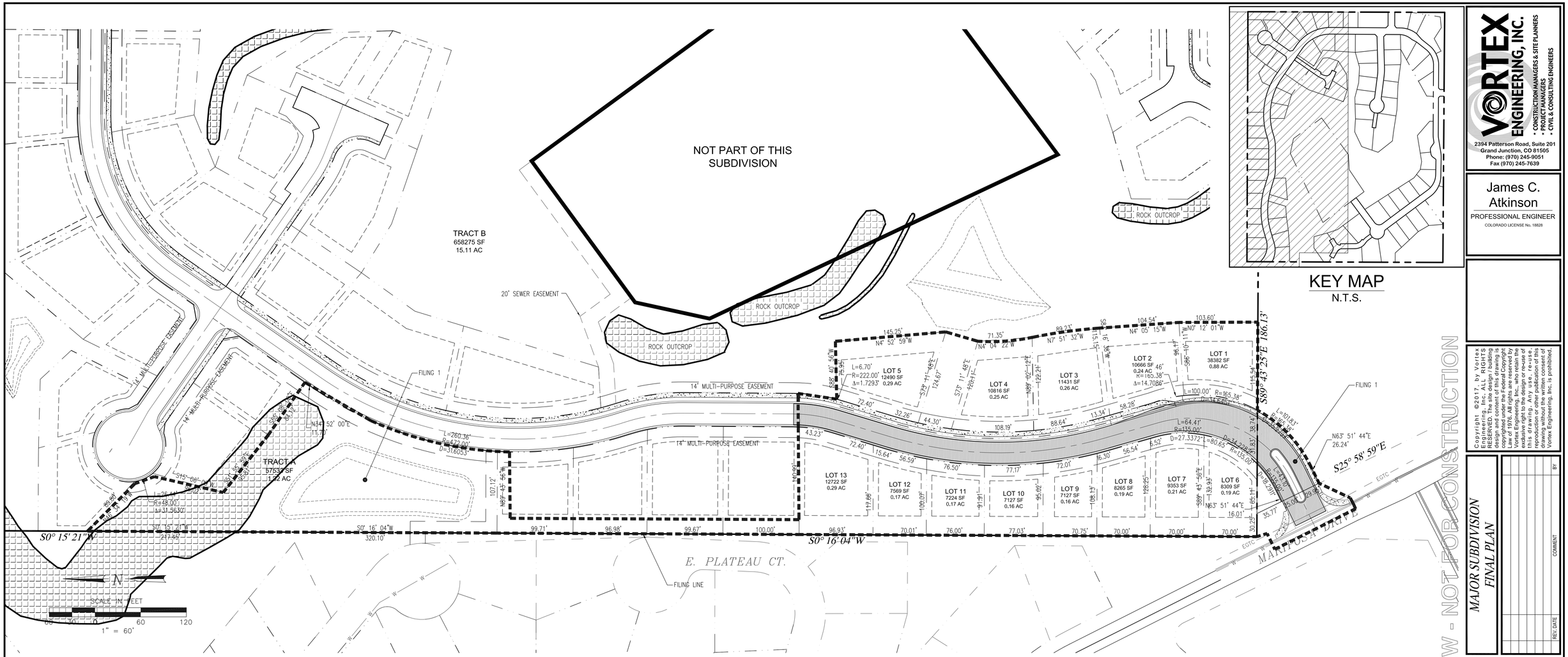
MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY

Filing Plan
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 100'**
CAD ID: **0.0cover-f1.dwg**

~SHEET~
C0.2



KEY MAP
N.T.S.

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY

UTILITY PROVIDERS INFORMATION

UTILITY	PROVIDER	PHONE NUMBER
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

PROPOSED LAND USE TABLE

USE	AREA	AC	% OF TOTAL	OWNER
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. – 45.11 AC			

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's **below.** **Call** before you dig.
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1-800-922-1987
co811.org

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY GEOTECHNICAL ENGINEERING GROUP, INC., DATED APRIL 16, 2002 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X–OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET C0.2

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

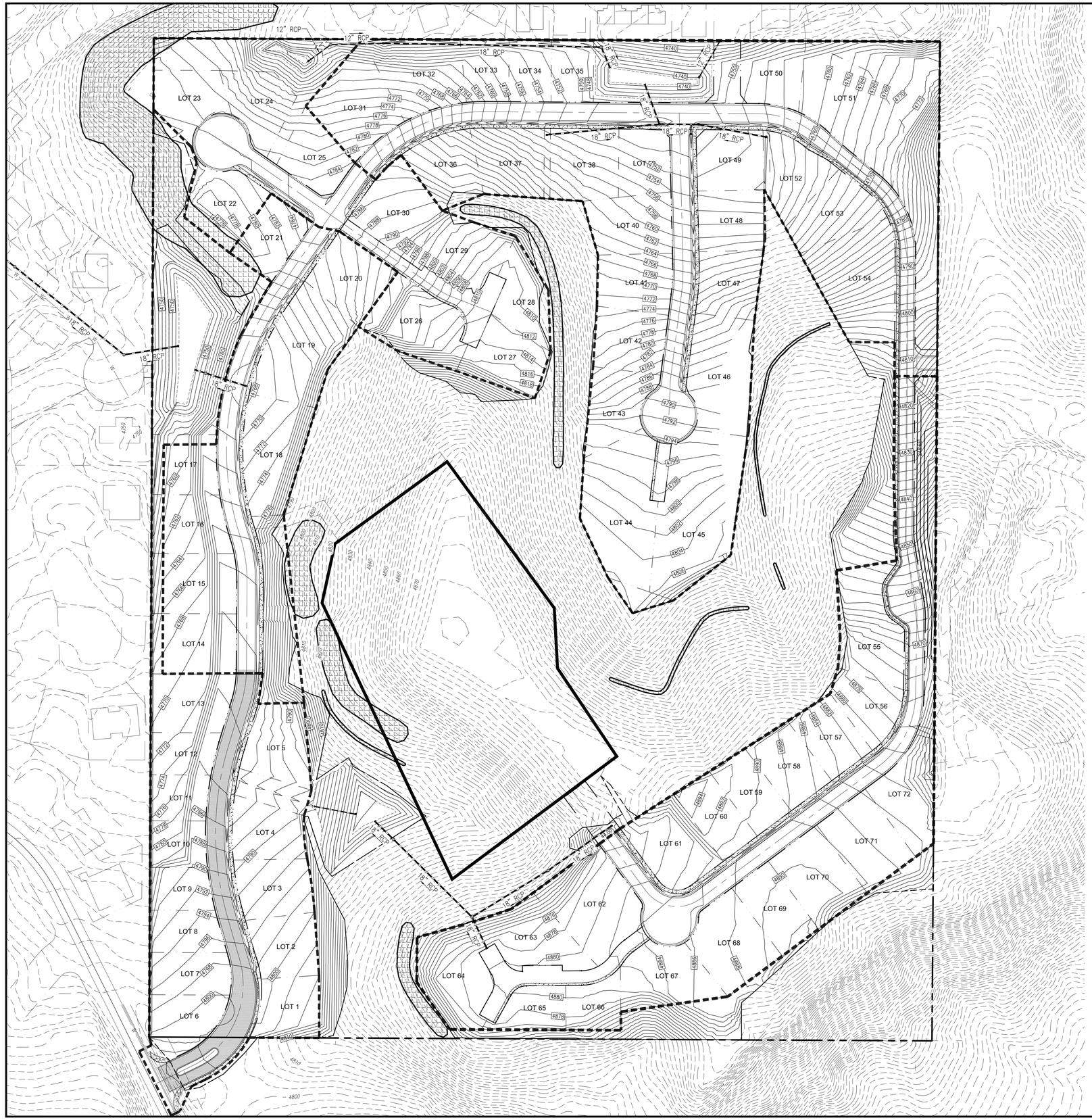
Composite Site Plan - Layout and Geometry Plan

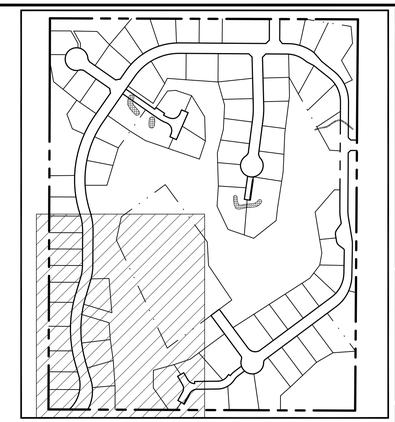
Filing 1
Pinnacle Ridge Subdivision

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 60'**
CAD ID: **1.0layout-f1.dwg**

~SHEET~
C1.0





KEY MAP
N.T.S.

N

SCALE IN FEET
80 40 0 80 160
1" = 80'
CONTOUR INTERVAL = 2'

GENERAL NOTES

1. ALL CONSTRUCTION TO CONFORM TO THE CURRENT CITY OF GRAND JUNCTION DEPARTMENT OF PUBLIC WORKS AND PLANNING STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR MUST CONTACT CITY OF GRAND JUNCTION TRAFFIC OPERATIONS SUPERVISOR PRIOR TO CONSTRUCTION OR PLACEMENT OF TRAFFIC CONTROL DEVICES/FEATURES (STRIPING, SIGNALS, MEDIANS, ETC.) FOR CONSTRUCTION IN THE RIGHT-OF-WAY ONLY.
3. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY, DATED 8/2/12 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE SANITARY SEWER, SEE SANITARY SEWER PLAN & PROFILE.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE FILING PLAN.
8. REFER TO SHEETS C0.1, C6.0 AND C6.2 FOR STORMWATER MANAGEMENT CONTROL PLANS AND EROSION CONTROL NOTES.

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

FOR REVIEW - NOT FOR CONSTRUCTION

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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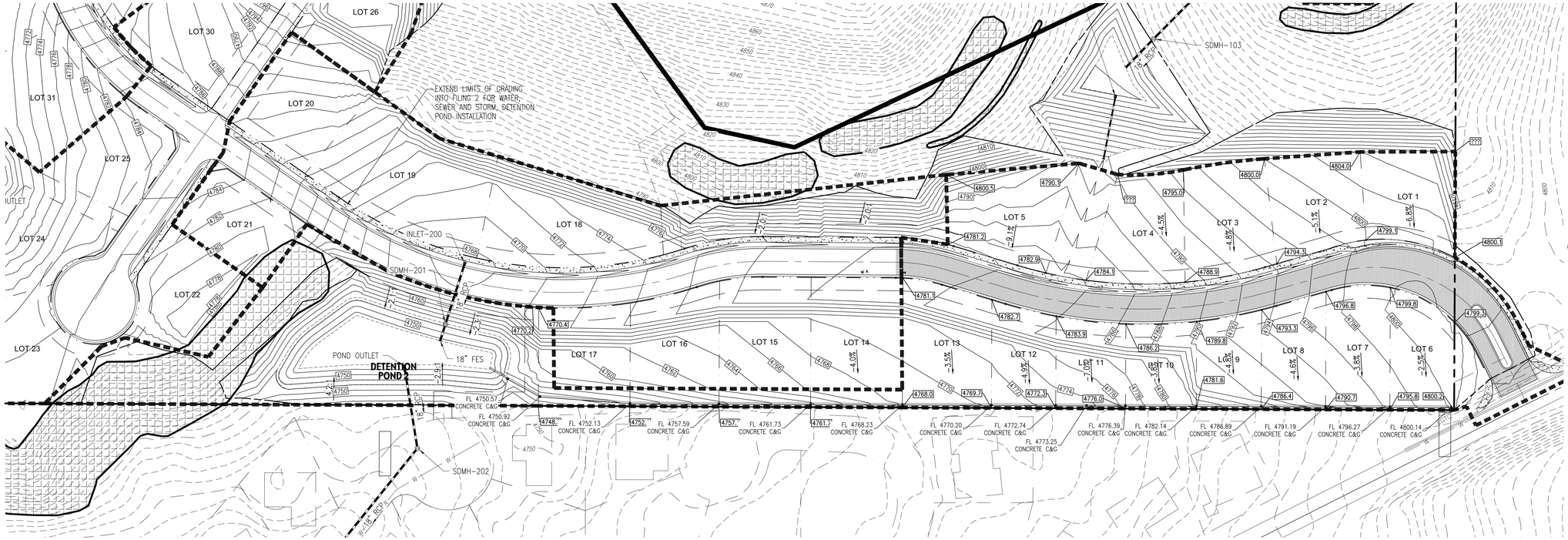
MAJOR SUBDIVISION FINAL PLAN

REV. DATE	COMMENT	BY

Overall Grading Plan Filings 1 - 5
Pinnacle Ridge Subdivision Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1"= 80'**
CAD ID: **2.0grad-f1.dwg**

~SHEET~
C2.0



N
SCALE IN FEET
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1" = 60'
CONTOUR INTERVAL = 2'

FILING 1 TOF TABLE			
Lot	*Grading*	*Min. TOF*	*Max. TOF*
1	Type A	4801.00	4801.50
2	Type A	4798.70	4799.20
3	Type A	4793.30	4793.80
4	Type A	4787.90	4788.40
5	Type A	4783.60	4784.10
6	Type C	4801.60	4802.10
7	Type C	4799.30	4799.80
8	Type C	4796.00	4796.50
9	Type C	4792.50	4793.00
10	Type C	4789.00	4789.50
11	Type C	4786.00	4786.50
12	Type C	4784.30	4784.80
13	Type C	4783.10	4783.60

GENERAL NOTES:

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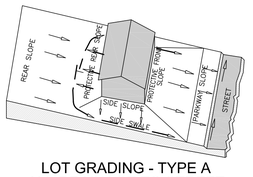
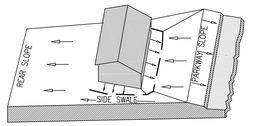
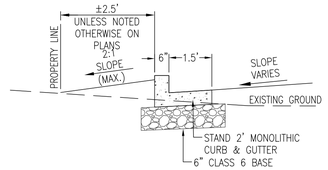
7. FOR STREET SECTIONS SEE SHEETS C2.2



LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.

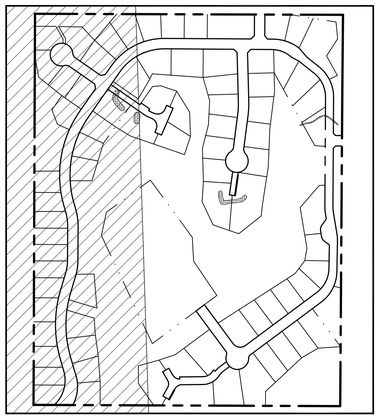


LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.



WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

CONCRETE CURB DETAIL
N.T.S.



KEY MAP
N.T.S.

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

FOR REVIEW - NOT FOR CONSTRUCTION

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2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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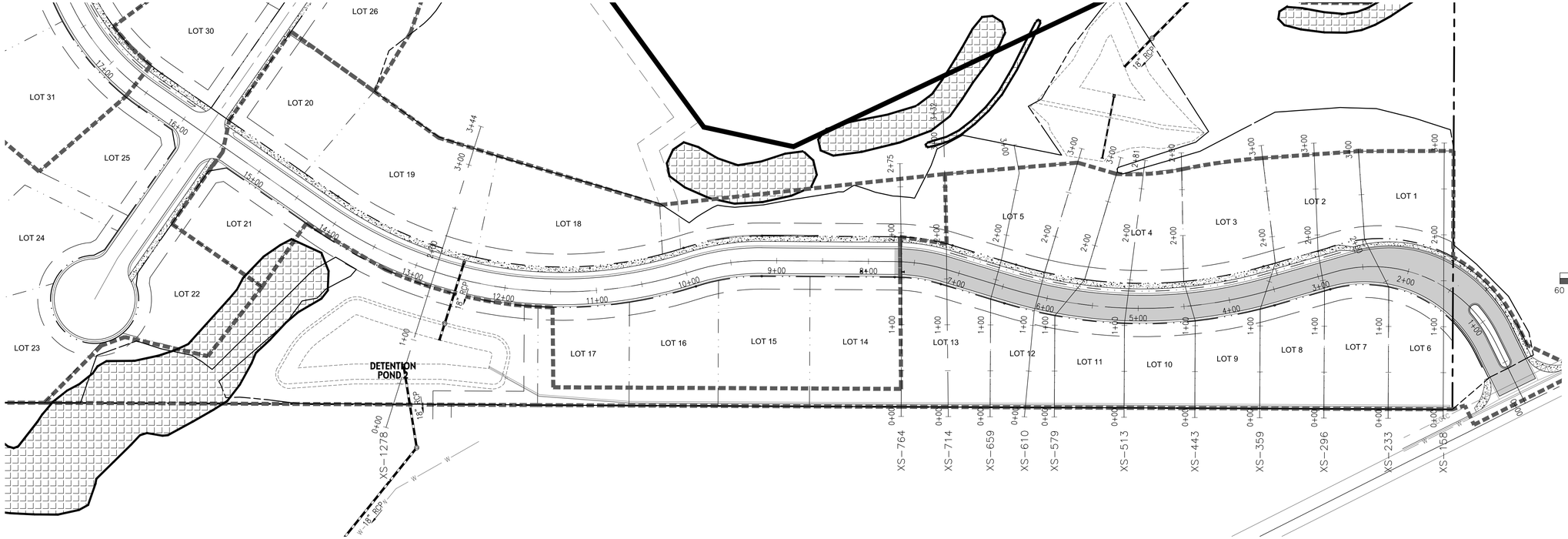
MAJOR SUBDIVISION
FINAL PLAN

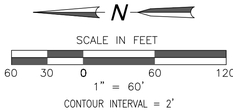
REV. DATE	COMMENT
B1	

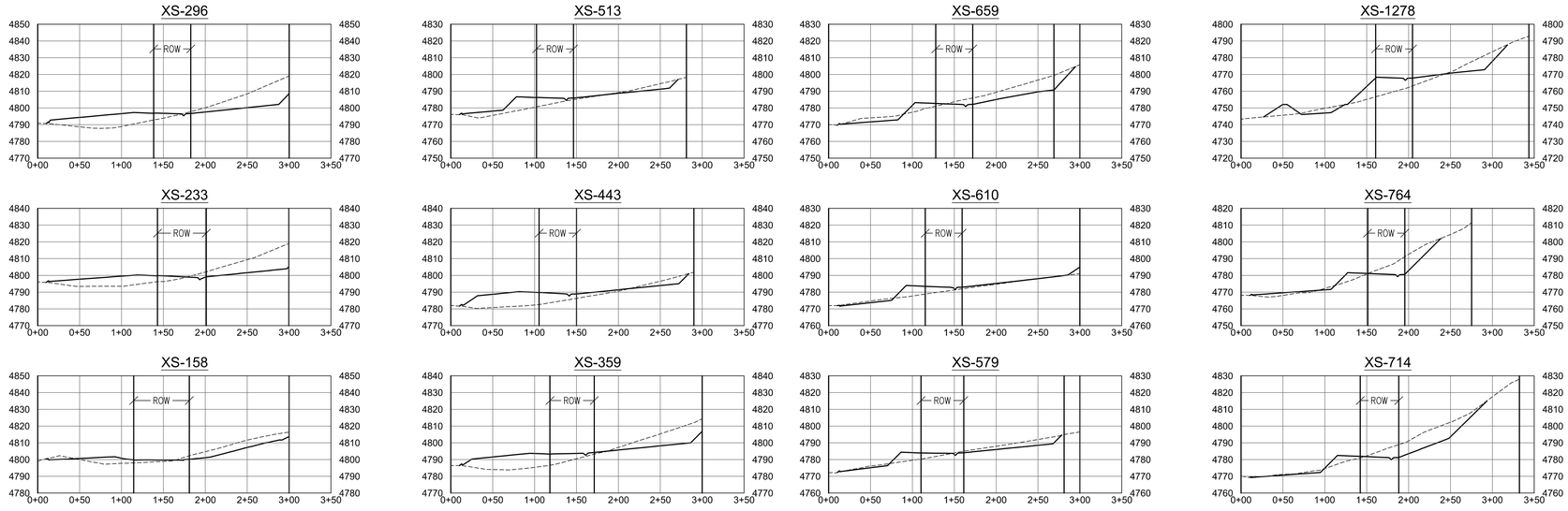
Grading Plan Filing 1
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **SEE PLAN**
CAD ID: **2.0grad-f1.dwg**

~SHEET~
C2.1







SECTIONS ALONG LOT LINES

SCALE: 1" = 80' HORIZONTAL
1" = 40' VERTICAL

ACCEPTANCE BLOCK

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COLORADO LICENSE No. 18828

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY

Grading Plan Filing 1 - Road Cross Sections

Pinnacle Ridge Subdivision
Filing 1

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **SEE PLAN**
CAD ID: **2.0grad-f1.dwg**

~SHEET~
C2.2

GENERAL NOTES

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2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X–OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET 3
6. HOUSES CONSTRUCTED ON LOTS 26–29 AND LOTS 55–72 SHALL HAVE SPRINKLER SYSTEMS INSTALLED. A 1" CUSTOMER WATER SERVICE LINE AND ¾" WATER METER WILL BE UTILIZED IN ACCORDANCE WITH UTE WATER CONSERVANCY DISTRICT STANDARDS & SPECIFICATIONS.

FILING NOTES

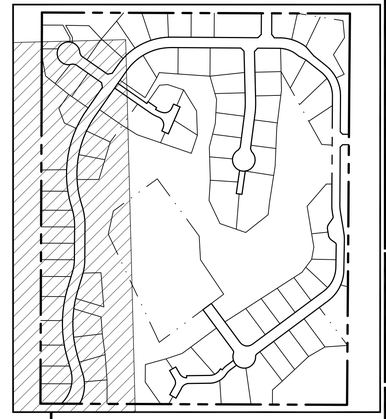
1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
2. INSTALL SANITARY SEWER FROM SSMH–A9 TO EXISTING MAN–HOLE IN RIDGEWAY COURT AS SHOWN INCLUDING LINE TO MAN–HOLE B–1.
3. END WATER LINE CONSTRUCTION AT THE MIDDLE OF LOT 14 AS SHOWN.

N

SCALE IN FEET

60 30 0 60 120

1" = 60'



KEY MAP

N.T.S.

VORTEX ENGINEERING, INC.

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• PROJECT MANAGERS
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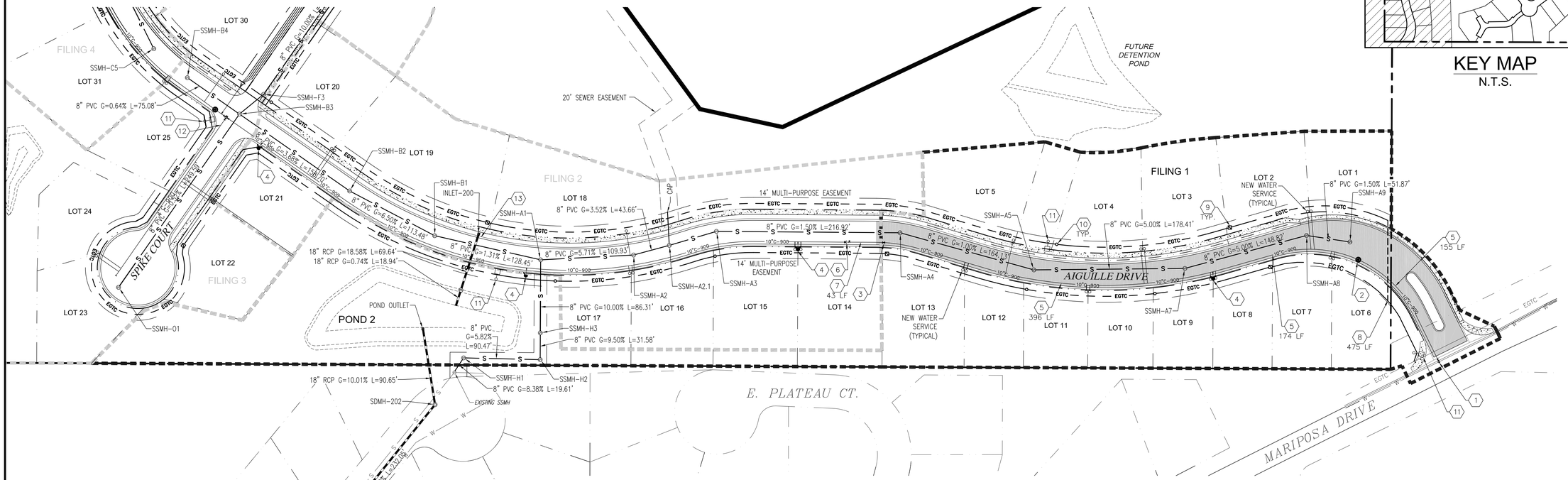
FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAT

REV. DATE	COMMENT	BY



LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT–OF–WAY
- PROPOSED WATER LINE
- EXISTING WATER LINE (EX.8" WTR)
- PROPOSED IRRIGATION (3" IRR)
- PROPOSED SEWER
- EXISTING SEWER
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER SERVICE
- PROPOSED 4" SS SERVICE
- EXISTING GAS LINE
- PROPOSED GAS LINE (BY XCEL ENERGY)
- PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
- PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.

Colorado 811
1-800-922-1987
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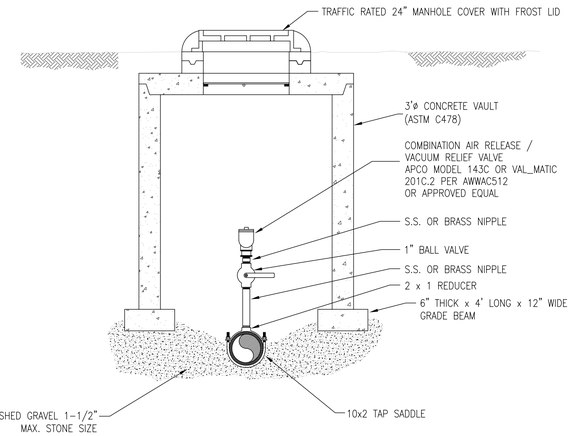


3'Ø MANHOLE AIR RELEASE/ VACUUM RELIEF VALVE DETAIL

N.T.S.

CONSTRUCTION NOTES:

1. CONNECT TO EXISTING 10" VALVE
2. INSTALL 2" AIR/VAC VALVE ON 10" MAIN RE: UTE WATER DETAILS
3. INSTALL 10" GATE VALVE RE: UTE WATER DETAILS
4. INSTALL FIRE HYDRANT ASSEMBLY RE: UTE WATER DETAILS
5. INSTALL WATER MAIN ALONG CURVE BY DEFLECTING PIPE TO 75% OF MANUFACTURER'S RECOMMENDATIONS
6. INSTALL BLOW–OFF ASSEMBLY & 10" CAP W/ THRUSTBLOCK RE: UTE WATER DETAILS
7. MJ PIPE JOINTS MUST BE RESTRAINED FOR A MINIMUM OF 43', FROM CAP TO VALVE. RE: UTE WATER VALVE INSTALLATION, LINE TERMINATION & TYPE 'A' BLOW–OFF STANDARD
8. INSTALL 4"ø UTILITY SLEEVES (5 SLEEVES @ 3' MIN)
9. PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)
10. PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
11. PROPOSED STREET LIGHT
12. INSTALL 4X10 REDUCER RE: UTE WATER STANDARDS
13. LOWER 10" WATER MAIN IN LIEU OF 45–DREGREE BENDS, DEFLECT PIPE TO DIP UNDER STORM INLET WITH A 6–INCH MINIMUM CLEARANCE BETWEEN PIPES.

ALL WATER METER PITS SHALL BE LOCATED ON OPPOSITE LOT SIDE OF DRY UTILITY TRANSFORMERS AND PEDESTALS. THIS IS A CUSTOMER/ CONSUMER SAFETY ISSUE.

Composite Site Plan - Utility and Water Plan

Pinnacle Ridge Subdivision
Filing 1

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1"= 60'**
CAD ID: **3.0utility-f1.dwg**

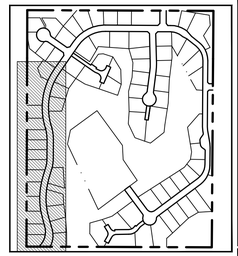
~SHEET~
C3.0

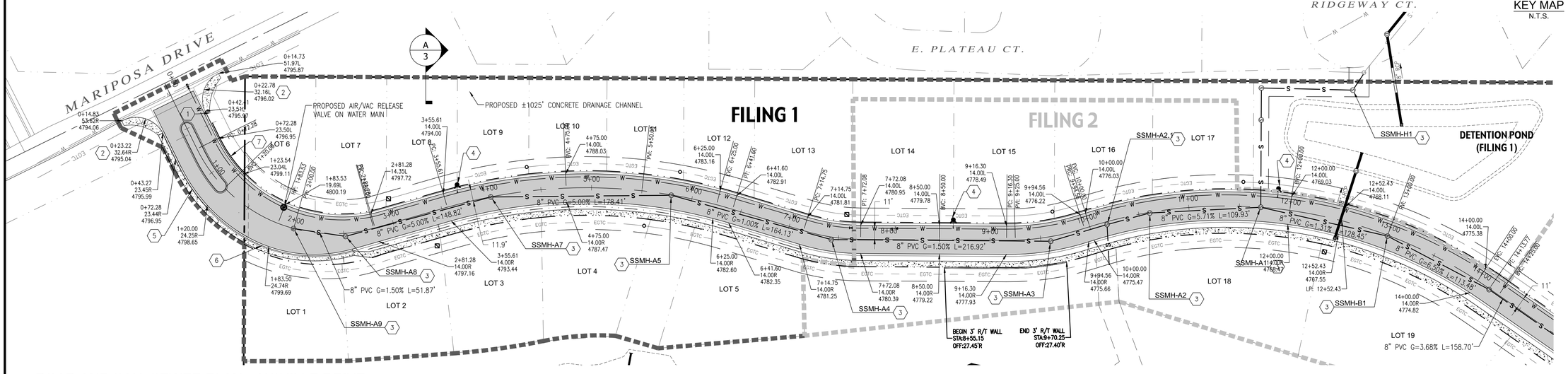
CONSTRUCTION NOTES:

1. INSTALL STOP SIGN & STREET SIGN RE: MUTCD
2. CONSTRUCT HANDICAPPED RAMP RE: CITY OF GJ DETAILS
3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT RE: UTE WATER DETAILS
5. INSTALL 6" STANDARD CURB & GUTTER W/ATTACHED SIDEWALK – 87 LF
6. INSTALL 6" DRIVE-OVER CURB & GUTTER W/ATTACHED SIDEWALK – 158 LF
7. INSTALL 6" STANDARD CURB & GUTTER 74 LF

GENERAL NOTES:

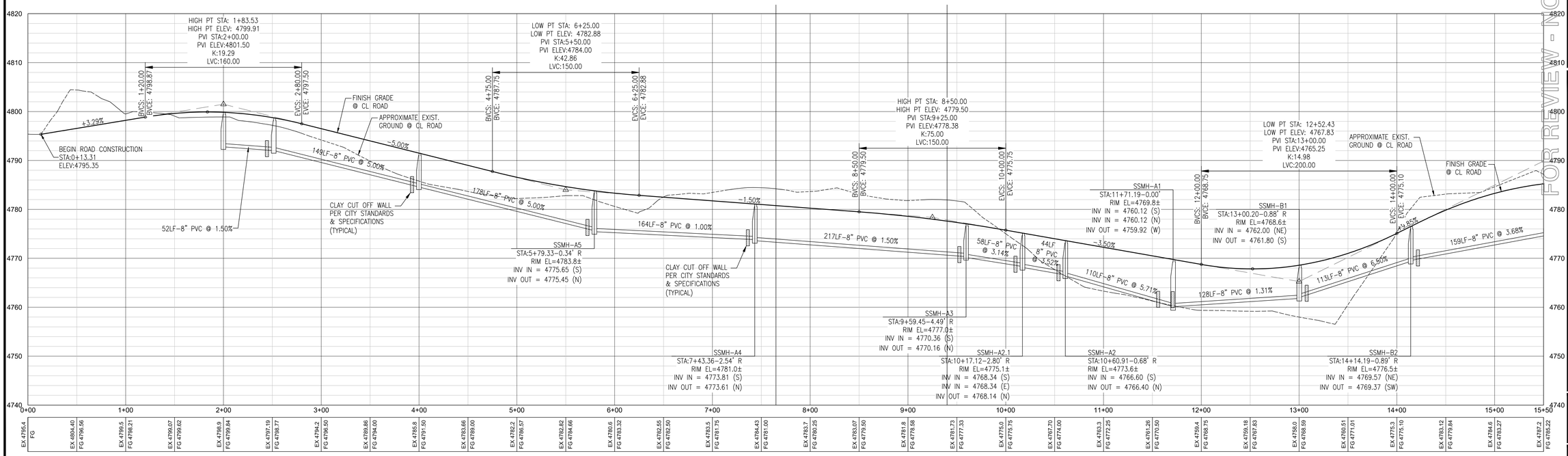
1. REFERENCE SHEET 2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET C0.2 FOR STREET SECTIONS
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION





ROAD AND SAN. SEWER PLAN - AIGUILLE DRIVE

SCALE: 1" = 50'



ROAD AND SAN. SEWER PROFILE - AIGUILLE DRIVE

HORIZONTAL SCALE: 1" = 50'

VERTICAL SCALE: 1" = 5'

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION FINAL PLAN

REV	DATE	COMMENT
B1		

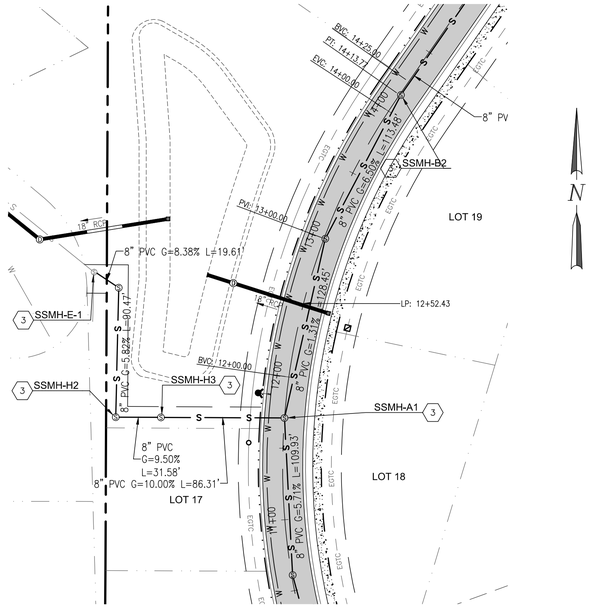
Road & Sanitary Sewer Plan & Profile

Aiguille Drive
Pinnacle Ridge Subdivision Filing 1

Mariposa Drive
Grand Junction, Colorado 81507

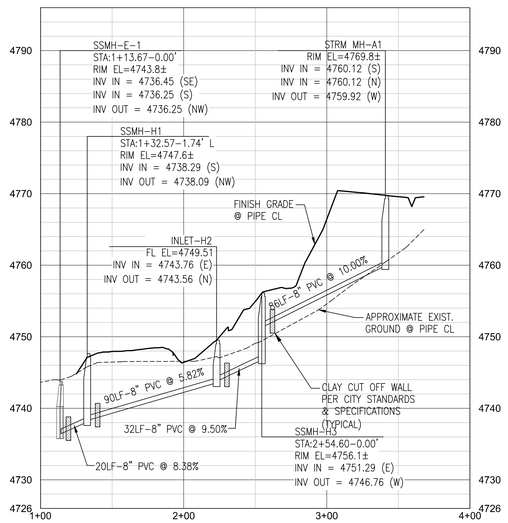
PROJECT NO.: **F04-006**
DATE: **06/02/17**
SCALE: **1" = 50'**
CAD ID: **4.0ss-road-f1.dwg**

~SHEET~
C4.0



ROAD AND SAN. SEWER PLAN - RIDGEWAY CT. CONNECTION

SCALE: 1" = 50'



ROAD AND SAN. SEWER PROFILE - RIDGEWAY CT. CONNECTION

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

GENERAL NOTES:

1. REFERENCE SHEET 2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET 3 FOR STREET SECTIONS
10. SEE SHEETS 4 & 5 FOR ALL EASEMENT INFORMATION

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FOR REVIEW - NOT FOR CONSTRUCTION

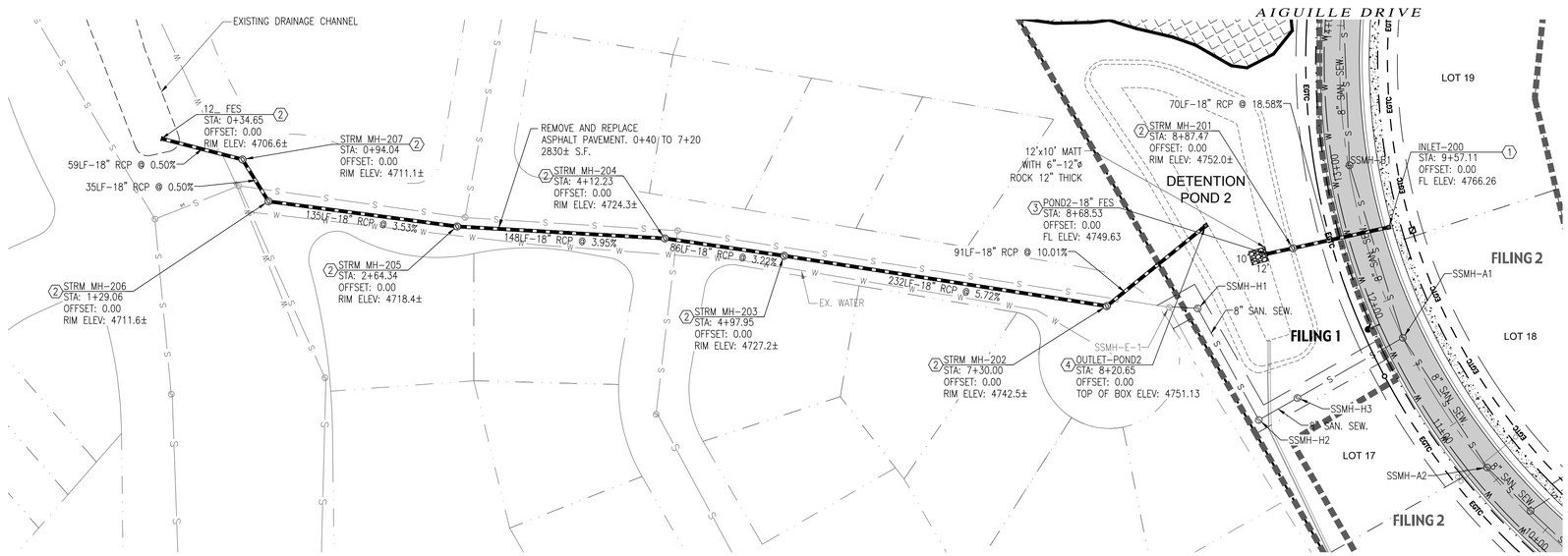
MAJOR SUBDIVISION
FINAL PLAN

REV. DATE	COMMENT	BY

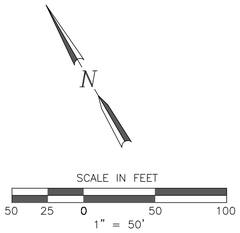
Road & Sanitary Sewer Plan & Profile
Ridgeway Court Sewer Connection
Pinnacle Ridge Subdivision Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/02/17
SCALE: 1" = 50'
CAD ID: 4.0ss-road-f1.dwg

~SHEET~
C4.1

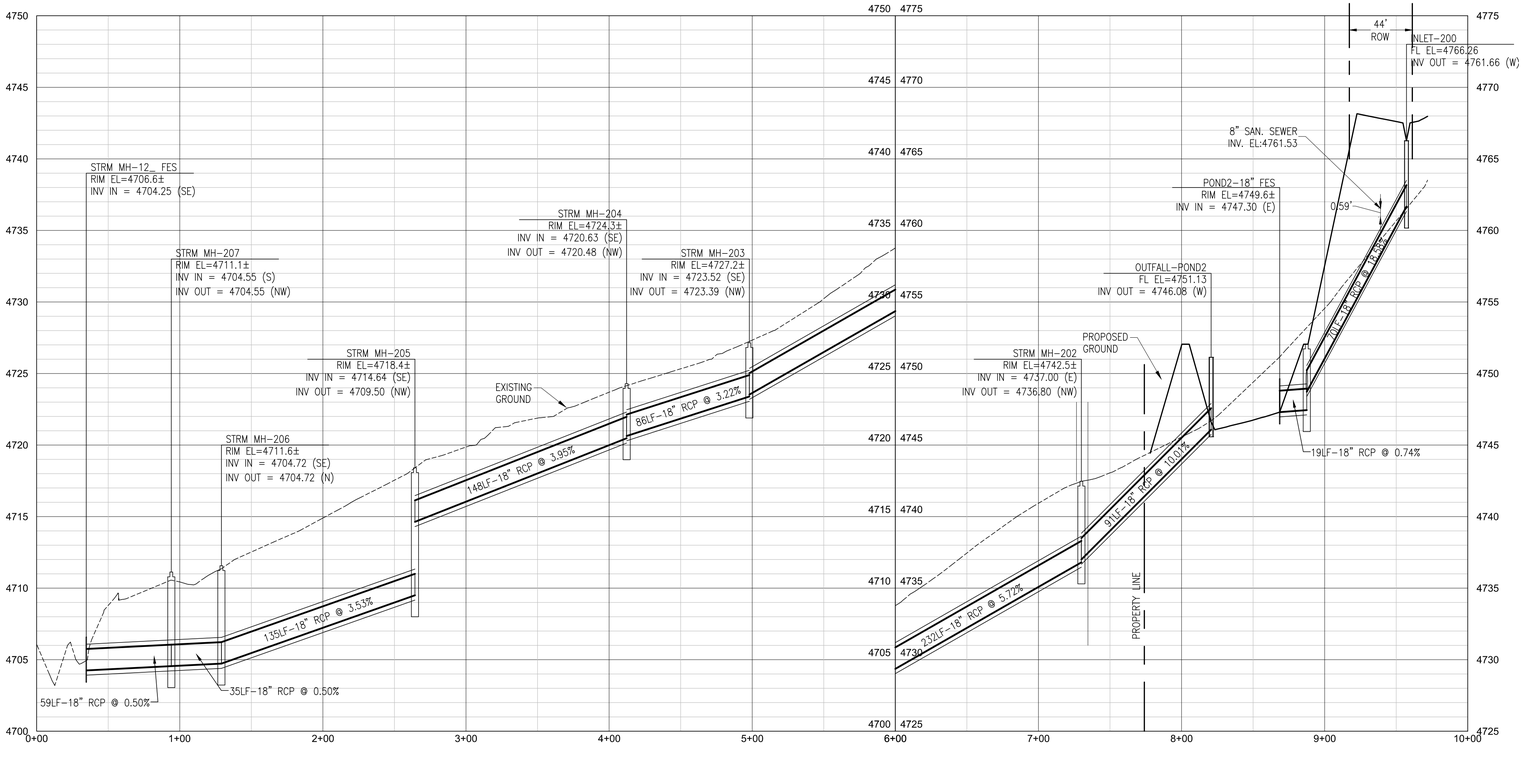


KEY MAP
N.T.S.



STORM SEWER PLAN AND PROFILE - POND 2 OUTFALL

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



GENERAL NOTES:

1. REFERENCE SHEET 2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. STATIONS ARE IN REFERENCE TO CENTER LINE OF ROAD, UNLESS OTHERWISE INDICATED.
4. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.

CONSTRUCTION NOTES:

1. INSTALL 3'X4' AREA INLET
   RE: CITY STD. DETAILS
2. INSTALL 48"ø MANHOLE
   RE: CITY STD. DETAILS
3. INSTALL FES WITH RIP RAP AT SHOWN SIZE
   RE: CITY STD. DETAILS
4. INSTALL POND OUTLET STRUCTURE.
   RE: SEE DETAIL ON SHEET 21

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

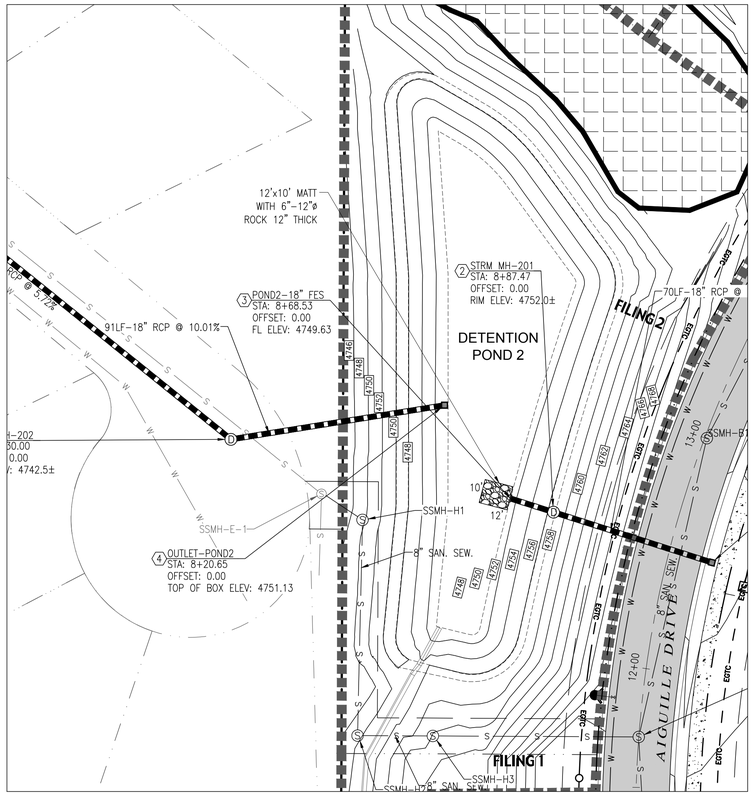
REV. DATE	COMMENT	BY

Storm Sewer Plan and Profile
Pond 2 Outfall

Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 50'**
CAD ID: **5.0storm-f1.dwg**

~SHEET~
C5.0



N

POND 2 - PLAN

SCALE: 1" = 30'

POND OUTLET STRUCTURE DETAIL

N.T.S.

OUTLET STRUCTURE TABLES

POND	A	B	C	D	E	F	G	H	I
POND 1	4799.00	4801.50	4802.31	4804.31	6"	32"	1	7	5/8"
POND 2	4747.00	4748.83	4749.39	4750.94	20"	21"	1	4	7/8"
POND 3	4751.00	4752.64	4752.88	4754.06	6"	21"	1	4	5/16"
POND 4	4739.00	4742.19	4742.73	4745.13	20"	35"	1	8	13/16"

PONDS' SUMMARY TABLES

POND 2	VOLUME (CF)	WSEL (FT)	PEAK DISCHRGE FLOW (CFS)	ALLOWABLE PEAK DISCHRGE FLOW (CFS)
WQCV	7,575	4848.83	NA	NA
10 YEAR	13,992	4748.32	0.52	1.87
100 YEAR	31,059	4749.95	4.21	7.79

GENERAL NOTES:

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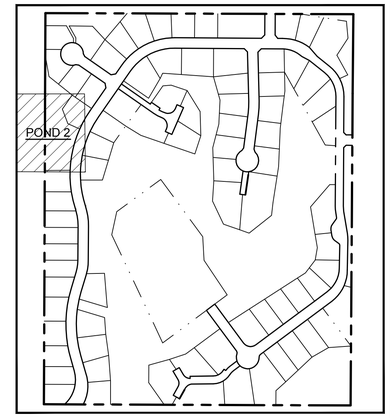
4. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
5. REFER TO SHEET C5.0 FOR CONSTRUCTION KEY NOTES.



KEY MAP
N.T.S.

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY

Storm Sewer Plan
Pond 1 and 2 Details

Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 30'**
CAD ID: **5.0storm-f1.dwg**

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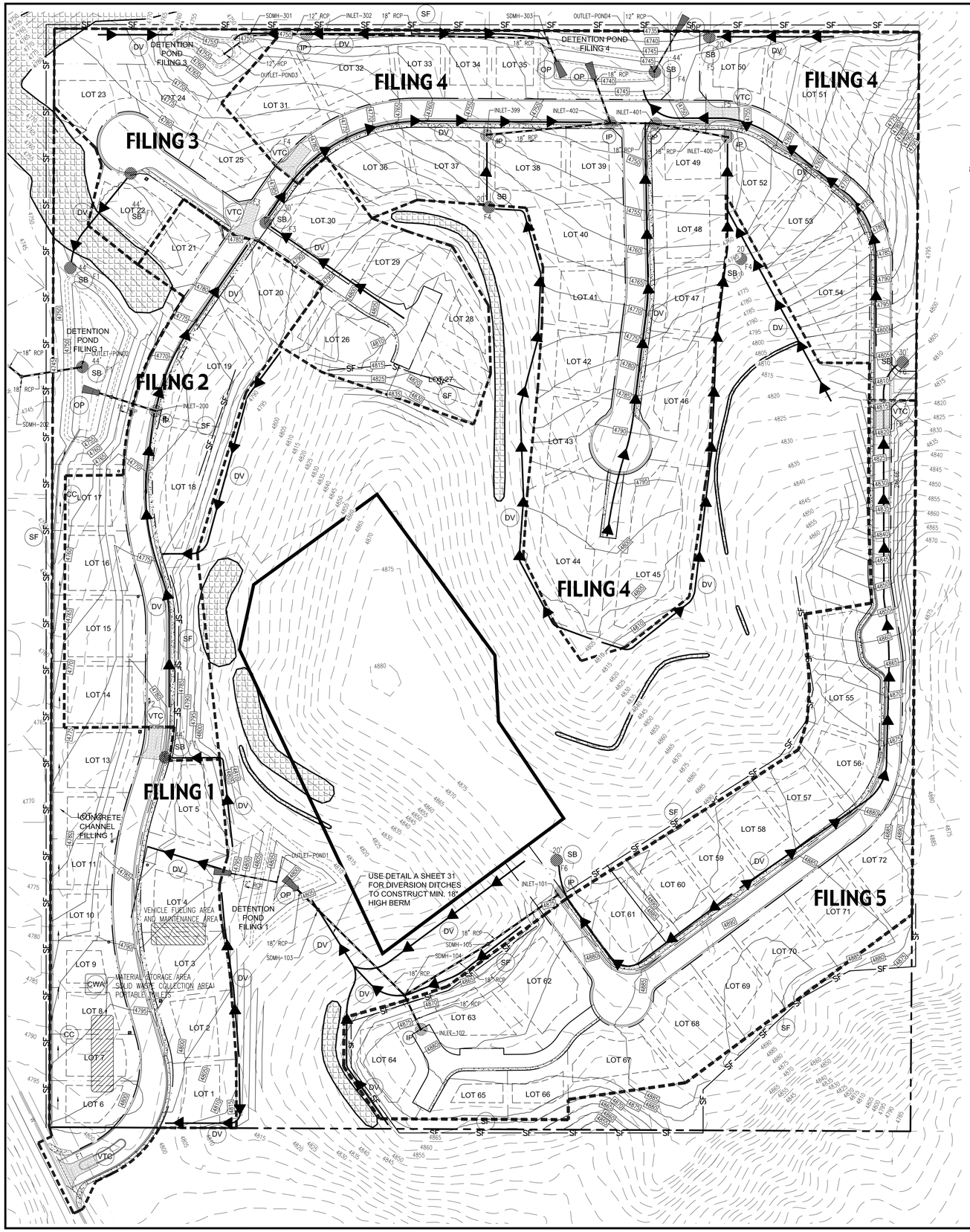
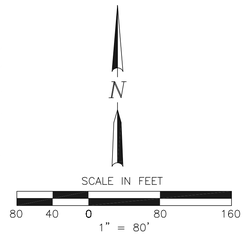
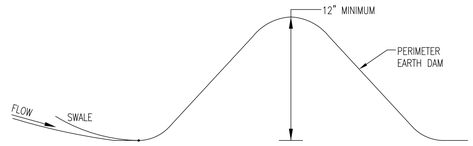
C5.1







EARTH DAM SECTION
SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
SILT FENCE	SF	SF
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
VEHICLE TRACKING CONTROL	SB	25' — INVERT DIAMETER F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

GENERAL NOTES:

1. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL REQUIRED EASEMENTS, RIGHT AND/OR RIGHTS-OF-WAY PURSUANT TO THE DISCHARGE FROM THE SEDIMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS AND GRADING OR OTHER WORK TO BE PERFORMED ON ADJACENT OR DOWNSTREAM PROPERTIES AFFECTED BY THE PLAN.
2. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1); FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE, THE IN-PLACE SEDIMENT CONTROL MEASURES WILL BE MAINTAINED ON A CONTINUING BASIS UNTIL THE SITE IS PERMANENTLY STABILIZED AND ALL PERMIT REQUIREMENTS ARE MET.
3. REFER TO CITY OF GRAND JUNCTION STANDARD DRAWINGS AND SPECIFICATIONS.
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE 5-2-1 DRAINAGE AUTHORITY. CONTACT MARK BARSLUND 970-201-1362

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

FOR REVIEW

MAJOR SUBDIVISION
FINAL PLAN

REV. DATE	COMMENT	BY

Overall Construction Stormwater Management Plan

Pinnacle Ridge Subdivison
Filing 1

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **07/08/15**
SCALE:
CAD ID: **6.0swm-f1.dwg**

~SHEET~
C6.0

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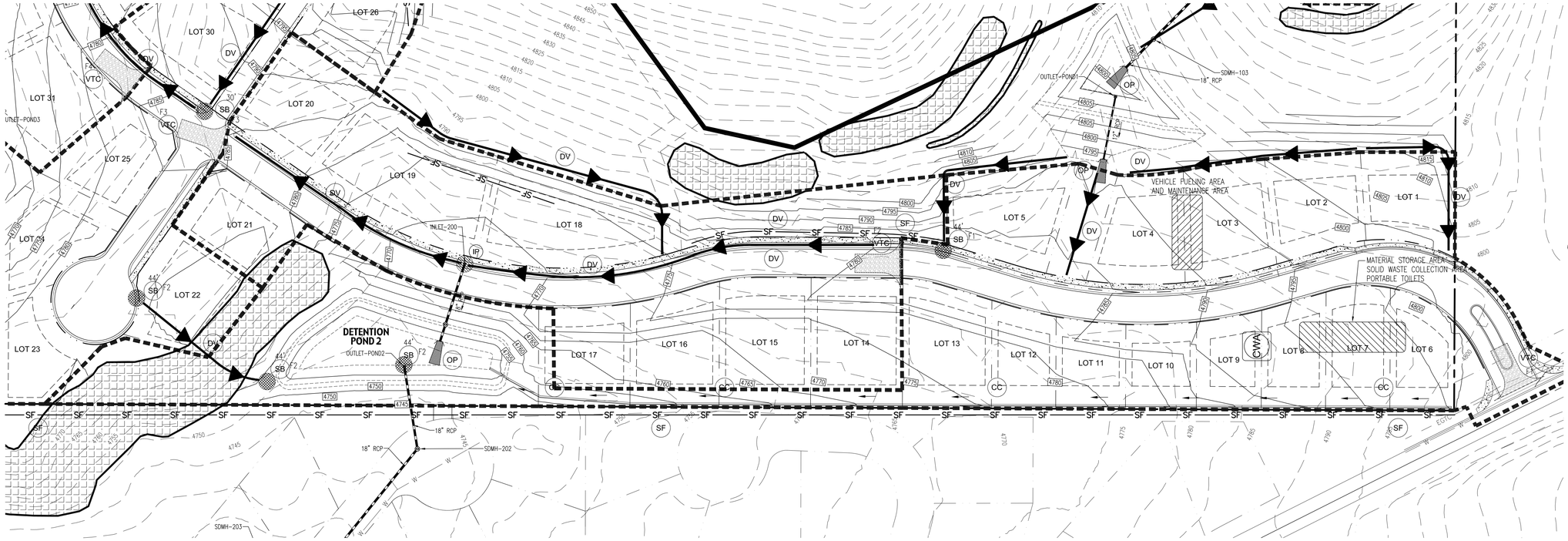

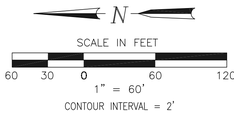

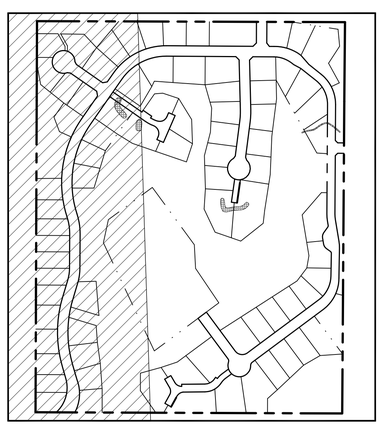

KEY MAP
N.T.S.

GENERAL NOTES:

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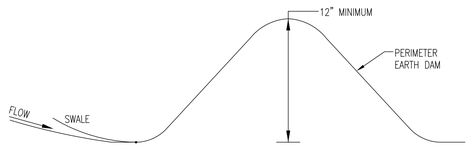
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE 5-2-1 DRAINAGE AUTHORITY. CONTACT MARK BARSLUND 970-201-1362



EARTH DAM SECTION
SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
SILT FENCE	SF	SF
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
VEHICLE TRACKING CONTROL	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

FOR REVIEW

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• PROJECT MANAGERS &
• CIVIL & CONSULTING ENGINEERS
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MAJOR SUBDIVISION
FINAL PLAN

REV. DATE	COMMENT	BY

Construction Stormwater Management Plan Filling 1

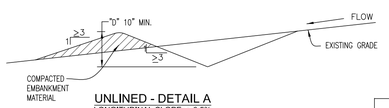
Pinnacle Ridge Subdivison
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **SEE PLAN**
CAD ID: **6.0swm-f1.dwg**

~SHEET~
C6.1

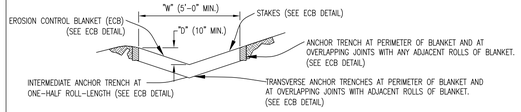
DIVERSION DITCH DETAIL A

DV

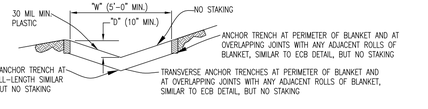


UNLINED - DETAIL A
LONGITUDINAL SLOPE < 0.5%

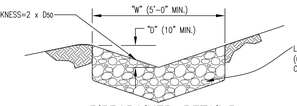




EROSION CONTROL BLANKET (ECB) LINED - DETAIL B
LONGITUDINAL SLOPE 0.5% TO 3 %



PLASTIC LINED - DETAIL C
LONGITUDINAL SLOPE 3% TO 33%



RIPRAP LINED - DETAIL D
LONGITUDINAL SLOPE 3% TO 33%

DIVERSION DITCH INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF DIVERSION DITCH.
   - TYPE OF DITCH (UNLINED, ECB PLASTIC LINED OR RIPRAP LINED).
   - LENGTH OF EACH TYPE OF DITCH.
   - DEPTH, "D", AND WIDTH, "W" DIMENSIONS.
   - FOR ECB LINED DITCH, EROSION CONTROL BLANKET TYPE (SEE ECB DETAIL).
   - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, "D 50 ".
2. SEE DRAINAGE PLANS FOR DETAILS OF ANY PERMANENT CONVEYANCE FACULTIES OR DIVERSION DITCHES EXCEEDING A 2 YEAR FLOOD 10 CFS.
3. DIVERSION DITCHES INDICATED ON INITIAL SWMP PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES..
4. FOR ECB LINED DITCHES, INSTALLATION OF EROSION CONTROL BLANKET SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.
5. IN LOCATIONS WHERE CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION DITCH, THE PERMITTEES SHALL INSTALL A TEMPORARY CULVERT WITH A MINUM DIAMETER OF 12-INCHES.

DIVERSION DITCH MAINTENANCE NOTES

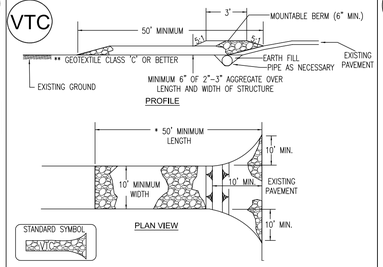
1. THE SWMP MANAGER SHALL INSPECT DIVERSION DITCHES WEEKLY AND DURING AND AFTER ANY STORM. MAKE REPAIRS AS NECESSARY.
2. DIVERSION DITCHES ARE TO REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION, OR IF APPROVED BY LOCAL JURISDICTION MAY BE LEFT IN PLACE.
3. IF DIVERSION DITCHES ARE REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, DRILL SEEDED, HAY CRIMPED MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

DETAIL BASED ON DETAILS PROVIDED BY DOUGLAS COUNTY

Urban Drainage and Flood Control District Drainage Criteria Manual (V.3)	Figure C5-3 DIVERSION DITCH AND DIKE

STABILIZED CONSTRUCTION ENTRANCE

VTC

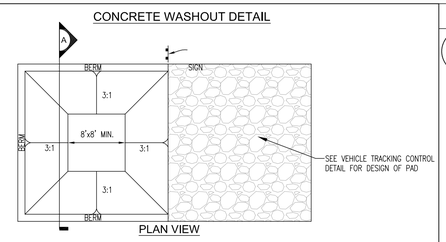


Construction Specification

1. Length – minimum of 50' (*30' for single residence lot).
2. Width – 10' minimum, should be flared at the existing road to provide a tuning radius
3. Geotextile fabric (filter cloth) shall placed over the exiting around prior to placing stone. **This plan approval authority may not require single family residence to use geotextile.
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water – all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location – A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

CONCRETE WASHOUT DETAIL

CWA



SECTION A

CONCRETE WASHOUT AREA INSTALLATION NOTES

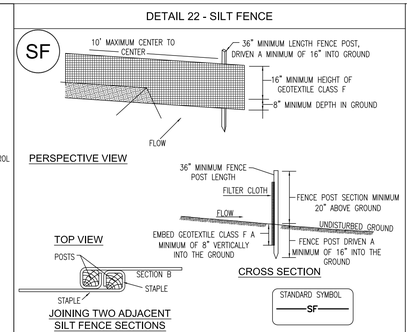
1. SEE PLAN VIEW FOR LOCATIONS OF CONCRETE WASHOUT AREA
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL IS REQUIRED AT THE ACCESS POINT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION

CONCRETE WASHOUT AREA MAINTENANCE NOTES

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, DRILL SEED AND CRIMP MULCH OR OTHERWISE STABILIZE IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
4. INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.

DETAIL 22 - SILT FENCE

SF



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
2. Geotexile shall be fastened securely to each fence post with wire ties or staples at top and mid-setion and shall meet the following requirements for Geotextile Class F:

Tensile Strength:	50 lbs./in. (min.)	Test: MSMT 509
Tensile Modulus:	20 lbs./in. (min.)	Test: MSMT 509
Flow Rate	0.3 gal. ft. / minute (max.)	Test MSMT 322
Efficiency	75% (min.)	Test: MSMT 322

3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

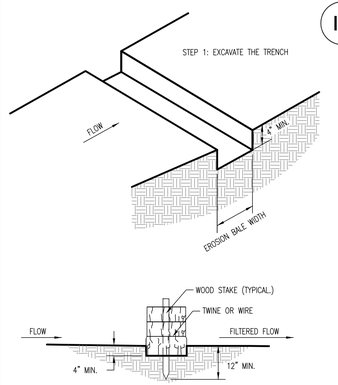
SILT FENCE

Silt Fence Design Criteria

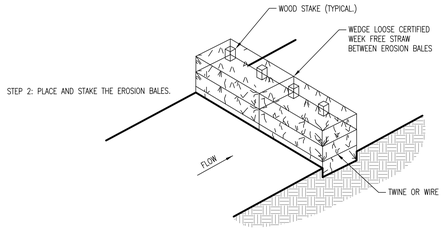
Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

NOTE:
In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.

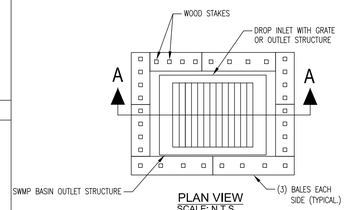
IP



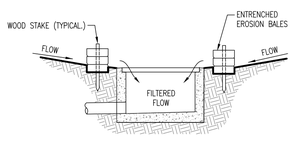
EROSION BALE TRENCHING AND STAKING
SCALE: N.T.S.



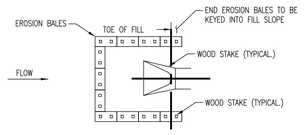
EROSION BALE BMP
SCALE: N.T.S.



PLAN VIEW
SCALE: N.T.S.



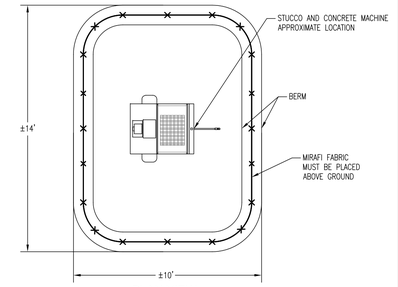
SECTION A-A
EROSION FILTER AT DROP INLET
SCALE: N.T.S.



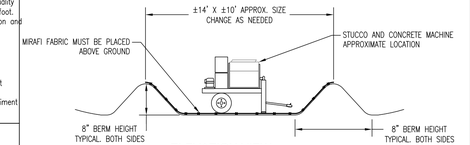
PLAN VIEW
EROSION BALE CULVERT INLET PROTECTION
SCALE: N.T.S.

NOTES

1. STAKES SHALL BE WOOD AND SHALL BE 2" X 2" NOMINAL.
2. EROSION BALES SHALL BE 18" X 18" X 36".
3. EROSION BALES SHALL BE ENTRENCHED 4 IN. MINIMUM INTO THE SOIL TIGHTLY ABUTTED WITH NO GAPS, STAKED, AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERIMETER.



PLAN VIEW
SCALE: N.T.S.



ELEVATION VIEW
SCALE: N.T.S.

STUCCO & CONCRETE MACHINE BMP
SCALE N.T.S.

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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FOR REVIEW

MAJOR SUBDIVISION
FINAL PLAN

BY	COMMENT	REV. DATE

Construction Stormwater Management Plan Details

Pinnacle Ridge Subdivison
Filing 1

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **07/06/15**
SCALE:
CAD ID: **6.0swm-f1.dwg**

~SHEET~
C6.2

Construction Storm Water Management Plan (CSWMP)
FOR
Pinnacle Ridge Subdivision

Date: April 25, 2017

Prepared by: Joseph S. Yamaguchi, Certified SWMP Administrator
Vortex Engineering, Inc.
2394 Patterson Rd., Ste 201
Grand Junction, CO 81505
970-245-9051
VEI # F04-006

Type of Design: Major Subdivision-Final Plan

Owner/Petitioner: TWO R&D, LLC

Property address: Mariposa Drive
Grand Junction, CO

Tax schedule Numbers: 2945-201-09-061, 2945-212-00-011, 2945-212-08-001
2945-212-08-002, 2945-212-08-003, 2945-212-08-004
2945-212-08-005, 2945-212-08-006, 2945-212-08-007
2945-212-08-008, 2945-212-08-009, 2945-212-08-010
2945-212-10-001, 2945-212-10-002, 2945-212-10-004
2945-212-10-005, 2945-212-10-006, 2945-212-10-007
2945-212-10-008, 2945-212-10-009

This CSWMP for a parcel of land consisting of 45.11 acres, located northwest of Monument Road, northeast of mariposa road, northwest of Ridges Blvd. and southwest of Colorado Hwy. 340 is formatted and presented consistent with Mesa County SWMP and State of Colorado SWMP criteria. There are no exceptions to State required inclusions in the plan. The following CSWMP is organized and presented as follows:

Section 1: Site Description

Section 2: Site Map (11" x 17" in Appendix D)

Section 3: Stormwater Management Controls

Section 4: Final Stabilization

Section 5: Inspection and Maintenance Procedures

Appendix A: Permit Applications & State of Colorado SWMP Permit

Appendix B: Sample Inspection Form

Appendix C: BMP Details

Appendix D: Site Map (11" x 17" SWMP)

Appendix E: Landscape Plan (11" x 17" LS-1 & LS-2)

This CSWMP was prepared by Joseph S. Yamaguchi Certified SWMP Administrator, Vortex Engineering Inc., 2394 Patterson Road, Suite 201, Grand Junction, CO 81505, (970) 245-9051.

A) The property as described here on as Pinnacle Ridge Subdivision, parcel numbers: 2945-201-09-061, 2945-212-00-011, 2945-212-08-001, 2945-212-08-002, 2945-212-08-003, 2945-212-08-004, 2945-212-08-005, 2945-212-08-006, 2945-212-08-007, 2945-212-08-008, 2945-212-08-009, 2945-212-08-010, 2945-212-10-001, 2945-212-10-002, 2945-212-10-004, 2945-212-10-005, 2945-212-10-006, 2945-212-10-007, 2945-212-10-008, 2945-212-10-009 consists of 45.11 acres, located northwest of Monument Road, northeast of Mariposa Road, northwest of Ridges Blvd. and southwest of Colorado Hwy. 340. By legal description, the properties are described as: DISTRICT OPEN SPACE LYG BET BLK 16&17 THE RIDGES FIL NO. 3 SEC. 20&21 1s 1w EXC BEG N 26DEG. 04'W 211.36FT FR E4 COR SD SEC20 N 32DEG 10'54SEC E 150.86FT S 0DEG 13'43SEC W 88.56FT S 63DEG 56'18SEC W 89.05FT TO BEG, S 10A OF NW4NW4 + SW4NW4 SEC21 1S 1W EXC BLKS 1-2 +3 ENERGY CENTER SUB PHASE 1 – 35.00AC, LOT 10 BLK ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W, LOT 9 BLK 2 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W, LOT 8 BLK 2 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W, LOT 7 BLK ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W, LOT 6 BLK 2 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W, LOT 5 BLK 2 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W, LOT 4 BLK 2 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1WM, LOT 3 BLK 2 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W, LOT 2 BLK 2 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W, LOT 1 BLK 2 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W, LOT 1 BLK 1 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W, LOT 2 BLK 1 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W, LOT 3 BLK 1 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W, LOT 4 BLK 1 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W, LOT 5 BLK 1 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W, LOT 6 BLK 1 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W, LOT 7 BLK 1 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W, LOT 8 BLK 1 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W, LOT 9 BLK 1 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W. These properties are approximately 45.11 acres and are currently occupied with lose rock, grass, bushes and hard dirt.

B) The following is a proposed sequence of major construction activities for the site:

i. Installation of onsite erosion control. A box clearly marked SWMP containing the site map, SWMP, all Stormwater permits must be onsite.

ii. Installation of BMPs.

iii. Existing Utilities moved to a temporary location

iv. Grubbing and clearing of existing gravel.

v. Utility Trenching and installation

vi. Grading of site including construction of the basin in the NE and NW corner of the parcel and all surface conveyances as depicted on the SWMP map.

vii. Revision of temporary BMP's to accommodate final grading.

viii. Final grading of site.

ix. Construction of curb and gutter.

x. Roadway paving.

xi. Existing Utilities moved to new permanent location.

xii. Construction of permanent BMP's.

xiii. Removal of temporary BMP's and final cleaning of permanent BMP's

C) Entire lot is 45.11 acres. The area to be disturbed is 45.11 acres which will be accomplished in 5 distinct phases.

D) According to the Natural Resource Conservation Service (NRCS), the soils across the site consist of Persayo Blackston complex (87), is classified as Hydrologic Type D. The property is outside of the 500-year floodplain per the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM), Mesa County, Colorado Unincorporated Areas, Map Number 08077C0815.

E) The site vegetation consists mainly of rock, bushes and sand. It is estimated that 40% of the existing ground is covered with farm grass and hard dirt. Information obtained from the Mesa County GIS map dated April 25, 2017.

F) Potential Stormwater pollution sources are identified as follows:

1. Sediment from ground disturbances.
2. Vehicle tracking of mud, soil, etc.
3. Liquid and solid waste, workers trash.
4. Concrete washout from trucks.

5. Onsite fueling of equipment.
6. Saw dust.
7. Asphalt and masonry waste.
8. Chemical storage for use in construction activities.

G) There are not any Non-Stormwater components of discharge identified such as irrigation tail water sources onsite.

H) Existing drainage off this site has six (6) discharge points. Drainage basin 1 flows southwest and southeast toward moment road. Drainage basin 2 flows north to northwest towards East Plateau Ct. Drainage basin 3 flows west towards East Plateau Ct. Drainage basin 4 and 6 has the drainage running to the north towards Hidden Valley Drive. The final drainage basin flows northeast towards Hidden Valley Court. The grades of the site range from 10% to 30%. The primary discharge points are at the: southwest corner, southeast, northeast and northeast is where the stormwater is discharged to an existing yards, street drains or storm culverts. The storm water enters these points and will ultimately discharge to the Colorado River.

Proposed drainage off this site consists of overland sheets flows, shallow concentrated flows, swale flows, piped storm sewer and four detention ponds. The detention ponds will release regulated flows for the minor storm and major storm events to a proposed storm system that runs northwest down to an existing storm ditch in Ridges Blvd.

2. Site Map

A) See 11" x 17" Site Map included in Appendix D.

3. Stormwater Management Controls

A) SWMP Administrator

Ben Dowd Excavating is the SWMP Administrator. His contact information is:

550 32 Road
Clifton, CO
Phone: (970) 434-8190
Email: bendowdexc@hotmail.com

In addition, personnel from Vortex Engineering Inc., or Ben Dowd Excavating designated project general contractor, will administer the SWMP and provide, as required, documentation of inspections every 14 days and after each rainfall event causing erosion / runoff.

B) Identification of Potential Pollution Sources

1. **Disturbed and Stored Soils:** All disturbed soil area shall occur within the limits of construction and within perimeter of the silt control (silt fence).

2. **Vehicle Tracking of Sediments:** A Vehicle Tracking Control (VTC aka Stabilized Construction Entrance) pad will be installed at the entrance to the site on the southwest side of the property accessing Mariposa drive on the site map. The VTC pad will be inspected and maintained throughout the duration of the construction activities. Should the VTC fail, the contractor will mitigate any and all damages caused by such failure including but not limited to the following, street sweeping, repairing as necessary and communicate with all site personnel as to cleaning procedures.

3. **Management of Contaminated Soils:** All spills of lubricants or fuel will be covered with sawdust or similar absorbent material which will be removed and disposed of appropriately to a designated facility along with the contaminated soils. Waste materials from construction operations are to be disposed in a dumpster or proper receptacle to prevent dissolving of soluble materials in Stormwater.

4. **Loading and Unloading:** Any loading and unloading activity of materials that have a potential for soil contamination shall be monitored by SWMP administrator or a representative thereof. In case of a spill the contaminated soil shall be disposed appropriately to a designated facility.

5. **Outdoor Storage Activity:** Any material with a potential of spill shall be stored in designated area on the Site Map area, or as changed by the SWMP administrator. The storage area shall be monitored for any leaks of contaminants.

6. **Vehicle and Equipment Maintenance and Fueling:** Fueling and vehicle maintenance may occur in the designated area as shown on the Site Map. Any fluid spills shall be mitigated as discovered as described in (3) above.

7. **Significant Dust or Particulate Generating Processes:** In case of significant dust and particulates pollutants escaping the construction site, the disturbed soils shall be wetted with water. If the wetting option is not possible, the construction activities shall be shut down due to high winds until wetting resumes.

8. **Routine Maintenance Activities:** All routine maintenance activities involving a potential of a spill of pollutants used for such activities shall be monitored for fluid leaks, and any leaks shall be stopped, and the contaminated soil shall be disposed of appropriately.

9. **On-site Waste Management Practices:** All solid waste shall be disposed in designated on Site Map areas. The waste shall be confined to dumpster or roll off containers, disposed of frequently, and covered in the case of high wind events.

10. **Concrete Truck/Equipment Washing:** All concrete washing shall occur in the Concrete Washout Area (CWA) and a sign is to be placed to clearly identify the (CWA). The (CWA) will be cleared of concrete as needed when full and disposed of according to State procedures.

11. **Dedicated Asphalt and Concrete Batch Plants:** No concrete or asphalt batch plant is proposed on the project site. All concrete and asphalt will be prepared in off-site facilities and delivered to the construction site as needed.

12. **Non-Industrial Waste:** Any non industrial waste shall be collected in the solid waste collection area and hauled of the site.

C) Best Management Practices

1. **Structural Practices for Erosion Control:** (Refer to Appendix C, D & E for design and maintenance of structural practices below, unless otherwise noted) During construction, the Structural Best Management Practices (Structural BMP's) are identified as follows:

   a. Vehicle Tracking Pad: Tracking Pad will be installed at the entrance.

   b. Concrete Washout: Provide a concrete washout area with signage - relocate as required.

   c. Inlet Protection: Inlet protection will be placed around each inlet and maintained throughout construction and remain until final stabilization has been achieved.

   d. Straw Bale Barrier: Straw Bale Barriers will be placed and remain until final stabilization has been achieved in all locations as depicted on the SWMP Site Map including the diversion ditch (DV) locations, pipe outlets and the detention pond outlet structure.

   e. Diversion Ditch: Temporary diversion ditches will be constructed as shown on the SWMP Site Map and Site Grading and Drainage Map.

   f. Silt Fence: A Silt Fence will be installed around the boundary of the site.

   g. Complete grading, utility installation, building construction, paving and sidewalks.

2. **Non-Structural Practices for Erosion and Sediment Control:**

   a. Existing Vegetation: Existing vegetation shall be preserved outside of disturbed areas.

   b. Landscaping: Final Landscaping to control erosion and the transport of sediment.

3. **Phased BMP Implementation:**

   a. Information On-Site: Prior to installation of onsite erosion control. A box (mail box) clearly marked SWMP containing the site map, SWMP, all Stormwater permits must be onsite and accessible at all times.

   b. Vehicle Tracking Control: Vehicle tracking control will be needed.

   c. Silt Fence: A Silt Fence will be installed around the boundary of the site.

   d. Straw Bale Barrier: Installed in surface conveyance prior to grubbing and clearing of existing vegetation.

   e. Existing Vegetation: Existing vegetation shall be maintained prior to over lot grading.

   f. Straw Bale Barrier: Over lot grading of site including construction of the basin in the SW corner of the parcel and all surface conveyances as depicted on the SWMP map.

   g. Utility lines installation moved to temporary locations

   h. Inlet protection: Construction of subsurface conveyances including inlets and storm water pipes.

   i. Concrete Wash Out: Relocate as necessary prior to construction of curb and gutter.

   j. Inlet protection: Maintain as necessary prior to roadway paving.

   k. Concrete Wash Out: Clean-out and relocate as necessary prior to Building Foundation & Erection.

   l. Utility lines installation moved to back to new locations

   m. Landscaping: Construction of permanent BMP's.

4. **Material Handling and Spill Prevention:**

   All spills of lubricants or fuel will be covered with sawdust or similar absorbent material which will be removed and disposed of appropriately to a designated facility along with the contaminated soils. Waste materials from construction operations are to be disposed in a dumpster or proper receptacle to prevent dissolving of soluble materials in Stormwater.

5. **Dedicated Concrete or Asphalt Batch Plants:**

   There are no dedicated concrete or asphalt batch plants existing or planned for this site.

6. **Vehicle Tracking Control:**

   Installation of Stabilized Construction Entrance (VTC) pad shall occur at the entrance to the site on the southeast side of the property accessing Mariposa drive as depicted on the site map. The pad shall be maintained in place throughout the use of the site for the proposed stated. Sweeping of Mariposa drive pavement shall be performed as necessary if mud or dirt is tracked on to the pavement from this site during the construction of this project. There are no dedicated wash rack areas existing or planned.

7. **Waste Management and Disposal, Including Concrete Washout:**

   All spills of lubricants or fuel will be covered with sawdust or similar absorbent material which will be removed and disposed of appropriately to a designated facility along with the contaminated soils. Waste materials from construction operations are to be disposed in a dumpster or proper receptacle to prevent dissolving of soluble materials in Stormwater. Portable toilets shall be maintained and cleaned as necessary or as scheduled. No open piles of worker generated trash or waste from operations at the site will be allowed - All trash and debris will be placed into approved onsite dumpster. Concrete washout of all trucks transporting concrete or concrete related debris shall occur in the area designated for concrete washout. Cleaning of the concrete washout shall occur as necessary and all concrete related debris from construction operations are to be disposed in a dumpster or proper receptacle to prevent dissolving of soluble materials in Stormwater.

8. **Ground Water and Stormwater Dewatering:**

   Construction activities on this site will occur above ground water levels. No dewatering of excavated areas is anticipated.

4. Final Stabilization and Long-term Stormwater Management

A & B) Final Stabilization of Disturbed Areas - Final Stabilization Practices

All areas within the site will be stabilized with the building, asphalt paving, concrete or landscaping. All temporary BMP's shall remain in place until the landscaping around the perimeter as required by and designed in the Landscape Plan (Appendix E) for this project.

C) Site Final Stabilization

a. As stated in Section 1, Sub-section E of this document, the existing vegetation information was obtained from the Mesa County GIS map dated October 15, 2013. The existing site vegetation consists mainly of native grasses, weeds. It is estimated that 70% to 80% of the existing ground is covered with vegetation.

b. Final site stabilization shall include:

   1. All ground disturbing activities have been completed.

   2. All structural BMP's installed during construction are left in place, maintained, inspected and repaired throughout the use of the site.

   3. Established, uniform landscaping around the subdivision are maintained as directed on the Landscape Plan and attached to this report as Appendix D: Landscape Plan.

c. Final Stabilization Summary:
   In addition to the previously described established landscaping, all areas within the site will be stabilized with the building, asphalt paving or concrete. These approved, permanent erosion reduction methods maintain at least 70% of pre-disturbance levels. Upon final site stabilization, the Contractor may remove the construction BMP's.

5. Inspection and Maintenance Procedures

A) SWMP Inspection

1. During the construction phase of the project, the SWMP Administrator or designated inspector, shall make periodic inspections of all BMP's in place on a minimum basis of every 14 days or within 24 hours of every major rainfall event causing runoff and or erosion. Inspections shall be conducted by certified personnel designated by Vortex Engineering, Inc., or the SWMP Administrator. The State of Colorado Stormwater Management Permit Inspection Requirements will be adhered to and is included in Appendix A.

2. The pavement on Main Street adjacent to the site shall be maintained free of mud and sediment caused by tracking of any kind from the site. Cleaning methods include sweeping as necessary or ordered by SWMP Administrator and communication with all personnel working on-site. In addition to all of the aforementioned BMP placement and maintenance, the Inspection Requirements and Inspection Scope as described in the State Permit Section I.D.6.a.1 as it applies in whole.

3. A sample (Stormwater Construction Permit Field Inspection Form) is included in (Appendix B) and must be completed as listed, at a minimum. The sample form is intended as a guide and is not inclusive or does it cover all circumstances that may arise. The Administrator shall not be limited by the contents of the sample report and is responsible for adhering to the guidelines of the State Permit.

4. The SWMP Administrator or (Vortex Engineering, Inc. delegate) will be responsible for inspection of the BMPs on the prescribed schedule in (1) above and document all findings. If any BMP exceeds the tolerances as described in (2) above it will be deemed deficient or failed and the SWMP Administrator must notify the owner of all findings and schedule maintenance completion within 24 hours. Upon completion of the required maintenance, the inspector is required to re-inspect the work for compliance and note the date of completion on the inspection report. The State of Colorado Stormwater Management Permit Inspection Requirements described in Sections (I.D.6.a.1) (I.D.6.b.1-2) (I.D.7-8-9) will be adhered to and is included in Appendix A.

6. Limitations/Restrictions

This report is a site-specific investigation and is applicable only for the client for whom our work was performed. Use of this report under other circumstances is not an appropriate application of this document. This report is a product of Vortex Engineering, Incorporated and is to be taken in its entirety. Excerpts from this report when taken out of context may not convey the true intent of the report. It is the owner's and owner's agent's responsibility to read this report and become familiar with recommendations and findings contained herein. Should any discrepancies be found, they must be reported to the preparing engineer within 5 days.

The recommendations and findings outlined in this report are based on: 1) Discussion with the client, 2) the site conditions disclosed at the specific time of the site investigation of reference, 3) various conversations with planners and utility companies, and 4) a general review of the zoning and transportation manuals. Vortex Engineering, Inc. assumes no liability for the accuracy or completeness of information furnished by the client or municipality/agency personnel. Site conditions are subject to external environmental effects and may change over time. Use of this report under different site conditions is inappropriate. If it becomes apparent that current site conditions vary from those reported, the design engineer should be contacted to develop any required report modifications. Vortex Engineering, Inc. is not responsible and accepts no liability for any variation of assumed information.

Vortex Engineering, Inc. represents this report has been prepared within the limits prescribed by the owner and in accordance with the current accepted practice of the civil engineering profession in the area. No warranty or representation either expressed or implied is included or intended in this report or in any of our contracts.

APPENDIX ‘A’

PERMITS (CO CDPHE)

APPENDIX 'B'

STORMWATER CONSTRUCTION PERMIT
FIELD INSPECTION REPORT

APPENDIX ‘C’

DETAILS

APPENDIX ‘D’

STORMWATER MANAGEMENT PLAN

APPENDIX ‘E’

LANDSCAPE PLAN

CITY OF Grand Junction COLORADO

PUBLIC WORKS & PLANNING

Development Application

We, the undersigned, being the owner's of the property adjacent to or situated in the City of Grand Junction, Mesa County, State of Colorado, as described herein do petition this:

Petition For: Subdivision Plat/Plan - Major Final

Please fill in blanks below only for Zone of Annexation, Rezones, and Comprehensive Plan Amendments:

Existing Land Use Designation: Residential Low (.5-2 du/ac)

Existing Zoning: R2 (2 du/ac)

Proposed Land Use Designation: N/A

Proposed Zoning: N/A

Property Information

Site Location: NE of Mariposa Drive, 1/4 mile north of Monument Road

Site Acreage: 45.39

Site Tax No(s): See attached list

Site Zoning: R2

Project Description: Major subdivision for Pinnacle Ridge Subdivision, Filing 1 containing 13 lots, Tracts A&B, Lots 100-103

Property Owner Information

Name: Two R & D, LLC

Street Address: PO Box 39

City/State/Zip: Fruita, CO 81521

Business Phone #: 970-245-9051

E-Mail: rjones@vortexeng.us

Fax #: 970-245-7639

Contact Person: Robert W. Jones, II

Contact Phone #: 970-245-9051

Applicant Information

Name: SAME AS OWNER

Street Address:

City/State/Zip:

Business Phone #:

E-Mail:

Fax #:

Contact Person:

Contact Phone #:

Representative Information

Name: Vortex Engineering, Inc.

Street Address: 2394 Patterson Road

City/State/Zip: Grand Junction, CO

Business Phone #: 970-245-9051

E-Mail: rjones@vortexeng.us

Fax #: 970-245-7639

Contact Person: Robert W. Jones, II

Contact Phone #: 970-245-9051

NOTE: Legal property owner is owner of record on date of submittal.

We hereby acknowledge that we have familiarized ourselves with the rules and regulations with respect to the preparation of this submittal, that the foregoing information is true and complete to the best of our knowledge, and that we assume the responsibility to monitor the status of the application and the review comments. We recognize that we or our representative(s) must be present at all required hearings. In the event that the petitioner is not represented, the item may be dropped from the agenda and an additional fee may be charged to cover rescheduling expenses before it can again be placed on the agenda.

Signature of Person Completing the Application: Robert W. Jones II

Date: 6/7/17

Signature of Legal Property Owner: Robert W. Jones II

Date: 6/7/17

Grand Junction
COLORADO
PUBLIC WORKS & PLANNING

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Existing Zoning: R2 (2 du/ac)
Proposed Land Use Designation: N/A
Proposed Zoning: N/A

Property Information

Site Location: NE of Mariposa Drive, 1/4 mile north of Monument Road
Site Acreage: 45.39
Site Tax No(s): See attached list
Site Zoning: R2
Project Description: Major subdivision for Pinnacle Ridge Subdivision, Filing 1 containing 13 lots, Tracts A&B, Lots 100-103

Property Owner Information

Name: Christopher Walston
Street Address: 14551 Yosemite St.
City/State/Zip: Brighton, CO 80602
Business Phone #: 303-524-5905
E-Mail: cdw1992@yahoo.com
Fax #:
Contact Person: Christopher Walston
Contact Phone #: 303-524-5905

Applicant Information

Name: Two R & D, LLC
Street Address: PO Box 39
City/State/Zip: Fruita, CO 81521
Business Phone #: 970-245-9051
E-Mail: rjones@vortexeng.us
Fax #: 970-245-7639
Contact Person: Robert W. Jones, II
Contact Phone #: 970-245-9051

Representative Information

Name: Vortex Engineering, Inc.
Street Address: 2394 Patterson Road
City/State/Zip: Grand Junction, CO 8
Business Phone #: 970-245-9051
E-Mail: rjones@vortexeng.us
Fax #: 970-245-7639
Contact Person: Robert W. Jones, II
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We hereby acknowledge that we have familiarized ourselves with the rules and regulations with respect to the preparation of this submittal, that the foregoing information is true and complete to the best of our knowledge, and that we assume the responsibility to monitor the status of the application and the review comments. We recognize that we or our representative(s) must be present at all required hearings. In the event that the petitioner is not represented, the item may be dropped from the agenda and an additional fee may be charged to cover rescheduling expenses before it can again be placed on the agenda.

Signature of Person Completing the Application: [signature] Date: 6-6-2017

Signature of Legal Property Owner: [signature] Date: 6-6-2017

EXHIBIT B

IMPROVEMENTS COST ESTIMATE

DATE: June 8, 2017
DEVELOPMENT NAME: **PINNACLE RIDGE FILING 1**
LOCATION: Mariposa Drive, Grand Junction, CO
PERSON PREPARING:

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
A.	**SANITARY SEWER**				
1	8" PVC Sanitary Sewer Main	LF	1,369	$ 20.00	$ 27,380.00
2	10" PVC Sanitary Sewer Main	LF		$ 30.00	$ -
3	____ " PVC Sanitary Sewer Main	LF			$ -
4	Sewer services	EA	17	$ 400.00	$ 6,800.00
5	Sanitary Sewer Manhole	EA	12	$ 2,500.00	$ 30,000.00
6	Sanitary Sewer Drop Manhole	EA	1		$ -
7	Connection to Existing Manhole	EA	1	$ 1,000.00	$ 1,000.00
8	Concrete Encasement	LF		$ 20.00	$ -
	Subtotal Part A Sanitary Sewer				**$ 65,180.00**
B.	**DOMESTIC WATER**				
1	Air Vacuum Release Valve	EA	1		$ -
2	8" PVC Water Main	LF		$ 30.00	$ -
3	10" PVC Water Main	LF	770	$ 35.00	$ 26,950.00
4	_4__ " Gatevalve	EA			$ -
5	8" Gatevalve	EA	2	$ 1,200.00	$ 2,400.00
6	10" Gatevalve	EA	0	$ 1,500.00	$ -
7	Water Services (copper)	EA	13	$ 500.00	$ 6,500.00
8	Connect to Existing Water Line	EA	1	$ 1,500.00	$ 1,500.00
9	Fire Hydrant with Valve	EA	1	$ 2,500.00	$ 2,500.00
10	Utility Adjustments	EA	1		$ -
11	Blowoff	EA	1	$ 500.00	$ 500.00
12	UTE Water Tap Fee	EA			$ -
	Subtotal Part B - Domestic Water				**$ 40,350.00**
C1	**STREETS**				
1	4" PVC Utility sleeves	LF		$ 15.00	$ -
2	8" & 12" PVC irr. Sleeves	LF		$ 20.00	$ -
3	Xcel (Gas & Electric) Services	EA	13		$ -
4	Qwest and Charter Services	EA	13		$ -
5	Aggregate Base Course (Class 6) (_6" Compacted Thickness)	CY		$ 20.00	$ -
6	Aggregate Base Course (Class 6) (12" Compacted Thickness)	CY	1,444	$ 20.00	$ 28,880.00
7	Hot Bituminous Paving, Grading (3" thick)	TON	400	$ 90.00	$ 36,000.00
8	Hot Bituminous Paving, Grading__ (5" thick)	TON	792	$ 90.00	$ 71,280.00
9	Hot Bituminous Paving, Patching (___" Thick)	SY		$ 90.00	$ -
10	Geotextile	SY		$ 2.00	$ -
11	Concrete Curb (__" Wide by __" High)	LF			$ -

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
12	Concrete Curb and Gutter (2' wide)	LF	220		$ -
13	Concrete Curb and Gutter (1.5' wide)	LF			$ -
14	Monolithic, Vertical Curb, Gutter and Sidewalk (7.0' Wide)	LF		$ 20.00	$ -
15	Drive Over Curb, Gutter, and Sidewalk (6.5' Wide)	LF	281	$ 20.00	$ 5,620.00
16	Concrete Sidewalk (6' Wide)	LF	860	$ -	$ -
17	Concrete Gutter and Driveway Section (6" Thick)	SY			
18	Concrete Drainage Pan (6' Wide, 6" Thick)	LF		$ 15.00	$ -
19	Concrete Corner Fillet	EA		$ 2,500.00	$ -
20	Concrete Curb Ramp	SY			$ -
21	8" Comb. Cross pans, Fillets & ADA Ramps	SF	2		$ -
22	Concrete Driveway (_6" Thick)	SY			$ -
23	Driveway/Concrete Repair	SY			$ -
24	Retaining Walls	LF	121		$ -
25	Street Signs	EA	2	$ 400.00	$ 800.00
26	Striping (New, Remove/Replace)	LF			$ -
27	Street Lights	EA			$ -
28	Signal Construction or Reconstruction	LS			$ -
29	Flowable Fill	CY			$ -
30	End of the Road Barrier	EA		$ 1,000.00	$ -
C2	**BRIDGES**				
					$ -
1	Box Culvert Pre-Cast	LS			$ -
2	Box Culvert Cast-in-Place	LS			$ -
3	Wingwalls	LS			$ -
4	Parapet Wall	LS			$ -
5	Railing (handrail, guardrail)	LS			$ -
	Subtotal Part C - Streets and Bridges				**$ 142,580.00**
D1	**EARTHWORK**				
1	Mobilization	LS	1		$ -
2	Clearing and Grubbing	AC		$ 1,000.00	$ -
3	Unclassified Excavation	CY	7,500	$ 2.00	$ 15,000.00
4	Unclassified Embankment	CY	22,042	$ 3.00	$ 66,126.00
5	Import Material	CY	1,452		$ -
D2	**REMOVALS AND RESETTING**				
1	Removal of Asphalt	SY			$ -
2	Removal of Miscellaneous Concrete	SY			$ -
3	Remove Curb and Gutter	LF			$ -
4	Removal of Culverts	LF			$ -
5	Remove Structures	EA			$ -
6	Remove Signs	EA			$ -
7	Remove Fence	LF			$ -
8	Adjust Manhole	EA		$ 250.00	$ -
9	Adjust Valvebox	EA		$ 150.00	$ -
10	Relocate or Adjust Utilities	LS			$ -
11	House & Garage Demo	LS			$ -

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
D3	**EROSION CONTROL, SEEDING, AND SOIL RETENTION**				
1	Sod	SY			$ -
2	Seeding (Native)	AC			$ -
3	Seeding (Bluegrass/Lawn)	SY or AC			$ -
4	Hydraulic Seed and Mulching	SY or AC			$ -
5	Soil Retention Blanket	SY			$ -
6	Silt Fence	LF		$ 2.00	$ -
7	Straw Waddles	LF		$ 3.00	$ -
8	Temporary Berms	LF		$ 2.00	$ -
9	Inlet Protection	EA	1	$ 500.00	$ 500.00
10	Sediment Trap/Basin	EA	1		$ -
11	Monthly Maintenance/Inspection	Month			$ -
12	Watering (Dust Control)	LS	1	$ 2,000.00	$ 2,000.00
13	Temporary Irrigation				$ -
D4	**STORM DRAINAGE FACILITIES**				
1	Finish Grading (incl. Swales, and Ponds)	LS	1	$ 5,000.00	$ 5,000.00
2	18" ADS Storm Drain Pipe	LF		$ 20.00	$ -
3	15" RCP Storm Drain Pipe	LF			$ -
4	18" RCP Storm Drain Pipe	LF	864	$ 40.00	$ 34,560.00
5	24" RCP Storm Drain Pipe	LF		$ 40.00	$ -
6	30" RCP Storm Drain Pipe	LF		$ 50.00	$ -
7	12" ADS Flared End Section	EA		$ 1,000.00	$ -
8	30" Flared End Section	EA		$ 2,000.00	$ -
9	48" Storm Drain Manhole	EA	6	$ 3,000.00	$ 18,000.00
10	60" Storm Drain Manhole	EA		$ 3,500.00	$ -
11	72" Storm Drain Manhole	EA		$ 4,000.00	$ -
12	Manhole with Box Base	EA			$ -
13	Connection to Existing MH	EA			$ -
14	Single Curb Opening Storm Drain Inlet	EA		$ 1,000.00	$ -
15	Double Curb Opening Storm Drain Inlet	EA		$ 2,000.00	$ -
16	Triple Curb Opening Storm Drain Inlet	EA		$ 3,000.00	$ -
17	Area Inlet	EA	1	$ 1,000.00	$ 1,000.00
18	Detention Area Outlet structure	EA	1	$ 5,000.00	$ 5,000.00
19	Sidewalk Trough Drain	EA		$ 500.00	$ -
20	Pump Systems including Electrical	LS		$ 2,000.00	$ -
21	Concrete V-pan (2' wide x 6" thick)	LF		$ 4.00	$ -
22	seep drains	LF		$ -	$ -
	Subtotal Part D - Grading and Drainage				**$ 147,186.00**
E1	**IRRIGATION**				
1	Connect to Existing Pipe	LS			$ -
2	4" PVC Irrigation Pipe	LF		$ 3.00	$ -
3	8" PVC Irrigation Pipe	LF		$ 4.00	$ -
4	Fittings and Valves	LS			$ -
5	Services	EA		$ 10.00	$ -
6	Pump System and Concrete Vault	LS			$ -
7	Irrigation Structure	EA		$ 1,800.00	$ -
8	Vacuum Relief and/or Air Release Valve	EA			
					$ -
E2	**LANDSCAPING**				$ -
1	Design/Architecture	LS			$ -
2	Earthwork	CY	1		$ -
3	Hardscape Features	LS			$ -
4	Plant Material & Planting	LS		$ 6,000.00	$ -
5	Irrigation System	LS			$ -

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
6	Curbing	LF			$ -
7	Retaining Walls & Structures	LF			$ -
8	1 Year Maintenance Agrmnt.	LS			$ -
9	Topsoil	CY			$ -
	Subtotal Part E - Landscaping and Irrigation				**$ -**
	Subtotal Construction Costs				**$ 395,296.00**
F.	**MISCELLANEOUS ITEMS**				
1	Construction staking/surveying	%	2.00%	$ 395,296.00	$ 7,905.92
2	Developer's inspection cost	%		$ 395,296.00	$ -
3	General construction supervsion	%		$ 395,296.00	$ -
4	Quality control testing	%	2.00%	$ 395,296.00	$ 7,905.92
5	Construction traffic control	%	0.00%	$ 395,296.00	$ -
6	City inspection fees	%	0.50%	$ 395,296.00	$ 1,976.48
7	As-builts	%	2.00%	$ 395,296.00	$ 7,905.92
	Subtotal Part F - Miscellaneous Items				**$ 25,694.24**
% = Percentage of total site construction costs					
G.	**COST SUMMARY**				
1	**Total Improvement Costs**				**$ 420,990.24**
2	**City Security (20%)**				**$ 84,198.05**
3	**Total Guarantee Amount**				**$ 505,188.29**

NOTES
1. All prices shall be for items complete in place and accepted.
2. All pipe prices shall include excavation, pipe, bedding, backfill, and compaction.
3. Water main shall include pipe, excavation, bedding, backfill, bends, and appurtenances not itemized elsewhere.
4. All concrete items shall include Aggregate Base Course where required by the drawings.
5. Fill in the pipe type for irrigation pipe and sleeves.
6. Reconditioning shall be calculated to at least 6" outside of back of walk on both sides.
7. Units can be changed if desired, simply annotate what is used.
8. Additional lines or items may be added as needed.

_____
Signature of Developer Date
(If corporation, to be signed by President and attested to by Secretary together with the corporate seals.)

I have reviewed the estimated costs and time schedule shown above and, based on the construction drawings submitted to date and the current cost of construction, I take no exception to the above.

_____
City Development Engineer Date

_____
Community Development Date

Final Drainage Report
For
Pinnacle Ridge Subdivision
Grand Junction, Colorado

Date: June 9, 2017

Prepared by: Vortex Engineering, Inc.
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
970-245-9051
VEI# F13-023

Submitted to: City of Grand Junction
250 N. 5th Street
Grand Junction, CO 81501

Type of Design: Major Subdivision

Owners: Two R & D LLC
Fruita, Co

Property Address: Mariposa Drive
Grand Junction, CO

Tax Schedule No.: 2945-212-00-011

"I hereby certify that this Final Drainage Report for the design Pinnacle Ridge Subdivision was prepared by me (or under my direct supervision) in accordance with the provisions of the Stormwater Management Manual for the owners thereof. I understand that City of Grand Junction does not and will not assume liability for drainage facilities designed by others.



6-9-17

James C. Atkinson P.E. Date

As an authorized signing representative of Pinnacle Ridge Subdivision, I hereby certify that the drainage facilities shall be constructed according to the design presented in this report. I understand that City of Grand Junction does not and will not assume liability for the drainage facilities designed and/or certified by my engineer. I understand that City of Grand Junction reviews drainage plan but cannot, on behalf of Pinnacle Ridge Subdivision, guarantee that Final drainage design review will absolve Pinnacle Ridge Subdivision and/or their successors and/or assigns of future liability for improper design. I further understand that approval of the Construction Plans does not imply approval of my engineer's drainage design.

Signature

6-9-17

Date

Table of Contents

1.0 Introduction....4
A. Background....4
B. Project Location....4
C. Property Description....4
2.0 Drainage System Description....5
A. Existing Drainage Conditions....5
B. Master Drainage Plans....5
C. Offsite Tributary Areas....6
D. Proposed Drainage System Description....6
3.0 Drainage Analysis and Drainage Criteria....7
A. Regulations....7
B. Hydrologic Criteria....7
C. Ponds' Summary Tables....8
D. Hydraulic Criteria....8
4.0 Conclusions....8
A. Compliance with Manual....9
5.0 References....9
Appendix A – Location Map....10
Appendix B – NCRS Soils Map....12
Appendix C – FEMA FIRM Maps....13
Appendix D – Basin Runoff, HGL Calcs....14
Appendix E – HYDROCAD Report....15
Appendix F – SWMM Checklis....16
Appendix G – Major Basins Exhibit....17
Appendix H – Variance Request Letter....18
Appendix I – Drainage Maps....19

1.0 Introduction

A. Background

This Final Drainage Report has been prepared by Vortex Engineering, Inc., and is required as part of the Pinnacle Ridge Major Subdivision submittal. This Final Drainage report has been created in accordance with the Mesa County/Grand Junction Stormwater Management Manual.

B. Project Location

The Pinnacle Ridge Subdivision is approximately 45-acres in size, located in the area known as The Ridges/Redlands in the political boundary of The City of Grand Junction, Colorado. It is located about 1/4 mile directly north of the intersection of Mariposa Drive and Monument Rd. Surrounding Pinnacle Ridge Subdivision are existing residential and open space parcels. Legal description of the site is as follows: Township 1 North, Range 1 East, and in Section 21 of the Ute Meridian. A vicinity map is provided in Appendix A for reference.

C. Property Description

The study area for the development of the subject site consists of about 49.2 acres. The development itself site consists of approximately 45 acres which does not include a 4.12-acre-undeveloped parcel located near the middle of the property. The project site is covered with native vegetation consisting of grasses and sparsely located shrubs. The highest point on the site is the ridge in the southeast corner that reaches a height of 4904. Grades on the site vary from 5 to 30 percent.

The Natural Resources Conservation Service (NRCS) classifies the soils within the Pinnacle Ridge Heights site predominantly as Persayo-Blackstone (Soil Symbol 87). These soils are classified as Hydrologic Group “D” which is described as soils having a slow infiltration rate when thoroughly wet. These soils consist mainly of clays that have a high shrink-swell potential, and a slow rate of water transmission. The NRCS Soils report is included in Appendix B.
No jurisdictional FEMA flood plain has been established on the site. See FEMA panel 08077C0815F in Appendix C

2.0 Drainage System Description

A. Existing Drainage Conditions

The existing topography of the site creates outflow conditions only. No offsite runoff enters the project site. The site is also intersected by a major sub-basin boundary placing the majority of the site, about 43 acres (basins EX2 to EX5) in the Major Basin 51 and about 6 acres (basin EX1) in The No Thoroughfare Canyon Basin. Both of these basins discharge into the Colorado River, located about a mile downstream from the site. There are no existing drainage or irrigation facilities present on the site, other than the natural channels and gulleys. The runoff from all of the 5 existing basins identified on the project site, exits the site in a shallow concentrated flow manner. Basin EX1 discharges out of the site along the southeast corner. Basin EX2 discharges west onto Plateau Ct. The runoff from Basin EX3 exits the site at about Ridgeway Ct along the western property boundary. The runoff from Basin EX4, the largest of the set, exits the site at the north onto a vacant lot that is situated between the following addresses 2417 and 2419 Hidden Valley Drive. From the vacant lot, the runoff enters an existing 24" culvert which routes the water to a drainage way in The Hidden Valley Park. Likewise, Basin EX5 runs off into Hidden Valley Court to the north.

Existing Conditions 3 Hour Runoff

Basin	Basin Area	CN	Tc (min.)	Runoff	
				10 yr	100 yr
EX1	5.96	86	7.9	1.62	4.47
EX2	9.4	86	11.3	1.41	6.74
EX3	9.18	86	8.5	1.42	6.8
EX4	21.3	86	21.8	2.91	13.46
EX5	2.77	86	4.6	0.45	2.22
EX6	0.62	86	5	0.11	0.55

B. Master Drainage Plans

As indicated above, the site is intersected by a major sub-basin boundary which places the majority of the site, about 43 acres in the Major Basin 59 and about 6 acres in the No Thoroughfare Canyon Basin. The proposed development diverts approximately 3.5 acres from the No Thoroughfare Canyon Basin to Basin 59. This area is negligible in comparison to the sizes of the above basins, being about 1 and 19 square miles for Basin 51 and No Thoroughfare Canyon Basin, respectively.

C. Offsite Tributary Areas

There are no offsite tributary basins discharging onto the project site.

D. Proposed Drainage System Description

The proposed storm sewer system for this project consists of overland sheets flows, shallow concentrated flows, gutter flows, ditch flows, piped storm sewer and 4 detention ponds in series of 2 each. The ponds are designed to treat and attenuate the Water Quality Capture Volume (WQCV), the 10 year minor storm and the 100 year major storm.

Pond 1, located in the southwest quarter of the site, shall intercept the runoff from approximately 6.8 acres. After, the water is released through the pond's outlet structure, it flows via a 1.25-foot-deep v-ditch for about 800 feet until it is intercepted by Inlet 200, and along with the surface runoff from Basin 200 it enters Pond 2. In addition to what is intercepted by Inlet 200, Pond 2 receives the surface runoff and concentrated flow delivered by a 24" wide by 6" concrete channel located along the western property boundary, Basin 201. Total tributary basin area for Pond 2 is approximately 15.5 acres. This channel shall collect runoff from the lots located on the west side of Aiguille Drive, thus eliminating the potential of flash flooding onto Plateau Ct, and Ridgeway Ct. After the runoff in Pond 2 is treated and attenuated, the water shall exit the pond via a 18" concrete pipe for about 777 feet until it discharges into the ditch in the median located at the intersection of Ridgeway Court and Ridges Boulevard.

Pond 3 is designed to intercept the surface runoff from basin 300 located in the northwest corner of the property. After the runoff is treated and attenuated in Pond 3, it exits via a 12" RCP to the area Inlet 403 from where it travels in an 18" RCP for about 400 feet until it discharges into the Pond 4. In addition to the above, Pond 4 receives runoff from basins 401 and 402 in a concrete pipe, and surface runoff from 2 lots located directly west of Pond 4, Basin 400. The pond's outlet discharges the water onto the vacant lot located between 2417 and 2419 Hidden Valley Drive. From there the water shall exit the lot in the existing 24" culvert under Hidden Valley Drive into a small natural creek taking it to the Colorado River.

The parcels located along the side of the streets with the roadside ditch will require culverts under the drives. The culverts will be sized for a minor storm for each affected lot and that information will be provided in the final report and on the final construction plans for this subdivision. The major storm flow path will be designed in a greater detail and the proposed finished floor of the houses in the affected area will set at least 1 vertical foot above the 100 year water surface elevation. For the scope

of this Final report attached are normal water surface calculations for the 2 year storm for ditches and channels in critical locations of the site. The lining of the ditches and utilizing hydraulic structures will be applied and detailed in the final plans, where warranted. It is intended to keep the velocities between scouring and eroding limits. Also, the use of check dams and other hydraulic structures will be utilized and detailed.

The proposed grading on the site is designed to eliminate cross lot drainage and to maintain positive runoff out of the site. There are 2 minor basins, DD1 and DD2 whose runoff directly discharges onto the offsite. The areas of basins DD1 and DD2 are 1.93 acres and 0.39 acres, respectively. The runoff from these basins shall present no potential for adverse effects downstream of the site for the Basin DD1 shall remain mostly undisturbed, and Basin DD2 shall have its surface finished with a permanent erosion control and diversion ditches routing the runoff onto the vacant lot at the Pond 4 outfall. No impervious area shall be introduced within the boundary of these basins. **The runoff flows from basins DD1 and DD2 in the proposed conditions in minor storm yield 0.32 and 0.06 cfs, respectively. Whereas the minor storm runoff from basins EX1 and EX6 yield 1.62 and 0.11 cfs, respectively. The decrease in runoff from existing to proposed conditions from DD1 and DD2 is caused by decreasing of the area of the basins in proposed conditions. The runoff from basins DD1 and DD2 is compensated in volumes and discharge rates in ponds 1 and 4, respectively. Nevertheless, the size of either of the basins does not comply with the regulation 1407.3 of the SWMM. Therefore, a variance from compliance with the section 1407.3 of SWMM is hereby requested for Basins DD1 and DD2. A copy of the variance request letter is found in Appendix H of this report.**

3.0 Drainage Analysis and Drainage Criteria

A. Regulations

The supporting drainage design and calculations were performed in accordance with the Mesa County/City of Grand Junction Stormwater Management Manual (SWMM) and the UDFCD “Urban Storm Drainage Criteria Manual, Volume 1.
Variance requests are listed in Section 2.0 D and 4.0 A of this report.

B. Hydrologic Criteria

The hydrologic and hydraulic analysis proposed is to use procedures per the Mesa County Stormwater Management Manual (SWMM) guidelines, dated December 2007.

A Computer Aided Design program (HydroCAD) was used for modeling the hydrology and hydraulics of stormwater runoff. HydroCAD is based largely on hydrology techniques developed by the Soil Conservation Service (now the Natural Resources Conservation Service), combined with other hydrology and hydraulic calculations. The storm selected for analysis is the Mesa County 3 hour storm recommended by the SWMM.

C. Pond Summary Tables

Pond	Pond to be Built in Filing:	Pond Contributing Area (ac)	CN	Storm Events	Volume (cf)	WSEL (ft)	Design Peak Discharge (cfs)	SUM OF DD1 AND POND 1 PEAK FLOWS (CFS)	Allowable Peak Discharge (cfs)
POND 1	6	6.87	89	WQCV	3,296	4801.50	NA	NA	NA
				10 YEAR	6,082	4802.31	0.26	0.58	0.59
				100 YEAR	13,335	4804.31	0.48	2.09	2.47
POND 2	1	15.58	89	WQCV	7,575	4847.71	NA	NA	NA
				10 YEAR	13,992	4748.32	0.52		1.87
				100 YEAR	31,059	4749.95	4.21		7.79
POND 3	3	1.56	88	WQCV	720	4752.64	NA	SUM OF DD2 AND POND 4 PEAK FLOWS (CFS)	NA
				10 YEAR	820	4752.88	0.17		0.19
				100 YEAR	2,077	4754.06	0.55		0.78
POND 4	4	22.94	89	WQCV	11,098	4742.19	NA	NA	NA
				10 YEAR	14,737	4742.73	1.91	1.96	2.71
				100 YEAR	33,969	4745.13	10.21	10.40	11.28

D. Hydraulic Criteria

Storm Drains

Storm Drains are designed to have the 2 year HGL below pipes' crowns.

Street Flow and Inlet Capacities

The SWMM criteria were used to check for street flow capacity and inlet capacities. Details shall be provided in the Final Drainage Report.

4.0 Conclusions

This report discusses the information requirements for a Final Drainage Report and Plan as defined by the Grand Valley "Stormwater Management Manual", Section 300.

The proposed development of the Pinnacle Ridge property will effectively convey runoff from the site per the SWMM best recommendations.

The proposed drainage facilities are designed to accept the 100-year runoff and continue the conveyance to the ultimate discharge in the Colorado River. Erosion control BMP's will be implemented during construction in an effort to prevent adverse impacts on downstream properties and drainage facilities. The proposed development will not adversely affect the surrounding properties or existing storm drainage systems.

A. Compliance with Manual

This report discusses the information requirements for a Final Drainage Report and Plan per the Mesa County/City of Grand Junction Stormwater Management Manual. The proposed drainage facilities are designed to collect and detain the 10-year and 100-year event runoff rates from the site along with offsite contributory flows and release at/or below the allowed rates. The proposed development will not adversely affect the surrounding properties or existing drainage systems.

The following variance is hereby requested for this project:

A variance from compliance with the section 1407.3 of SWMM is hereby requested for Basins DD1 and DD2, as described in section 2.0 D of this report.

5.0 References

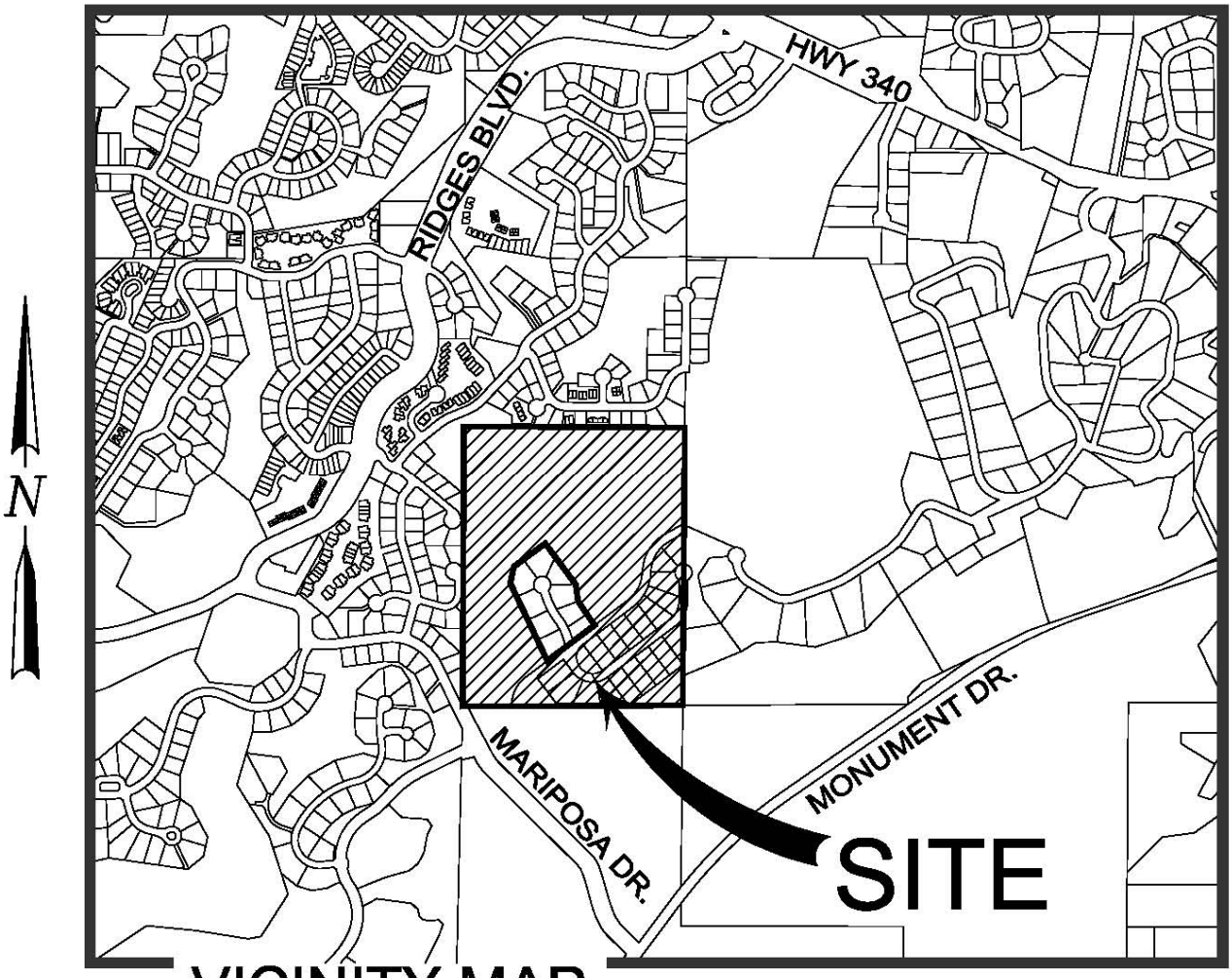
Mesa County/City of Grand Junction Stormwater Management Manual, adopted March 20, 2008.

"Soil Survey of Mesa County Area, Colorado", prepared by United States Department of Agriculture, Soil Conservation Service, issued September 1993.

"Urban Storm Drainage Criteria Manual, Volume 1", prepared by the Urban Drainage and Flood Control District, effective September 1999.

Federal Emergency Management Agency, Flood Insurance Rate Map, Mesa County, Colorado unincorporated Areas, Map No. 08077C0815F.

Appendix A – Location Map



VICINITY MAP

Appendix B – NCRS Soils Map

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Mesa County Area, Colorado



March 19, 2015

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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Contents

Preface.....2
Soil Map.....5
Soil Map.....6
Legend.....7
Map Unit Legend.....8
Map Unit Descriptions.....8
Mesa County Area, Colorado.....10
87—Persayo-Blackston complex, 6 to 45 percent slopes.....10
127—Rock outcrop-Persayo-Hostage complex, 25 to 99 percent slopes, extremely stony.....11

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:3,240 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 45 90 180 270

Feet
0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mesa County Area, Colorado
Survey Area Data: Version 5, Sep 22, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 22, 2010—Sep 2, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Mesa County Area, Colorado (CO680)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
87	Persayo-Blackston complex, 6 to 45 percent slopes	49.7	99.7%
127	Rock outcrop-Persayo-Hostage complex, 25 to 99 percent slopes, extremely stony	0.1	0.3%
Totals for Area of Interest		**49.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If

intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Mesa County Area, Colorado

87—Persayo-Blackston complex, 6 to 45 percent slopes

Map Unit Setting

National map unit symbol: k0bh
Elevation: 4,500 to 6,000 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 100 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

Persayo and similar soils: 65 percent
Blackston and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Persayo

Setting

Landform: Mesas
Landform position (two-dimensional): Backslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Residuum weathered from clayey shale

Typical profile

A - 0 to 4 inches: silty clay loam
C - 4 to 15 inches: silty clay loam
Cr - 15 to 19 inches: weathered bedrock

Properties and qualities

Slope: 6 to 45 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Silty saltdesert (R034XY410CO)

Description of Blackston

Setting

Landform: Mesas
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from sandstone and shale and/or outwash derived from sandstone and shale

Typical profile

A - 0 to 3 inches: very gravelly sandy clay loam
Bk1 - 3 to 7 inches: gravelly clay loam
Bk2 - 7 to 15 inches: very gravelly sandy clay loam
2Bk3 - 15 to 35 inches: extremely gravelly sandy loam
2C - 35 to 60 inches: extremely gravelly sand

Properties and qualities

Slope: 6 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Loamy saltdesert (R034XY401CO)

127—Rock outcrop-Persayo-Hostage complex, 25 to 99 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: k07k
Elevation: 4,700 to 5,400 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 150 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Rock outcrop: 35 percent

Persayo and similar soils: 30 percent
Hostage and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rock Outcrop

Setting
Landform: Ledges, cliffs

Typical profile
H1 - 0 to 60 inches: unweathered bedrock

Properties and qualities
Slope: 50 to 99 percent
Depth to restrictive feature: 0 to 4 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.00 in/hr)
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8

Description of Persayo

Setting
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Residuum weathered from clayey shale

Typical profile
A - 0 to 2 inches: very parachannery clay loam
C - 2 to 11 inches: very parachannery silty clay loam
Cr - 11 to 15 inches: weathered bedrock

Properties and qualities
Slope: 25 to 65 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Saltdesert breaks (R034XY406CO)

Description of Hostage

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium derived from sandstone and shale over residuum weathered from clayey shale

Typical profile

A - 0 to 4 inches: clay loam
B - 4 to 25 inches: clay loam
C1 - 25 to 50 inches: silty clay loam
C2 - 50 to 55 inches: silty clay loam
Cr - 55 to 59 inches: weathered bedrock

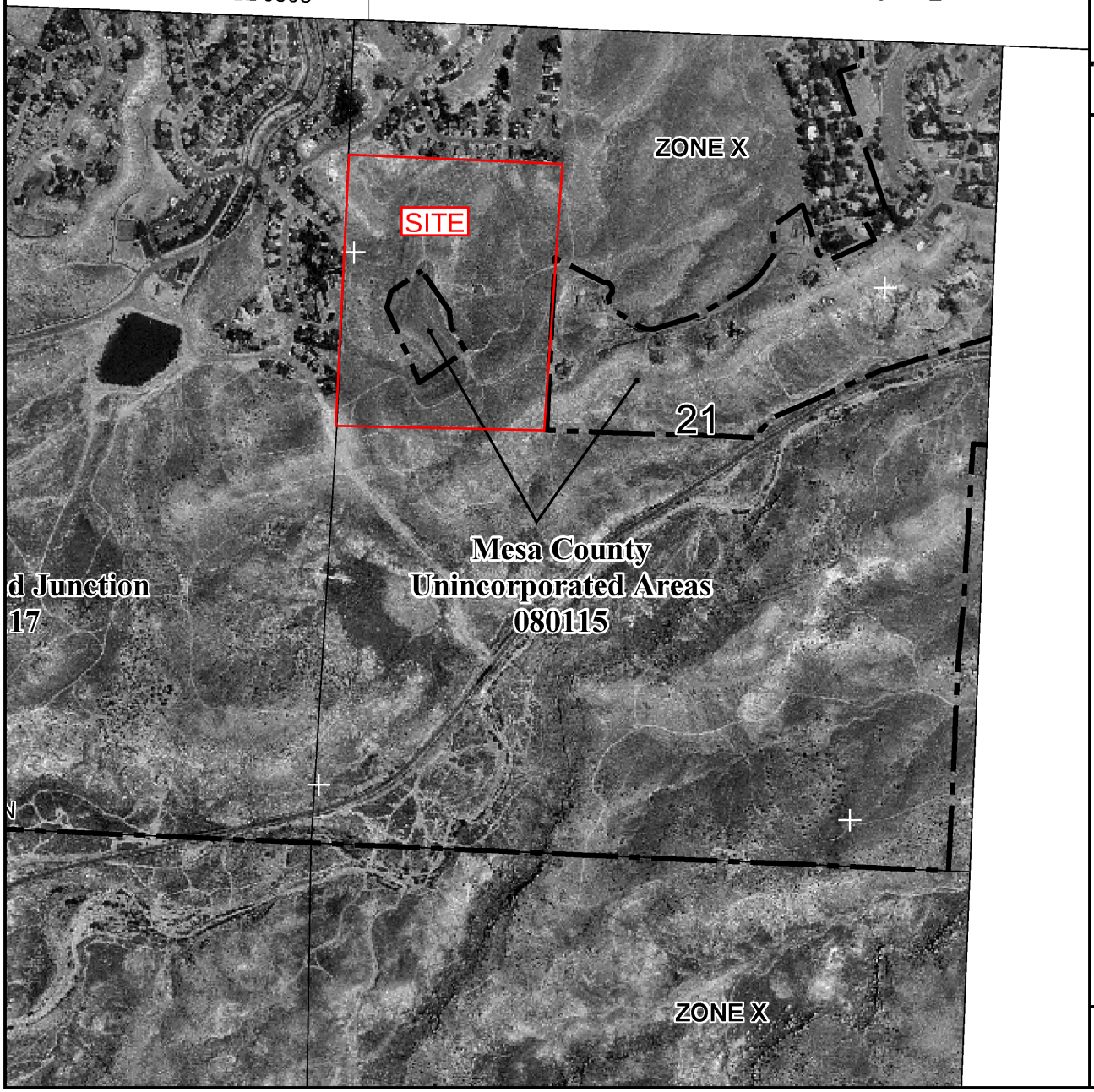
Properties and qualities

Slope: 25 to 50 percent
Percent of area covered with surface fragments: 10.0 percent
Depth to restrictive feature: 39 to 59 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Saltdesert breaks (R034XY406CO)

Appendix C – FEMA FIRM Maps



MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0815F

FIRM

FLOOD INSURANCE RATE MAP
MESA COUNTY, COLORADO
AND INCORPORATED AREAS

PANEL 815 OF 1725

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
GRAND JUNCTION, CITY OF	080117	0815	F
MESA COUNTY	080115	0815	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
08077C0815F

EFFECTIVE DATE
JULY 6, 2010

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Appendix D – Basin Runoff, HGL Calcs

Pinnacle Estates
Existing Basins

Vortex Engineering, Inc.
December 15, 2015

Basin	Basin Area	CN	Tc (min.)	Runoff	
				10 yr	100 yr
EX1	5.96	86	7.9	1.62	4.47
EX2	9.4	86	11.3	1.41	6.74
EX3	9.18	86	8.5	1.42	6.8
EX4	21.3	86	21.8	2.91	13.46
EX5	2.77	86	4.6	0.45	2.22
EX6	0.62	86	5	0.11	0.55

Pinnacle Ridge **Vortex Engineering, Inc.**

Drainage Area C calculations - 2yr and 100yr Events **June 9, 2017**

BASIN	TOTAL AREA (ft^2)	BASIN AREA (ac)	LOT/PERV. AREA (ft^2)	LOT AREA $C_{2\ year}$	LOT AREA C $_{100\text{-}year}$	STREET IMP. AREA (ft^2)	IMPREVIOUS AREA (ac)	STREET AREA $C_{2\ year}$	STREET AREA $C_{100\ year}$	2 yr WEIGHTED C VALUE	100 yr WEIGHTED C VALUE
100	164,742	3.78	162,042	0.29	0.40	2,700	0.06	0.89	0.96	0.30	0.41
101	53,987	1.24	42,611	0.29	0.40	11,376	0.26	0.89	0.96	0.42	0.52
102	80,428	1.85	67,828	0.29	0.40	12,600	0.29	0.89	0.96	0.38	0.49
200	467,961	10.74	395,061	0.29	0.40	72,900	1.67	0.89	0.96	0.38	0.49
201	210,613	4.84	210,613	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
300	67,941	1.56	67,941	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
400	34,503	0.79	34,503	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
401	312,940	7.18	256,240	0.29	0.40	56,700	1.30	0.89	0.96	0.40	0.50
402	178,940	4.11	178,940	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
403	25,850	0.59	25,850	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
404	95,303	2.19	83,753	0.29	0.40	11,550	0.27	0.89	0.96	0.36	0.47
405	165,832	3.81	154,232	0.29	0.40	11,600	0.27	0.89	0.96	0.33	0.44
406	187,532	4.31	187,532	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
DD1	83,873	1.93	83,873	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
DD2	16,796	0.39	16,796	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
Total On-Site Area =		49.29	45.17				4.12				

Description	Basin area (ac)	Impreviousness (%)
Lots	45.17	50.0%
Streets and Sidewalks	4.12	98.0%
Total Area/Impreviousne	49.29	54%

Pinnacle Ridge **Vortex Engineering, Inc.**
Curve Number Calculations **February 10, 2014**

Pond 1

Assumptions:		Impreviousness
4000 sf homes		
1.75 du/acre density	**From Figure 703 Mesa County**	**SWMM**
Streets Area (ac)	0.61	98%
Lot area (ac)	6.26	44%
Total Basin Area (ac)	6.87	
Impreviousness=	49%	

CN = 98*Imp+X*(1-Imp) Where: X=80 (D Type Soils)

CN= 88.79 **use 89**

Pond 2

Assumptions:		Impreviousness
4000 sf homes		
1.75 du/acre density	**From Figure 703 Mesa County**	**SWMM**
Streets Area (ac)	1.67	98%
Lot area (ac)	13.90	44%
Total Basin Area (ac)	15.58	
Impreviousness=	50%	

CN = 98*Imp+X*(1-Imp) Where: X=80 (D Type Soils)

CN= 88.96 **use 89**

Pond 3

Assumptions:		Impreviousness
4000 sf homes		
1.75 du/acre density	**From Figure 703 Mesa County**	**SWMM**
Streets Area (ac)	0.00	98%
Lot area (ac)	1.56	44%
Total Basin Area (ac)	1.56	
Impreviousness=	44%	

CN = 98*Imp+X*(1-Imp) Where: X=80 (D Type Soils)

CN= 87.92 **use 88**

Pond 4

Assumptions:		Impreviousness
4000 sf homes		
1.75 du/acre density	**From Figure 703 Mesa County**	**SWMM**
Streets Area (ac)	2.31	98%
Lot area (ac)	20.63	44%
Total Basin Area (ac)	22.94	
Impreviousness=	49%	

CN = 98*Imp+X*(1-Imp) Where: X=80 (D Type Soils)

CN= 88.90 **use 89**

Pinnacle Ridge | **Vortex Engineering, Inc.**
Detention Pond's | **February 10, 2014**
WQCV and Detention Volume Calculations | Rev. June 26, 2015
POND 1 | December 16, 2015

Elevation [ft.]	Area [ft²]	Stage Volume [cf]	Change in Elevation [ft]	Cumulative Volume [cf]	Cumulative Volume [acre-ft]
4799.00	0	0.00	0.0	0.0	0.000
4800.00	856	285.33	1.0	285.3	0.007
4802.00	3447	4013.83	2.0	4299.2	0.099
4804.00	5204	8590.90	2.0	12890.1	0.296
4806.00	7321	12464.93	2.0	25355.0	0.582
4808.00	9798	17058.95	2.0	42413.9	0.974

$WQCV=K(a(0.91*I^3-1.19*I^2+0.78*I))$

Where:

K = adjustment to equation for Mesa County = $d_6/0.43$) = 0.65

a = Adjustment for BMP's drain Time (for 40hrs a=1.0) = 1.00

I = watershed Impreviousness in decimal = 0.49

d_6 = Depth of average producing storm d_6 = 0.28

Watershed area (100+101+102) = 6.87

WQCV= 0.132 in

		WSEL (ft)	Pond Design Peak Discharge** (cfs)	Basin DD1 Design Peak Discharge ** (cfs)	Sum of Direct Discharge and Pond Design Discharge (cfs)	Adjusted Allowable Peak Discharge*** (cfs)
Req'd storage WQCV =	3,296 cf	4,801.50*	N/A	N/A	N/A	N/A
10 yr Runoff + WQCV =	6,082 cf	4802.31**	0.26	0.32	0.58	0.59
100 yr Runoff + WQCV =	15,335 cf	4804.31**	0.48	1.61	2.09	2.47

Pond 1 is designed to compensate for direct dicharge from Basin DD1 (SWMM Sec. 1407.3)
Allowable Discharge:

DD1 Q_{10} = 0.23 cfs

DD1 Q_{100}** = 0.96 cfs

* Water surface elevation thru linear interpolation

** By hydrograph routing

*** Mesa Co. SWMM Table 1402.

Pinnacle Ridge
Detention Pond 1
WQ Orifice Plate

Vortex Engineering, Inc.
June 2, 2017

WQCV Orifice Plate Area

Per UDFCD Volume 2, SO-13a, pg SO-12

$$A_o = \frac{88V^{(0.95/H^{0.085})}}{T_D S^{0.09} H^{(2.6S0.8)}}$$

A_o= area per row of orifice spaced on 4" centers (in^2)
V= design volume (WQCV, ac-ft)
T_D= Time to drain the prescribed volume (hrs)
H= Depth of Volume (ft)
S= slope (ft/ft)

V= 0.07567 ac-ft
T_D= 40 hrs
H= 2.50
S= 0.02
A_o= 0.3116
# of columns= 1
area per hole in a row (in^2)= 0.3116
hole diameter (in)= 0.6298

USE 5/8" DIA. HOLES

Pinnacle Ridge **Vortex Engineering, Inc.**
Detention Pond's **May 31, 2017**
WQCV and Detention Volume Calculations
POND 2

Elevation [ft.]	Area [ft²]	Stage Volume [cf]	Change in Elevation [ft]	Cumulative Volume [cf]	Cumulative Volume [acre-ft]
4746.06	0	0.00	0.0	0.0	0.000
4747.00	6765	2119.70	0.9	2119.7	0.049
4748.00	8746	7734.33	1.0	9854.0	0.226
4749.00	10334	9528.97	1.0	19383.0	0.445
4750.00	11994	11153.70	1.0	30536.7	0.701
4751.00	13830	12901.11	1.0	43437.8	0.997
4752.00	15490	14652.16	1.0	58090.0	1.334

$WQCV=K(a(0.91*I^3-1.19*I^2+0.78*I))$

Where:

K = adjustment to equation for Mesa County = $d_6/0.43$)= 0.65
a = Adjustment for BMP's drain Time (for 40hrs a=1.0)= 1.00
I = watershed Impreviousness in decimal = 0.50
d_6 = Depth of average producing storm d_6= 0.28
Watershed area = 15.58

WQCV= 0.134 in

		WSEL (ft)	Design Peak Discharge** (cfs)	Allowable Discharge*** (cfs)
Req'd storage WQCV =	7,575 cf	4,747.71*	N/A	N/A
10 yr Runoff + WQCV =	13,992 cf	4748.32**	0.52	1.87
100 yr Runoff + WQCV =	31,059 cf	4749.95**	4.21	7.79

* Water surface elevation thru linear interpolation
** Water Surface by hydrograph routing
*** Mesa Co. SWMM Table 1402

Pinnacle Ridge
Detention Pond 2
WQ Orifice Plate

Vortex Engineering, Inc.
June 2, 2017

WQCV Orifice Plate Area

Per UDFCD Volume 2, SO-13a, pg SO-12

$$A_o = \frac{88V^{(0.95/H^{0.085})}}{T_D S^{0.09} H^{(2.6S0.8)}}$$

A_o= area per row of orifice spaced on 4" centers (in^2)
V= design volume (WQCV, ac-ft)
T_D= Time to drain the prescribed volume (hrs)
H= Depth of Volume (ft)
S= slope (ft/ft)

V= 0.17389 ac-ft
T_D= 40 hrs
H= 1.65
S= 0.02
A_o= 0.6230
# of columns= 1
area per hole in a row (in^2)= 0.6230
hole diameter (in)= 0.8906

USE 7/8" DIA. HOLES

Pinnacle Ridge | **Vortex Engineering, Inc.**
Detention Pond's | **February 10, 2014**
WQCV and Detention Volume Calculations | Rev. June 26, 2015
POND 3 | December 16, 2015

Elevation [ft.]	Area [ft²]	Stage Volume [cf]	Change in Elevation [ft]	Cumulative Volume [cf]	Cumulative Volume [acre-ft]
4751.00	0	0.00	0.0	0.0	0.000
4752.00	483	161.00	1.0	161.0	0.004
4754.00	1277	1696.91	2.0	1857.9	0.043
4756.00	2080	3324.52	2.0	5182.4	0.119

$WQCV=K(a(0.91*I^3-1.19*I^2+0.78*I))$

Where:

K = adjustment to equation for Mesa County = $d_6/0.43$)= 0.65
a = Adjustment for BMP's drain Time (for 40hrs a=1.0)= 1.00
I = watershed Impreviousness in decimal = 0.44
d_6 = Depth of average producing storm d_6= 0.28
Watershed area = 1.56

WQCV= 0.124 in

		WSEL (ft)	Design Peak Discharge** (cfs)	Allowable Discharge*** (cfs)
Req'd storage WQCV =	702 cf	4,752.64*	N/A	N/A
10 yr Runoff + WQCV =	820 cf	4752.88**	0.17	0.19
100 yr Runoff + WQCV =	2,077 cf	4754.06**	0.55	0.78

* Water surface elevation thru linear interpolation
** By hydrograph routing
*** Mesa Co. SWMM Table 1402

Pinnacle Ridge
Detention Pond 3
WQ Orifice Plate

Vortex Engineering, Inc.
June 2, 2017

WQCV Orifice Plate Area

Per UDFCD Volume 2, SO-13a, pg SO-12

$$A_o = \frac{88V^{(0.95/H^{0.085})}}{T_D S^{0.09} H^{(2.6S0.8)}}$$

A_o= area per row of orifice spaced on 4" centers (in^2)
V= design volume (WQCV, ac-ft)
T_D= Time to drain the prescribed volume (hrs)
H= Depth of Volume (ft)
S= slope (ft/ft)

V= 0.01611 ac-ft
T_D= 40 hrs
H= 1.64
S= 0.02
A_o= 0.0713
# of columns= 1
area per hole in a row (in^2)= 0.0713
hole diameter (in)= 0.3013

USE 5/16" DIA. HOLES

Pinnacle Ridge | **Vortex Engineering, Inc.**
Detention Pond's | **February 10, 2014**
WQCV and Detention Volume Calculations | Rev. June 26, 2015
POND 4 | December 16, 2015

Elevation [ft.]	Area [ft²]	Stage Volume [cf]	Change in Elevation [ft]	Cumulative Volume [cf]	Cumulative Volume [acre-ft]
4739.00	0	0.00	0.0	0.0	0.000
4740.00	3373	1124.33	1.0	1124.3	0.026
4742.00	5394	8688.29	2.0	9812.6	0.225
4744.00	8104	13406.39	2.0	23219.0	0.533
4746.00	10902	18936.97	2.0	42156.0	0.968

$WQCV=K(a(0.91*I^3-1.19*I^2+0.78*I))$

Where:

K = adjustment to equation for Mesa County = $d_6/0.43$)= 0.65
a = Adjustment for BMP's drain Time (for 40hrs a=1.0)= 1.00
I = watershed Impreviousness in decimal = 0.49
d_6 = Depth of average producing storm d_6= 0.28
Watershed area (400 thru 403) = 22.94

WQCV= 0.133 in

		WSEL (ft)	Design Peak Discharge** (cfs)	Basin DD2 Design Peak Discharge (cfs)	Sum of Direct Discharge and Pond Design Discharge (cfs)	Adjusted Allowable Peak Discharge*** (cfs)
Req'd storage WQCV =	11,098 cf	4,742.19*	N/A	N/A	N/A	N/A
10 yr Runoff + WQCV =	14,737 cf	4742.73**	1.91	0.05	1.96	2.71
100 yr Runoff + WQCV =	36,969 cf	4745.13**	10.21	0.19	10.40	11.28

Pond 1 is designed to compensate for direct dicharge from Basin DD1 (SWMM Sec. 1407.3)
Allowable Discharge:

DD2 Q_{10}= 0.05 cfs
DD2 Q_{100}= 0.19 cfs

* Water surface elevation thru linear interpolation
** By hydrograph routing
*** Mesa Co. SWMM Table 1402.

Pinnacle Ridge
Detention Pond 4
WQ Orifice Plate

Vortex Engineering, Inc.
June 2, 2017

WQCV Orifice Plate Area

Per UDFCD Volume 2, SO-13a, pg SO-12

$$A_o = \frac{88V^{(0.95/H^{0.085})}}{T_D S^{0.09} H^{(2.6S0.8)}}$$

A_o= area per row of orifice spaced on 4" centers (in^2)
V= design volume (WQCV, ac-ft)
T_D= Time to drain the prescribed volume (hrs)
H= Depth of Volume (ft)
S= slope (ft/ft)

V= 0.14103 ac-ft
T_D= 40 hrs
H= 2.45
S= 0.02
A_o= 0.5374
# of columns= 1
area per hole in a row (in^2)= 0.5374
hole diameter (in)= 0.8272

USE 13/16" DIA. HOLES

Pinnacle Ridge
Basin Runoff Calculation

Vortex Engineering, Inc.
June 9, 2017

DRAINAGE AREA	INLET #	Area (ac)	'C_2' Weighted	'C_{100}' Weighted	T_c (min)	2-Yr. Storm Intensity (in/hr)	100-Yr. Storm Intensity (in/hr)	2-Yr. Q (cfs) Basin Runoff	100-Yr. Q (cfs) Basin Runoff	Inlet Type for Minor Storm
100	POND 1	3.78	0.30	0.41	5	1.2	4.68	1.36	7.24	
101	101	1.85	0.38	0.49	5	1.2	4.68	0.85	4.21	
102	102	1.24	0.42	0.52	5	1.2	4.68	0.62	3.00	
200	200	10.74	0.38	0.49	5	1.2	4.68	4.94	24.50	
201	POND 2	4.84	0.29	0.40	5	1.2	4.68	1.68	9.05	
300	POND 3	1.56	0.29	0.40	5	1.2	4.68	0.54	2.92	
400	POND 4	0.79	0.29	0.40	5	1.2	4.68	0.28	1.48	
401	401	7.18	0.40	0.50	5	1.2	4.68	3.44	16.86	
402	402	4.11	0.29	0.40	5	1.2	4.68	1.43	7.69	
403	403	0.59	0.29	0.40	5	1.2	4.68	0.21	1.11	
404	404	2.19	0.36	0.47	5	1.2	4.68	0.95	4.79	
405	405	3.81	0.33	0.44	5	1.2	4.68	1.52	7.82	
406	406	4.31	0.29	0.40	5	1.2	4.68	1.50	8.06	
DD1	offsite	1.93	0.29	0.40	5	1.2	4.68	0.67	3.60	
DD2	offsite	0.39	0.29	0.40	5	1.2	4.68	0.13	0.72	

Total on site basins = 36.68

Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Monday, Jun 5 2017

FILING 1 CONCRETE CHANNEL - FLAT - 2yr storm

Gutter

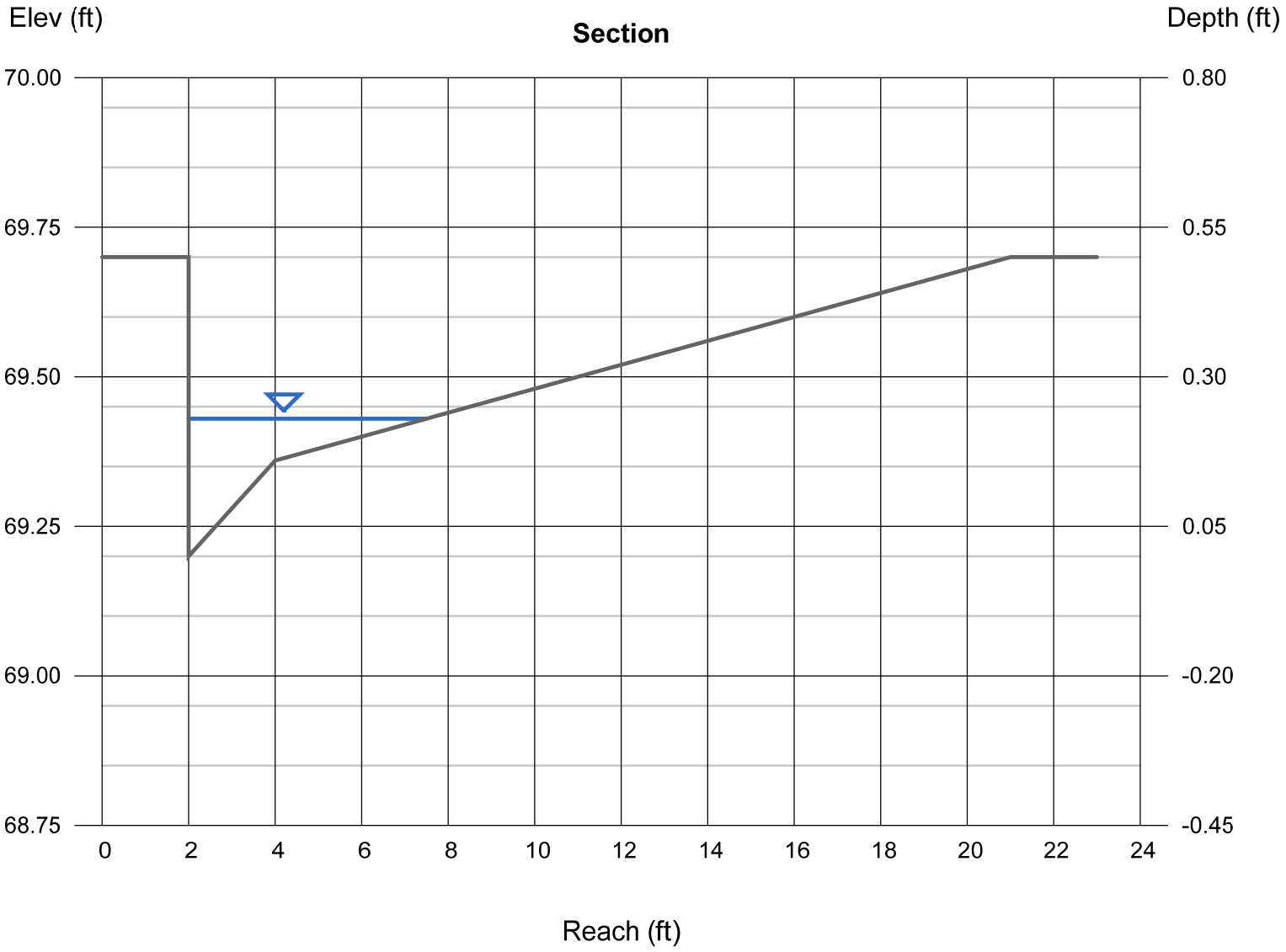
Cross Sl, Sx (ft/ft)	= 0.02
Cross Sl, Sw (ft/ft)	= 0.08
Gutter Width (ft)	= 2.00
Invert Elev (ft)	= 69.20
Slope (%)	= 6.71
N-Value	= 0.013

Calculations

Compute by:	Known Q
Known Q (cfs)	= 2.00

Highlighted

Depth (ft)	= 0.23
Q (cfs)	= 2.000
Area (sqft)	= 0.42
Velocity (ft/s)	= 4.73
Wetted Perim (ft)	= 5.74
Crit Depth, Yc (ft)	= 0.32
Spread Width (ft)	= 5.50
EGL (ft)	= 0.58



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Monday, Jun 5 2017

FILING 1 CONCRETE CHANNEL - FLAT - 2yr storm

Gutter

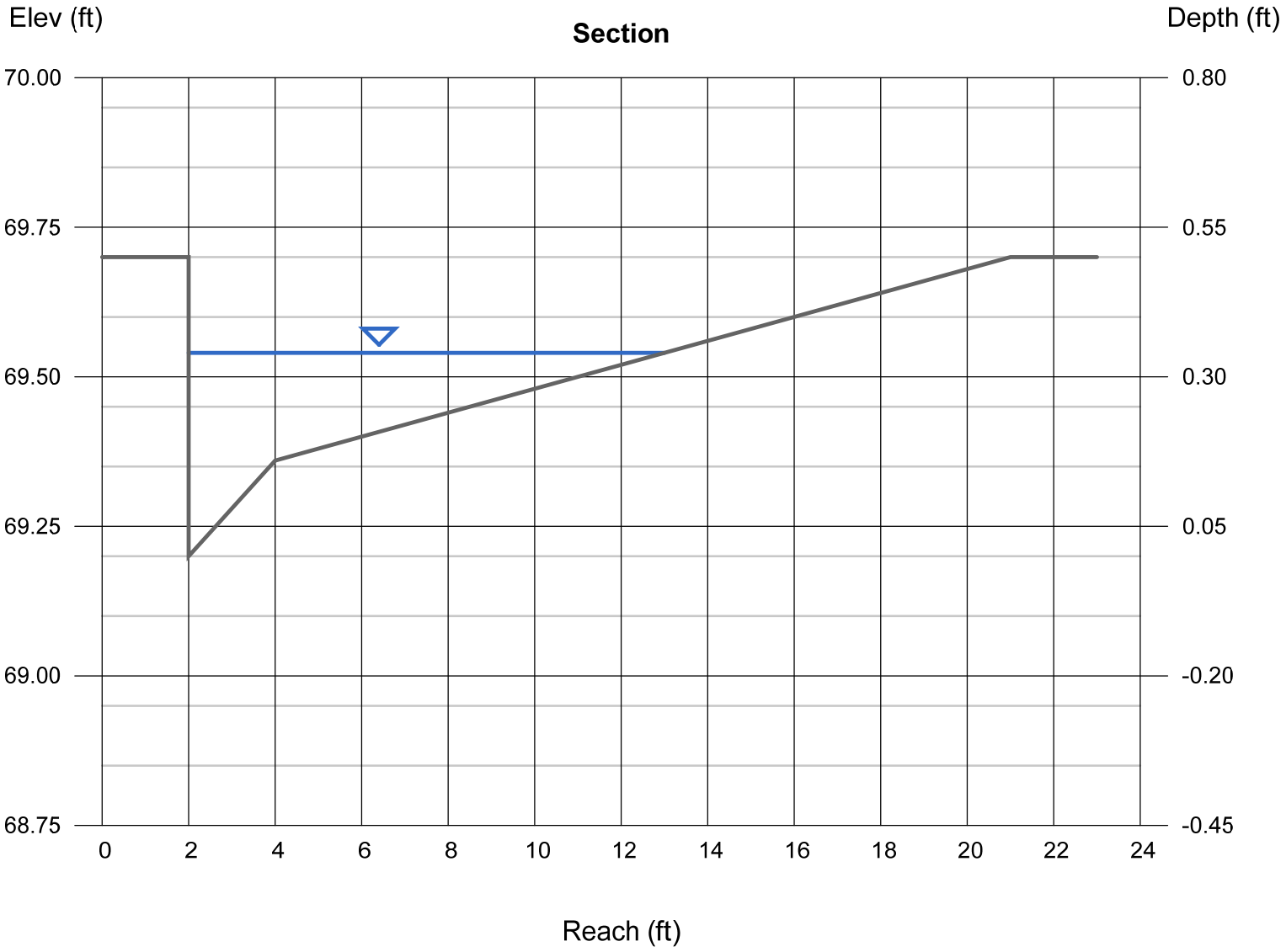
Cross Sl, Sx (ft/ft)	= 0.02
Cross Sl, Sw (ft/ft)	= 0.08
Gutter Width (ft)	= 2.00
Invert Elev (ft)	= 69.20
Slope (%)	= 6.71
N-Value	= 0.013

Calculations

Compute by:	Known Q
Known Q (cfs)	= 9.05

Highlighted

Depth (ft)	= 0.34
Q (cfs)	= 9.050
Area (sqft)	= 1.33
Velocity (ft/s)	= 6.80
Wetted Perim (ft)	= 11.35
Crit Depth, Yc (ft)	= 0.50
Spread Width (ft)	= 11.00
EGL (ft)	= 1.06



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Wednesday, Jun 7 2017

FILING 1 CONCRETE CHANNEL - FLAT - 2yr storm

Gutter

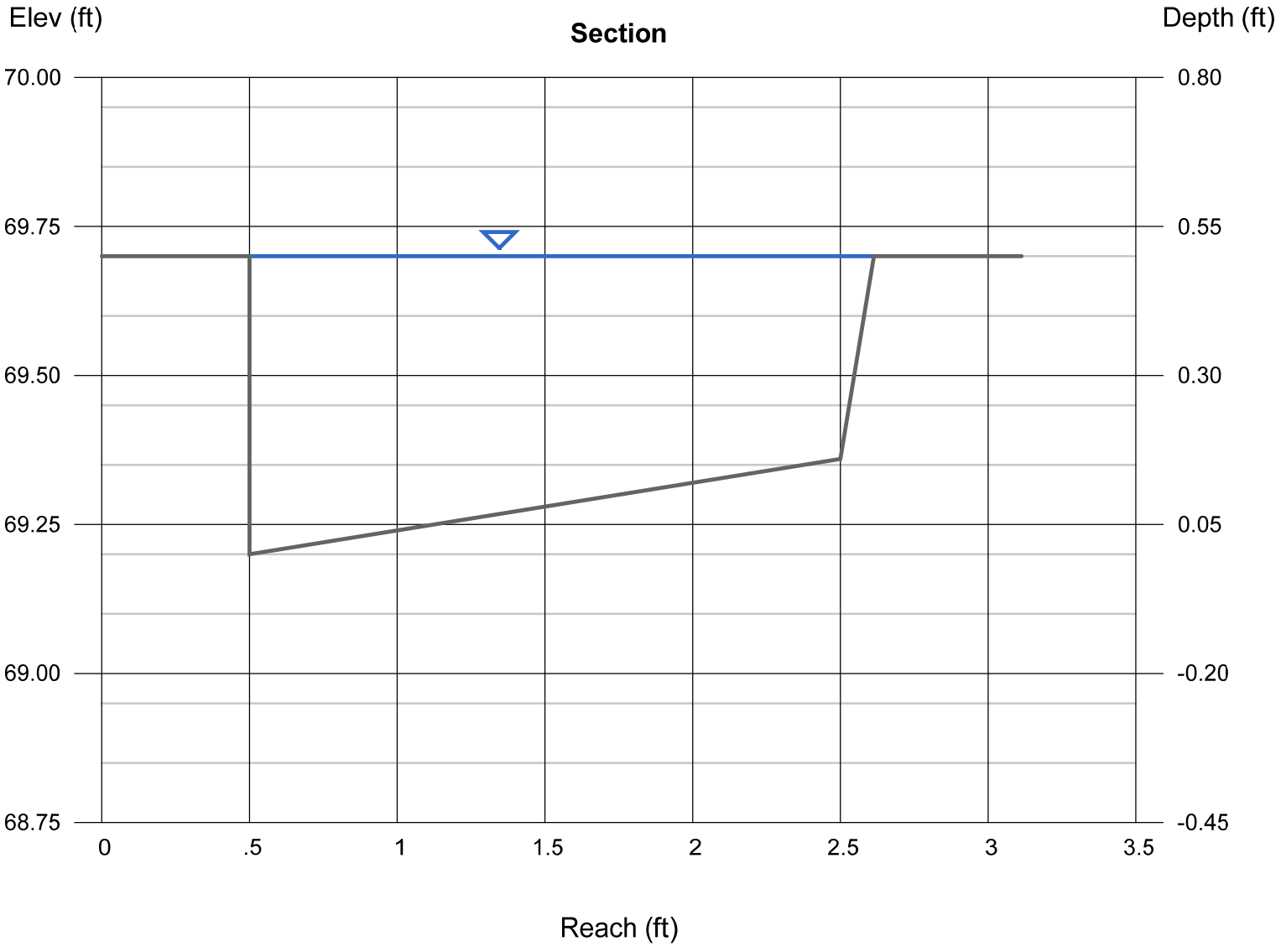
Cross Sl, Sx (ft/ft)	= 3.00
Cross Sl, Sw (ft/ft)	= 0.08
Gutter Width (ft)	= 2.00
Invert Elev (ft)	= 69.20
Slope (%)	= 1.24
N-Value	= 0.013

Calculations

Compute by:	Known Q
Known Q (cfs)	= 4.80

Highlighted

Depth (ft)	= 0.50
Q (cfs)	= 4.800
Area (sqft)	= 0.86
Velocity (ft/s)	= 5.59
Wetted Perim (ft)	= 2.86
Crit Depth, Yc (ft)	= 0.64
Spread Width (ft)	= 2.11
EGL (ft)	= 0.99



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Friday, Dec 11 2015

44' ROW Elysium Drive - VERY STEEP - 2yr storm Section C Drainage Map

User-defined

Invert Elev (ft)	= 99.40
Slope (%)	= 13.00
N-Value	= 0.014

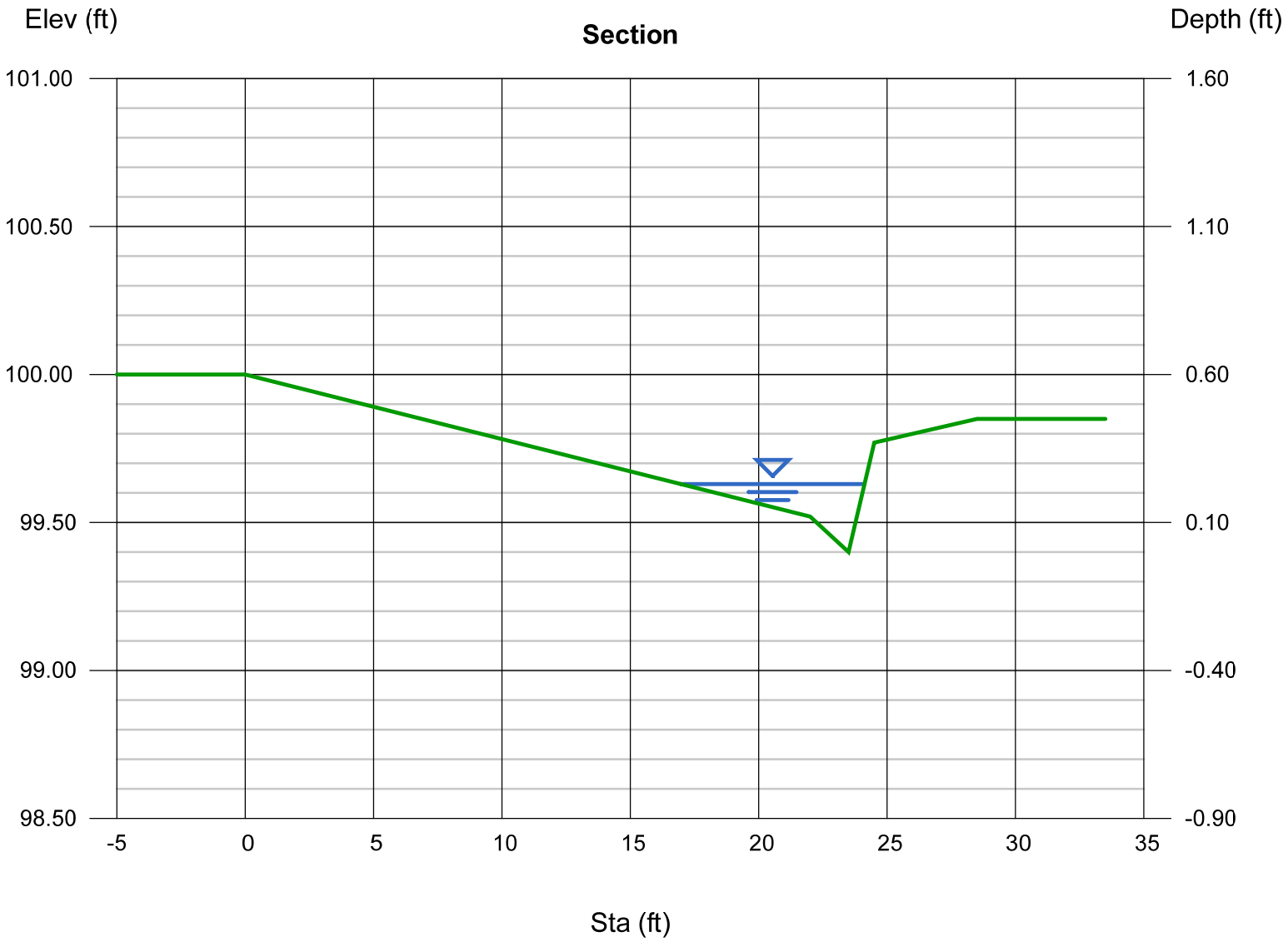
Calculations

Compute by:	Known Q
Known Q (cfs)	= 4.00

Highlighted

Depth (ft)	= 0.23
Q (cfs)	= 4.000
Area (sqft)	= 0.60
Velocity (ft/s)	= 6.62
Wetted Perim (ft)	= 7.21
Crit Depth, Yc (ft)	= 0.36
Top Width (ft)	= 7.16
EGL (ft)	= 0.91

(Sta, El, n)-(Sta, El, n)... (-5.00, 101.00)-(22.50, 99.54, 0.014)-(23.50, 99.40, 0.014)-(24.50, 99.77, 0.014)-(28.50, 99.85, 0.014)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Friday, Dec 11 2015

44' ROW Aiguille Drive - FLAT - 2yr storm Section D Drainage Map

User-defined

Invert Elev (ft)	= 97.70
Slope (%)	= 1.50
N-Value	= 0.025

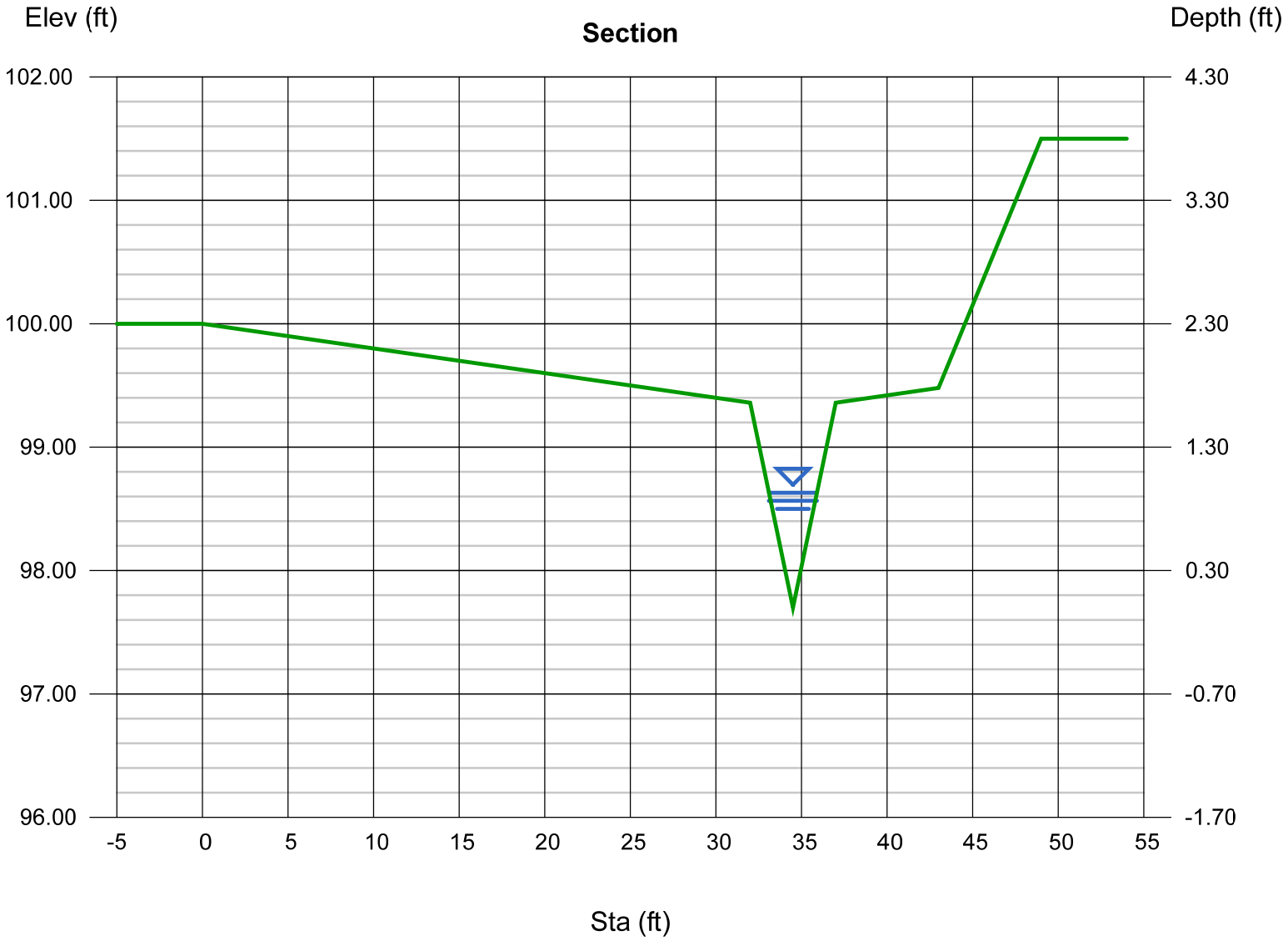
Calculations

Compute by:	Known Q
Known Q (cfs)	= 5.00

Highlighted

Depth (ft)	= 0.93
Q (cfs)	= 5.000
Area (sqft)	= 1.30
Velocity (ft/s)	= 3.84
Wetted Perim (ft)	= 3.36
Crit Depth, Yc (ft)	= 0.93
Top Width (ft)	= 2.80
EGL (ft)	= 1.16

(Sta, El, n)-(Sta, El, n)... (-5.00, 102.00)-(2.00, 99.90, 0.014)-(32.00, 99.36, 0.014)-(34.50, 97.70, 0.025)-(37.00, 99.36, 0.025)-(43.00, 99.48, 0.014)-(49.00, 101.50, 0.025)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Friday, Dec 11 2015

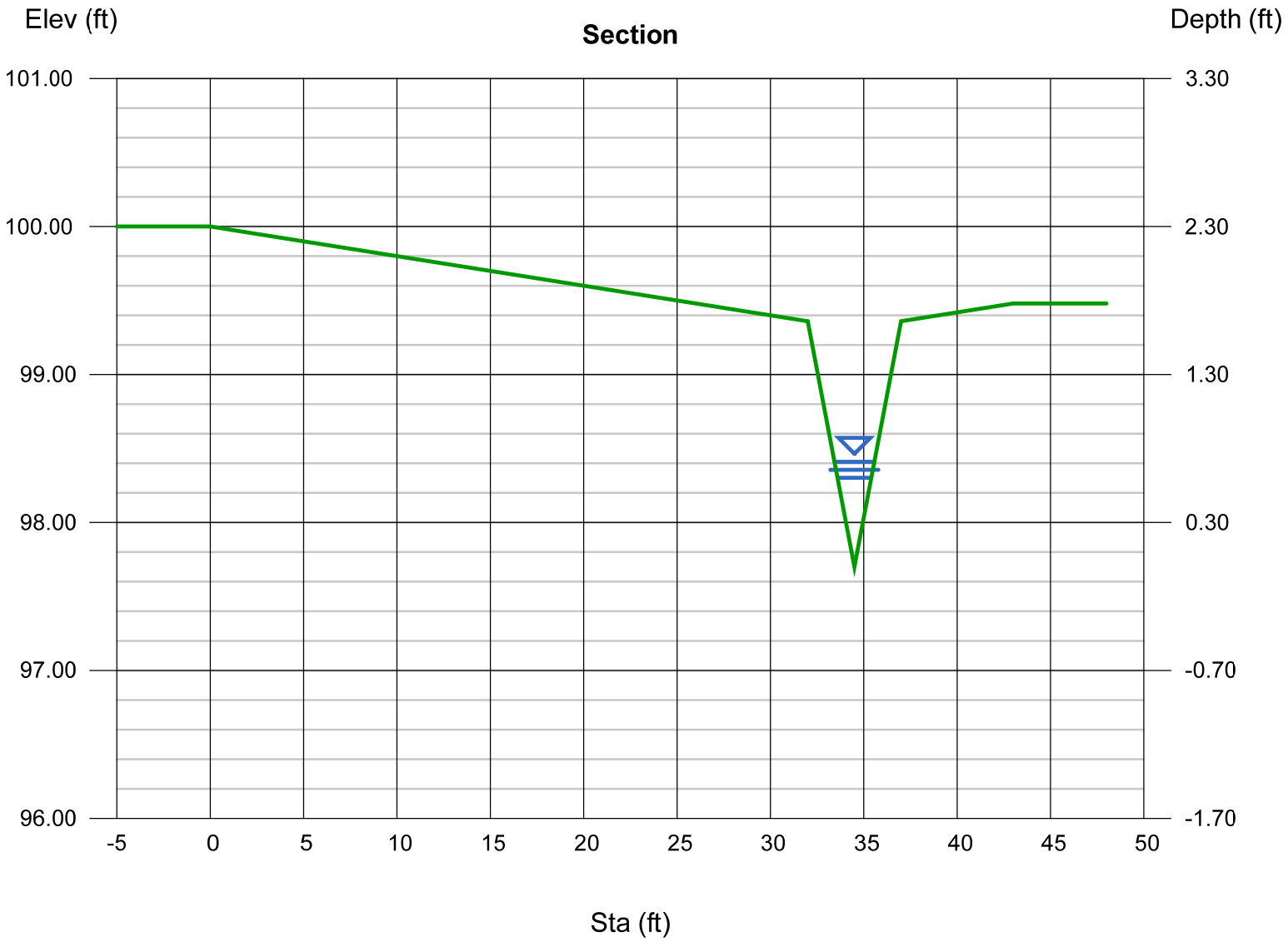
44' ROW Aiguille Drive - STEEP - 2yr storm Section E Drainage Map

User-defined	
Invert Elev (ft)	= 97.70
Slope (%)	= 9.00
N-Value	= 0.030

Calculations	
Compute by:	Known Q
Known Q (cfs)	= 5.00

Highlighted	
Depth (ft)	= 0.71
Q (cfs)	= 5.000
Area (sqft)	= 0.76
Velocity (ft/s)	= 6.59
Wetted Perim (ft)	= 2.57
Crit Depth, Yc (ft)	= 0.93
Top Width (ft)	= 2.14
EGL (ft)	= 1.38

(Sta, El, n)-(Sta, El, n)... (-5.00, 101.00)-(2.00, 99.98, 0.014)-(32.00, 99.36, 0.014)-(34.50, 97.70, 0.030)-(37.00, 99.36, 0.030)-(43.00, 99.48, 0.014)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Friday, Dec 11 2015

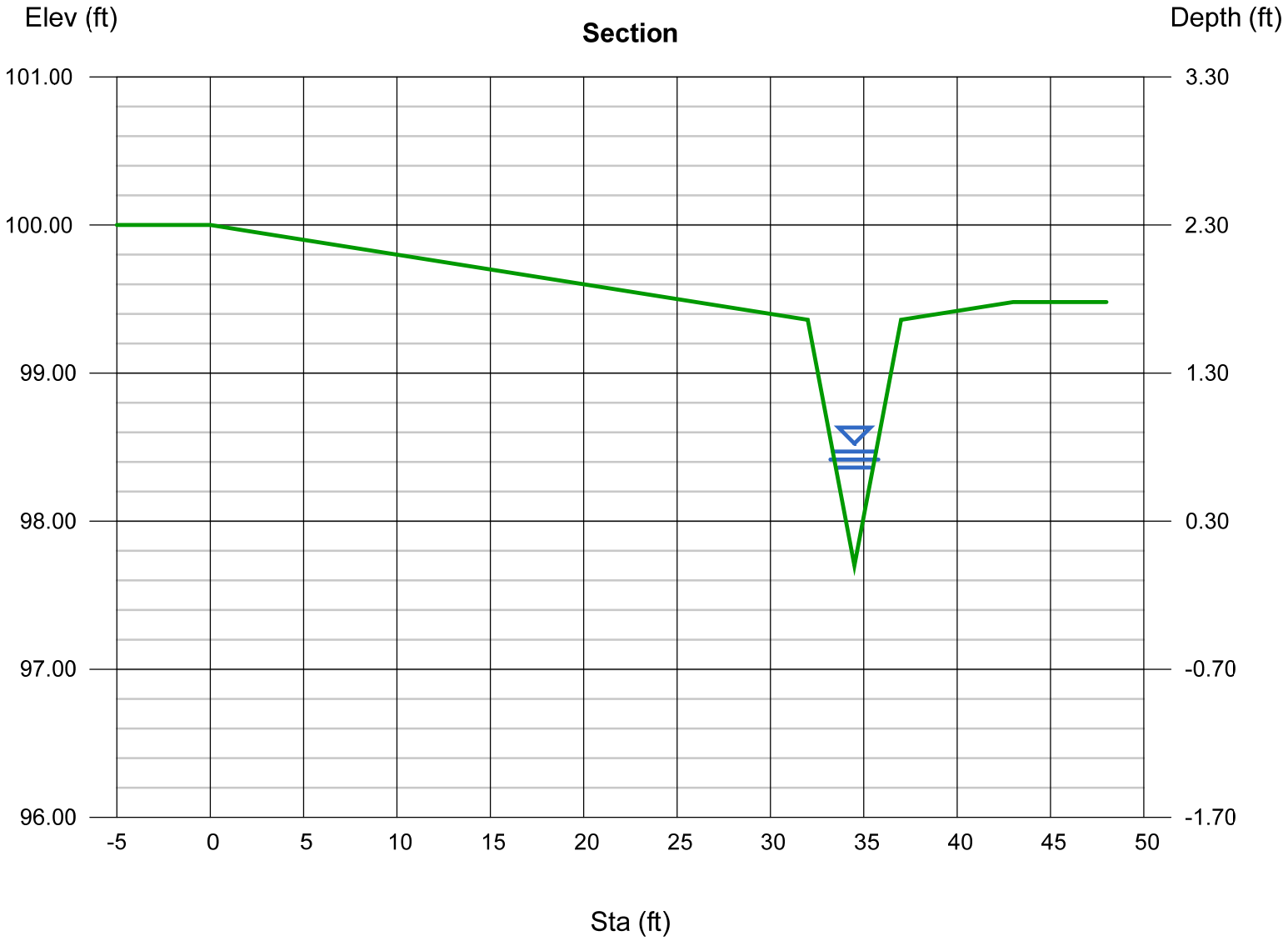
44' ROW Hidden Court - VERY STEEP - 2yr storm Section F Drainage Map

User-defined	
Invert Elev (ft)	= 97.70
Slope (%)	= 12.00
N-Value	= 0.035

Calculations	
Compute by:	Known Q
Known Q (cfs)	= 6.00

Highlighted	
Depth (ft)	= 0.77
Q (cfs)	= 6.000
Area (sqft)	= 0.89
Velocity (ft/s)	= 6.72
Wetted Perim (ft)	= 2.78
Crit Depth, Yc (ft)	= 1.00
Top Width (ft)	= 2.32
EGL (ft)	= 1.47

(Sta, El, n)-(Sta, El, n)... (-5.00, 101.00)-(2.00, 99.96, 0.014)-(32.00, 99.36, 0.014)-(34.50, 97.70, 0.035)-(37.00, 99.36, 0.035)-(43.00, 99.48, 0.014)



HGEGL2y

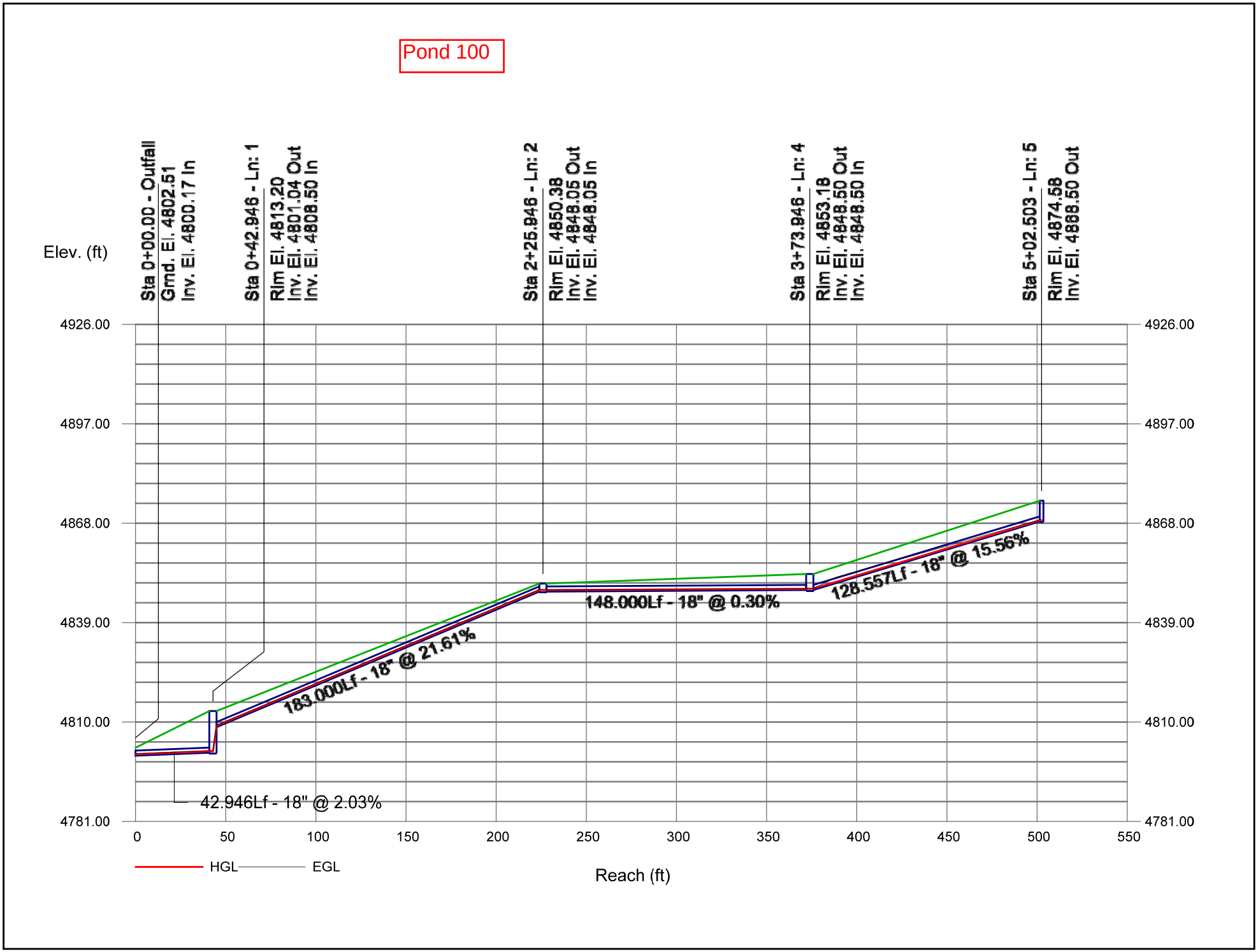
Line No.	Line ID	Line Size (in)	Known Q (cfs)	Invert Dn (ft)	Gnd/Rim El Dn (ft)	Invert Up (ft)	Gnd/Rim El Up (ft)	Capac Full (cfs)	Flow Rate (cfs)	Line Length (ft)	Vel Ave (ft/s)	HGL Up (ft)	HGL Dn (ft)	EGL Up (ft)	EGL Dn (ft)	
1	1	18	0.00	4800.17	4802.51	4801.04	4813.20	14.95	1.47	42.946	3.17	4801.50	4800.63	4801.66	4800.79	
2	2	18	0.00	4808.50	4813.20	4848.05	4850.38	48.82	1.47	183.000	3.17	4848.51	4808.96	4848.67	4809.12	
3	3	18	0.62	4856.50	4850.38	4870.50	4879.05	52.04	0.62	57.005	2.46	4870.80	4856.80	4870.90	4856.90	
4	4	18	0.00	4848.05	4850.38	4848.50	4853.18	5.79	0.85	148.000	2.20	4848.87	4848.51	4848.97	4848.57	
5	5	18	0.85	4848.50	4853.18	4868.50	4874.58	41.42	0.85	128.557	2.55	4868.85 j	4848.88	4868.97	4848.97	
6	6	18	0.00	4747.30	4749.63	4747.44	4752.05	9.03	4.94	18.945	4.77	4748.29	4748.15	4748.65	4748.51	
7	7	18	4.94	4748.73	4752.05	4761.66	4766.26	45.25	4.94	69.639	4.79	4762.51	4749.58	4762.87	4749.94	
8	8	18	1.43	4739.00	4741.33	4741.90	4746.57	21.30	6.65	70.493	5.41	4742.88	4739.98	4743.34	4740.44	
9	9	18	3.44	4741.90	4746.57	4743.22	4747.46	14.94	3.72	65.215	3.67	4743.96 j	4742.88	4744.25	4743.03	
10	10	18	0.28	4743.22	4747.46	4748.33	4753.73	22.27	0.28	113.583	1.15	4748.53 j	4743.96	4748.59	4743.96	
11	11	18	1.50	4741.90	4746.57	4748.41	4754.73	19.58	1.50	187.192	2.21	4748.88 j	4742.88	4749.04	4742.91	

Project File: Pinnacle-AllFilings-2yr.stm | Number of lines: 11 | Date: 6/7/2017

NOTES: ** Critical depth

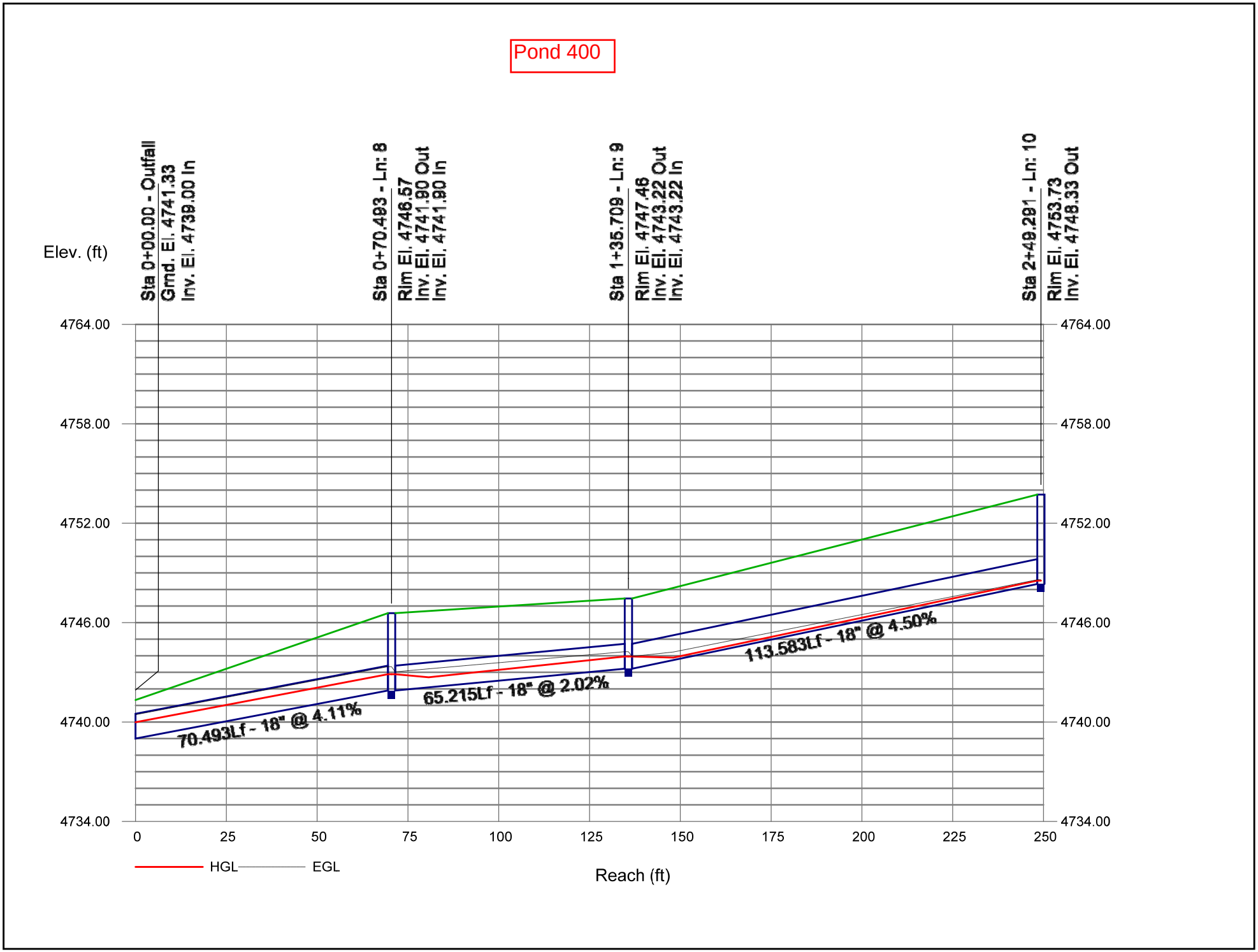
Storm Sewer Profile

Proj. file: Pinnacle-AllFilings-2yr.stm



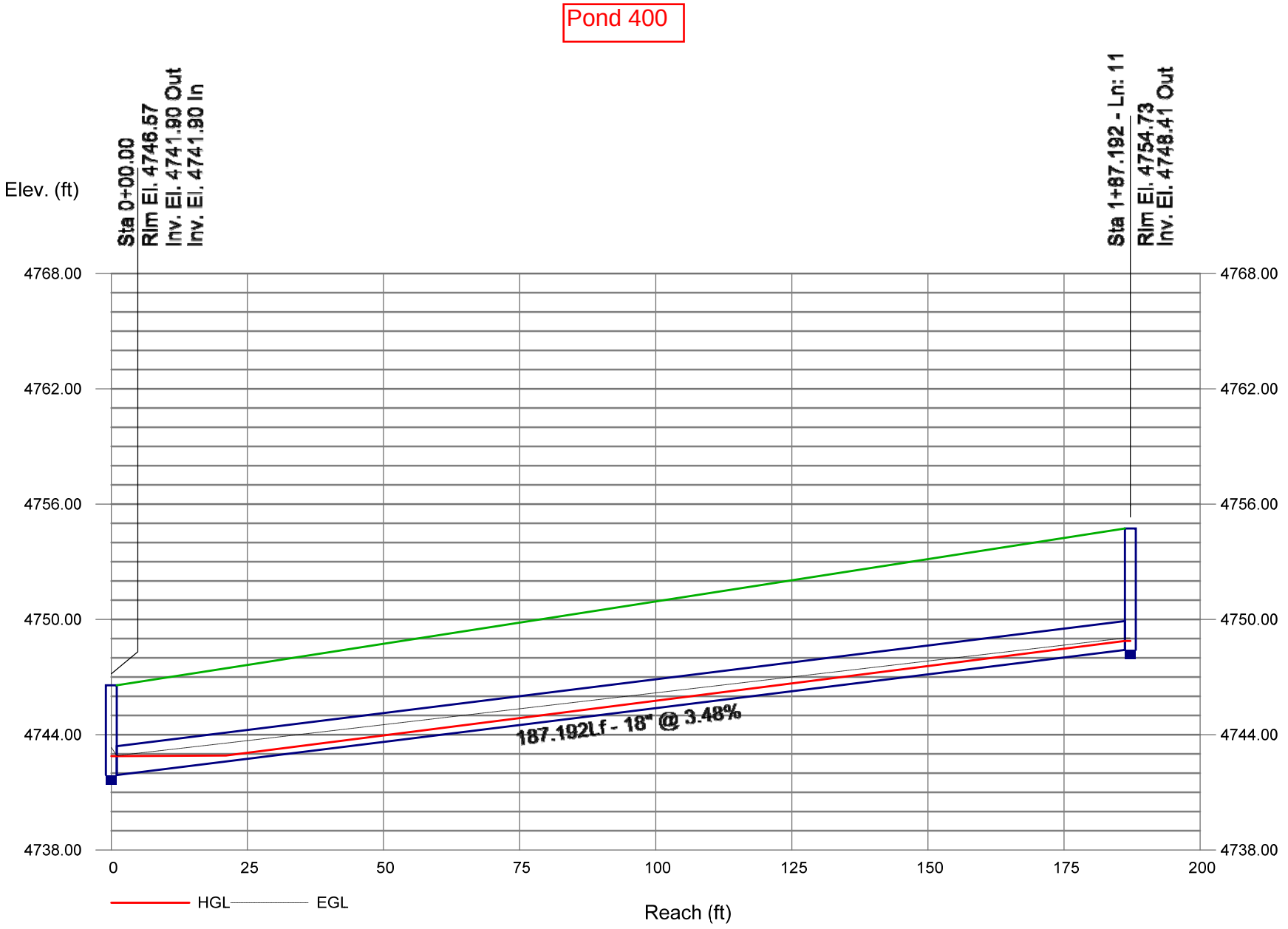
Storm Sewer Profile

Proj. file: Pinnacle-AllFilings-2yr.stm



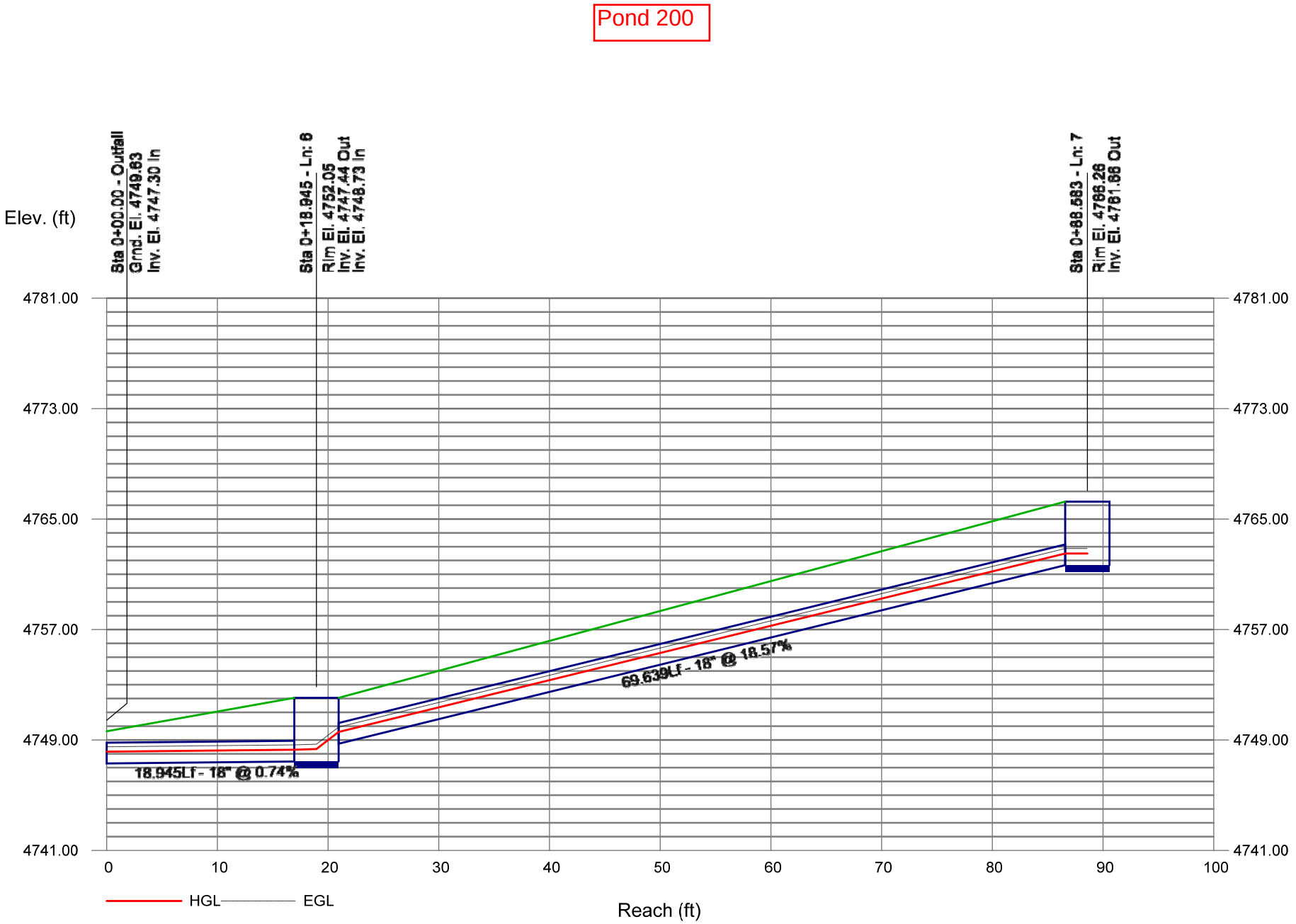
Storm Sewer Profile

Proj. file: Pinnacle-AllFilings-2yr.stm

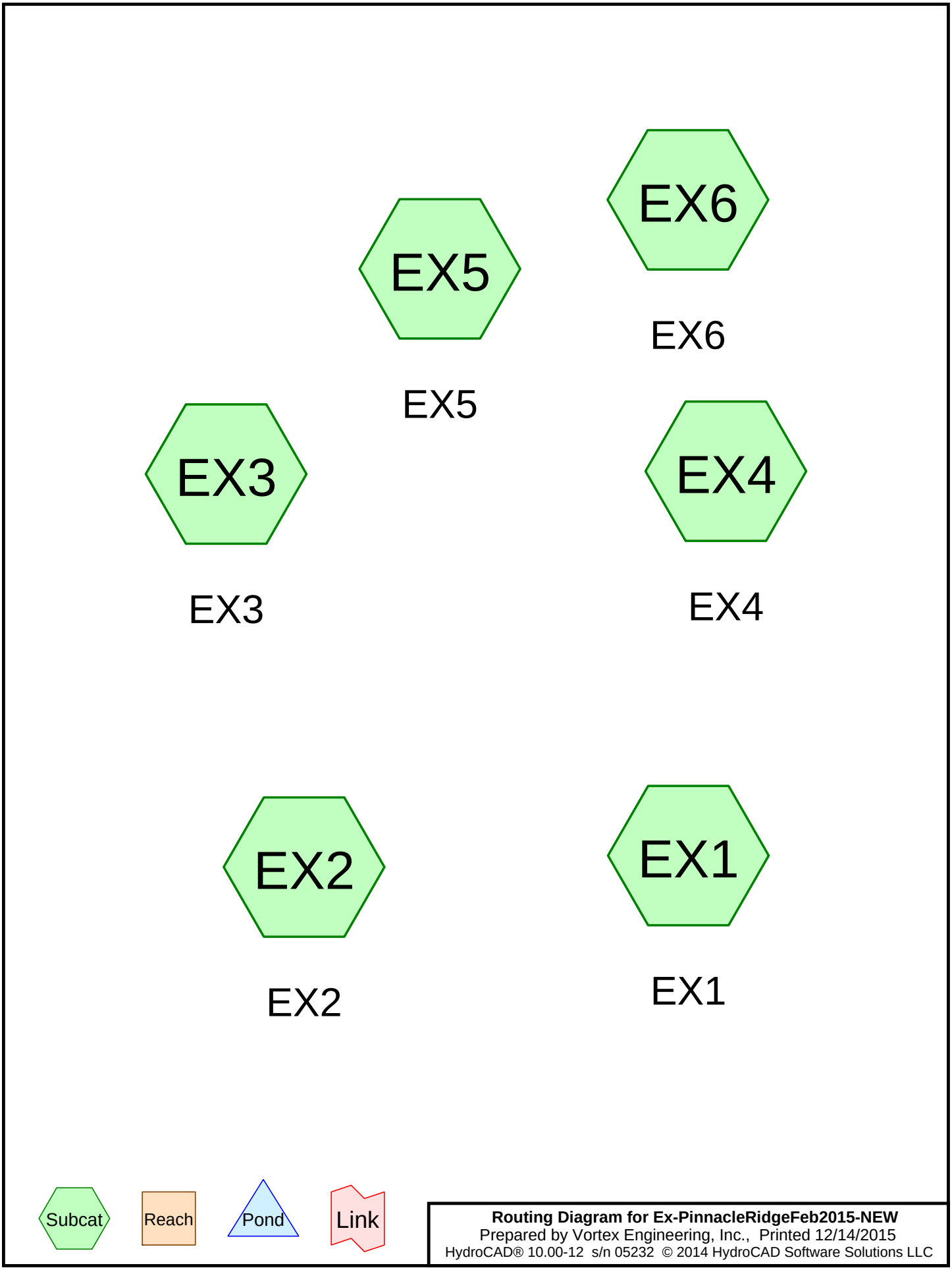


Storm Sewer Profile

Proj. file: Pinnacle-AllFilings-2yr.stm



Appendix E – HYDROCAD Report



Routing Diagram for Ex-PinnacleRidgeFeb2015-NEW
Prepared by Vortex Engineering, Inc., Printed 12/14/2015
HydroCAD® 10.00-12 s/n 05232 © 2014 HydroCAD Software Solutions LLC

Summary for Subcatchment EX1: EX1

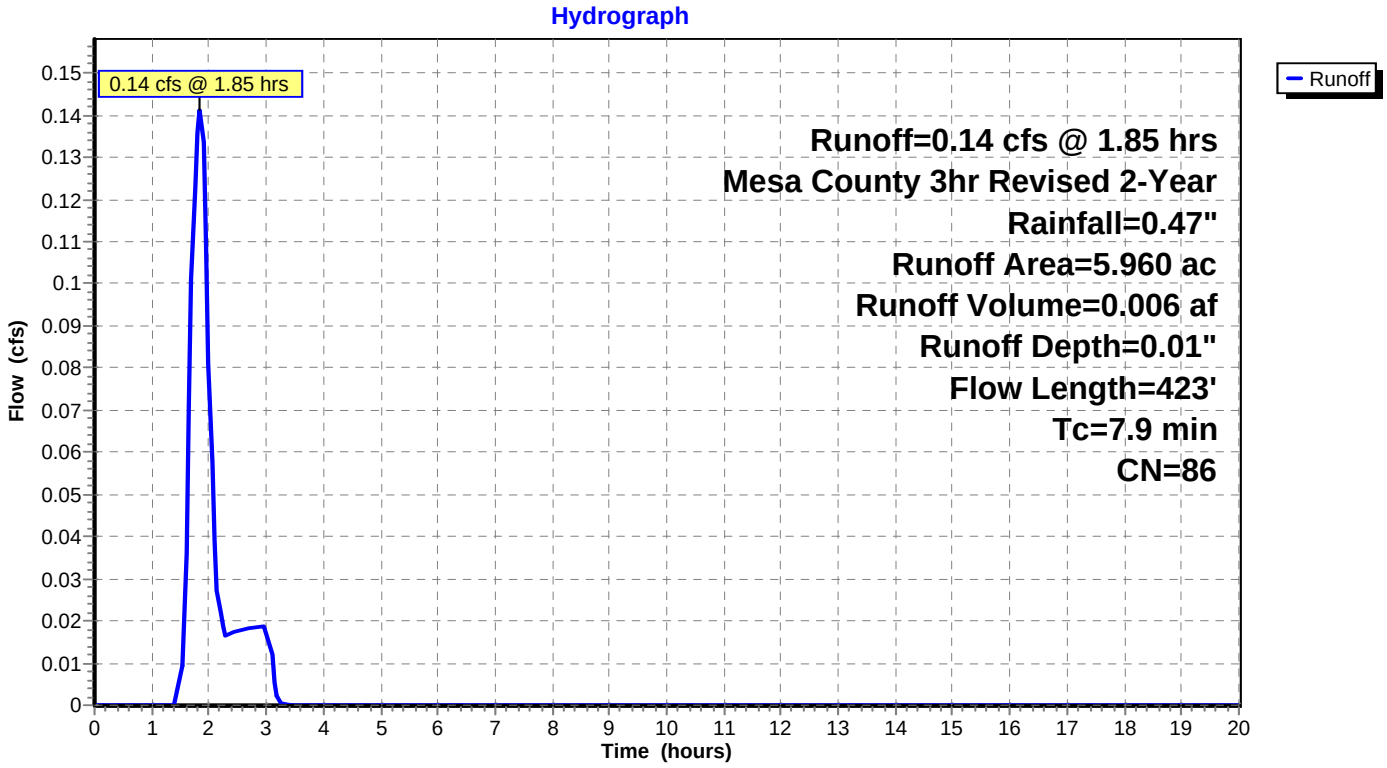
Runoff = 0.14 cfs @ 1.85 hrs, Volume= 0.006 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
5.960	86	Desert shrub range, Fair, HSG D
5.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0200	0.26		**Sheet Flow,** n= 0.026 P2= 0.46"
1.5	323	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
7.9	423	Total			

Subcatchment EX1: EX1



Summary for Subcatchment EX2: EX2

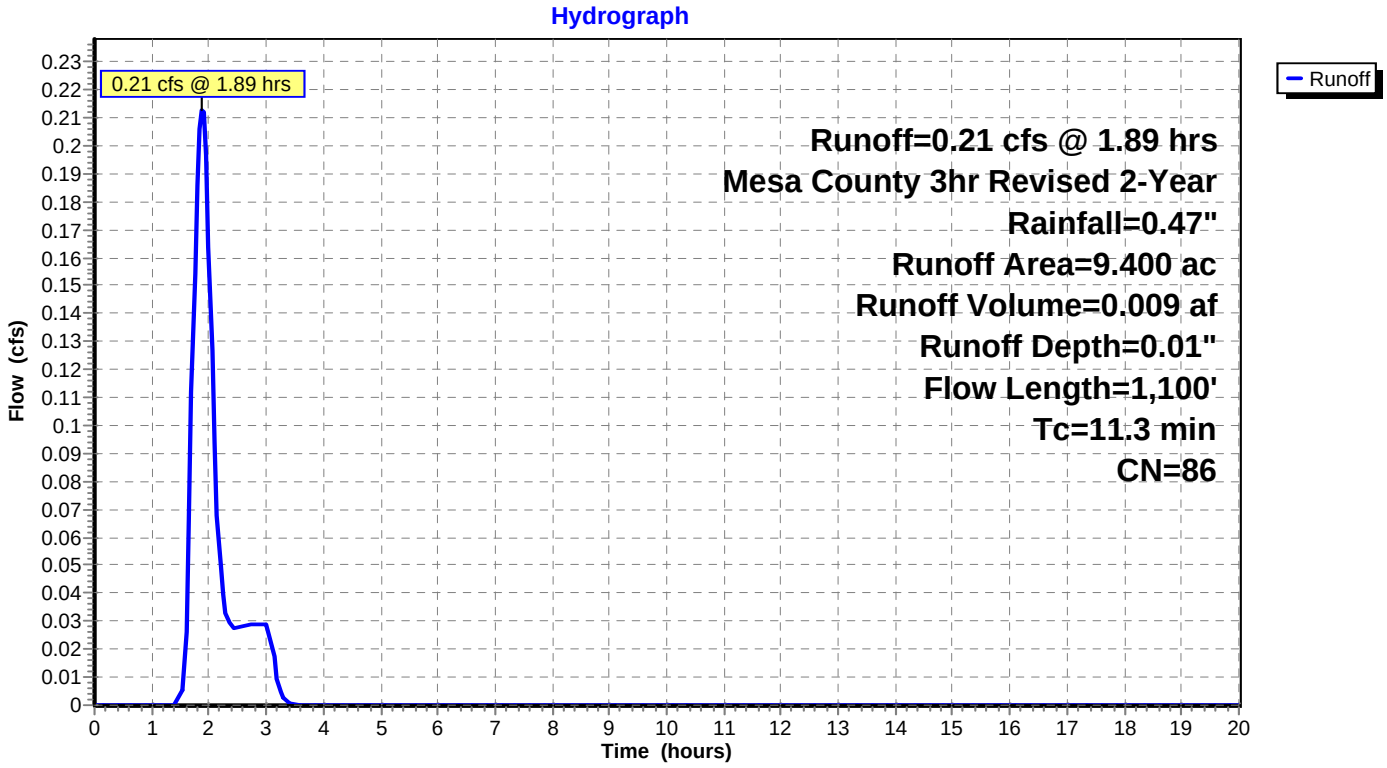
Runoff = 0.21 cfs @ 1.89 hrs, Volume= 0.009 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
9.400	86	Desert shrub range, Fair, HSG D
9.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	100	0.0200	0.25		**Sheet Flow,** n= 0.028 P2= 0.46"
4.6	1,000	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
11.3	1,100	Total			

Subcatchment EX2: EX2



Summary for Subcatchment EX3: EX3

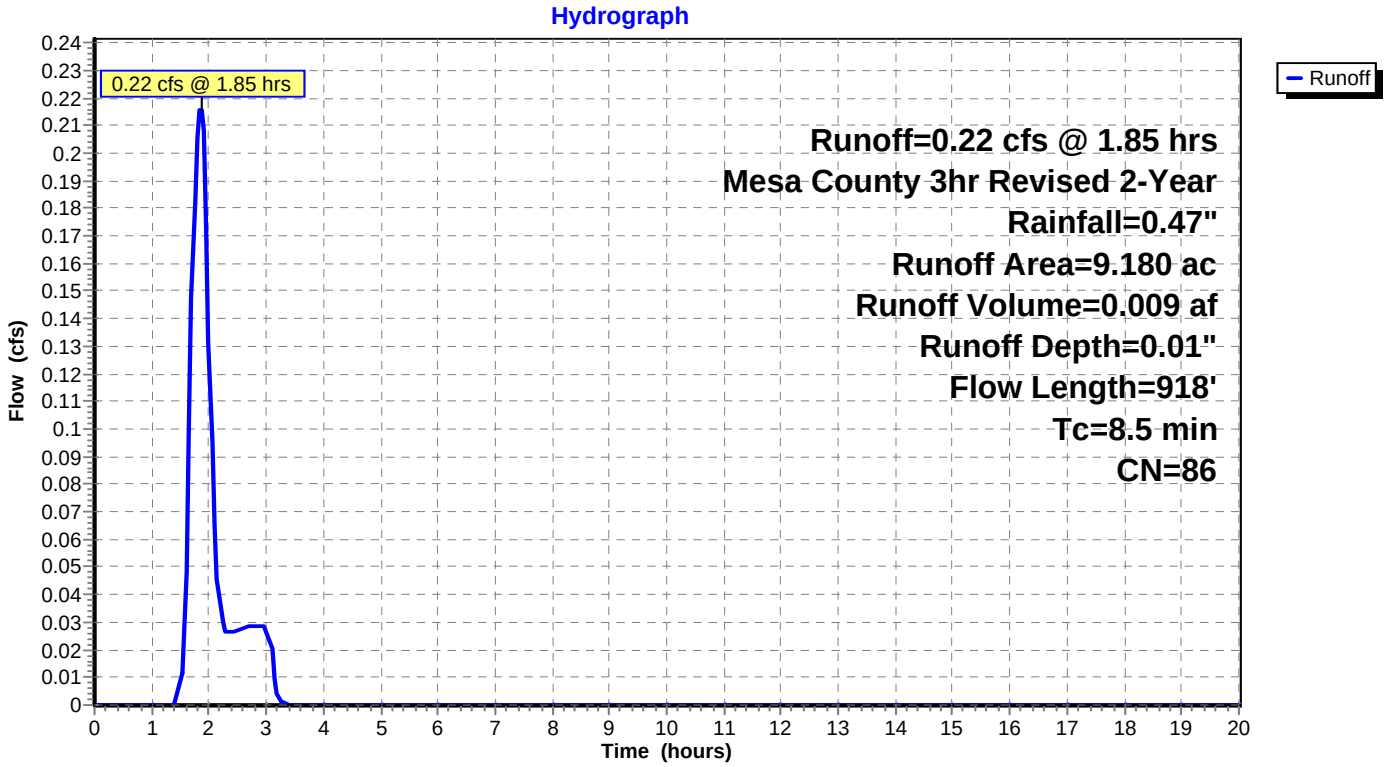
Runoff = 0.22 cfs @ 1.85 hrs, Volume= 0.009 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
9.180	86	Desert shrub range, Fair, HSG D
9.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	100	0.1600	0.57		**Sheet Flow,** n= 0.028 P2= 0.46"
2.6	466	0.1800	2.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.0	352	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	918	Total			

Subcatchment EX3: EX3



Summary for Subcatchment EX4: EX4

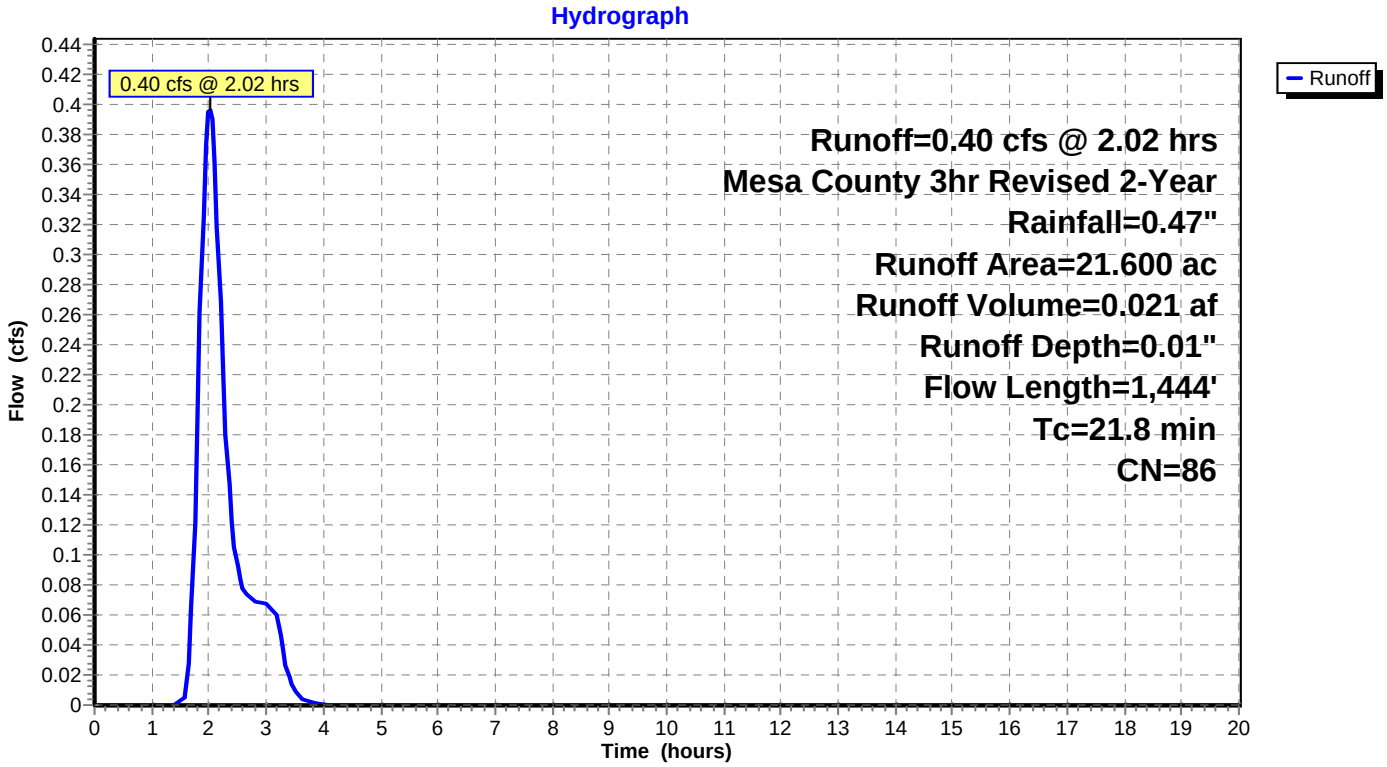
Runoff = 0.40 cfs @ 2.02 hrs, Volume= 0.021 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
21.600	86	Desert shrub range, Fair, HSG D
21.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0	192	0.0100	0.21		**Sheet Flow,** n= 0.028 P2= 0.46"
0.7	360	0.2900	8.67		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.1	892	0.0600	2.45		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
21.8	1,444	Total			

Subcatchment EX4: EX4



Summary for Subcatchment EX5: EX5

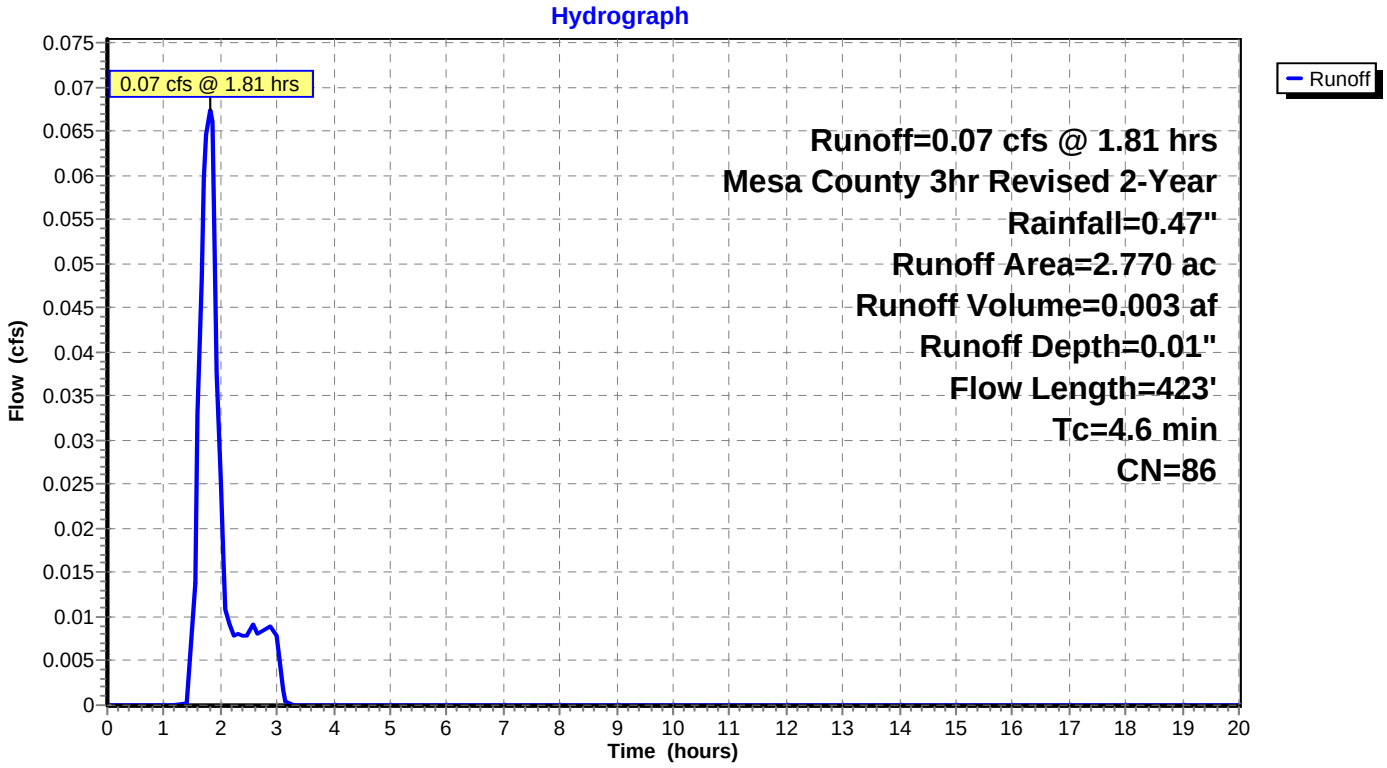
Runoff = 0.07 cfs @ 1.81 hrs, Volume= 0.003 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
2.770	86	Desert shrub range, Fair, HSG D
2.770		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.2500	0.68		**Sheet Flow,** n= 0.028 P2= 0.46"
2.1	323	0.1300	2.52		**Shallow Concentrated Flow,** Kv= 7.0 fps
4.6	423	Total			

Subcatchment EX5: EX5



Summary for Subcatchment EX6: EX6

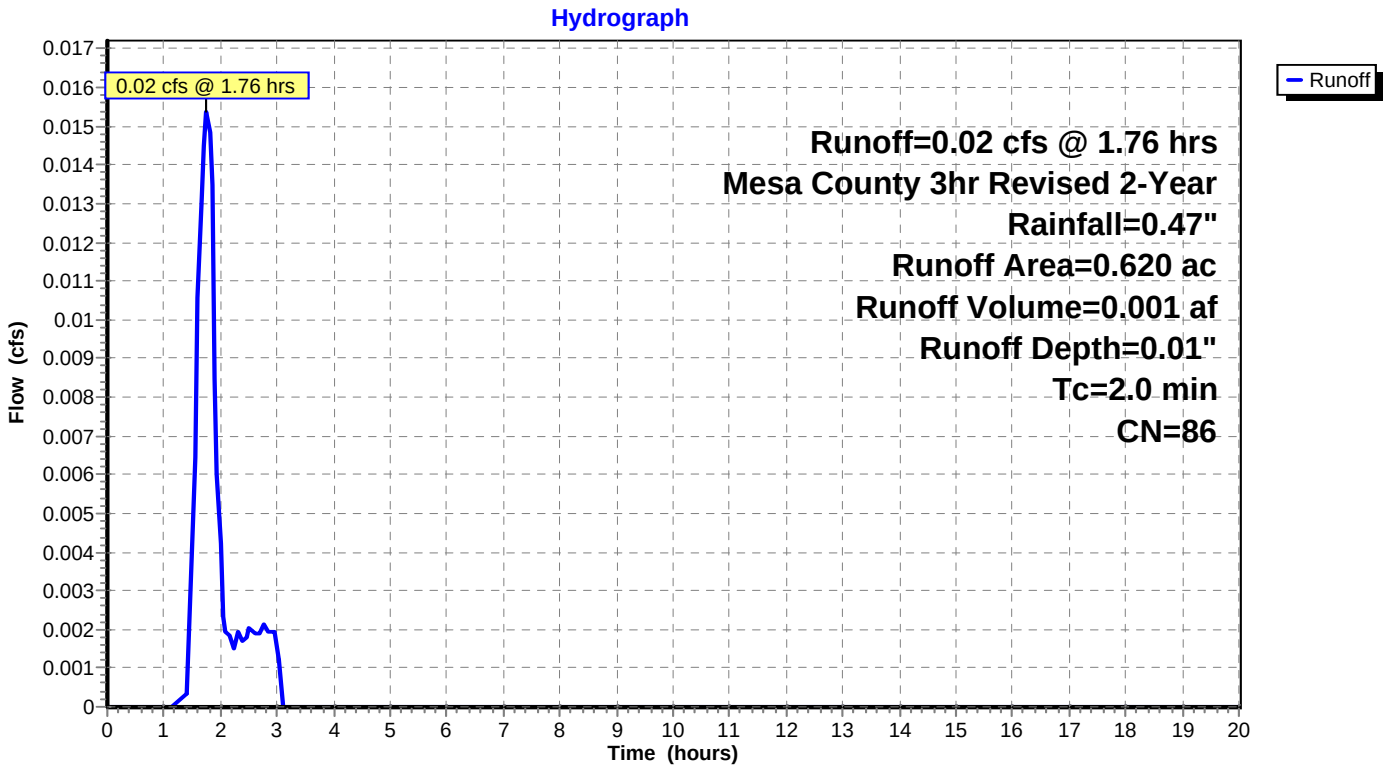
Runoff = 0.02 cfs @ 1.76 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
0.620	86	Desert shrub range, Fair, HSG D
0.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment EX6: EX6



Summary for Subcatchment EX1: EX1

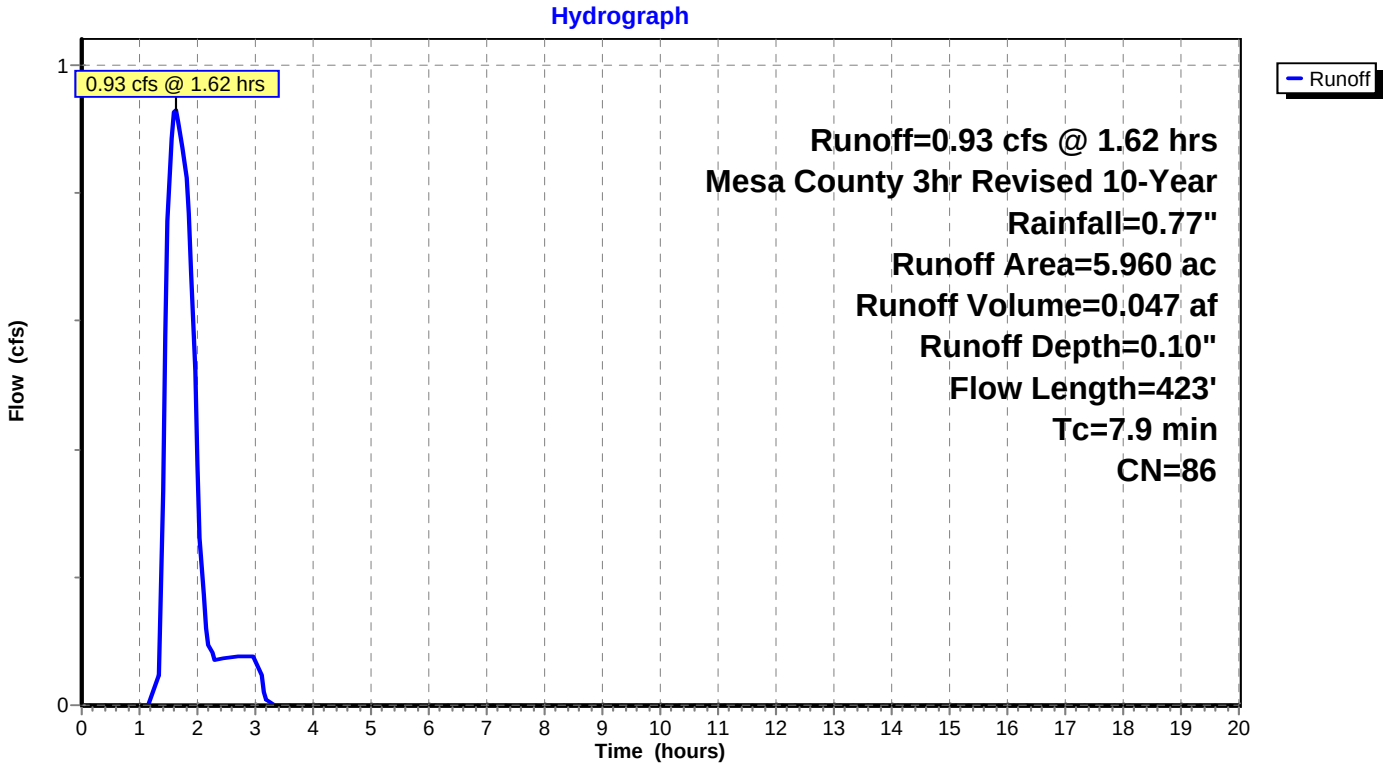
Runoff = 0.93 cfs @ 1.62 hrs, Volume= 0.047 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
5.960	86	Desert shrub range, Fair, HSG D
5.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0200	0.26		**Sheet Flow,** n= 0.026 P2= 0.46"
1.5	323	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
7.9	423	Total			

Subcatchment EX1: EX1



Summary for Subcatchment EX2: EX2

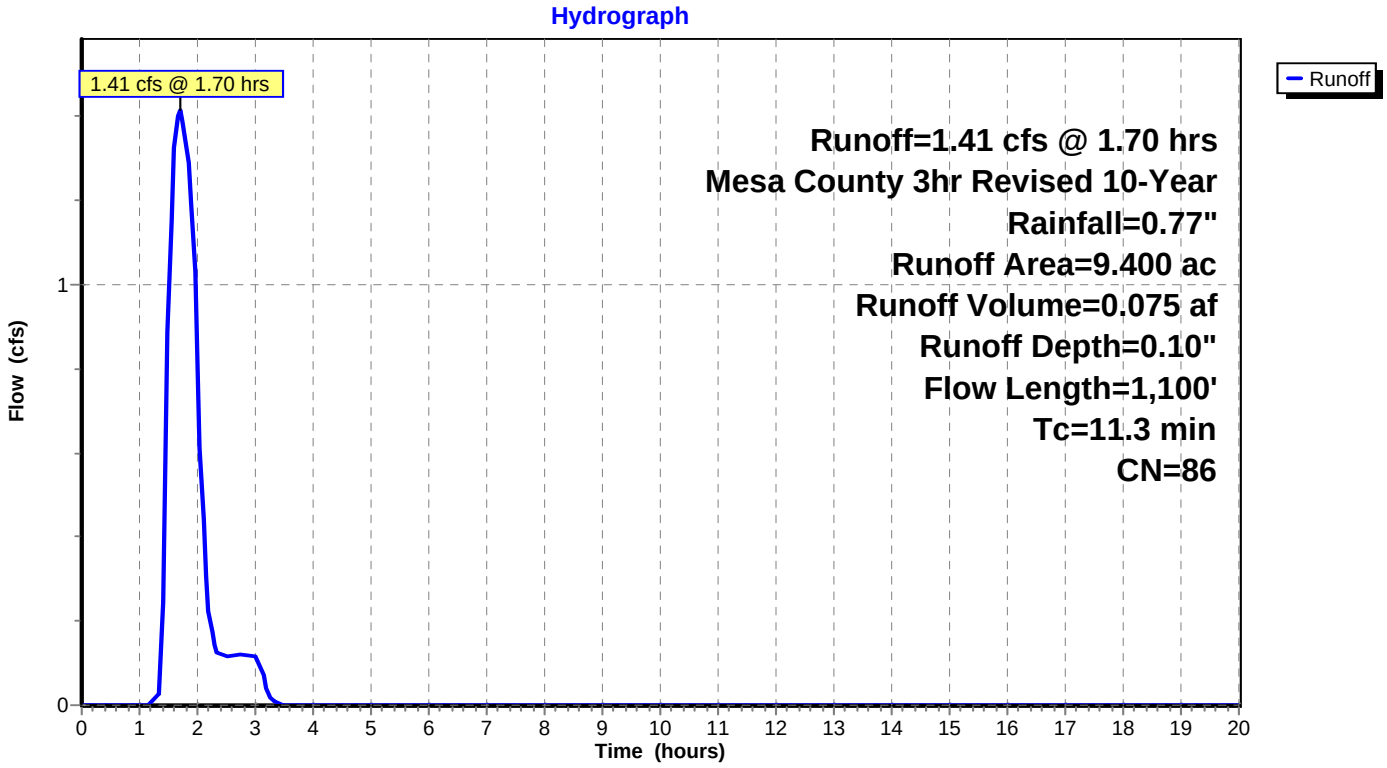
Runoff = 1.41 cfs @ 1.70 hrs, Volume= 0.075 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
9.400	86	Desert shrub range, Fair, HSG D
9.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	100	0.0200	0.25		**Sheet Flow,** n= 0.028 P2= 0.46"
4.6	1,000	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
11.3	1,100	Total			

Subcatchment EX2: EX2



Summary for Subcatchment EX3: EX3

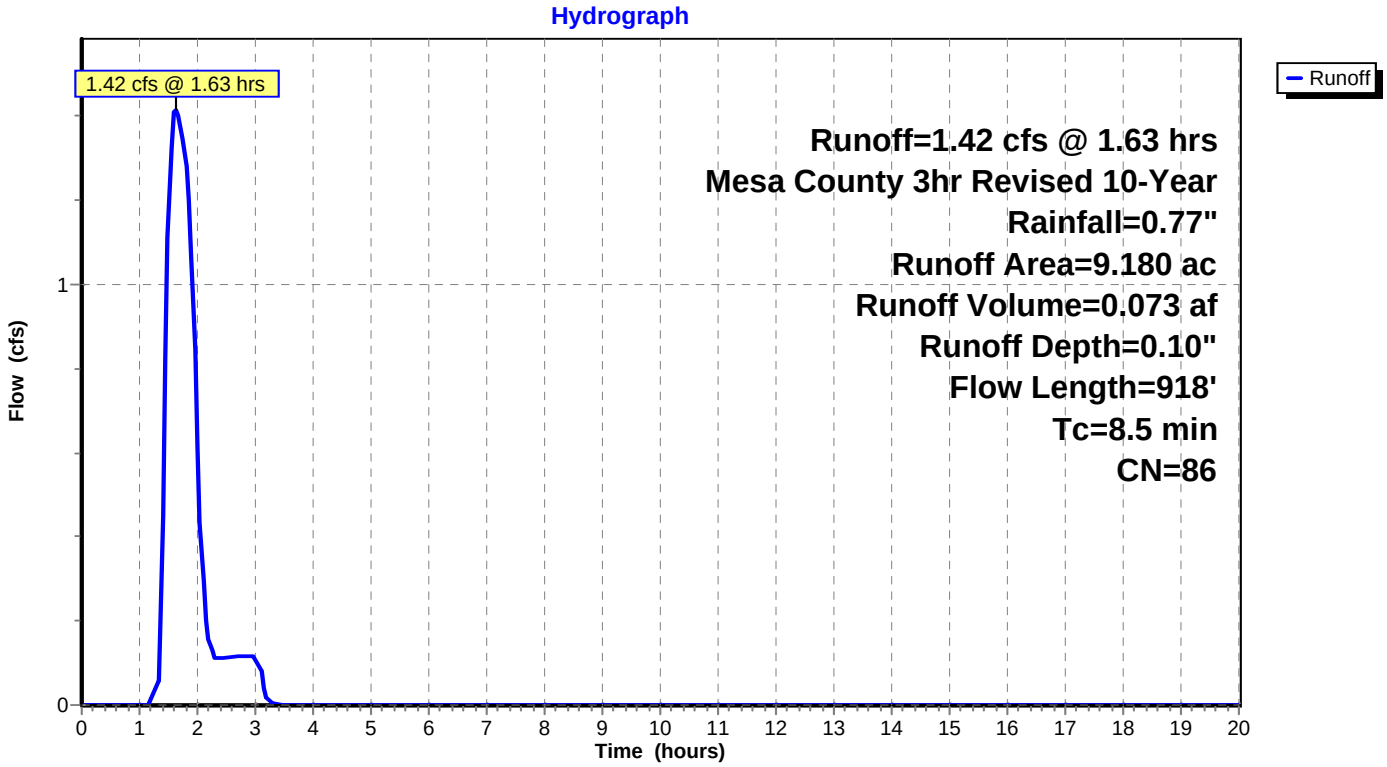
Runoff = 1.42 cfs @ 1.63 hrs, Volume= 0.073 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
9.180	86	Desert shrub range, Fair, HSG D
9.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	100	0.1600	0.57		**Sheet Flow,** n= 0.028 P2= 0.46"
2.6	466	0.1800	2.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.0	352	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	918	Total			

Subcatchment EX3: EX3



Summary for Subcatchment EX4: EX4

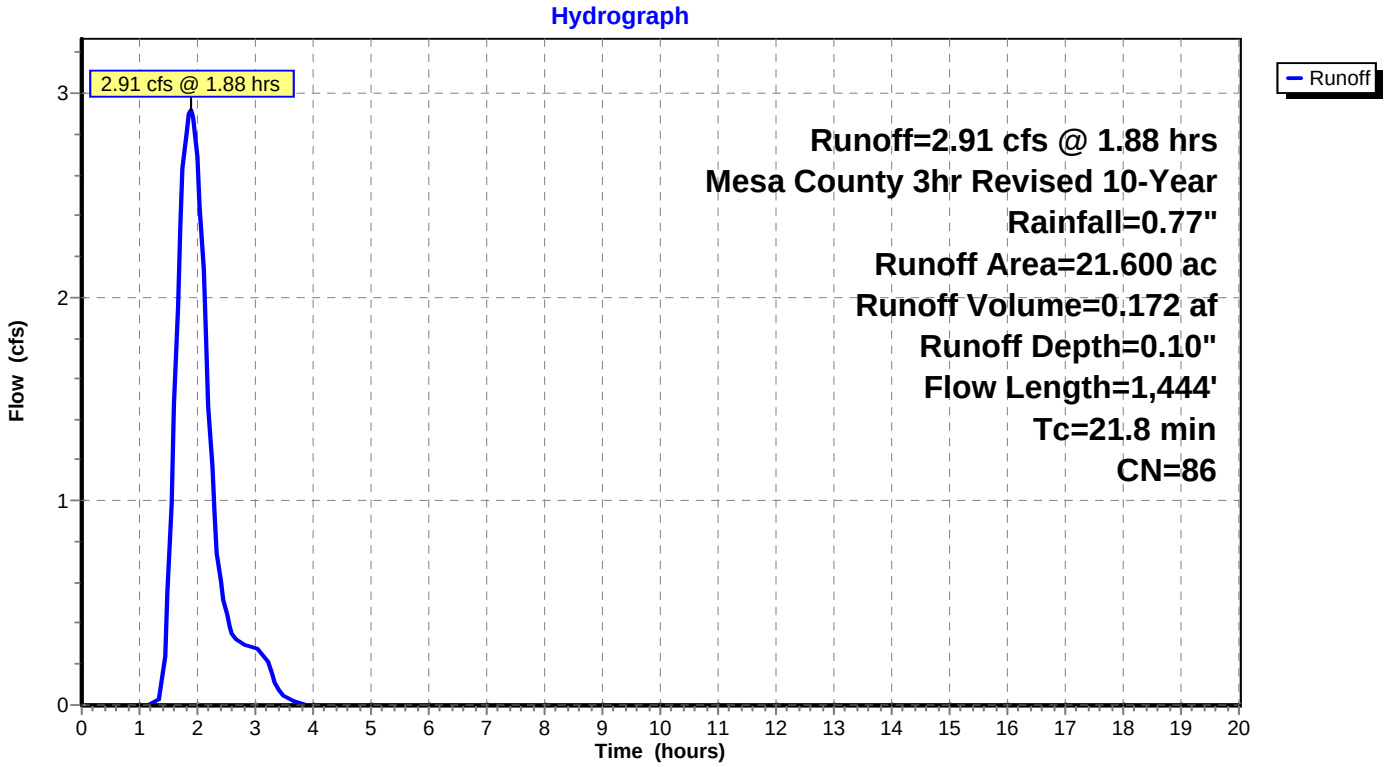
Runoff = 2.91 cfs @ 1.88 hrs, Volume= 0.172 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
21.600	86	Desert shrub range, Fair, HSG D
21.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0	192	0.0100	0.21		**Sheet Flow,** n= 0.028 P2= 0.46"
0.7	360	0.2900	8.67		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.1	892	0.0600	2.45		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
21.8	1,444	Total			

Subcatchment EX4: EX4



Summary for Subcatchment EX5: EX5

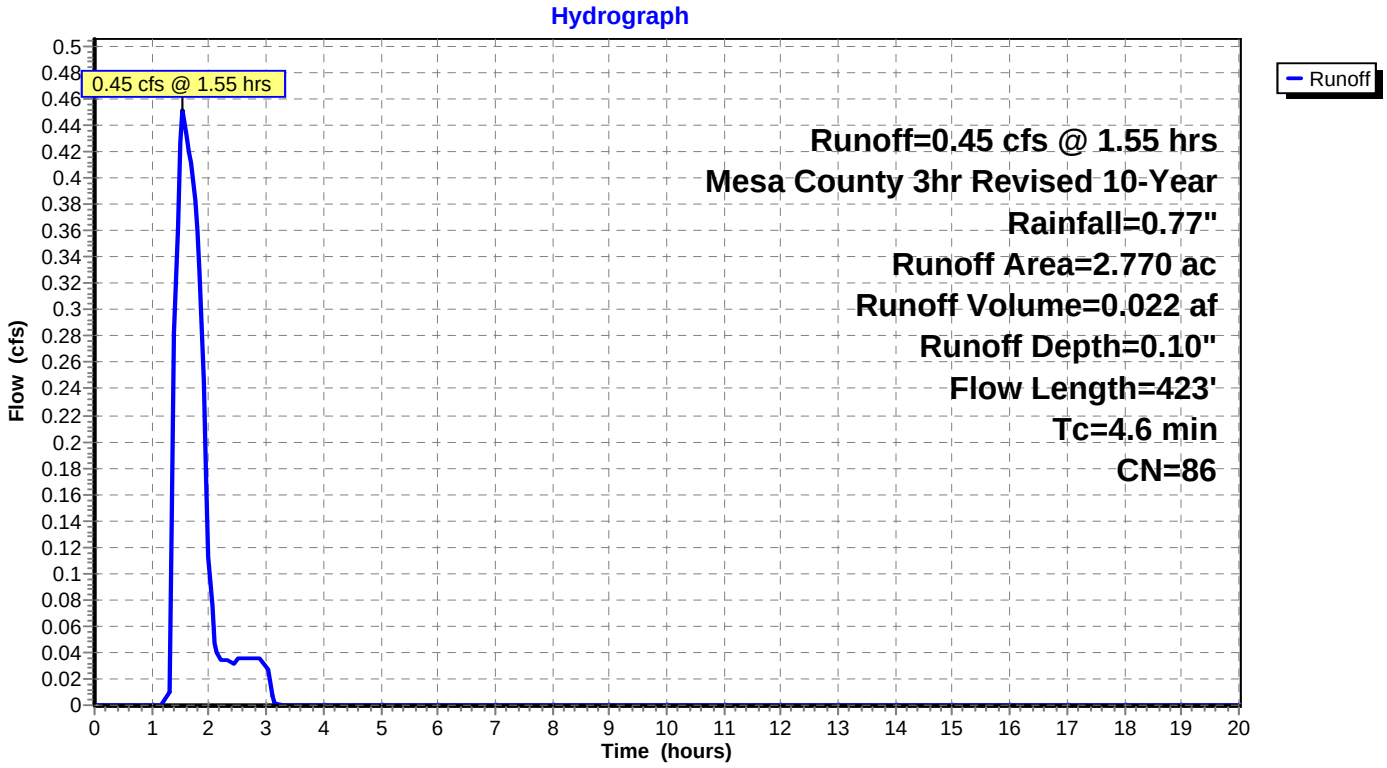
Runoff = 0.45 cfs @ 1.55 hrs, Volume= 0.022 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
2.770	86	Desert shrub range, Fair, HSG D
2.770		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.2500	0.68		**Sheet Flow,** n= 0.028 P2= 0.46"
2.1	323	0.1300	2.52		**Shallow Concentrated Flow,** Kv= 7.0 fps
4.6	423	Total			

Subcatchment EX5: EX5



Summary for Subcatchment EX6: EX6

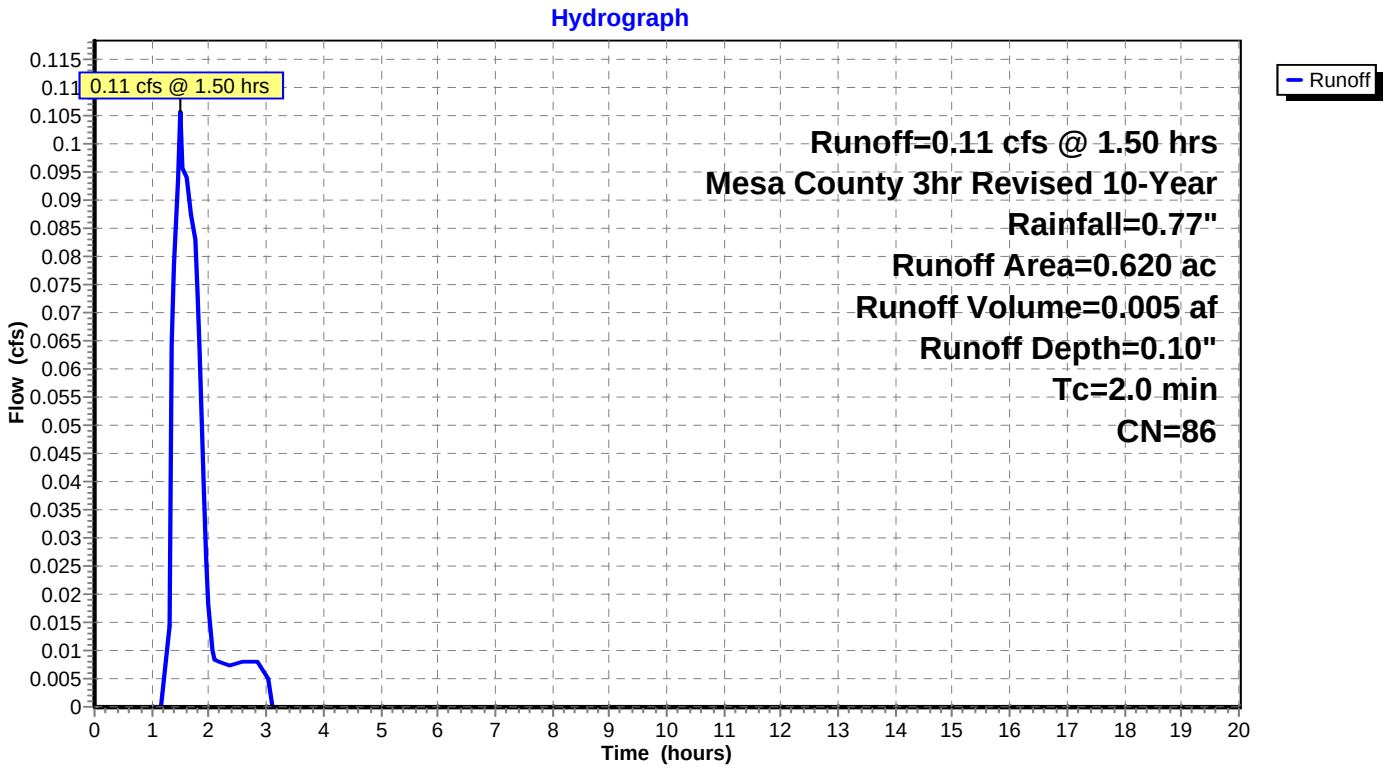
Runoff = 0.11 cfs @ 1.50 hrs, Volume= 0.005 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
0.620	86	Desert shrub range, Fair, HSG D
0.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment EX6: EX6



Summary for Subcatchment EX1: EX1

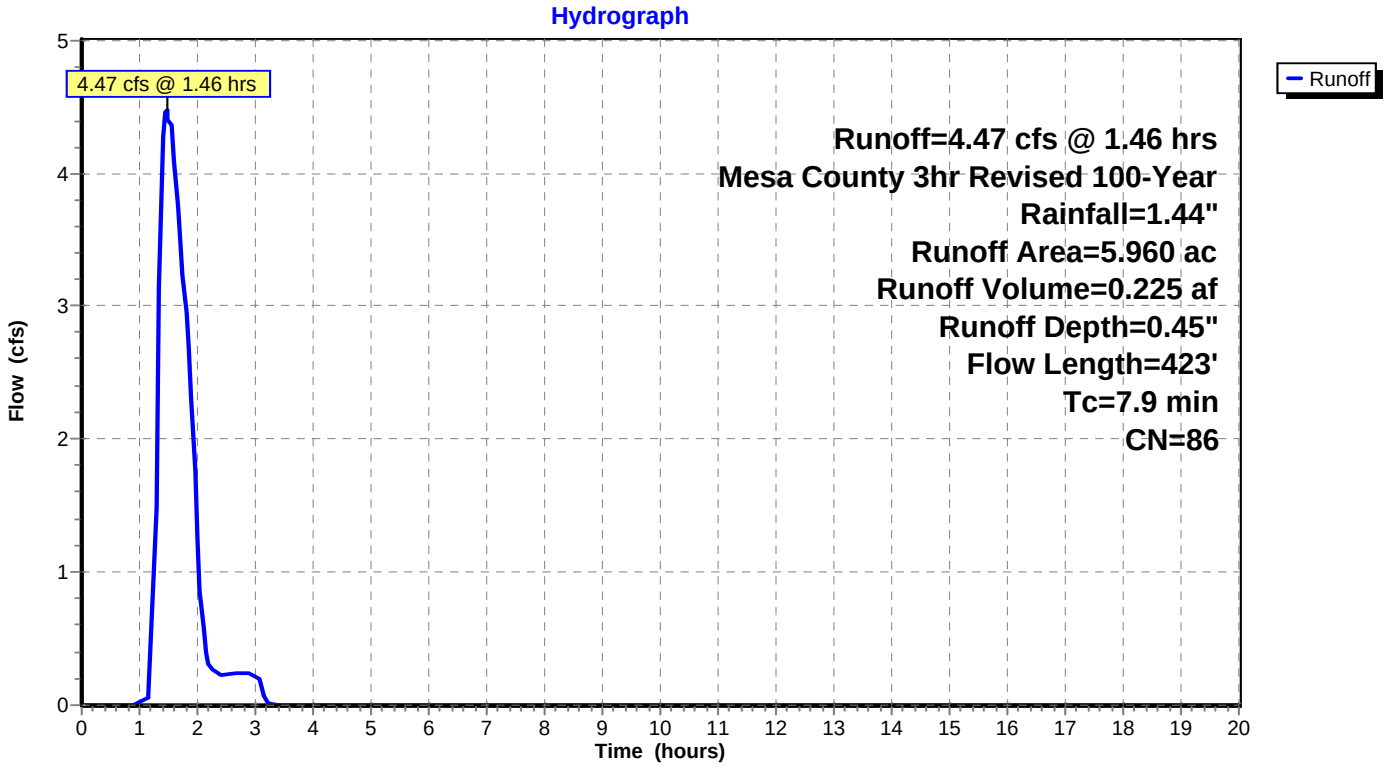
Runoff = 4.47 cfs @ 1.46 hrs, Volume= 0.225 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
5.960	86	Desert shrub range, Fair, HSG D
5.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0200	0.26		**Sheet Flow,** n= 0.026 P2= 0.46"
1.5	323	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
7.9	423	Total			

Subcatchment EX1: EX1



Summary for Subcatchment EX2: EX2

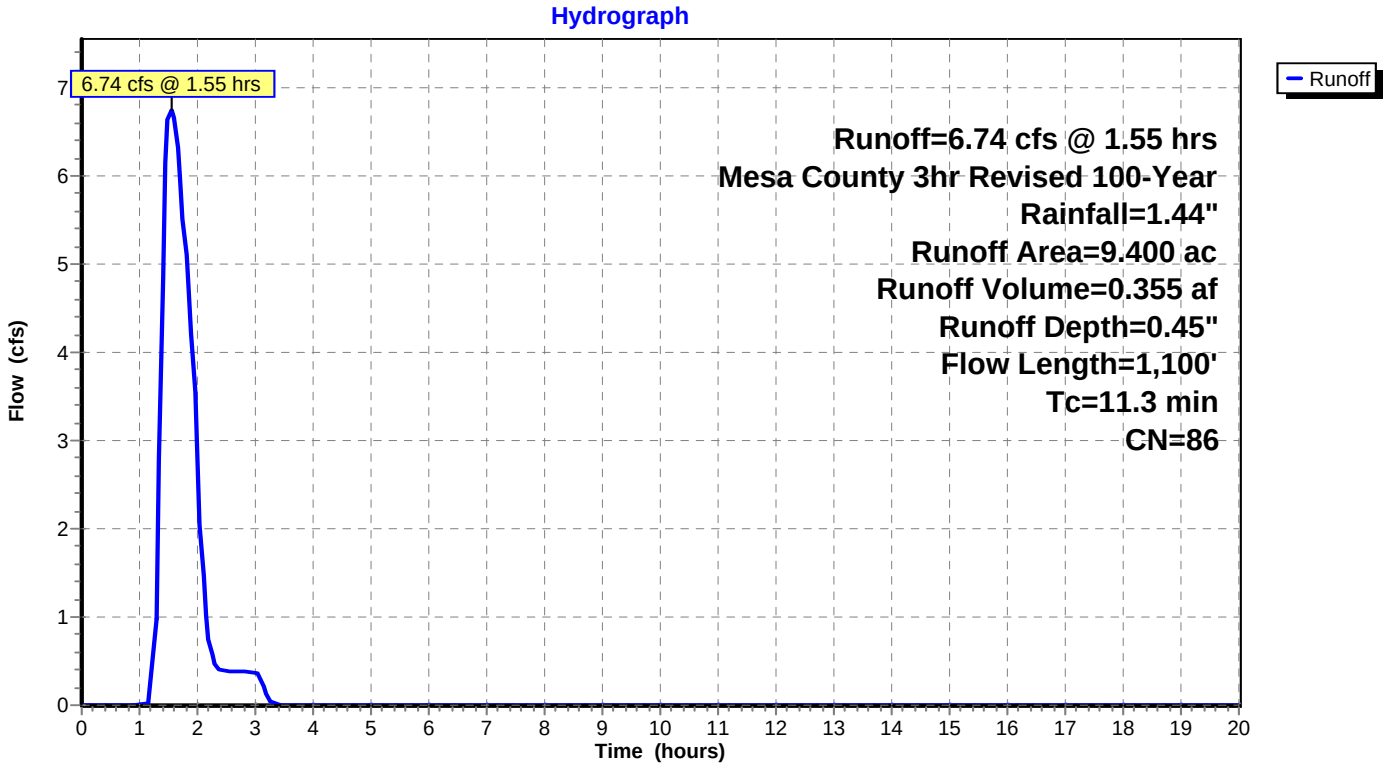
Runoff = 6.74 cfs @ 1.55 hrs, Volume= 0.355 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
9.400	86	Desert shrub range, Fair, HSG D
9.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	100	0.0200	0.25		**Sheet Flow,** n= 0.028 P2= 0.46"
4.6	1,000	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
11.3	1,100	Total			

Subcatchment EX2: EX2



Summary for Subcatchment EX3: EX3

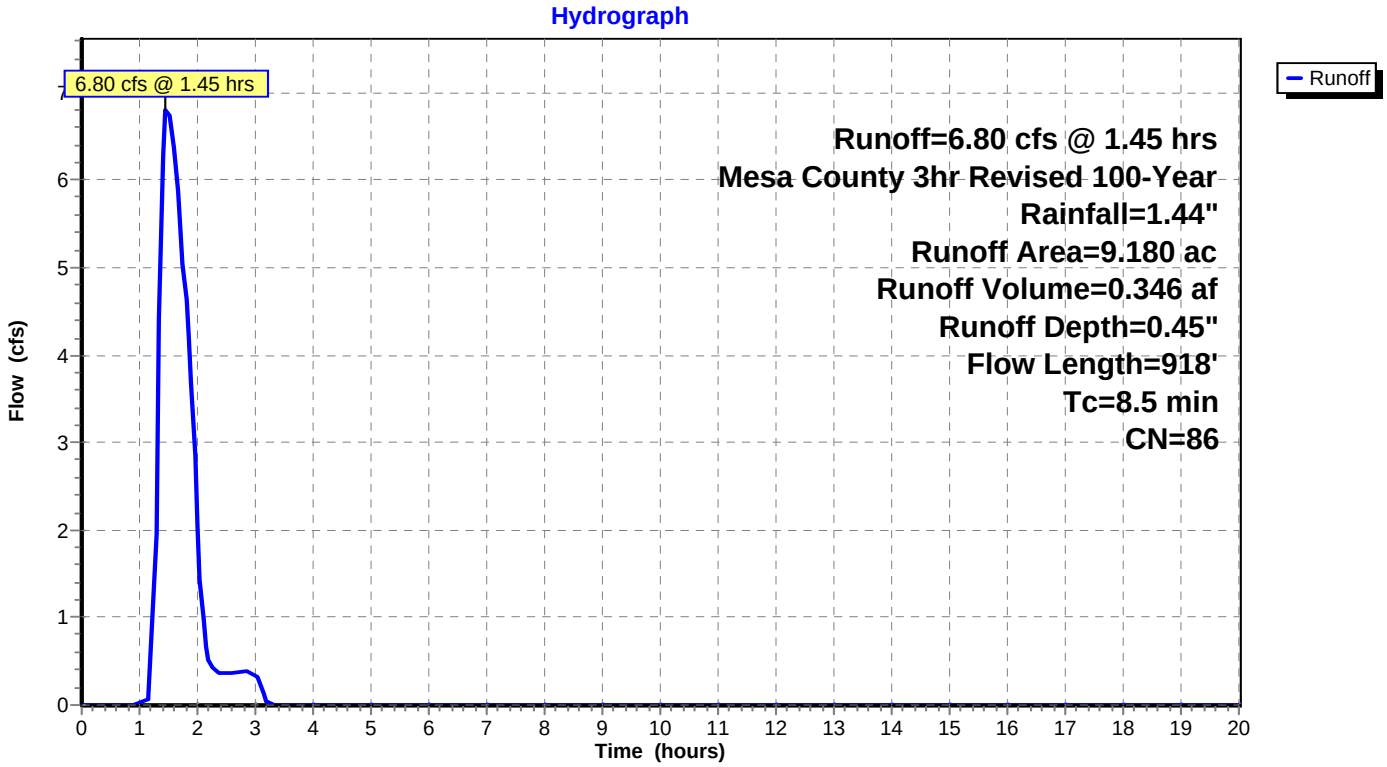
Runoff = 6.80 cfs @ 1.45 hrs, Volume= 0.346 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
9.180	86	Desert shrub range, Fair, HSG D
9.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	100	0.1600	0.57		**Sheet Flow,** n= 0.028 P2= 0.46"
2.6	466	0.1800	2.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.0	352	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	918	Total			

Subcatchment EX3: EX3



Summary for Subcatchment EX4: EX4

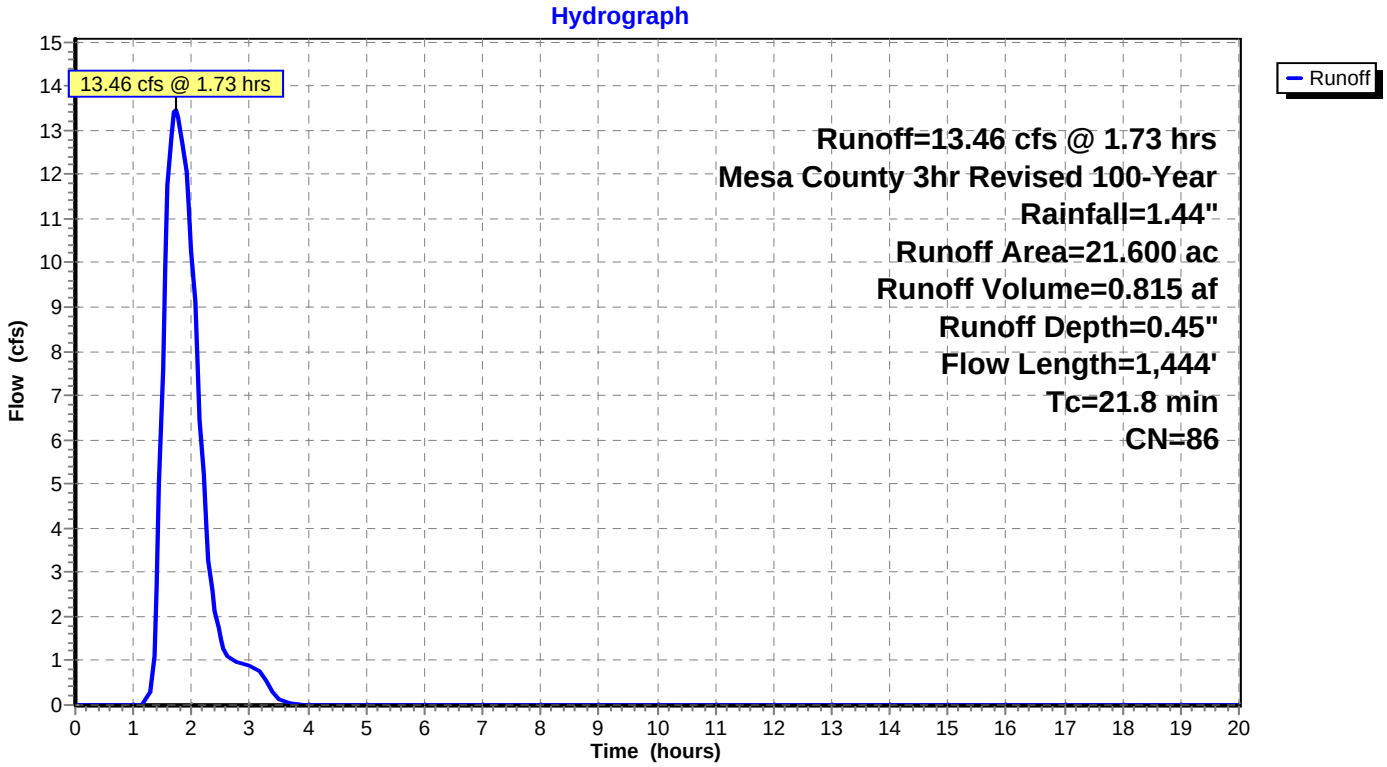
Runoff = 13.46 cfs @ 1.73 hrs, Volume= 0.815 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
21.600	86	Desert shrub range, Fair, HSG D
21.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0	192	0.0100	0.21		**Sheet Flow,** n= 0.028 P2= 0.46"
0.7	360	0.2900	8.67		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.1	892	0.0600	2.45		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
21.8	1,444	Total			

Subcatchment EX4: EX4



Summary for Subcatchment EX5: EX5

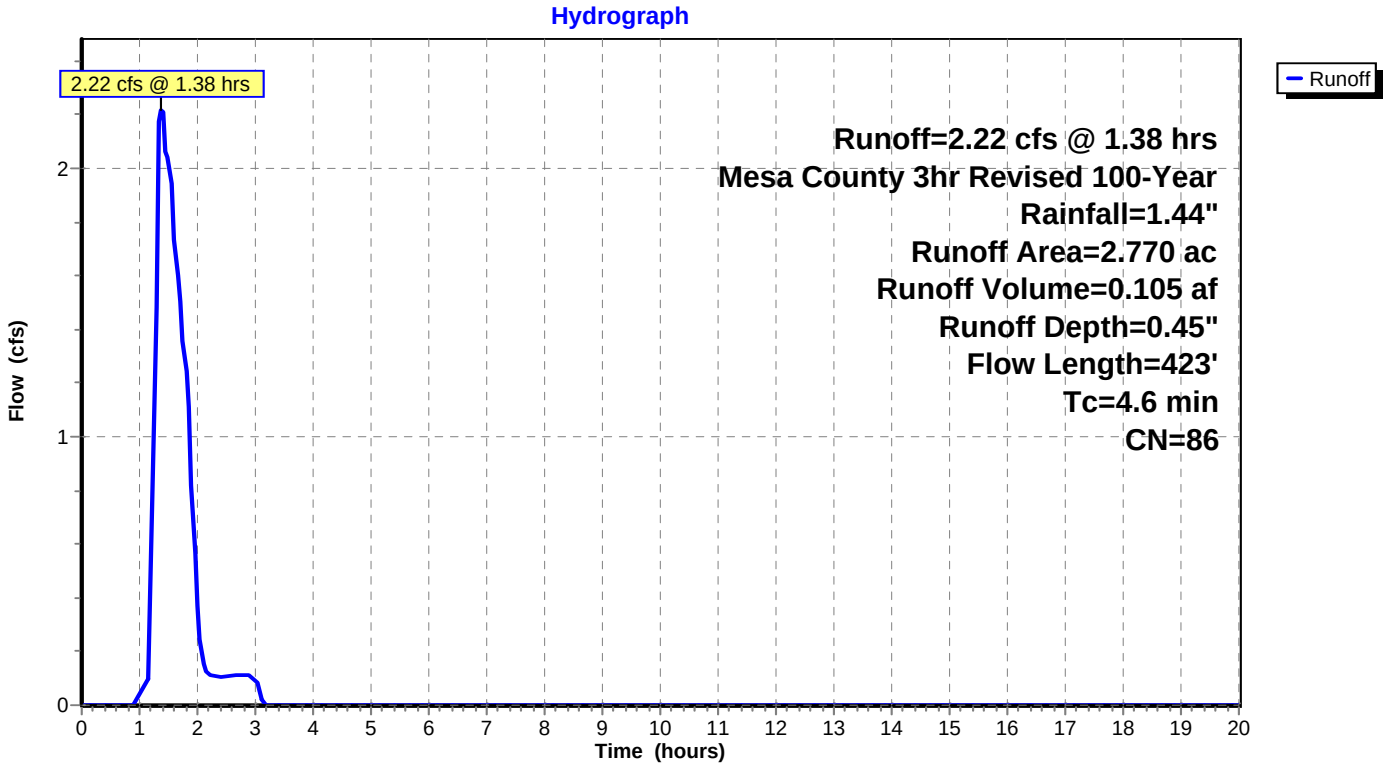
Runoff = 2.22 cfs @ 1.38 hrs, Volume= 0.105 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
2.770	86	Desert shrub range, Fair, HSG D
2.770		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.2500	0.68		**Sheet Flow,** n= 0.028 P2= 0.46"
2.1	323	0.1300	2.52		**Shallow Concentrated Flow,** Kv= 7.0 fps
4.6	423	Total			

Subcatchment EX5: EX5



Summary for Subcatchment EX6: EX6

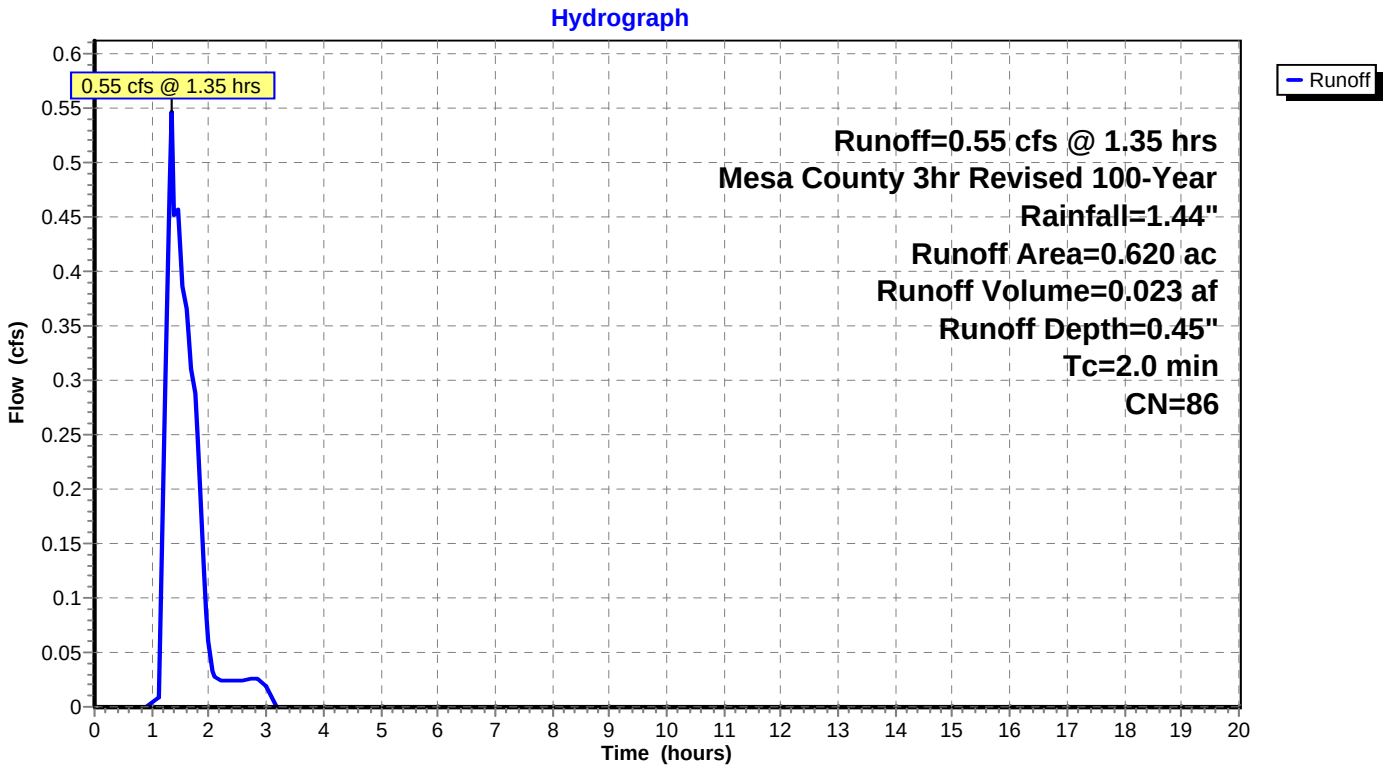
Runoff = 0.55 cfs @ 1.35 hrs, Volume= 0.023 af, Depth= 0.45"

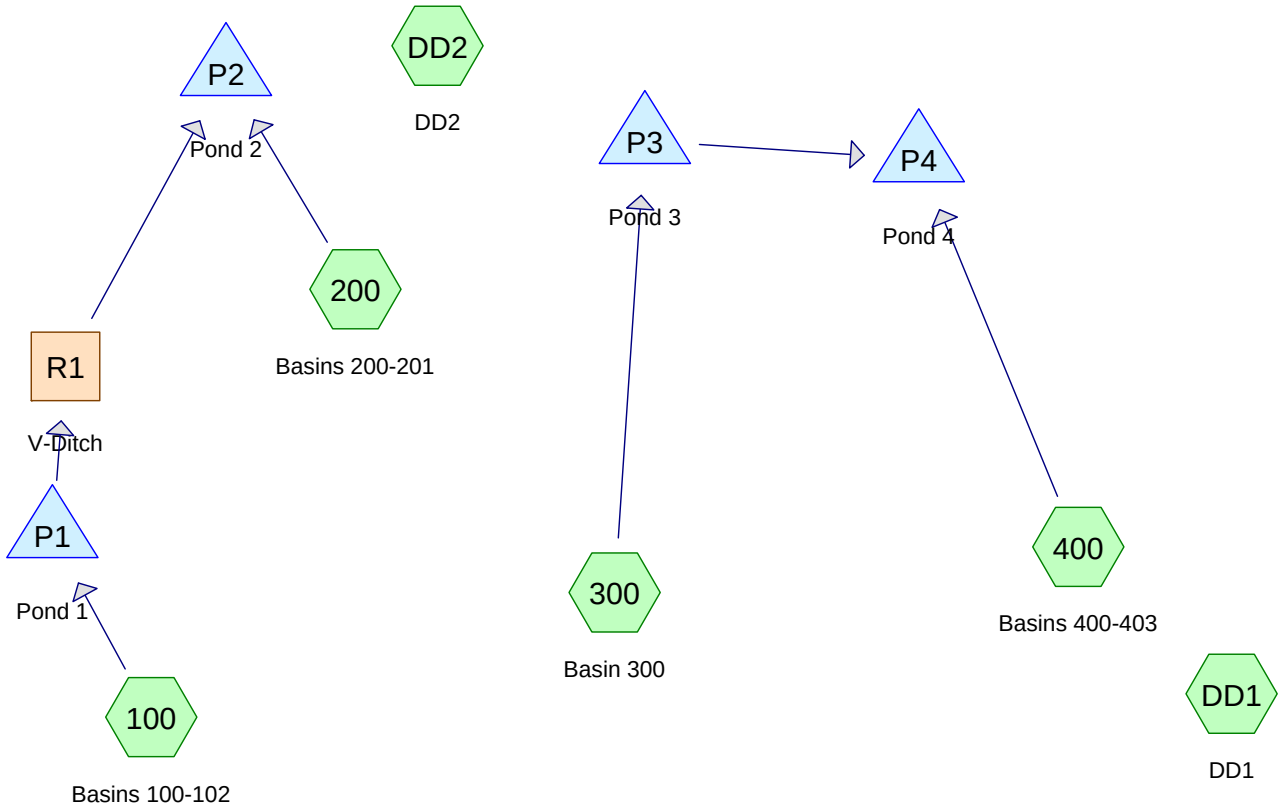
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
0.620	86	Desert shrub range, Fair, HSG D
0.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment EX6: EX6





Subcat Reach Pond Link

Routing Diagram for PinnacleRidgeFeb2015
Prepared by Vortex Engineering, Inc., Printed 6/2/2017
HydroCAD® 10.00-19 s/n 05232 © 2016 HydroCAD Software Solutions LLC

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 100: Basins 100-102 Runoff Area=6.870 ac Runoff Depth=0.16"
Flow Length=991' Tc=25.6 min CN=89 Runoff=1.41 cfs 0.089 af

Subcatchment 200: Basins 200-201 Runoff Area=15.580 ac Runoff Depth=0.16"
Tc=9.1 min CN=89 Runoff=3.93 cfs 0.202 af

Subcatchment 300: Basin 300 Runoff Area=1.560 ac Runoff Depth=0.13"
Tc=5.0 min CN=88 Runoff=0.36 cfs 0.017 af

Subcatchment 400: Basins 400-403 Runoff Area=22.940 ac Runoff Depth=0.16"
Flow Length=1,690' Tc=12.5 min CN=89 Runoff=5.52 cfs 0.297 af

Subcatchment DD1: DD1 Runoff Area=1.930 ac Runoff Depth=0.10"
Tc=5.0 min CN=86 Runoff=0.32 cfs 0.015 af

Subcatchment DD2: DD2 Runoff Area=0.390 ac Runoff Depth=0.10"
Tc=5.0 min CN=86 Runoff=0.06 cfs 0.003 af

Reach R1: V-Ditch Avg. Flow Depth=0.23' Max Vel=2.50 fps Inflow=0.26 cfs 0.170 af
n=0.025 L=815.0' S=0.0368 '/' Capacity=24.18 cfs Outflow=0.26 cfs 0.170 af

Pond P1: Pond 1 Peak Elev=4,802.31' Storage=6,082 cf Inflow=1.41 cfs 0.089 af
Outflow=0.26 cfs 0.170 af

Pond P2: Pond 2 Peak Elev=4,748.32' Storage=13,992 cf Inflow=3.98 cfs 0.372 af
Outflow=0.52 cfs 0.569 af

Pond P3: Pond 3 Peak Elev=4,752.88' Storage=820 cf Inflow=0.36 cfs 0.017 af
Outflow=0.17 cfs 0.032 af

Pond P4: Pond 4 Peak Elev=4,742.73' Storage=14,737 cf Inflow=5.59 cfs 0.329 af
Outflow=1.91 cfs 0.593 af

Total Runoff Area = 49.270 ac Runoff Volume = 0.624 af Average Runoff Depth = 0.15"

Summary for Subcatchment 100: Basins 100-102

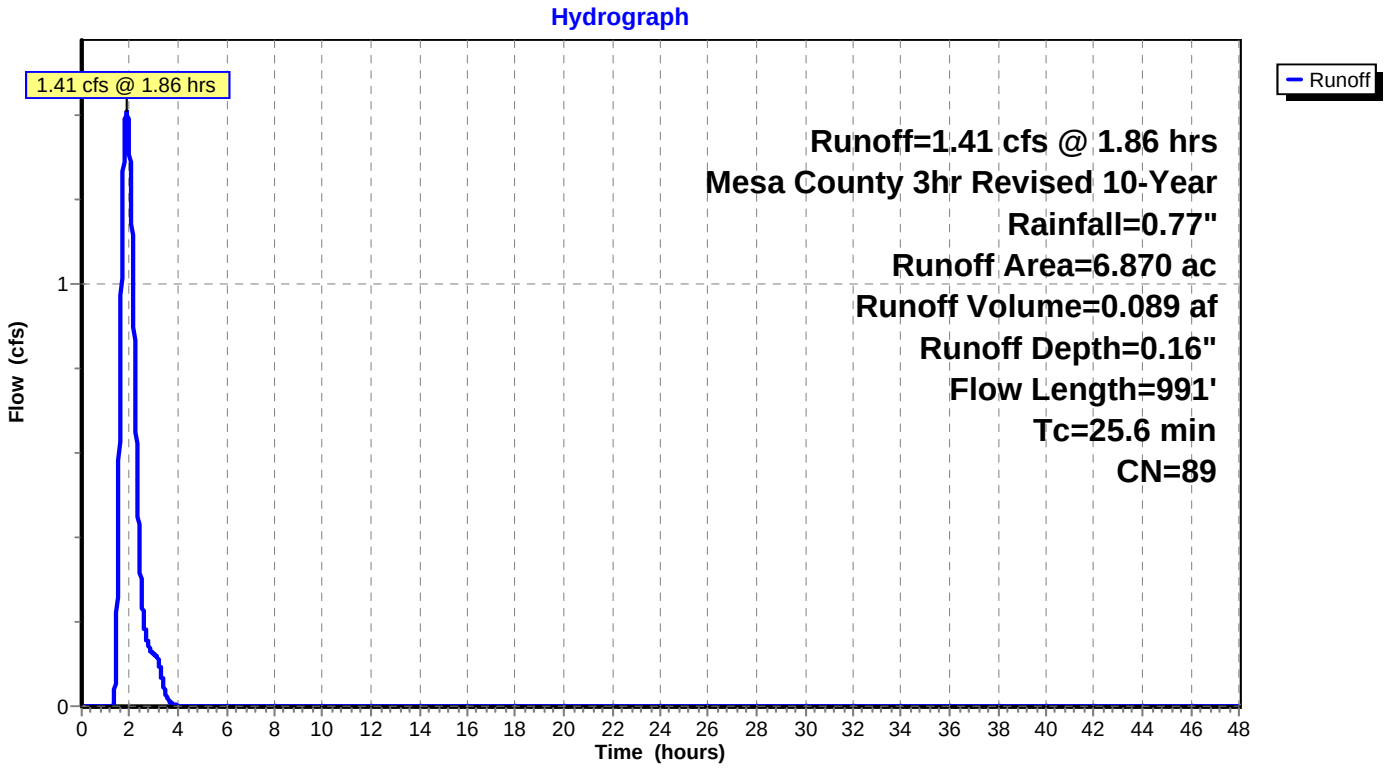
Runoff = 1.41 cfs @ 1.86 hrs, Volume= 0.089 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	6.870	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.9	136	0.0500	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 0.46"
2.7	855	0.1100	5.34		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
25.6	991	Total			

Subcatchment 100: Basins 100-102



Summary for Subcatchment 200: Basins 200-201

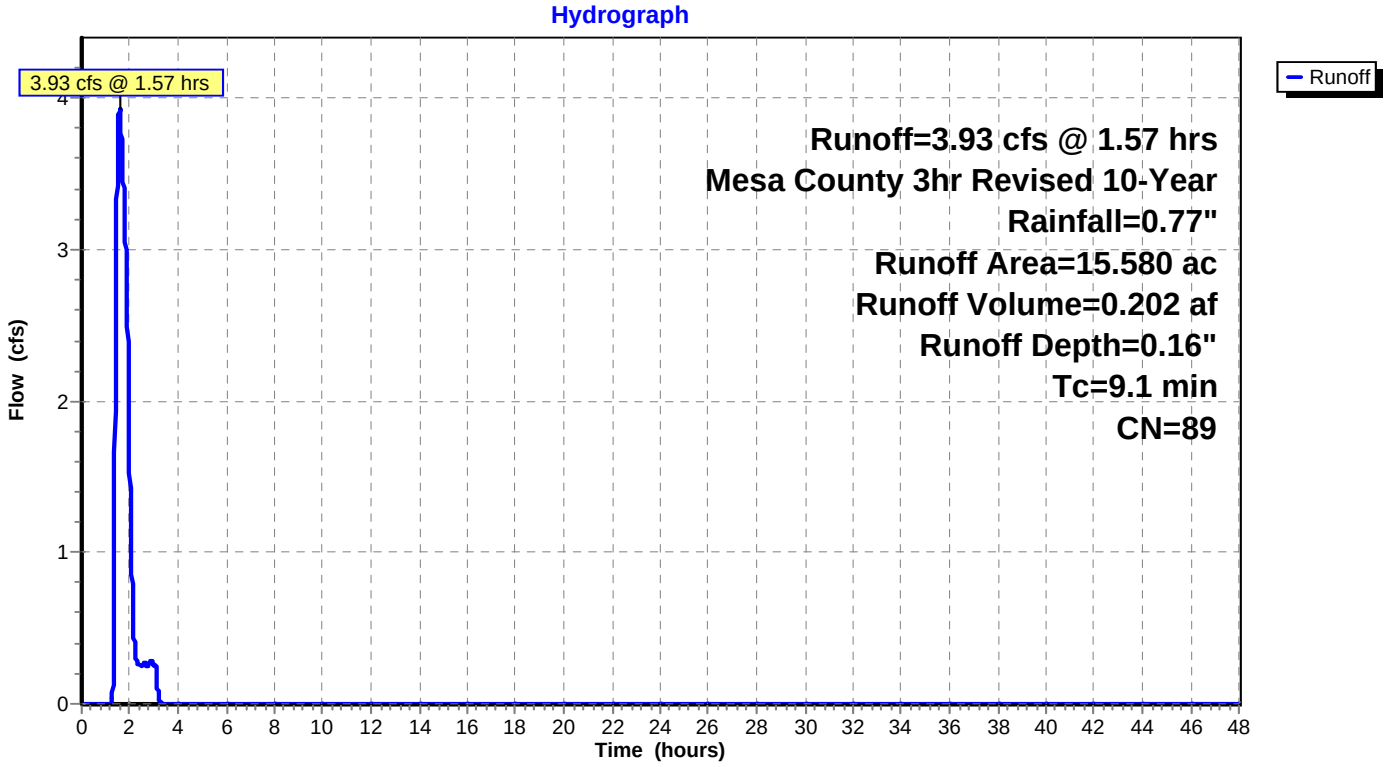
Runoff = 3.93 cfs @ 1.57 hrs, Volume= 0.202 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	15.580	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1					**Direct Entry, Tc to Pond #2**

Subcatchment 200: Basins 200-201



Summary for Subcatchment 300: Basin 300

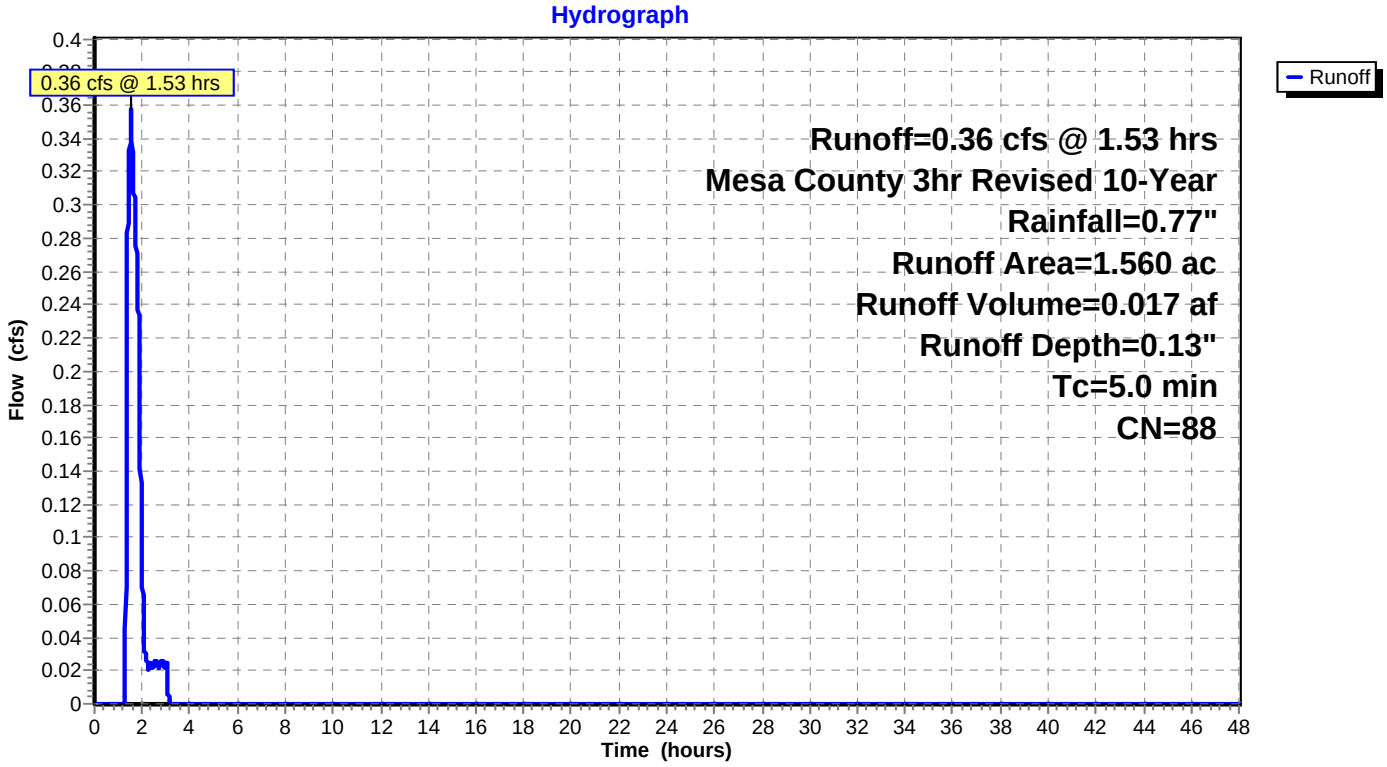
Runoff = 0.36 cfs @ 1.53 hrs, Volume= 0.017 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	1.560	88	LOTS W/ HOUSES 4000 SF

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 300: Basin 300



Summary for Subcatchment 400: Basins 400-403

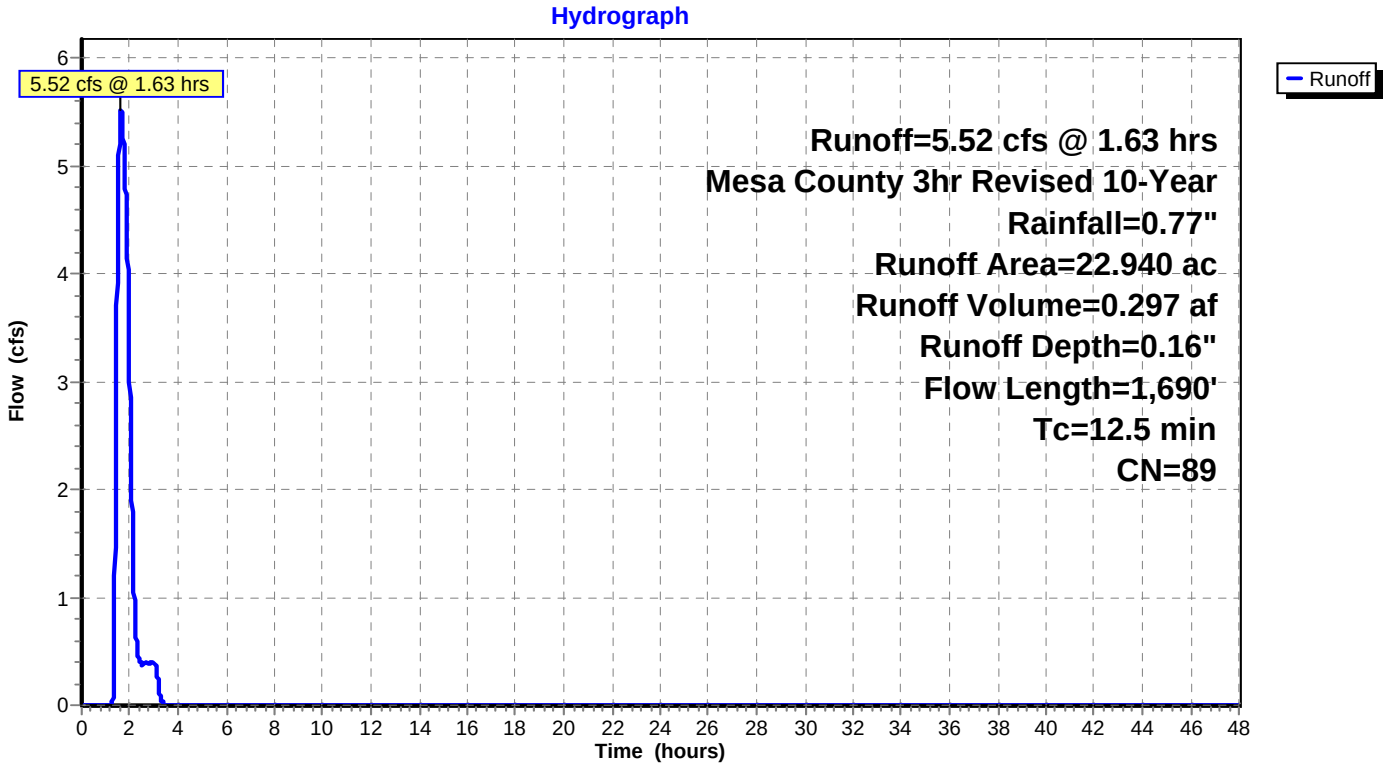
Runoff = 5.52 cfs @ 1.63 hrs, Volume= 0.297 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	22.940	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	190	0.0300	0.31		**Sheet Flow,** n= 0.030 P2= 0.46"
2.4	1,500	0.0933	10.27	32.09	**Trap/Vee/Rect Channel Flow,** Bot.W=0.00' D=1.25' Z= 2.0 '/' Top.W=5.00' n= 0.030
12.5	1,690	Total			

Subcatchment 400: Basins 400-403



Summary for Subcatchment DD1: DD1

Direct Discharge basin compensated in Pond 1

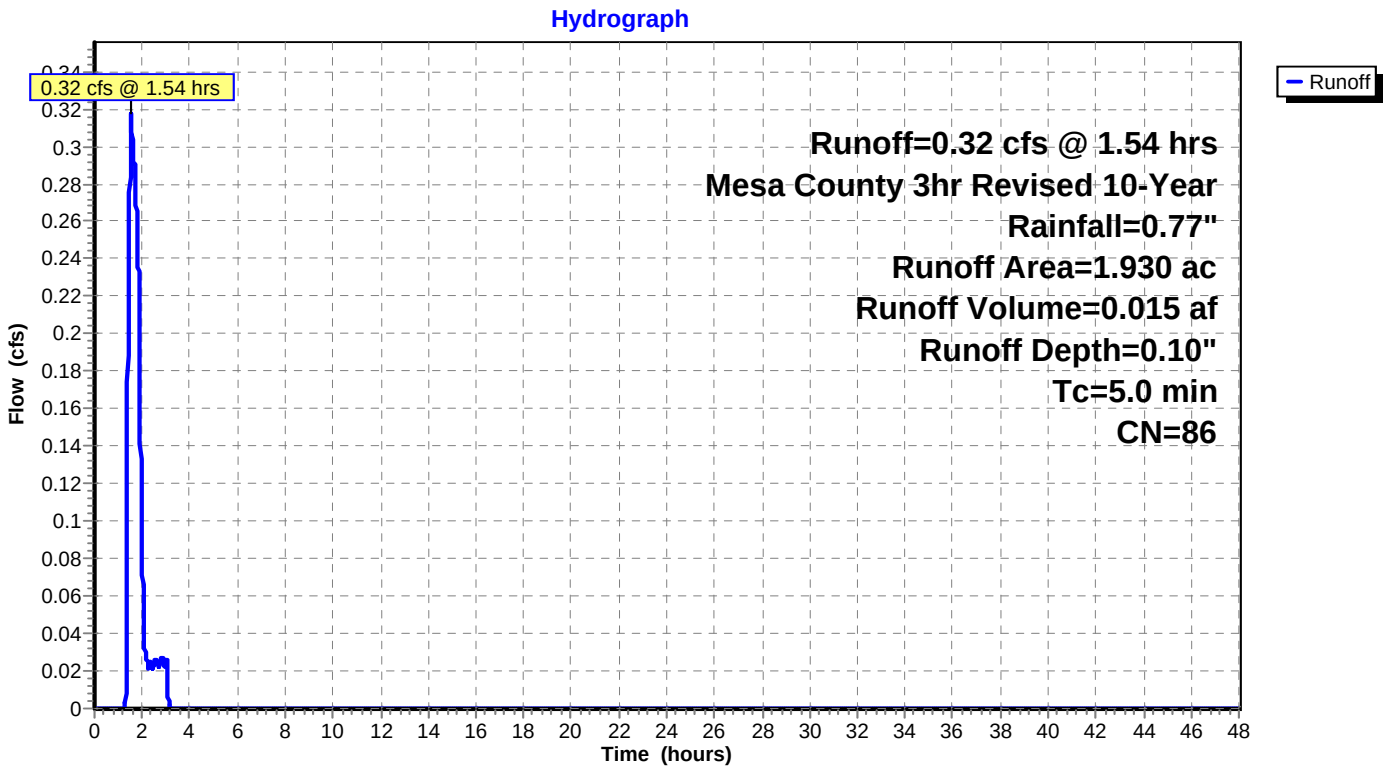
Runoff = 0.32 cfs @ 1.54 hrs, Volume= 0.015 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	1.930	86	Natural western desert, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DD1: DD1



Summary for Subcatchment DD2: DD2

Disrect discharge basin, compensated in Pond 4

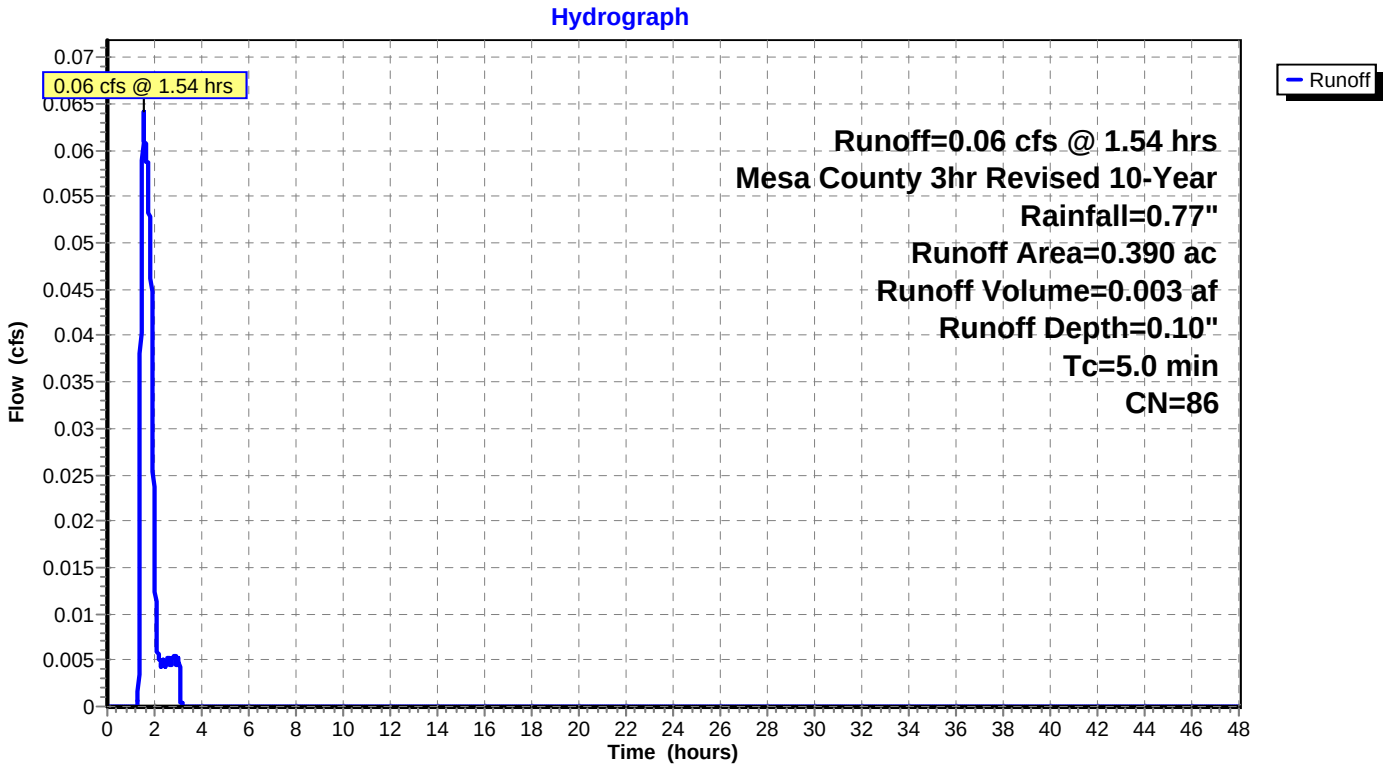
Runoff = 0.06 cfs @ 1.54 hrs, Volume= 0.003 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	0.390	86	Natural western desert, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DD2: DD2



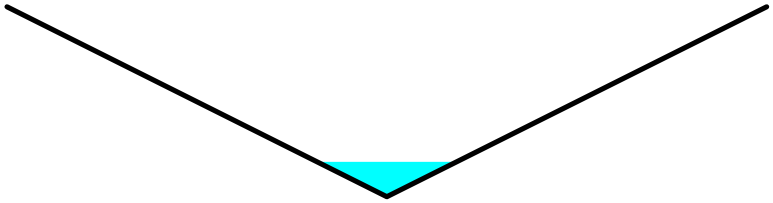
Summary for Reach R1: V-Ditch

Inflow Area = 6.870 ac, Inflow Depth > 0.30" for 10-Year event
Inflow = 0.26 cfs @ 2.49 hrs, Volume= 0.170 af
Outflow = 0.26 cfs @ 2.57 hrs, Volume= 0.170 af, Atten= 0%, Lag= 5.0 min

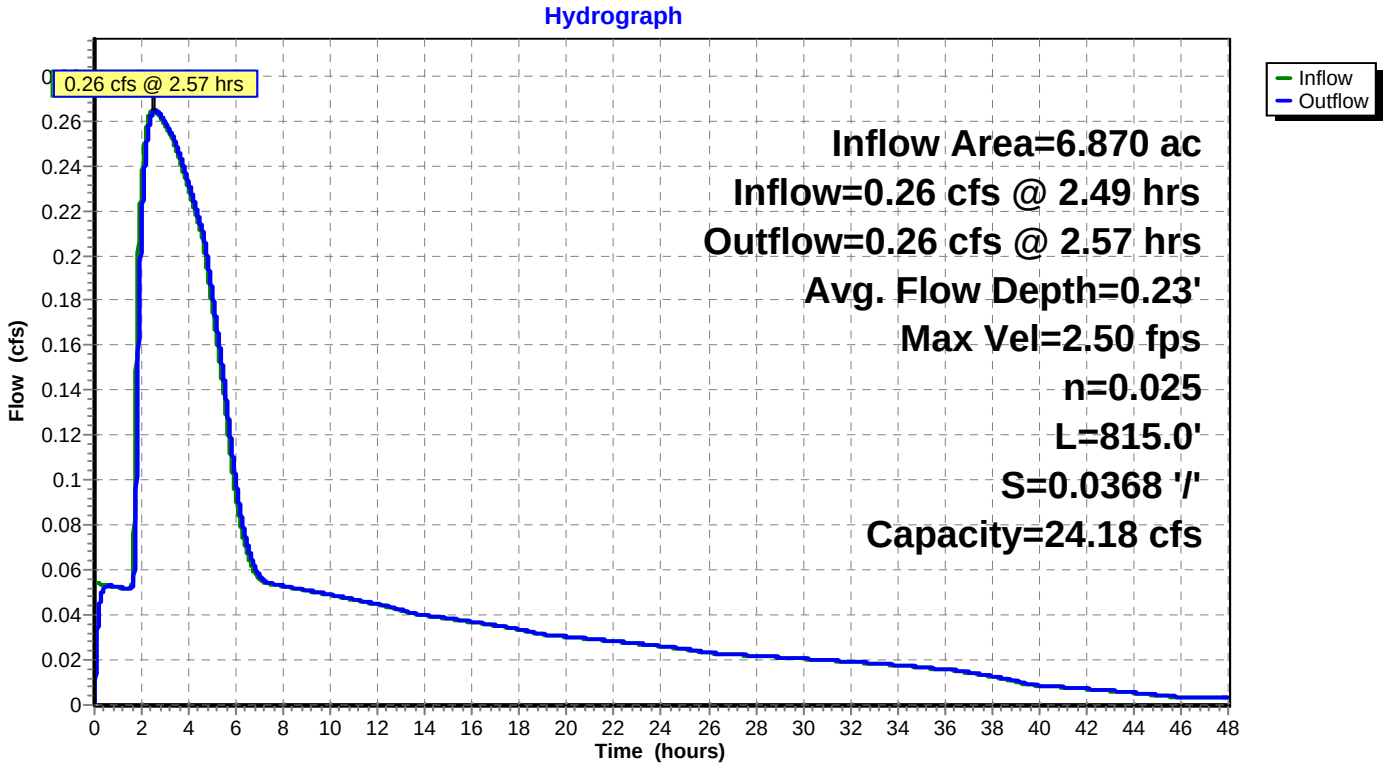
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.50 fps, Min. Travel Time= 5.4 min
Avg. Velocity = 1.44 fps, Avg. Travel Time= 9.4 min

Peak Storage= 86 cf @ 2.57 hrs
Average Depth at Peak Storage= 0.23'
Bank-Full Depth= 1.25' Flow Area= 3.1 sf, Capacity= 24.18 cfs

0.00' x 1.25' deep channel, n= 0.025
Side Slope Z-value= 2.0 '/' Top Width= 5.00'
Length= 815.0' Slope= 0.0368 '/'
Inlet Invert= 4,796.00', Outlet Invert= 4,766.00'



Reach R1: V-Ditch



Summary for Pond P1: Pond 1

Inflow Area = 6.870 ac, Inflow Depth = 0.16" for 10-Year event
Inflow = 1.41 cfs @ 1.86 hrs, Volume= 0.089 af
Outflow = 0.26 cfs @ 2.49 hrs, Volume= 0.170 af, Atten= 81%, Lag= 37.5 min
Primary = 0.26 cfs @ 2.49 hrs, Volume= 0.170 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,801.50' Surf.Area= 2,799 sf Storage= 3,655 cf
Peak Elev= 4,802.31' @ 2.49 hrs Surf.Area= 3,721 sf Storage= 6,082 cf (2,426 cf above start)

Plug-Flow detention time= 1,075.9 min calculated for 0.086 af (97% of inflow)
Center-of-Mass det. time= 585.6 min (708.3 - 122.7)

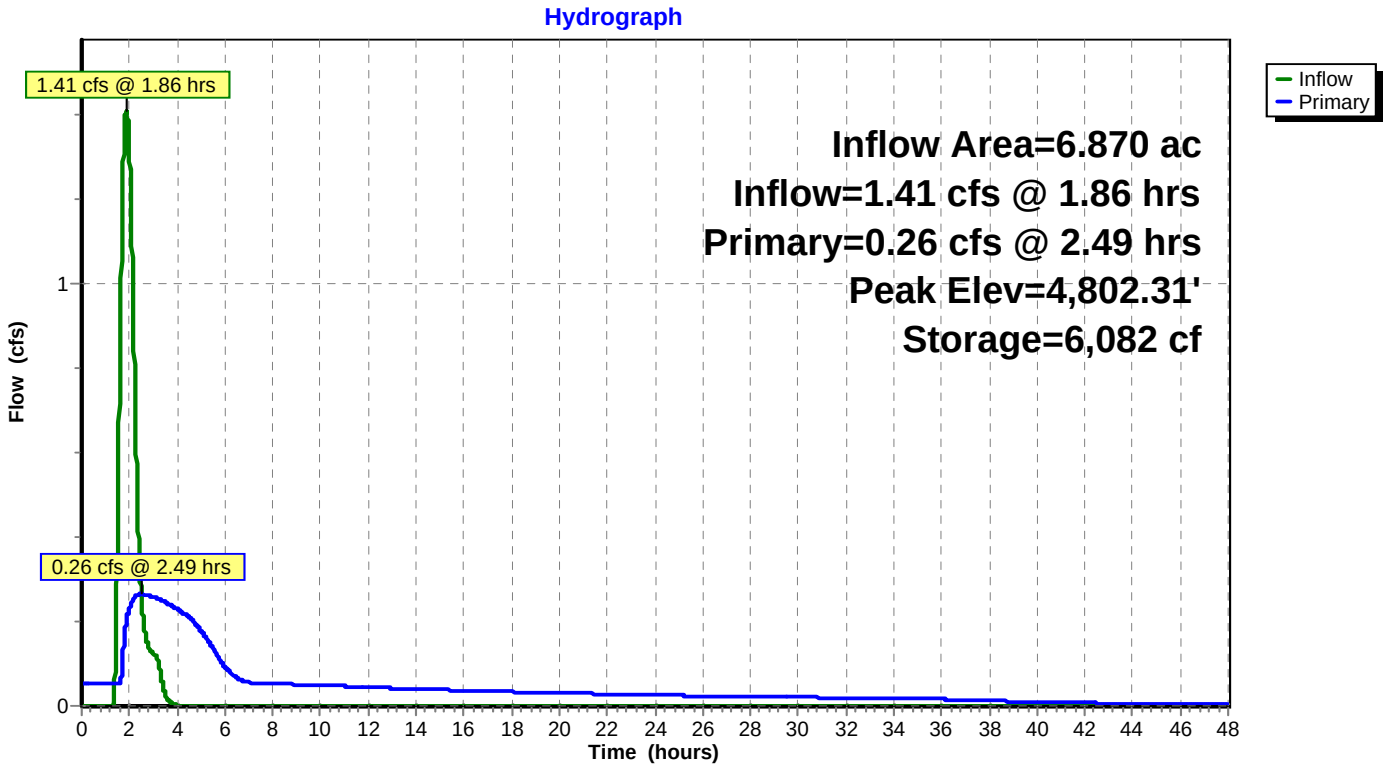
Volume	Invert	Avail.Storage	Storage Description
#1	4,799.00'	43,026 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,799.00	0	0	0
4,800.00	856	428	428
4,802.00	3,447	4,303	4,731
4,804.00	5,204	8,651	13,382
4,806.00	7,321	12,525	25,907
4,808.00	9,798	17,119	43,026

Device	Routing	Invert	Outlet Devices
#1	Primary	4,799.00'	**0.5" Vert. Orifice/Grate** X 7 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,801.50'	**3.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	4,804.50'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.26 cfs @ 2.49 hrs HW=4,802.31' TW=4,796.23' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.07 cfs @ 7.21 fps)
- **2=Orifice/Grate** (Orifice Controls 0.20 cfs @ 3.99 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P1: Pond 1



Summary for Pond P2: Pond 2

Inflow Area = 22.450 ac, Inflow Depth > 0.20" for 10-Year event
Inflow = 3.98 cfs @ 1.57 hrs, Volume= 0.372 af
Outflow = 0.52 cfs @ 2.94 hrs, Volume= 0.569 af, Atten= 87%, Lag= 82.0 min
Primary = 0.52 cfs @ 2.94 hrs, Volume= 0.569 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,747.71' Surf.Area= 8,172 sf Storage= 8,686 cf
Peak Elev= 4,748.32' @ 2.94 hrs Surf.Area= 9,255 sf Storage= 13,992 cf (5,306 cf above start)

Plug-Flow detention time= 475.5 min calculated for 0.369 af (99% of inflow)
Center-of-Mass det. time= 220.2 min (605.7 - 385.5)

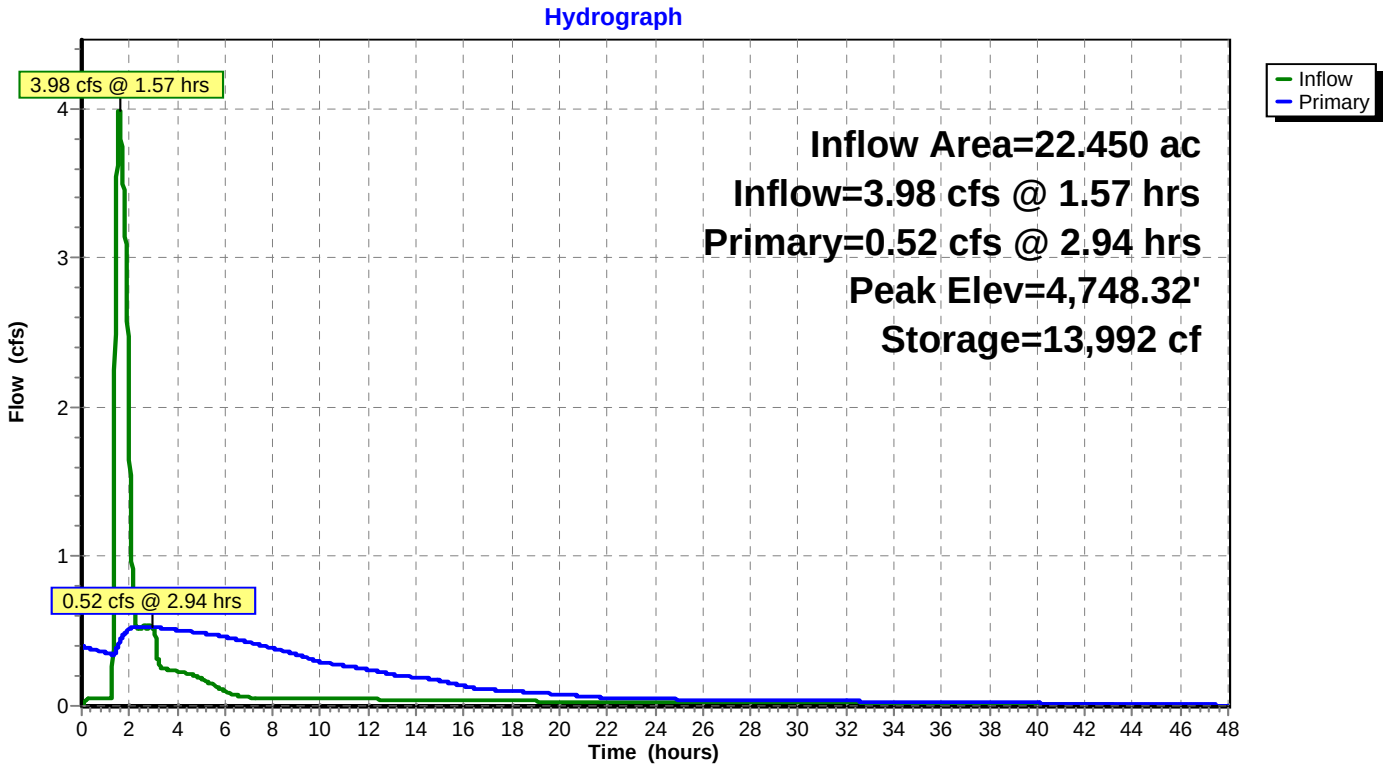
Volume	Invert	Avail.Storage	Storage Description
#1	4,746.06'	59,211 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,746.06	0	0	0
4,747.00	6,765	3,180	3,180
4,748.00	8,746	7,756	10,935
4,749.00	10,334	9,540	20,475
4,750.00	11,994	11,164	31,639
4,751.00	13,830	12,912	44,551
4,752.00	15,490	14,660	59,211

Device	Routing	Invert	Outlet Devices
#1	Primary	4,746.06'	**0.9" Vert. Orifice/Grate X 4.00 columns** X 5 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,748.32'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	4,751.00'	**14.0' long x 0.5' breadth emergency spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.52 cfs @ 2.94 hrs HW=4,748.32' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.52 cfs @ 5.93 fps)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.06 fps)
- **3=emergency spillway** (Controls 0.00 cfs)

Pond P2: Pond 2



Summary for Pond P3: Pond 3

Inflow Area = 1.560 ac, Inflow Depth = 0.13" for 10-Year event
Inflow = 0.36 cfs @ 1.53 hrs, Volume= 0.017 af
Outflow = 0.17 cfs @ 1.90 hrs, Volume= 0.032 af, Atten= 52%, Lag= 22.2 min
Primary = 0.17 cfs @ 1.90 hrs, Volume= 0.032 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,752.64' Surf.Area= 737 sf Storage= 632 cf
Peak Elev= 4,752.88' @ 1.90 hrs Surf.Area= 832 sf Storage= 820 cf (188 cf above start)

Plug-Flow detention time= 184.7 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 92.6 min (197.3 - 104.8)

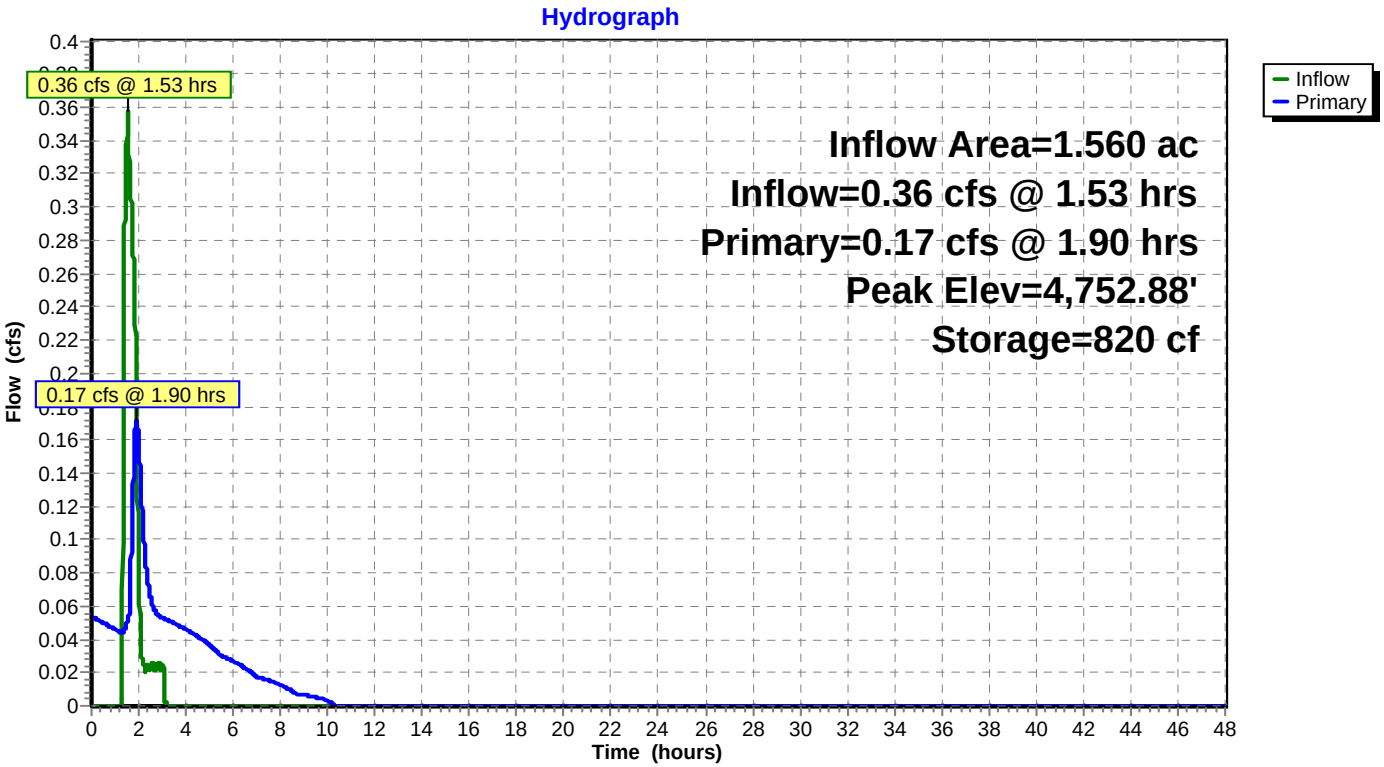
Volume	Invert	Avail.Storage	Storage Description
#1	4,751.00'	5,359 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,751.00	0	0	0
4,752.00	483	242	242
4,754.00	1,277	1,760	2,002
4,756.00	2,080	3,357	5,359

Device	Routing	Invert	Outlet Devices
#1	Primary	4,751.00'	**0.7" Vert. Orifice/Grate** X 4 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,752.64'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	4,754.06'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.17 cfs @ 1.90 hrs HW=4,752.88' TW=4,742.58' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.06 cfs @ 5.54 fps)
- **2=Orifice/Grate** (Orifice Controls 0.11 cfs @ 1.67 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P3: Pond 3



Summary for Pond P4: Pond 4

Inflow Area = 24.500 ac, Inflow Depth = 0.16" for 10-Year event
Inflow = 5.59 cfs @ 1.63 hrs, Volume= 0.329 af
Outflow = 1.91 cfs @ 2.09 hrs, Volume= 0.593 af, Atten= 66%, Lag= 27.4 min
Primary = 1.91 cfs @ 2.09 hrs, Volume= 0.593 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,742.19' Surf.Area= 5,651 sf Storage= 11,503 cf
Peak Elev= 4,742.73' @ 2.09 hrs Surf.Area= 6,380 sf Storage= 14,737 cf (3,234 cf above start)

Plug-Flow detention time= 185.7 min calculated for 0.329 af (100% of inflow)
Center-of-Mass det. time= 89.4 min (208.4 - 118.9)

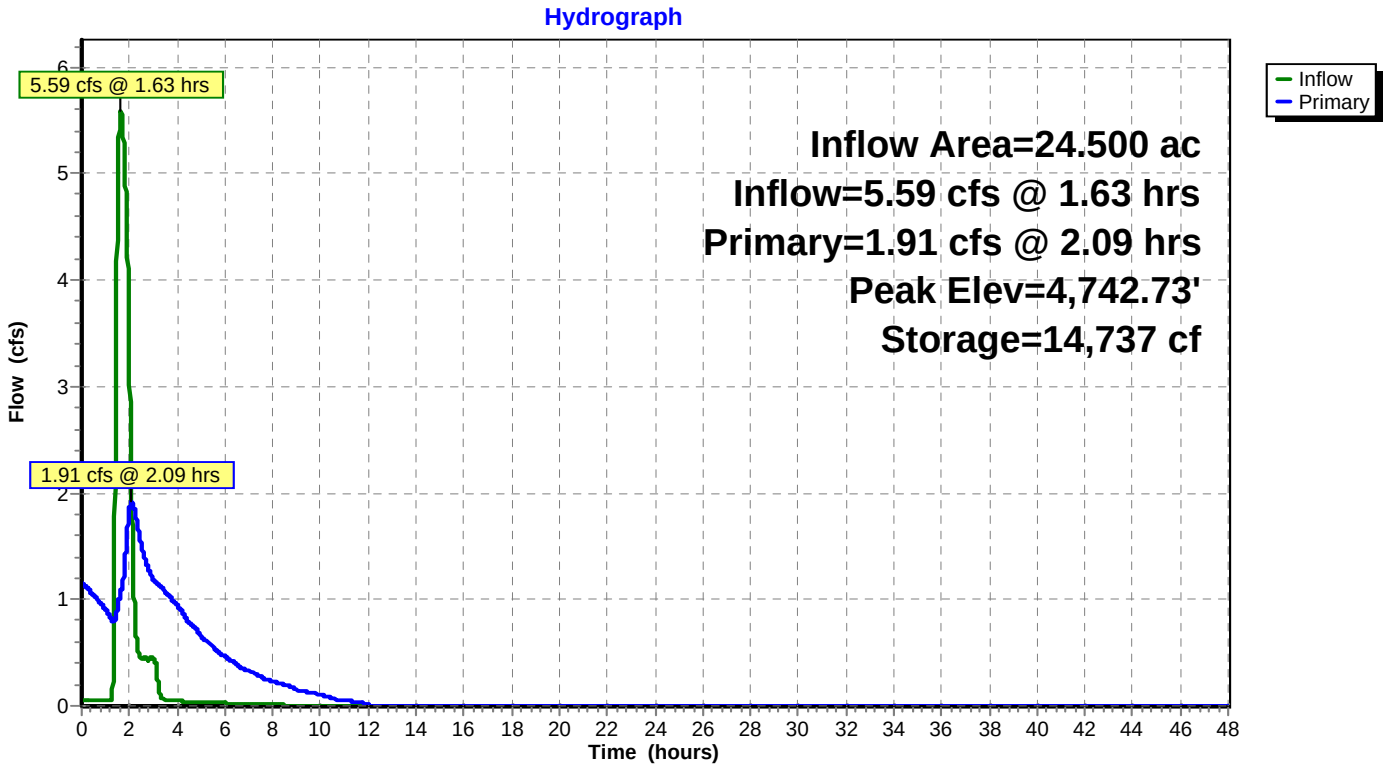
Volume	Invert	Avail.Storage	Storage Description
#1	4,739.00'	42,958 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,739.00	0	0	0
4,740.00	3,373	1,687	1,687
4,742.00	5,394	8,767	10,454
4,744.00	8,104	13,498	23,952
4,746.00	10,902	19,006	42,958

Device	Routing	Invert	Outlet Devices
#1	Primary	4,739.00'	**1.0" Vert. Orifice/Grate X 4.00 columns** X 8 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,742.19'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	4,745.13'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.91 cfs @ 2.09 hrs HW=4,742.73' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 1.32 cfs @ 7.55 fps)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 0.60 cfs @ 2.22 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P4: Pond 4



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 100: Basins 100-102 Runoff Area=6.870 ac Runoff Depth=0.59"
Flow Length=991' Tc=25.6 min CN=89 Runoff=5.32 cfs 0.335 af

Subcatchment 200: Basins 200-201 Runoff Area=15.580 ac Runoff Depth=0.59"
Tc=9.1 min CN=89 Runoff=15.76 cfs 0.761 af

Subcatchment 300: Basin 300 Runoff Area=1.560 ac Runoff Depth=0.54"
Tc=5.0 min CN=88 Runoff=1.63 cfs 0.070 af

Subcatchment 400: Basins 400-403 Runoff Area=22.940 ac Runoff Depth=0.59"
Flow Length=1,690' Tc=12.5 min CN=89 Runoff=21.55 cfs 1.120 af

Subcatchment DD1: DD1 Runoff Area=1.930 ac Runoff Depth=0.45"
Tc=5.0 min CN=86 Runoff=1.61 cfs 0.073 af

Subcatchment DD2: DD2 Runoff Area=0.390 ac Runoff Depth=0.45"
Tc=5.0 min CN=86 Runoff=0.33 cfs 0.015 af

Reach R1: V-Ditch Avg. Flow Depth=0.29' Max Vel=2.91 fps Inflow=0.48 cfs 0.414 af
n=0.025 L=815.0' S=0.0368 '/' Capacity=24.18 cfs Outflow=0.48 cfs 0.414 af

Pond P1: Pond 1 Peak Elev=4,804.31' Storage=15,335 cf Inflow=5.32 cfs 0.335 af
Outflow=0.48 cfs 0.414 af

Pond P2: Pond 2 Peak Elev=4,749.95' Storage=31,059 cf Inflow=15.82 cfs 1.174 af
Outflow=4.21 cfs 1.368 af

Pond P3: Pond 3 Peak Elev=4,754.06' Storage=2,077 cf Inflow=1.63 cfs 0.070 af
Outflow=0.55 cfs 0.085 af

Pond P4: Pond 4 Peak Elev=4,745.13' Storage=33,969 cf Inflow=21.99 cfs 1.204 af
Outflow=10.21 cfs 1.469 af

Total Runoff Area = 49.270 ac Runoff Volume = 2.373 af Average Runoff Depth = 0.58"

Summary for Subcatchment 100: Basins 100-102

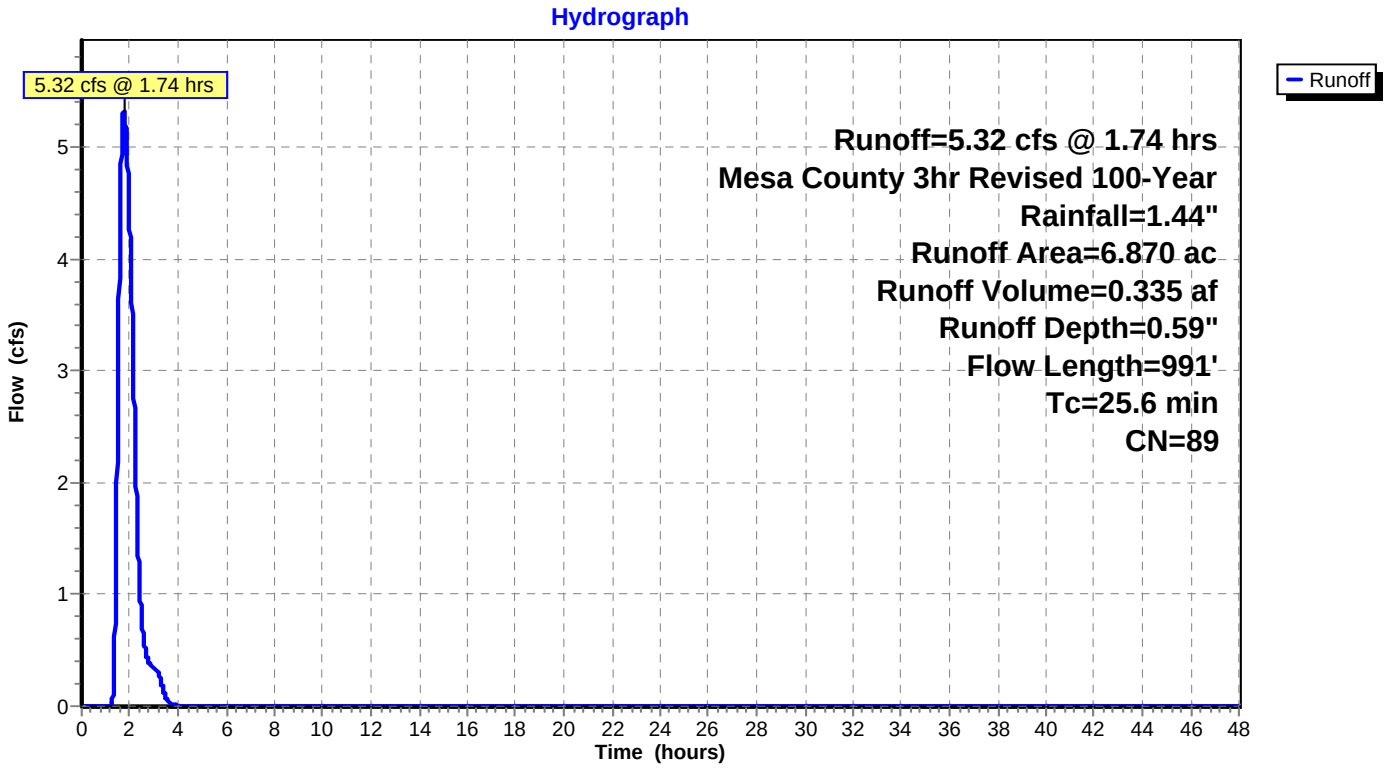
Runoff = 5.32 cfs @ 1.74 hrs, Volume= 0.335 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	6.870	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.9	136	0.0500	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 0.46"
2.7	855	0.1100	5.34		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
25.6	991	Total			

Subcatchment 100: Basins 100-102



Summary for Subcatchment 200: Basins 200-201

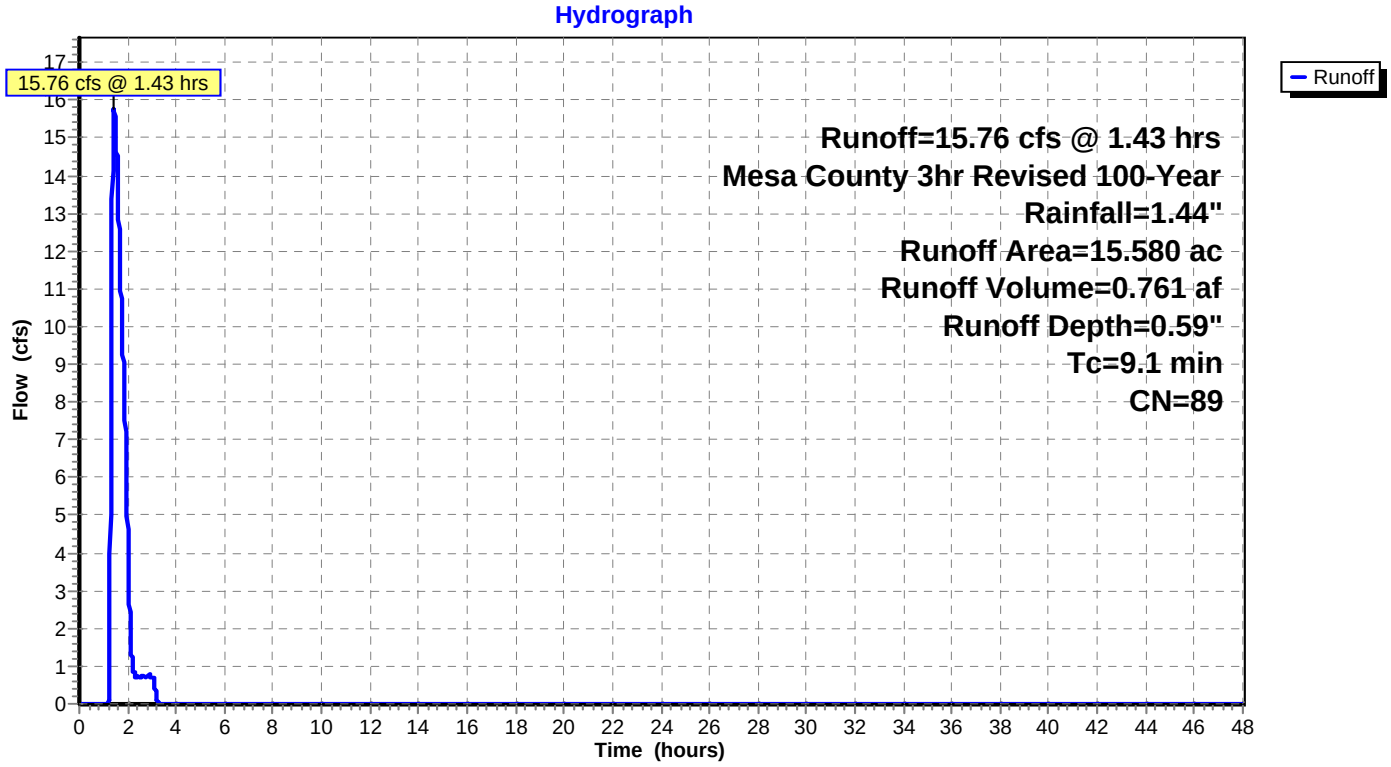
Runoff = 15.76 cfs @ 1.43 hrs, Volume= 0.761 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	15.580	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1					**Direct Entry, Tc to Pond #2**

Subcatchment 200: Basins 200-201



Summary for Subcatchment 300: Basin 300

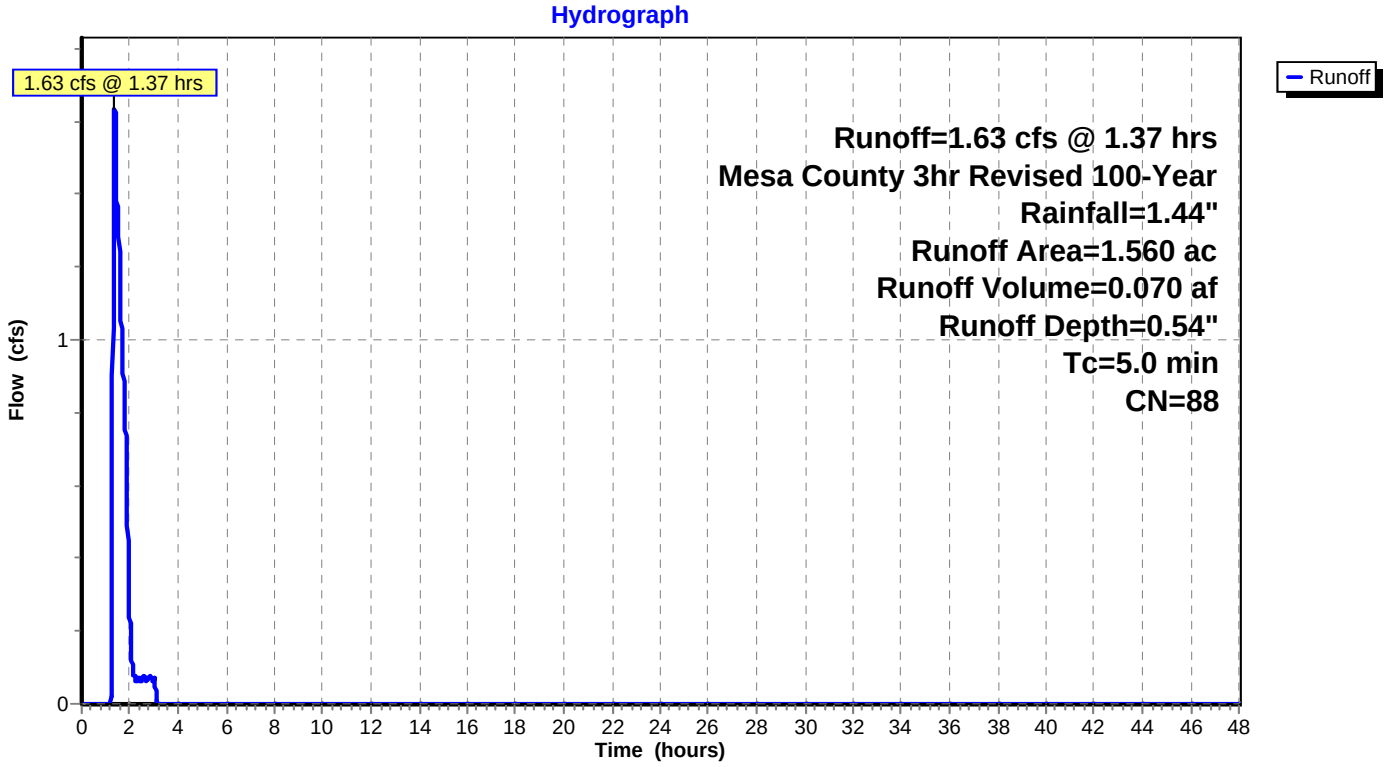
Runoff = 1.63 cfs @ 1.37 hrs, Volume= 0.070 af, Depth= 0.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	1.560	88	LOTS W/ HOUSES 4000 SF

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 300: Basin 300



Summary for Subcatchment 400: Basins 400-403

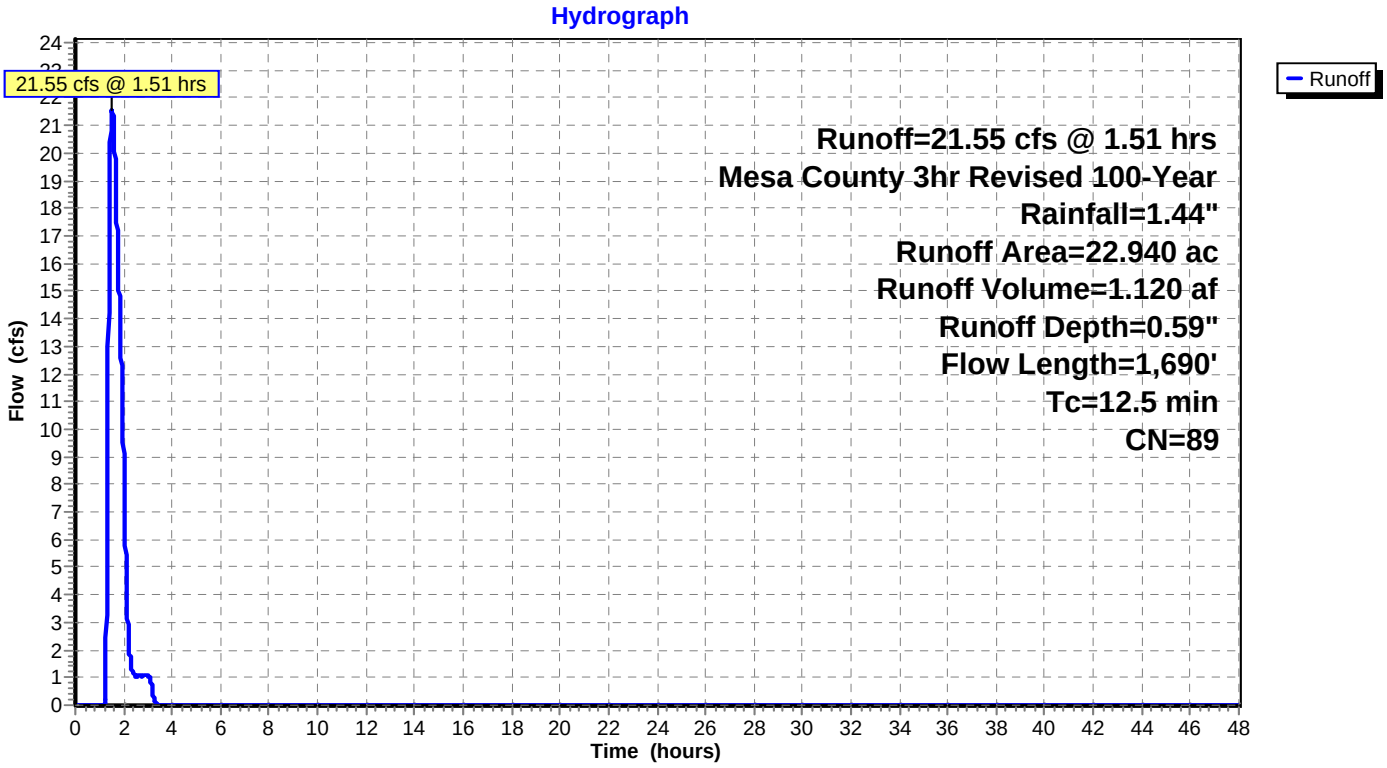
Runoff = 21.55 cfs @ 1.51 hrs, Volume= 1.120 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	22.940	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	190	0.0300	0.31		**Sheet Flow,** n= 0.030 P2= 0.46"
2.4	1,500	0.0933	10.27	32.09	**Trap/Vee/Rect Channel Flow,** Bot.W=0.00' D=1.25' Z= 2.0 '/' Top.W=5.00' n= 0.030
12.5	1,690	Total			

Subcatchment 400: Basins 400-403



Summary for Subcatchment DD1: DD1

Direct Discharge basin compensated in Pond 1

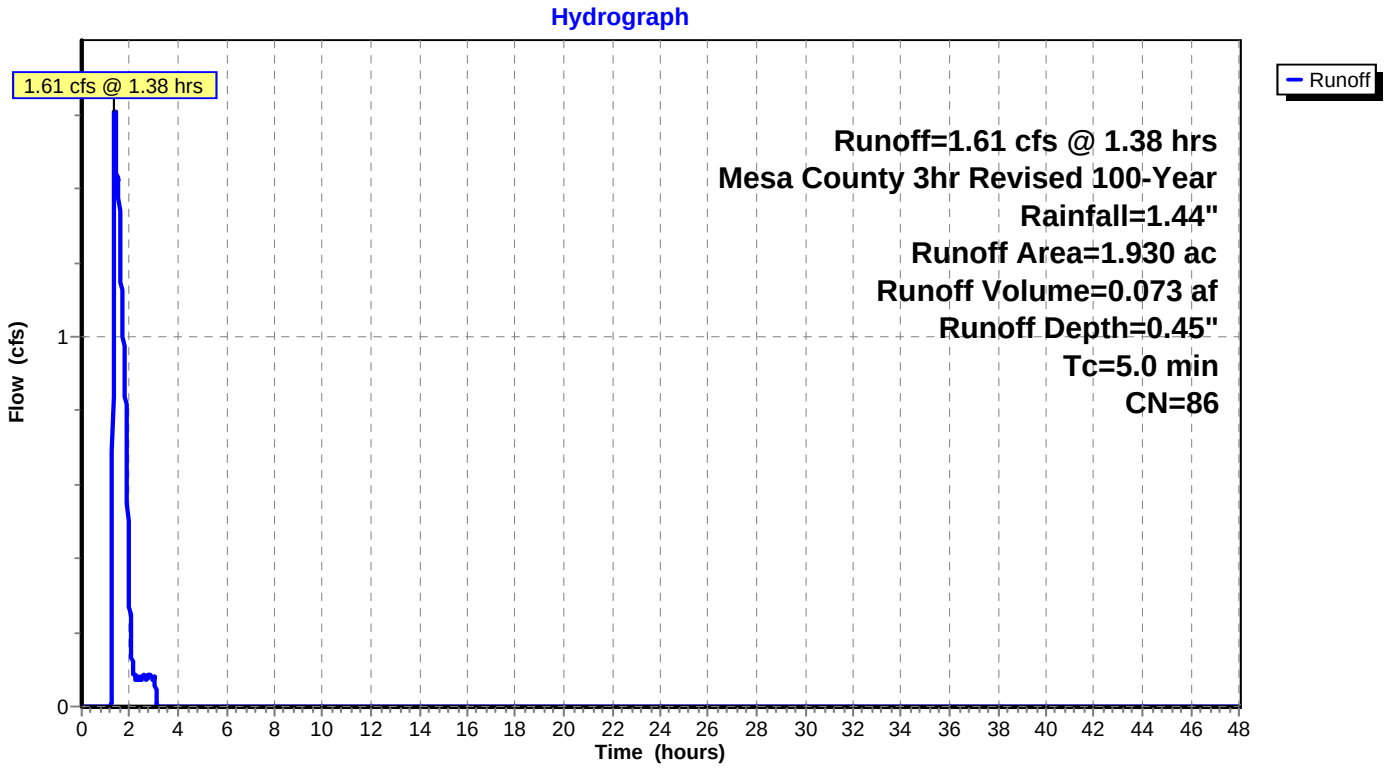
Runoff = 1.61 cfs @ 1.38 hrs, Volume= 0.073 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	1.930	86	Natural western desert, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DD1: DD1



Summary for Subcatchment DD2: DD2

Disrect discharge basin, compensated in Pond 4

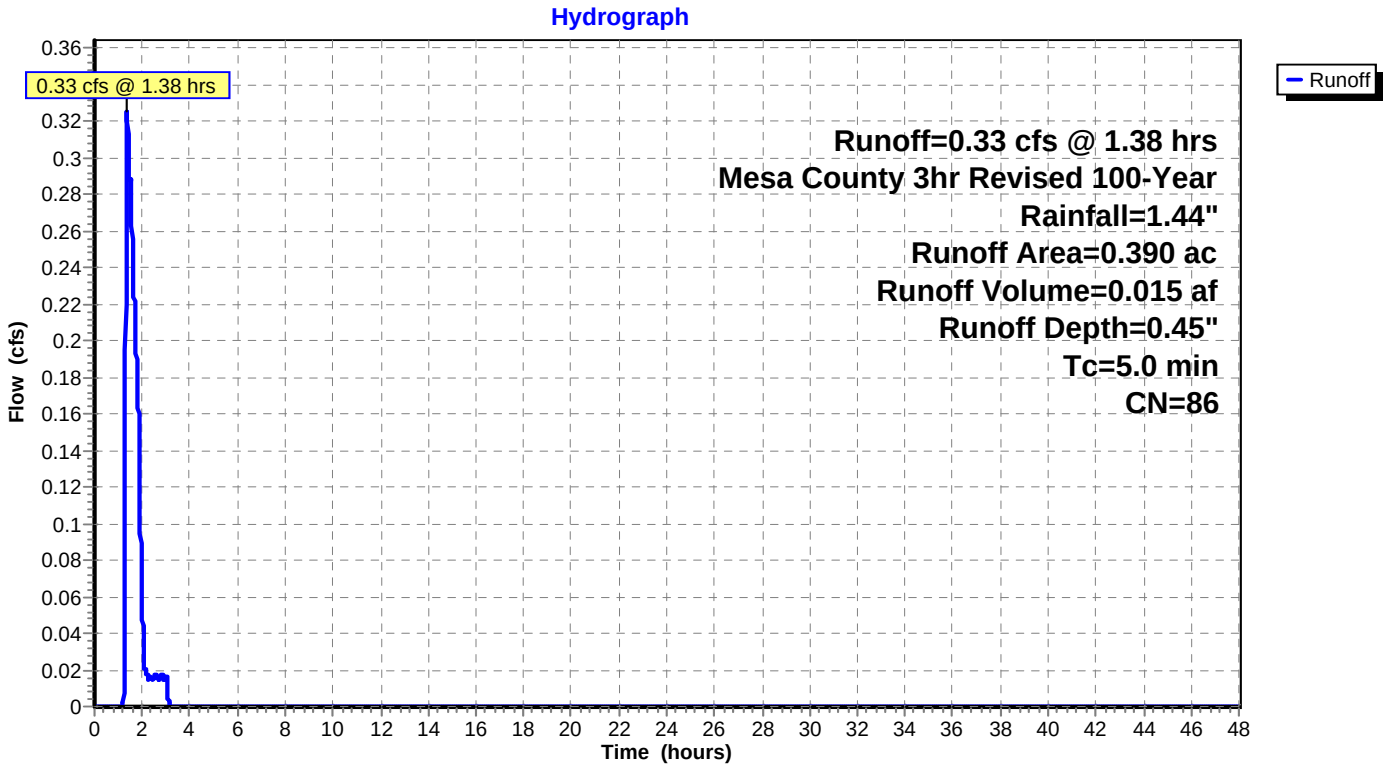
Runoff = 0.33 cfs @ 1.38 hrs, Volume= 0.015 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	0.390	86	Natural western desert, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DD2: DD2



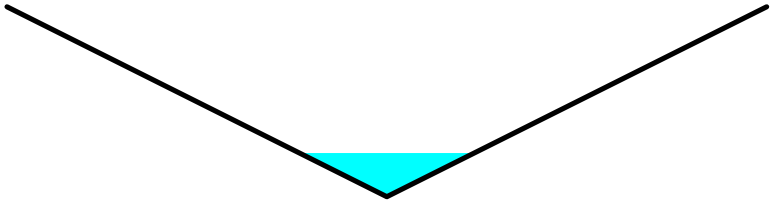
Summary for Reach R1: V-Ditch

Inflow Area = 6.870 ac, Inflow Depth > 0.72" for 100-Year event
Inflow = 0.48 cfs @ 2.66 hrs, Volume= 0.414 af
Outflow = 0.48 cfs @ 2.74 hrs, Volume= 0.414 af, Atten= 0%, Lag= 4.3 min

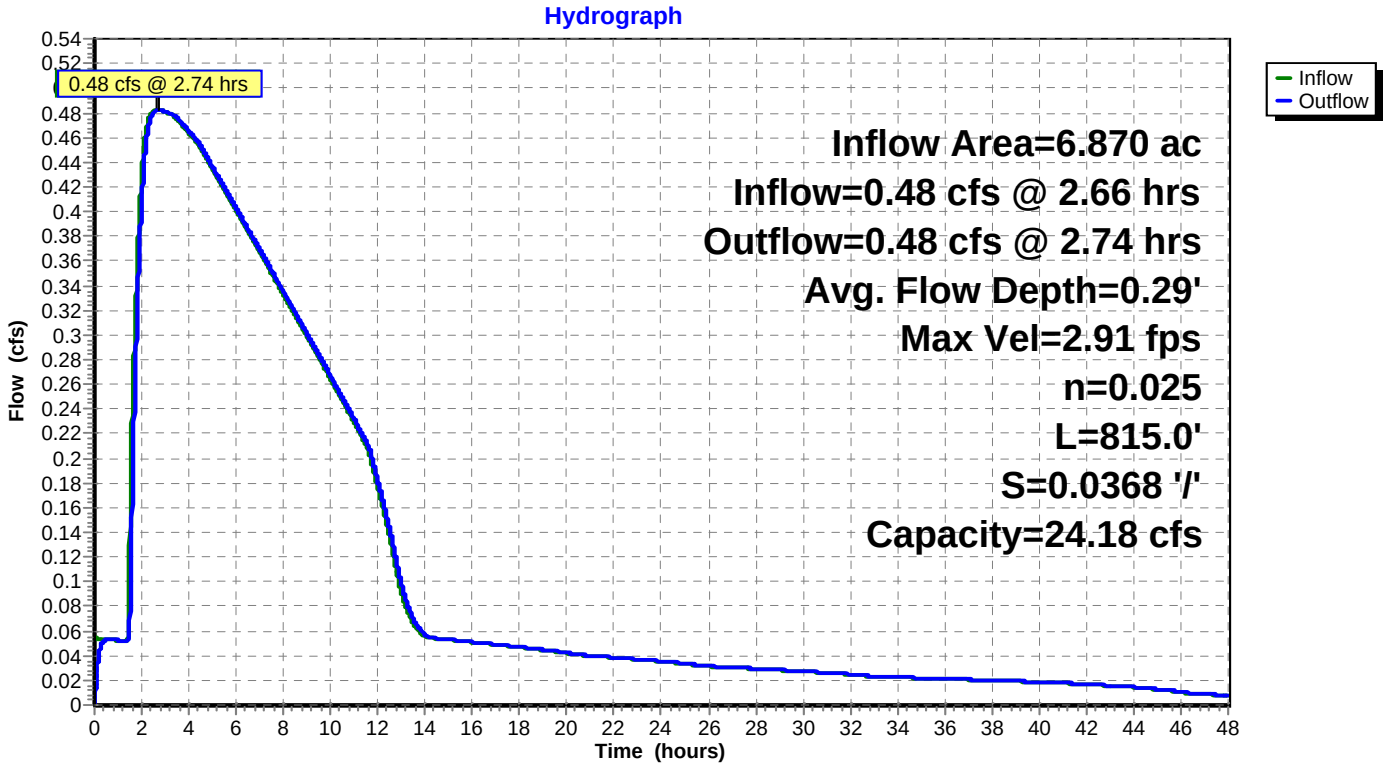
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.91 fps, Min. Travel Time= 4.7 min
Avg. Velocity = 1.72 fps, Avg. Travel Time= 7.9 min

Peak Storage= 135 cf @ 2.74 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 1.25' Flow Area= 3.1 sf, Capacity= 24.18 cfs

0.00' x 1.25' deep channel, n= 0.025
Side Slope Z-value= 2.0 '/' Top Width= 5.00'
Length= 815.0' Slope= 0.0368 '/'
Inlet Invert= 4,796.00', Outlet Invert= 4,766.00'



Reach R1: V-Ditch



Summary for Pond P1: Pond 1

Inflow Area = 6.870 ac, Inflow Depth = 0.59" for 100-Year event
Inflow = 5.32 cfs @ 1.74 hrs, Volume= 0.335 af
Outflow = 0.48 cfs @ 2.66 hrs, Volume= 0.414 af, Atten= 91%, Lag= 55.3 min
Primary = 0.48 cfs @ 2.66 hrs, Volume= 0.414 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,801.50' Surf.Area= 2,799 sf Storage= 3,655 cf
Peak Elev= 4,804.31' @ 2.66 hrs Surf.Area= 5,534 sf Storage= 15,335 cf (11,680 cf above start)

Plug-Flow detention time= 616.1 min calculated for 0.330 af (98% of inflow)
Center-of-Mass det. time= 496.5 min (613.9 - 117.5)

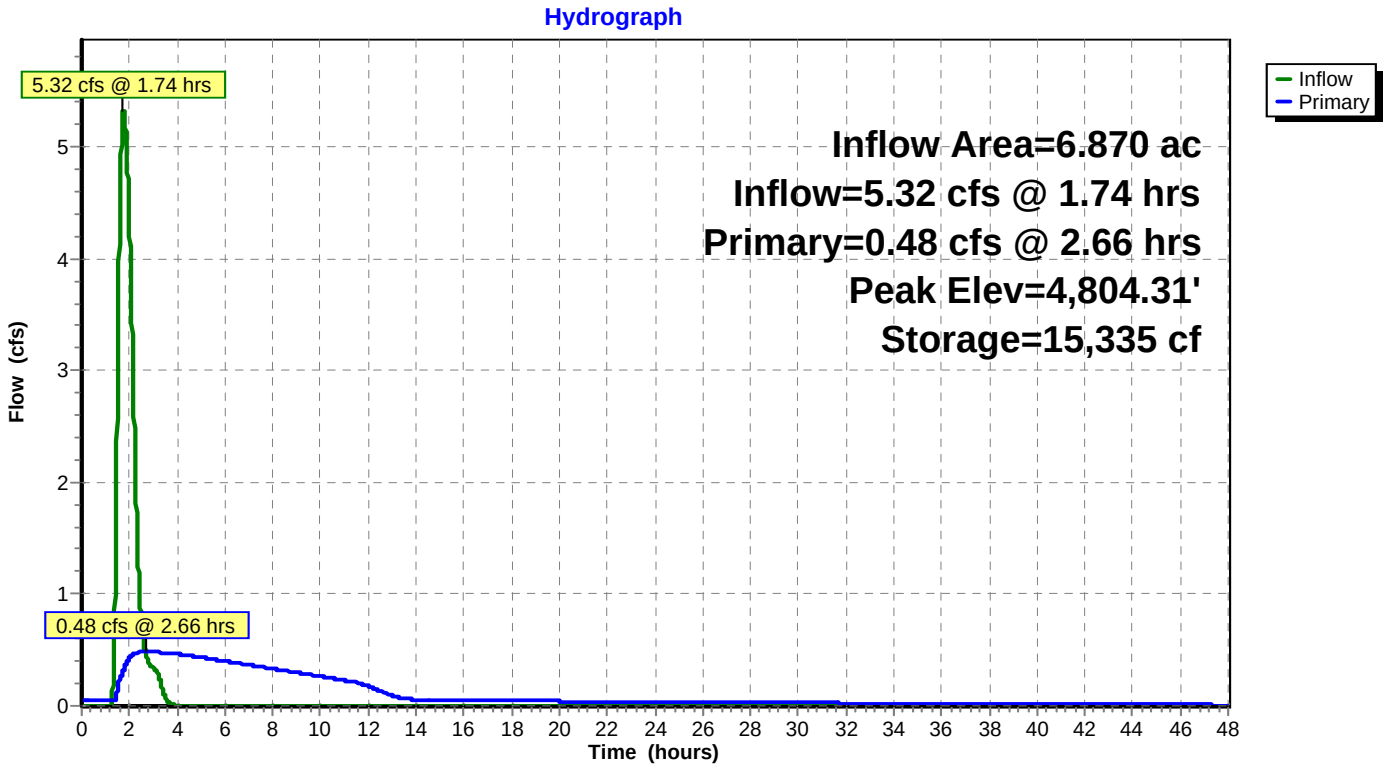
Volume	Invert	Avail.Storage	Storage Description
#1	4,799.00'	43,026 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,799.00	0	0	0
4,800.00	856	428	428
4,802.00	3,447	4,303	4,731
4,804.00	5,204	8,651	13,382
4,806.00	7,321	12,525	25,907
4,808.00	9,798	17,119	43,026

Device	Routing	Invert	Outlet Devices
#1	Primary	4,799.00'	**0.5" Vert. Orifice/Grate** X 7 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,801.50'	**3.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	4,804.50'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.48 cfs @ 2.66 hrs HW=4,804.31' TW=4,796.29' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.09 cfs @ 9.94 fps)
- **2=Orifice/Grate** (Orifice Controls 0.39 cfs @ 7.89 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P1: Pond 1



Summary for Pond P2: Pond 2

Inflow Area = 22.450 ac, Inflow Depth > 0.63" for 100-Year event
Inflow = 15.82 cfs @ 1.43 hrs, Volume= 1.174 af
Outflow = 4.21 cfs @ 2.02 hrs, Volume= 1.368 af, Atten= 73%, Lag= 35.1 min
Primary = 4.21 cfs @ 2.02 hrs, Volume= 1.368 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,747.71' Surf.Area= 8,172 sf Storage= 8,686 cf
Peak Elev= 4,749.95' @ 2.02 hrs Surf.Area= 11,908 sf Storage= 31,059 cf (22,373 cf above start)

Plug-Flow detention time= 309.8 min calculated for 1.168 af (100% of inflow)
Center-of-Mass det. time= 226.9 min (511.1 - 284.3)

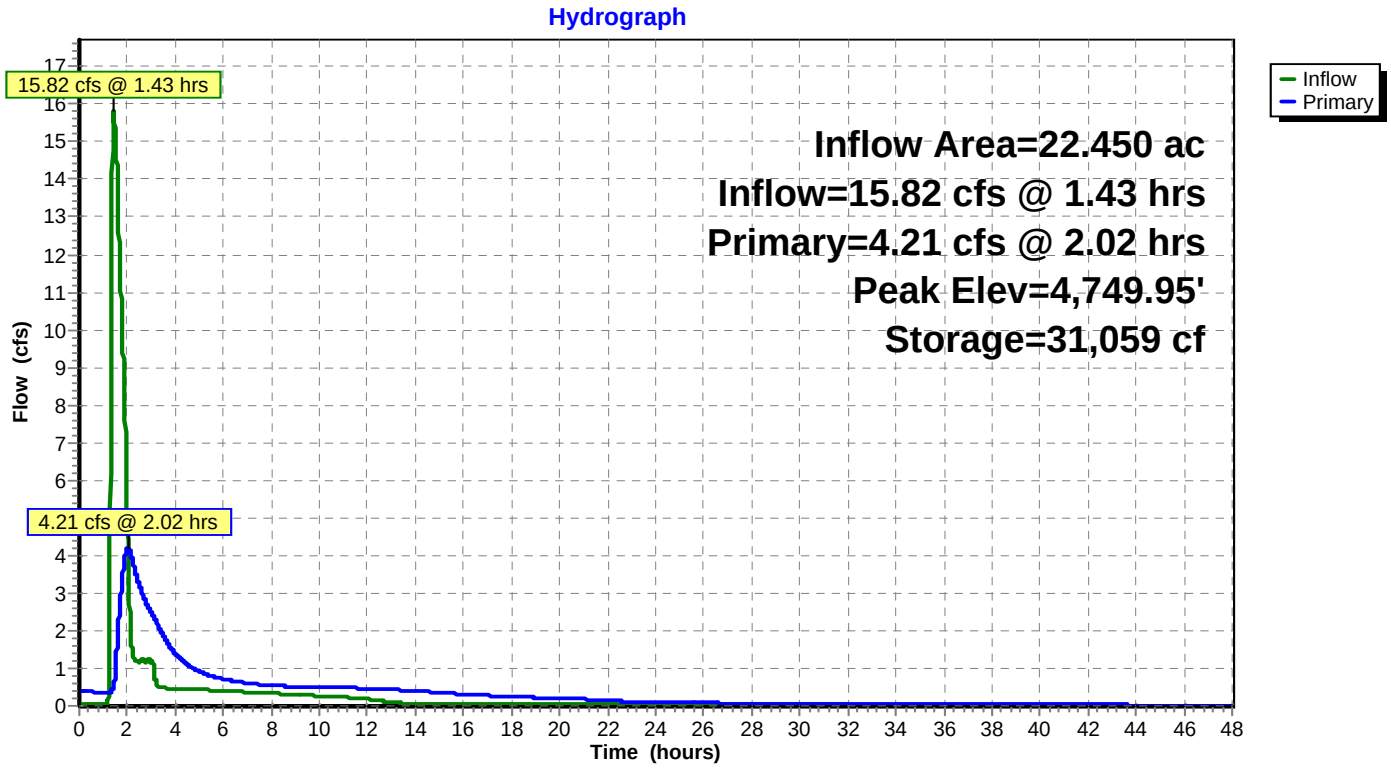
Volume	Invert	Avail.Storage	Storage Description
#1	4,746.06'	59,211 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,746.06	0	0	0
4,747.00	6,765	3,180	3,180
4,748.00	8,746	7,756	10,935
4,749.00	10,334	9,540	20,475
4,750.00	11,994	11,164	31,639
4,751.00	13,830	12,912	44,551
4,752.00	15,490	14,660	59,211

Device	Routing	Invert	Outlet Devices
#1	Primary	4,746.06'	**0.9" Vert. Orifice/Grate X 4.00 columns** X 5 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,748.32'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	4,751.00'	**14.0' long x 0.5' breadth emergency spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=4.21 cfs @ 2.02 hrs HW=4,749.95' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.76 cfs @ 8.57 fps)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 3.45 cfs @ 4.24 fps)
- **3=emergency spillway** (Controls 0.00 cfs)

Pond P2: Pond 2



Summary for Pond P3: Pond 3

Inflow Area = 1.560 ac, Inflow Depth = 0.54" for 100-Year event
Inflow = 1.63 cfs @ 1.37 hrs, Volume= 0.070 af
Outflow = 0.55 cfs @ 1.90 hrs, Volume= 0.085 af, Atten= 66%, Lag= 31.4 min
Primary = 0.55 cfs @ 1.90 hrs, Volume= 0.085 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,752.64' Surf.Area= 737 sf Storage= 632 cf
Peak Elev= 4,754.06' @ 1.90 hrs Surf.Area= 1,301 sf Storage= 2,077 cf (1,445 cf above start)

Plug-Flow detention time= 86.5 min calculated for 0.070 af (100% of inflow)
Center-of-Mass det. time= 67.0 min (166.0 - 99.0)

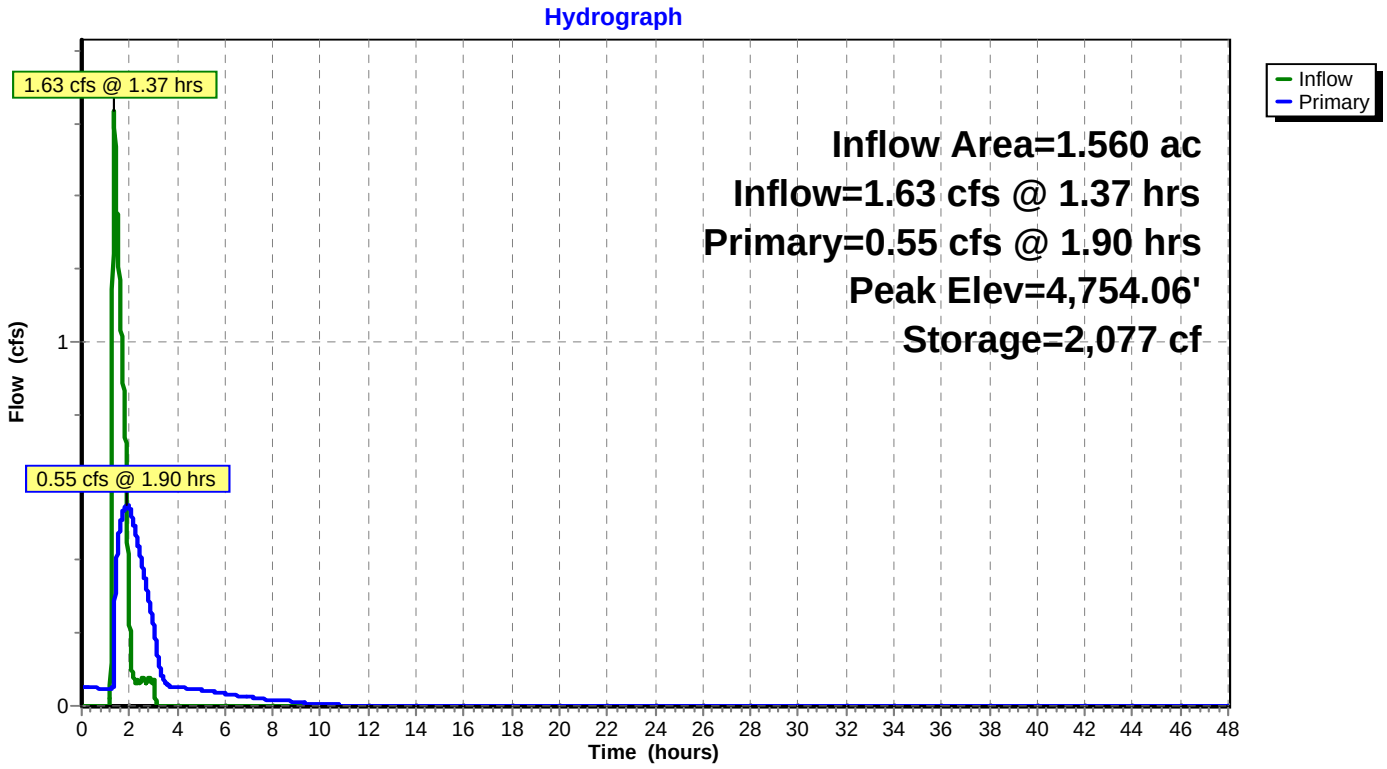
Volume	Invert	Avail.Storage	Storage Description
#1	4,751.00'	5,359 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,751.00	0	0	0
4,752.00	483	242	242
4,754.00	1,277	1,760	2,002
4,756.00	2,080	3,357	5,359

Device	Routing	Invert	Outlet Devices
#1	Primary	4,751.00'	**0.7" Vert. Orifice/Grate** X 4 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,752.64'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	4,754.06'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.55 cfs @ 1.90 hrs HW=4,754.06' TW=4,745.08' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.08 cfs @ 7.64 fps)
- **2=Orifice/Grate** (Orifice Controls 0.47 cfs @ 5.39 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P3: Pond 3



Summary for Pond P4: Pond 4

Inflow Area = 24.500 ac, Inflow Depth = 0.59" for 100-Year event
Inflow = 21.99 cfs @ 1.52 hrs, Volume= 1.204 af
Outflow = 10.21 cfs @ 1.98 hrs, Volume= 1.469 af, Atten= 54%, Lag= 27.6 min
Primary = 10.21 cfs @ 1.98 hrs, Volume= 1.469 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,742.19' Surf.Area= 5,651 sf Storage= 11,503 cf
Peak Elev= 4,745.13' @ 1.98 hrs Surf.Area= 9,680 sf Storage= 33,969 cf (22,467 cf above start)

Plug-Flow detention time= 97.0 min calculated for 1.204 af (100% of inflow)
Center-of-Mass det. time= 73.1 min (182.6 - 109.6)

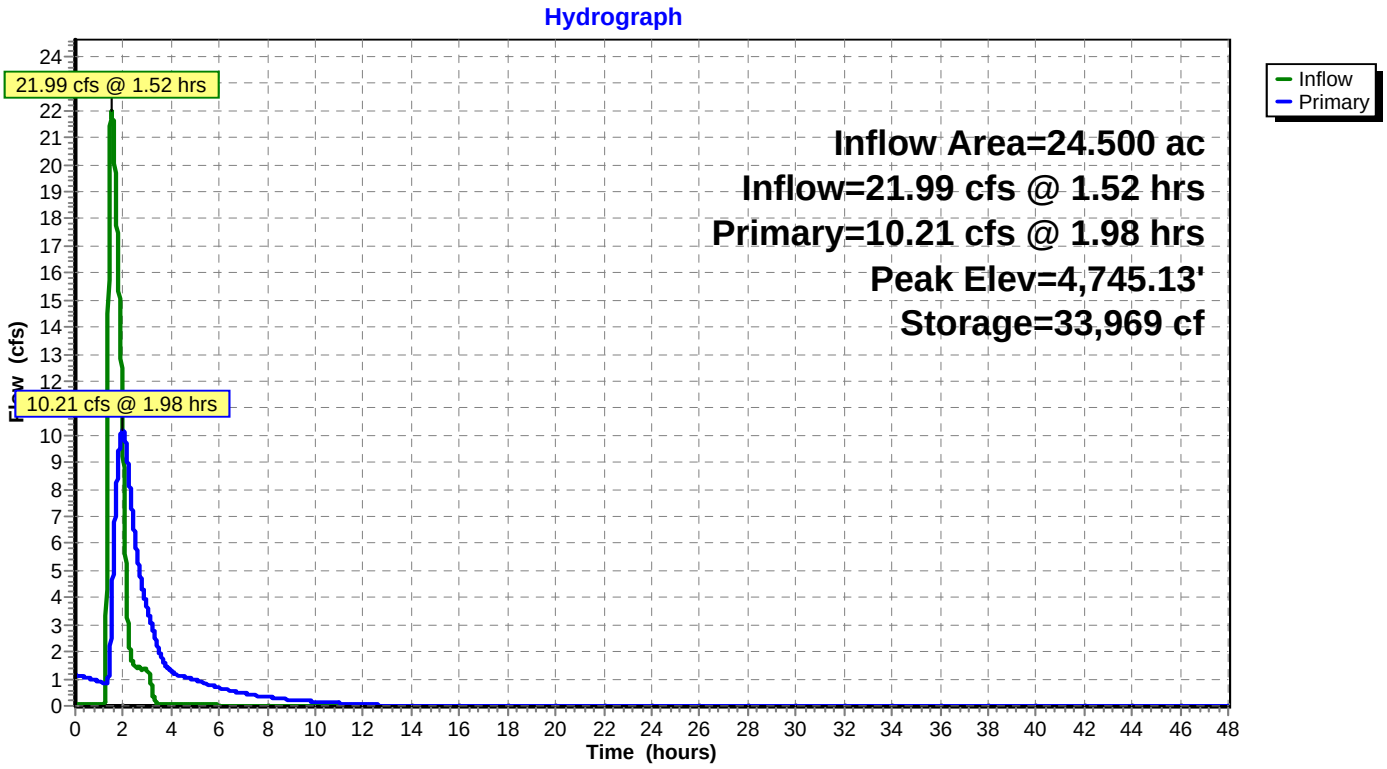
Volume	Invert	Avail.Storage	Storage Description
#1	4,739.00'	42,958 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,739.00	0	0	0
4,740.00	3,373	1,687	1,687
4,742.00	5,394	8,767	10,454
4,744.00	8,104	13,498	23,952
4,746.00	10,902	19,006	42,958

Device	Routing	Invert	Outlet Devices
#1	Primary	4,739.00'	**1.0" Vert. Orifice/Grate X 4.00 columns** X 8 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,742.19'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	4,745.13'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=10.21 cfs @ 1.98 hrs HW=4,745.13' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 1.86 cfs @ 10.65 fps)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 8.35 cfs @ 5.69 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P4: Pond 4



Appendix F – SWMM Checklist

Table 302
Stormwater Management Manual
Drainage Report Checklist

Instructions:
1. Applicant to identify with a "check-mark" if information is provided with report. If applicant believes information is not required, indicate with "n/a" and attach separate sheet with explanation
2. The reviewer will determine if information labeled "n/a" is required and whether information must be submitted.
3. Those items noted with an "asterisk" are not typically required for conceptual/ preliminary report. Applicant shall confirm this with local jurisdiction.
4. Submit three (3) copies of report and include copy of check list bound with report.

TITLE PAGE

A. Type of report (Conceptual/Preliminary or Final Drainage Report).
B. Project Name.
C. Preparer name, firm, address, number, and date.
D. Professional Engineer's seal of preparer.
E. Certifications (see SWMM Section 303.1)

I. INTRODUCTION

A. Background
- X 1. Identify report preparer and purpose.
- NA 2. Identify date of letter with previous County comments.

B. Project Location
- X 1. Identify Township, Range, and Section.
- X 2. Identify adjacent street and subdivision names.
- X 3. Reference to General Location Map.

C. Property Description
- X 1. Identify area in acres of entire contiguous ownership.
- X 2. Describe existing ground cover, vegetation, soils, topography and slopes.
- X 3. Describe existing drainage facilities, such as channels, detention areas, or structures.
- NA 4. Describe existing irrigation facilities, such as ditches, head-gates, or diversions.
- X 5. Identify proposed types of land use and encumbrances.

D. Previous Investigations
- X 1. Identify drainage master plans that include the project area, including floodplain studies.
- X 2. Identify drainage reports for adjacent development.

II. DRAINAGE SYSTEM DESCRIPTION

A. Existing Drainage Conditions
- X 1. Describe existing topography and provide map with contours extending a minimum of 100 feet beyond property limits.
- X 2. Identify major drainageway or outfall drainageway and describe map showing location of proposed development within the drainageways.
- X 3. Identify pre-developed drainage patterns and describe map showing pre-developed sub-basins and concentrated discharge locations. Provide calculations of pre-developed peak flows entering and leaving the site.

B. Master Drainage Plan
- X 1. Describe location of the project relative to a previously prepared master drainage plan, including drainage plans prepared for adjacent development.

C. Offsite Tributary Area

X 1. Identify all offsite drainage basins that are tributary to the project.
X 2. Identify assumptions regarding existing and future land use and effects of offsite detention on peak flows.

D. Proposed Drainage System Description

NA 1. Identify how offisite stormwater is collected and conveyed through the site and ultimately to the receiving water(s).
X 2. Identify sub-basins and describe, in general terms, how onsite stormwater is collected and conveyed through the site for each location where stormwater is discharged from the site.
X * 3. Describe detention volumes, release rates and pool elevations.
X * 4. Identify the difference in elevation between pond invert and the groundwater table.
X 5. Describe how stormwater is discharged from the site, including both concentrated and dispersed discharges and rates.
X 6. Describe stormwater quality facilities.
X * 7. Describe maintenance access aspects of design.
X * 8. Describe easements and tracts for drainage purposes, including limitation on use.

E. Drainage Facility Maintenance

NA * 1. Identify responsible parties for maintenance of each drainage and water quality facility.
NA * 2. Identify general maintenance activities and schedules.

III. DRAINAGE ANALYSIS AND DESIGN CRITERIA

A. Regulations

X 1. Identify that analysis and design was prepared in accordance with the provisions of the Manual.
X 2. Identify other regulations or criteria which have been used to prepare analysis and design.

B. Development Criteria

X 1. Identify drainage constraints placed on the project, such as by a major drainage study, floodplain study or other drainage reports relevant to the project.
X 2. Identify drainage constraints placed on the project, such as from major street alignments, utilities, existing structures, and other developments.

C. Hydrologic Criteria

(If Manual was followed without deviation, then a statement to that effect is all that is required. Otherwise provide the following information where the criteria used deviates from the Manual.)

X 1. Identify developed storm runoff peak flows and volumes and how they were determined, including rainfall intensity or design storm.
X 2. Identify which storm events were used for minor and major flood analysis and design.
X 3. Identify how and why any other deviations from the Manual occurred.

D. Hydraulic Criteria

(If Manual was followed without deviation, then a statement to that effect is all that is required. Otherwise provide the following information where the criteria used deviates from the Manual.)

NA * 1. Identify type(s) of streets within and adjacent to development and source for allowable street capacity.
NA * 2. Identify which type(s) of storm inlets were analyzed or designed and source for allowable capacity.
3. Identify which type of storm sewers which were analyzed or designed and

Manning's n-values used.

4. Identify which method was used to determine detention volume requirements and how allowable release rates were determined.
5. Identify how the capacity of open channels and culverts were determined.
6. Identify any special analysis or design requirements not contained with the Manual.
7. Identify how and why any other deviations from the Manual occurred.

E. Variance from Criteria

1. Identify any provisions of the Manual for which a variance is requested.
2. Identify pre-existing conditions which cause the variance request.

***IV. POST CONSTRUCTION STORMWATER MANAGEMENT. See Manual Section 1600 for requirements.**

Note: This section of the Final Drainage Report identifies additional information required by Mesa County's, City of Grand Junction's, and Town of Palisade's, Permit for Stormwater Discharges Associated with Municipal Separate Storm Sewer Systems (MS4s), permit No. COR-090000. The Final Drainage Plan and the Construction SWMP (see SWMM Section 1500) meets the requirements of the MS4s Permit. In general, this section identifies permanent BMP practices to control the discharge of pollutants after construction is complete.

*A. Stormwater Quality Control Measures

1. Describe the post-construction BMPs to control discharge of pollutants from the project site.
2. If compensating detention is provided, discuss practices to address water quality from area not tributary to detention area.
3. If underground detention is proposed, discuss how water quality facilities will be provided on the surface.
4. If proprietary BMPs are proposed, provide the justification and sizing requirements (see SWMM Section 1603.3).

*B. Calculations

1. Provide methods and calculations for WQCV, sediment storage, and water quality outlet structure.

V. CONCLUSIONS

A. Compliance with Manual

Compliance with Manual and other approved documents, such as drainage plans and floodplain studies.

B. Design Effectiveness

Effectiveness of drainage design to control impacts of storm runoff.

C. Areas in Flood Hazard Zone

Meet requirements of Floodplain Regulations: Mesa County Land Development Code, Section 7.13; City of Grand Junction Zoning and Development Code, Section 7.1.

D. Variances from Manual

Applicant shall identify any requested variances and provide basis for approving variance. If no variances are requested, applicant shall state that none are requested.

VII. REFERENCES

Provide a reference list of all criteria, master plans, drainage reports, and technical information used.

TABLES

Include copy of all tables prepared for report.

FIGURES

A. General Location Map (See Section 303.2a)

X B. Flood Plain Information
X C. Drainage Plan (See Section 303.2b)
X D. Other pertinent figures.

APPENDICIES

A. DESIGN CHARTS

X 1. Provide copy of all design charts (i.e.: tables, figures, charts from other criteria) used for the report.

B. HYDROLOGIC CALCULATIONS (see Manual Sections 600 and 700)

X 1. Land use assumptions for off-site runoff calculations.
X 2. Time of concentration and runoff coefficients for pre-existing and post development conditions.
X 3. Pre-developed hydrologic computations.
X 4. Developed conditions hydrologic computations.

C. HYDRAULIC CALCULATIONS

NA 1. Capacity of existing channels, streets, storm sewers, inlets, culverts and other facilities.
NA 2. Calculations for existing storm sewer and open channel.
NA 3. Irrigation ditch flows and ditch system capacity.
X * 4. Detention pond design (see Manual, Section 1400 for requirements).
X * a. Storage volume, release rates, and pool elevations for 10-year and 100-year storm.
X * b. Outlet structure dimensions, orifice diameter, weir lengths, pipe headwater and other data.
X * c. Outlet velocity and energy dissipation requirements.
X * d. Routing of outlet flows and emergency spillway flows.
X * 5. Street capacity calculations, if data in Manual not used (see Section 1100).
NA * 6. Storm inlet capacity calculations, if data in Manual not used (see Section 1100).
NA * 7. Storm sewer capacity calculations, if data in Manual not used (see Section 1000).
NA * 8. Channel capacity calculations, if data in Manual not used (see Section 800).
NA * 9. Culvert capacity calculations (see Manual, Section 1200).
NA * 10. Other hydraulic structure calculations (see Manual, Section 900).

D. STORMWATER QUALITY CALCULATIONS

X 1. Water Quality Capture Volume (WQCV).
X * 2. Storage volume for sediment volume and pool elevations for WQCV.
X * 3. Outlet calculations for required area per row, diameter of individual holes, number of holes per row, and number of holes per column.

X

CERTIFICATION – PROFESSIONAL ENGINEER'S SEAL AND SIGNATURE

ACKNOWLEDGEMENTS

Drainage Report checklist was prepared by: SSM

Table 303
Stormwater Management Manual

Drainage Plan Checklist

Instructions:
1. Applicant to identify with a "check-mark" if information is provided. If applicant believes information is not required, indicate with "n/a".
2. County will determine if information labeled "n/a" is required and whether information must be submitted.

I. EXISTING FACILITIES

- X A. Contours at two foot intervals, based on USGS datum. Contours to extend at least 50 feet past property line.
- X B. Location and elevation of USGS benchmarks or benchmarks referenced to USGS.
- X C. Property lines.
- X D. Drainage easements.
- X E. Street names.
- X F. Major and minor channels and floodplains.
- X G. A historic drainage plan including historic basin boundaries and flow paths.

II. PROPOSED FACILITIES

- X A. Contours at two-foot intervals, based on USGS datum.
- X B. Property lines.
- X C. Drainage easements.
- X D. Street names and grades.
- X E. Right of way and easement.
- X F. Finished floor elevations for protection from major storm run-off.
- X G. Detention pond information:
  1. X Location of each detention pond with site at 1"=50' scale or larger with 2-foot contour intervals.
  2. X Inlet and outlet structure, and trickle channel design details.
  3. X Details of emergency spillway and channel.
  4. X Landscape information, including side slopes, vegetation and planting requirements.
  5. X Details of water quality outlet structure.
- X H. Channel Information:
  1. X Profiles with existing and proposed grades.
  2. X Cross sections on 100-foot stations showing existing and proposed topography and required rights of way.
  3. X Locations and size of all existing and proposed structures.
  4. X Locations and profiles of adjacent utilities.
  5. X Typical channel section and lining details.
- X I. Storm sewer information:
  1. X Alignment and location of manholes, inlets, and outlet structures.
  2. X Profile of invert and pipe crown.
  3. X Invert elevations at manholes and inlets.
  4. X Lengths and grades between manholes and inlets.
  5. X Locations and elevations of utilities adjacent to and crossing storm sewer.
  6. X Easement and other O&M access geometry.
  7. X Outlet details, such as end sections, headwall and wingwalls, erosion control, and vegetation.
- N/A J. Street cross sections with design 100-year flood depth.
- N/A K. Other drainage related structures and facilities, including underdrains and sump pump discharge lines.
- N/A L. Other permanent BMP measures to control pollutant discharges to the County's MS4 system.

III. HYDRAULIC AND HYDROLOGIC INFORMATION

X A. Routing and accumulative runoff peaks at upstream and downstream ends of the site and at various critical points onsite for initial and major storms. Inflow and outflow from each subbasin shall be shown for both initial and major storms.

NA B. Street cross sections showing 100-year flood levels.

NA C. Major and minor channels and floodplains.

X D. Detention pond data:

X 1. Release rates for 10- and 100-year storm events.

X 2. Required and provided volumes for 10- and 100-year storm events.

X 3. Design depths for 10- and 100-year storm events.

X 4. Water quality capture volume and pool elevation.

NA E. Channel data:

NA 1. Water surface profiles.

NA 2. Representative 100-year flow velocity and Froude number.

NA F. Storm sewer data:

NA 1. Profile of water surface for design flow rate.

NA 2. Peak flows for design flow, 2-year and 100-year storm events.

IV. STANDARD NOTES

X A. No building, structure, or fill will be placed in the detention areas and no changes or alterations affecting the hydraulic characteristics of the detention areas will be made without the approval of the County.

X B. Maintenance and operation of the detention and water quality areas is the responsibility of property owner. If owner fails in this responsibility, the County has the right to enter the property, maintain the detention areas, and be reimbursed for costs incurred.

X C. Detention pond volumes, all drainage appurtenances, and basin boundaries shall be verified. As-built drawings shall be prepared by a registered professional engineer prior to issuance of certificate of occupancy for any structure within the development.

X D. Permission to reproduce these plans is hereby given to Mesa County for County purposes associated with plan review, approval, permitting, inspection and construction of work.

X **V. PROFESSIONAL ENGINEER'S SEAL AND SIGNATURE**

Y **VI. OTHER**

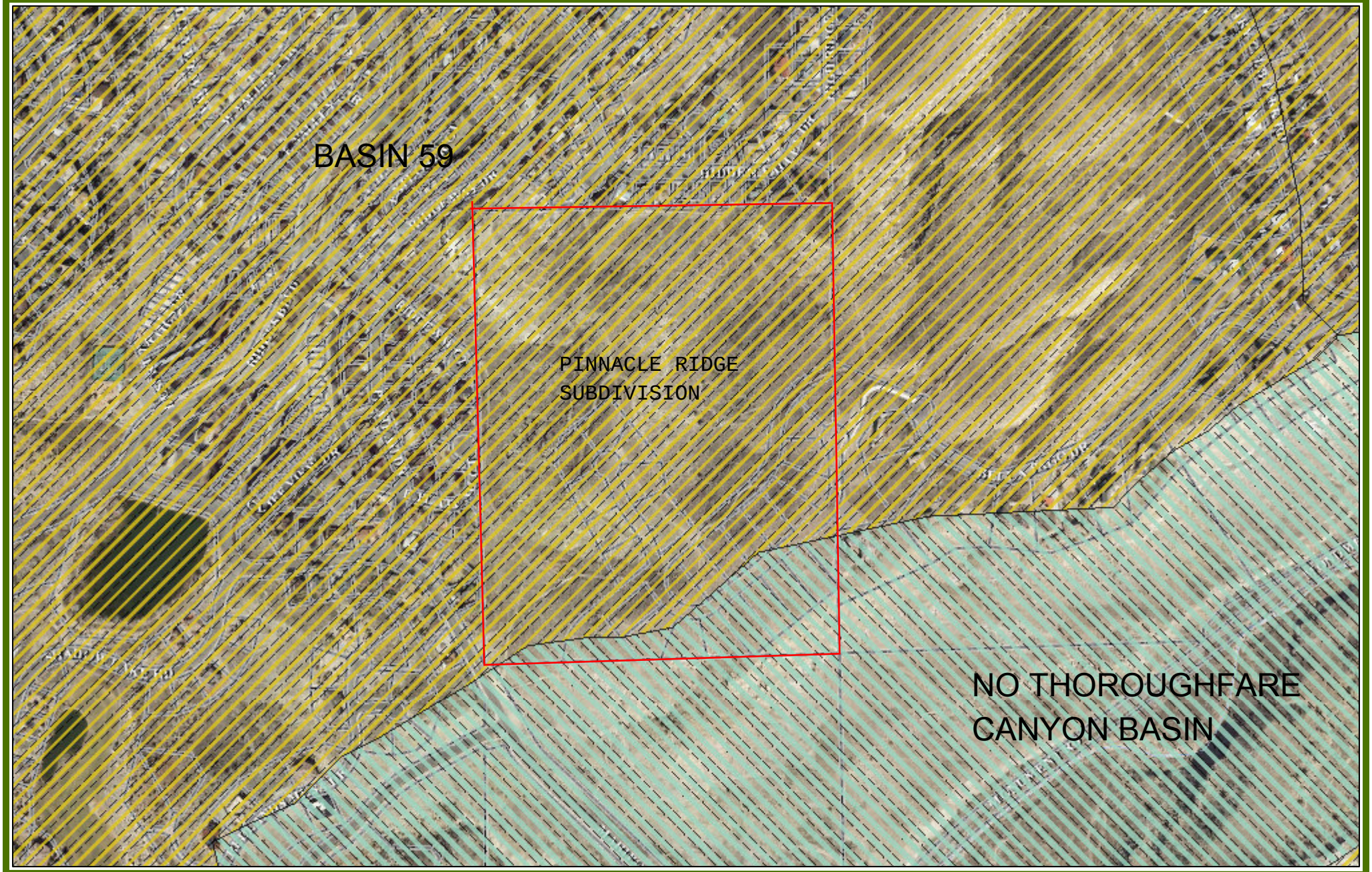
A. Horizontal and vertical control information and ties to existing and proposed features.

ACKNOWLEDGEMENTS

Drainage Plan checklist was prepared by: CSM

Appendix G – Major Basins Exhibit

City of Grand Junction



N

0 0.125 0.25 Miles

Printed: 6/23/2015

1 inch = 468 feet

CITY OF Grand Junction COLORADO GEOGRAPHIC INFORMATION SYSTEM

Appendix H – Variance Request Letter

VORTEX
ENGINEERING, INC.

December 22, 2015

City of Grand Junction
Attn: Rick Dorris, P.E.
250 N 5th Street
Grand Junction, CO 81501

RE: Pinnacle Ridge Subdivision
Drainage Variance Request
East of Mariposa Drive
Grand Junction, CO

VEI #: F04-006
PROJECT #: SUB-2015-120

Dear Mr. Dorris,

This letter is to request a variance from compliance with section 1407.3 of The Grand Junction Storm Water Management Manual, hereinafter SWMM, which requires that "The total of un-detained area shall not exceed 5% or 5000 square feet of total area whichever is less." This request shall be taken into consideration in conjunction with the data and narrative contained in the approved "Preliminary Drainage Report for Pinnacle Ridge Subdivision". The copy of this letter is found in Appendix H of the above mentioned report. The subject project has two (2) basins that do not meet the above requirement, and are the cause for this request; Basins DD1 and DD2.

The proposed basin DD1 is about 1.93 acres in size, located in the south east corner of the project site. In proposed conditions this basin shall remain mostly undisturbed. Historically, the runoff from this area is generated by the existing basin EX1, with an area of 5.96 acres and discharges 1.62 and 4.47 cfs runoff for the minor (10 year storm) and the major (100 year storm), respectively. The runoff during the proposed conditions from DD1 is estimated to be 0.32 cfs and 1.61 cfs for minor and major storm event, respectively. The reduction of the runoff in the proposed conditions is created by reducing the existing basin area, due to the onsite grading.

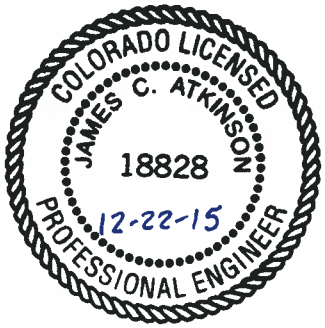
Basin DD2 is located in the north east corner of the site with an area of 0.39 acres. The proposed runoffs from this basin are 0.06 cfs and 0.33 cfs for minor and major storm, respectively. The existing runoff flows in this area are generated by the existing basin EX6 and are estimated to be 0.11 cfs and 0.55 cfs for minor and major storm, respectively. The area of the basin in proposed conditions is decreased by almost a half. The runoff from this basin is impossible to route via gravity through Pond 4 due to the basin elevations at low end are below the inverts of the designated ponds. The runoff from DD2 shall be concentrated in swales along the northern property boundary and diverted into the adjacent vacant lot owned by Genie Inc., and located between 2417 and 2419 Hidden Valley Drive, at the same point of discharge as the outfall from Pond 4. The sum of the flows into the vacant lot from Pond 4 outfall and DD2 runoff, in proposed conditions, is estimated to be 1.96 cfs and 10.40 cfs, for minor and major storm respectively, which is less than the adjusted allowable 2.71 cfs and 11.28 and also less than the historic runoff from basin EX4 = 2.91 cfs and 13.46 during the minor and major storm events, respectively.

In both cases of the direct discharge from basins DD1 and DD2, in the proposed conditions is less than in the existing conditions. In case of DD2 the runoff onto the north property shall be controlled with diversion ditches running along the boundary in the direction of the above mentioned vacant lot, thus reducing the cross lot drainage onto the developed lots located directly north of the basin.

In both cases the low points of DD1 and DD2 basins are well below inverts of their respective detention ponds, thus the hydraulic conditions in these basins cannot be adequately addressed to comply with the SWMM. Nevertheless, both basins DD1 and DD2 are over detained in Pond 1 and Pond 4, respectively.

Vortex Engineering, Inc. looks forward to successfully working with the City of Grand Junction to permit this project. Upon your review of this information, should you have any questions or require additional information, please do not hesitate to contact me at 970-245-9051. Thank you.

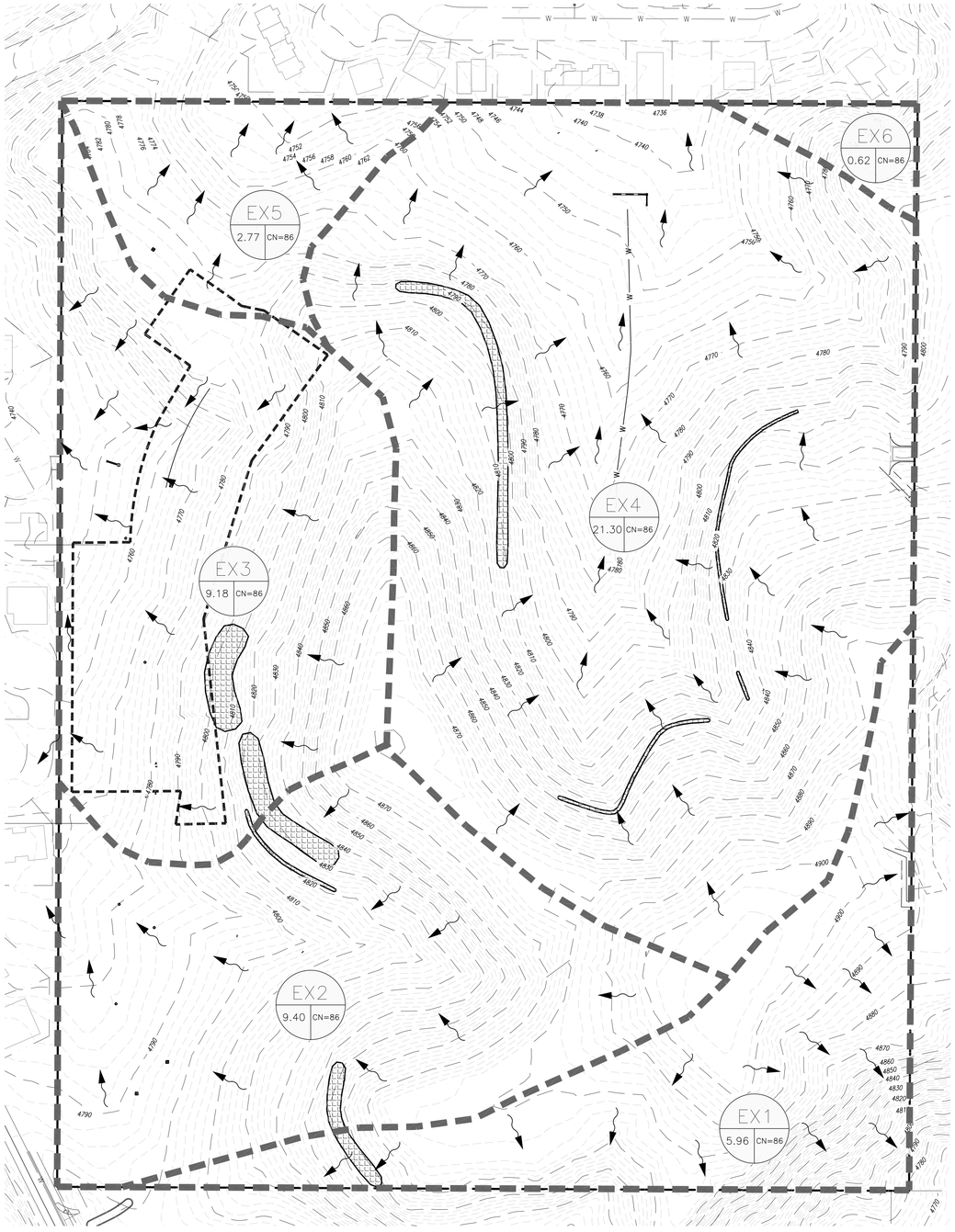
Sincerely,
Vortex Engineering, Inc

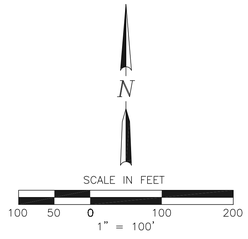


James C. Atkinson, P.E.

Cc: Two R&D
File

Appendix I – Drainage Maps





RUNOFF TABLE

BASIN	10 YEAR RUNOFF (CFS)	100 YEAR RUNOFF (CFS)
EX1	1.62	4.47
EX2	1.41	6.74
EX3	1.42	6.80
EX4	2.91	13.46
EX5	0.45	2.22
EX6	0.11	0.55

PROJECT BENCHMARK

PROJECT BENCHMARK #1 IS A SURVEY MONUMENT LOCATED AT THE SE1/16 CORNER OF SECTION 4, T1S, R1W, ON F 1/4 ROAD. ELEVATION IS BASED ON THE MESA COUNTY SURVEY INFORMATION MANAGEMENT SYSTEM.
ELEVATION=4571.298
PROJECT BENCHMARK #2 IS A SURVEY MONUMENT LOCATED AT THE C-E1/16 CORNER OF SECTION 4, T1S, R1W. ELEVATION IS BASED ON THE MESA COUNTY SURVEY INFORMATION MANAGEMENT SYSTEM.
ELEVATION=4580.794

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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FOR REVIEW

MAJOR SUBDIVISION
FINAL PLAN

REV. DATE	COMMENT	BY

Drainage Map - Existing Conditions

-

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/07/17
SCALE: SEE PLAN
CAD: pinnacledrainagemap.dwg

~SHEET~
1/2

PONDS' SUMMARY TABLES

POND 1	VOLUME (CF)	WSEL (FT)	DESIGN PEAK DISCHRGE FLOW (CFS)	SUM OF DD1 AND POND 1 PEAK FLOWS (CFS)	ADJUSTED ALLOWABLE PEAK DISCHARGE FLOW (CFS)
WQCV	3,296	4801.50	NA	NA	NA
10 YEAR	6,082	4802.31	0.26	.58	0.59
100 YEAR	15,335	4804.31	0.48	2.09	2.47

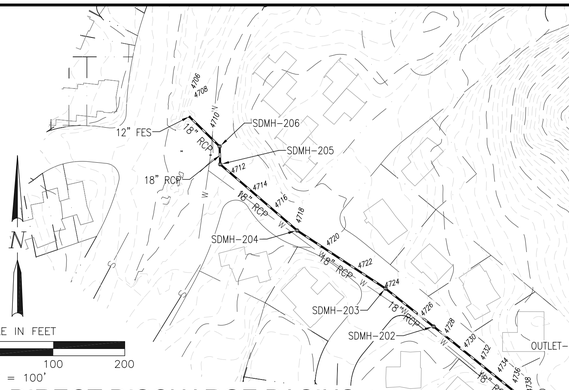
POND 2	VOLUME (CF)	WSEL (FT)	PEAK DISCHRGE FLOW (CFS)	ALLOWABLE PEAK DISCHRGE FLOW (CFS)
WQCV	7,575	4848.83	NA	NA
10 YEAR	13,992	4748.32	0.52	1.87
100 YEAR	31,059	4749.95	4.21	7.79

POND 3	VOLUME (CF)	WSEL (FT)	PEAK DISCHRGE FLOW (CFS)	ALLOWABLE PEAK DISCHRGE FLOW (CFS)
WQCV	720	4752.64	NA	NA
10 YEAR	820	4752.88	.17	0.19
100 YEAR	2,077	4754.06	.55	0.78

POND 4	VOLUME (CF)	WSEL (FT)	PEAK DISCHRGE FLOW (CFS)	SUM OF DD2 AND POND 4 PEAK FLOWS (CFS)	ADJUSTED ALLOWABLE PEAK DISCHARGE FLOW (CFS)
WQCV	11,098	4742.19	NA	NA	NA
10 YEAR	14,737	4742.73	1.91	1.96	2.71
100 YEAR	33,969	4745.13	10.21	10.40	11.28

OUTLET STRUCTURE TABLES

POND	A	B	C	D	E	F	G	H	I
POND 1	4799.00	4801.50	4802.31	4804.31	6"	32"	1	7	5/8"
POND 2	4747.00	4748.83	4749.39	4750.94	20"	21"	1	4	7/8"
POND 3	4751.00	4752.64	4752.88	4754.06	6"	21"	1	4	5/16"
POND 4	4739.00	4742.19	4742.73	4745.13	20"	35"	1	8	13/16"



DIRECT DISCHARGE BASINS:

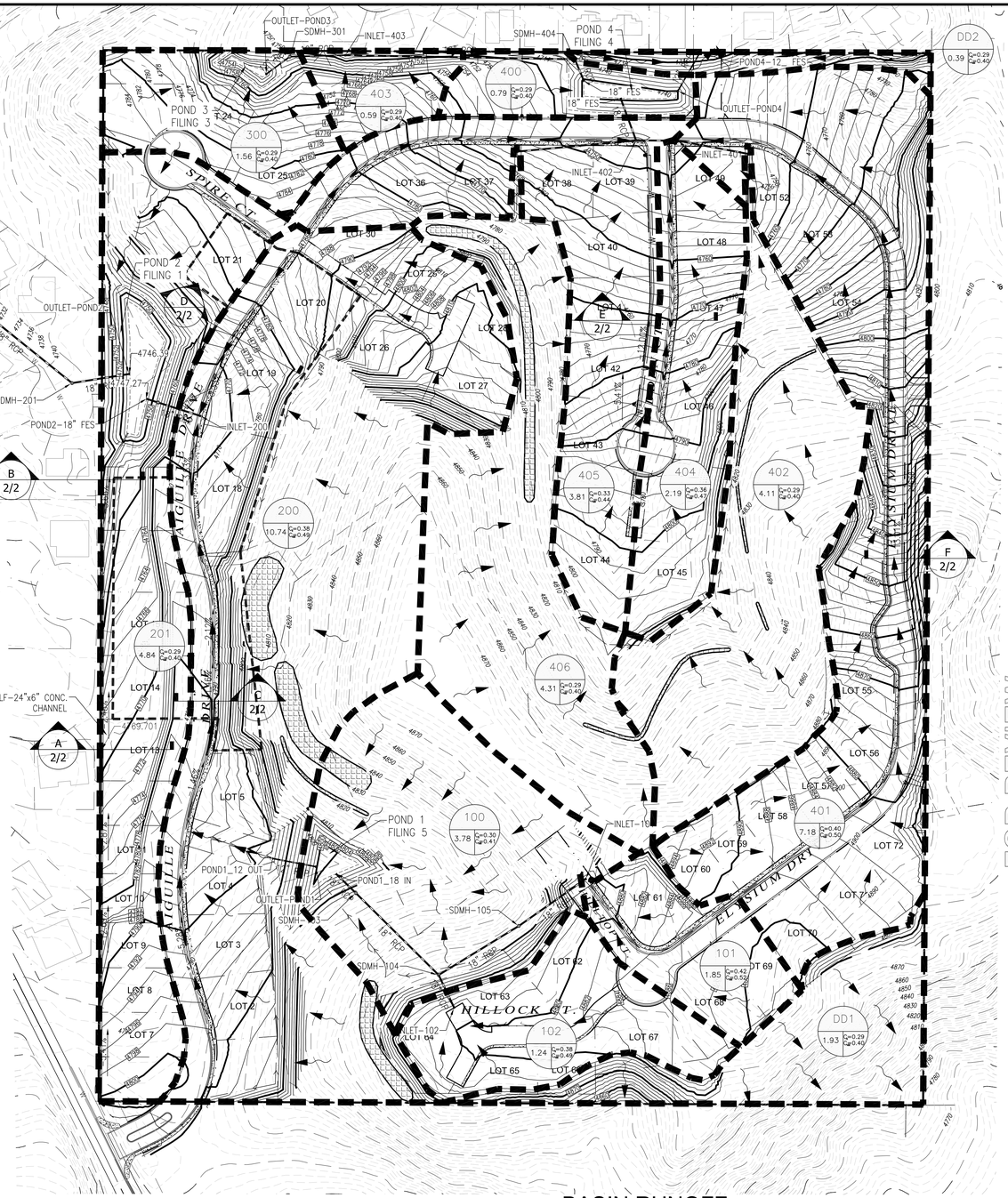
BASIN	10 YEAR RUNOFF (CFS)	100 YEAR RUNOFF (CFS)
DD1	0.32	1.61
DD2	0.06	0.33

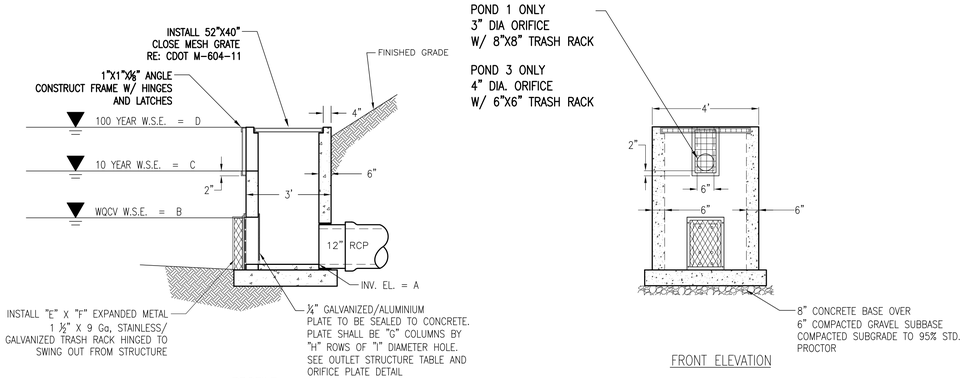
GENERAL NOTES:

1. NO BUILDING, STRUCTURE, OR FILL WILL BE PLACED IN THE DETENTION AREAS AND NO CHANGES OR ALTERATIONS AFFECTING THE HYDRAULIC CHARACTERISTICS OF THE DETENTION AREAS WILL BE MADE WITHOUT THE APPROVAL OF THE CITY.
2. MAINTENANCE AND OPERATION OF THE DETENTION AND WATER QUALITY AREAS IS THE RESPONSIBILITY OF PROPERTY OWNER. IF OWNER FAILS IN THIS RESPONSIBILITY, THE CITY HAS THE RIGHT TO ENTER THE PROPERTY, MAINTAIN THE DETENTION AREAS, AND BE REIMBURSED FOR COSTS INCURRED.
3. DETENTION POND VOLUMES, ALL DRAINAGE APPURTENANCES, AND BASIN BOUNDARIES SHALL BE VERIFIED. AS-BUILT DRAWINGS SHALL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY FOR ANY STRUCTURE WITHIN THE DEVELOPMENT.
4. PERMISSION TO REPRODUCE THESE PLANS IS HEREBY GIVEN TO THE CITY OF GRAND JUNCTION FOR CITY'S PURPOSES ASSOCIATED WITH PLAN REVIEW, APPROVAL, PERMITTING, INSPECTION AND CONSTRUCTION OF WORK.

LEGEND

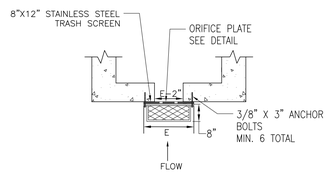
- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- BASIN INFO BLOCK (BASIN DESIGNATION, AREA (AC), RATIONAL COEFFICIENTS)
- DESIGN POINT
- DIVERSION DITCH

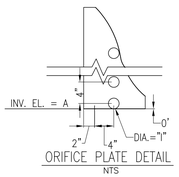




POND 1 ONLY
3" DIA ORIFICE
W/ 8"X8" TRASH RACK

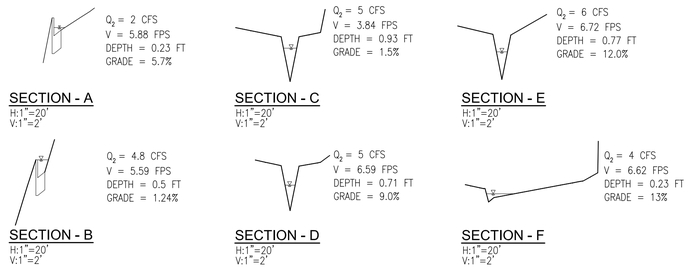
POND 3 ONLY
4" DIA. ORIFICE
W/ 6"X6" TRASH RACK





POND OUTLET STRUCTURE DETAIL

N.T.S.



BASIN RUNOFF

DRAINAGE AREA	Area (ac)	2-Yr. Q (cfs) Basin Runoff	100-Yr. Q (cfs) Basin Runoff
100	3.78	1.36	7.24
101	1.85	0.85	4.21
102	1.24	0.62	3.00
200	10.74	4.94	24.50
201	4.84	1.68	9.05
300	1.56	0.54	2.92
400	0.79	0.28	1.48
401	7.18	3.44	16.86
402	4.11	1.43	7.69
403	0.59	0.21	1.11
404	2.19	0.95	4.79
405	3.81	1.52	7.82
406	4.31	1.50	8.06
DD1	1.93	0.67	3.60
DD2	0.39	0.13	0.72

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James C. Atkinson
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FOR REVIEW

MAJOR SUBDIVISION FINAL PLAN

REV. DATE	COMMENT	BY

Drainage Map - Proposed Conditions

-

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/07/17**
SCALE: **SEE PLAN**
CAD: **pinnacledrainagemap.dwg**

~SHEET~
2/2

Huddleston-Berry
Engineering & Testing, LLC

FINAL GEOTECHNICAL REPORT
PINNACLE RIDGE SUBDIVISION
FILINGS 1, 2, AND 3
GRAND JUNCTION, COLORADO
PROJECT#00545-0022

VORTEX ENGINERING & ARCHITECTURE, INC.
2394 PATTERSON ROAD, SUITE 201
GRAND JUNCTION, COLORADO 81505

JUNE 7, 2017

Huddleston-Berry Engineering and Testing, LLC
640 White Avenue
Grand Junction, Colorado 81501

TABLE OF CONTENTS

1.0 INTRODUCTION 1
1.1 Referenced Documents 1
1.2 Scope of Current Work 1
1.3 Site Location and Description 2
1.4 Proposed Construction 2
2.0 GEOLOGIC SETTING 2
2.1 Soils 2
2.2 Geology 2
2.3 Groundwater 2
3.0 FIELD INVESTIGATION 3
3.1 Subsurface Exploration 3
3.2 Field Reconnaissance 3
4.0 LABORATORY TESTING 3
5.0 GEOLOGIC INTERPRETATION 4
5.1 Geologic Hazards 4
5.2 Geologic Constraints 4
5.3 Water Resources 4
5.4 Mineral Resources 4
6.0 RECOMMENDATIONS FOR ROADWAY CONSTRUCTION . 5
6.1 Filing 1 – Southern Section 5
6.1.1. ~Sta. 0+00 to ~Sta. 2+00 Aiguille Drive 5
6.1.2. ~Sta. 2+00 to ~Sta. 6+50 Aiguille Drive 6
6.1.3. ~Sta. 6+50 to ~Sta. 7+50 Aiguille Drive 7
6.2 Filing 1 – Northern Section 8
6.3 Filing 2 8
6.3.1. ~Sta. 7+50 to ~Sta. 10+00 Aiguille Drive 8
6.3.2. ~Sta. 10+00 to ~Sta. 14+00 Aiguille Drive 9
6.3.3. ~Sta. 14+00 to ~Sta. 15+50 Aiguille Drive 10
6.4 Filing 3 11
6.4.1. ~Sta. 1+00 to ~Sta. 3+80 Spire Court 11
6.4.2. ~Sta. 3+80 to ~Sta. 7+00 Talus Court 13
7.0 GENERAL RECOMMENDATIONS FOR DEVELOPMENT .. 14
7.1 Development on Individual Lots 14
7.2 Structural and Grading Fill 14
7.3 Lateral Earth Pressures 15
7.4 Excavations 15
7.5 Pavements 15
7.6 Engineering Oversight 17
8.0 GENERAL 17

FIGURES

Figure 1 – Site Location Map
Figure 2 – Site Plan
Figure 3 – Aiguille Drive Plan and Profile
Figure 4 – Spire Court and Talus Court Plan and Profile

APPENDICES

Appendix A – Site Photographs
Appendix B – Soil Survey Data
Appendix C – Test Hole Logs from Previous Investigation
Appendix D – Test Pit Logs from Current Investigation
Appendix E – Laboratory Results from Previous Investigation
Appendix F – Laboratory Results from Current Investigation
Appendix G – Slope Stability Results

1.0 INTRODUCTION

As part of extensive development in Western Colorado, the new Pinnacle Ridge residential subdivision is proposed in Grand Junction, Colorado. As part of the development process, Huddleston-Berry Engineering and Testing, LLC (HBET) was retained by Vortex Engineering to prepare a final geotechnical report for Filings 1, 2, and 3 of the subdivision.

1.1 Referenced Documents

Previous geotechnical investigation for the project was completed by Geotechnical Engineering Group, Inc. (GEG). The previous work is summarized in the following documents:

- *Preliminary Geotechnical Investigation, Subgrade Investigation and Pavement Design, Pinnacle Ridge Development, North and West of Mariposa Road and Monument Road, Grand Junction, Colorado* by Geotechnical Engineering Group, Inc. for RW Jones Construction, April 16, 2002.
- *Supplemental Geotechnical Investigation – Rock Fall Hazard, Pinnacle Ridge Development, North and West of Mariposa Road and Monument Road, Grand Junction, Colorado* by Geotechnical Engineering Group, Inc. for RW Jones Construction, August 8, 2005.

In addition to the previous geotechnical work at the site, the following were used in the development of this report:

- Plans titled *Pinnacle Ridge Subdivision, Grand Junction, Colorado* by Vortex Engineering, Inc., March 19, 2015.

1.2 Scope of Current Work

The scope of the current work included the following components:

- Reviewing the available documentation.
- Conducting a subsurface investigation to supplement the information in the referenced documents.
- Collecting soil samples and conducting laboratory testing to supplement the information in the referenced reports.
- Evaluating potential geologic hazards at the site.
- Providing recommendations for roadway construction, grading, excavation, and other items pertaining to the development of Filings 1, 2, & 3.

The work was completed by a Colorado registered professional engineer in accordance with generally accepted geotechnical and geological engineering practices. This report has been prepared for the exclusive use of Vortex Engineering.

1.3 Site Location and Description

The site encompasses approximately 45 acres north of Mariposa Drive and west of Monument Road in Grand Junction, Colorado. The project location is shown on Figure 1 – Site Location Map. A site plan is included as Figure 2.

At the time of the investigation, the site was open. The terrain was variable with the western portion of Filings 1 and 2 generally consisting of slightly sloping ground and the eastern portion rising moderately to the west to the top of a ridge. Filing 3 sat on the end of a ridge with slight to moderate slopes falling to the north and south and slight to moderate slopes rising to the east. Site photographs are included in Appendix A.

1.4 Proposed Construction

Filings 1, 2, and 3 are anticipated to include residential structures on 30 lots. New utilities and streets will be included in the development. Significant cuts and fills are anticipated as shown on the roadway profiles included as Figures 3 and 4.

2.0 GEOLOGIC SETTING

2.1 Soils

Soils data was obtained from the USDA Natural Resource Conservation Service Web Soil Survey. The data indicates that the soils at the site consist of Persayo-Blackston complex, 6 to 45 percent slopes and Rock outcrop-Persayo-Hostage complex, 25 to 99 percent slopes, extremely stony. Soil survey data, including descriptions of the soil units, is included in Appendix B.

Residential construction in the site soils is described as being very limited due to slope, depth to soft bedrock, and/or shrink-swell. Road construction in the site soils is indicated to be very limited due to depth to soft bedrock, low strength, slope, and/or shrink-swell. Excavation in the site soils is described as being very limited due to depth to soft bedrock, slope, dust, and/or unstable excavation walls. The site soils are indicated to have a low potential for frost action, moderate to high risk of corrosion of steel, and low to high risk of corrosion of concrete.

2.2 Geology

According to the *Geologic Map of the Grand Junction Quadrangle, Mesa County, Colorado* (2002), Filings 1, 2 are underlain by the Dakota and Burro Canyon formations. Filing 3 is mapped as being underlain by terrace alluvium above the Dakota formation.

2.3 Groundwater

Groundwater was not encountered during the previous or current investigation.

3.0 FIELD INVESTIGATION

3.1 Subsurface Exploration

Subsurface exploration in Filings 1, 2, and 3 included seven geotechnical test holes as part of the preliminary geotechnical investigation and seven test pits conducted as part of the current investigation. The locations of the test holes and test pits are shown on Figure 2. Copies of the test hole logs from the referenced report are included in Appendix C. Test pit logs from the current investigation are included in Appendix D. In addition, graphical logs of the test holes and test pits are included on Figures 3 and 4.

As indicated on the logs, the subsurface conditions at the site were variable. However, the test holes and test pits generally encountered clay, silt, gravel, and sand overburden materials above claystone and sandstone bedrock. Detailed discussion of the subsurface conditions with respect to the proposed development is included later in this report.

3.2 Field Reconnaissance

The field reconnaissance included walking the site during the subsurface investigation. As discussed previously, the terrain was variable. Although some moderate slopes and rock outcrops were observed at the site. No evidence of active or recently active landslides, debris flows, rockfalls, etc. was observed. Site photographs are included in Appendix A.

4.0 LABORATORY TESTING

As indicated in the referenced report, laboratory testing was conducted on the soils and bedrock at the site. Laboratory testing results from the referenced report applicable to Filings 1, 2, and 3 are included in Appendix E.

In addition to the laboratory testing conducted as part of the preliminary geotechnical investigation, HBET conducted laboratory testing as part of the current investigation. The laboratory testing results from the current investigation are included in Appendix F.

The laboratory testing results indicate that the native overburden soils range from slightly to moderately plastic. Direct shear testing indicated friction angles of 32° for the native clayey sand soils and 36° for the native clayey gravel with sand soils.

The native claystone bedrock was indicated to be moderately plastic. In addition, the claystone was generally indicated to be slightly expansive, with up to 2.1% expansion measured in the laboratory. One swell/consolidation test from the referenced report indicated up to 2.9% collapse for the claystone bedrock. However, based upon our experience with the claystone bedrock in the vicinity of the subject site and depth of the sample, HBET believes that the collapse observed in the laboratory reflects sample disturbance.

5.0 GEOLOGIC INTERPRETATION

5.1 Geologic Hazards

As discussed previously, moderate slopes are present across much of the site. In addition, sandstone bedrock outcrops were observed at the site. Rockfall hazard analysis was previously conducted as outlined in the referenced documents. Based upon the results of the rockfall hazard analysis, presence of flat lying to very gently dipping bedrock, and upon our observations at the site (see photographs in Appendix A), HBET does not believe that any rockfall hazards currently exist at the site. Impacts of site development on rockfall hazards will be discussed later in this report.

In addition to rockfall, as discussed previously, HBET did not observe any evidence of active or recently active mass earth movements at the site. In addition, review of aerial photographs on the Mesa County GIS database dating back to 1937 did not show any evidence of mass earth movements. In general, based upon the available information and upon our observations at the site, HBET does not believe that there is currently a significant risk of mass earth movements at the site. Impacts of site development on slope stability will be discussed later in this report.

In general, based upon the results of the preliminary and current subsurface investigations, the primary geologic hazard identified on the site is the presence of moisture sensitive bedrock. This will primarily be a consideration for foundation design/construction on individual lots; however, impacts of expansive bedrock on site development will be discussed later in this report.

5.2 Geologic Constraints

In general, the primary geologic constraints to construction at the site in Filings 1, 2, and 3 are the presence of existing moderate slopes and shallow bedrock.

5.3 Water Resources

No water supply wells were observed on the property. In addition, shallow groundwater was not encountered at the site. In general, with proper design and construction, the proposed construction is not anticipated to adversely impact surface water or groundwater.

5.4 Mineral Resources

Potential mineral resources in the Grand Valley generally include gravel, uranium ore, and commercial rock products such as flagstone. As discussed previously, the geologic map suggests that portions of the site are underlain by gravels. In addition, some gravels were encountered during the subsurface investigation. However, due to the area of the site proposed to be developed and surrounding land use, HBET does not believe that gravels present in Filings 1, 2, or 3 represent economically recoverable resources.

6.0 RECOMMENDATIONS FOR ROADWAY CONSTRUCTION

6.1 Filing 1 – Southern Section

The southern section of Filing 1 includes 13 lots. Approximately 750 feet of utilities and new roadway will be included in this portion of the project.

6.1.1. ~Sta. 0+00 to ~Sta. 2+00 Aiguille Drive

As indicated on Figure 3, the construction in this area will include up to approximately eight feet of cut near where Aiguille Drive intersects Mariposa Drive. Test Hole TH-1 conducted nearby encountered eight feet of gravelly sand above sandstone and claystone bedrock. HBET anticipates that the cuts in this area will include primarily overburden soils.

Where native gravelly sand soils are encountered at the roadway subgrade elevation, HBET recommends that the subgrade be scarified to a depth of 12-inches, moisture conditioned, and compacted to a minimum of 95% of the modified Proctor maximum dry density, within ±2% of optimum moisture content as determine in accordance with ASTM D1557. Where bedrock is encountered in the subgrade, HBET recommends that the bedrock be proofrolled to identify soft or weak zones. Soft or weak materials should be removed and replaced with structural fill. In addition, due to the expansive nature of the claystone bedrock, it may be necessary to remove some of the claystone and replace with structural fill as outlined later in this report.

With the exception of the small hill that will be cut into by the connection of Aiguille Drive and Mariposa Drive, the existing grades in this area are gentle. Immediately above the roadway, the slopes are as shallow as 8H:1V. They do steepen gradually to the east; however, the maximum slopes are generally 2.5H:1V or less. Based upon our observations at the site and shallow slopes, HBET does not believe that the proposed development along this section of roadway will create any slope instabilities.

The nearest rock outcrop is approximately 250 feet to the east. The sandstone outcrop shows fairly flat lying bedrock. The referenced documents include a rockfall hazard assessment conducted by Geotechnical Engineering Group, Inc. (GEG). Based upon the existing and proposed grades, minimal presence of surface bedrock ‘float’, and condition of the bedrock outcrop, and referenced report, HBET does not believe that rockfall hazards currently exist in this area of the site. However, HBET should be retained during construction to re-evaluate rockfall hazards after completion of the site grading.

6.1.2. ~Sta. 2+00 to ~Sta. 6+50 Aiguille Drive

As indicated on Figure 3, from approximately Station 2+00 to Station 6+50, the roadway will be in a fill section. Up to approximately six feet of fill will be placed in this area along the roadway. Test Holes 2 and 11, and Test Pit TP-1 conducted in this area encountered between four and ten feet of granular overburden soils above claystone and sandstone bedrock. The laboratory testing results in Appendix F indicate that the clayey gravel soils encountered in TP-1 are moderately plastic. However, the fines content of the soil was only 13%. Therefore, HBET does not believe that the clayey gravel soils will have an appreciable potential for swelling.

As indicated on the Test Hole and Test Pit logs, the granular overburden soils are in a medium dense to very dense condition and HBET believes that this stratum will be fairly stable. In addition, due to the granular nature of the soils, any settlement of the native soils due to placement of fill materials above would be expected to be elastic and occur as the fill is placed. Long term settlement of the native granular soils is not anticipated.

Although the granular overburden soils are anticipated to be stable, HBET recommends that all topsoil be stripped from the subgrade prior to fill placement. In addition, it is recommended that the subgrade soils be scarified to a depth of 12-inches, moisture conditioned, and compacted. Due to the presence of large particles, it may not be possible to conduct nuclear density testing of the native gravel soils. If it is possible to conduct nuclear density testing, HBET recommends that the subgrade soils be compacted to a minimum of 98% of the modified Proctor maximum dry density, within ±2% of optimum moisture content as determine in accordance with ASTM D1557. Where nuclear density testing is not feasible, the native gravel subgrade soils should be moisture conditioned and proofrolled to the Engineer's satisfaction using equipment with large wheel loading such as a full water truck, loader with full bucket, etc.

As shown on the photographs included in Appendix A, the existing slopes above this section of roadway are fairly shallow. The slopes range from approximately 6H:1V near the roadway to approximately 2.5H:1V near the crest of the hill. Based upon our observations at the site and shallow slopes, HBET believes that the existing slopes are stable; however, the construction will include regrading of the slopes above the roadway in this area. Immediately beyond the roadway, the grade will be reduced to approximately 25H:1V. Farther to the east, the slopes will be regraded to approximately 2H:1V.

Slope stability analyses were conducted for the proposed cut slopes using the GSTABL7 computer software program. For conservatism, the analyses considered the shear strength parameters determined for the native clayey sand soils. The results of the analyses included in Appendix G indicate a Factor of Safety of greater than 1.5 which is deemed appropriate for long term stability. However, HBET should be retained to evaluate the cut slope during construction to verify that the soil conditions are consistent with our assumptions.

Also as shown on the site photographs, a few bedrock outcrops are present above the proposed roadway alignment. However, the bedrock units are fairly flat lying. In addition, weathering of the bedrock appears to create slabs of rock with a very high ratio of length and width relative to thickness. As a result of our observations at the site and referenced rockfall hazards report, HBET does not believe that any rockfall hazards currently exist in this area. However, HBET should be retained during construction to re-evaluate rockfall hazards after completion of the site grading.

6.1.3. ~Sta. 6+50 to ~Sta. 7+50 Aiguille Drive

As indicated on Figure 3, from approximately Station 6+50 to Station 7+50, the roadway will be in a cut section. The centerline of the roadway will include approximately four feet of cut; however, at the east edge of the roadway, eight to ten feet of cut is proposed.

Test Pit TP-2, conducted in this area, encountered sandstone bedrock at a depth of 0.5 feet. In general, HBET believes that the sandstone bedrock will provide excellent roadway support. However, HBET recommends that the bedrock in the subgrade be proofrolled to identify any soft or weak materials. Soft or weak materials should be removed and replaced with structural fill. In addition, due to the expansive nature of the native claystone bedrock, where claystone is encountered in the subgrade, it may be necessary to remove some of the claystone and replace with structural fill as outlined later in this report.

As shown on the photographs included in Appendix A, the existing slopes above this section of roadway are shallow to moderate. The slopes range from approximately 4H:1V near the roadway to approximately 2H:1V near the crest of the hill. In general, HBET believes that the native slopes above the roadway are fairly stable; however, the proposed construction will include significant cuts above the roadway to the east. The proposed cut slopes will be 2H:1V.

Based upon the results of the subsurface investigation and observations at the site, the cut slopes will likely consist entirely of sandstone bedrock. The sandstone is fairly flat lying. As a result, HBET believes that the proposed 2H:1V cut slopes in competent sandstone bedrock will be stable. However, HBET should be present during excavation to evaluate the precise conditions of the bedrock in the cut slope to verify long term stability.

Also as shown on the site photographs, several bedrock outcrops are present above the proposed roadway alignment. However, the bedrock units are fairly flat lying. In addition, weathering of the bedrock appears to create slabs of rock with a very high ratio of length and width relative to thickness. As a result of our observations at the site and referenced rockfall hazards report, HBET does not believe that any rockfall hazards currently exist in this area. However, as mentioned previously, significant cuts are proposed above the roadway. Therefore, it is recommended that HBET be retained during construction to re-evaluate rockfall hazards after completion of the site grading.

6.2 Filing 1 – Northern Section

The northern section of Filing 1 includes construction of a detention pond in the area identified as Tract A. The detention pond will be constructed in a fill area with side slopes of approximately 3.3H:1V.

Slope stability analyses were conducted for the proposed fill slopes using the GSTABL7 computer software program. As discussed later in this report, the recommended materials for the thick fills at the site will consist of excavated sandstone bedrock or native gravel materials more consistent with those encountered in TP-1. Therefore, the laboratory determined shear strength for the native clayey gravel and cobble soils was used for the analysis.

Test Pit TP-5, conducted in this area, indicated shallow claystone bedrock in the subsurface. However, for conservatism, the analysis assumed a subsurface profile consisting entirely of soil. The analysis included a traffic surcharge of 250 psf across the roadway.

The results of the analyses included in Appendix G indicate a Factor of Safety of greater than 1.5 which is deemed appropriate for long term stability. However, the analyses assume proper subgrade preparation and fill placement as outlined later in this report.

6.3 Filing 2

Filing 2 includes 8 lots. Approximately 800 feet of utilities and new roadway will be included in this portion of the project

6.3.1. ~Sta. 7+50 to ~Sta. 10+00 Aiguille Drive

As indicated on Figure 3, from approximately Station 7+50 to Station 10+00, the roadway will be in a cut section. The centerline of the roadway will include approximately four to six feet of cut; however, at the east edge of the roadway, up to ten feet of cut is proposed.

Test Pits TP-2 and TP-3, conducted in this area, encountered shallow sandstone and siltstone bedrock. In general, HBET believes that the sandstone and siltstone bedrock will provide excellent roadway support. However, HBET recommends that the bedrock in the subgrade be proofrolled to identify any soft or weak materials. Soft or weak materials should be removed and replaced with structural fill. In addition, due to the expansive nature of the native claystone bedrock, where claystone is encountered in the subgrade, it may be necessary to remove some of the claystone and replace with structural fill as outlined later in this report.

At the end of this section, Test Hole TH-3 indicated sandy, gravelly clay overburden soils. The soils were indicated to be stiff to very stiff. In general, HBET believes that this stratum will be fairly stable. However, prior to roadway construction, HBET recommends that all topsoil be stripped from the subgrade. In addition, it is recommended that the subgrade soils be scarified to a depth of 12-inches, moisture conditioned, and compacted. Due to the presence of large particles, it may not be possible to conduct nuclear density testing of the native soils. If it is possible to conduct nuclear density testing, HBET recommends that the subgrade soils be compacted to a minimum of 98% of the modified Proctor maximum dry density, within ±2% of optimum moisture content as determine in accordance with ASTM D1557. Where nuclear density testing is not feasible, the native subgrade soils should be moisture conditioned and proofrolled to the Engineer's satisfaction using equipment with large wheel loading such as a full water truck, loader with full bucket, etc.

As shown on the photographs included in Appendix A, the existing slopes above this section of roadway are shallow to moderate. The slopes range from approximately 4H:1V near the roadway to approximately 2H:1V near the crest of the hill. In general, HBET believes that the native slopes above the roadway are stable; however, the proposed construction will include significant cuts above the roadway to the east. The proposed cut slopes will be 2H:1V.

Based upon the results of the subsurface investigation and observations at the site, the cut slopes will likely consist entirely of sandstone bedrock. The sandstone is fairly flat lying. As a result, HBET believes that the proposed 2H:1V cut slopes in competent sandstone bedrock will be stable. However, HBET should be present during excavation to evaluate the precise conditions of the bedrock in the cut slope to verify long term stability.

Also as shown on the site photographs, several bedrock outcrops are present above the proposed roadway alignment. However, the bedrock units are fairly flat lying. In addition, weathering of the bedrock appears to create slabs of rock with a very high ratio of length and width relative to thickness. As a result of our observations at the site and referenced rockfall hazards report, HBET does not believe that any rockfall hazards currently exist in this area. However, as mentioned previously, significant cuts are proposed above the roadway. Therefore, it is recommended that HBET be retained during construction to re-evaluate rockfall hazards after completion of the site grading.

6.3.2. ~Sta. 10+00 to ~Sta. 14+00 Aiguille Drive

As indicated on Figure 3, from approximately Station 10+00 to Station 14+00, the roadway will be in a fill section. Up to approximately fourteen feet of fill will be placed in this area along the roadway. Test Hole TH-10, and Test Pits TP-4 and TP-5, conducted in this area encountered between one and two feet of overburden soils above claystone and sandstone bedrock. The laboratory testing results in Appendix F indicate that the claystone is moderately plastic. In addition, the laboratory results included in Appendix E indicate that the claystone is slightly expansive.

Due to the significant fills proposed in this area, HBET recommends that the overburden soils be completely stripped from the subgrade prior to fill placement. In addition, it is recommended that the bedrock be proofrolled to identify any soft or weak materials, soft or weak materials should be removed and replaced by structural fill. In addition, due to the expansive nature of the native claystone bedrock, where claystone is encountered in the subgrade, it may be necessary to remove some of the claystone and replace with structural fill as outlined later in this report.

In general, the native claystone and sandstone bedrock materials are anticipated to be fairly stable with regard to settlement potential. Any settlement of the weathered bedrock that occurs due to fill placement would be anticipated to be elastic in nature and occur during the fill placement.

As shown on the photographs included in Appendix A, the existing slopes above this section of roadway are fairly shallow. The slopes range from approximately 5H:1V near the roadway to approximately 2H:1V near the crest of the hill. Based upon our observations at the site and shallow slopes, HBET believes that the existing slopes are stable; however, the construction will include regrading of the slopes above the roadway in this area. Immediately beyond the roadway, the grade will be reduced to approximately 14H:1V. Farther to the east, the slopes will be regraded to approximately 3H:1V.

As discussed previously, slope stability analyses were conducted for cut slopes of up to 2H:1V. The results of the analyses indicated a Factor of Safety greater than 1.5. Therefore, the 3H:1V slopes proposed in this area would have a higher Factor of Safety. However, HBET should be retained to evaluate the cut slope during construction to verify that the soil conditions are consistent with our assumptions.

The grading in this area of Filing 2 will include fill slopes of approximately 3.3H:1V below the roadway. As discussed in Section 6.2 above, these fill slopes are anticipated to be stable.

The site photographs also show bedrock outcrops above the proposed roadway alignment. However, the bedrock units are fairly flat lying. In addition, weathering of the bedrock appears to create slabs of rock with a very high ratio of length and width relative to thickness. As a result of our observations at the site and referenced rockfall hazards report, HBET does not believe that any rockfall hazards currently exist in this area. However, HBET should be retained during construction to re-evaluate rockfall hazards after completion of the site grading.

6.3.3. ~Sta. 14+00 to ~Sta. 15+50 Aiguille Drive

As indicated on Figure 3, from approximately Station 14+00 to Station 15+50, the roadway will be in a cut section. The centerline of the roadway will include up to approximately four feet of cut; however, east of the roadway, up to approximately sixteen feet of cut is proposed.

Test Hole TH-4 and Test Pit TP-6, conducted in this area, encountered 1.5 to 2.0 feet of clay overburden soils above sandstone bedrock with siltstone and claystone layers. Therefore, the proposed cuts will extend into the bedrock. In general, HBET believes that the bedrock will provide excellent roadway support. However, HBET recommends that the bedrock in the subgrade be proofrolled to identify any soft or weak materials. Soft or weak materials should be removed and replaced with structural fill. In addition, due to the expansive nature of the native claystone bedrock, where claystone is encountered in the subgrade, it may be necessary to remove some of the claystone and replace with structural fill as outlined later in this report.

As shown on the photographs included in Appendix A, this section of the roadway is near the top of the ridge and the existing slopes above the roadway are shallow to moderate. The slopes range from approximately 16H:1V near the roadway to approximately 2H:1V near the crest of the hill. However, the hill east of the roadway in this area will be cut down as part of Filing 3 and the finished slopes will be reduced to approximately 4H:1V. In general, HBET believes that the native slopes above the roadway are fairly stable. In addition, as discussed previously, slope stability analyses were conducted for cut slopes of up to 2H:1V. The results of the analyses indicated a Factor of Safety greater than 1.5. Therefore, the 4H:1V slopes proposed in this area would have a higher Factor of Safety. However, HBET should be retained to evaluate the cut slope during construction to verify that the soil conditions are consistent with our assumptions.

Also as shown on the site photographs, a few bedrock outcrops are present above the proposed roadway alignment. However, as discussed previously, the hillside above the roadway is proposed to be cut off as part of Filing 3. Therefore, based upon the proposed grading, our observations at the site, and referenced rockfall hazards report, HBET does not believe that any rockfall hazards do or will exist in this area. However, it is recommended that HBET be retained during construction to re-evaluate rockfall hazards after completion of the site grading.

6.4 Filing 3

Filing 3 includes 9 lots. Approximately 300 feet of public roadway and utilities, and 300 feet of private roadway and utilities will be included in this portion of the project

6.4.1. ~Sta. 1+00 to ~Sta. 3+80 Spire Court

As indicated on Figure 4, from approximately Station 1+00 to Station 3+80, the roadway will be in a fill section. Up to approximately six feet of fill will be placed in this area along the roadway. Test Pit TP-6 and Test Hole TH-9 conducted in this area encountered between 1.5 and 4 feet of overburden soils above sandstone and claystone bedrock. The laboratory testing results in Appendix F indicate that the claystone is moderately plastic. In addition, the laboratory results included in Appendix E indicate that the claystone is slightly expansive.

As indicated on the Test Hole and Test Pit logs, the overburden soils are in a stiff to very stiff condition and HBET believes that this stratum will be fairly stable. Although the overburden soils are classified as cohesive, the materials are limited in thickness. As a result, HBET believes that the potential for long term consolidation settlements of the native soils due to the placement of fill above is very low.

In general, the native bedrock materials are anticipated to be fairly stable with regard to settlement potential. Any settlement of the weathered bedrock that occurs due to fill placement would be anticipated to be elastic in nature and occur during the fill placement.

HBET recommends that all topsoil be stripped from the subgrade prior to fill placement. In addition, it is recommended that any subgrade soils present after topsoil removal be scarified to a depth of 12-inches, moisture conditioned, and compacted to a minimum of 98% of the modified Proctor maximum dry density, within ±2% of optimum moisture content as determine in accordance with ASTM D1557. It is recommended that bedrock in the subgrade be proofrolled to identify any soft or weak materials. Soft or weak materials should be removed and replaced with structural fill. In addition, due to the expansive nature of the native claystone bedrock, where claystone is encountered in the subgrade, it may be necessary to remove some of the claystone and replace with structural fill as outlined later in this report.

As shown on the plans, this section of roadway lies on top of a ridge. The existing slopes below the roadway to the north and south range from approximately 4H:1V to 3H:1V. Based upon our observations at the site, HBET believes that the existing slopes are stable. The construction will include regrading of the slopes below the roadway in this area; however, the finished slopes are generally not to exceed 3H:1V with the exception of the fill slopes along the small detention pond in Tract B. The pond side slopes are anticipated to range from 2H:1V to 1.5H:1V.

Slope stability analyses were conducted for the proposed pond side slopes using the GSTABL7 computer software program. As discussed later in this report, the recommended materials for fills at the site will consist of excavated sandstone bedrock or native gravel materials more consistent with those encountered in TP-1. Therefore, the laboratory determined shear strength for the native clayey gravel and cobble soils was used for the analysis.

The results of the analyses included in Appendix G indicate a Factor of Safety of greater than 1.5 which is deemed appropriate for long term stability. However, the analyses assume proper subgrade preparation and fill placement as outlined later in this report.

Also as shown on the site photographs, a few bedrock outcrops are present in this area of the site. However, the bedrock units are fairly flat lying. In addition, weathering of the bedrock appears to create slabs of rock with a very high ratio of length and width relative to thickness. As a result of our observations at the site and referenced rockfall hazards report, HBET does not believe that any rockfall hazards currently exist in this area. However, HBET should be retained during construction to re-evaluate rockfall hazards after completion of the site grading.

6.4.2. ~Sta. 3+80 to ~Sta. 7+00 Talus Court

As indicated on Figure 3, from approximately Station 3+80 to Station 7+00, the roadway will be in a cut section. The centerline of the roadway will include up to approximately seventeen feet of cut.

Test Pits TP-6 and TP-7, conducted in this area, encountered a thin layer of overburden soils above sandstone bedrock with siltstone and claystone layers. Therefore, the proposed cuts will extend into the bedrock. In general, HBET believes that the bedrock will provide excellent roadway support. However, HBET recommends that the bedrock in the subgrade be proofrolled to identify any soft or weak materials. Soft or weak materials should be removed and replaced with structural fill. In addition, due to the expansive nature of the native claystone bedrock, where claystone is encountered in the subgrade, it may be necessary to remove some of the claystone and replace with structural fill as outlined later in this report.

As shown on the photographs included in Appendix A and subdivision plans, this section of the roadway is near the top of the ridge and the existing slopes above and below the roadway are shallow to moderate. The slopes range from approximately 5H:1V to approximately 2H:1V. In general, HBET believes that the native slopes above and below the roadway are fairly stable. However, while the hill that comprises much of Talus Court will be cut down and the finished slopes will be reduced to approximately 7H:1V, 2H:1V cut slopes are proposed at the southeastern end of Talus Court.

As discussed previously, slope stability analyses were conducted for cut slopes of up to 2H:1V. The results of the analyses indicated a Factor of Safety greater than 1.5. Therefore, the cut slopes proposed at the end of Talus Court are anticipated to be stable. However, HBET should be retained to evaluate the cut slope during construction to verify that the soil conditions are consistent with our assumptions.

Also as shown on the site photographs, a few bedrock outcrops are present above and below the proposed roadway in this area. However, the bedrock units are fairly flat lying. In addition, weathering of the bedrock appears to create slabs of rock with a very high ratio of length and width relative to thickness. As a result of our observations at the site and referenced rockfall hazards report, HBET does not believe that any rockfall hazards currently exist in this area. However, as discussed previously, large cuts are proposed along Talus Court as part of the development. Therefore, it is recommended that HBET be retained during construction to re-evaluate rockfall hazards after completion of the site grading.

7.0 GENERAL RECOMMENDATIONS FOR DEVELOPMENT

7.1 Development on Individual Lots

As discussed in the preceding sections of this report, significant grading will be conducted as part of the development. In addition, based upon the size and shape of individual lots, the precise layout and configuration of structures on individual lots is impossible to predict. Based upon the results of the previous and current subsurface investigations, and upon our experience in the vicinity of the subject site, HBET anticipates that micro-pile foundations will be preferred for most of the lots. However, recommendations for foundation type, slabs-on-grade, slope stability, grading and drainage, etc. associated with development on individual lots should be based upon lot-specific geotechnical investigations.

7.2 Structural and Grading Fill

Due to the significant grading proposed as part of Filings 1, 2, and 3, excess materials will be generated. In general, HBET believes that the native sand and gravel soils are suitable for use as structural and/or grading fill. In addition, some of the sandstone bedrock materials excavated from the large cuts in Filing 3 is anticipated to be suitable for use as structural and/or grading fill. Due to their potential for expansion, the native clay and claystone materials are not suitable for use as structural and/or grading fill. In general, any and all materials proposed to be used as structural and/or grading fill should be evaluated by HBET prior to placement to determine the suitability of the specific materials.

As discussed previously in this report, prior to placement of any structural or grading fill, subgrade soils should be scarified to a depth of 12-inches, moisture conditioned, and compacted to a minimum of 98% of the modified Proctor maximum dry density, within ±2% of optimum moisture content as determine in accordance with ASTM D1557. Non-testable subgrade materials should be moisture conditioned and proofrolled to the Engineer's satisfaction.

It is recommended that bedrock in the subgrade be proofrolled to identify any soft or weak materials. Soft or weak materials should be removed and replaced with structural fill. In addition, due to the expansive nature of the native claystone bedrock, where claystone is encountered in the subgrade HBET should be contacted to evaluate the material. Depending upon the depth of fill above the claystone, condition of claystone, and risk of movement associated with the claystone in a specific area, it may be necessary to remove some of the claystone and replace it with structural fill.

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Depending upon the grain-size distribution of suitable fill materials, structural and grading fill materials should be placed in 6 to 9-inch lifts, moisture conditioned, and compacted according to criteria developed by HBET for each material proposed to be used as structural and/or grading fill. Nuclear density testable materials should be compacted to a minimum of 98% of the modified Proctor maximum dry density, within ±2% of optimum moisture content as determined in accordance with ASTM D1557. Non-testable materials should be moisture conditioned and proofrolled to the Engineer's satisfaction.

7.3 Lateral Earth Pressures

Although not currently anticipated, any retaining walls should be designed to resist lateral earth pressures. For structural fill materials in the active zone behind walls, walls should be designed for an active equivalent fluid unit weight of 60 pcf in areas where no surcharge loads are present. Lateral earth pressures should be increased as necessary to reflect any surcharge loading behind the walls.

7.4 Excavations

Temporary in the soils and bedrock at the site may stand for short periods of time but should not be considered to be stable. Therefore, trenching and excavations should be sloped back, shored, or shielded for worker protection in accordance with applicable OSHA standards. The materials at the site range from soils to bedrock. With regard to OSHA's *Construction Standards for Excavations*, the materials range from Type C soils to competent rock. Due to the variability across the site, HBET should be retained to classify the materials within each excavation and/or along utility trenches where significant lateral variations occur to determine the appropriate worker protection measures.

7.5 Pavements

The proposed construction is anticipated to include residential street construction. Based upon the results of the previous and current subsurface investigations, and upon the proposed site grading, the pavement subgrade materials are anticipated to range from bedrock to fill to native soils. The referenced *Preliminary Geotechnical Investigation* report included recommendations for pavement sections consisting of 3-inches of asphalt pavement above 6 to 9.5-inches of base course. However, HBET understands that the proposed pavement section will consist of 3-inches of asphalt above 10-inches of base course across the site. In general, based upon the anticipated subgrade conditions, HBET believes that the proposed pavement section is adequate. However, due to the variability of subsurface materials across the site, HBET provides the following recommendations for roadway design and construction.

Based upon our experience in the Grand Valley, HBET believes that some of the pavement heave observed in the area is due to the combination of Type A lots and attached sidewalks. Runoff from Type A lots can infiltrate into the base course behind the sidewalk and then migrate below the pavement section. As a result, to the extent practical, HBET recommends that detached sidewalks be used for this subdivision.

In all areas, HBET recommends that the roadway subgrade and pavement section have a consistent cross slope in one direction rather than a conventional crown. In areas of detached sidewalk, a small drainage ditch is proposed between the roadway and sidewalk to move stormwater away from the pavement section. The roadway cross slope should be towards the ditch. Where an attached sidewalk is necessary, HBET recommends an underdrain below the sidewalk to move stormwater away from the pavement section. The roadway cross slope should be towards the underdrain.

Prior to roadway construction, HBET should be provided the opportunity to evaluate the subgrade. In fill areas, HBET should verify that fill has been properly placed as outlined in Section 7.2 of this report. In cut areas where soil is present in the subgrade, it is recommended that the subgrade soils be scarified to a depth of 12-inches; moisture conditioned, and recompacted to a minimum of 95% of the modified Proctor maximum dry density, within ±2% of optimum moisture as determined by AASHTO T-180.

In cut areas, where bedrock is present, the bedrock should be proofrolled to identify soft or weak materials. Soft or weak materials should be removed and replaced with structural fill. In addition, as discussed previously, the native claystone bedrock materials are expansive. Depending upon the condition and extent of claystone in the subgrade, HBET may recommend removal of the claystone to a depth of up to approximately 24-inches and replacement with structural fill.

In addition to the above recommendations, based upon the variability in subsurface conditions across the site, there may be areas where the transition from soil to bedrock subgrade is abrupt. In these areas, HBET recommends that additional bedrock excavation be conducted to provide for a gradual transition from soil to bedrock subgrade. HBET should be contacted to develop recommendations for transitions depending upon the actual conditions encountered during construction.

Aggregate base course should be placed in maximum 9-inch loose lifts, moisture conditioned, and compacted to a minimum of 95of the maximum dry density, respectively, at -2% to +3% of optimum moisture content as determined by AASHTO T-180. In addition to density testing, base course should be proofrolled to verify subgrade stability.

It is recommended that Hot-Mix Asphaltic (HMA) pavement conform to CDOT grading SX or S specifications and consist of an approved 75 gyration Superpave method mix design. HMA pavement should be compacted to between 92% and 96% of the maximum theoretical density. An end point stress of 50 psi should be used. In addition, pavements should conform to local specifications.

The long-term performance of the pavements is dependent on positive drainage away from the pavements. Ditches, culverts, and inlet structures in the vicinity of paved areas must be maintained to prevent ponding of water on or around the pavements.

7.6 Engineering Oversight

Due to the significant grading proposed as part of this project and critical issues with regard to pavement performance, slope stability, rockfall hazards, etc., HBET believes that substantial engineering oversight will be required. Construction materials testing and engineering oversight should be in accordance with the *Construction Materials Testing and Engineering Oversight Plan, Pinnacle Ridge Subdivision, Filings 1, 2, and 3, Grand Junction, Colorado* by Huddleston-Berry Engineering & Testing, LLC for Vortex Engineering, Inc., June 7, 2017.

8.0 GENERAL

The recommendations included above are based upon the results of the subsurface investigation and on our local experience. These conclusions and recommendations are valid only for the proposed construction.

As discussed previously, the subsurface conditions at the site were variable. ***The recommendations contained herein are designed to reduce the risk and magnitude of movements and it is extremely critical that ALL of the recommendations herein be applied to the design and construction. However, HBET cannot predict long-term changes in subsurface moisture conditions and/or the precise magnitude or extent of volume change in the soils and/or bedrock at the site. Where significant increases in subsurface moisture occur due to poor grading, improper stormwater management, utility line failure, excess irrigation, or other cause, during or after construction, significant movements are possible***.

Huddleston-Berry Engineering and Testing, LLC is pleased to be of service to your project. Please contact us if you have any questions or comments regarding the contents of this report.

Respectfully Submitted:
Huddleston-Berry Engineering and Testing, LLC



Michael A. Berry, P.E.
Vice President of Engineering

FIGURES

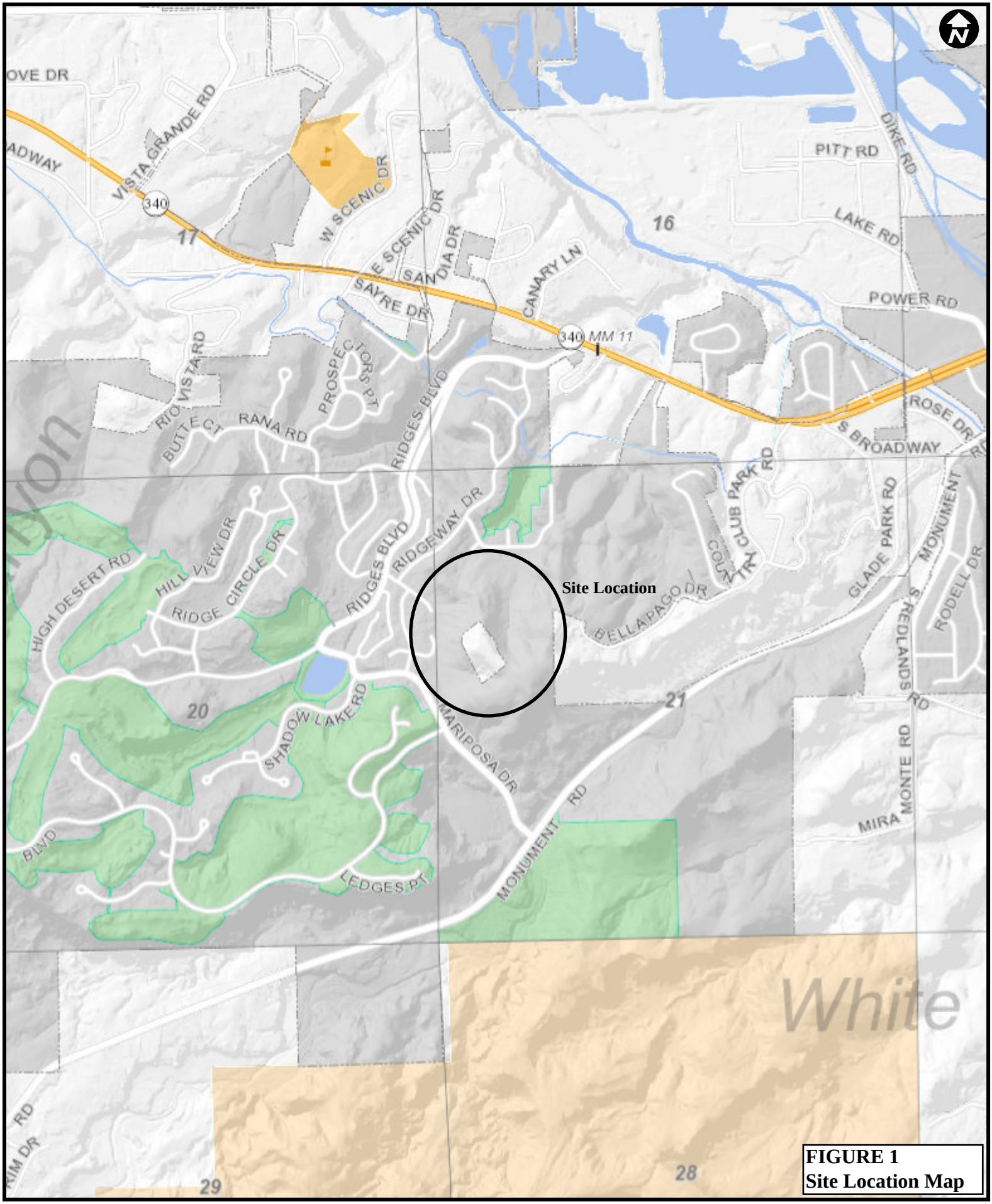


FIGURE 1
Site Location Map

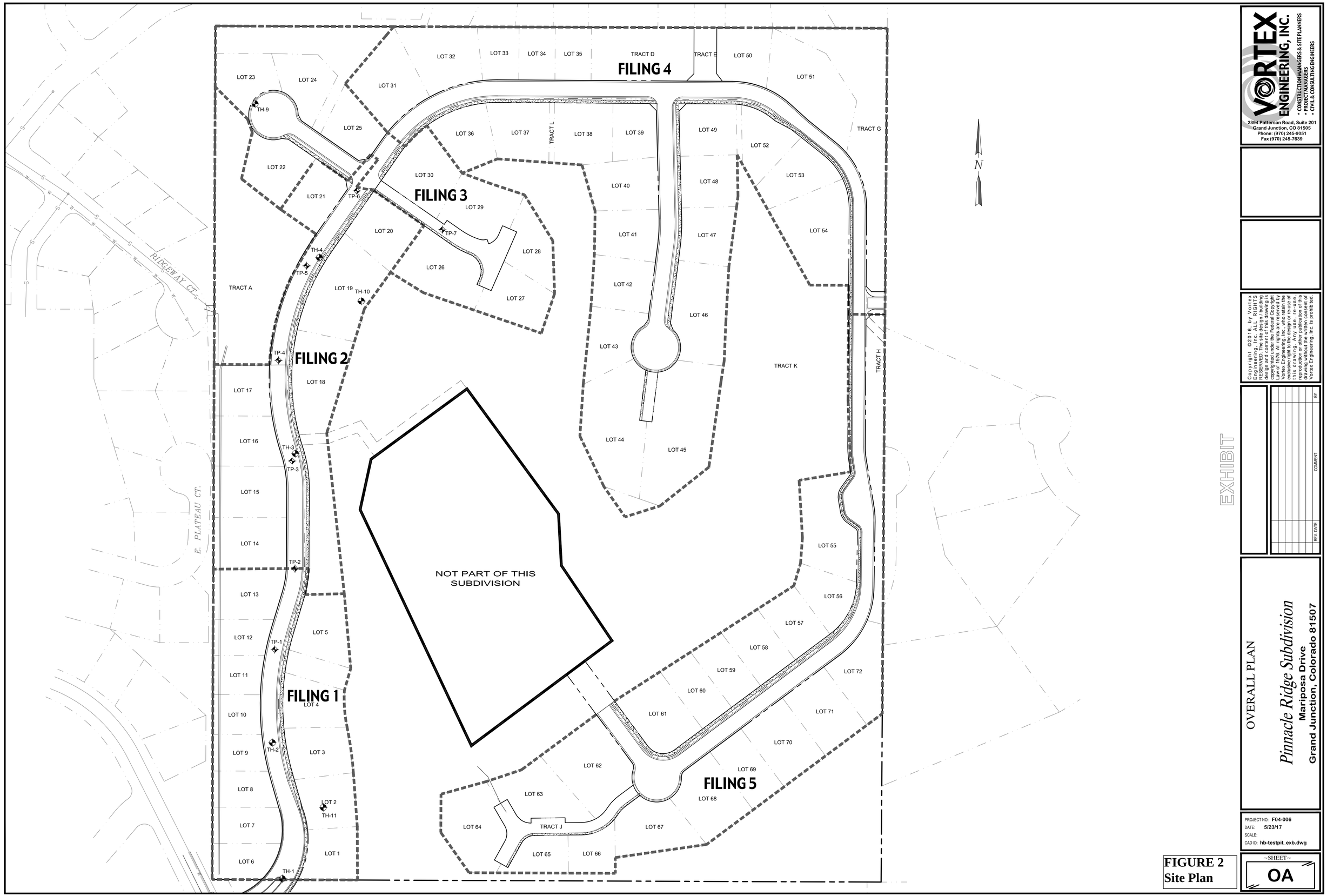
Mesa County Map

The Geographic Information System (GIS) and its components are designed as a source of reference for answering inquiries, for planning and for modeling. GIS is not intended or does not replace legal description information in the chain of title and other information contained in official government records such as the County Clerk and Recorders office or the courts. In addition, the representations of location in this GIS cannot be substitute for actual legal surveys.
The information contained herein is believed accurate and suitable for the limited uses, and subject to the limitations, set forth above. Mesa County makes no warranty as to the accuracy or suitability of any information contained herein. Users assume all risk and responsibility for any and all damages, including consequential damages, which may flow from the user's use of this information.

0 0.125 0.25 0.5 mi
0 0.15 0.3 0.6 km

Print Date: May 19, 2017

Mesa County, Colorado
GIS/IT Department
gis.mesacounty.us



VORTEX ENGINEERING, INC.
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2394 Patterson Road, Suite 201
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REV.	DATE	COMMENT

EXHIBIT

OVERALL PLAN

Pinnacle Ridge Subdivision

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **5/23/17**
SCALE:
CAD ID: **hb-testpit_exb.dwg**

~SHEET~
OA

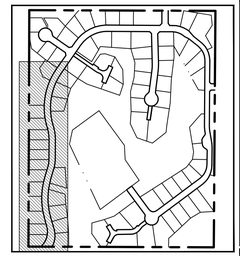
FIGURE 2
Site Plan

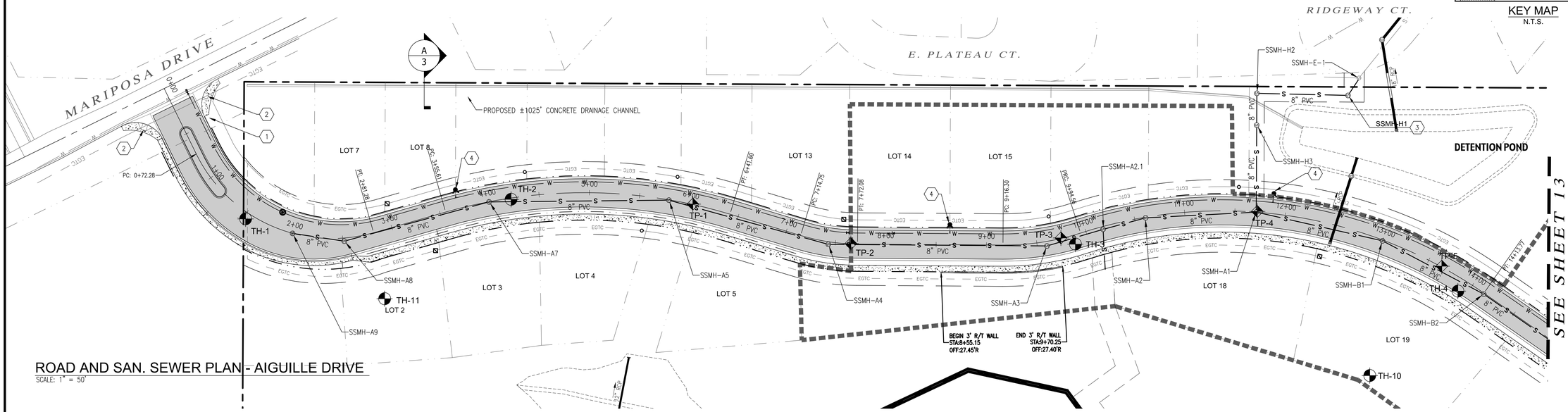
CONSTRUCTION NOTES:

1. INSTALL STOP SIGN & STREET SIGN RE: MUTCD
2. CONSTRUCT HANDICAPPED RAMP RE: CITY OF GJ DETAILS
3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT RE: UTE WATER DETAILS

GENERAL NOTES:

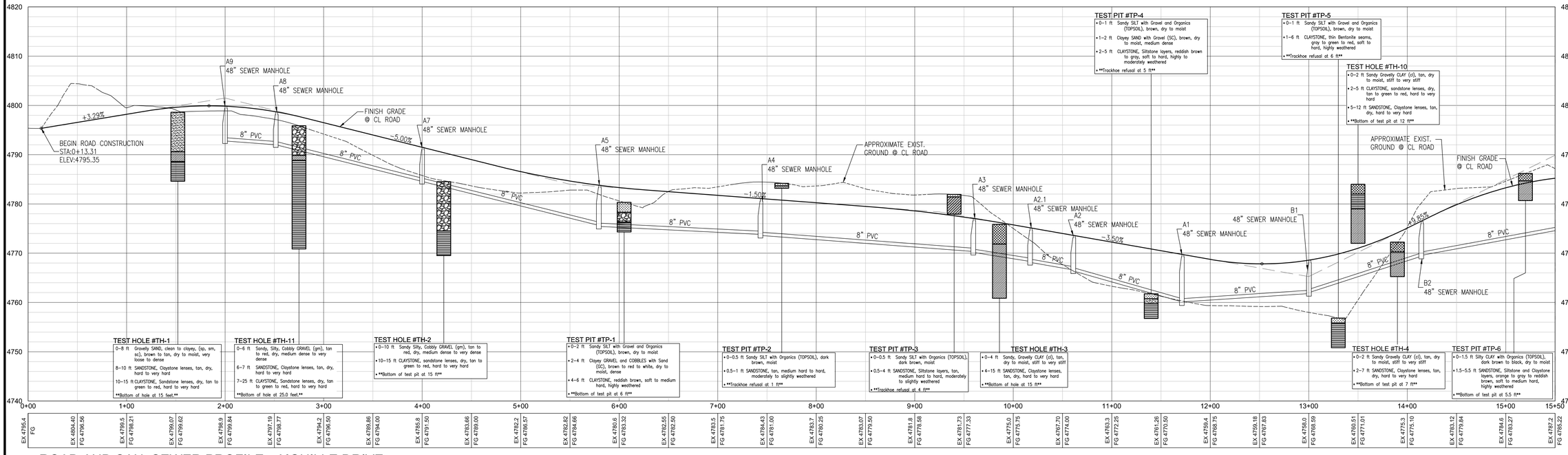
1. REFERENCE SHEET 2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET 3 FOR STREET SECTIONS
10. SEE SHEETS 4 & 5 FOR ALL EASEMENT INFORMATION





ROAD AND SAN. SEWER PLAN - AIGUILLE DRIVE

SCALE: 1" = 50'



ROAD AND SAN. SEWER PROFILE - AIGUILLE DRIVE

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

FIGURE 3

VORTEX ENGINEERING, INC.
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• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
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REV	DATE	COMMENT	BY

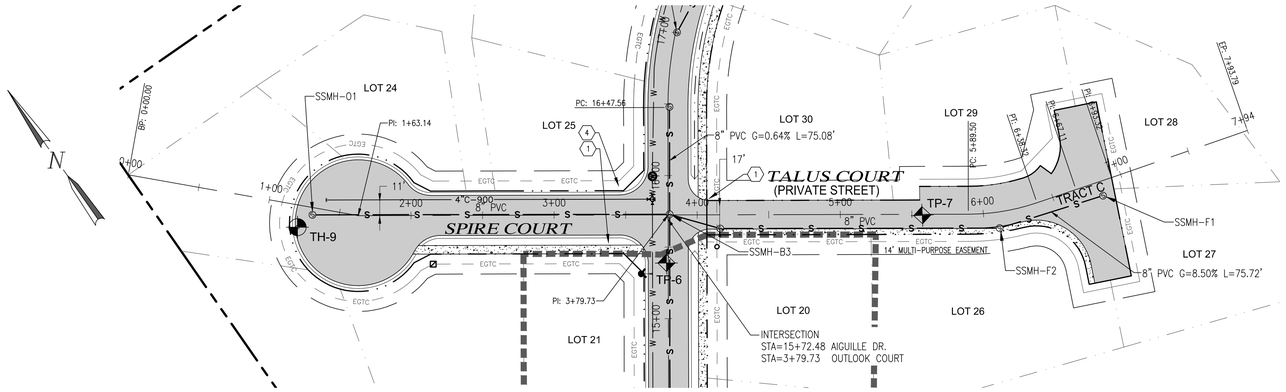
Pinnacle Ridge Subdivision

Road & Sanitary Sewer Plan & Profile
Aiguille Drive

Mariposa Drive
Grand Junction, Colorado 81507

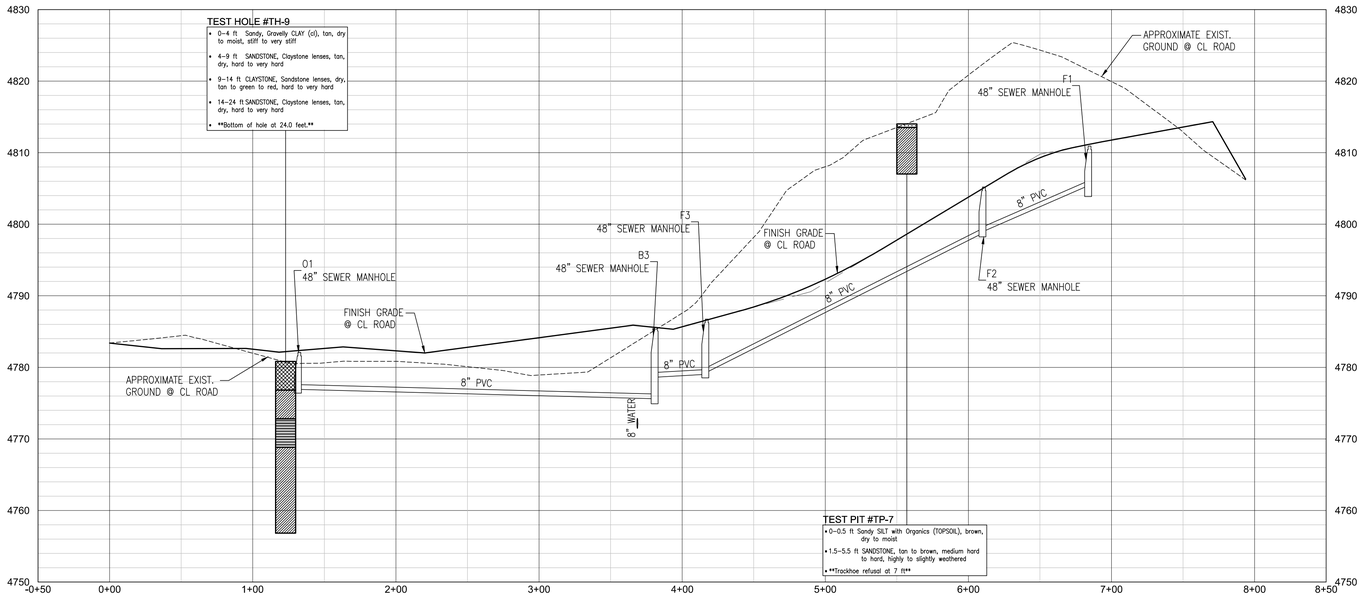
PROJECT NO: **F04-006**
DATE: **5/23/17**
SCALE: **1" = 50'**
CAD ID: **hb-testpit_exb.dwg**

~SHEET~
1 of 2



ROAD AND SAN. SEWER PLAN - SPIRE COURT □ TALUS COURT

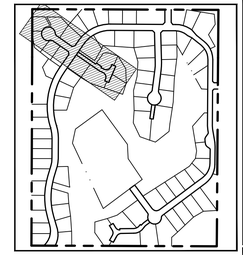
SCALE: 1" = 50'



ROAD AND SAN. SEWER PROFILE - SPIRE COURT □ TALUS COURT

HORIZONTAL SCALE: 1" = 50'

VERTICAL SCALE: 1" = 5'



KEY MAP

N.T.S.

CONSTRUCTION NOTES:

1. INSTALL STOP SIGN & STREET SIGN
   RE: MUTCD
2. CONSTRUCT HANDICAPPED RAMP
   RE: CITY OF GJ DETAILS
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EXHIBIT

FIGURE 4

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REV. DATE	COMMENT	BY

Road and Sanitary Sewer Plan and Profile
Spire Court & Talus Court

Pinnacle Ridge Subdivision

Mariposa Drive
Grand Junction, Colorado 81507

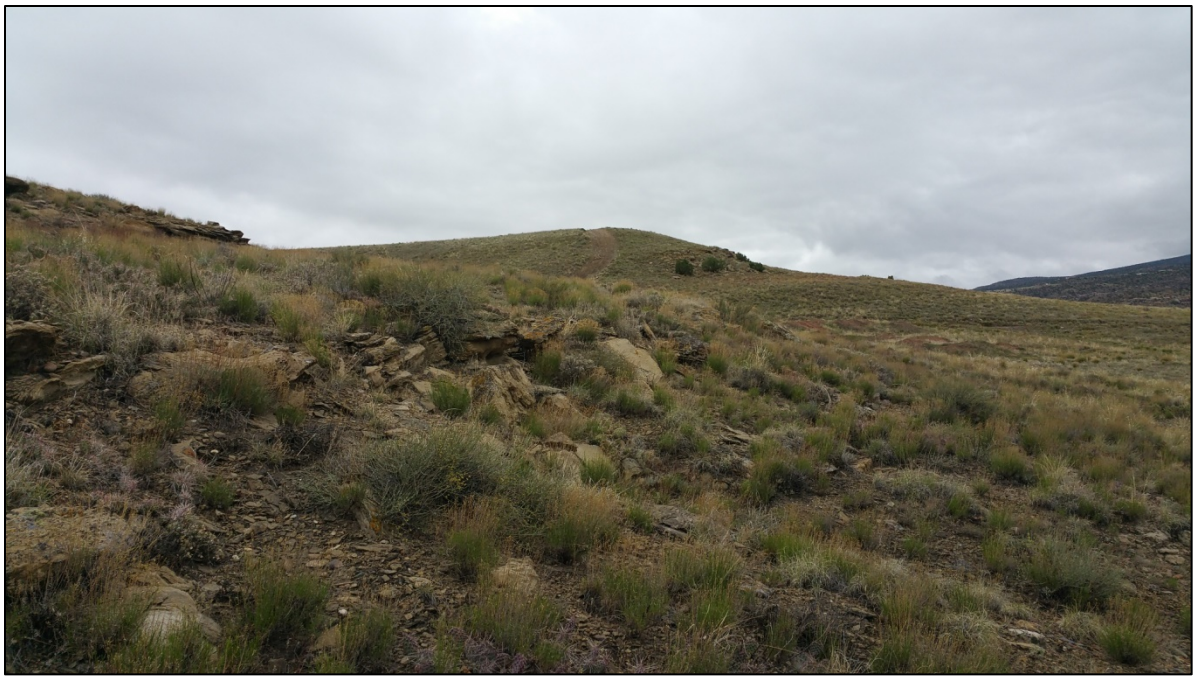
PROJECT NO: **F04-006**
DATE: **5/23/17**
SCALE: **1" = 50'**
CAD ID: **hb-testpit_exb.dwg**

~SHEET~

APPENDIX A
Site Photographs



Looking East From TP-1



Looking Southeast at Rock Outcrops Above TP-2



Looking North Along Hillside Above TP-2



Looking West Downhill Towards TP-2



Looking East From TP-2



Looking East From Above TP-3



Looking Southeast From TP-4



Looking North From Above TP-5



Looking Northeast From TP-5



Looking Southeast From TP-6



Looking Southwest From TP-7



Looking South From TP-7



Test Pit TP-1



Test Pit TP-2



Test Pit TP-3



Test Pit TP-4



Test Pit TP-5



Test Pit TP-6



Test Pit TP-7

APPENDIX B
Soil Survey Data



Map Scale: 1:3,110 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 45 90 180 270

Feet: 0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mesa County Area, Colorado
Survey Area Data: Version 7, Sep 30, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 22, 2010—Sep 2, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Mesa County Area, Colorado (CO680)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
87	Persayo-Blackston complex, 6 to 45 percent slopes — Draft	49.4	99.4%
127	Rock outcrop-Persayo-Hostage complex, 25 to 99 percent slopes, extremely stony — Draft	0.3	0.6%
Totals for Area of Interest		**49.8**	**100.0%**

Map Unit Description

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description

Mesa County Area, Colorado

87—Persayo-Blackston complex, 6 to 45 percent slopes — Draft

Map Unit Setting

National map unit symbol: k0bh

Elevation: 4,500 to 6,000 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 100 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

Persayo and similar soils: 65 percent
Blackston and similar soils: 25 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Persayo

Setting

Landform: Mesas
Landform position (two-dimensional): Backslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Residuum weathered from clayey shale

Typical profile

A - 0 to 4 inches: silty clay loam
C - 4 to 15 inches: silty clay loam
Cr - 15 to 19 inches: weathered bedrock

Properties and qualities

Slope: 6 to 45 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Silty Saltdesert (R034XY410CO)
Hydric soil rating: No

Description of Blackston

Setting

Landform: Mesas
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from sandstone and shale and/or outwash derived from sandstone and shale

Typical profile

A - 0 to 3 inches: very gravelly sandy clay loam
Bk1 - 3 to 7 inches: gravelly clay loam
Bk2 - 7 to 15 inches: very gravelly sandy clay loam
2Bk3 - 15 to 35 inches: extremely gravelly sandy loam
2C - 35 to 60 inches: extremely gravelly sand

Properties and qualities

Slope: 6 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Loamy Saltdesert (R034XY401CO)
Hydric soil rating: No

Minor Components

Rock outcrop

Percent of map unit: 4 percent
Landform: Mesas
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: Unranked

Soils with bedrock between 20 and 60 inches

Percent of map unit: 3 percent
Landform: Mesas
Landform position (two-dimensional): Shoulder

Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Very deep soils without rock fragments
Percent of map unit: 3 percent
Landform: Mesas
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

127—Rock outcrop-Persayo-Hostage complex, 25 to 99 percent slopes, extremely stony — Draft

Map Unit Setting
National map unit symbol: k07k
Elevation: 4,700 to 5,400 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 150 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition
Rock outcrop: 35 percent
Persayo and similar soils: 30 percent
Hostage and similar soils: 25 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rock Outcrop

Setting
Landform: Cliffs, ledges

Typical profile
H1 - 0 to 60 inches: unweathered bedrock

Properties and qualities
Slope: 50 to 99 percent
Depth to restrictive feature: 0 to 4 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.00 in/hr)
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: Unranked

Description of Persayo

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Residuum weathered from clayey shale

Typical profile

A - 0 to 2 inches: very parachannery clay loam
C - 2 to 11 inches: very parachannery silty clay loam
Cr - 11 to 15 inches: weathered bedrock

Properties and qualities

Slope: 25 to 65 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Very slightly saline to moderately saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Saltdesert Breaks (R034XY406CO)
Hydric soil rating: No

Description of Hostage

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium derived from sandstone and shale over residuum weathered from clayey shale

Typical profile

A - 0 to 4 inches: clay loam

B - 4 to 25 inches: clay loam
C1 - 25 to 50 inches: silty clay loam
C2 - 50 to 55 inches: silty clay loam
Cr - 55 to 59 inches: weathered bedrock

Properties and qualities

Slope: 25 to 50 percent
Percent of area covered with surface fragments: 10.0 percent
Depth to restrictive feature: 39 to 59 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Saltdesert Breaks (R034XY406CO)
Hydric soil rating: No

Minor Components

Soils with bedrock below 20 inches

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Soils with more than 35% rock fragments

Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear

Hydric soil rating: No

Data Source Information

Soil Survey Area: Mesa County Area, Colorado
Survey Area Data: Version 7, Sep 30, 2016

Dwellings and Small Commercial Buildings

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. This table shows the degree and kind of soil limitations that affect dwellings and small commercial buildings.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Dwellings are single-family houses of three stories or less. For dwellings without basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. For dwellings with basements, the foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of about 7 feet. The ratings for dwellings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility. Compressibility is inferred from the Unified classification. The properties that affect the ease and amount of excavation include depth to a water table, ponding, flooding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Small commercial buildings are structures that are less than three stories high and do not have basements. The foundation is assumed to consist of spread footings of reinforced concrete built on undisturbed soil at a depth of 2 feet or at the depth of maximum frost penetration, whichever is deeper. The ratings are based on the soil properties that affect the capacity of the soil to support a load without movement and on the properties that affect excavation and construction costs. The properties that affect the load-supporting capacity include depth to a water table, ponding, flooding, subsidence, linear extensibility (shrink-swell potential), and compressibility (which is inferred from the Unified classification). The properties that affect the ease and amount of excavation include flooding, depth to a water table, ponding, slope, depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, and the amount and size of rock fragments.

Information in this table is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this table. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Report—Dwellings and Small Commercial Buildings

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

Dwellings and Small Commercial Buildings–Mesa County Area, Colorado							
Map symbol and soil name	Pct. of map unit	Dwellings without basements		Dwellings with basements		Small commercial buildings	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
87—Persayo-Blackston complex, 6 to 45 percent slopes — Draft							
Persayo	65	Very limited		Very limited		Very limited	
		Slope	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Depth to soft bedrock	0.50	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Blackston	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
127—Rock outcrop-Persayo-Hostage complex, 25 to 99 percent slopes, extremely stony — Draft							
Rock outcrop	35	Not rated		Not rated		Not rated	
Persayo	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Depth to soft bedrock	0.50	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50
Hostage	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Shrink-swell	0.50	Shrink-swell	0.50	Shrink-swell	0.50

Data Source Information

Soil Survey Area: Mesa County Area, Colorado
Survey Area Data: Version 7, Sep 30, 2016

Roads and Streets, Shallow Excavations, and Lawns and Landscaping

Soil properties influence the development of building sites, including the selection of the site, the design of the structure, construction, performance after construction, and maintenance. This table shows the degree and kind of soil limitations that affect local roads and streets, shallow excavations, and lawns and landscaping.

The ratings in the table are both verbal and numerical. Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect building site development. *Not limited* indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. *Somewhat limited* indicates that the soil has features that are moderately favorable for the specified use. The limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. *Very limited* indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Numerical ratings in the table indicate the severity of individual limitations. The ratings are shown as decimal fractions ranging from 0.01 to 1.00. They indicate gradations between the point at which a soil feature has the greatest negative impact on the use (1.00) and the point at which the soil feature is not a limitation (0.00).

Local roads and streets have an all-weather surface and carry automobile and light truck traffic all year. They have a subgrade of cut or fill soil material; a base of gravel, crushed rock, or soil material stabilized by lime or cement; and a surface of flexible material (asphalt), rigid material (concrete), or gravel with a binder. The ratings are based on the soil properties that affect the ease of excavation and grading and the traffic-supporting capacity. The properties that affect the ease of excavation and grading are depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, depth to a water table, ponding, flooding, the amount of large stones, and slope. The properties that affect the traffic-supporting capacity are soil strength (as inferred from the AASHTO group index number), subsidence, linear extensibility (shrink-swell potential), the potential for frost action, depth to a water table, and ponding.

Shallow excavations are trenches or holes dug to a maximum depth of 5 or 6 feet for graves, utility lines, open ditches, or other purposes. The ratings are based on the soil properties that influence the ease of digging and the resistance to sloughing. Depth to bedrock or a cemented pan, hardness of bedrock or a cemented pan, the amount of large stones, and dense layers influence the ease of digging, filling, and compacting. Depth to the seasonal high water table, flooding, and ponding may restrict the period when excavations can be made. Slope influences the ease of using machinery. Soil texture, depth to the water table, and linear extensibility (shrink-swell potential) influence the resistance to sloughing.

Lawns and landscaping require soils on which turf and ornamental trees and shrubs can be established and maintained. Irrigation is not considered in the ratings. The ratings are based on the soil properties that affect plant growth and trafficability after vegetation is established. The properties that affect plant growth are reaction; depth to a water table; ponding; depth to bedrock or a cemented pan; the available water capacity in the upper 40 inches; the content of salts, sodium, or calcium carbonate; and sulfidic materials. The properties that affect trafficability are flooding, depth to a water table, ponding, slope, stoniness, and the amount of sand, clay, or organic matter in the surface layer.

Information in this table is intended for land use planning, for evaluating land use alternatives, and for planning site investigations prior to design and construction. The information, however, has limitations. For example, estimates and other data generally apply only to that part of the soil between the surface and a depth of 5 to 7 feet. Because of the map scale, small areas of different soils may be included within the mapped areas of a specific soil.

The information is not site specific and does not eliminate the need for onsite investigation of the soils or for testing and analysis by personnel experienced in the design and construction of engineering works.

Government ordinances and regulations that restrict certain land uses or impose specific design criteria were not considered in preparing the information in this table. Local ordinances and regulations should be considered in planning, in site selection, and in design.

Report—Roads and Streets, Shallow Excavations, and Lawns and Landscaping

[Onsite investigation may be needed to validate the interpretations in this table and to confirm the identity of the soil on a given site. The numbers in the value columns range from 0.01 to 1.00. The larger the value, the greater the potential limitation. The table shows only the top five limitations for any given soil. The soil may have additional limitations]

Roads and Streets, Shallow Excavations, and Lawns and Landscaping–Mesa County Area, Colorado							
Map symbol and soil name	Pct. of map unit	Lawns and landscaping		Local roads and streets		Shallow excavations	
		Rating class and limiting features	Value	Rating class and limiting features	Value	Rating class and limiting features	Value
87—Persayo-Blackston complex, 6 to 45 percent slopes — Draft							
Persayo	65	Very limited		Very limited		Very limited	
		Depth to bedrock	1.00	Depth to soft bedrock	1.00	Depth to soft bedrock	1.00
		Slope	1.00	Low strength	1.00	Slope	1.00
		Droughty	0.87	Slope	1.00	Dusty	0.50
		Low exchange capacity	0.50	Shrink-swell	0.50	Unstable excavation walls	0.01
		Dusty	0.50				
Blackston	25	Very limited		Very limited		Very limited	
		Gravel content	1.00	Slope	1.00	Slope	1.00
		Slope	1.00			Dusty	0.15
		Droughty	0.92			Unstable excavation walls	0.02
		Dusty	0.15				
127—Rock outcrop-Persayo-Hostage complex, 25 to 99 percent slopes, extremely stony — Draft							
Rock outcrop	35	Not rated		Not rated		Not rated	
Persayo	30	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Depth to soft bedrock	1.00
		Droughty	1.00	Depth to soft bedrock	1.00	Slope	1.00
		Depth to bedrock	1.00	Low strength	1.00	Dusty	0.50
		Dusty	0.50	Shrink-swell	0.50	Unstable excavation walls	0.01
Hostage	25	Very limited		Very limited		Very limited	
		Slope	1.00	Slope	1.00	Slope	1.00
		Gravel content	1.00	Low strength	1.00	Dusty	0.37
		Dusty	0.37	Shrink-swell	0.50	Unstable excavation walls	0.01

Data Source Information

Soil Survey Area: Mesa County Area, Colorado
Survey Area Data: Version 7, Sep 30, 2016

Soil Features

This table gives estimates of various soil features. The estimates are used in land use planning that involves engineering considerations.

A *restrictive layer* is a nearly continuous layer that has one or more physical, chemical, or thermal properties that significantly impede the movement of water and air through the soil or that restrict roots or otherwise provide an unfavorable root environment. Examples are bedrock, cemented layers, dense layers, and frozen layers. The table indicates the hardness and thickness of the restrictive layer, both of which significantly affect the ease of excavation. *Depth to top* is the vertical distance from the soil surface to the upper boundary of the restrictive layer.

Subsidence is the settlement of organic soils or of saturated mineral soils of very low density. Subsidence generally results from either desiccation and shrinkage, or oxidation of organic material, or both, following drainage. Subsidence takes place gradually, usually over a period of several years. The table shows the expected initial subsidence, which usually is a result of drainage, and total subsidence, which results from a combination of factors.

Potential for frost action is the likelihood of upward or lateral expansion of the soil caused by the formation of segregated ice lenses (frost heave) and the subsequent collapse of the soil and loss of strength on thawing. Frost action occurs when moisture moves into the freezing zone of the soil. Temperature, texture, density, saturated hydraulic conductivity (Ksat), content of organic matter, and depth to the water table are the most important factors considered in evaluating the potential for frost action. It is assumed that the soil is not insulated by vegetation or snow and is not artificially drained. Silty and highly structured, clayey soils that have a high water table in winter are the most susceptible to frost action. Well drained, very gravelly, or very sandy soils are the least susceptible. Frost heave and low soil strength during thawing cause damage to pavements and other rigid structures.

Risk of corrosion pertains to potential soil-induced electrochemical or chemical action that corrodes or weakens uncoated steel or concrete. The rate of corrosion of uncoated steel is related to such factors as soil moisture, particle-size distribution, acidity, and electrical conductivity of the soil. The rate of corrosion of concrete is based mainly on the sulfate and sodium content, texture, moisture content, and acidity of the soil. Special site examination and design may be needed if the combination of factors results in a severe hazard of corrosion. The steel or concrete in installations that intersect soil boundaries or soil layers is more susceptible to corrosion than the steel or concrete in installations that are entirely within one kind of soil or within one soil layer.

For uncoated steel, the risk of corrosion, expressed as *low*, *moderate*, or *high*, is based on soil drainage class, total acidity, electrical resistivity near field capacity, and electrical conductivity of the saturation extract.

For concrete, the risk of corrosion also is expressed as *low*, *moderate*, or *high.* It is based on soil texture, acidity, and amount of sulfates in the saturation extract.

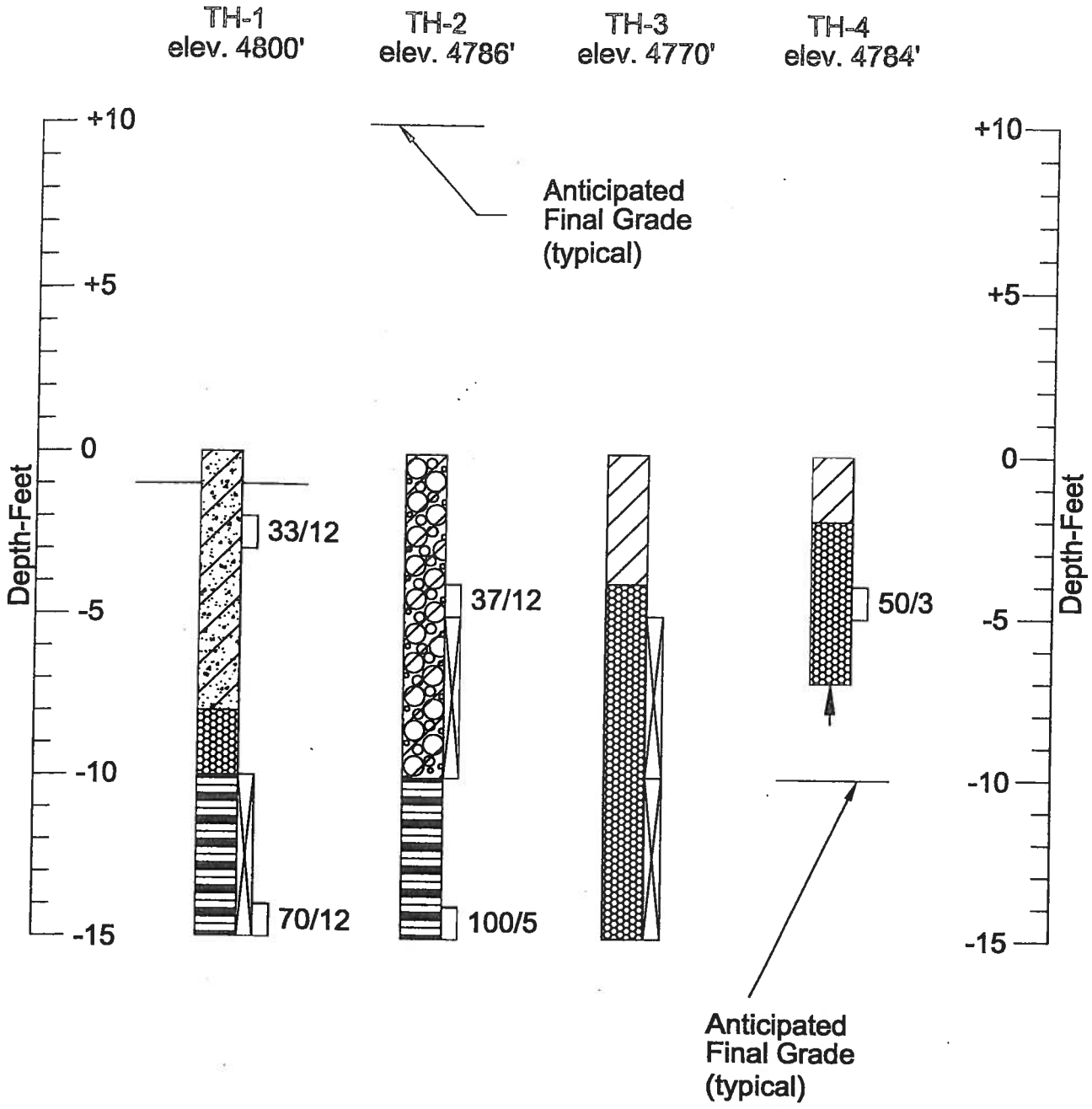
Report—Soil Features

Soil Features–Mesa County Area, Colorado									
Map symbol and soil name	**Restrictive Layer**				**Subsidence**		**Potential for frost action**	**Risk of corrosion**	
	Kind	**Depth to top**	**Thickness**	**Hardness**	**Initial**	**Total**		**Uncoated steel**	**Concrete**
		Low-RV-High	*Range*		*Low-High*	*Low-High*			
		In	*In*		*In*	*In*			
87—Persayo-Blackston complex, 6 to 45 percent slopes — Draft									
Persayo	Paralithic bedrock	10-15-20	—	Weakly cemented	0	—	Low	High	High
Blackston		—	—		0	—	Low	Moderate	Low
127—Rock outcrop-Persayo-Hostage complex, 25 to 99 percent slopes, extremely stony — Draft									
Rock outcrop	Lithic bedrock	0- 0-4	—	Indurated	—	—			
Persayo	Paralithic bedrock	10-11-20	—	Weakly cemented	0	—	Low	High	High
Hostage	Paralithic bedrock	39-55-59	—	Weakly cemented	—	—	Low	Moderate	Low

Data Source Information

Soil Survey Area: Mesa County Area, Colorado
Survey Area Data: Version 7, Sep 30, 2016

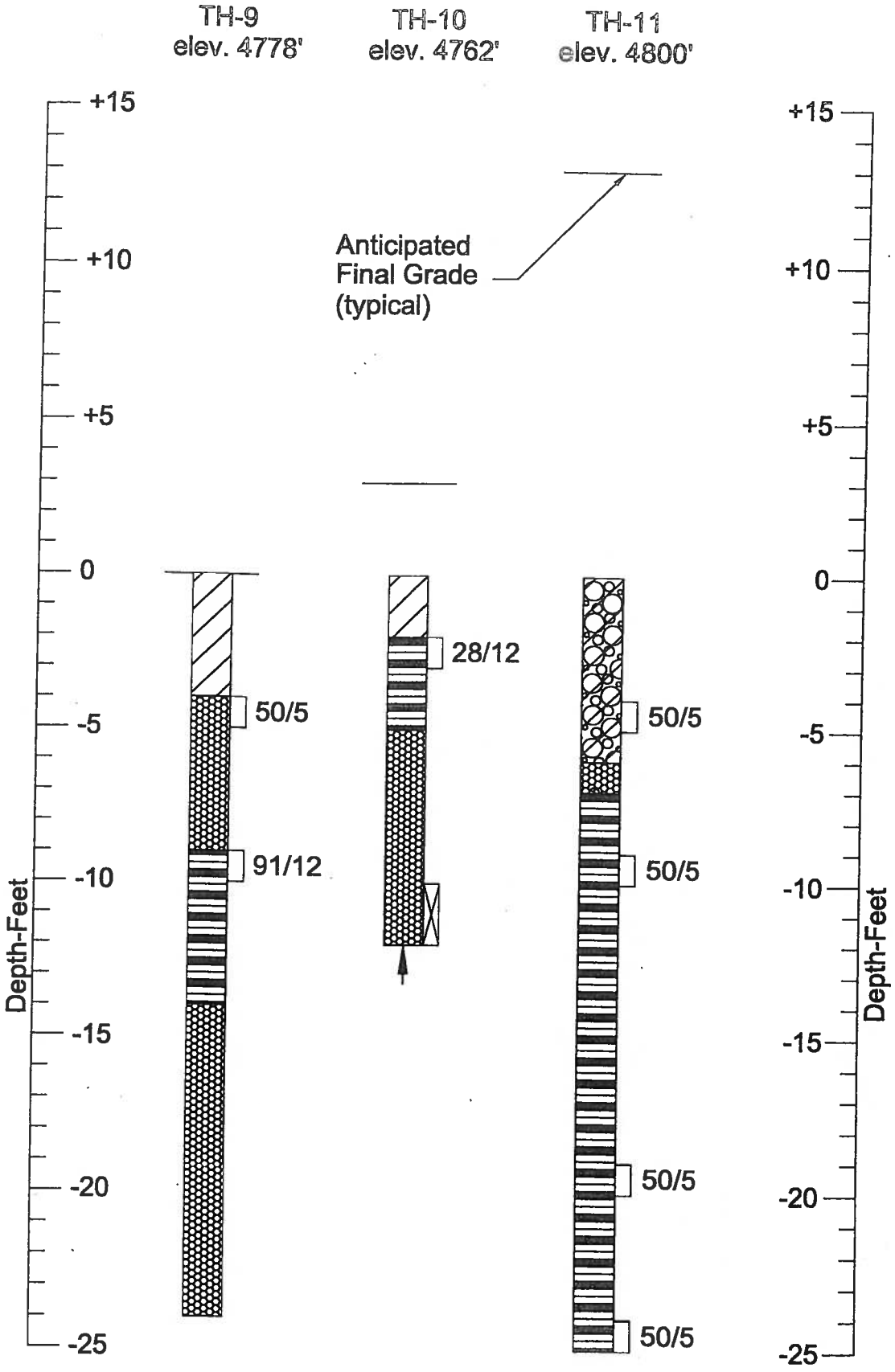
APPENDIX C
Test Hole Logs from Previous Report



Job No. 978

Logs of Exploratory Borings

Fig. 5



Job No. 978 Logs of Exploratory Borings Fig. 7

Legend



Sand, gravelly, clean to clayey, occasional cobbles, very loose to dense, dry to moist, brown, tan (SP,SM,SC)



Gravel, sandy, silty, cobbley, medium dense to very dense, dry, tan, red (GM)



Clay, sandy, gravelly, stiff to very stiff, dry to moist, tan (CL)



Claystone, interlayered sandstone lenses, hard to very hard, dry, tan, tan, green, red



Sandstone, interlayered claystone lenses, hard to very hard, exhibits substantial drill rig resistance to drill rig refusal, dry, tan



Indicates location of penetration test. The symbol 31/10 indicates that 31 blows of a 15 pound hammer falling 26 inches were required to drive a 1.0 inch diameter penetrometer 10 inches. The symbol HD indicates hand drive using modified California (2.0-inch O.D.) liner.



Indicates drive sample. The symbol 31/10 indicates that 31 blows of a 140 pound hammer falling 30 inches were required to drive a 2.5 inch O.D. sample barrel 10 inches.

Notes

1. Exploratory borings were drilled and sampled on January 25, 2002 using a 6- inch diameter solid stem, continuous flight auger and a truck mounted rig.
2. Exploratory test pits were observed and sampled on February 20, 2002.
3. Anticipated grading levels estimated from proposed street area grading on "Preliminary Site Plan" sheets provided by Rhino Engineering. "Spur Drive P/P," "Pinnacle Ridge P/P", "Pinnacle Ridge Development, Spur Drive & Bella Pago Drive Grand Junction, Colorado, Project No. 21070.01, dated 10/30/01"
4. These logs are subject to the explanations, limitations and conclusions as contained in this report.

Job No. 978

Legend of Logs of Exploratory Borings

Fig. 9

Legend



Indicates location of bulk sample collected from auger cuttings.



Indicates free water level. Numeral indicates number of days after drilling that measurement was taken.



Indicates practical drill rig refusal. Borings terminated.

Notes

1. Exploratory borings were drilled and sampled on January 25, 2002 using a 6- inch diameter solid stem, continuous flight auger and a truck mounted rig.
2. Exploratory test pits were observed and sampled on February 20, 2002.
3. Anticipated grading levels estimated from proposed street area grading on "Preliminary Site Plan" sheets provided by Rhino Engineering. "Spur Drive P/P," "Pinnacle Ridge P/P", "Pinnacle Ridge Development, Spur Drive & Bella Pago Drive Grand Junction, Colorado, Project No. 21070.01, dated 10/30/01"
4. These logs are subject to the explanations, limitations and conclusions as contained in this report.

Job No. 978

Legend of Logs of Exploratory Borings

Fig. 10

APPENDIX D
Test Pit Logs from Current Investigation

Huddleston-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

TEST PIT NUMBER TP-1

CLIENT Vortex Engineering
PROJECT NAME Pinnacle Ridge
PROJECT NUMBER 00545-0022
PROJECT LOCATION Grand Junction, CO
DATE STARTED 5/10/17 **COMPLETED** 5/10/17
GROUND ELEVATION _____ **TEST PIT SIZE** _____
EXCAVATION CONTRACTOR Client
GROUND WATER LEVELS:
EXCAVATION METHOD Trackh/Backhoe
AT TIME OF EXCAVATION dry
LOGGED BY MAB **CHECKED BY** MAB
AT END OF EXCAVATION dry
NOTES _____
AFTER EXCAVATION ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Sandy SILT with Gravel and Organics (TOPSOIL), brown, dry to moist										
1												
2		Clayey GRAVEL and COBBLES with Sand (GC), brown to red to white, dry to moist, dense										
3			GB 1					2	32	20	12	13
4												
5		CLAYSTONE, reddish brown, soft to medium hard, highly weathered										
6												

Bottom of test pit at 6.0 feet.

GEOTECH BH COLUMNS 00545-0022 PINNACLE RIDGE.GPJ GINT US LAB.GDT 5/23/17

Huddleston-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

TEST PIT NUMBER TP-2

CLIENT Vortex Engineering
PROJECT NAME Pinnacle Ridge
PROJECT NUMBER 00545-0022
PROJECT LOCATION Grand Junction, CO
DATE STARTED 5/10/17 **COMPLETED** 5/10/17
GROUND ELEVATION _____ **TEST PIT SIZE** _____
EXCAVATION CONTRACTOR Client
GROUND WATER LEVELS:
EXCAVATION METHOD Trackh/Backhoe
AT TIME OF EXCAVATION dry
LOGGED BY MAB **CHECKED BY** MAB
AT END OF EXCAVATION dry
NOTES _____
AFTER EXCAVATION ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Sandy SILT with Organics (TOPSOIL), dark brown, moist										
		SANDSTONE, tan, medium hard to hard, moderately to slightly weathered										
1		**Trackhoe refusal at 1 ft**										

Bottom of test pit at 1.0 feet.

Huddleston-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

TEST PIT NUMBER TP-3

CLIENT Vortex Engineering
PROJECT NAME Pinnacle Ridge
PROJECT NUMBER 00545-0022
PROJECT LOCATION Grand Junction, CO
DATE STARTED 5/10/17 **COMPLETED** 5/10/17
GROUND ELEVATION _____ **TEST PIT SIZE** _____
EXCAVATION CONTRACTOR Client
GROUND WATER LEVELS:
EXCAVATION METHOD Trackh/Backhoe
AT TIME OF EXCAVATION dry
LOGGED BY MAB **CHECKED BY** MAB
AT END OF EXCAVATION dry
NOTES _____
AFTER EXCAVATION ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Sandy SILT with Organics (TOPSOIL), dark brown, moist										
1		SANDSTONE, Siltstone layers, tan, medium hard to hard, moderately to slightly weathered										
2												
3												
4		**Trackhoe refusal at 4 ft**										

Bottom of test pit at 4.0 feet.

GEOTECH BH COLUMNS 00545-0022 PINNACLE RIDGE.GPJ GINT US LAB.GDT 5/23/17

Huddleston-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

TEST PIT NUMBER TP-4

CLIENT Vortex Engineering
PROJECT NAME Pinnacle Ridge
PROJECT NUMBER 00545-0022
PROJECT LOCATION Grand Junction, CO
DATE STARTED 5/10/17 **COMPLETED** 5/10/17
GROUND ELEVATION _____ **TEST PIT SIZE** _____
EXCAVATION CONTRACTOR Client
GROUND WATER LEVELS:
EXCAVATION METHOD Trackh/Backhoe
AT TIME OF EXCAVATION dry
LOGGED BY MAB **CHECKED BY** MAB
AT END OF EXCAVATION dry
NOTES _____
AFTER EXCAVATION ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Sandy SILT with Gravel and Organics (TOPSOIL), brown, dry to moist										
1												
2		Clayey SAND with Gravel (SC), brown, dry to moist, medium dense	GB 1					7	25	17	8	35
3		CLAYSTONE, Siltstone layers, reddish brown to gray, soft to hard, highly to moderately weathered	GB 2						NP	NP	NP	
4												
5		**Trackhoe refusal at 5 ft**										

Bottom of test pit at 5.0 feet.

Huddleston-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

TEST PIT NUMBER TP-5

CLIENT Vortex Engineering
PROJECT NAME Pinnacle Ridge
PROJECT NUMBER 00545-0022
PROJECT LOCATION Grand Junction, CO
DATE STARTED 5/10/17 **COMPLETED** 5/10/17
GROUND ELEVATION _____ **TEST PIT SIZE** _____
EXCAVATION CONTRACTOR Client
GROUND WATER LEVELS:
EXCAVATION METHOD Trackh/Backhoe
AT TIME OF EXCAVATION dry
LOGGED BY MAB **CHECKED BY** MAB
AT END OF EXCAVATION dry
NOTES _____
AFTER EXCAVATION ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Sandy SILT with Gravel and Organics (TOPSOIL), brown, dry to moist										
1		CLAYSTONE, thin Bentonite seams, gray to green to red, soft to hard, highly weathered										
2			GB 1						40	25	15	
3												
4												
5												
6		**Trackhoe refusal at 6 ft**										

Bottom of test pit at 6.0 feet.

GEOTECH BH COLUMNS 00545-0022 PINNACLE RIDGE.GPJ GINT US LAB.GDT 5/23/17

Huddleston-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

TEST PIT NUMBER TP-6

CLIENT Vortex Engineering
PROJECT NAME Pinnacle Ridge
PROJECT NUMBER 00545-0022
PROJECT LOCATION Grand Junction, CO
DATE STARTED 5/10/17 **COMPLETED** 5/10/17
GROUND ELEVATION _____ **TEST PIT SIZE** _____
EXCAVATION CONTRACTOR Client
GROUND WATER LEVELS:
EXCAVATION METHOD Trackh/Backhoe
AT TIME OF EXCAVATION dry
LOGGED BY MAB **CHECKED BY** MAB
AT END OF EXCAVATION dry
NOTES _____
AFTER EXCAVATION ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		Silty CLAY with Organics (TOPSOIL), dark brown to black, dry to moist										
1												
		SANDSTONE, Siltstone and Claystone layers, orange to gray to reddish brown, soft to medium hard, highly weathered										
2												
3												
4												
5												

Bottom of test pit at 5.5 feet.

GEOTECH BH COLUMNS 00545-0022 PINNACLE RIDGE.GPJ GINT US LAB.GDT 5/23/17

Huddleston-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

TEST PIT NUMBER TP-7

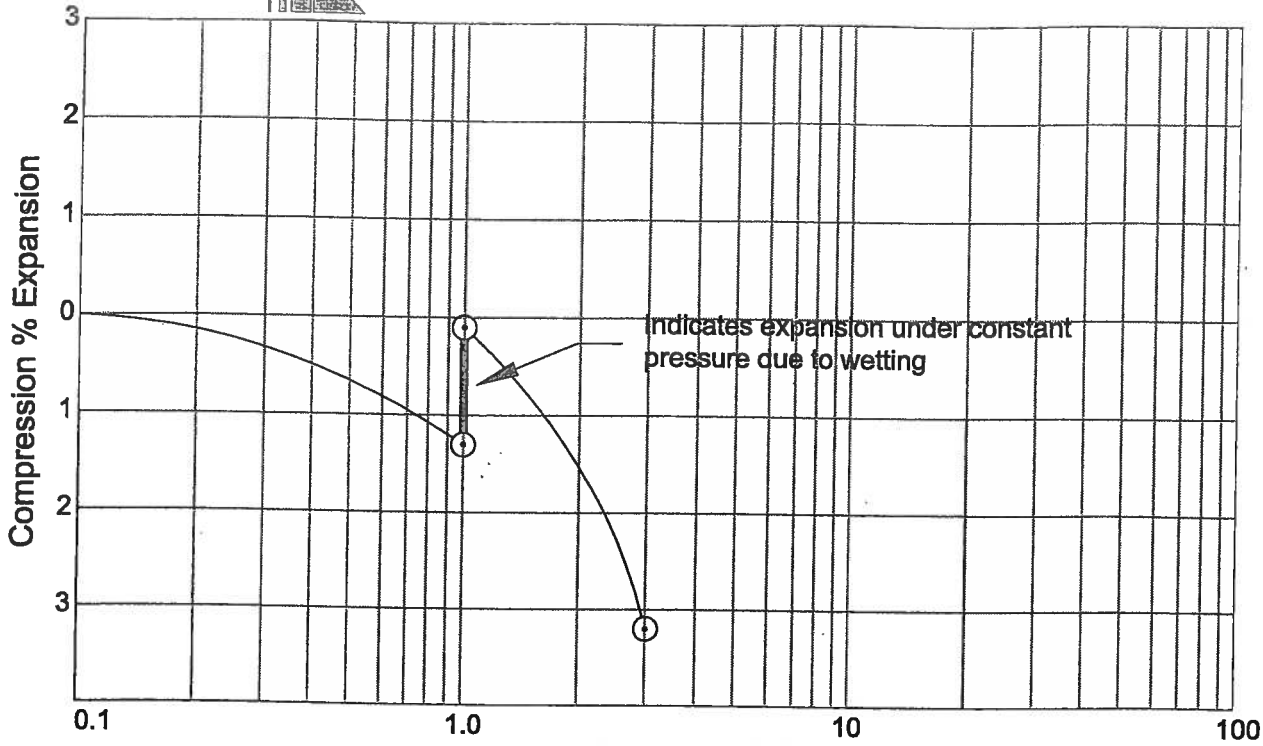
CLIENT Vortex Engineering
PROJECT NAME Pinnacle Ridge
PROJECT NUMBER 00545-0022
PROJECT LOCATION Grand Junction, CO
DATE STARTED 5/10/17 **COMPLETED** 5/10/17
GROUND ELEVATION _____ **TEST PIT SIZE** _____
EXCAVATION CONTRACTOR Client
GROUND WATER LEVELS:
EXCAVATION METHOD Trackh/Backhoe
AT TIME OF EXCAVATION dry
LOGGED BY MAB **CHECKED BY** MAB
AT END OF EXCAVATION dry
NOTES _____
AFTER EXCAVATION ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0.0		Sandy SILT with Organics (TOPSOIL), brown, dry to moist										
		SANDSTONE, tan to brown, medium hard to hard, highly to slightly weathered										
2.5												
5.0		**Trackhoe refusal at 7 ft**										

Bottom of test pit at 7.0 feet.

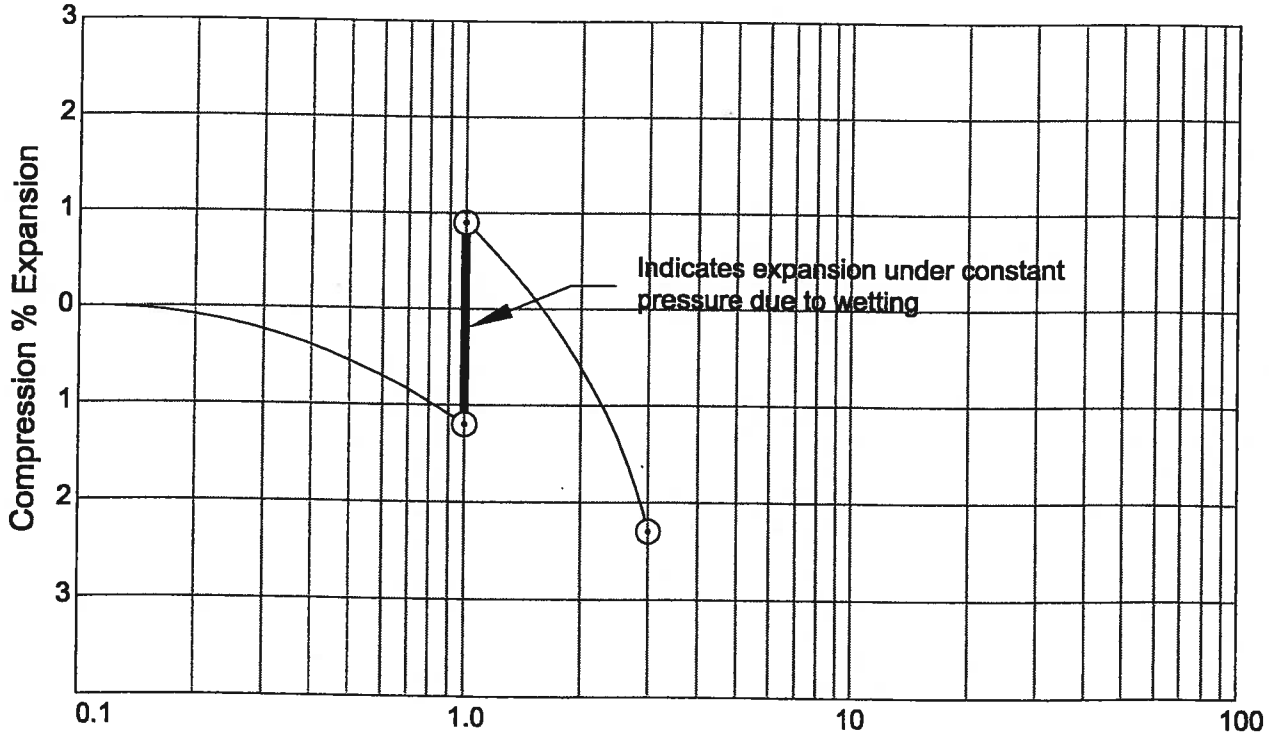
GEOTECH BH COLUMNS 00545-0022 PINNACLE RIDGE.GPJ GINT US LAB.GDT 5/23/17

APPENDIX E
Laboratory Results from Previous Investigation



Sample of: Claystone
From: TH-1 @ 14 feet

Dry Unit Weight= 102 PCF
Moisture Content= 11.9 %

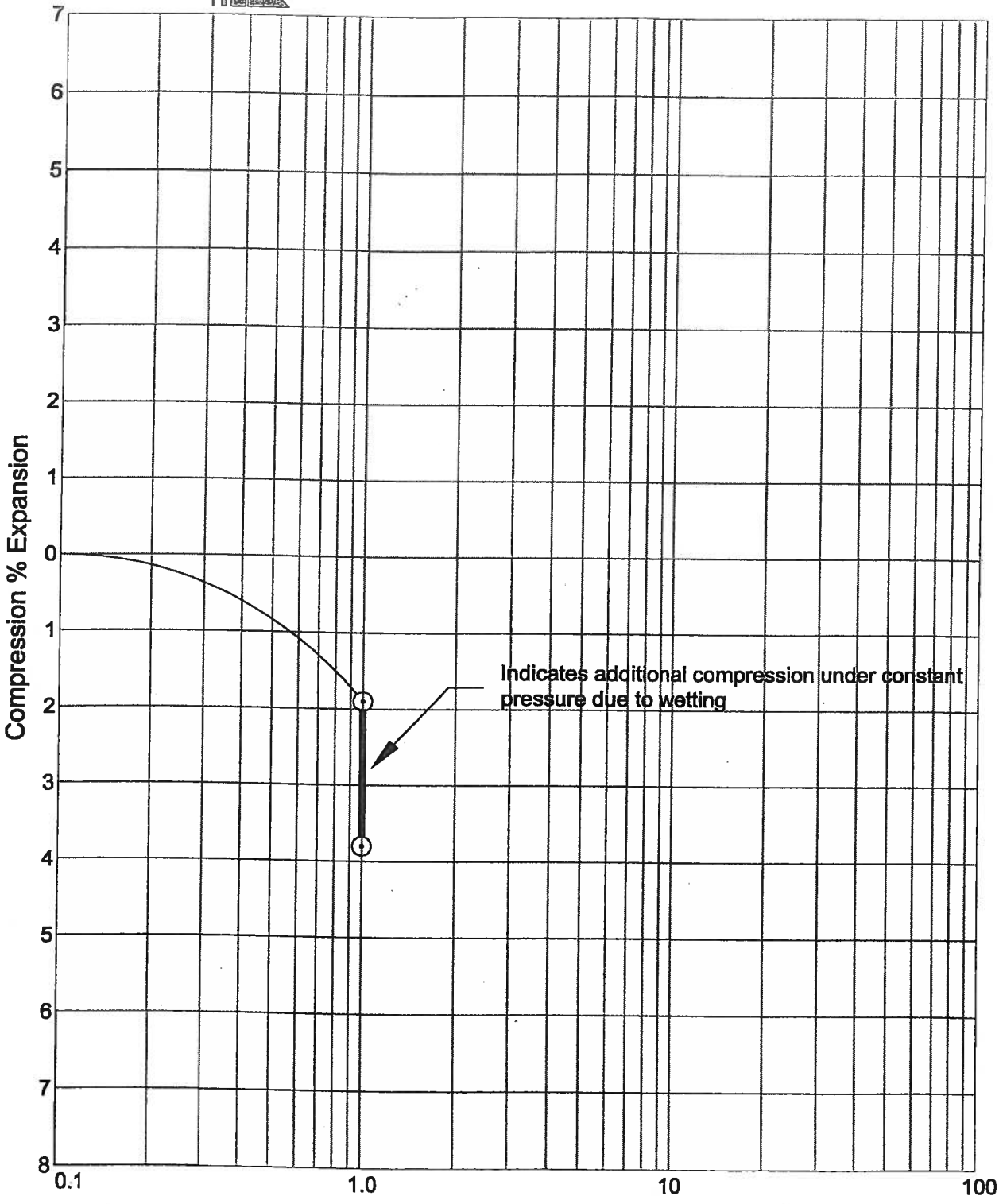


Sample of: Claystone
From: TH-2 @ 14 feet

Dry Unit Weight= 102 PCF
Moisture Content= 9.4 %

Job No. 978 **Swell Consolidation Test Results** Fig. 12

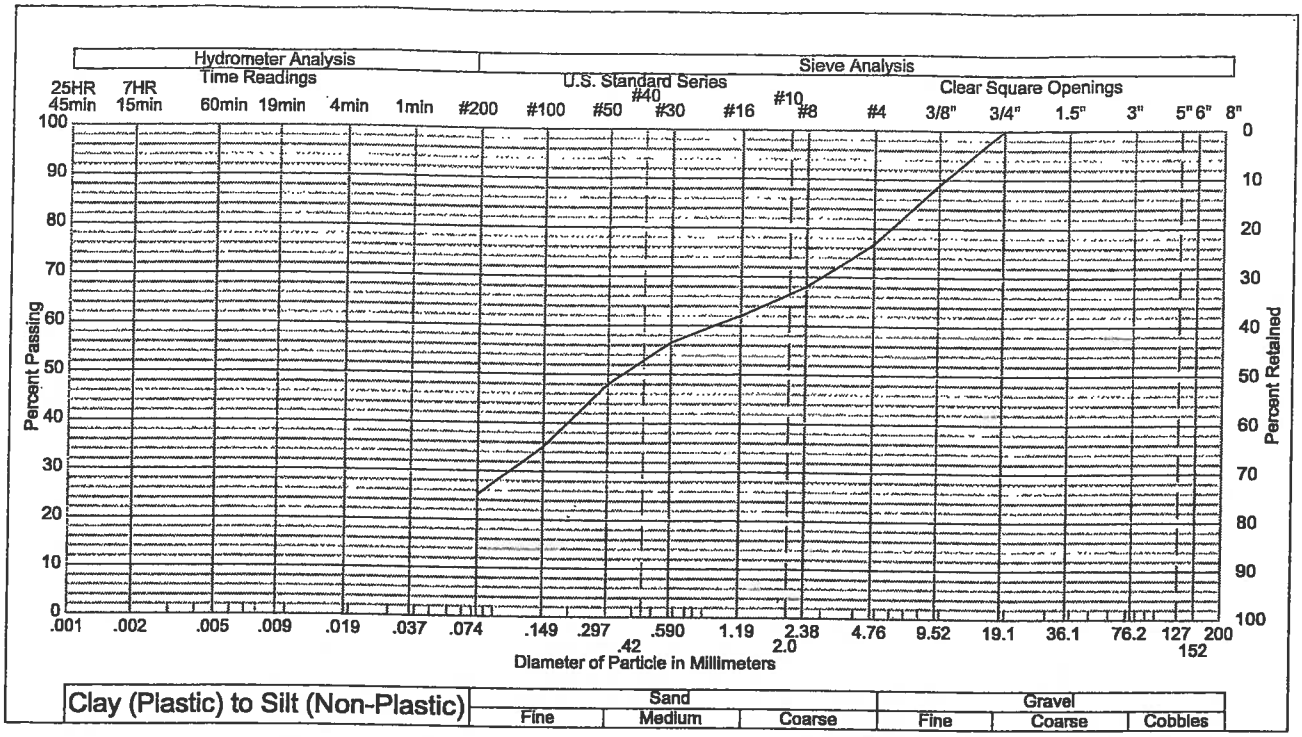
Geotechnical Engineering Group, Inc.



Sample of: Claystone
From: TH-11 @ 24 feet

Dry Unit Weight= 90 PCF
Moisture Content= 20.9 %

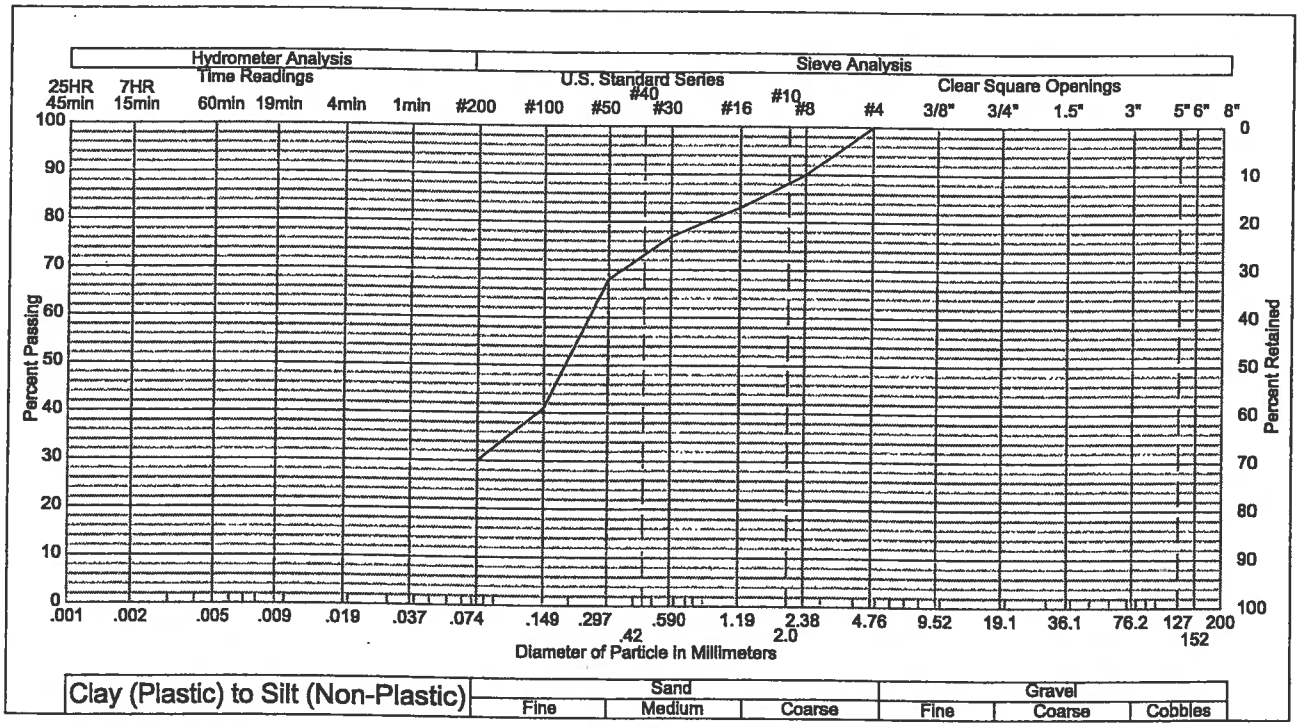
Job No. 978 **Swell Consolidation Test Results** Fig. 15



Sample of: Sand, gravelly, clayey (SC)
From: TH-2 @ 4 feet

Gravel: 23 %
Silt & Clay: 25 %
Plasticity Index:

Sand: 52 %
Liquid Limit:



Sample of: Sand, clayey (SC)
From: TH-2 and 3 @ 5 to 10 and 10 to 15 feet, bulk combined

Gravel: 0 %
Silt & Clay: 30 %
Plasticity Index: NP

Sand: 70 %
Liquid Limit: NL

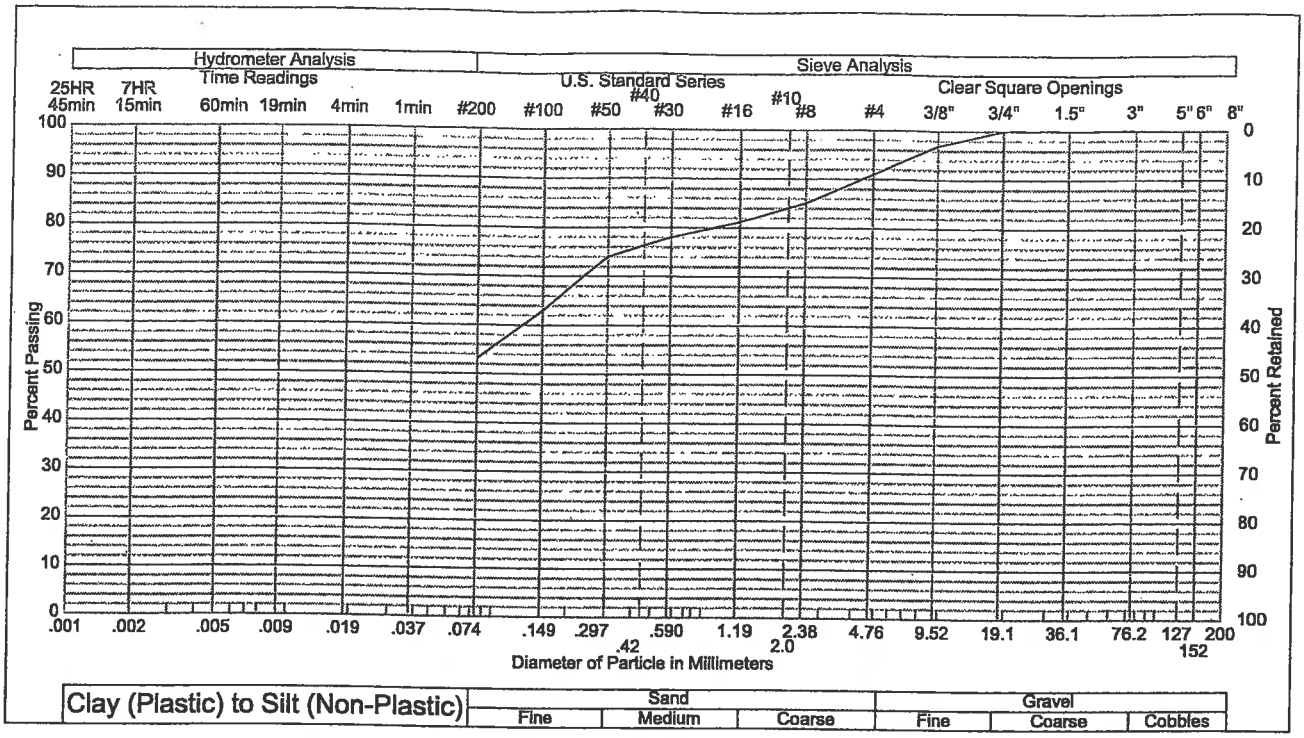
Gradation Test Results

Geotechnical Engineering Group, Inc.

Job No. 978

Date: April, 2002

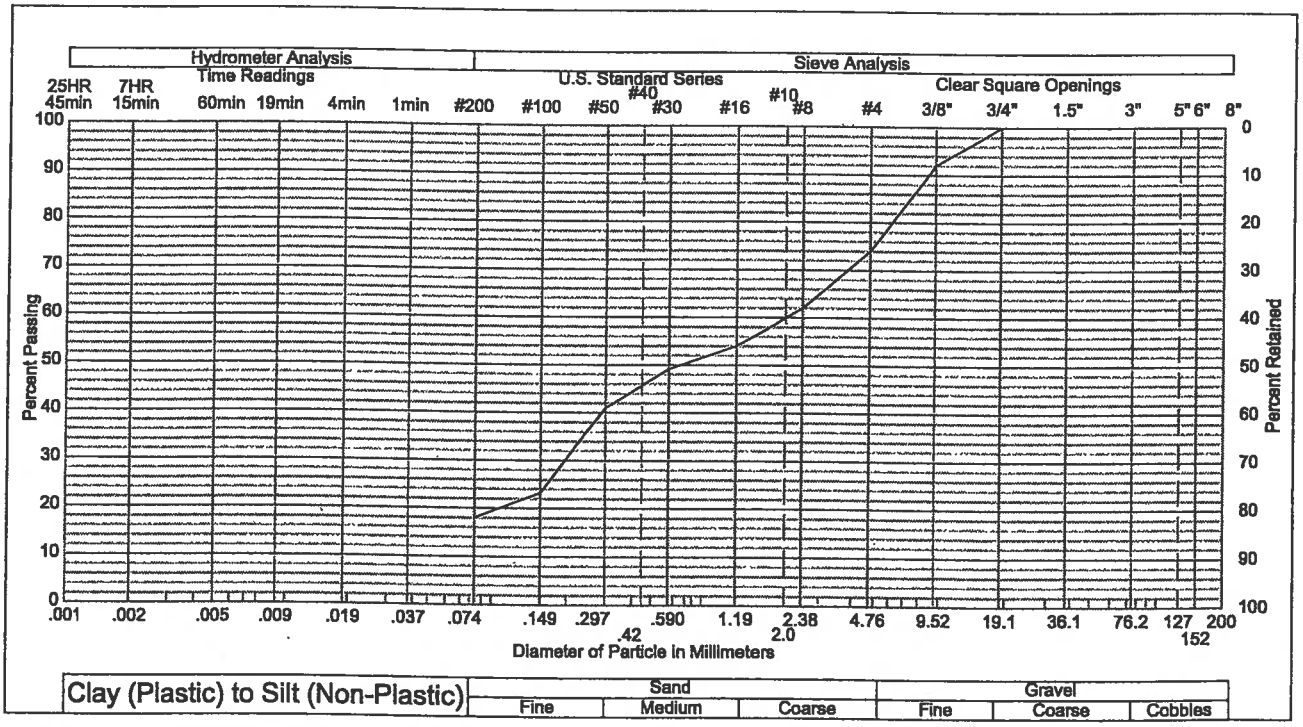
Fig. 19



Sample of: Clay, sandy, gravelly (CL)
From: TH-5 @ 5 to 10 feet, TH-6 @ 5 to 10 feet and TH-10 @ 10 to 12 feet; bulk combined

Gravel: 9 %
Silt & Clay: 53 %
Plasticity Index: 15

Sand: 38 %
Liquid Limit: 30



Sample of: Sand, gravelly, silty (SM)
From: TH-11 @ 4 feet

Gravel: 26 %
Silt & Clay: 18 %
Plasticity Index:

Sand: 56 %
Liquid Limit:

Gradation Test Results

Geotechnical Engineering Group, Inc.

Job No. 978

Date: April, 2002

Fig. 20

JOB NO. 978

Geotechnical Engineering Group, Inc.

TABLE I

SUMMARY OF LABORATORY TEST RESULTS

HOLE	DEPTH (FEET)	NATURAL MOISTURE (%)	DRY DENSITY (PCF)	Atterberg Limits		Swell / Consolidation		PASSING NO. 200 SIEVE (%)	WATER SOLUBLE SULFATES (ppm)	SOIL TYPE
				LIQUID LIMIT (%)	PLASTICITY INDEX (%)	SWELL (%)	CONFINING PRESSURE (PSF)			
TP-1	6-10	3.3	--					7		Gravel, sandy, silty (GM)
TP-2	10	1.9	--					6		Sand, gravelly, silty (SM)
TP-3	18-20	9.3	--	37	23			71		Clay, sandy (CL)
TP-4	18-20	1.7	--					5		Sand, gravelly, clean (SP)
TP-5	15	10.0	112	43	22	+3.8	1,000	75		Claystone
	20	8.0	124			+2.0	1,000			Claystone
TP-6	15-20	5.5	--	26	9			59		Clay, sandy (CL)
TH-1	2	7.7	--	42	23			37		Sand, clayey (SC)
	14	11.9	102			+1.2	1,000			Claystone
TH-2	4	3.9	--					25		Sand, gravelly, clayey (SC)
	14	9.4	102			+2.1	1,000			Claystone
TH-6	4	10.6	124			+6.8	500			Claystone

JOB NO. 978

Geotechnical Engineering Group, Inc.

TABLE I

SUMMARY OF LABORATORY TEST RESULTS

HOLE	DEPTH (FEET)	NATURAL MOISTURE (%)	DRY DENSITY (PCF)	Atterberg Limits		Swell / Consolidation		PASSING NO. 200 SIEVE (%)	WATER SOLUBLE SULFATES (ppm)	SOIL TYPE
				LIQUID LIMIT (%)	PLASTICITY INDEX (%)	SWELL (%)	CONFINING PRESSURE (PSF)			
TH-7	4	15.8	--	NL *	NP *			82		Claystone
	9	8.1	105			-0.3	1,000			Claystone
TH-8	14	19.4	114			+3.9	1,000			Claystone
TH-9	9	10.3	122	33	11			30		Claystone
TH-10	2	3.2	--						1,400	Sand, gravelly, clayey (SC)
TH-11	4	3.5	--					18		Sand, gravelly, silty (SM)
	24	20.9	90			-2.9	1,000			Claystone
TH-12	9	10.0	--	41	22			73		Claystone
	19	5.1	104	NL *	NP *			28		Sandstone
TH-13	9	8.9	--	31	13			45		Claystone
TH-2 and 3 Bulk combined	5-10 and 10-15	2.9	--	NL *	NP *			30		Sand, clayey (SC)
TH-5, TH-6 and TH-10 Bulk combined	5-10, 5-10 and 10-12	3.1	--	30	15			53		Clay, sandy, gravelly (CL)

* NL - Indicates sample did not exhibit liquid characteristics.

* NP - Indicates sample did not exhibit plastic characteristics.

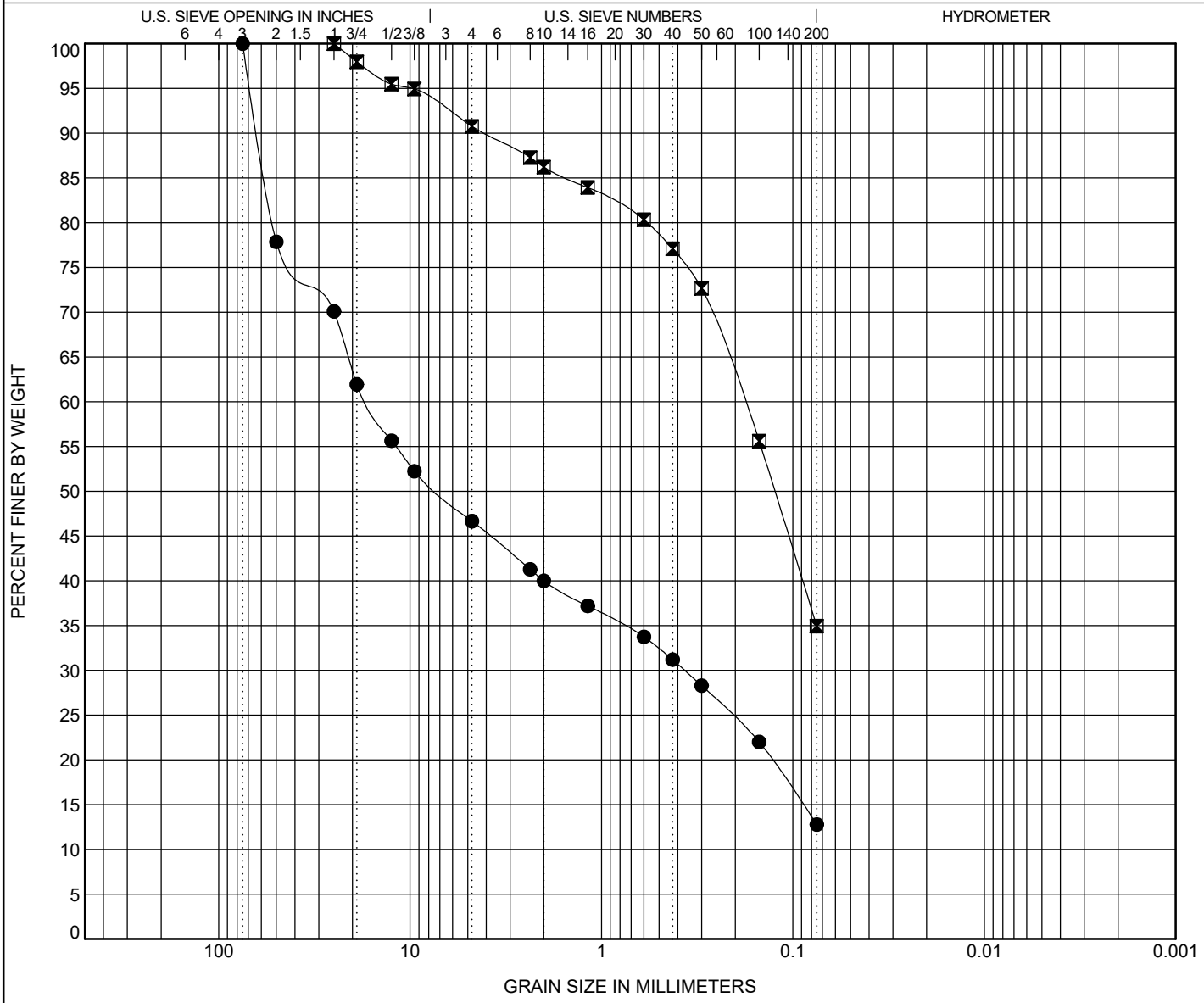
APPENDIX F
Laboratory Results from Current Investigation

Huddleston-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

GRAIN SIZE DISTRIBUTION

CLIENT Vortex Engineering **PROJECT NAME** Pinnacle Ridge

PROJECT NUMBER 00545-0022 **PROJECT LOCATION** Grand Junction, CO



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

Specimen Identification	Classification	LL	PL	PI	Cc	Cu
● TP-1, GB1 5/17	CLAYEY GRAVEL with SAND(GC)	32	20	12		
⊠ TP-4, GB1 5/17	CLAYEY SAND(SC)	25	17	8		

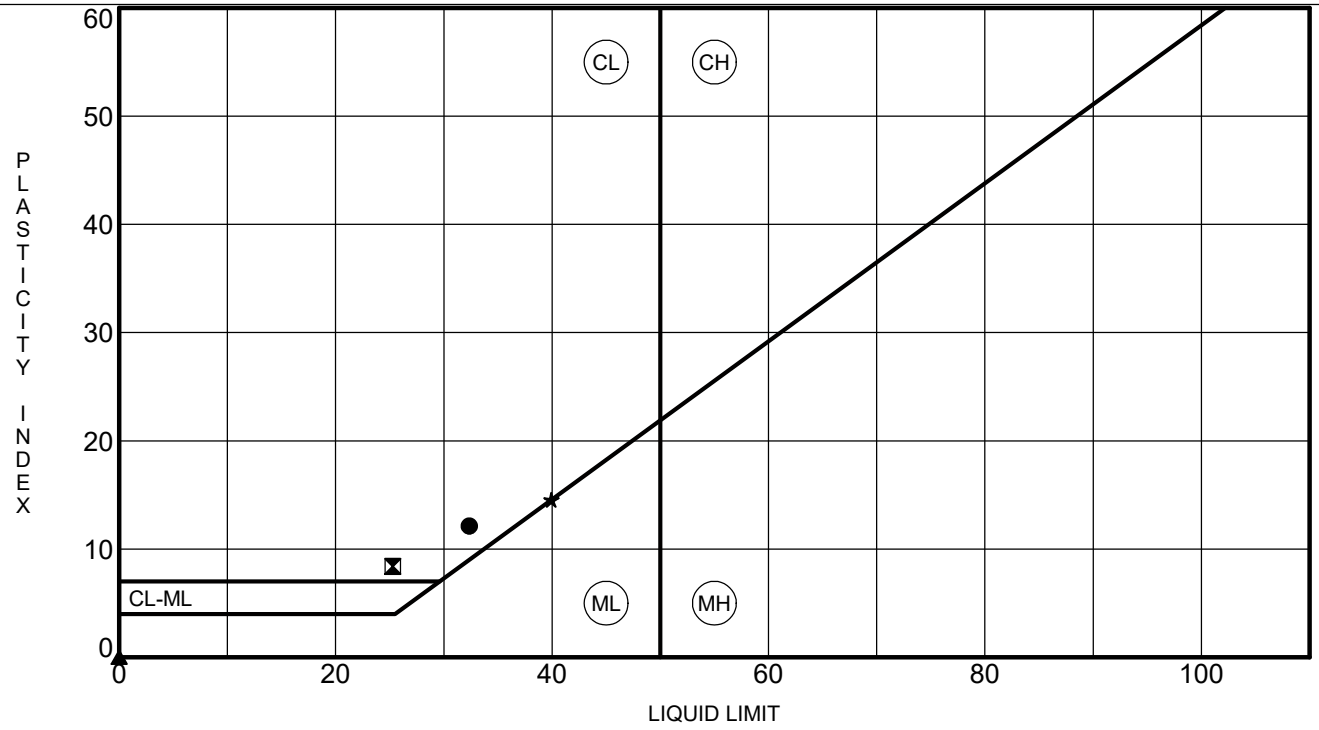
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● TP-1, GB1 5/17	75	16.7	0.368		53.3	33.9	12.8	
⊠ TP-4, GB1 5/17	25	0.179			9.2	55.8	34.9	

Huddleston-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

ATTERBERG LIMITS' RESULTS

CLIENT Vortex Engineering **PROJECT NAME** Pinnacle Ridge

PROJECT NUMBER 00545-0022 **PROJECT LOCATION** Grand Junction, CO



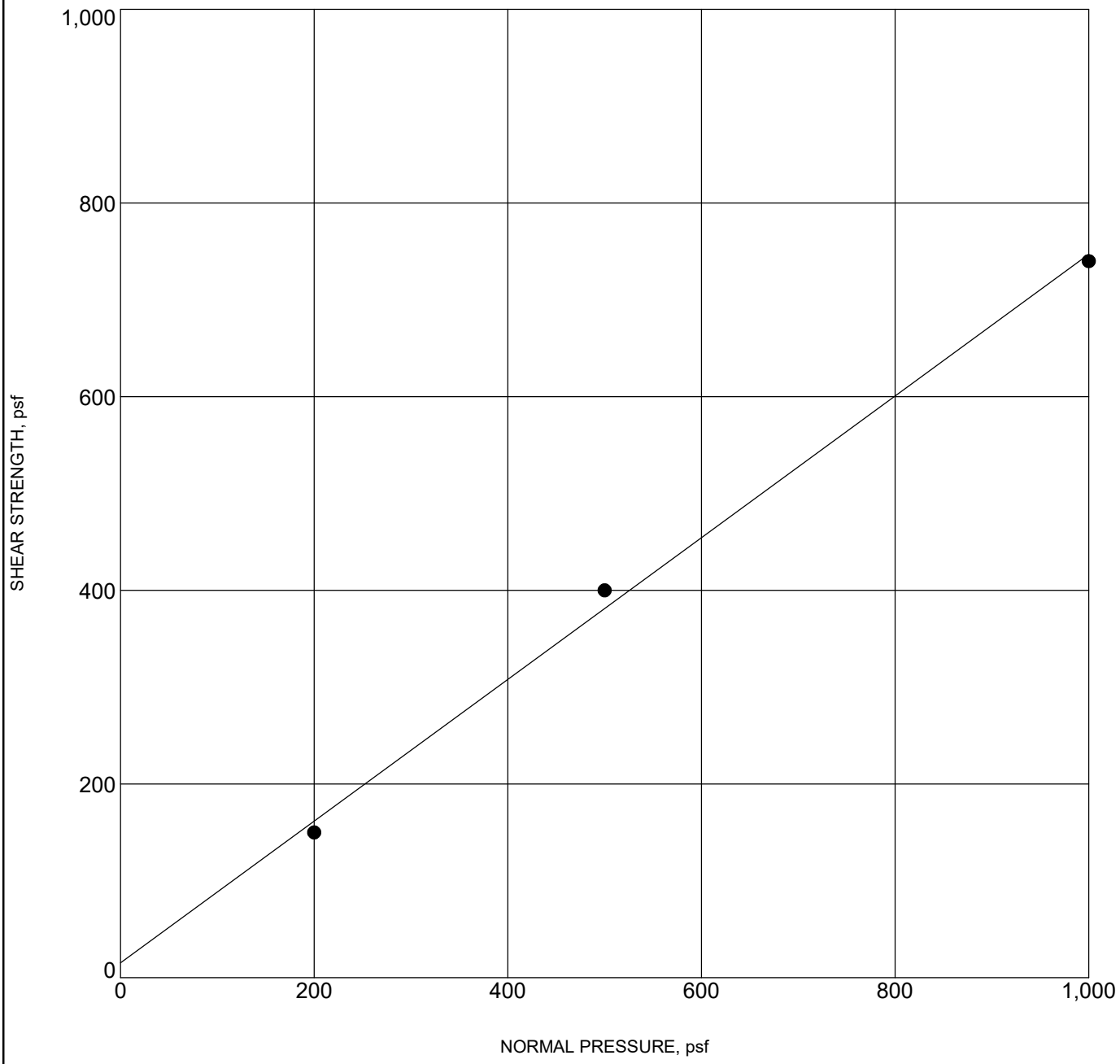
	Specimen Identification		LL	PL	PI	#200	Classification
●	TP-1, GB1	5/10/2017	32	20	12	13	CLAYEY GRAVEL with SAND(GC)
⊠	TP-4, GB1	5/10/2017	25	17	8	35	CLAYEY SAND(SC)
▲	TP-4, GB2	5/10/2017	NP	NP	NP		SILTSTONE
★	TP-5, GB1	5/10/2017	40	25	15		CLAYSTONE

Huddleston-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

DIRECT SHEAR TEST

CLIENT Vortex Engineering **PROJECT NAME** Pinnacle Ridge

PROJECT NUMBER 00545-0022 **PROJECT LOCATION** Grand Junction, CO



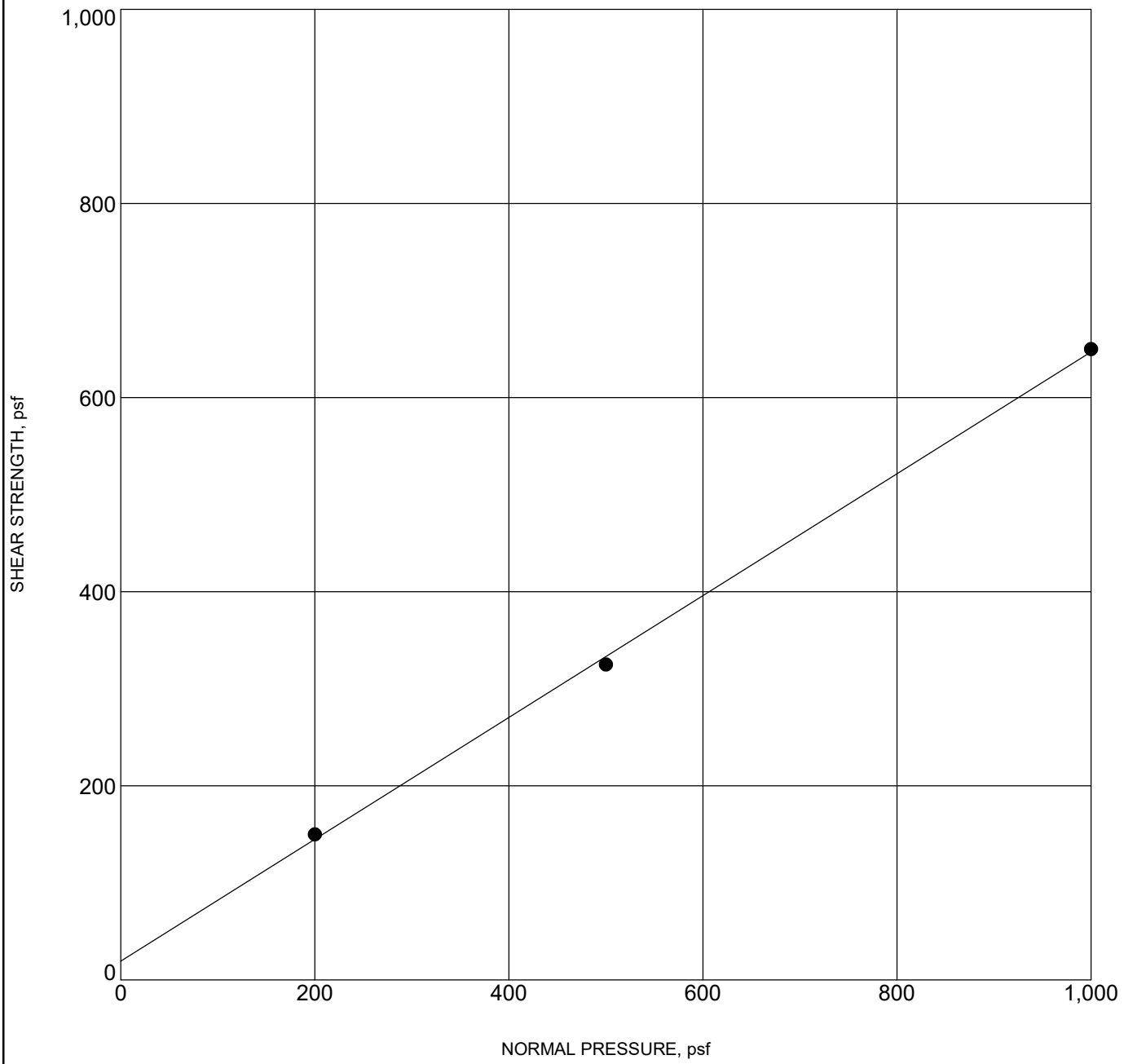
Specimen Identification		Classification	γ_d	MC%	c	ϕ
● **TP-1**	**3.0**	**CLAYEY GRAVEL with SAND(GC)**	**108**	**13**	**15**	**36**

Huddleston-Berry Engineering & Testing, LLC
640 White Avenue, Unit B
Grand Junction, CO 81501
970-255-8005
970-255-6818

DIRECT SHEAR TEST

CLIENT Vortex Engineering **PROJECT NAME** Pinnacle Ridge

PROJECT NUMBER 00545-0022 **PROJECT LOCATION** Grand Junction, CO

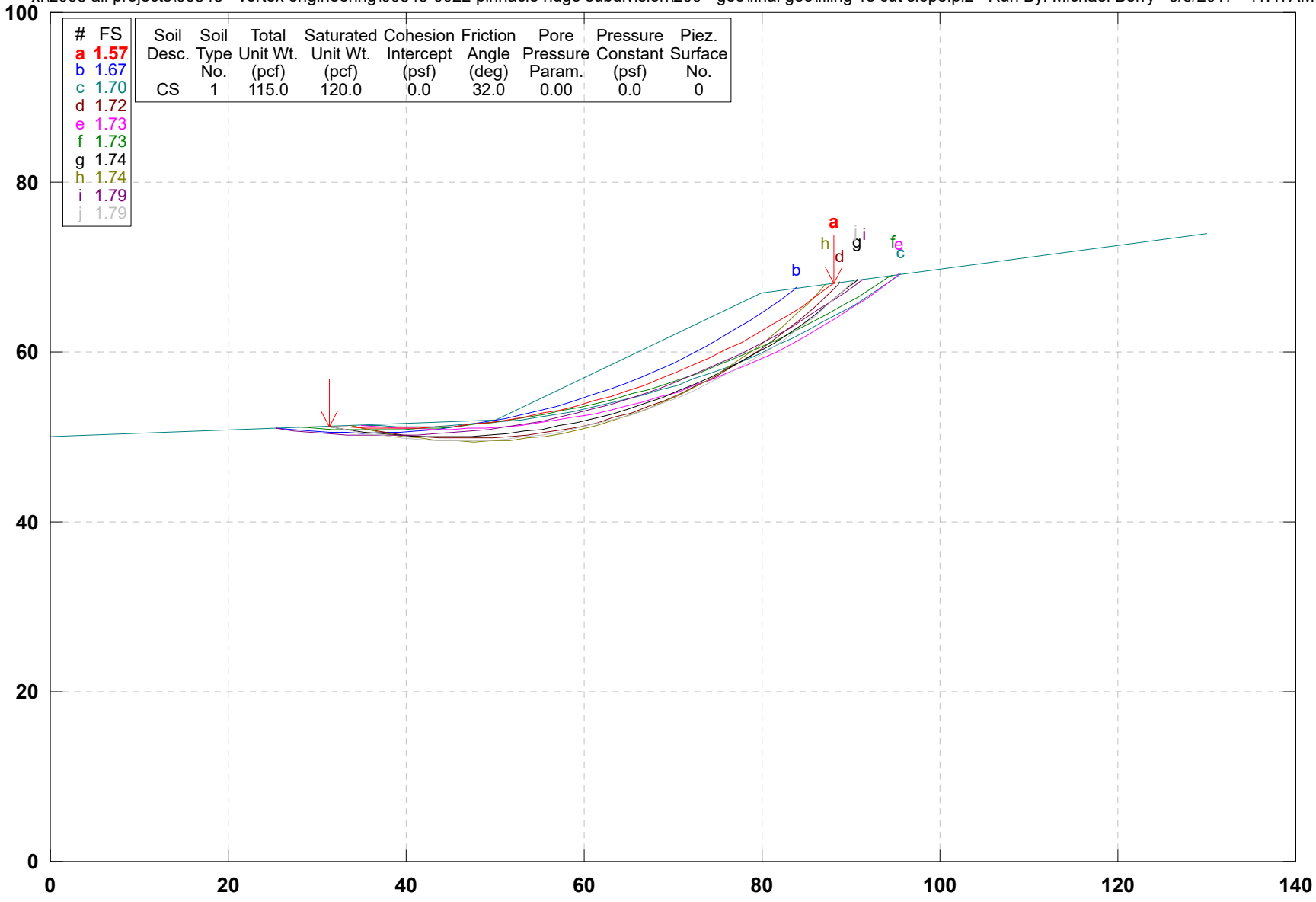


Specimen Identification		Classification	γ_d	MC%	c	ϕ
● **TP-4** **1.0**		**CLAYEY SAND(SC)**	**103**	**11**	**19**	**32**

APPENDIX G
Slope Stability Results

Pinnacle Ridge Subdivision Filing 1 South Cut Slope

x:\2008 all projects\00545 - vortex engineering\00545-0022 pinnacle ridge subdivision\200 - geo\final geo\filing 1s cut slope.pl2 Run By: Michael Berry 6/6/2017 11:47AM

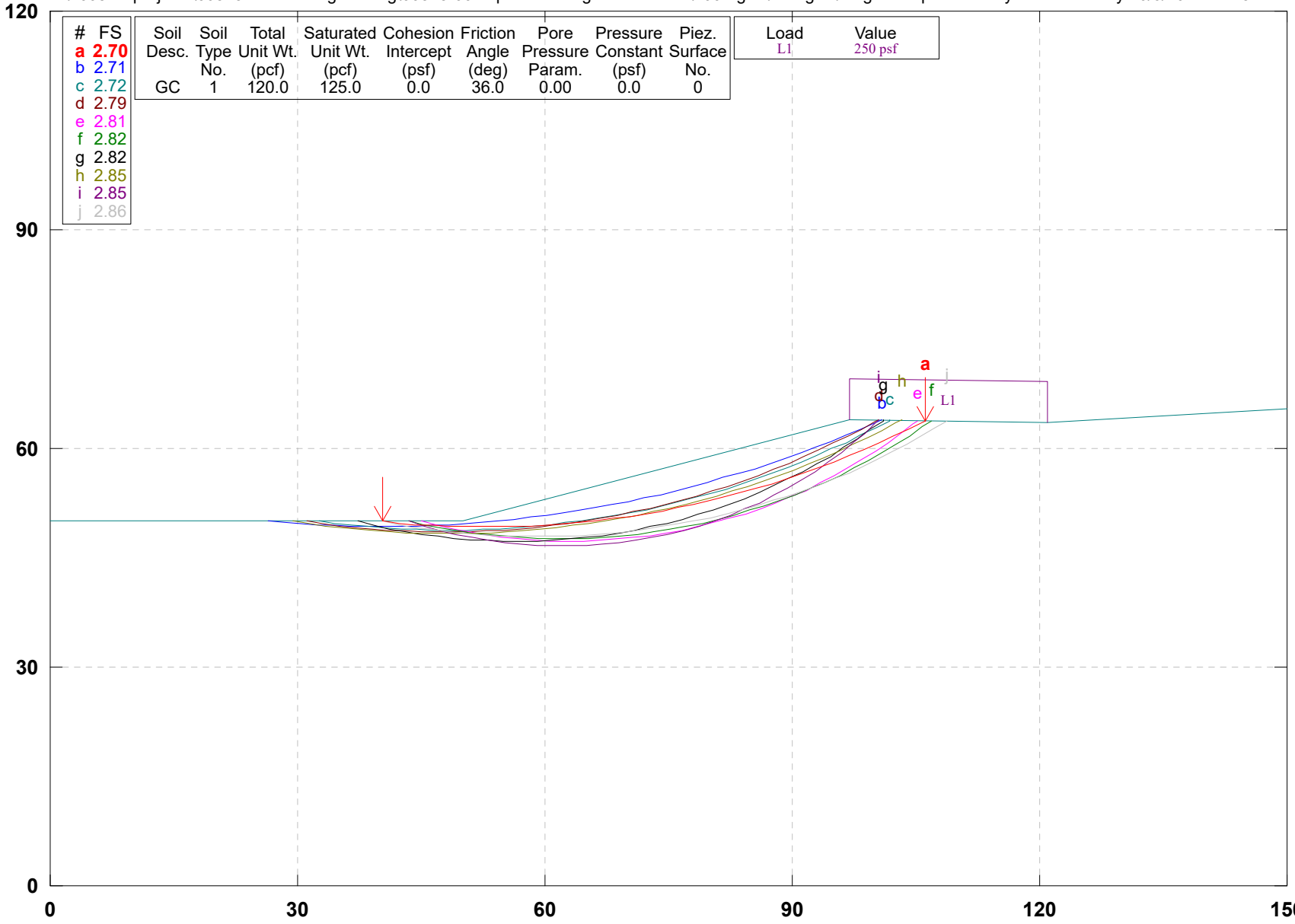


GSTABL7 v.2 FSmin=1.57

Safety Factors Are Calculated By The Modified Bishop Method

Pinnacle Ridge Subdivision Filing 1/2 Fill Slope

x:\2008 all projects\00545 - vortex engineering\00545-0022 pinnacle ridge subdivision\200 - geo\final geo\filing 1n fill.pl2 Run By: Michael Berry 6/6/2017 12:34PM

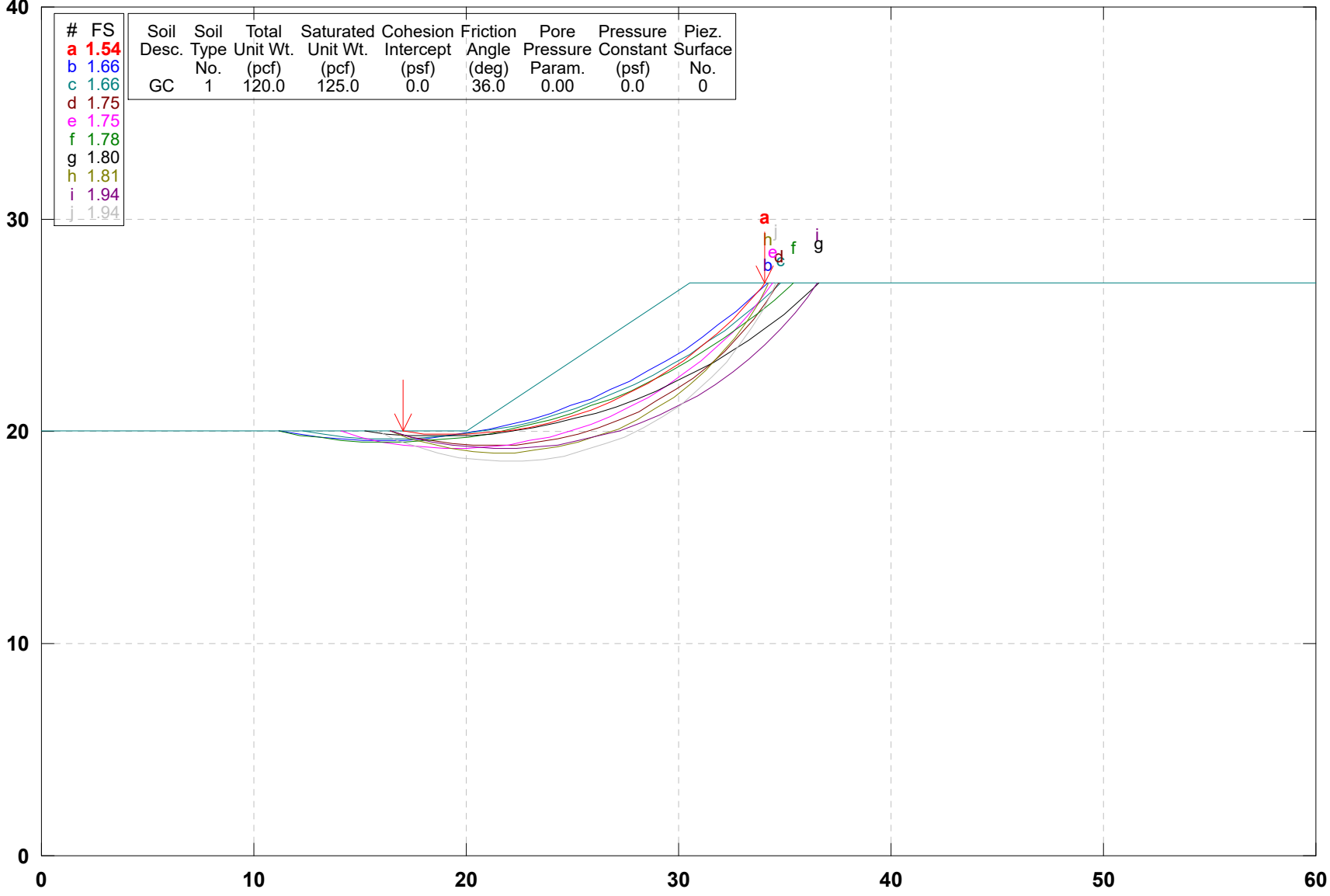


GSTABL7 v.2 FSmin=2.70

Safety Factors Are Calculated By The Modified Bishop Method

Pinnacle Ridge Subdivision Filing 3 Pond Side Slopes

x:\2008 all projects\00545 - vortex engineering\00545-0022 pinnacle ridge subdivision\200 - geo\final geo\filing 3 pond slope.pl2 Run By: Michael Berry 6/7/2017 09:29AM



GSTABL7 v.2 FSmin=1.54

Safety Factors Are Calculated By The Modified Bishop Method

City of Grand Junction
Fire Department New Development Fire Flow

Instructions: To process the application, the developer/applicant's engineer should first fill out all items in Section A, and then deliver/mail this form to the appropriate water purveyor.[1] Once the water supplier has signed and given the required information, deliver/mail the completed and fully signed form to the City or County Planning Department.[2]

SECTION A

Date: May 29, 2017
Project Name: Pinnacle Ridge, Filings 1 and 2
Project Street Address: NE of Mariposa Drive, 1/4 mi north of
Assessor's Tax Parcel Number: 2945-212-00-011
Project Owner Name: Two R & D, LLC.
City or County project file #: TBD

1. If the project includes one or more one or two-family dwelling(s):
   a. The maximum fire area [1] for each one or two family dwelling will be 6,000 sf square feet.
   b. All dwelling units will ☐ will not ■ include an approved automatic sprinkler system.
   Comments:
   There are no homes in Filing 1 and 2 that will require a fire sprinkler system.
2. If the project includes a building other than one and two-family dwelling(s):
   a. List the fire area and type of construction for all buildings used to determine the minimum fire flow requirements:
      N/A
   b. List each building that will be provided with an approved fire sprinkler system:
      N/A
3. List the minimum fire flow required for this project (based on Appendix B and C):
   2000 gpm at 20 psi

   Comments:

Note: Fire Flow Rule: The City's Fire Code[3] sets minimum fire flows for all structures and new development. In general, for single family dwellings, at least 1000 g.p.m. at 20 p.s.i. residual pressure must be continuously available at each structure. Duplex, other residential and all non-residential uses must have more fire flows in order to fight fires. Inadequate fire flows are normally due to water supply pipes that are too small or too little water pressure, or a combination of both.

Note for the Applicant/Project engineer: Refer to Appendix B and C, IFC 2012, to determine the minimum fire flow required for this project, based on the Water Purveyor's information (*i.e.*, location, looping and size of water lines; water pressure at the site, *etc.*) and the type, density and location of all structures. Base your professional judgment on the City approved utility plans and Water Provider information shown on this Form. Each time the utility plans/other information relating to treated water changes, resubmit this form just as you did the first time.

[End of Section A. Section B continues on the reverse side of this page]

[1] Fire flow calculation area, 2012 IFC, B104.1 p 445.

City of Grand Junction
Fire Flow Form

SECTION B
[To be completed by the Water Supplier]

1. Circle the name of the water supplier: (Ute) Clifton Grand Junction

2. List the approximate location, type and size of supply lines for this project, or attach a map with the same information:
   See the attached map.

3. List the g.p.m. at 20 p.s.i. residual pressure at the point that the development/project will be connected to the existing water system:
   3,621 g.p.m. @ 20 p.s.i.

4. Attach fire flow test data for the fire hydrants nearest to the development/project that must be used to determine available fire flow: See the attached flow test results.
   [Or: **1.)** attach a map or diagram with the same information, or **2.)** attach a map/diagram with flow modeling information.]

5. If new lines are needed (or if existing lines must be looped) to supply the required fire flows, or if more information is needed to state the available minimum g.p.m. @ 20 p.s.i. residual pressure, please list what the applicant/developer must do or obtain: .....

Print Name and Title of Water Supplier Employee completing this Form:

Robert Yates - Fire Hydrants Division Date: May 31, 2017

****

Note: Based on the facts and circumstances, the Fire Chief may require the applicant/developer to engage an engineer[4] to verify/certify that the proposed water system improvements, as reflected in the approved utility plans submitted in support of the application/development, will provide the minimum fire flows to all structures in this project. If so, the engineer's signature below means that the City's Fire Flow requirements will be met by this development, if constructed as approved.

Print Name and License No. of P.E.: _____

Signature of P.E.: _____

Dated: _____

---

[1] There are three drinking water suppliers: Ute Water, Clifton Water and City water.
[2] Address: City – 333 West Ave, Bldg A, Grand Junction, CO 81501; County – PO Box 20000, Grand Junction, CO 81502
[3] International Fire Code, 2012 Edition
[4] City Code defines engineer as one who is licensed as a P.E. by the state of Colorado.

Fire Flow Hydrant Master
With Graph

Company Name: Ute Water Conservancy District
Address: 2190 H 1/4 Rd
City: Grand Junction
State: Colorado
Zip: 81505

Work Order: 566
Operator: Robert/Dusty

Test Date: 5/31/17 2:00 pm

NFPA Classification:

Blue	AA
3621.87	

Test did not reach recommended drop of 25% per NFPA 291

Test Hydrant: 738
Address: 2398 MARIPOSA DR
Cross Street:
Location:
District:
Sub-Division:

Latitude: 706960.304
Longitude: 4325735.005
Elevation: 4788.95
State X / Y: _____ / _____

Pumpers: **Nozzles:** **Open Dir:**

Manuf: Kennedy Valve
Model: Guardian

Installed: 01/01/2014
Main Size: 0.00

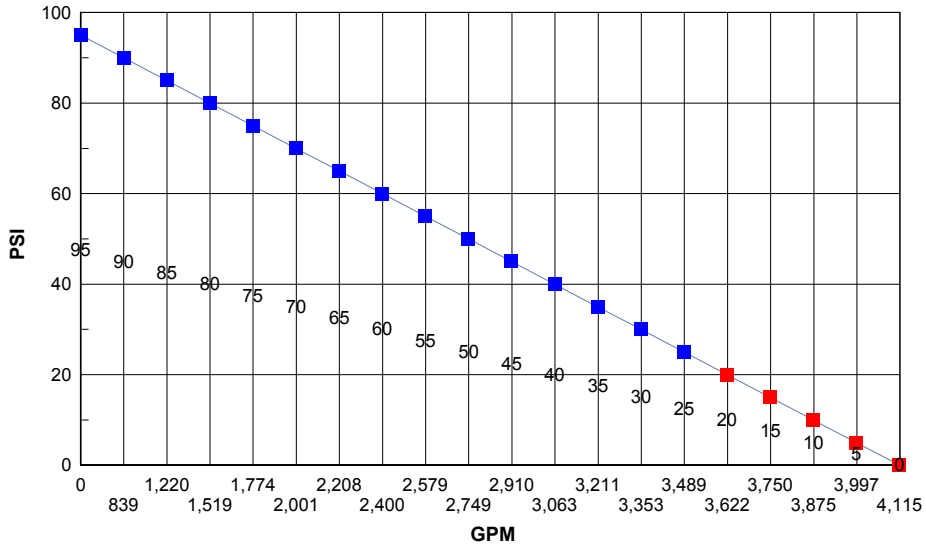
Vandal Proof:
Bury Depth: 0.00

	Flow Hydrant	Flow Device	Diameter	GPM	Gallon Used
1:	3096	2.5" Hose Monster	2.50	1284.55	6422.76
2:					
3:					
4:					
5:					

Pitot / Nozzle PSI: 58.00
Static PSI: 95.00
Residual PSI: 84.00
Percent Drop: 11.58

Total Gallons Used: 6422.76
Max GPM during test: 1,284.55
Elapsed Time Min:Sec: 5 : 0
Predicted GPM @ 20 PSI: 3621.87

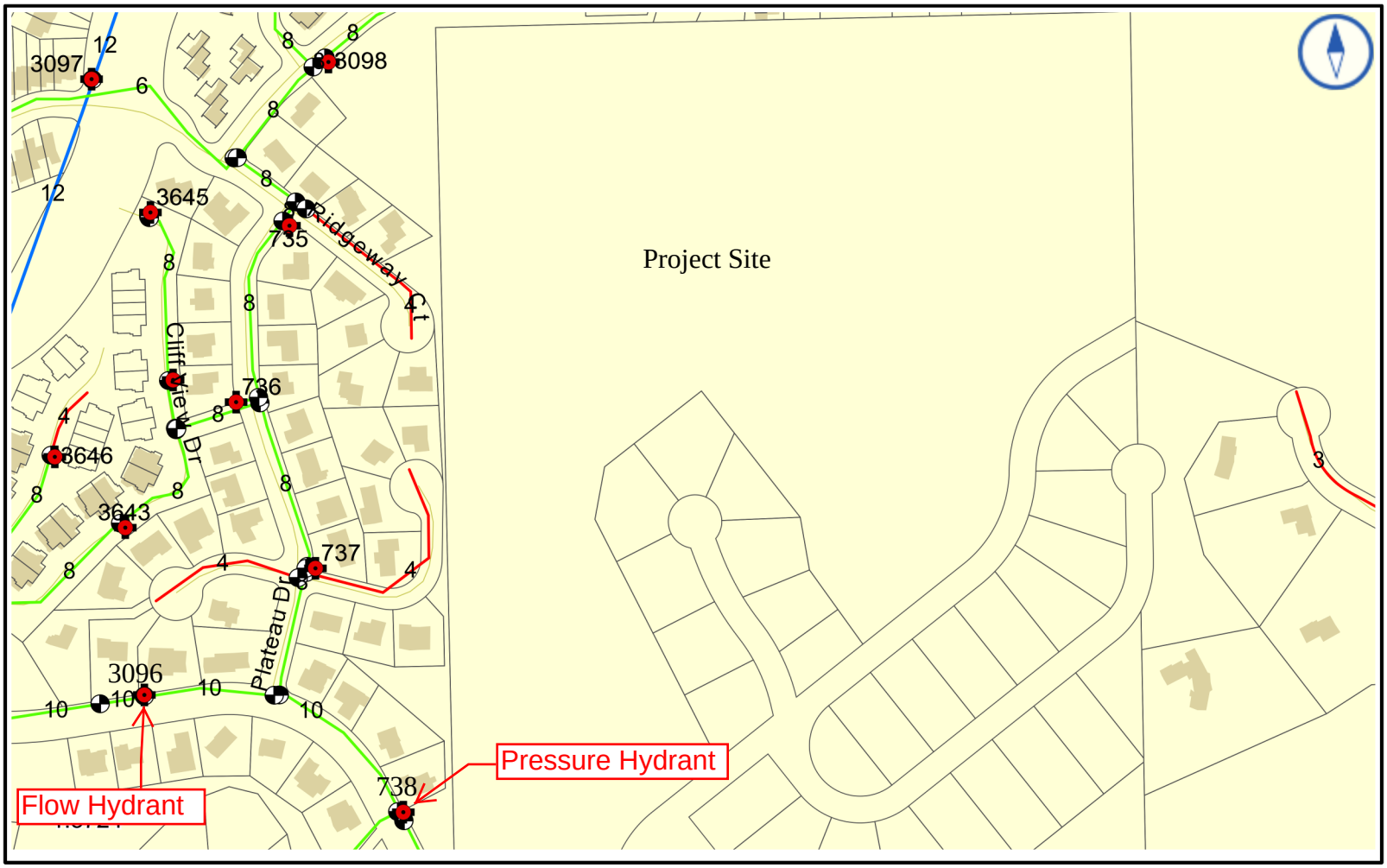
738 Flow GPM



GPM rounded to nearest gallon

Values inside grid below flow line are PSI @ predicted flow

Ute Water



1 Pushpins
2 Cities
3 Hydrants
4 Sample Stations
5 System Valves
6 Control Valves
7 Regulators
8 Address Points
9 Meters
10 Water Mains
1" thru 4"
6" thru 10"
12" thru 18"
24" thru 36"
42" thru 54"
11 Lateral Lines
12 Abandoned M…
13 Roadways
139
I70
I70B
14 Local Roads
15 Major Roadways
17 Parcels
18 Building Footp…

Fire Flow Water System Report
For
Pinnacle Ridge Subdivision

Date:	January 12, 2015
Prepared by:	Vortex Engineering, Inc. 2394 Patterson Road Grand Junction, CO 81505 970-245-9051 VEI # F04-006
Type of Design:	New Residential Subdivision
Developer/Owner:	Two R&D, LLC 1880 K Road Fruita, CO 81521
Property Address:	Mariposa Drive Grand Junction, CO
Tax Schedule No.:	2697-243-00-770

TABLE OF CONTENTS

1. Introduction/Project Description 3
   A. Property Location 3
   B. Description of Project 3
   C. Purpose of Fire Flow Water System Report 3
2. Water Supply 3
   A. Water Source 3
   B. Existing Pressures and Available Flow 4
3. Water Usage 4
   A. Increase in Average Daily and Peak Hour Flows 4
   B. Fire Flow Criteria 4
   C. Pressure and Velocity Requirements 5
   D. Pipe Sizes and Materials 5
   E. Appurtenances 5
4. Water System Analysis 6
   A. Modeling Software 6
   B. Model Input 6
   C. Design Scenarios 6
5. Results and Conclusions 7
   A. Design Scenario 1 – Peak Domestic Flow 7
   B. Design Scenario 2 – Fire Flows 7
   C. Conclusions 7
6. Limitations/Restrictions 8
APPENDIX ‘A’ 9
APPENDIX ‘B’ 10

1. Introduction/Project Description

A. Property Location

The site is located north of Monument Road and east of Mariposa Road in the area known as the Redlands.

B. Description of Project

The Utility Composite Plan of the project is included in Appendix C. The total size of the project is approximately 45 acres. This subdivision will consist of 79 lots. The site is currently vacant.

C. Purpose of Fire Flow Water System Report

The purpose of this report is to verify the adequacy of the proposed potable water system with respect to the required fire flow.

2. Water Supply

A. Water Source

The water source for this project is a 10” water main located in Mariposa Drive, a Ute Water Conservancy District (UWCD). Contact information is provided below.

UWCD
2190 H 1/4 Road, Grand Junction, CO 81505
(970) 242 - 7491

The proposed point of connection for the project’s potable water is the 10” water main in Mariposa Drive, located about 150 feet north of center line of West Ridge Blvd at the proposed intersection of Mariposa Drive and Pinnacle Heights Drive.

B. Existing Pressures and Available Flow

Fire Hydrant pressure test has been performed on fire hydrant located near the tie-in point at 2389 Mariposa Drive. UWCD conducted a flow test on this hydrant and determined that the static pressure is approximately 140 psi. The hydrant flowed 1251 gpm at 100 psi residual pressure. UWCD estimated that the available fire flow at 20 psi will be 2,264 gpm. A copy of the fire flow test is included in Appendix A.

3. Water Usage

A. Increase in Average Daily and Peak Hour Flows

Criteria used for the water system analysis is as follows:

- 100 gallons per capita per day
- 3 persons per single family residence
- Peak Hour Flow equal to 3 times average flow

Based on the above criteria, flow rates for this project are estimated as follows:

- 300 gallons per residential unit per day (single family residence)
- Average residential daily flow of 23,700 gallons (79 residences)
- Peak flow demand of 3x(23,700/(24x60))=49.4 gpm

For the purpose of this study the domestic peak demand flow has been distributed among 14 junctions of a total of 3.5 gpm each.

B. Fire Flow Criteria

Fire flow criteria is based on the International Fire Code (IFC) which is summarized as follows:

Type and Size of Structure	Residential less than 3,600 square feet	Residential between 3,600 and 4,800 square feet	Residential between 4,800 and 6,200 square feet
Fire Flow (gpm)	1,000	1,750	2,000
Residual Pressure (psi)	20	20	20

The IFC Appendix B states that a reduction in required fire flow of 50 percent (as approved) is allowed when the building is provided with an approved automatic sprinkler system.

C. Pressure and Velocity Requirements

UWCD will own and operate the distribution system once constructed and accepted. Their pressure and velocity requirements are as follows:

- Under static operating conditions, main line pressures should not exceed 125 psi. Pressures exceeding this amount cause undue stress on the pipeline and residential services.
- Under peak flow condition, all points in the distribution system shall have at least 20 psi and flow velocities less than 10 feet per second (fps).

D. Pipe Sizes and Materials

Pipe sizes will be a minimum of 10-inch diameter. Pipe material will be Poly Vinyl Chloride (PVC) schedule DR 18 or greater.

E. Appurtenances

Water line appurtenances will include approximately twelve (12) fire hydrants distributed throughout the project. The fire hydrant locations are based on maximum 500 foot centers to provide a maximum distance of 250 feet from a fire hydrant. Fire hydrants are typically placed at intersections on the waterline side of the street. Gate valves will be placed at all junctions. Water services and meters will be placed in accordance with UWCD standards.

4. Water System Analysis

A. Modeling Software

Bentley WaterCAD Version V8i computer software was used in this model.

B. Model Input

A computer model of portions of the existing water system and the proposed water system was input into the WaterCAD software. Pipe size, lengths, type and elevations of the junctions were input to the model for evaluation. Friction loss through pipe was estimated based on a Hazen-Williams roughness coefficient of friction set at 150 for the PVC pipe. Minor loses have been set to each pipe in the model. A schematic of the WaterCAD model is included in Appendix B.

The water source for this model has been modeled as a reservoir with the Hydraulic grade line (HGL) set at the static pressure recorded during the below listed Fire Hydrant Flow Test

WATER SUPPLY PRESSURE/FLOW VALUES AT FIRE HYDRANT AT 2389 MARIPOSA DRIVE TEST CONDUCTED ON OCTOBER 21, 2014 BY UTE WATER.

Pressure (psi)	Flow (gpm)	Comments
140	0	Static test
100	1250	Residual test
20	2,264	Estimate by UWCD

C. Design Scenarios

1. Peak Domestic Flow – Conditions at peak domestic demand with No Fire Flows
2. Fire Flow Analysis on hydrants FH-1 to FH-12 with 2000 gpm Fire Flow Demand

5. Results and Conclusions

A. Design Scenario 1 – Peak Domestic Flow

In this scenario, the pressures at the analyzed junctions vary between 98.6 and 158.3 psi. International Plumbing Code requires domestic pressures to be at 80 psi. The resulting pressures on the junctions warrant that a Pressure Regulating Valves (PRV) be installed at the meter yokes for each residence.

B. Design Scenario 2 – Fire Flows

The Fire Flow analysis feature in WaterCAD performs fire flows with the desired flow demands, which in this model are set at 2000 gpm. The software simulates these flows on the chosen junctions, which in this model are designated as FH-1 thru FH-12. The fire flow simulation is done in one run, with the output of the minimums and the maximums at the time of the flow thru the simulated hydrant. The residual pressures vary between 64.4 and 92.9 psi, which is more than adequate.

C. Conclusions

The fire flow demand has been set to 2000 gpm, assuming that the size of every residence shall be between 4,800 sf and 6,200 sf. This flow requires the main to be at least 10” I.D. Most of the residences, will most likely be between 3,600 sf and 4,800 sf, thus rendering the potable water system more than adequate for fire flows.

6. Limitations/Restrictions

This report is a site-specific investigation and is applicable only for the client for whom our work was performed. Use of this report under other circumstances is not an appropriate application of this document. This report is a product of Vortex Engineering Incorporated and is to be taken in its entirety. Excerpts from this report may be taken out of context and may not convey the true intent of the report. It is the owner's and owner's agents' responsibility to read this report and become familiar with recommendations and findings contained herein. Should any discrepancies be found, they must be reported to the preparing engineer within 5 days.

The recommendations and findings outlined in this report are based on: 1) Knowledge of the site and discussion of the development with the owner, 2) the base maps of the existing water system and test data furnished by Ute Water Conservancy District, 3) various conversations with planners and utility companies, and 4) the Haestad Methods WaterCAD Software. Vortex Engineering, Inc. assumes no liability for the accuracy or completeness of information furnished by the client or municipality/agency personnel. Site conditions are subject to external environmental effects and may change over time. Use of this report under different site conditions is inappropriate. If it becomes apparent that current site conditions vary from those reported, the design engineer should be contacted to develop any required report modifications. Vortex Engineering, Inc. is not responsible and accepts no liability for any variation of assumed information.

Vortex Engineering, Inc. represents this report has been prepared within the limits prescribed by the owner and in accordance with the current accepted practice of the civil engineering profession in the area. No warranty or representation either expressed or implied is included or intended in this report or in any of our contracts.

APPENDIX ‘A’

FIRE HYDRANT FLOW TEST

Ute Water Conservancy District

Company Name: Ute Water Conservancy District
Address: 2190 H 1/4 Rd
City: Grand Junction
State: Colorado
Zip: 81505

Work Order: 56
Operator: Nick

Test Date: 10/21/14 11:00 am

NFPA Classification:	
Blue	AA
2263.94	

Test Hydrant: 738
Address: 2398 MARIPOSA DR
Cross Street:
Location:
District:
Sub-Division:

Latitude: 706960.304
Longitude: 4325735.005
Elevation: 4788.95
State X / Y: _____ / _____

Pumpers: **Nozzles:** **Open Dir:**

Manuf: Clow
Model:

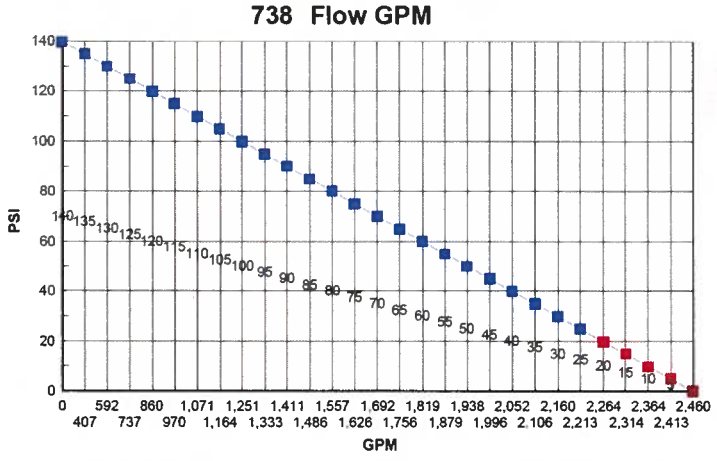
Installed: 01/01/1900
Main Size: 0.00

Vandal Proof:
Bury Depth: 0.00

	Flow Hydrant	Flow Device	Diameter	GPM	Gallon Used
1:	3096	2.5" Hose Monster	2.50	1250.89	6254.45
2:					
3:					
4:					
5:					

Pitot / Nozzle PSI: 55.00
Static PSI: 140.00
Residual PSI: 100.00
Percent Drop: 28.57

Total Gallons Used: 6254.45
Max GPM during test: 1,250.89
Elapsed Time Min:Sec: 5 : 0
Predicted GPM @ 20 PSI: 2263.94



GPM rounded to nearest gallon

Values inside grid below flow line are PSI @ predicted flow

APPENDIX ‘B’

PEAK DOMESTIC FLOW

FIRE FLOW CONDITION

Pinnacle Ridge, Grand Junction, Colorado



Fire Flow Report

Label	Satisfies Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Static Pressure @ Peak Domestic Demand (psi)	Residual Pressure (Calculated @ FH Junction) (psi)	Minimum Pressure in System (psi)	Junction w/ Minimum Pressure (System)	Is Fire Flow Run Balanced?	Velocity of Maximum Pipe (ft/s)	Pipe w/ Maximum Velocity
J-1	(N/A)	2,000.0	(N/A)	(N/A)	20.0	140.6	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
FH-2	True	2,000.0	2,001.0	2,004.5	20.0	144.5	134.9	89.0	FH-9	True	8.37	P-26
FH-3	True	2,000.0	2,001.0	2,004.5	20.0	148.8	135.0	84.8	FH-9	True	8.37	P-26
FH-4	True	2,000.0	2,001.0	2,001.0	20.0	141.9	126.4	83.1	FH-9	True	8.37	P-26
J-5	(N/A)	2,000.0	(N/A)	(N/A)	20.0	144.5	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
FH-5	True	2,000.0	2,001.0	2,004.5	20.0	151.8	133.2	80.0	FH-9	True	8.37	P-26
FH-6	(N/A)	2,000.0	(N/A)	(N/A)	20.0	158.3	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
FH-12	(N/A)	2,000.0	(N/A)	(N/A)	20.0	141.9	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
FH-7	True	2,000.0	2,001.0	2,004.5	20.0	129.8	103.5	72.3	FH-9	True	8.37	P-26
FH-9	True	2,000.0	2,001.0	2,004.5	20.0	98.6	67.0	67.4	FH-10	True	8.37	P-26
FH-10	True	2,000.0	2,001.0	2,001.0	20.0	99.1	64.4	67.0	FH-9	True	8.37	P-26
J-12	(N/A)	2,000.0	(N/A)	(N/A)	20.0	102.1	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
FH-11	True	2,000.0	2,001.0	2,004.5	20.0	101.7	64.4	64.4	FH-10	True	8.37	P-26
FH-8	True	2,000.0	2,001.0	2,004.5	20.0	103.8	74.6	69.3	FH-9	True	8.37	P-26
FH-1	True	2,000.0	2,001.0	2,004.5	20.0	138.4	132.7	92.9	FH-9	True	8.37	P-26
J-16	(N/A)	2,000.0	(N/A)	(N/A)	20.0	147.1	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-17	(N/A)	2,000.0	(N/A)	(N/A)	20.0	103.8	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)

Peak Domestic Flow - Pipe Table

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)	Has User Defined Length?	Length (User Defined) (ft)	Velocity (Maximum) (ft/s)
36	P-3	511	FH-2	FH-3	10.0	PVC	150.0	False	0.600	42.0	0.17	0.000	False	0	0.17
38	P-4	199	FH-3	FH-4	10.0	PVC	150.0	False	0.400	38.5	0.16	0.000	False	0	0.16
40	P-5	49	FH-4	J-5	10.0	PVC	150.0	False	0.000	38.5	0.16	0.000	False	0	0.16
42	P-6	343	J-5	FH-5	10.0	PVC	150.0	False	0.400	31.5	0.13	0.000	False	0	0.13
44	P-7	275	FH-5	FH-6	10.0	PVC	150.0	False	0.400	28.0	0.11	0.000	False	0	0.11
46	P-8	630	FH-6	FH-12	10.0	PVC	150.0	False	0.500	3.5	0.01	0.000	False	0	0.01
48	P-9	673	FH-6	FH-7	10.0	PVC	150.0	False	0.600	21.0	0.09	0.000	False	0	0.09
52	P-11	385	FH-9	FH-10	10.0	PVC	150.0	False	0.300	10.5	0.04	0.000	False	0	0.04
54	P-12	29	FH-10	J-12	10.0	PVC	150.0	False	0.000	10.5	0.04	0.000	False	0	0.04
56	P-13	293	J-12	FH-11	10.0	PVC	150.0	False	0.500	3.5	0.01	0.000	False	0	0.01
58	P-14	381	FH-7	FH-8	10.0	PVC	150.0	False	0.300	17.5	0.07	0.000	False	0	0.07
59	P-15	294	FH-8	FH-9	10.0	PVC	150.0	False	0.400	14.0	0.06	0.000	False	0	0.06
62	P-17	462	FH-1	FH-2	10.0	PVC	150.0	False	0.700	45.5	0.19	0.000	False	0	0.19
64	P-18	256	J-16	J-5	10.0	PVC	150.0	False	0.300	-3.5	0.01	0.000	False	0	0.01
66	P-19	255	J-17	J-12	10.0	PVC	150.0	False	0.400	-3.5	0.01	0.000	False	0	0.01
84	P-25	329	R-1	J-1	10.0	PVC	150.0	False	0.100	49.0	0.20	0.000	False	0	0.20
86	P-26	358	J-1	FH-1	10.0	PVC	150.0	False	0.800	49.0	0.20	0.000	False	0	0.20

Peak Domestic Flow - Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
31	J-1	4,790.00	<None>	<Collection: 0 items>	0.0	5,114.99	140.6
33	FH-2	4,781.00	<None>	<Collection: 1 items>	3.5	5,114.98	144.5
35	FH-3	4,771.00	<None>	<Collection: 1 items>	3.5	5,114.97	148.8
37	FH-4	4,787.00	<None>	<Collection: 0 items>	0.0	5,114.97	141.9
39	J-5	4,781.00	<None>	<Collection: 1 items>	3.5	5,114.97	144.5
41	FH-5	4,764.00	<None>	<Collection: 1 items>	3.5	5,114.97	151.8
43	FH-6	4,749.00	<None>	<Collection: 1 items>	3.5	5,114.97	158.3
45	FH-12	4,787.00	<None>	<Collection: 1 items>	3.5	5,114.96	141.9
47	FH-7	4,815.00	<None>	<Collection: 1 items>	3.5	5,114.96	129.8
49	FH-9	4,887.00	<None>	<Collection: 1 items>	3.5	5,114.96	98.6
51	FH-10	4,886.00	<None>	<Collection: 0 items>	0.0	5,114.96	99.1
53	J-12	4,879.00	<None>	<Collection: 1 items>	3.5	5,114.96	102.1
55	FH-11	4,880.00	<None>	<Collection: 1 items>	3.5	5,114.96	101.7
57	FH-8	4,875.00	<None>	<Collection: 1 items>	3.5	5,114.96	103.8
60	FH-1	4,795.00	<None>	<Collection: 1 items>	3.5	5,114.99	138.4
63	J-16	4,775.00	<None>	<Collection: 1 items>	3.5	5,114.97	147.1
65	J-17	4,875.00	<None>	<Collection: 1 items>	3.5	5,114.96	103.8

General Project Report
For
Pinnacle Ridge Final Plat and Plan – Filing 1
Grand Junction, CO

Date: June 8, 2017

Prepared by: Robert W. Jones II, P.E.
Vortex Engineering and Architecture, Inc.
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
VEI# F04-006

Submitted to: City of Grand Junction
250 N. 5th Street
Grand Junction, CO 81501

Type of Design: Final Plat and Plan

Owner: Two R & D, LLC
PO Box 39
Fruita, CO 81521

Property Address: Northeast of Mariposa Drive and ¼ mile north of Monument Road
Grand Junction, CO 81507

Tax Schedule No: 2945-212-00-011

2945-212-08-001	2945-212-10-001
2945-212-08-002	2945-212-10-002
2945-212-08-003	2945-212-10-003
2945-212-08-004	2945-212-10-004
2945-212-08-005	2945-212-10-005
2945-212-08-006	2945-212-10-006
2945-212-08-007	2945-212-10-007
2945-212-08-008	2945-212-10-008
2945-212-08-009	2945-212-10-009
2945-212-08-010	

I. Project Intent

The applicant's intent is to construct a high quality single family residential subdivision in an area attractive to buyers with proximity to schools, open space and parks, shopping, medical facilities and employment centers near downtown Grand Junction. The proposed infill development will provide much needed housing in the Grand Junction market and reduce suburban sprawl by developing close to the City Center.

II. Project Description

The subject property is located northeast of Mariposa Drive and ¼ mile north of Monument Road (See Attachment A). The Pinnacle Ridge Subdivision proposes 72 single family homes to be developed in five filings. This application is made for Filing 1 which contains 13 lots, Tracts A and B, and Lots 100, 101, 102 and 103 which will develop in the future as Filings 2, 3, 4 and 5. Tracts A and B will be owned and maintained by the HOA.

The overall density is 1.59 dwelling units per acre which is consistent with the R2 zone district. Pedestrian trails are provided throughout the development as well as a large open space area.

The legal description of this site is:

The property is described as a parcel of land situated in the W ½ NW ¼ of Section 21, Township 1 South, Range 1 West of the Ute Meridian, Mesa County, Colorado, being described as follows:

The south 10 acres of the NW ¼ NW ¼ and the SW ¼ NW ¼ of said Section 21.
EXCEPTING THEREFROM:
Lots 1-9, Block 3 and the adjoining dedicated right-of-way know as Spur Drive and Lot 2, Block 2, Energy Center Subdivision, Phase I as platted and recorded in Plat Book 8 at Page 55 with a Reception Number 644620 of the Mesa County records. The property is approximately 45.0 acres in size.

III. Neighborhood Meeting and Public Notice

A Neighborhood Meeting was held on March 11, 2015 at 5:30 pm as required by the Zoning and Development Code for the Preliminary Plan submittal. Information related to the neighborhood meeting was included with the earlier application for Preliminary Plan approval which was granted by City Council on April 19, 2017. A neighborhood meeting is not required for Final Plat/Plan submittal. Public notice for this application will be provided in accordance with Sec. 21.02.080(g) of the Grand Junction Municipal Code, including posting the subject property on all public rights-of-way.

IV. Comprehensive Plan

The Comprehensive Plan's Future Land Use Map shows the subject property as Residential Low (RL, .5-2 du/ac). The subject property is located within the 201 Sewer Service Boundary and the Urban Development Boundary. These areas are expected to grow and develop with urban densities and services.

The proposed development meets a number of the goals and policies of the Comprehensive Plan:

Goal 1, Policy D: For development that requires municipal services, those services shall be provided by a municipality or district capable of providing municipal services.
Goal 3: The Comprehensive Plan will create ordered and balanced growth and spread future growth throughout the community.
Goal 8: Create attractive public spaces and enhance the visual appeal of the community through quality development.
Goal 8, Policy A: Design streets and walkways as attractive public spaces.

V. Zoning and Surrounding Areas

Surrounding area zoning and land uses include:

North – City PD (with R4 default zone) with single family and multifamily dwelling units land use
South – City Community Services and Recreation (CSR) with open space land use
West – City PD (with R3 default zone) with single family and multifamily dwelling units land use
East – City PD and Mesa County RSF-4 with single family land use and vacant land

The subject property is zoned R2 and currently undeveloped.

VI. Utility Providers

All necessary and required utilities shall be provided concurrent with construction of the Pinnacle Ridge Subdivision. Utilities shall be installed to current City standards and specifications.

Utility providers for the site are as follows:

Sewer: City of Grand Junction/Persigo
Water: Ute Water
Electric: Grand Valley Power
Irrigation Water: N/A; there is no irrigation water provided to this site
Cable: Spectrum

VII. Soils, Drainage and Grading

An in depth, detailed final Geotechnical Report has been prepared by Huddleston-Berry Engineering and Testing, LLC, with specific information regarding slope stability, rockfall and earthwork analysis and requirements for the Pinnacle Ridge development. A Materials Testing Plan has been included with the Geotechnical Report that outlines the field observation and testing plan. Please see the report for specific information regarding the results and findings of the field investigation and recommendations from Huddleston-Berry.

A final drainage report is included with this application and addresses the entire site. Please see the report for specific information regarding drainage issues for the Pinnacle Ridge development.

Approval for overlot grading is requested prior to final approval of the plat and plans. During the Preliminary Plan review process, the need to perform overall grading for the entire site was identified because there are very distinct cut and fill areas in each of the filings and differing types of materials that will make for a better overall development for the public street infrastructure. Construction operations and sequencing identified by staff that allow for a longer consolidation time in the deep fill areas, and to likewise mine the deep cut areas for preferred materials (non-expansive materials) allows for settling, consolidation and stabilization for the overall site. This will provide City staff, the owner's geotechnical engineer and the applicant an opportunity to observe the soil properties and behavior in the embankment cuts and areas of fill where the street rights-of-way and building pad sites are located.

VIII. Wetlands and Floodplain

There are no known wetland or floodplain areas identified on the subject property.

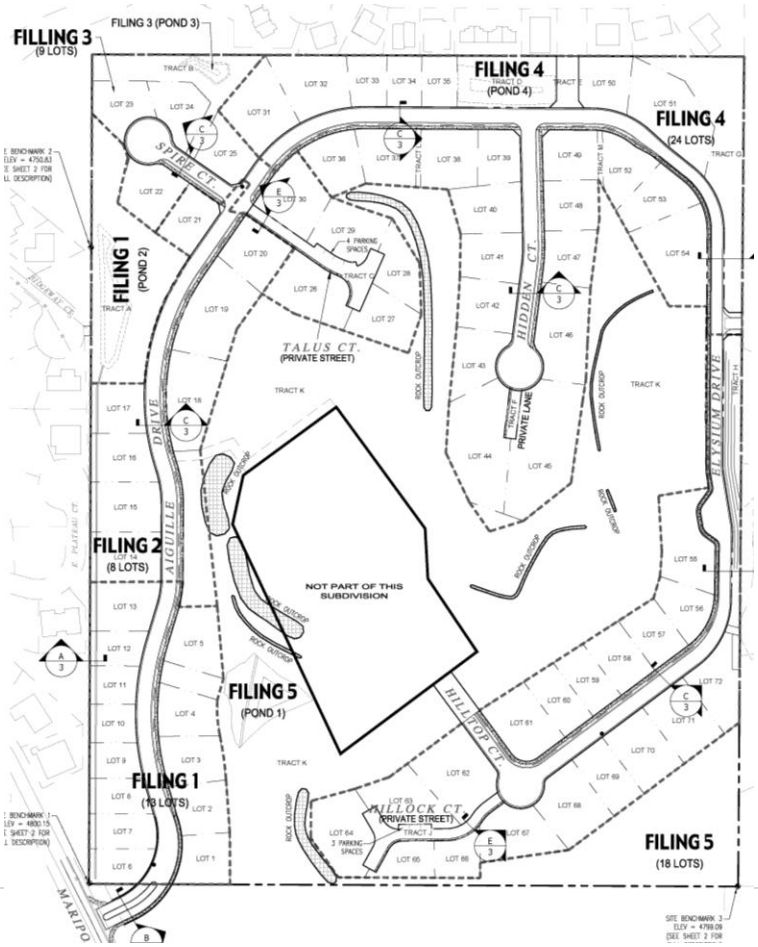
IX. Traffic

The site will be accessed by two streets providing interconnectivity and efficient traffic flow between filings and adjacent development. Filings One, Two and Three will be accessed from Mariposa Drive. The second point of access will be constructed with Filing 4 and will connect the development to Hidden Valley Drive on the northern property line. A stub street will be provided to the east for possible future connection and through traffic with adjacent property with Filing 4.

To address concerns of past street failures, an Alternative Street section has been approved by the City for use to reduce the differential movement between the asphalt street surface and the concrete curb, gutter and sidewalk. The majority of Aiguille Drive and a portion of Elysium will use a 44' ROW with 28' pavement section that has 2' shoulders. A drainage swale will be located on one side of the street with a 6' wide detached pedestrian trail next to the swale.

The mid-section of Elysium Drive will use a 34' ROW with 22' pavement section and 6.5' combination curb, gutter and sidewalk on one side of the street. Parking will be restricted to one side for this portion of the street. This street section will be constructed in Filing 5.

There are two private streets (to be constructed in Filing 3 and Filing 5) which include parking pods that provide required off-site residential parking. The CC&Rs contain provisions for maintenance of the private streets, including snow removal, and signage will be posted to distinguish the private streets from the public streets.

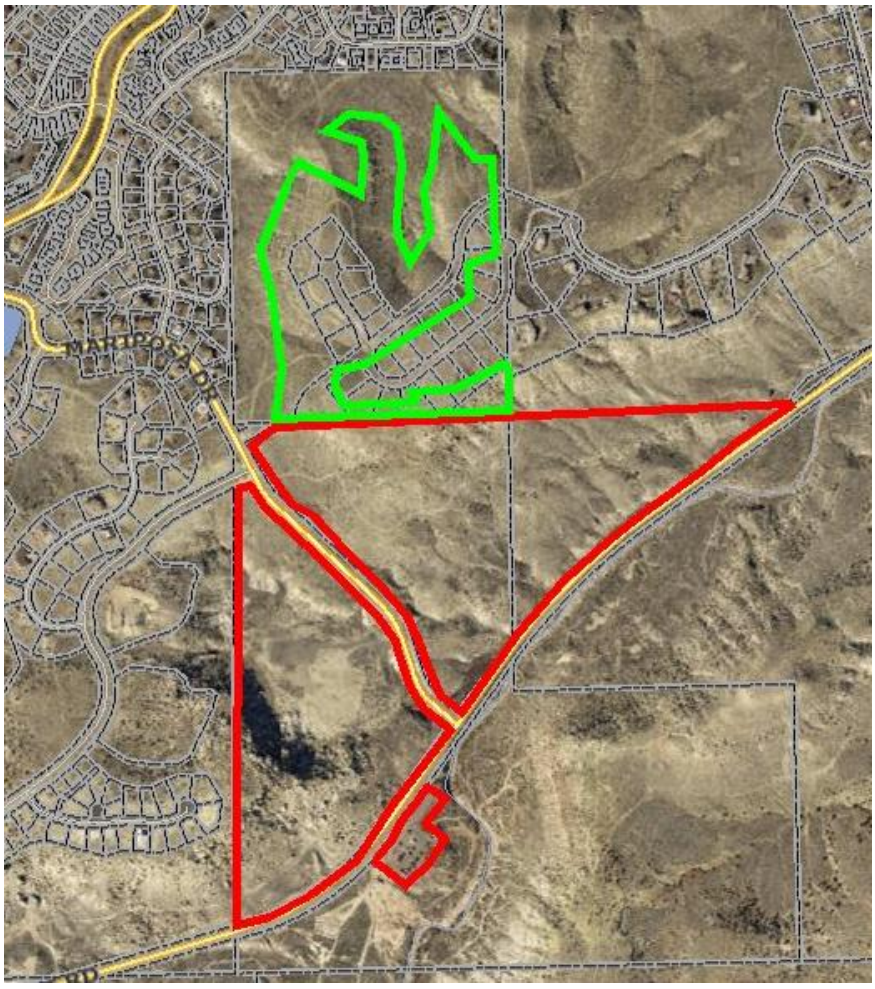


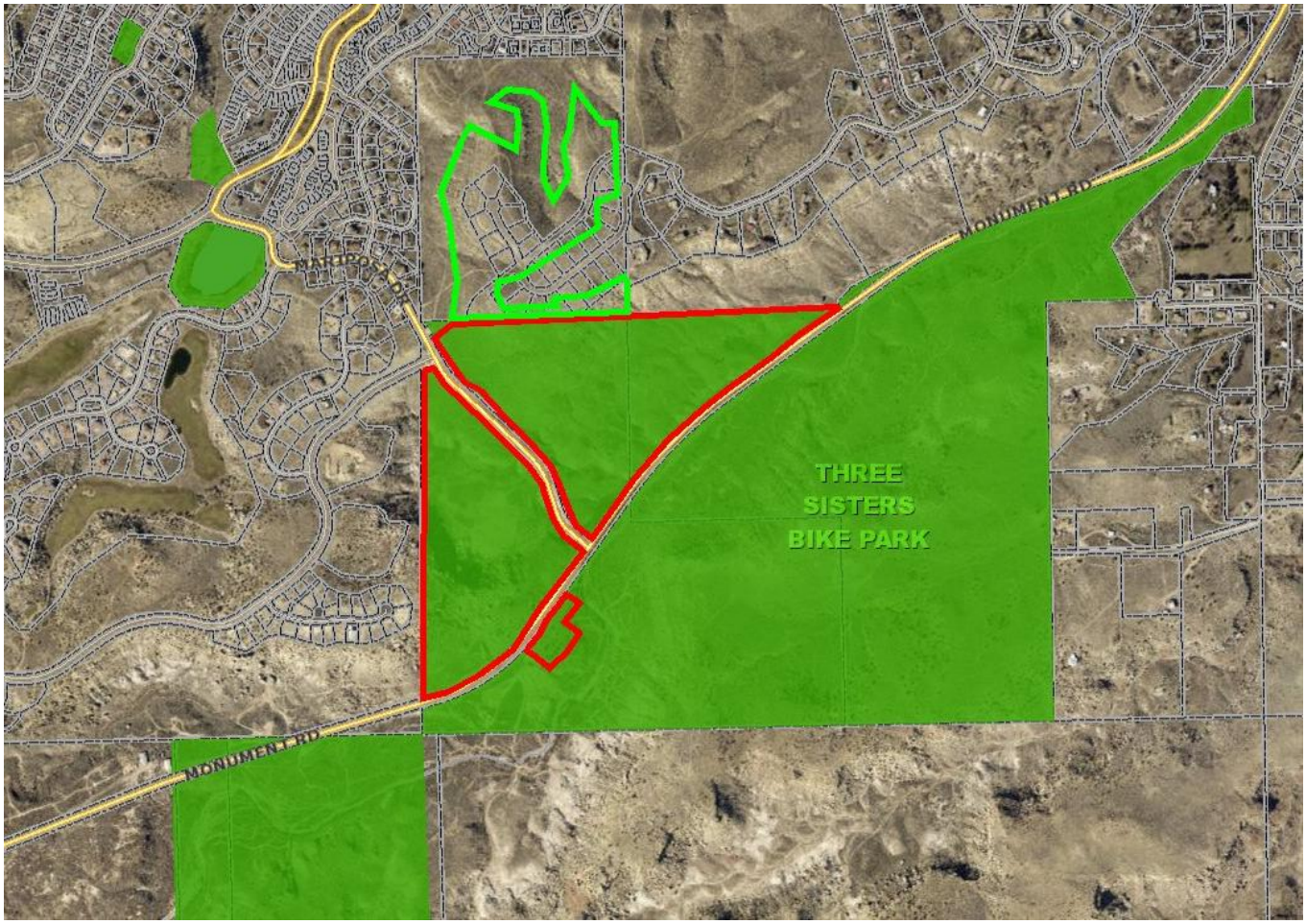
X. Open Space

The Cluster Development standards of the Zoning Code have been utilized to cluster development and preserve a significant amount of open space within the Pinnacle Ridge subdivision. Open space in excess of 33% has been preserved with this development for use by residents and the public. There are a number of trails which currently exist within the area to be preserved as open space as can be seen on the aerial photo below. These trails have long been used by area residents for hiking and walking pets.

The majority of the open space will be platted as Tract B with Filing 1. This tract contains 15.06 acres and will be accessed by public right-of-way upon construction of Aiguille Drive and Elysium Drive. Tract B (shown in green on map below) is also adjacent to open space land owned by the City of Grand Junction (shown in red on the map below). The City's open space land is contiguous with Mariposa Drive and Monument Road and provides parking and bathroom facilities for the Lunch Loop bike trail and Three Sisters Bike Park.

Adding the Pinnacle Ridge open space to the City's existing open space would be a natural extension of the City's park system. Picturesque views from the Pinnacle Ridge open space are unparalleled. Little to no maintenance for the open space is anticipated. In accordance with Section 21.06.020(b), Open Space, the applicant proposes to dedicate the 15.06 acres of open space to the City of Grand Junction for the use and enjoyment of the general public.





XI. <u>Approval Criteria</u>

The final plat shall conform to the approved preliminary subdivision plan. Section 21.02.070(s), Final Plat, states that the final plat shall demonstrate compliance with all of the following:

(i) The same criteria as the preliminary subdivision plan in subsection (r) of this section; and

(ii) The preliminary plan approval and any condition attached thereto.

Sec. 21.02.070(r)(2), Preliminary Subdivision Plan, Approval Criteria: A preliminary subdivision plan shall not be approved unless the applicant proves compliance with the purpose portion of this section and with all of the following criteria:

(i) The preliminary subdivision plan will be in conformance with the Comprehensive Plan, Grand Valley Circulation Plan, Urban Trails Master Plan, and other adopted plans;

Response: The Pinnacle Ridge Subdivision Future Land Use classification is Residential Low (RL, .5-2 du/ac). The proposed land use and density are supported by the current zoning of the property of R2 (Residential, 2 du/ac). The property is identified by the Comprehensive Plan as an "area of change" which anticipates new growth and development of vacant land near or within Centers as identified by

the Comprehensive Plan. In addition, the proposed development supports several of the goals and policies of the Comprehensive Plan as noted earlier in this report.

The proposed development is designed to be compliant with the Grand Valley Circulation Plan. Specifically the development meets Sec. 31.08.020(d) which states: Subdivisions and other development shall be designed to continue or create an integrated system of streets and trails that provide for efficient movement of pedestrians, bicycles, and automobiles to and from adjacent development. Sidewalks and various detached pedestrian trails have been included in the design to meet the needs of an integrated system of streets and trails with convenient interconnectivity between streets and adjacent development.

This criterion has been MET.

(ii) The subdivision standards in Chapter 21.06 GJMC;

Response: The Pinnacle Ridge Subdivision has been designed to comply with all provisions of the Zoning and Development Code, including detached pedestrian trails along Aiguille Drive and open space that provides detention facilities, off street pedestrian trails and protection of environmentally sensitive areas.

The design is consistent with adopted plans and policies as well as the City's technical standards and specifications. Reports as required by the SSID manual have been prepared for the site. The Transportation Engineering Design Standards have been utilized and are incorporated into the circulation plan for the development.

This criterion has been MET.

(iii) The zoning standards in Chapters 21.03 and 21.04 GJMC;

Response: The Pinnacle Ridge Subdivision shall comply with all requirements of Sec. 21.03, Zoning Districts, and Sec. 21.04, Uses, of the Zoning and Development Code. Specifically, all development shall comply with the R2 zone district bulk and development standards and the Cluster Development standards; and only those uses that are permitted within the R2 zone district shall be allowed. All development, including principle and accessory structures and fences, shall obtain the necessary permits prior to commencement of construction.

This criterion has been MET.

(iv) Other standards and requirements of this code and other City policies and regulations;

Response: The Pinnacle Ridge Subdivision is designed to comply with all known City policies and regulations which include those listed earlier in this report as well as payment of all required fees, dedication of all required rights-of-way or easements, meeting all design specifications and reporting requirements.

This criterion has been MET.

(v) Adequate public facilities and services will be available concurrent with the subdivision;

Response: All necessary and required public facilities and utilities shall be provided through the construction process for the Pinnacle Ridge Subdivision. Public facilities such as hospitals, schools, parks and a public library are available and sufficient to serve the proposed development. Utility providers have the capacity and willingness to provide services to this development. Utilities shall be installed to current City standards and specifications.

This criterion has been MET.

(vi) The project will have little or no adverse or negative impacts upon the natural or social environment;

Response: The Pinnacle Ridge Subdivision is identified by the Comprehensive Plan as an "area of change" in anticipation of development as the City and Grand Valley grow. The Future Land Use Map classification of Residential Low calls for development to occur with a density of not more than 2 dwelling units per acre, which this development meets.

Several studies including a Geotechnical Report, Drainage Report, Transaction Screen Process and others have been conducted to ensure that the development is designed and constructed in a manner that is compliant with City development codes and regulations. Environmentally sensitive areas such as rock outcrops within the open space will not be disturbed. Pedestrian trails have been provided to encourage social interaction between filings and to provide a safe, pleasant pedestrian experience for residents and the public to enjoy.

Thoughtful design has gone into creating a new residential development that meets City standards and provides needed housing for the local market without adversely impacting the natural or social environment, or environmentally sensitive areas.

This criterion has been MET.

(vii) Compatibility with existing and proposed development on adjacent properties;

Response: Pinnacle Ridge Subdivision will provide infill single family residential development between the established neighborhoods to the north, east and west, and the open space located to the south. Lots will be developed at a density slightly lower than adjacent properties and approximately 33% open space will be provided for use by residents and the public. The proposed development is compatible because it is single family residential which is what compromises the existing neighborhoods in the immediate area.

This criterion has been MET.

(viii) Adjacent agricultural property and land uses will not be harmed;

Response: There is no agricultural land located near the Pinnacle Ridge site; therefore there are no anticipated negative impacts with development of the Pinnacle Ridge Subdivision in regards to agricultural property. There are no known negative impacts associated with the infill development of the Pinnacle Ridge site.

This criterion has been MET.

(ix) Is neither piecemeal development nor premature development of agricultural land or other unique areas;

Response: The subject property is approximately 45 acres and is being planned and developed in five filings, therefore there is no piecemeal development occurring. All required facilities and utilities will be provided with urban levels of service. The site is located within the Persigo 201 Sewer Service Boundary, the Urban Development Boundary and is identified as an "area of change" by the Comprehensive Plan, therefore development is neither piecemeal nor premature.

This criterion has been MET.

(x) There is adequate land to dedicate for provision of public services; and

Response: There is adequate land to dedicate for necessary street rights-of-way, multipurpose easements, detention facilities, pedestrian trails and open space tracts. All required utility easements shall be provided. The applicant has offered to dedicate 15.06 acres of open space to the City to extend the City's park system for use by the public.

This criterion has been MET.

(xi) This project will not cause an undue burden on the City for maintenance or improvement of land and/or facilities.

Response: The Pinnacle Ridge Subdivision will not cause an undue burden to the City for maintenance. Alternative residential streets have been approved for use and shall be constructed to City standards and specifications. The HOA shall own and maintain the two private streets approved by City Council and tracts with detention facilities. Furthermore, the City has required that the HOA provide snow removal for the private streets and a portion of Elysium Drive, therefore this project will not cause an undue burden on the City for maintenance or improvement of land and/or facilities.

This criterion has been MET.

XII. Conditions of Preliminary Plan Approval

On April 19, 2017, Preliminary Plan Approval was granted by the City Council subject to the following conditions:

1. At final design, perform an in depth geotechnical engineering investigation and report with proper slope stability, rockfall, and earthwork analysis and requirements. This can be incremental to the phases where final design approval is being requested; however, if slope stability and/or rockfall analyses prove problematic, the Preliminary Plan could be nullified or may need to be redesigned and reapproved.
   Response: *A detailed final Geotechnical Report has been prepared by Huddleston-Berry Engineering and Testing, LLC for the entire site based on field investigation. The report includes site specific slope and rockfall analysis in addition to soil and materials testing. Please refer to the final geotechnical report for specific details and information related to the site.*

   a. The geotechnical report must design the earthwork and streets to minimize vertical movement and construction must strictly adhere to the report and be documented by daily observations and proper testing during construction.
      Response: *Please refer to the final Geotechnical Report as noted above for specific details and information. A Materials and Testing Plan has been prepared by Huddleston-Berry Engineering and Testing, LLC that details the proposed inspection and testing plan for all phases of this development.*

   b. A secured two-year warranty will be required as offered by the developer.
      Response: *A Development Improvements Agreement (DIA) and extended two-year warranty will be provided by the applicant with each filing. The extended warranty was offered by the applicant and exceeds the City's standard one-year warranty period for public infrastructure.*

   c. Landscaping shall be limited to low water requirement plants and irrigation systems. The details will be defined in conjunction with the geotechnical engineer at final design.
      Response: *A landscape plan prepared by a licensed landscape architect has been included with the final construction plans for all areas to be landscaped. Landscape materials shall be low water requirement plants with irrigation systems to establish the xeric plant materials. In addition, the CC&Rs require all home owners to install only low water requirement plants and irrigation systems. The CC&Rs have been submitted for review and approval of required language related to the landscaping standards for the development.*

   d. A site specific slope and rockfall analysis (based on field investigation) in the areas of concern will be required with each filing.
      Response: *A site specific slope and rockfall analysis (based on field investigation) has been provided with the final Geotechnical Report. In addition, each home owner will be required to have a site specific slope and rockfall analysis performed prior to construction of each home.*

e. Lot specific grading and drainage plans will either be required with the final design for each filing or with each planning clearance.
Response: *Lot specific grading and drainage plans will be required for each planning clearance to ensure that the grading and drainage functions properly for each lot.*

2. Perfect an intermediate connection to Hidden Valley Drive, with Filing 4 according to the current phasing plan, as required by the January 2007 TEDS exception.
Response: *The applicant has begun discussions with relevant property owners to secure the required connection to Hidden Valley Drive. The connection will be secured prior to commencement of Filing 4 as required by the January 2007 TEDS exception.*

3. Perfect the ability to loop water lines, if needed, and provide sanitary sewer to portions of the project via the Hidden Valley Drive connection with Filing 4 according to the current phasing plan.
Response: *Ute Water has withdrawn their comment regarding the looped water line. Sanitary sewer will be provided to the portions of the project where needed via Hidden Valley Drive.*

4. The HOA is required to remove snow along the north facing slope on Elysium Drive. Provide proper language and assessments in the CC & R's and signs must be conspicuously placed on the street stating such.
Response: *See the CC&Rs for specific language regarding the HOA's duty to remove snow along the north facing slope on Elysium Drive. Also, signage will be conspicuously posted on that portion of the Elysium Drive stating such.*

5. Private streets will be allowed in two areas of the subdivision, Talus Court and Hillock Court.
Response: *Only those private streets, as approved by City Council on April 19, 2017, are included in the Pinnacle Ridge development.*

XIII. Development Schedule

Upon review and approval of the Final Plat and Plans, construction of Filing One is expected to begin within 30 days. Subsequent filings will commence annually thereafter, or sooner if market conditions are favorable, until the subdivision has been fully constructed.

XIV. Conclusion

After demonstrating how Pinnacle Ridge, Filing 1, meets the goals and policies of the Comprehensive Plan, applicable sections of the Grand Junction Zoning and Development Code and other related development regulations, we respectfully request approval of the final plat and plans.

XIV. Limitations/Restrictions

This report is a site-specific report and is applicable only for the client for whom our work was performed. The review and use of this report by City of Grand Junction, affiliates, and review agencies is fully permitted and requires no other form of authorization. Use of this report under other circumstances is not an appropriate application of this document. This report is a product of Vortex Engineering, Inc. and is to be taken in its entirety. Excerpts from this report when taken out of context may not convey the true intent of the report. It is the owner's and owner's agent's responsibility to read this report and become familiar with recommendations and findings contained herein. Should any discrepancies be found, they must be reported to the preparing engineer within 5 days.

The recommendations and findings outlined in this report are based on: 1) The site visit and discussion with the owner, 2) the site conditions disclosed at the specific time of the site investigation of reference, 3) various conversations with planners and utility companies, and 4) a general review of the zoning and transportation manuals. Vortex Engineering, Inc. assumes no liability for the accuracy or completeness of information furnished by the client or municipality/agency personnel. Site conditions are subject to external environmental effects and may change over time. Use of this report under different site conditions is inappropriate. If it becomes apparent that current site conditions vary from those reported, the design engineering should be contacted to develop any required report modifications. Vortex Engineering, Inc. is not responsible and accepts no liability for any variation of assumed information.

Vortex Engineering, Inc. represents this report has been prepared within the limits prescribed by the owner and in accordance with the current accepted practice of the civil engineering profession in the area. No warranty or representation either expressed or implied is included or intended in this report or in any of our contracts.

ATTACHMENT "A"

LOCATION MAP



E-Filed

Colorado Secretary of State
Date and Time: 05/22/2017 01:05 PM
ID Number: 20171380252

Document number: 20171380252
Amount Paid: $50.00

Document must be filed electronically.
Paper documents are not accepted.
Fees & forms are subject to change.
For more information or to print copies
of filed documents, visit www.sos.state.co.us.

ABOVE SPACE FOR OFFICE USE ONLY

Articles of Incorporation for a Nonprofit Corporation

filed pursuant to § 7-122-101 and § 7-122-102 of the Colorado Revised Statutes (C.R.S.)

1. The domestic entity name for the nonprofit corporation is Pinnacle Ridge Home Owners Association, Inc.

*(**Caution:** The use of certain terms or abbreviations are restricted by law. Read instructions for more information.)*

2. The principal office address of the nonprofit corporation's initial principal office is

Street address
2394 Patterson Road, Suite 201
(Street number and name)

Grand Junction | CO | 81505
(City) | *(State)* | *(ZIP/Postal Code)*

(Province – if applicable) | United States *(Country)*

Mailing address
(**leave blank** if same as street address)

(Street number and name or Post Office Box information)

(City) | *(State)* | *(ZIP/Postal Code)*

(Province – if applicable) | *(Country)*

3. The registered agent name and registered agent address of the nonprofit corporation's initial registered agent are

Name
(if an individual)
Jones | Robert | | Jr.
(Last) | *(First)* | *(Middle)* | *(Suffix)*

OR

(if an entity)

*(**Caution:** Do not provide both an individual and an entity name.)*

Street address
2394 Patterson Road, Suite 201
(Street number and name)

Grand Junction | CO | 81505
(City) | *(State)* | *(ZIP Code)*

Mailing address
(**leave blank** if same as street address)

(Street number and name or Post Office Box information)

(City) CO *(State)* *(ZIP Code)*

(The following statement is adopted by marking the box.)

☑ The person appointed as registered agent above has consented to being so appointed.

4. The true name and mailing address of the incorporator are

Name
(if an individual)

Jones *(Last)* Robert *(First)* *(Middle)* Jr. *(Suffix)*

OR

(if an entity)

*(**Caution:** Do not provide both an individual and an entity name.)*

Mailing address

2394 Patterson Road, Suite 201
(Street number and name or Post Office Box information)

Grand Junction *(City)* CO *(State)* 81505 *(ZIP/Postal Code)*

(Province – if applicable) United States *(Country)*

(If the following statement applies, adopt the statement by marking the box and include an attachment.)

☐ The corporation has one or more additional incorporators and the name and mailing address of each additional incorporator are stated in an attachment.

5. *(If the following statement applies, adopt the statement by marking the box.)*

☑ The nonprofit corporation will have voting members.

6. Provisions regarding the distribution of assets on dissolution:

No distributions of the corporate assets to Members shall be made until all corporate debts are paid, and then only upon final dissolution of the Association. Upon dissolution and after winding up the affairs of the Association, all assets shall be distributed, transferred and conveyed to the Members pro-rata.

7. *(If the following statement applies, adopt the statement by marking the box and include an attachment.)*

☑ This document contains additional information as provided by law.

8. ***(Caution:** Leave blank if the document does not have a delayed effective date. Stating a delayed effective date has significant legal consequences. Read instructions before entering a date.)*

(If the following statement applies, adopt the statement by entering a date and, if applicable, time using the required format.)

The delayed effective date and, if applicable, time of this document is/are _____.
(mm/dd/yyyy hour:minute am/pm)

Notice:

Causing this document to be delivered to the Secretary of State for filing shall constitute the affirmation or acknowledgment of each individual causing such delivery, under penalties of perjury, that the document is the individual's act and deed, or that the individual in good faith believes the document is the act and deed of the person on whose behalf the individual is causing the document to be delivered for filing, taken in conformity with the requirements of part 3 of article 90 of title 7, C.R.S., the constituent documents, and the organic statutes, and that the individual in good faith believes the facts stated in the document are true and the document complies with the requirements of that Part, the constituent documents, and the organic statutes. This perjury notice applies to each individual who causes this document to be delivered to the Secretary of State, whether or not such individual is named in the document as one who has caused it to be delivered.

9. The true name and mailing address of the individual causing the document to be delivered for filing are

Beckner (*Last*) Larry (*First*) _____ (*Middle*) _____ (*Suffix*)

PO Box 220
(Street number and name or Post Office Box information)

Grand Junction (*City*) CO (*State*) 81502 (*ZIP/Postal Code*)

_____ (*Province – if applicable*) United States (*Country*)

(If the following statement applies, adopt the statement by marking the box and include an attachment.)

☐ This document contains the true name and mailing address of one or more additional individuals causing the document to be delivered for filing.

Disclaimer:

This form/cover sheet, and any related instructions, are not intended to provide legal, business or tax advice, and are furnished without representation or warranty. While this form/cover sheet is believed to satisfy minimum legal requirements as of its revision date, compliance with applicable law, as the same may be amended from time to time, remains the responsibility of the user of this form/cover sheet. Questions should be addressed to the user's legal, business or tax advisor(s).

ARTICLES OF INCORPORATION OF PINNACLE RIDGE HOME OWNERS ASSOCIATION, INC.

The undersigned hereby signs and acknowledges these Articles of Incorporation for the purpose of forming a nonprofit corporation under the Colorado Revised Nonprofit Corporation Act ("Act").

I. NAME

The name of this corporation shall be Pinnacle Ridge Home Owners Association, Inc. ("Association").

II. DURATION

The period of duration of the Association shall be perpetual.

III. PURPOSES

The Association is organized to be and constitutes the Association to which reference is made in the Declaration of Covenants, Conditions and Restrictions for the Pinnacle Ridge Subdivision ("Declaration"). The Declaration is executed or will be executed by Robert Jones Jr., as agent for Two R&D, LLC, a Colorado limited liability company as the "Declarant". The Declaration is recorded or will be recorded in the office of the Clerk and Recorder of Mesa County, Colorado. All capitalized terms used herein shall have the same meanings as used in the Declaration, unless otherwise defined herein. The Declaration relates to real property (the " Common Interest Community ") in the County of Mesa, State of Colorado, which is or may become subject to the Declaration.

The Association shall be a nonprofit corporation without shares. The Association is not organized in contemplation of pecuniary gain or profit to Members. No part of the net earnings of the Association shall inure to the benefit of any Member of the Association, other than by acquiring, constructing or providing management, maintenance, and care of such property of the Association qualifying as "Association Property" under Section 528(c)(4) of the Internal Revenue Code, and other than by a rebate of excess membership dues, fees or assessments.

Specific purposes for which the Association is organized are:

(a) To exercise all of the rights, powers and privileges and to perform all of the duties and obligations of the Association as set forth in the Declaration or in any amendment to the Declaration;

(b) To provide for maintenance, preservation and architectural control of the Common Interest Community, including the Lots and any Association Property;

(c) To promote, foster and advance the health, safety and welfare of residents within the Common Interest Community;

(d) To fix, levy, collect and enforce payment of, by any lawful means, assessments and other amounts payable by or with respect to Owners of Lots within the Common Interest Community as provided in the Declaration;

(e) To manage, control, operate, maintain, repair and improve Association Property, and to perform services and functions for or relating to the Common Interest Community, all as provided in the Declaration;

(f) To enforce covenants, restrictions, conditions and equitable servitudes affecting the Common Interest Community;

(g) To make and enforce rules and regulations with respect to the use of the Lots and Association Property within the Common Interest Community, as provided in the Declaration; and

(h) To establish and maintain the Common Interest Community as property of the highest quality and value, and to enhance and protect its value, desirability and attractiveness.

Each purpose specified herein is an independent purpose and is not to be restricted by reference to or inference from the terms of any other purpose.

IV. POWERS

The Association shall have all of the powers that a nonprofit corporation may exercise under the Act and the laws of the State of Colorado in effect from time to time.

V. PRINCIPAL OFFICE

The street address of the Association's initial principal office is 2394 Patterson Road, Suite 201, Grand Junction, Colorado 81505.

VI. REGISTERED OFFICE AND AGENTS

The initial registered office in the State of Colorado of the Association shall be at 2394 Patterson Road, Suite 201, Grand Junction, Colorado 81505, and the initial registered agent of the Association upon whom process may be served is Robert Jones Jr. at the same address. The registered office and registered agent may be changed, without amendment of these Articles of Incorporation, as provided by statute.

VII. MEMBERS

The affairs of the Association shall be managed by its Members. A "Member," as defined in the Declaration, is the Person, or if more than one, all Persons collectively, who constitute the Owner of a Lot, including, but not limited to, the Declarant. Each Membership shall be

appurtenant to the fee simple title to a Lot. The Person or Persons who constitute the Owner of fee simple title to a Lot shall automatically be the holder of the Membership appurtenant to that Lot and the Membership shall automatically pass with fee simple title to the Lot. The Association shall have voting Members and each Member, as an Owner of a Lot, shall have the right to cast one (1) vote in accordance with the Declaration. If the Members determine to elect Directors, the duties, qualifications, number and term of Directors and the manner of their election, appointment and removal shall be as set forth in the Bylaws. If the Members determine to elect Directors, cumulative voting by Members in the election of Directors shall not be permitted.

VIII. AMENDMENT OF ARTICLES

The Association may amend these Articles of Incorporation from time to time in accordance with the Act by vote of the Members, but only so long as the Articles of Incorporation as amended contain such provisions as are lawful under the Act and are not contrary to or inconsistent with any provision of the Declaration. In the event of a conflict between the provisions of these Articles and the provisions of the Declaration, the provisions of the Declaration shall govern and control. In the event of a conflict between the provisions of these Articles and the provisions of the Bylaws adopted by the Association, the provisions of these Articles shall govern and control.

IX. BYLAWS

The Association shall have the power to make and alter Bylaws not inconsistent with these Articles of Incorporation, the Declaration or the laws of the State of Colorado, for the administration and regulation of the affairs of the Association. The Members shall adopt the Bylaws of the Association.

X. DISSOLUTION

The Association shall not pay any dividends. No distributions of the corporate assets to Members shall be made until all corporate debts are paid, and then only upon final dissolution of the Association. Upon dissolution and after winding up the affairs of the Association, all assets shall be distributed, transferred and conveyed to the Members pro-rata.

XI. LIMITATION OF LIABILITY

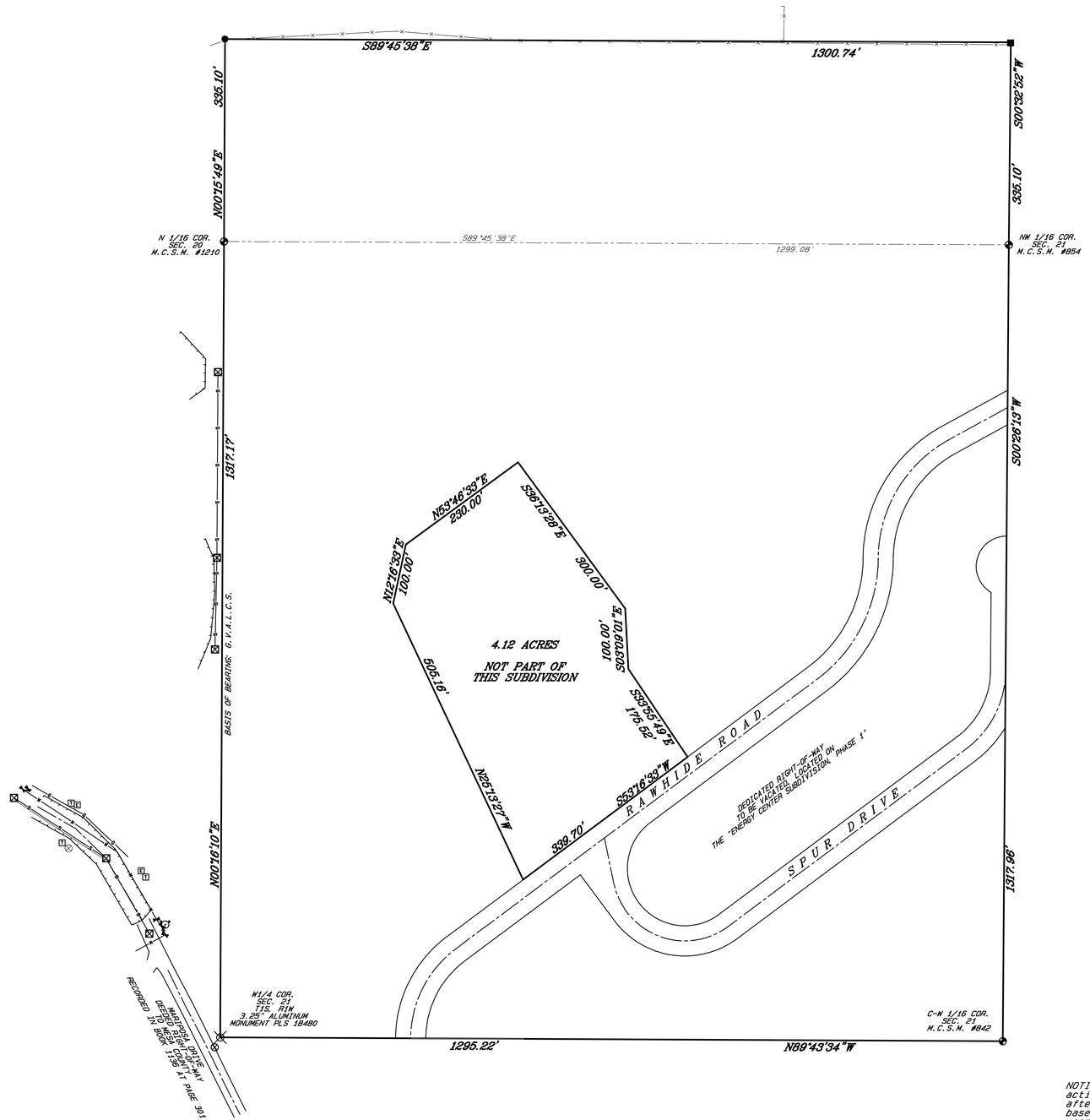
To the fullest permitted by the laws of the State of Colorado, as the same exist or are amended, a director, officer, committee member, or other Member representative of the Association shall not be liable to the Association or its Members for monetary damages for breach of its fiduciary duty except that the foregoing shall not eliminate or limit the liability of a director, officer, committee member, or other Member representative for: any breach of its duty of loyalty to the Association or its Members; acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law; acts specified in C.R.S. 7-128-403 or 7- 128-501(2); or any transaction from which the director, officer, committee member, or other Member representative directly or indirectly derived an improper personal benefit. Any repeal or modifications of this article by the Members of the Association shall be prospective only and shall

not adversely affect any right or protection of a director, officer, committee member, or other Member representative of the Association existing at the time of such repeal or modification.

XIII. INCORPORATOR

The incorporator of this Association is Robert Jones Jr. with an address of 2394 Patterson Road, Suite 201, Grand Junction, Colorado 81505.

IMPROVEMENT SURVEY PLAT



PROPERTY DESCRIPTION

A parcel of land situate in the W 1/2 NW 1/4 of Section 21, Township 1 South, Range 1 West of the Ute Meridian, Mesa County, Colorado, being described as follows:

The south 10 acres of the NW 1/4 NW 1/4 and the SW 1/4 NW 1/4 of said Section 21.

EXCEPTING THEREFROM: Lots 1 - 9, Block 3 and the adjoining dedicated right-of-way known as Spur Drive, Energy Center Subdivision, Phase I as platted and recorded in Plat Book B at Page 55 with a Reception Number 644620 of the Mesa County records.

Said parcel contains 45.36 acres more or less.

LEGEND & ABBREVIATIONS

- FD MESA COUNTY SURVEY MARKER
- FD 3.25" ALUMINUM CAP STAMPED THOMPSON LANGFORD CORP LS 18480
- FD #5 REBAR W/1.5" ALUMINUM CAP STAMPED LS 5933
- SET #5 REBAR W/2" ALUM. CAP STAMPED D H SURVEYS LS 20677

M.C.S.M. = MESA COUNTY SURVEY MARKER

G.V.A.L.C.S. = GRAND VALLEY AREA LOCAL COORDINATE SYSTEM

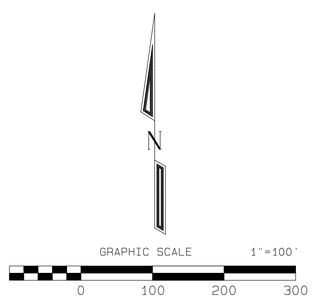
SEC. = SECTION

- ELECTRIC PED./VAULT
- POWER POLE
- GAS METER
- TELEPHONE PED.
- SAN. SEWER MANHOLE
- STORM SEWER MANHOLE
- IRRIG. MANHOLE/RISER
- FIRE HYDRANT
- WATER METER/MANHOLE
- WATER VALVE
- MAILBOX
- LIGHT POLE
- STREET SIGN
- TREE/BUSH
- STORM SEWER INLET

- ELECTRIC LINE
- TELEPHONE/CABLE LINE
- WATER LINE
- SEWER LINE
- IRRIGATION LINE
- LIMITS OF ASPHALT
- FENCE LINE
- DIRECTION OF FLOW
- FLOWLINE
- CONCRETE

SURVEYOR'S STATEMENT

I, Michael W. Drissel, a registered Professional Land Surveyor in the State of Colorado, do hereby state that this survey was performed by me or under my direct responsibility, supervision, and checking. That title research was supplied by First American Heritage Title Company under File Number: 915-H0074568-900-GTO, Amendment No. A.



NOTICE: According to Colorado law you must commence any legal action based upon any defect in the survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of this certification/statement shown hereon.

TWO R & D, LLC

LOCATED IN THE

W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.

D H SURVEYS INC.

118 OURAY AVE. - GRAND JUNCTION, CO.

(970) 245-8749

Designed By M.W.D.	Checked By S.L.H.	Job No.	129-04-03
Drawn By TMODEL	Date JAN. 2008	Sheet	1 OF 1

Scott Peterson

From: Mac Lewis <maclewis1@gmail.com>
Sent: Wednesday, July 19, 2017 11:38 AM
To: Scott Peterson
Subject: Pinnacle Ridge Subdivision

I am writing in regard to the Pinnacle Ridge Subdivision that is being proposed east of Mariposa. I am fully opposed to this subdivision as planned. I own a house that is within 500 ft of the proposed building site and am opposed to this building for a few reasons.

There is concern about the soil quality and steep grade that poses a threat of water runoff and damage to my house and to the surrounding houses of the proposed building site.

Increased traffic on Mariposa is also a concern for those residents in the Ridges and Redlands Mesa communities. Mariposa already has significant road and sidewalk damage without the start of the construction and I can only assume that the damage will increase remarkably. Mariposa is in considerable poor shape given the the amount of low traffic. I would think that the even steeper graded roads of Pinnacle Ridge would have the same problems which would become an ongoing taxpayers' burden after 7 years.

There is also concern that the HSA wouldn't be able to maintain the roads of Pinnacle Ridge as problems and damage occur with such a steep grade of road. This would also become a taxpayer's unfair debt.

Grand Junction is growing incredibly fast so we need to protect our community and protect the open space which makes this place such a wonderful place to live. The proposed building site is home to many mammals, reptiles, birds, rodents, etc that are part of our daily lives living in a smaller town. I urge you to make this area as "green" as possible, incorporating trails and open space as much as possible

I am opposed to the building of this subdivision and have great concern for the wellbeing of my neighborhood. Thank you for your time.

Mac Lewis

--

Mac Lewis

"Yo solo sé que no sé nada." **-Sócrates**

743 Horizon Drive, Suite 372
Grand Junction, CO 81506
970-243-0250 970-243-1721 Fax
orders@bbgj.com

June 9, 2017

Ms. Lisa Cox, AICP
Vortex Engineering, Inc.
2394 Patterson Road, Suite 201
Grand Junction, CO 81505

RE: City open space fee appraisal of 45.36 acres on what will be known as Pinnacle Ridge Filing 1 in Grand Junction, Colorado.

Dear Ms. Cox:

In accordance with your request, I have completed an appraisal of the parcel located at approximately 2400 Mariposa Drive in Grand Junction, Colorado. The site is currently vacant. No entitlements for the approvals that are pending are valued herein. The client is you. The intended user is the city of Grand Junction for city open space fees. You and the City are knowledgeable regarding the Appraisal Process and the neighborhood. You have indicated a Brief Summary Format is adequate.

This report contains the most relevant comparables. There has been limited current sales activity for residential raw ground suitable for development in the area.

The purpose and sole intended use of this Report is to provide market value as raw land for city land use fees. Use of, or reliance upon, this report for any other purpose is prohibited. The scope of this assignment assumes no subdivision approvals through City Planning have occurred. Market value of the "raw" land with the current zoning in place requires research of current sales and trends.

The 45.36 acre Subject parcel as it currently sits is at approximately 2400 Mariposa Drive. It will be Filing 1 of the Pinnacle Ridge subdivision. It is zoned R-2 by the City of Grand Junction. "As is" it is Tax Schedule Numbers 2945-212-00-011, 2945-212-10-001, -002, -003, -004, -005, -006, -007, -008, -009, 2945-212-08-001, -002, -003, -004, -005, -006, -007, -008, -010.

This report has been completed in accordance with the current edition of the Uniform Standards of Professional Appraisal Practice. Typical Assumptions, Limiting Conditions, and Scope apply. They are at the end of this letter. The only applicable approach to value is the Comparable Sales Analysis Approach. The Cost and Income Approaches to value may be considered meaningful in certain markets for vacant land, but they are not meaningful in this area for this type of vacant land.

An inspection of the Subject was conducted with a brief walk on the site on June 2, 2017. Appropriate Plat Maps were reviewed. Additional supporting data has been obtained from your engineers, from Mesa County records, MLS, and conversations with buyers, sellers, and real estate agents active in the area.

Subject photos:



Looking northeast across Subject site from Mariposa Drive



Looking south across Subject site towards Mariposa Drive.



Looking east across Subject site.



Looking west on Mariposa Drive.

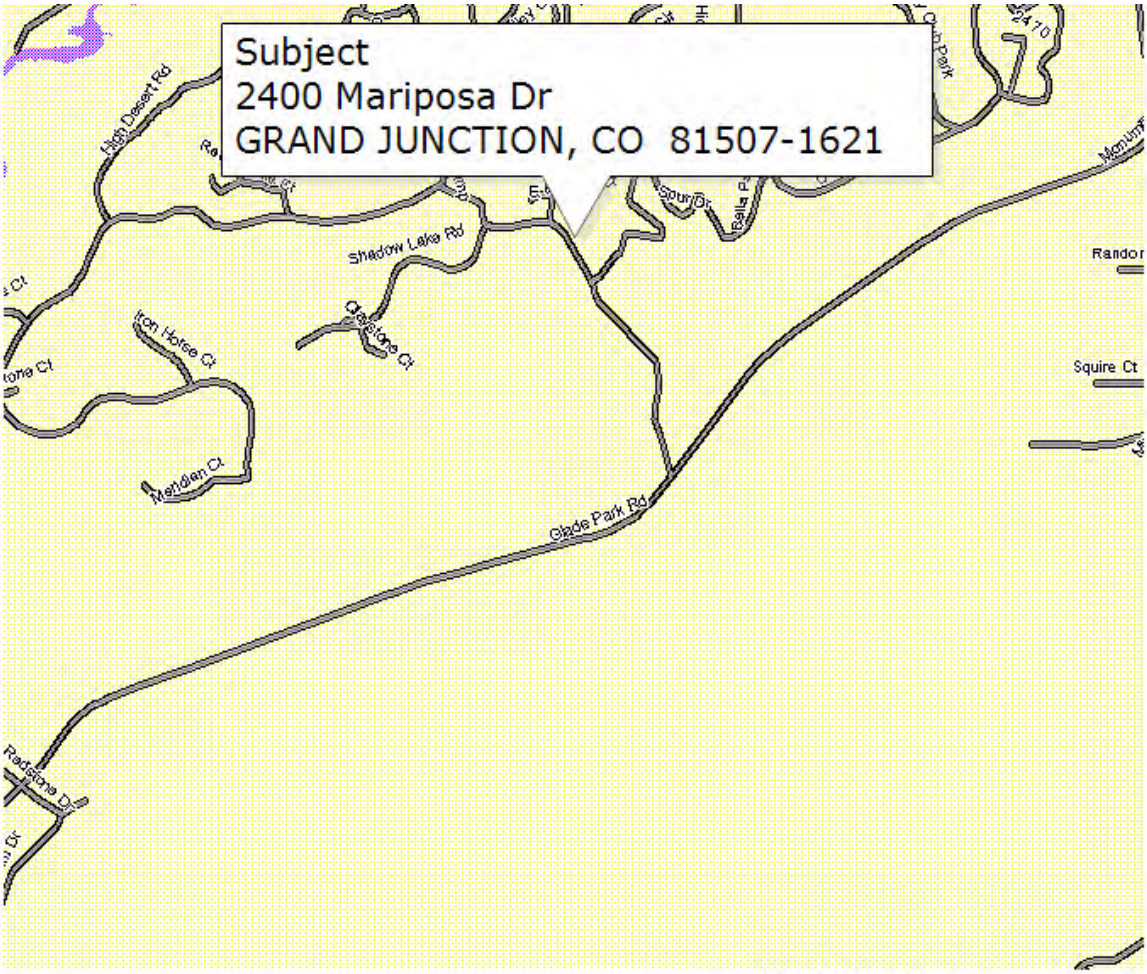
Market value is defined as: The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms, for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller each acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress. Implicit in this definition is the consummation of a sale as of a specified date and the passing of title from seller to buyer under conditions whereby: (1) a buyer and seller are typically motivated: (2) both parties are well informed or well advised, and each acting in what he considers his own best interest: (3) a reasonable time is allowed for exposure in the open market: (4) payment is made in terms of cash in U.S. dollars or in terms of financial arrangements comparable there to: and (5) the price represents the normal consideration for the property sold unaffected by special or creative financing or sales concessions' granted by anyone associated with the sale.
[The Dictionary of Real Estate Appraisal, the Appraisal Institute, 6th Edition, P. 141]

Current Legal Descriptions of the Subject:

- S 10A OF NW4NW4 + SW4NW4 SEC 21 1S 1W EXC BLKS 1-2 + 3 ENERGY CENTER SUB PHASE 1 - 35.00AC
- LOT 1 BLK 1 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W
- LOT 2 BLK 1 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W
- LOT 3 BLK 1 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W
- LOT 4 BLK 1 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W
- LOT 5 BLK 1 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W
- LOT 6 BLK 1 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W
- LOT 7 BLK 1 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W
- LOT 8 BLK 1 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W
- LOT 9 BLK 1 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W
- LOT 1 BLK 2 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W
- LOT 3 BLK 2 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W
- LOT 4 BLK 2 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W
- LOT 5 BLK 2 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W
- LOT 6 BLK 2 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W
- LOT 7 BLK 2 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W
- LOT 8 BLK 2 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W
- LOT 9 BLK 2 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W
- LOT 10 BLK 2 ENERGY CENTER SUB PHASE 1 SEC 21 1S 1W
  (19 parcels total)
- Zoning/Compliance: R-2, City of Grand Junction.



The Subject is that which is in yellow. The paper lots that say R-2 in each of them are the Energy Center paper lots as indicated on the legal descriptions of the Subject. In Pinnacle Ridge Subdivision, Filing 1 they are simply identified as "Lot 103" for future development. They are essentially raw ground "as is".



FloodMap Legend

Flood Zones

- Areas inundated by 500-year flooding
- Areas outside of the 100- and 500-year floodplains
- Areas inundated by 100-year flooding
- Areas inundated by 100-year flooding with velocity hazard
- Floodway areas
- Floodway areas with velocity hazard
- Areas of undetermined but possible flood hazards
- Areas not mapped on any published FIRM

Flood Information

Community: 080117 - GRAND JUNCTION, CITY OF

Property is not in a FEMA special flood hazard area.

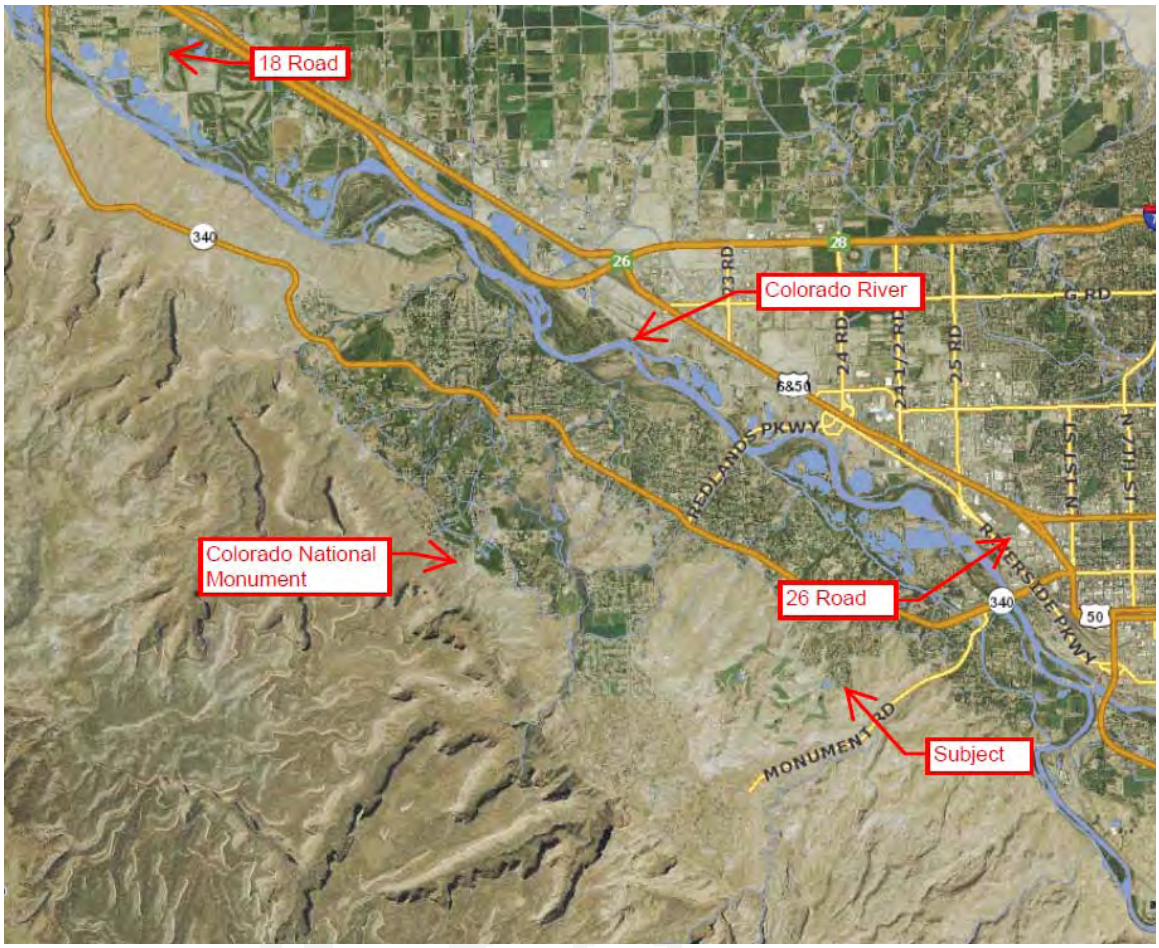
Map Number: 08077C0815F
Panel: 0815F
Zone: X

Map Date: 07/06/2010
FIPS: 08077

Neither Transamerica Flood Hazard Certification (TFHC) nor ACI make any representations or warranties to any party concerning the content, accuracy or completeness of this flood report, including any warranty of merchantability or fitness for a particular purpose. Neither TFHC nor ACI nor the seller of this flood report shall have any liability to any third party for any use or misuse of this flood report.

The Subject is located outside of the 100 and 500-year floodplains, Zone X.

- Neighborhood Data: The property is in an area of above average to good quality single family homes built 1950's to present. Semi to custom, upper price ranges. Excellent appeal. Hilly, rolling terrain with mountains close by and good views. No identical homes. It is 10 to 15 minutes from all services. Boundaries are: the Colorado River North, the Colorado National Monument South, 26 Road East, 18 Road West.

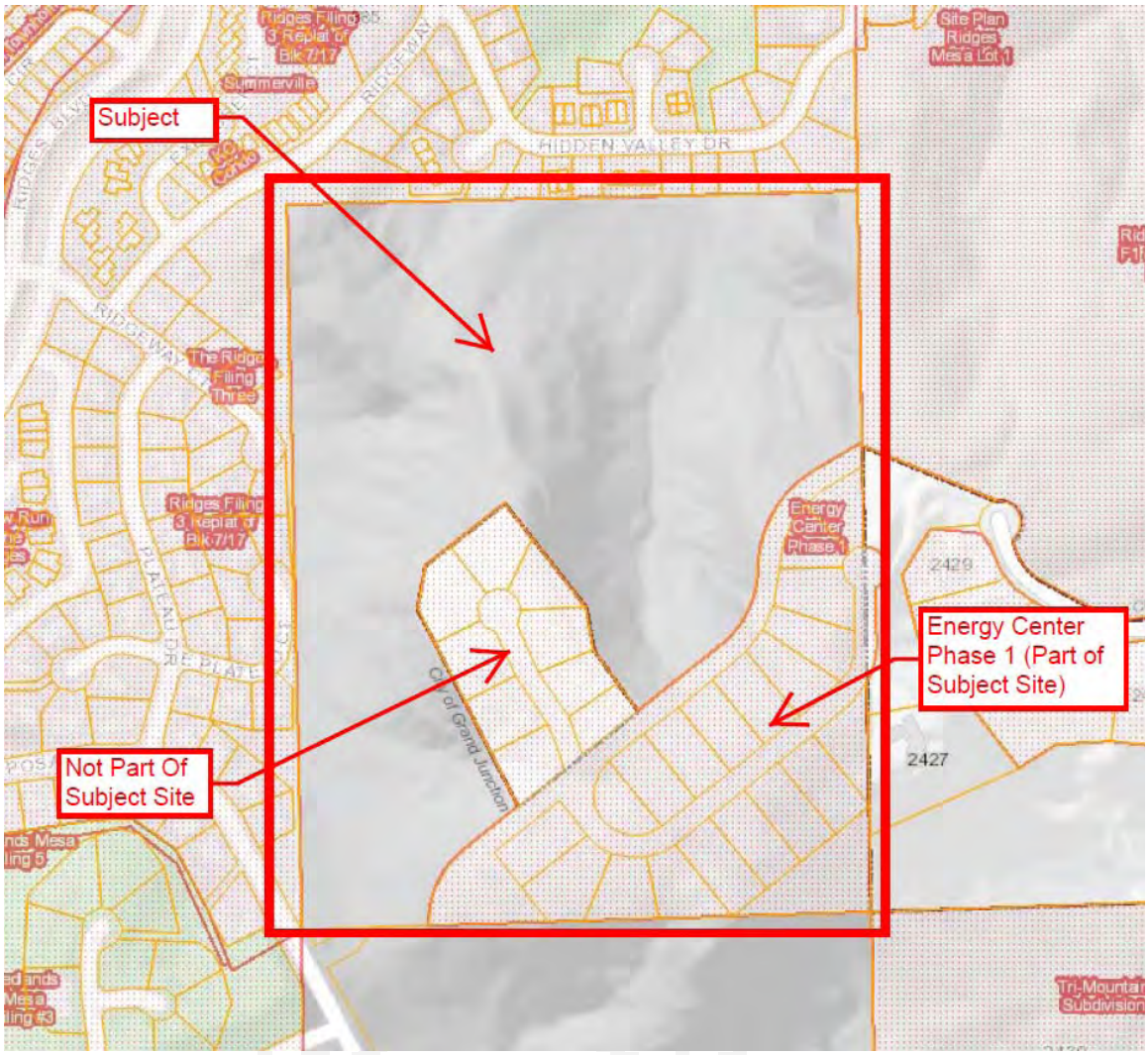


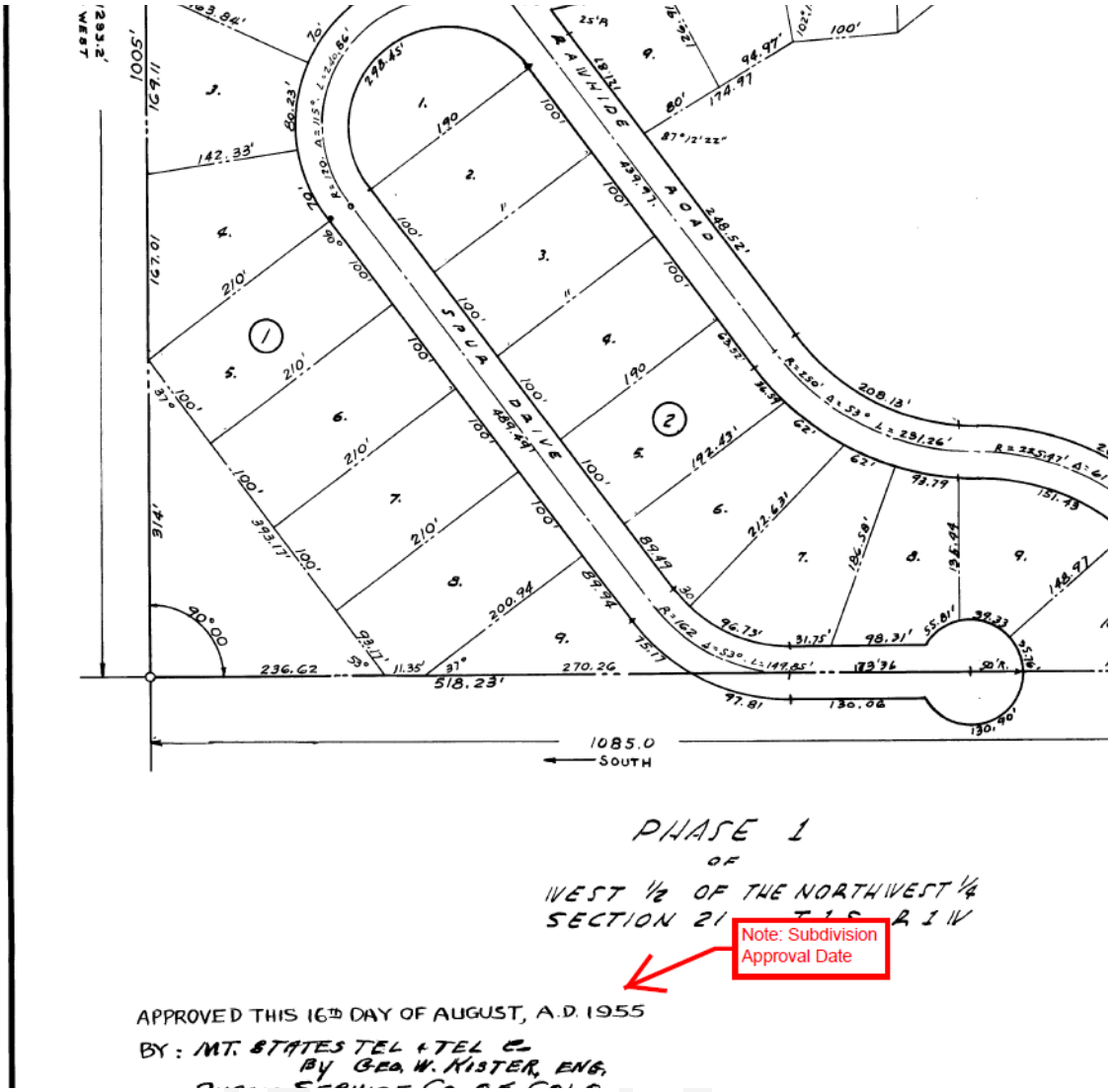
- Subject physical description: Access is currently from Mariposa Drive, from the south.
- Site Comments: For Filing 1, rolling terrain, slopes downward from street grade. Northeast from Filing 1, the site becomes steep and mountainous. 45.36 acres zoned R-2.

Mesa County Aerial Map follows:



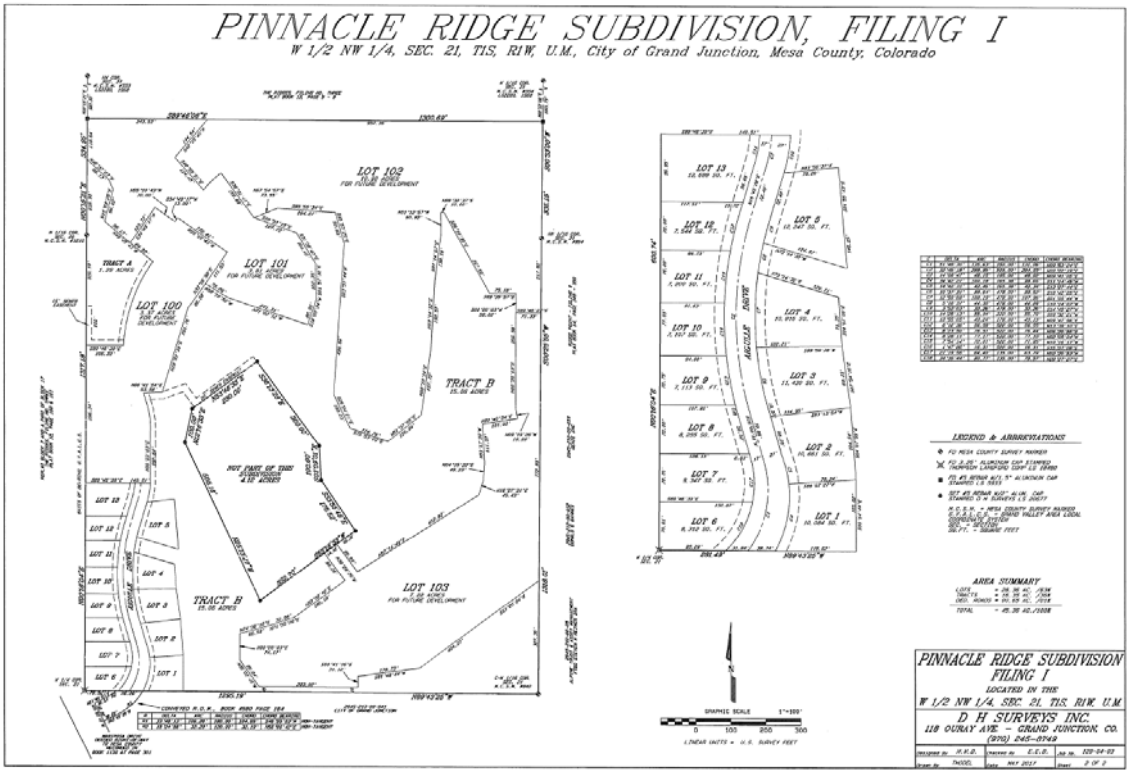
The Subject is outlined in red above with the areas outside blue lines attributable to parcel #2945-212-00-011. The portion in yellow is not part of the Subject site. The area inside the blue lines is a failed subdivision. Energy Center Phase 1 subdivision was platted in 1955. All of its lots and tracts are part of the Subject site, which is why the Subject site has so many parcel numbers. The assessor's plat map is seen in the following illustration:

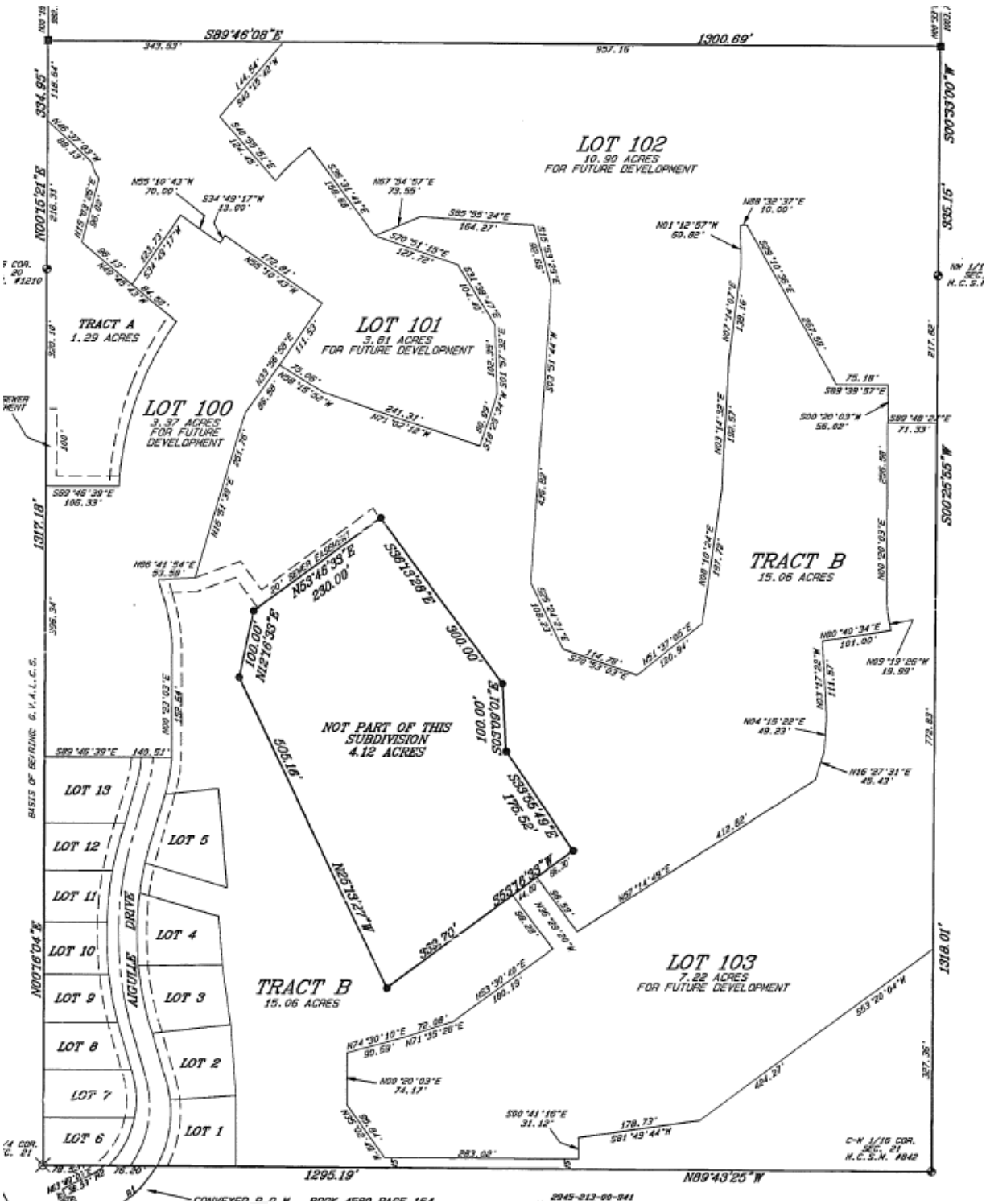

Subject
Energy Center Phase 1 (Part of Subject Site)
Not Part Of Subject Site
Ridges Filing 3 Replat of Blk 7/17
Summerville
HIDDEN VALLEY DR
Site Plan Ridges Mesa Lot 1
The Ridge Filing Three
Ridges Filing 3 Replat of Blk 7/17
Energy Center Phase 1
2429
2427
City of Grand Junction
Tri-Mountain Subdivision

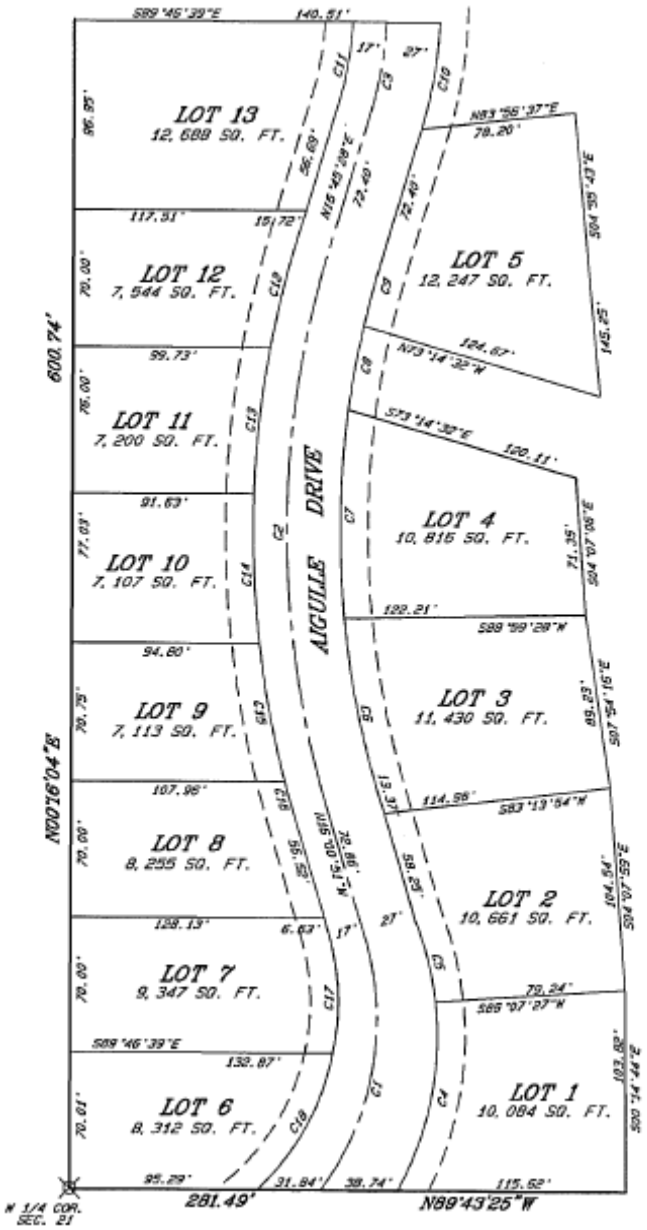


Pinnacle Ridge Subdivision Filing 1's plat hasn't been approved or recorded as of yet according to City Planning's Mr. Scott Peterson (970-244-1430). Their preliminary plans have been submitted, and they are expected to submit their final plan in the next two weeks. If everything goes smoothly, they should complete the approval process by November. However, Ms. Lisa Cox of Vortex Engineering stated that they should have final approval in approximately 7 weeks. They have proposed to build 13 lots in Filing 1. The entire subdivision will have 72 lots.

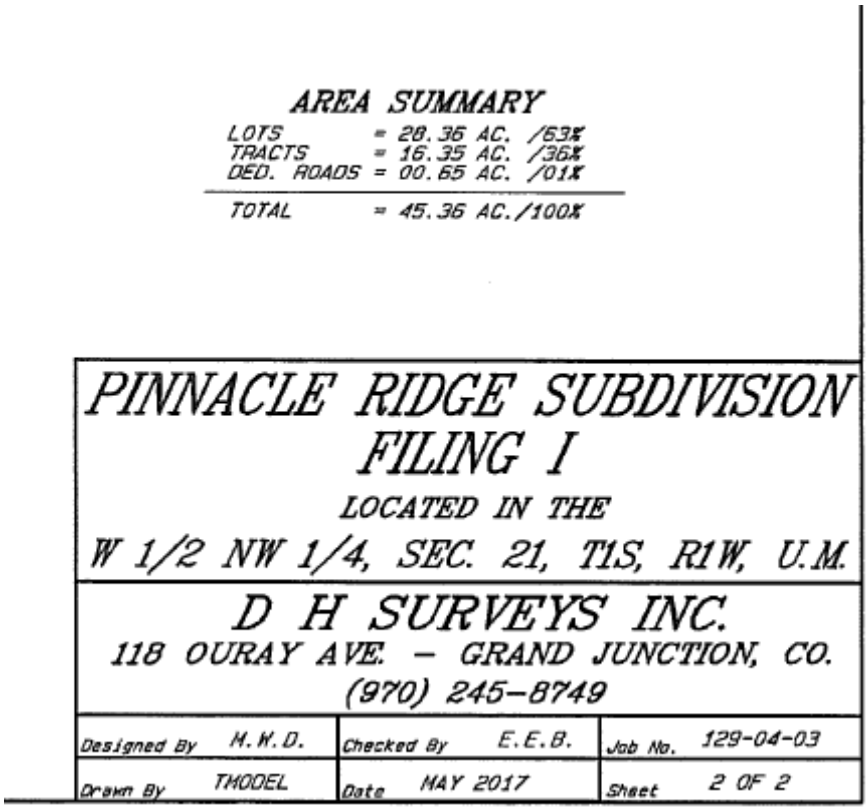
The following plat maps are for informational purposes only. The appraisal does not consider any subdivision plan herein. It should be noted that these are the preliminary plats that have not yet been approved by City Planning.


PINNACLE RIDGE SUBDIVISION, FILING I
W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M., City of Grand Junction, Mesa County, Colorado
LOT 102
LOT 101
LOT 100
TRACT A
TRACT B
LOT 103
NOT PART OF THIS SUBDIVISION
LEGEND & ABBREVIATIONS
AREA SUMMARY
PINNACLE RIDGE SUBDIVISION
FILING I
LOCATED IN THE
W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.
D H SURVEYS INC.
118 OURAY AVE. - GRAND JUNCTION, CO.
(970) 245-8749


S89°46'08"E
1300.69'
LOT 102
10.90 ACRES
FOR FUTURE DEVELOPMENT
LOT 101
3.81 ACRES
FOR FUTURE DEVELOPMENT
TRACT A
1.29 ACRES
LOT 100
3.37 ACRES
FOR FUTURE DEVELOPMENT
TRACT B
15.06 ACRES
NOT PART OF THIS SUBDIVISION
4.12 ACRES
LOT 103
7.22 ACRES
FOR FUTURE DEVELOPMENT
TRACT B
15.06 ACRES
AIGULLE DRIVE
LOT 13
LOT 12
LOT 11
LOT 10
LOT 9
LOT 8
LOT 7
LOT 6
LOT 5
LOT 4
LOT 3
LOT 2
LOT 1
1295.19'
N89°43'25"W
1317.18'
1318.01'
S00°33'00"W
S00°25'55"W
N00°15'21"E
N00°16'04"E


LOT 13
12, 688 SQ. FT.
LOT 12
7, 944 SQ. FT.
LOT 11
7, 200 SQ. FT.
LOT 10
7, 107 SQ. FT.
LOT 9
7, 113 SQ. FT.
LOT 8
8, 255 SQ. FT.
LOT 7
9, 347 SQ. FT.
LOT 6
8, 312 SQ. FT.
LOT 5
12, 247 SQ. FT.
LOT 4
10, 815 SQ. FT.
LOT 3
11, 430 SQ. FT.
LOT 2
10, 661 SQ. FT.
LOT 1
10, 084 SQ. FT.
AIGUILLE DRIVE
600.74'
N00°16'04"E
281.49'
N89°43'25"W
N 1/4 COR. SEC. 21

A site survey was provided by Vortex Engineering and lists a site size of 45.36 acres. This figure has been relied upon for the Subject's site size, and is assumed to be correct.



AREA SUMMARY

LOTS	= 28.36 AC.	/63%
TRACTS	= 16.35 AC.	/36%
DED. ROADS	= 00.65 AC.	/01%
TOTAL	= 45.36 AC.	/100%

PINNACLE RIDGE SUBDIVISION
FILING I
LOCATED IN THE
W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.

D H SURVEYS INC.
118 OURAY AVE. – GRAND JUNCTION, CO.
(970) 245-8749

Designed By M.W.D.	Checked By E.E.B.	Job No. 129-04-03
Drawn By THODEL	Date MAY 2017	Sheet 2 OF 2

Subject: Sales History and Listing History:

Sales & Conveyance Information **

Date	Price	Reception Number (Click for Recorded Document)	Document Type
02/25/2005	$0.00	2240511	ANNEXATION
01/25/2005	$425,000.00	2236038	Warranty Deed
		Search Clerk Records	Document Type Descriptions

The Subject property has not been listed for sale or sold in at least the last three years. The Subject (including all of the Energy Center Subdivision failed paper lots) was purchased on January 25, 2005 for $425,000. A copy of the warranty deed (including legal descriptions) can be found at the end of this report. 2005 was at the height of the Grand Junction real estate market boom. Not all properties have recovered to 2005 levels.

Reasonable Exposure and Marketing Times, Highest and Best Use:

- Reasonable exposure period is two years. Normal marketing time, if priced competitively on the open market, is estimated to be three years. This is based on competitive sales and listings marketing times.

- Highest and Best Use "as is" and "as if no entitlements are in place" is as vacant land with the potential to eventually be a single family residential subdivision. Considered in this use is that which is legally permissible, physically possible, financially feasible, and maximally productive.

The Sales Comparison Approach

Sales of large parcels of land have been scarce in the Redlands over the past two years, as this desirable area has few such parcels available. This necessitated the inclusion of some smaller comparables in the Redlands, as well as a sale in North Grand Junction. Four of the comparables presented are in the Redlands, with three of them being located in very close proximity to the Subject. Furthermore, all five comparables were purchased for the development of residential subdivisions.

A location map follows:



The most representative sales follow. The applicable unit of comparison is price per acre.

Sale # / Sale Date / MLS or Reception # / DOM	Site Size (acres) / Location/Address / Density	Sale Price / Adjusted Sale Price / No. of Lots/Units	$/Acre / $/Unit	TSN / Description
1 4/11/2016 MLS #674743 DOM: 390	24.03 818 26 Rd R-1	$975,000 $375,000 22	$40,574 $17,045	Formerly 2701-263-00-002; now 2701-263-50-020 Freedom Heights subdivision in North Grand Junction. 6,146 sq.ft., 1973 built single family home on site. The listing agent attributed $525,000 to the improvements, which has been backed out of the $975,000 sale price. Existing home was platted into the subdivision on a 0.84 acre lot, which has been subtracted from the 24.87 acre site.
2 6/9/2017 MLS #684479 DOM: 248	35.11 1851 Broadway AFT	$300,000 N/A	$8,545	Part of 2697-333-00-790 Recent Redlands sale. 1800 sq.ft. Class S building on site. Listing agent gave it no contributory value. Parcel had subdivision potential, but buyers will be using it for a single-family home site, per listing agent.
3 1/9/2015 MLS #666403 DOM: 273	3.69 2312 Hacienda Dr R-4	$308,000 14	$83,469 $22,000	2945-083-00-082 Located at the end of Hacienda Drive in the Redlands. Level ground. Slated for 14 lots. Density - 3.8/acre. Offered as raw land -no approvals. Sale owner financed. Didn't close until buyer/developer received final plat approval
4 2/27/2015 MLS #655241 DOM: 1230	51.04 Approx. 384 High Ridge Dr PD	$415,000 101	$8,131 $4,109	2945-212-18-001, -002 REO. Sketch plan for 101 lots. Will consist of 3 phases. 2 filings for Phase I. Filing I will consist of 5 lots. Preliminary plan has been approved. Filing II for Phase I (10 lots) is still pending public review. Density - 1.98/acre. High up front development costs expected for Phase II & III due to terrain.
Subject	**45.36 acres** **R-2**	**Median Adjusted Sale Price/Acre:** **Average Adjusted Sale Price/Acre:**	**$24,559** **$35,180**	**Median Adjusted Sale Price/Unit:** **Average Adjusted Sale Price/Unit:**	**$17,045** **$14,385**

Sale 1 is the only comparable not located in the Redlands. However, it has been included since large land sales purchased for subdivision development were scarce in the Redlands. Also, this comparable is located in a desirable area in North Grand Junction. The Freedom Heights Subdivision consists of 22 lots. All infrastructure is now in place and the lots are available for sale. The Buyer paid for all entitlements and infrastructure. Homes are expected to be in the $400,000+ range, with the 0.69 to 0.88 acre lots selling for $115,000 to $145,000. The density is more marketable than the Subject. There are no phases, no large capital outlay besides the initial subdivision infrastructure. No adjustment for density is applicable.

Sale 2 was a 35.11 acre parcel off Broadway. There was an 1,800 square foot, Class S storage building on the site, which the listing agent gave no value to. Although the buyers reportedly intend to use the site to build a single-family residence, the site did have subdivision potential.

Sale 3 is the South Rim Hollow Subdivision. This 14-lot single-family subdivision had 0.19 to 0.25 acre lots listed from $79,900 to $88,000 with homes ranging from $360,000 to $409,000.

Sale 4 actually borders the northeast portion of the Subject site. It was lender owned at the time of sale. A positive adjustment under conditions of sale is appropriate for this comp. Purchased for the development of the Ridges Mesa Subdivision, this 51.04 acre site consisted of two parcels. There were no plans other than a brief minimal concept plan drawn up, much less ever in process for a subdivision at that time. According to Mr. Dave Thornton of the Planning Department, Phase I will consist of two filings. Filing I off of High Ridge Drive has preliminary plan approval and is close to completing the application process. It will be just 5 lots, with an additional 10 lots planned for Filing II of Phase I. This filing is still pending further public review. Mr. Thornton stated there would be two more phases to complete the subdivision. The future phases are expected to have higher development costs due to the steep terrain. Mr. Thornton also went on to say that utilities were not a limiting factor for the subdivision, as all were located in High Ridge Drive.

Market condition adjustments were applied to Comps 3 and 4, which had the oldest sale dates presented. Comp 3 had favorable financing terms, as it was owner-carried. A location adjustment was allocated to Comp 1, which is located in North Grand Junction. Comp 1 was again adjusted for zoning density potential. Comps 2 and 3 also had inferior zoning density, warranting an upward adjustment. Conversely, Comp 4 had superior zoning density. Finally, the site sizes of Comps 1 and 3 were both much smaller than the Subject, necessitating downward adjustments. After adjustments, the comparables ranged from $9,399/acre to $41,734/acre with an average and median of $20,294/acre and $15,022/acre, respectively. Comp 4 was lender owned. It tempers the final value conclusion. It is most similar in topography and location. The next most similar is Sale 2. Both adjust to slightly under $10,000 per acre.

Conclusion:

The strength of the comparables presented is that most were purchased for development of residential subdivisions, with three of the four sales taking place in the Redlands. The weakness of the comparables is that two of the sales are much smaller sites. The Redlands is a very desirable area in the Grand Junction market. Within the Redlands, the Subject has a good location near Redlands Mesa with typical views for this area. Though Filing 1 is much more level, future filings can expect significantly higher development costs due to the steep terrain. It could take many years for build out.

After accounting for the Subject's site size, topography, challenges, zoning density and neighborhood, the "raw land without entitlements" market value of the Subject is estimated to be $18,000 per acre for 45.36 acres equates to $816,480.

As of June 2, 2017 the indicated raw land market value, prior to any subdivision approvals, rounded to the nearest $5,000, was:

Eight Hundred Twenty Thousand Dollars
($820,000)

USPAP CERTIFICATION:

I certify that to the best of my knowledge and belief:

1. The statements of fact contained in this report are true and correct.
2. The reported analysis, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and they are my personal, impartial, and unbiased professional analyses, opinions, and conclusions.
3. I have no present or prospective interest with respect to the parties involved, unless otherwise specified in this report.
4. I have no bias with respect to the property that is the subject of this report or the parties involved with this assignment.
5. My engagement in this assignment was not contingent upon developing or reporting predetermined results.
6. My compensation for completing this assignment is not contingent upon the development or reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value opinion, the attainment of a stipulated result, or the occurrence of a subsequent event directly related to the intended use of the appraisal.
7. My analysis, opinions, and conclusions were developed, and this report has been prepared, in conformity with the Uniform Standards of Professional Appraisal Practice.
8. I have not performed services, as an appraiser or in any other capacity, regarding the property that is the subject of this report within the three-year period immediately preceding acceptance of this assignment.



Mary Jane Broom, MAI, SRA
Colorado Certified General Appraiser
License # CG01313418, expires 12/31/17

CERTIFICATE OF APPRAISAL

I certify that, to the best of my knowledge and belief:

1. The statements of fact contained in this report are true and correct.
2. I have no present or prospective interest in the property that is the subject of this report, and I have no personal interest or bias with respect to the parties involved.
3. My compensation is not contingent upon the reporting of a predetermined value or direction in value that favors the cause of the client, the amount of the value estimate, the attainment of a stipulated result, or the occurrence of a subsequent event. The report complies with all statutes, rules, and regulations prohibiting discrimination on the basis of race, color, religion, national origin, sex, marital status, age, or location of property. The appraisal assignment was not based on a requested minimum valuation, a specific valuation, or the approval of a loan in the determination of Market Value.
4. My analyses, opinions, and conclusions were developed, and this report has been prepared in conformity with the requirements of the Code of Professional Ethics and the Standards of Professional Practice of the Appraisal Institute.
5. The use of this report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.

6. Mary Jane Broom, MAI, SRA, is currently certified under the continuing education program of the Appraisal Institute.
7. Mary Jane Broom, MAI, SRA, made a personal inspection of the property that is the subject of this report. She is licensed to appraise commercial real estate in Colorado. Certified General Appraisal License #CG01313418 expires 12/31/2017.
8. The reported analysis, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and they are my personal, unbiased professional analyses and conclusions.
9. This report is subject to the contingent and limiting conditions attached to and made a part of this report.
10. No one provided significant professional assistance to the person(s) signing this report.
11. Darren Shadix is an appraiser trainee working under Mary Jane Broom, MAI, SRA, AI. He aids in measuring the Subject, producing sketches and photo exhibits, locating and verifying and driving by comparables, and writing drafts of portions of the appraisal report. He also aids in determining market derived adjustments for the analysis, along with identifying any unusual circumstances of any comps as needed. In no way does he exceed his level of experience. No one provided significant professional assistance to the person(s) signing this report.
12. The reported analyses, opinions, and conclusions are limited only by the reported assumptions and limiting conditions, and is my personal, unbiased professional analyses and conclusions.
13. This report is subject to the contingent and limiting conditions attached to and made a part of this report.



Mary Jane Broom, MAI, SRA
Colorado Certified General Appraiser
License # CG01313418, expires 12/31/17

GENERAL ASSUMPTIONS

This appraisal report has been made with the following general assumptions:

1. No responsibility is assumed for the legal description or for matters including legal or title considerations. Title to the property is assumed to be good and marketable unless otherwise stated.
2. The property is appraised free and clear of any and all liens or encumbrances unless otherwise stated.
3. Responsible ownership and competent property management are assumed.
4. The information furnished by others is believed to be reliable. However, no warranty is given for its accuracy.
5. All engineering is assumed to be correct. The plot plans and illustrative material in this report are included only to assist the reader in visualizing the property.
6. It is assumed that there are no hidden or non-apparent conditions of the property, subsoil, or structures that render it more or less valuable unless specifically disclosed, discusses, and considered in the report. No responsibility is assumed for such conditions or for arranging for engineering studies that may be required to discover and/or clarify requirements to address the concerns.
7. It is assumed that there is full compliance with all applicable federal, state, and local environmental regulations and laws unless noncompliance is stated, defined, and considered in the appraisal report.

8. It is assumed that all applicable zoning and use regulations and restrictions have been complied with, unless non-conformity has been stated, defined, and considered in the appraisal report.
9. It is assumed that all required licenses, certificates of occupancy, consents, or other legislative or administrative authority from any local, state, or national government or private entity or organization have been or can be obtained or renewed for any use on which the value estimate contained in this report is based.
10. It is assumed that the utilization of the land improvements is within the boundaries or property lines of the property described and that there is no encroachment or trespass unless noted in the report.

LIMITING CONDITIONS

This appraisal report has been made with the following general limiting conditions:

1. The distribution, if any, of the total valuation in this report between land and improvements applies only under the stated program of utilization. The separate allocations for land and buildings must not be used in conjunction with any other appraisal and are invalid if so used.
2. Possession of this report, or a copy thereof, does not carry with it the right of publication. It may not be used for any purpose by any person other than the party to whom it is addressed without the written consent of the appraiser and in any event only with proper written qualification and only in its entirety.
3. The appraiser herein by reason of this appraisal is not required to give further consultation, testimony, or be in attendance in court with reference to the property in question unless arrangements have been previously made.
4. Neither all nor any part of the contents of this report (especially any conclusions as to value, the identity of the appraiser, or the firm with which the appraiser is connected) shall be disseminated to the public through advertising, public relations, news, sales, or other media without the prior written consent and approval of the appraiser.
5. In this appraisal assignment, the existence of potentially hazardous material used in the construction or maintenance of the building, such as the presence of urea formaldehyde foam insulation, and/or existence of toxic waste, which may or may not be present on the property, has not been considered unless specifically addressed. The appraisers are not qualified to detect such substances. I urge the client to retain an expert in this field if desired.
6. A statistically high number of residential properties are affected by radon in Colorado; a radon detection test is the responsibility of the client.
7. I was not required to report a predetermined value that favors the cause of the client or any related party, the amount of the value estimate, the attainment of a specific result, or the occurrence of a subsequent event in order to receive my compensation and/or employment for performing the appraisal. I did not base the appraisal report on a requested minimum valuation, a specific valuation, or the need to approve a specific mortgage.
8. Mary Jane Broom, MAI, SRA is certified and is licensed to appraise commercial real estate in Colorado. Her interpretation of the Appraisal Foundation, USPAP, the Appraisal Institute and the State of Colorado regulations has been complied with.
9. Unless otherwise noted, personal property and/or intangible assets are not included in the value estimate contained in this appraisal report.
10. Many types of appraisal analysis require the formulation of financial projections. The achievement of any such projections will be affected by fluctuating economic

conditions and is dependent upon the occurrence of other future events that cannot be assured. As a result, actual events may well vary from projections, and such variations may be material.

11. Except as discussed in this report, the author(s) take no responsibility for, and reach no final conclusions regarding, indirect costs of a project based on political processes including planning and other government processes, including planning and other government functions, whereby changes in standards of construction, density, etc. can occur; indirect charges for highways, education, or other items that can be charged to a project; or various moratoria that can delay a project. Governmental processes can change suddenly and substantially affect costs and values, and users of this report are cautioned to make their own inquiry and apply their own judgment regarding these matters, as applicable.
12. The author(s) profess no expertise in law, macroeconomics, or any field of specialization other than real estate appraisal, and base all considerations of the future (such as inflation rates, vacancy factors, absorption rates, etc.) upon reasonable analysis of date and opinions of others, to derive usable opinions only for the purpose of customary appraisal analyses. The author(s) assume no responsibility for predicting actual events.
13. This appraisal report and the value stated herein shall not be used or relied upon in any of the matters pertaining to any syndication nor any State or Federal Securities and Exchange Commission registrations.
14. The value estimate set forth herein relies in part upon data provided by the client, client's representatives, owner, owner's representatives, professional consultants, and/or other available sources. It is the responsibility of the client to carefully read the appraisal report, and advise the author(s) of any errors or omissions of which the client is aware, prior to utilizing the report or making it available to any third party.

Qualifications of Mary Jane Broom, MAI, SRA, AI
743 Horizon Court, Suite 372, Grand Junction, CO 81506
(970) 243-0250 Fax (970) 243-1721 email: Orders@bbgj.com

- PROFESSION:

Real Estate Appraiser and Consultant

- DESIGNATIONS:

MAI and SRA of the Appraisal Institute. (MAI since 1985 and SRA since 1982)

- LICENSE:

Certified General Appraiser in Colorado – CG01313418, License expires December 31, 2017.

- EDUCATION:

Bachelor of Arts, College of Journalism, Marquette University, Milwaukee, Wisconsin.
As of the date of the appraisal, Mary Jane Broom has completed the requirements under the continuing education program of the Appraisal Institute.

Successful completion of the following courses: Yellow Book/UASFLA by ASFMRA, Litigation Valuation through the Appraisal Institute, Residential l Appraisal (101), Commercial Appraisal (201), Narrative Report Seminar, and R-2 exam through the Society of Real Estate Appraisers, and Case Studies in Real Estate Valuation, Valuation Analysis and Report Writing, Capitalization Theory and Techniques Parts I, II and III, Introduction to Real Estate Investment Analysis, and Standards of Professional Practice through the American Institute of Real Estate Appraisers. Introduction to Real Estate, Appraisal I and Appraisal II through the University of Colorado.

Seminars and Webinars completed in the last five years:

2016: Fannie Mae Appraisal Guidelines: Debunking the Myths (McKissock)
2016: 34th Annual Demography Summit (Colorado Department of Local Affairs)
2016: Energy Efficiency and Contributory Value, Supporting Adjustments (Northern Colorado Appraiser Association)
2016: FHA Education, BOREA Investigations, Conservation Easement Update (Northern Colorado Appraiser Association)
2015: Avoiding Mortgage Fraud for Appraisers (McKissock)
2015: The New FHA Handbook 4000.1 (McKissock)
2015: Online Cool Tools; New Technology for Real Estate Appraisers (AI)
2015: Appraising Manufactured Homes (McKissock)
2015: Residential Construction (McKissock)
2015: GASB Final Statement of Fair Value Measurement and Application (AI)
2015: You Say Fracking, I Say Frac'ing: Let's Talk Valuation (AI)
2015: Impact of Collateral Underwriting for Appraisers and Lenders (AI)
2015: Improving Appraisal Reports Used for Financing Institutions – Strategies from Reviewers (AI)
2014: Current Issues Regarding Appraisals of Seniors Housing & Long-Term Care Properties (AI)
2013: Appraisal of Real Estate 14th Edition Changes (AI)
2013: Carving Out Your Legal Niche: Do's and Don'ts of Litigation Support (AI)

Completed 7-Hour National USPAP Update (AI) as required every other year.

- REAL ESTATE EXPERIENCE:

Co-owner of B & B Appraisal, Inc., in Grand Junction, Colorado which was founded in 1983. Have been appraising real estate since 1975, beginning in the Boulder County Assessor's office. From 1973 to 1975, researched commercial and vacant land sales and

trends in the Denver area for the Rocky Mountain Research Institute. Appraised residential properties for First Federal Savings in Denver from 1977 to 1979. Was independent residential and commercial fee appraiser for Biber & Co., Inc. in Grand Junction from 1979 to 1983. On the HUD fee panel since 1979 and am currently approved for FHA reports. On VA panel 1979 to 1993.

- APPRAISAL EXPERIENCE:

Appraisal assignments encompassing single-family and multi-unit dwellings, proposed residential and commercial subdivisions, townhomes, condominiums, and projects of each; plus existing and proposed commercial and industrial properties; vacant land; farms and ranches.

- EXPERT WITNESS:

Qualified as an expert witness in Federal District Court and in Mesa County and Garfield County District Courts.

- WESTERN COLORADO CITIES I HAVE WORKED IN:

Aspen	Delta	Lake City
Clifton	Mesa	Whitewater
Fruit	Meeker	Palisade
Glade Park	Rangely	Battlement Mesa
Grand Junction	Nucla	Ouray
Montrose	Parachute	Craig
Norwood	Naturita	Ridgway
Ouray	Rifle	Glenwood Springs
Silt	New Castle	Loma
Telluride	Collbran	1/17


Colorado Department of Regulatory Agencies
Division of Real Estate
Mary Jane Broom
Certified General Appraiser

CG.001313418 — License Number
01/01/2016 — Issue Date
Active — License Status
12/31/2017 — Expiration
Verify this license at http://dora.colorado.gov/dre
Director: Marcia Waters
Licensee Signature

SUBJECT WARRANTY DEED

3 PAGE DOCUMENT

BK 3826 PG 220

2236038 BK 3826 PG 220-222
01/28/2005 10:29 AM
Janice Ward CLK&REC Mesa County, CO
RecFee $15.00 SurChg $1.00
DocFee $42.50

After Recording Return to:
Two R & D, LLC
1880 K Road
Fruita, CO 81521

Recorded by
First American Heritage Title Co.

WARRANTY DEED

This Deed, made **January 25, 2005**
Between **Claude A. Barlieb, also known as Claude A. Barlieb, Jr. and Marie L. Barlieb** of the County **Mesa,** State of **COLORADO,** grantor(s) and **Two R & D, LLC, a Colorado limited liability company,** whose legal address is **1880 K Road, Fruita, CO 81521,** County of **Mesa,** and State of **COLORADO,** grantee.
WITNESS, That the grantor, for and in the consideration of the sum of **FOUR HUNDRED TWENTY-FIVE THOUSAND AND 00/100 DOLLARS ($425,000.00)** the receipt and sufficiency of which is hereby acknowledged, has granted, bargained, sold and conveyed, and by these presents does grant, bargain, sell, convey and confirm, unto the grantee, their heirs and assigns forever, all the real property together with improvements, if any, situate, lying and being in the County of **Mesa,** State of **COLORADO** described as follows:

See Attached Exhibit "A"

H0032984 / 154500

also known by street and number as **Vacant Land, Grand Junction, CO**
TOGETHER with all and singular hereditaments and appurtenances, thereunto belonging, or in anywise appertaining, and the reversion and reversions, remainder and remainders, rents issues and profits thereof, and all the estate, right, title, interest, claim and demand whatsoever of the grantor, either in law or equity, of, in and to the above bargained premises, with the hereditaments and appurtenances.
TO HAVE AND TO HOLD said premises above bargained and described, with the appurtenances, unto the grantee, his heirs and assigns forever. And the grantor, for himself, his heirs and personal representatives, does covenant, grant, bargain and agree to and with the grantee, his heirs and assigns, that at the time of the ensealing and delivery of these presents, he is well seized of the premises above conveyed, has good, sure, perfect, absolute and indefeasible estate of inheritance, in law, in fee simple, and has good right, full power and lawful authority to grant, bargain, sell and convey the same in manner and form as aforesaid, and that the same are free and clear from all former and other grants, bargains, sales, liens, taxes, assessments, encumbrances and restrictions of whatever kind of nature so ever, **except for taxes for the current year, a lien but not yet due and payable, and those specific Exceptions described by reference to recorded documents as reflected in the Title Documents accepted by Buyer in accordance with section 8a (Title Review) of the contract dated July 26, 2003, between the parties.**

The grantor shall and will WARRANT AND FOREVER DEFEND the above-bargained premises in the quiet and peaceable possession of the grantee, his heirs and assigns, against all and every person or persons lawfully claiming the whole or any part thereof. The singular number shall include the plural, the plural the singular, and the use of any gender shall be applicable to all genders.
IN WITNESS WHEREOF, the grantor has executed this on the date set forth above.

SELLERS:

CHB
Claude A. Barlieb

Marie L. Barlieb
Marie L. Barlieb

STATE OF COLORADO
COUNTY OF **MESA** }ss:

The foregoing instrument was acknowledged, subscribed and sworn to before me **January 25, 2005** by **Claude A. Barlieb and Marie L. Barlieb.**

Witness my hand and official seal.

NOTARY PUBLIC TAMARA M. HEINE STATE OF COLORADO
My Commission Expires 08/24/2008

Tamara M Heine
Notary Public
My Commission expires:

ESCROW NO. 915-H0032984-097-THE

WD-Warranty Deed

BK 3826 PG 221

Exhibit A

Parcel 1:

The SW1/4 of the NW1/4 and the South 10 acres of the NW1/4 of the NW1/4 of Section 21, Township 1 South, Range 1 West of the Ute Meridian;
EXCEPT Blocks 1, 2 and 3 of
The Energy Center Subdivision, Phase 1

Parcel 2:

Lot 1 in Block 1 of
The Energy Center Subdivision, Phase 1

Parcel 3:

Lot 2 in Block 1 of
The Energy Center Subdivision, Phase 1

Parcel 4:

Lot 3 in Block 1 of
The Energy Center Subdivision, Phase 1

Parcel 5:

Lot 4 in Block 1 of
The Energy Center Subdivision, Phase 1

Parcel 6:

Lot 5 in Block 1 of
The Energy Center Subdivision, Phase 1

Parcel 7:

Lot 6 in Block 1 of
The Energy Center Subdivision, Phase 1

Parcel 8:

Lot 7 in Block 1 of
The Energy Center Subdivision, Phase 1

Parcel 9:

Lot 8 in Block 1 of
The Energy Center Subdivision, Phase 1

Parcel 10:

Lot 9 in Block 1 of
The Energy Center Subdivision, Phase 1

Parcel 11:

Lot 1 in Block 2 of
The Energy Center Subdivision, Phase 1

Parcel 12:

Lot 3 in Block 2 of
The Energy Center Subdivision, Phase 1

Parcel 13:

Lot 4 in Block 2 of
The Energy Center Subdivision, Phase 1

Parcel 14:

Lot 5 in Block 2 of
The Energy Center Subdivision, Phase 1

Parcel 15:

Lot 6 in Block 2 of
The Energy Center Subdivision, Phase 1

Parcel 16:

Lot 7 in Block 2 of
The Energy Center Subdivision, Phase 1

Parcel 17:

Lot 8 in Block 2 of
The Energy Center Subdivision, Phase 1

Parcel 18:

Lot 9 in Block 2 of
The Energy Center Subdivision, Phase 1

Parcel 19:

Lot 10 in Block 2 of
The Energy Center Subdivision, Phase 1

Scott Peterson

From: Stephanie Marsicovetere <smarsi18@gmail.com>
Sent: Friday, June 30, 2017 8:45 PM
To: Scott Peterson
Subject: Pinnacle Ridge Subdivision

I am writing in regard to the Pinnacle Ridge Subdivision that is being proposed east of Mariposa. I own a house that is within 500 ft of the proposed building site and am opposed to this building for a few reasons.
There is concern about the soil quality and steep grade that poses a threat of water runoff and damage to my house and to the surrounding houses of the proposed building site.

Increased traffic on Mariposa is also a concern for those residents in the Ridges and Redlands Mesa communities. Mariposa already has significant road and sidewalk damage without the start of the construction and I can only assume that the damage will increase remarkably. Mariposa is in considerable poor shape given the the amount of low traffic. I would think that the even steeper graded roads of Pinnacle Ridge would have the same problems which would become an ongoing taxpayers' burden after 7 years.

There is also concern that the HSA wouldn't be able to maintain the roads of Pinnacle Ridge as problems and damage occur with such a steep grade of road. This would also become a taxpayer's unfair debt.

Grand Junction is growing incredibly fast so we need to protect our community and protect the open space which makes this place such a wonderful place to live. The proposed building site is home to many mammals, reptiles, birds, rodents, etc that are part of our daily lives living in a smaller town. I urge you to make this area as "green" as possible, incorporating trails and open space as much as possible

I am opposed to the building of this subdivision and have great concern for the wellbeing of my neighborhood. Thank you for your time.

Stephanie Marsicovetere

Mesa County Treasurer Tax Receipt

Account	Parcel Number	Receipt Date	Receipt Number
R068288	294521200011	Jun 5, 2017	2017-06-05-CLH-14241

TWO R & D LLC
P.O. BOX 39
FRUITA, CO 81521

Situs Address	Payor
	ALPINE BANK ESCROW DISBURSEMENT 400 7TH ST SOUTH RIFLE CO 81650

Legal Description

S 10A OF NW4NW4 + SW4NW4 SEC 21 1S 1W EXC BLKS 1-2 + 3 ENERGY CENTER SUB PHASE 1 - 35.00AC

Property Code	Actual	Assessed	Year	Area	Mill Levy
35 AC NO MORE THAN 100 AC - 0550	355,000	102,950	2016	14100	61.572

Payments Received

Check — Multi-Account Payment

Check # 017263

Payments Applied

Year	Charges	Billed	Prior Payments	New Payments	Balance
2016	Tax	$6,338.84	$3,169.42	$3,169.42	$0.00
				$3,169.42	$0.00
			Balance Due as of Jun 5, 2017		**$0.00**

Thank you for your payment.

OWNERSHIP STATEMENT - CORPORATION OR LIMITED LIABILITY COMPANY

(a) Two R & D, LLC ("Entity") is the owner of the following property:

(b) Pinnacle Ridge Subdivision

A copy of the deed(s) evidencing the owner's interest in the property is attached. Any documents conveying any interest in the property to someone else by the owner are also attached.

I am the (c) Managing Member for the Entity. I have the legal authority to bind the Entity regarding obligations and this property. I have attached the most recent recorded Statement of Authority of the Entity.

(•) My legal authority to bind the Entity both financially and concerning this property is unlimited.

( ) My legal authority to bind the Entity financially and/or concerning this property is limited as follows:

(•) The Entity is the sole owner of the property.

( ) The Entity owns the property with other(s). The other owners of the property are:

On behalf of Entity, I have reviewed the application for the (d) _____

I have the following knowledge or evidence of a possible boundary conflict affecting the property:

(e) N/A

I understand the continuing duty of the Entity to inform the City planner of any changes regarding my authority to bind the Entity and/or regarding ownership, easement, right-of-way, encroachment, lienholder and any other interest in the land.

I swear under penalty of perjury that the information in this Ownership Statement is true, complete and correct.

Signature of Entity representative: Robert W. Jones

Printed name of person signing: Robert W. Jones, II

State of Colorado)

County of Mesa) ss.

MARY F BURNS
Notary Public – State of Colorado
Notary ID 20064010840
My Commission Expires Jan 11, 2021

Subscribed and sworn to before me on this 6th day of June, 2017

by Mary F. Burns

Witness my hand and seal.

My Notary Commission expires on January 11, 2021

Mary F Burns
Notary Public Signature

OWNERSHIP STATEMENT - NATURAL PERSON

I, (a) Christopher Walston , am the owner of the following real property:

(b) Lot 2, Blk 2 Energy Center Sub Phase 1 Sec 21 1S 1W

A copy of the deed evidencing my interest in the property is attached. All documents, if any, conveying any interest in the property to someone else by the owner, are also attached.

(•) I am the sole owner of the property.

( ) I own the property with other(s). The other owners of the property are (c):

I have reviewed the application for the (d) Pinnacle Ridge Subdivision pertaining to the property.

I have the following knowledge and evidence concerning possible boundary conflicts between my property and the abutting property(ies): (e) N/A

I understand that I have a continuing duty to inform the City planner of any changes in interest, including ownership, easement, right-of-way, encroachment, lienholder and any other interest in the property.

I swear under penalty of perjury that the information contained in this Ownership Statement is true, complete and correct.

Owner signature as it appears on deed 

Printed name of owner: Christopher Walston

State of Colorado)

County of Mesa) ss.

Subscribed and sworn to before me on this 6 day of June, 20 17

by Christopher Walston

Witness my hand and seal.

My Notary Commission expires on 02/17/21

Kristina Gasparyan
NOTARY PUBLIC
STATE OF COLORADO
NOTARY ID 20174007586
MY COMMISSION EXPIRES 02/17/21



Notary Public Signature

POST-CONSTRUCTION STORMWATER CONTROL OPERATIONS AND MAINTENANCE AGREEMENT

Agreement No. _____

THIS AGREEMENT ("Agreement") is made and entered into this 16th day of June, 20 17, by and between Two R & D, LLC _____, (hereinafter the "Landowner"), and the 5-2-1 Drainage Authority (hereinafter the "Authority") as a representative of the City of Grand Junction ("City").

RECITALS

The Landowner is the owner of the following real property (hereinafter referred to as "the Property").

__ If the Property is a single parcel:

Street Address: _____

Parcel Number: _____

X If the Property is a subdivision or planned unit development:

Development Name: Pinnacle Ridge Subdivision

The Landowner is developing the Property.

The Authority and the Landowner, on behalf of all successors and assigns, agree that the health, safety, and welfare of the residents and the protection and maintenance of water quality require that on-site stormwater Best Management Practices be constructed and maintained on the Property. The Landowner acknowledges the 521 Drainage Authority has been granted legal authority by the City to execute this Agreement and perform the activities identified in this agreement within the jurisdiction of the City.

For the purposes of this Agreement, the following definition shall apply:

> BMP – "Best Management Practice;" activities, facilities, designs, measures or procedures used to manage stormwater impacts from land development, to protect and maintain water quality and groundwater recharge and to otherwise meet the purposes of the Municipal Stormwater Pollution Prevention Ordinance, including but not limited to infiltration trenches, seepage pits, filter strips, bioretention, wet ponds, permeable paving, grassed swales, forested buffers, sand filters and detention basins.

As part of the approval of the development of the property, the Authority will review and approve a Final Drainage Report which will implement Post-Construction Storm Water Management BMPs required by the Mesa County/City of Grand Junction Stormwater Management Manual.

The purpose of this Agreement is to insure the adequate maintenance, operation and repair of the storm water management facilities, in perpetuity, by the owners of the property served by these facilities.

The Landowner desires to subject and place upon the Property the covenants and servitudes set forth herein which shall run with the Property and be binding on all parties having any right, title, or interests in the Property or any part thereof, their heirs, personal representatives, successors and assigns, and shall inure to the benefit of each owner thereof.

NOW, THEREFORE, in consideration of the foregoing promises, the mutual covenants contained herein and the following terms and conditions, the parties hereto agree as follows:

1. The BMPs shall be constructed by the Landowner in accordance with the plans and specifications shown and described in the Final Drainage Report.

2. The Landowner shall operate and maintain in perpetuity the BMP(s) as shown and described on the Final Drainage Report in good working order as reasonably determined by the Authority and in accordance with the specific maintenance requirements noted on the Final Drainage Report.

3. The Landowner shall cause the BMP(s) to be inspected annually by a Qualified Erosion Control Specialist to ensure good working order and shall send a report from said inspection to the Authority annually, on or before December 31st of each year.

4. The Landowner hereby grants a perpetual easement to the Authority, its authorized agents and employees, to enter upon the Property, at reasonable times and upon presentation of proper identification, to inspect the BMP(s) whenever it deems necessary. The Authority shall make reasonable efforts to notify the Landowner prior to entering the Property.

5. In the event the Landowner fails to operate and maintain the BMP(s) as shown and described on the Final Drainage Report in good working order as reasonably determined by the Authority, the Authority and the City may enter upon the Property and take action to maintain and/or repair and/or reconstruct said BMP(s). It is expressly understood and agreed that the Authority and the City are under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on the Authority and the City.

6. In the event the Authority and the City, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner shall reimburse the Authority and the City for all reasonable expenses (direct and indirect) incurred within 10 days of receipt of invoice from the Authority and the City.

7. The intent and purpose of this Agreement is to ensure the proper maintenance of the onsite BMP(s) by the Landowner. This Agreement shall not be deemed to create or affect any additional liability of any party for damage alleged to result from or be caused by stormwater runoff.

8. The Authority may conduct routine inspections of the BMP(s) to verify their continued adequate functioning. The Authority may also inspect the BMP(s) in the event of reported or suspected failure to function adequately. These inspection activities shall not absolve the Landowner of its obligation to maintain the BMPs in perpetuity or to provide the Authority with the required Landowner inspection report.

9. This Agreement shall not be interpreted or deemed to limit the authority, privilege or right of the Authority and the City pursuant to any duly enacted ordinance of the Authority or the City, charter provision, statute or any duly granted federal or state water discharge permit.

10. Notifications and reports made under this Agreement shall be provided to the Authority at:

5-2-1 Drainage Authority
P.O. Box 3389
Grand Junction, CO 81502

and to the Landowner at:

Two R & D, LLC
P.O. Box 39
Fruita, CO 81521

This Agreement shall be recorded in the Mesa County, Colorado land records and shall, once recorded, constitute a covenant running with the Property and shall be an equitable servitude binding on present and subsequent owners of the Property in whole or in part, and their administrators, executors, assigns, heirs and successors in interest, in perpetuity

WITNESS the following signatures and seals:

FOR THE AUTHORITY:

By: _____
521 Drainage Authority Manager

ATTEST:

_____

_____
Printed Name & Title

LANDOWNER: Two R & D, LLC (SEAL – if incorporated)

By: Robert W. Jones

Printed name and title: Robert W. Jones II, Managing Member

COUNTY OF Mesa, STATE OF Colorado

I, Mary F. Burns, a Notary Public in and for the County and State aforesaid, whose commission expires on the 11th day of January, 2021, do hereby certify that Robert W. Jones II, whose name(s) is/are signed to the foregoing Agreement has/have acknowledged the same before me in my said County and State.

Given under my hand this 6th day of June, 2017.

Mary F Burns
Notary Public (SEAL)

MARY F BURNS
Notary Public – State of Colorado
Notary ID 20064010840
My Commission Expires Jan 11, 2021

City of Grand Junction
Review Comments

Date: July 18, 2017 **Comment Round No.** 1 **Page No.** 1 of 15
Project Name: Pinnacle Ridge Subdivision, Filing 1 **File No:** SUB-2017-271
Project Location: East of Mariposa Drive

Check appropriate [X] **if comments were mailed, emailed, and/or picked up.**

Property Owner(s): Two R & D LLC – Attn: Robert Jones II
[ ] **Mailing Address:** P. O. Box 39, Fruita, CO 81521
[X] **Email:** rjones@vortexeng.us **Telephone:** (970) 245-9051
[ ] **Date Picked Up:** _____ **Signature:** _____

Representative(s): Vortex Engineering Inc. – Attn: Robert Jones II
[ ] **Mailing Address:** 2394 Patterson Road, Suite 201, Grand Junction, CO 81505
[X] **Email:** rjones@vortexeng.us **Telephone:** (970) 245-9051
[ ] **Date Picked Up:** _____ **Signature:** _____

Developer(s):
[ ] **Mailing Address:**
[ ] **Email:** **Telephone:**
[ ] **Date Picked Up:** _____ **Signature:** _____

CITY CONTACTS

Project Manager: Scott D. Peterson, Senior Planner
Email: scottp@gjcity.org **Telephone:** (970) 244-1447

Dev. Engineer: Rick Dorris
Email: rickdo@gjcity.org **Telephone:** (970) 256-4034

City of Grand Junction
REQUIREMENTS
(with appropriate Code citations)

CITY PLANNING

1. Request is for Final Subdivision Plan review for Filing 1 of Pinnacle Ridge Subdivision in order to develop 13 single-family detached residential lots, 2 tracts of land and 4 additional lots that would be reserved for future residential development that would be developed in accordance with the approved Preliminary Plan (City file # SUB-2015-120) all on 45.36 +/- acres in an existing R-2 (Residential – 2 du/ac) zoning district. Proposed residential density for all filings within the subdivision would be 1.58 +/- dwelling units/acre (72 lots total). The Comprehensive Plan Future Land Use Map identifies the area as Residential Low (.5 - 2 dwelling units/acre). No further response required.
Applicant's Response:
Document Reference

2. Subdivision Plat (Sheets 1 & 2):
a. FYI. The Preliminary Plan application approved the use of the cluster provisions for the subdivision, therefore the bulk requirements, building setbacks, etc., for the subdivision will need to meet the standards of the R-4 zone district (Section 21.03.060 (c) (4) of the Zoning and Development

Code); minimum lot width of 70', building setbacks of 20' front, 7' side and 25' rear and maximum lot coverage of 50%. Please design house plans accordingly within these parameters.
b. Are private Drainage Easements needed to be identified at the rear of the properties located along the west property line of the subdivision? If so, please identify and label locations on the plat. Same comment for the properties located on the eastside of Aiguille Drive. Are private Irrigation Easements also needed to serve each individual lot?
c. Correct misspelling of "Aiguille" on Sheet 2.
d. Label locations of 14' Multi-Purpose Easements on Sheet 2.
e. Proposed Lots 9 & 10 must not fall under 7,125 sq. ft. in size per the approved Cluster Provisions of the Preliminary Plan. Revise as necessary.
f. On Sheet 1, in the Dedication and Notary Public Blocks, add Christopher Walston as a property owner (Parcel # 2945-212-08-009).
g. On Sheet 1, in the Dedication Block, revise Multi-Purpose Easement paragraph to the correct Model Dedication Language (April 2008).
h. On Sheet 2, label Tract A as a "Drainage Easement" and on Sheet 1 in the Dedication Block, add the following paragraph; "An easement over Tract A is dedicated to the City of Grand Junction as perpetual easements for the inspection, installation, operation, maintenance and repair of detention and drainage facilities and appurtenants thereto. The City of Grand Junction is dedicated reasonable ingress/egress access to the drainage/detention easement areas. The owner(s) and/or the property owners' association, if one exists, is not relieved of its responsibility to inspect, install, operate, maintain and repair the detention and drainage facilities."
i. See City Surveyor review comments and revise as applicable.
j. On Sheet 2, connect proposed public sanitary sewer easement from the Foster Family's property to the sanitary sewer easement within Tract A.
k. On Sheet 2, provide public storm sewer easement from Aiguille Drive to Tract A.
l. On Sheet 1, add Model Dedication Language for "All Utility Easements are dedicated to the City of Grand Junction……"
m. FYI. Urban Trail Map does not designate any future public trail easements located within the proposed development and also the applicant is not requesting a PD Planned Development zone district, therefore no public dedicated trail easements will be required for this development.
n. In order for Section 21.06.060 (f) (1) of the Zoning and Development Code to not apply (Easements shall be used to access not more than one lot with no street frontage), City Project Manager suggests that applicant plat the entire subdivision located outside of Filing 1 and Tracts A & B as one lot. Please review options, address further and revise plat as necessary.
o. Submit separate legal description and map exhibit for proposed temporary turn-around easement located at the end of Filing 1. Identify easement on plat. Senior City Staff Attorney will prepare dedication document for property owner's signature to be recorded at time of final subdivision plan recording.
Applicant's Response:
Document Reference:

3. Vacation of Rights-of-Way within Energy Center Subdivision, Phase 1:
Prior to recording of Filing 1, applicant will need to vacate the existing right-of-way and utility easements as identified within the Energy Center Subdivision, Phase I (Blocks 1 & 2) with the exception of the Foster Family's property which is located outside of the City limits. If wishing to proceed, please address the review criteria for a vacation as identified within Section 21.02.100 (c) of the Zoning and Development Code and submit separate legal description and map exhibit of proposed vacation area for inclusion within proposed City Ordinance. The vacation process will require both Planning Commission and City Council review and approval.
Applicant's Response:
Document Reference:

4. Landscaping Plan:
a. Submit Landscaping Plan for review. Preliminary Plan indicated landscaping proposed within the detention pond (Tract A) and the subdivision entrance feature from Mariposa Drive (Section 21.06.060 (h) (9) of the Zoning and Development Code). Landscaping Plan shall be prepared by Licensed Landscape Architect.
b. FYI. At time of subdivision infrastructure acceptance, Licensed Landscape Architect shall provide a letter to the City Project Manager stating that all landscaping was installed per the approved Landscaping Plan.
c. Is the applicant proposing any subdivision perimeter fencing? If so, please label location and include overall height of fencing (Section 21.04.040 (i) (4) of the Zoning and Development Code).
Code Reference: Sections 21.06.040 (g) and 21.06.060 (h) (9) of the Zoning and Development Code and V-10 of the SSIDS Manual.
Applicant's Response:
Document Reference:

5. Covenants and Dedication Documents, etc.:
a. Senior City Staff Attorney is currently reviewing submitted CCR's. City Project Manager will email applicant with the requested changes once review is complete.
b. All proposed private drainage and irrigation easements etc., dedicated to the HOA shall be conveyed by separate document(s). Please submit proposed conveyance documents, legal descriptions and map exhibits for review prior to recording.
c. Senior City Staff Attorney has reviewed the submitted Special Warranty Deed for the dedication of the Tracts to the HOA and has requested changes (see attached redlines).
d. Submit Statement of Authority document (either previously recorded or proposed) which authorizes Robert W. Jones II to sign as Managing Member (or other Title) on behalf of Two R & D LLC. If not previously recorded, submit original document at time of final subdivision plan recording.
Code Reference: IV-2 of the SSIDS Manual.
Applicant's Response:
Document Reference:

6. Fees:
a. City Park Fee: $2,925.00 (13 new lots @ $225 per new lot payable at time of subdivision plat recording).
b. City Open Space Fee: 10% of the value of the raw land payable at time of subdivision plat recording. Senior City Staff Attorney is currently reviewing submitted MAI Appraisal Report and will let City Project Manager know if acceptable in determination of this fee. It appears that the applicant will be paying the required 10% fee for all phases of development, rather than on a per filing basis, since the appraisal report included all 45 acres.
c. School Impact Fee: $560 per dwelling unit payable at time of Planning Clearance issuance.
d. Plant Investment Fees: Contact City Customer Service Division for sewer fees payable at time of Planning Clearance issuance. Contact Ute Water Conservancy District for water tap fees payable at time of Planning Clearance issuance.
e. See City Development Engineer comments for other applicable fees.
Code Reference: Section 21.06.020 and 030 of the Zoning and Development Code.
Applicant's Response:
Document Reference:

7. Public Correspondence Received:
City Project Manager has received one email from the public concerning the proposed development. I have included this attachment for the applicant's information and file.
Applicant's Response:
Document Reference:

CITY DEVELOPMENT ENGINEER

FEES

Review Comment: Transportation Capacity Payment (TCP) – To be determined and collected at the time of planning clearance for individual building permits.

Storm Drainage Fee (in lieu of detention) – None, detention provided.

Inspection Fee – 13 residential units x $90/unit = $1170.

Fee In Lieu of Utility Undergrounding – None, no overhead utilities to underground.

Applicant's Response:
Document Reference:

GENERAL

Review Comment: The applicant is requesting a grading permit. The City will support issuing a grading permit in concept. The plans and reports aren't clear what will be graded at this time. Is it the entire project, filings 1 and 2, or something else? The Stormwater management drawing and/or plan need to describe how disturbed areas will be stabilized if allowed to sit for an extended period of time. Dust and erosion will be prevalent if disturbed ground protected. Prepare a grading plan showing the desired limits of grading, construction erosion control measures, and permanent or temporary dust and erosion control measures. If revegetation is the chosen measure, appropriate soil preparation and probably temporary irrigation will be necessary to establish growth.

Applicant's Response:
Document Reference:

Review Comment: When the grading plan is complete, provide a letter from the building department stating they have received hard copies of 1) the geotechnical report, 2) the final grading plan, and 3) a tabulation of the minimum and maximum finished floor elevations by lot. Also reference the individual lot specific grading and drainage plan requirement. This must be the final grading plan and tabulation after all revisions. Include the revision date for the grading plan on the letter: this date must match the revision date on the final plans to be approved by the City.

Applicant's Response:
Document Reference:

Review Comment: Provide easement description and exhibit for the storm and sanitary sewers crossing City property. The City will prepare the easement document.

Applicant's Response:
Document Reference:

Review Comment: Street lights are not shown at the required TEDS manual spacing of every 250’ and at all intersections. Either install per standards or submit a TEDS exception requesting something different.

Applicant’s Response:
Document Reference:

Review Comment: Record a site plan establishing the unusual CC&R responsibilities, lot grading plans, engineered foundations, etc.

Applicant’s Response:
Document Reference:

PLANS

Review Comment: See redlined plans. Respond in different color ink next to each comment and return with written response.

Applicant’s Response:
Document Reference:

Review Comment: The plans need a thorough quality control check and many details have not been included.

Applicant’s Response:
Document Reference:

Review Comment: Include a sheet that shows all filing 1 construction including the storm sewer outfall and any grading outside of phase I.

Applicant’s Response:
Document Reference:

Review Comment: Please include a benchmark with the appropriate description and coordinates on the construction drawings. Include the horizontal and vertical datum source. It shall be located on or close to the site for ease of use, where it won’t be destroyed, and shown graphically. Also include on the construction drawings coordinates on a minimum of two of the exterior boundary corners.

Applicant’s Response:
Document Reference:

Review Comment: Make sure acceptance blocks are on all sheets except the outside agency detail sheets and 521 sheets.

Applicant’s Response:
Document Reference:

Review Comment: There have been recent problems with fire hydrants set to the wrong elevations and having to be raised after the fact. Call out flange elevations for all fire hydrants according to the appropriate water utility providers details. The hydrants shall be as-built prior to concrete.

Applicant’s Response:
Document Reference:

Review Comment: The grading for the diversion ditches needs to be reflected on the grading plan and the cross sections. Currently, they are only shown on the Stormwater management plan. They are shown as unlined on sheet C6.0. I suspect there will be a lot of sediment in these ditches and it will deposit a lot of sediment in the roadside ditches. The City will be maintaining the roadside ditches and all grading must be designed to minimize sedimentation and erosion in these ditches. The drainage report must design these ditches including design flow velocity erosion and sedimentation.

Applicant's Response:
Document Reference:

Review Comment: Address driveway culverts and how they will be handled on the plans.

Applicant's Response:
Document Reference:

Review Comment: It is critical to establish areas of no disturbance so construction traffic doesn't travel on open spaces. The desert pavement is pretty well established in many areas and erosion is fairly small. Any disturbance of these areas will increase erosion.

Applicant's Response:
Document Reference:

Review Comment: Review the signage memo from a few months ago. No outlet or dead end signs are required. May be others. Include in DIA.

Applicant's Response:
Document Reference:

Review Comment: Provide a temporary turn around and easement at the end of filing 1 and/or filing 2.

Applicant's Response:
Document Reference:

Review Comment: Provide landscaping plan.

Applicant's Response:
Document Reference:

DRAINAGE REPORT

Review Comment: All detention basins and infiltration-based retention basins must be registered on the State of Colorado Stormwater Detention and Infiltration Facility portal. The design engineer must visit the website and follow the directions to register the new basin. The web portal address is: https://maperture.digitaldataservices.com/gvh/?viewer=cswdif This must be complete and accepted prior to plan approval.

Applicant's Response:
Document Reference:

Review Comment: Refer to section 404.2, Design Storm Events, in the SWMM. The street must be designed to carry the 100 event with less than 1.0' of ponding at the flowline. Given the roadside ditches and no crown in the street plus the street is in cut on the uphill side and fill on the downhill a new criterion should be proposed. Also, every time a driveway culvert is encountered, the ditch hydraulics are likely reduced. Propose a method to evaluate the 100 yr street capacity. Also evaluate how the ditches and driveway culverts work and the culverts don't wash out. We should discuss this.

Applicant's Response:
Document Reference:

Review Comment: The report mentions ditch velocity, check dams, and hydraulic structures but doesn't discuss and none are proposed on the plans. The report must discuss ditch velocities and how they will be designed to prevent both sedimentation and erosion as was discussed in the Preliminary Plan review. The report shows velocities for the 2-yr storm in excess of 6 fps which will erode site soils.

Applicant's Response:
Document Reference:

Review Comment: The curb and gutter on the west side must be designed to carry the 100 yr event.

Applicant's Response:
Document Reference:

Review Comment: The pipe down ridgeway court was designed but the pipes on site conveying water from the ditches to the ponds were not.

Applicant's Response:
Document Reference:

Review Comment: Section 3D, report talks about checking street and inlet capacities to be done in the final drainage report. This is the final. No inlets were sized or designed.

Applicant's Response:
Document Reference:

Review Comment: The report says the runoff from basin DD2 will be routed to the lot at the pond 4 outfall. The plan doesn't show how to accomplish this.

Applicant's Response:
Document Reference:

Review Comment: The outflow from pond 1 appears to travel in an open ditch down a steep slope to the roadside ditch. This will deposit sediment quickly in the roadside ditch.

Applicant's Response:
Document Reference:

Review Comment: I don't understand the HGEGL2y table although it looks like the 18" pipe will easily handle the pond 2 100 yr discharge. Let's visit.

Applicant's Response:
Document Reference:

Review Comment: The report needs to address the diversion ditches on the hillside behind all houses, see comment under plans.

Applicant's Response:
Document Reference:

STORMWATER

Review Comment: Obtain the 521 permit.

Applicant's Response:
Document Reference:

GEOTECHNICAL REPORT

Review Comment: General note 9 says the contractor shall provide testing. To ensure the requirements of the geotech report and the materials testing plan are correctly implemented, the owner should be providing testing and on-site geotechnical engineering.

Applicant's Response:
Document Reference:

Review Comment: Address the water quality and detention basins uphill of existing houses. The water quality component will keep water in the basins for up to 40 hours whenever it rains. Will this water infiltrate and cause problems for downhill structures? Do the ponds need to be lined up to the water quality capture volume elevation plus a little freeboard? Any other concerns about this situation?

Applicant's Response:
Document Reference:

Review Comment: The report mentions underdrains below the sidewalk where it is attached. This filing has very little attached walk. Is an underdrain necessary.

Applicant's Response:
Document Reference:

Review Comment: The report mentions to excavate rock to provide gradual transition from rock to soil. This may not apply on Filing 1 but show on the plans in filings where it does apply.

Applicant's Response:
Document Reference:

Review Comment: The lab work focuses mostly on test pits #1 and #4. What is the reason other test pits weren't tested?

Applicant's Response:
Document Reference:

Review Comment: Will grading in the areas of filing 4 and 5 occur with filing 1? If so, we need geotechnical info. to assess viability.

Applicant's Response:
Document Reference:

Review Comment: What about benching details for fill placement? Are they needed? What about cut areas?
Applicant's Response:
Document Reference:

Review Comment: Is there any value in bedding the utilities in low permeability materials similar to Summer Hill?
Applicant's Response:
Document Reference:

TESTING PLAN

Review Comment: In the reporting section, The City will require a report from HBET stating construction was done in accordance with the geotechnical report, City standards, and the materials testing plan. It shall also summarize site issues encountered and how they were resolved.
Applicant's Response:
Document Reference:

Review Comment: I didn't see subgrade proof rolling prior to basecourse placement. Shouldn't this be done?
Applicant's Response:
Document Reference:

Review Comment: Is trench compaction to be 98% of modified like fill placement?
Applicant's Response:
Document Reference:

Review Comment: Reference benching if required.
Applicant's Response:
Document Reference:

Review Comment: Reference underdrain construction.
Applicant's Response:
Document Reference:

Review Comment: In section 2.2 where it identifies 1 test per 300 SY or fill, include a depth requirement. I.e. 1 test per 300 SY per 2' rise or whatever is appropriate.
Applicant's Response:
Document Reference:

DIA

Review Comment: $20 per foot for sanitary sewer seems pretty light.
Applicant's Response:
Document Reference:

Review Comment: The 8" gate valves should be 10".
Applicant's Response:
Document Reference:

Review Comment: Aren't two fire hydrants needed?
Applicant's Response:
Document Reference:

Review Comment: Fire hydrant seems light.
Applicant's Response:
Document Reference:

Review Comment: What are the irrigation sleeves for? Is irrigation being provided?
Applicant's Response:
Document Reference:

Review Comment: $20 per yard is real light for basecourse.
Applicant's Response:
Document Reference:

Review Comment: Asphalt seems light at $90 per ton.
Applicant's Response:
Document Reference:

Review Comment: Include reconditioning for subgrade prep.
Applicant's Response:
Document Reference:

Review Comment: $20 for curb, gutter, and walk is light.
Applicant's Response:
Document Reference:

Review Comment: Include street lights.
Applicant's Response:
Document Reference:

Review Comment: Include end of road barriers.
Applicant's Response:
Document Reference:

Review Comment: Are $2 and $3 real numbers for excavation and backfill?
Applicant's Response:
Document Reference:

Review Comment: Section D3 needs more items.
Applicant's Response:
Document Reference:

Review Comment: Include street repair for the storm sewer in the street. Also, there will likely be many services affected that will cost money.
Applicant's Response:
Document Reference:

Review Comment: Where is the money for the curb and gutter on the west side?
Applicant's Response:
Document Reference:

Review Comment: Include landscaping costs.
Applicant's Response:
Document Reference:

Review Comment: Delete City inspection fees.
Applicant's Response:
Document Reference:

Review Comment: Is this a good quality control testing number given the added geotechnical presence?
Applicant's Response:
Document Reference:

Review Comment: Include money for the Developer's inspection cost.
Applicant's Response:
Document Reference:

Review Comment: Include dry utilities and trenching.
Applicant's Response:
Document Reference:

CC & R'S

Review Comment: Complete section 1.10.
Applicant's Response:
Document Reference:

Review Comment: Add diversion ditches to 1.18.
Applicant's Response:
Document Reference:

Review Comment: The CC & Rs talk about irrigation water provided by the City. Is irrigation water really being provided? It isn't shown on the plans.
Applicant's Response:
Document Reference:

Review Comment: A condition of the preliminary plan approval is for the HOA to provide snow removal on Elysium drive and to post signs stating such in conspicuous locations. Include in the CC & Rs.
Applicant's Response:
Document Reference:

CITY SURVEYOR – Peter Krick – peterk@gjcity.org (970) 256-4003

1. Provide the required documents for the vacation of the public rights of way within the Energy Center Subdivision Phase 1.

2. Label the 4.12 Acre Not-Included parcel as Block3 of the Energy Center Subdivision Phase 1.

3. Graphically depict Spua Drive and the lots that lie within the 4.12 Acre Not-Included parcel (Block 3).

4. Access must be provided to Spua Drive within Block 3 of the Energy Center Subdivision. The existing lots within Block 3 will have their access severed if the alternative access from within Tract B is not provided.

5. Verify if updated monument records will be required for any or all of the aliquot corners depicted and used as control for this proposed subdivision and improvement survey. Several of the existing monument records have only one tie for the aliquot corner.

6. Graphically depict and label any existing easements from the Ridges Filing No. Three.
Applicant's Response:
Document Reference:

CITY FIRE DEPARTMENT – Mike Gazdak – mikega@gjcity.org (970) 549-5854

1. Fire flow form (Ute Water dated 5/31/17) submitted shows 3621 gpm at 20 psi available at test hydrant. The Fire Flow Water System Report (Vortex) provided on January 12, 2015 Appendix B indicates a predicted fire flow of 2001 gpm at 20 psi for all proposed fire hydrants which is acceptable for the proposed residential structures (V-B construction) up to 6000 square feet.

2. The fire department has no other comments or objections to this Major Subdivision (Filing 1).
Applicant's Response:
Document Reference:

CITY TRANSPORTATION ENGINEER – Sandy Mallory – sandym@gjcity.org (970) 244-1567

Filing 1 does not list or show traffic signs...Need a stop sign (R1-1), Street Name signs (D3-1), No outlet sign (W14-2a) at intersection of Mariposa Dr. & Auguille Dr. and 20 MPH Speed Limit sign (R2-1) on Aiguille Dr.
Applicant's Response:
Document Reference:

CITY ADDRESSING – Pat Dunlap – patd@gjcity.org (970) 256-4030

Addresses to be assigned at time of final plat recording.
Applicant's Response:
Document Reference:

OUTSIDE REVIEW AGENCY COMMENTS

(Non-City Agencies)

Review Agency: 5-2-1 Drainage Authority
Contact Name: Mark Barslund
Email / Telephone Number: markb@gjcity.org (970) 256-4106

The SWMP is accepted as submitted. Prior to the issuance of a 521 storm water permit the following items must be submitted.
*A copy of the CDPHE permit.
*An ORIGINAL signed and notarized 521 O&M agreement.
*A $900.00 permit fee.
Applicant's Response:

Review Agency: Mesa County Development Engineer
Contact Name: Dana Brosig
Email / Telephone Number: dana.brosig@mesacounty.us (970) 255-5035

No Comments.
Applicant's Response:

Review Agency: Ute Water Conservancy District
Contact Name: Jim Daugherty
Email / Telephone Number: jdaugherty@utewater.org (970) 242-7491

• The water main in Monument Rd is a Contract Water Line (CWL) assessments for the CWL will need to be paid prior to wet tap or tap and meter sales.
• Note 17 needs to read OF 250 "MINIMUM" AND SHALL
• Show a PRV & Vault at the entrance to the subdivision. A pressure regulating valve and vault will be required at the entrance to the subdivision, Ute will construct the vault and related equipment, developer will reimburse the District time and materials for this work & equipment. Or as an alternative to the PRV, regulated yokes may be installed during construction at services based on pressure limits as determined in the hydraulic analysis. Developer will reimburse the District for materials required for this work.
• Check separation on SS and water main.
• Show the laterals for lot 8 & 9 to include the FH as perpendicular to the water main.
• See redline drawing for further comment.
• ALL FEES AND POLICIES IN EFFECT AT TIME OF APPLICATION WILL APPLY.
• If you have any questions concerning any of this, please feel free to contact Ute Water.
Applicant's Response:

Review Agency: United States Postal Service
Contact Name: Christopher Buzzell
Email / Telephone Number: Christopher.w.buzzell@usps.gov (970) 858-7715

All new development must be centralized with the cost of mailbox purchase and installation the sole responsibility of the developer. Mailbox equipment may be purchased from www.florencemailboxes.com but is only a recommendation, other vendors may also be used. Location of mailbox equipment must be pre-approved by local USPS management. For any questions, please contact:
Chris Buzzell
(970) 260-3719
Plat maps can be submitted to:
Christopher.w.buzzell@usps.gov

To determine mailbox placement.
Applicant's Response:

Review Agency: Colorado Geological Survey
Contact Name: Jill Carlson
Email / Telephone Number: carlson@mines.edu (303) 384-2643

CGS has reviewed the Pinnacle Ridge Subdivision Filing 1 final subdivision plan referral, for 13 single family detached lots in the southwestern corner of the overall Pinnacle Ridge property, two HOA tracts, and four reserve lots for future development. The referral documents include:

- Set of two Pinnacle Ridge Subdivision, Filing 1 plat sheets (D H Surveys Inc., May 2017),
- General Project Report for Pinnacle Ridge Final Plat and Plan – Filing 1 (Vortex Engineering & Architecture, Inc. [Vortex], June 8, 2017)
- Final Geotechnical Report, Pinnacle Ridge Subdivision, Filings 1, 2, and 3 (Huddleston-Berry Engineering & Testing, LLC [HBET], June 7, 2017),
- Construction Materials Testing and Engineering Oversight Plan, Pinnacle Ridge Subdivision Filings 1, 2, and 3 (HBET, June 7, 2017),
- Improvement Survey Plat (DH Surveys, January 2008),
- Set of 15 construction plans (Vortex, June 8, 2017),
- Final Drainage Report (Vortex, June 9, 2017),
- and other documents.

HBET has satisfactorily addressed CGS's concerns regarding slope stability and rockfall in the western portion of the site, corresponding to proposed Filings 1, 2, and 3. CGS agrees with HBET's recommendations for construction materials testing and engineering oversight to (1) evaluate cut slopes during construction to confirm that soil conditions are consistent with assumptions and to verify long term stability of cut slopes in rock, and (2) evaluate rockfall hazards after completion of site grading. Inconsistencies may require stabilization or other mitigation.

Provided the recommendations in HBET's Final Geotechnical Report and Construction Materials Testing and Engineering Oversight for Filings 1, 2, and 3 are strictly adhered to, CGS has no objection to approval of Filing 1 as proposed. A similar level of slope and roadway analysis will be needed prior to platting individual lots within proposed Filings 4 and 5 (reserve Lots 102 and 103). CGS looks forward to reviewing this when available.

As HBET notes on page 14 of their Final Geotechnical Report, lot-specific geotechnical investigations will be needed for use in design of individual foundations, floor slabs, slope stability, grading, drainage, etc.

Thank you for the opportunity to review and comment on this project. If you have questions or require further review, please call me at (303) 384-2643, or e-mail carlson@mines.edu.
Applicant's Response:

Review Agency: Mesa County Building Department
Contact Name: Darrell Bay
Email / Telephone Number: Darrell.bay@mesacounty.us (970) 244-1651

MCBD has no objections.
Provide a soil report, drainage plan and TOF tabulation sheet to our office in paper form.
Applicant's Response:

REVIEW AGENCIES

(Responding with "No Comment" or have not responded as of the due date)

The following Review Agencies have responded with "No Comment."

1. Regional Transportation Planning Office (RTPO)

The following Review Agencies have not responded as of the comment due date.

1. Mesa County Valley School District #51
2. Mesa County Assessor's Office
3. Redlands Water and Power
4. Urban Trails Committee
5. Xcel Energy

The Petitioner is required to submit electronic responses, labeled as "**Response to Comments**" for the following agencies:

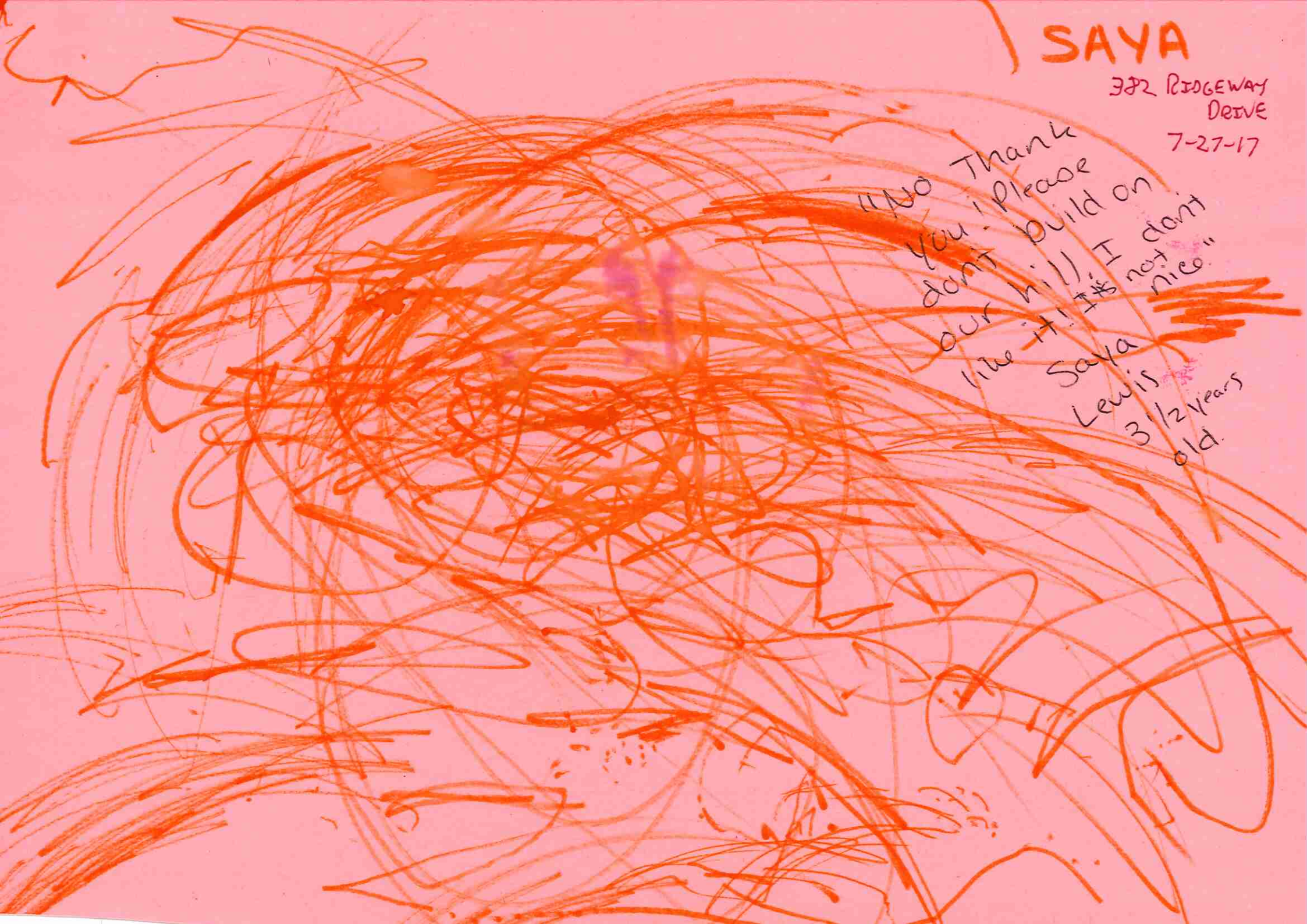
1. **City Planning**
2. **City Development Engineer**
3. **City Surveyor**
4. **City Transportation Engineer**
5. **5-2-1 Drainage Authority**
6. **Ute Water Conservancy District**

Date due: **October 18, 2017**

Please provide a written response for each comment and, for any changes made to other plans or documents indicate specifically where the change was made.

I certify that all of the changes noted above have been made to the appropriate documents and plans and there are no other changes other than those noted in the response.

Applicant's Signature **Date**


SAYA
382 RIDGEWAY DRIVE
7-27-17
"No Thank You! Please dont build on our hill. I dont like it! It's not nice."
Saya Lewis
3 1/2 years old.



PINNACLE RIDGE SUBDIVISION, FILING I

W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.
City of Grand Junction, Mesa County, Colorado

DEDICATION

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, TWO R & D, LLC a Colorado limited liability company is the owner of that real property situate in the W 1/2 NW 1/4 of Section 21, Township 1 South, Range 1 of the Ute Meridian, City of Grand Junction, Mesa County, Colorado; being more particularly described as follows:

The SW1/4 of the NW1/4 and the South 10 Acres of the NW1/4 of the NW1/4 of said Section 21, EXCEPT Blocks 1, 2, and 3 of The Energy Center Subdivision Phase 1.
AND
Lots 1-9, Block 1, Lots 1, 3-10, Block 2, The Energy Center Subdivision Phase 1.

Said parcel contains 45.36 acres more or less.

Said Owner has by these presents laid out, platted and subdivided the above-described real property into Lots, and Tracts as shown hereon, and designated the same as PINNACLE RIDGE SUBDIVISION, FILING I in the City of Grand Junction, County of Mesa, State of Colorado, and does hereby offer the following dedications and grants:

All streets, roads and Rights-of-Way are dedicated to the City of Grand Junction for the use of the public forever.

All Multipurpose Easements are dedicated to the City of Grand Junction for the use of City-approved utilities and public providers as perpetual easements for the installation, operation, maintenance and repair of utilities and appurtenances including, but not limited to, electric lines, cable TV lines, natural gas pipelines, sanitary sewer lines, storm sewers, water lines, telephone lines, traffic control facilities, street lighting, landscaping, trees and grade structures.

_____
TWO R & D, LLC, Member

STATE OF COLORADO)
)ss
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____
2017 A.D. by TWO R & D, LLC, Member _____

Witness my hand and official seal: _____
Notary Public

My commission expires: _____

CITY APPROVAL

This plat of PINNACLE RIDGE SUBDIVISION, FILING I, a subdivision of the City of Grand Junction, County of Mesa, State of Colorado, is approved and accepted on the ____ day of _____, 2017 A.D.

_____ _____
City Manager City Mayor

NOTICE: According to Colorado law you must commence any legal action based upon any defect in the survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of this certification/statement shown hereon.

TITLE CERTIFICATION

State of Colorado
County of Mesa

We, Heritage Title Company, a title insurance company, as duly licensed in the State of Colorado, hereby certify that we have examined the title to the hereon described property, that we find the title to the property is vested to Two R & D, LLC, a Colorado limited liability company ; that the current taxes have been paid; that all mortgages not satisfied or released of record or otherwise terminated by law are shown hereon and that there are no other encumbrances of record; that all easements, reservations and right-of-ways of record are shown hereon.

Date: _____ By: _____

LIENHOLDERS RATIFICATION OF PLAT

The undersigned, hereby certifies that it is a holder of a security interest upon the property hereon described and does hereby join in and consent to the dedication of the land described in said dedication by the owners thereof and agree that its security interest which is recorded under Reception No. 2236040, 2310515, 2422221, 2422230, 2439195, 2488454, 2654494, 2351449, 2351450, 2439196, 2488467, 2654493 of the public records of Mesa County, Colorado shall be subordinated to the dedications shown hereon.

BY: _____ FOR: Alpine Bank

STATE OF COLORADO)
)ss
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____
2017 A.D. by

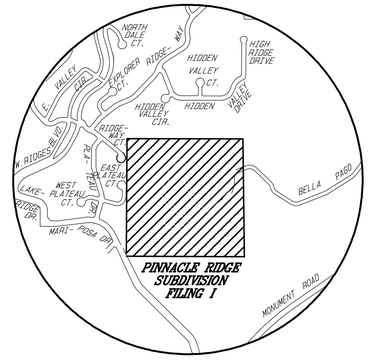
Witness my hand and official seal: _____
Notary Public

My commission expires: _____

CLERK AND RECORDER'S CERTIFICATE

This plat was accepted for filing in the office of the Clerk and Recorder of Mesa County, Colorado at _____ o'clock__M., on this ____ day of _____ 2017 A.D., and was recorded at Reception No. _____, Drawer No. _____, and Fees _____.

_____ _____
Clerk and Recorder Deputy



VICINITY MAP
N.T.S.

To be completed by the City of Grand Junction personnel. The accuracy of this information is the responsibility of the City of Grand Junction.

Declaration of Covenants, Restrictions and Conditions of the Pinnacle Ridge Homeowner's Association, Inc.

recorded under Reception No. _____.

Tracts A and B are conveyed to the Pinnacle Ridge Homeowner's Association, Inc.

recorded under Reception No. _____.

SURVEYOR'S STATEMENT

I, Michael W. Drissel, a registered Professional Land Surveyor in the State of Colorado, do hereby state that this survey was performed by me or under my direct responsibility, supervision, and checking. It is based upon my professional knowledge, information and belief according to applicable standards of practice. This is not a guarantee or warranty, either expressed or implied. Title research was supplied by Heritage Title Company under FILE NUMBER: 598-H0502023-900-GTO.

FOR REVIEW

PINNACLE RIDGE SUBDIVISION FILING I

LOCATED IN THE

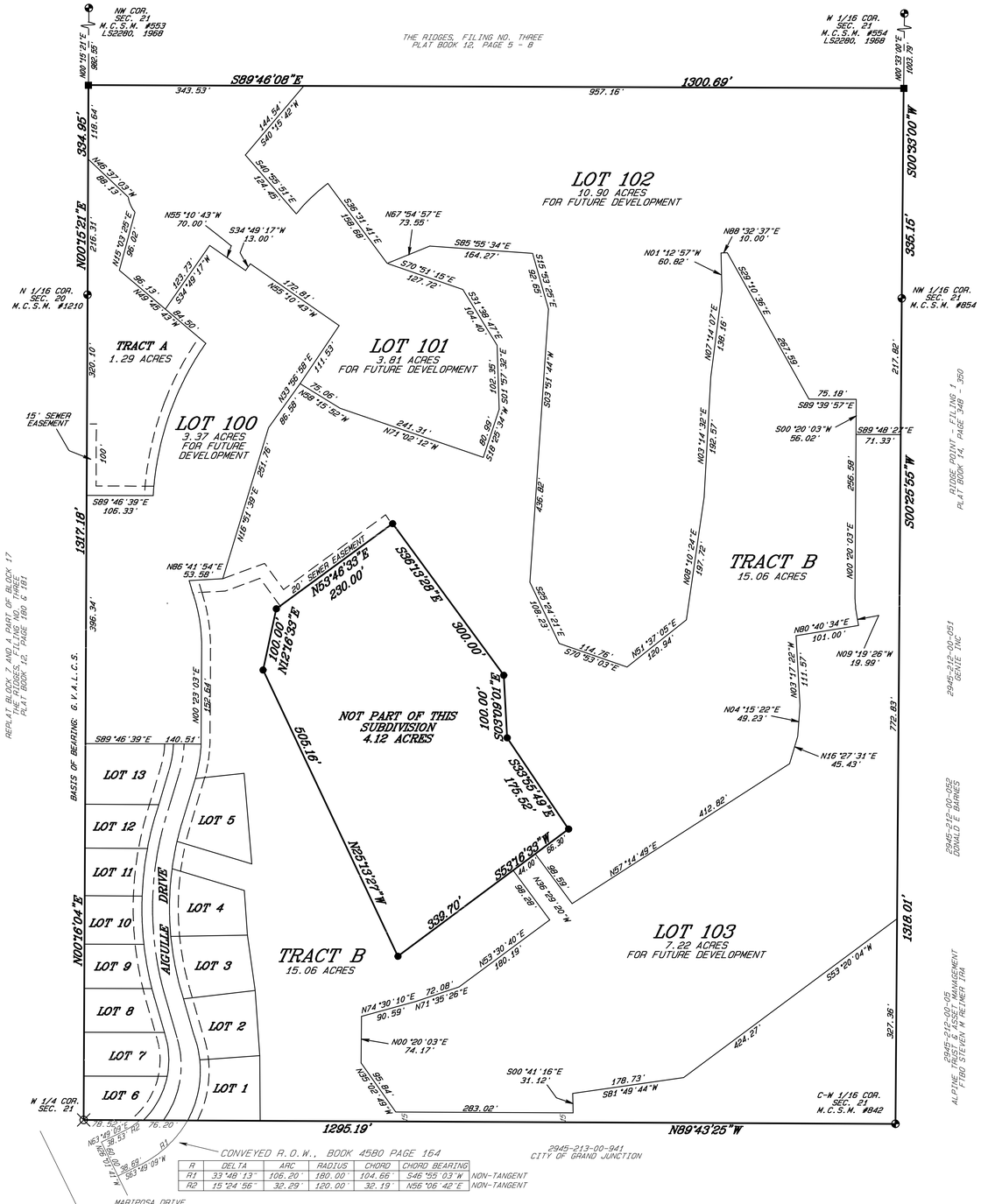
W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.

D H SURVEYS INC.
118 OURAY AVE. - GRAND JUNCTION, CO.
(970) 245-8749

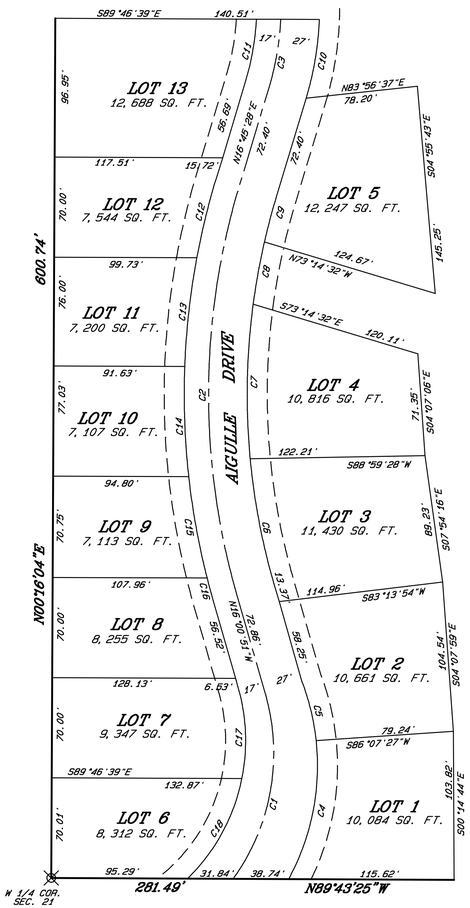
Designed By M.W.D.	Checked By E.E.B.	Job No. 129-04-03
Drawn By TMODEL	Date MAY 2017	Sheet 1 OF 2

PINNACLE RIDGE SUBDIVISION, FILING I

W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M., City of Grand Junction, Mesa County, Colorado



R	DELTA	ARC	RADIUS	CHORD	CHORD BEARING	
R1	33°48'13"	106.20'	180.00'	104.66'	S46°55'03"W	NON-TANGENT
R2	15°24'56"	32.29'	120.00'	32.19'	N56°06'42"E	NON-TANGENT



C	DELTA	ARC	RADIUS	CHORD	CHORD BEARING
C1	51°48'30"	135.63'	150.00'	131.06'	N09°53'24"E
C2	32°46'18"	288.85'	505.00'	284.93'	N02°32'15"E
C3	14°08'47"	48.15'	195.00'	48.02'	N09°41'05"E
C4	34°42'27"	100.18'	165.38'	98.66'	S11°14'45"W
C5	14°42'31"	42.46'	165.38'	42.34'	S13°27'44"E
C6	10°37'31"	88.64'	478.00'	88.52'	S10°42'05"E
C7	12°58'08"	108.19'	478.00'	107.96'	S01°05'44"W
C8	5°18'37"	44.30'	478.00'	44.29'	S10°14'07"W
C9	3°52'03"	32.26'	478.00'	32.26'	S14°49'27"W
C10	14°26'13"	55.94'	222.00'	55.79'	S09°32'21"W
C11	13°55'05"	43.24'	178.00'	43.13'	N09°47'56"E
C12	6°12'36"	56.58'	522.00'	56.55'	N13°39'10"E
C13	8°23'50"	76.51'	522.00'	76.44'	N06°20'56"E
C14	8°28'11"	77.17'	522.00'	77.10'	N02°05'04"W
C15	7°54'14"	72.01'	522.00'	71.95'	N10°16'17"W
C16	1°47'26"	16.31'	522.00'	16.31'	S15°07'08"E
C17	27°19'56"	64.40'	135.00'	63.79'	N02°20'53"W
C18	34°16'44"	80.77'	135.00'	79.57'	N28°27'27"E

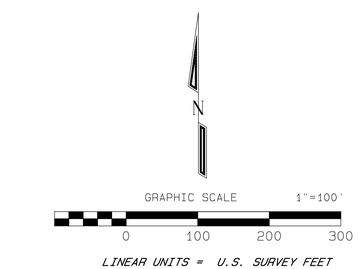
LEGEND & ABBREVIATIONS

- FD MESA COUNTY SURVEY MARKER
- FD 3.25" ALUMINUM CAP STAMPED THOMPSON LANGFORD CORP LS 18480
- FD #5 REBAR W/1.5" ALUMINUM CAP STAMPED LS 5933
- SET #5 REBAR W/2" ALUM. CAP STAMPED D H SURVEYS LS 20677

M.C.S.M. = MESA COUNTY SURVEY MARKER
G.V.A.L.C.S. = GRAND VALLEY AREA LOCAL COORDINATE SYSTEM
SEC. = SECTION
SQ.FT. = SQUARE FEET

AREA SUMMARY

LOTS	= 28.36 AC. /63%
TRACTS	= 16.35 AC. /36%
DED. ROADS	= 00.65 AC. /01%
TOTAL	= 45.36 AC. /100%



PINNACLE RIDGE SUBDIVISION FILING I

LOCATED IN THE

W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.

D H SURVEYS INC.
118 OURAY AVE. - GRAND JUNCTION, CO.
(970) 245-8749

Designed By M.W.D.	Checked By E.E.B.	Job No. 129-04-03	
Drawn By TMODEL	Date MAY 2017	Sheet 2 OF 2	

CITY OF GRAND JUNCTION

(03-21-12)

SURVEYOR VERIFICATION INITIAL SUBMITTAL CHECKLIST

(GS = GRAPHIC STANDARDS F = FEATURES)

Plat Name Pinnacle Ridge Subdivision, Filing 1 & 2

		Yes	N/A
1.	A legible scale is indicated and a graphic bar scale included (GS A)	☒	☐
2.	Drawing size is 24"x36" (GS B)	☒	☐
3.	Margins; 2" minimum left, 1" top, 1/2" bottom and right, minimum (GS B)	☒	☐
4.	Minimum text height is 0.08" lower case letter height (GS R)	☒	☐
5.	Limits of platted parcel are depicted with a bold, heavy line weight (GS E)	☒	☐
6.	North arrow appears on each sheet (GS I)	☒	☐
7.	All abbreviations and symbols used on the plat listed in a legend (GS M,N)	☒	☐
8.	Match lines used for multiple sheet plats (GS P)	☐	☒
9.	A graphical key index map for multiple sheet plats (GS P)	☐	☒
10.	Legible site/vicinity map (all major streets or roads within 1/2 mile radius) (F 26)	☒	☐
11.	All section, 1/4 section and 1/16 section lines within the plat or used for control are drawn with lightly dashed lines and accurately described (GS K)	☒	☐
12.	Plat name in large bold characters in top center of sheet (GS K)	☒	☐
13.	Plat name cannot begin with "The", "A", "Replat" or numerals (GS K)	☒	☐
14.	All descriptive references shall be placed beneath the plat name (GS K)	☒	☐
15.	Crosshatching, if used, neat and legible and doesn't obscure text (GS E)	☐	☒
16.	Replats shall not depict existing lots, tracts or parcels (F 27)	☒	☐
17.	Improvement survey meeting State and City requirements (F 1)	☒	☐
18.	All recorded and apparent rights-of-way and easements are depicted (F 2a)	☒	☐
19.	Indicate the source for the recorded easements and rights-of-way (F 2b)	☒	☐
20.	Book and page recording information for easements and rights-of-way (F 2b)	☒	☐
21.	Easements and rights-of-way completely dimensioned (F 2c)	☒	☐
22.	Easements and rights-of-way dimensioned to lot lines and boundaries (F 2c)	☒	☐
23.	All easements identified on the Plat (f 2D)	☒	☐
24.	Blanket easements noted with all recording information noted (F 2e)	☐	☒
25.	All dimensions necessary to establish boundaries in field (F 21)	☒	☐
26.	Statement that survey was performed under responsible charge of surveyor (F 22)	☒	☐
27.	All interior "excepted" parcels labeled as "NOT PLATTED HEREON" (F 23)	☒	☐
28.	A written statement describing the Basis of Bearings (F 3a)	☒	☐

	Yes	N/A
29. Basis of Bearings line graphically depicted and tied to boundary of plat (F 3b)	☒	☐
30. Boundary monuments fully described with size, composition and markings (F 4b)	☒	☐
31. Boundary monuments no further than 1400' apart (F 4c)	☐	☒
32. Monuments set at all angle points and at the beginning and end of curves (F 4f)	☒	☐
33. Witness corners set on line or prolongation thereof (f 4g)	☒	☐
34. Two reference monuments for each corner if not set on line or extension (F 4g)	☐	☒
35. Control monuments shown and identified (F 4h)	☒	☐
36. Monuments set at the boundary intersection of newly dedicated rights-of-way (F 4i)	☒	☐
37. Description references the City, County and State (F 5a)	☒	☐
38. Description references the Section, Township, Range and Meridian (F 5a)	☒	☐
39. Descriptions for replats include recording information of prior plat (F 5b)	☒	☐
40. Descriptions for replats include reference to lots and blocks being replatted	☒	☐
41. Description and boundary is complete and has a mathematical closure of +/- 0.01' (F 5c, 20a)	☒	☐
42. The Point of Commencement and Beginning clearly indicated (F 5d)	☐	☒
43. Conflicts from adjoining descriptions shown and method of resolution noted (F 7a)	☐	☒
44. Physical evidence of boundary conflicts noted (F 7b)	☐	☒
45. Recorded boundary agreements noted and recording information included	☐	☒
46. Dedication language matching approved City Model Language and corresponds with items such as new easements labeled on the plat (GS 2)	☒	☐
47. Consent to subordination for all known lienholders (F 8a)	☒	☐
48. Notary statement for all known lienholders (F 8b)	☒	☐
49. The record owner(s) signature(s) which shall be notarized (F 9a)	☒	☐
50. Statement by owner `that all lienholders appear hereon' or "there are no lienholders of record" (F 9b)	☒	☐
51. Total area of lands being platted noted in acres or square feet (F 10a)	☒	☐
52. Summary table provided, including percentage of the whole (F 10c)	☒	☐
53. Adjoining subdivisions noted with plat title and recording information (F 11a)	☒	☐
54. If Plat includes a portion of a previously recorded plat, sufficient ties to controlling lines (F 11b)	☒	☐
55. All adjoining recorded and apparent easements depicted (F 11c)	☒	☐
56. All adjoining recorded and apparent rights-of-way depicted (F 11c)	☒	☐
57. Width and use of adjoining rights-of-way, easements and reservations (F 11d)	☒	☐

	Yes	N/A
58. Recording information for adjoining rights-of-way, easements & reservations (F 11a)	☒	☐
59. Tabular data of lines and curves on applicable sheet, if possible (F 28)	☒	☐
60. Vertical datum must be referenced to NAVD88, unless otherwise pre-approved (F 12a)	☐	☒
61. Horizontal data shall be the Mesa County Local Coordinate System, unless otherwise pre-approved (F 12b)	☐	☐
62. Title block contains the Section, Township, Range and Meridian (F 13a)	☒	☐
63. The name of the plat appears in the title block (F 13b)	☒	☐
64. Every revision must be dated and noted in the title block (F 13c)	☐	☒
65. All curves must show the delta, arc length, radius, chord bearing and length (F 14a)	☒	☐
66. All non-tangent curves must be identified and labeled (including table data) (F 14b)	☐	☒
67. Blocks and lots numbered consecutively (F 15a)	☒	☐
68. Additional filings, when contiguous, must continue with sequential numbering of lots and blocks from previous filings (F 15b)	☒	☐
69. City Model language on the plat for the City Manager and Mayor to sign (GS T, F 16a)	☒	☐
70. City Model language on the plat for the Title Company to sign (GS T, F 17)	☒	☐
71. City Model language on the plat for the Clerk and Recorder's certificate (GS T, F 16b)	☒	☐
72. City Model language on the plat for any lienholder to sign (GS T, F 8)	☒	☐
73. Proper language on the plat for the Owner(s) to sign (GS T, F 9)	☒	☐
74. Proper language on the Surveyor to sign and seal (GS T, F 6)	☒	☐
75. A "City Use Block" provided for City personnel to use (F 30)	☒	☐
INTERNAL STAFF ITEMS ONLY		
76. Surveyor's Verification Form	☐	☐
77. Plat name does not duplicate the title of an existing plat or is not so nearly the same as an existing plat as to create confusion.	☐	☐
78. Legible copies provided for all documents referenced on the plat	☐	☐
79. Legible copies provided for all documents referenced in the title commitment	☐	☐
80. Legible copies provided of all recorded covenants and restrictions	☐	☐
81. Legible copies provided of all proposed covenants and restrictions	☐	☐
82. Copies of all instruments dedicating non-public easements or tracts	☐	☐
83. Exterior boundary monuments in place	☐	☐
84. Boundary monuments must be embedded in concrete	☐	☐
85. Alternative monumentation anchored in concrete or rock	☐	☐

By: _____ Date: 5-30-17

Professional Land Surveyor

P.L.S. Number 20677

TRANSACTION SCREEN

FOR

PINNACLE RIDGE SUBDIVISION
EAST of MARIPOSA DRIVE
GRAND JUNCTION, COLORADO

SUBMITTED TO:

COMMUNITY DEVELOPMENT
CITY OF GRAND JUNCTION
250 NORTH 5TH STREET
GRAND JUNCTION, COLORADO 81501

PREPARED FOR:

Two R & D, LLC
1880 K Road
Fruita, Colorado 81521

PREPARED BY:

Rhino Engineering, Inc.
1334 Ute Avenue
Grand Junction, Colorado 81501

June 29, 2005

RE Project No. 21070.01

TABLE OF CONTENTS

I. OVERVIEW 1

II. LOCATION AND DESCRIPTION OF PROPERTY 1

A. Location of Property 1
B. Description of Prior Property Use 1
C. Description of Bordering Property Use 2
D. Description of Future Property Use 2

III. METHODS AND FINDINGS 2

A. Transaction Screen Questionnaire (TSQ) 2
B. Government Database Review 2
C. Site Inspection 2

IV. RECOMMENDATIONS 4

V. LIMITATIONS 4

VI. REFERENCES 4

Appendix A: Transaction Screen Questionnaire
Appendix B: Government Database Review

I. OVERVIEW

A. Introduction to Environmental Risk Transaction Screen

To assess the potential for real estate to be environmentally impaired, an environmental review of a borrower's property was undertaken by Rhino Engineering. In general, environmental transaction screening evaluates risk of environmental hazards using a questionnaire, a government database review, and a site inspection. The ASTM Transaction screen process as an economical first step in the environmental due-diligence process. ASTM document E 1528-00 defines good commercial and customary practice for the transaction screen process. Proper implementation of the Transaction Screen Questionnaire allows Rhino Engineering to recommend one of the following options: (a) that no further inquiry is needed to assess the potential for identifying any recognized environmental conditions, or (b) that further inquiry is required to assess the environmental condition of the property.

B. Summary of Findings

Based on the Environmental Risk Transaction Screen Process, Rhino Engineering concludes that ***no further inquiry is needed to assess the potential for identifying any recognized environmental conditions***.

The process and evidence that led to this conclusion is detailed in the following sections.

II. LOCATION AND DESCRIPTION OF PROPERTY

A. Location of Property

The project site is located south and east of the "Ridges" development in the Redlands, in the City of Grand Junction. The site was annexed into the City of Grand Junction in 2004 and also recently zoned as RSF-2. The subject site lies south of Hwy 340, north of Monument Road, and east of Mariposa Drive.

By legal description, the property is located in the NW¼ of Section 21, Township 1 South, Range 1 West of the Ute Meridian in Mesa County, Colorado. The property occupies about 45.3 acres.

Single-family residences surround this property on the north, west, and partially the southeast. Undeveloped land lies partially on the east and south.

B. Description of Prior Property Use

The site is undeveloped. Previously, the land was used as irrigated and non-irrigated pasture and rangeland. According to the evidence found in the Transaction Screen Process, no industrial or commercial facilities have existed on the site.

C. Description of Bordering Property Use

The area to the south of the property is composed both city and private property. The areas to the north, east, and west are residential properties. A golf course borders the site on the west. According to the evidence found in the Transaction Screen Process, no industrial or commercial facilities have existed on properties adjacent to the site.

D. Description of Future Property Use

The proposed development consists of developing 45.3± acres into residential development. About 35% of the total area will remain undisturbed and as "open space".

III. METHODS AND FINDINGS

Rhino Engineering performed the Transaction Screen Process in conformance with the ASTM E 1528-00 guidance document, *Standard Practice for Environmental Site Assessments: Transaction Screen Process.*

A. Transaction Screen Questionnaire (TSQ)

A key component to the Transaction Screen Process is the Transaction Screen Questionnaire. The TSQ asks the owner and any occupants to offer any and all knowledge of prior industrial uses of the land, existing or prior land issues, and existing or prior structural evidence of industrial usage. Additionally, a site visit by Rhino Engineering is conducted to assess the same questions per the TSQ. The complete TSQ is provided in Appendix A.

The completed TSQ indicates no reason for concern on this site.

B. Government Database Review

Satisfi produced a government database report on the site. The report, included in Appendix B, lists most if not all ASTM required findings for possible sources of contamination surrounding the site. The site in this report had ***three mapped findings all related to the Petro Mart Broadway gas station***. Other unmapped sites were found, but it is unclear how close to the site they exist. The site inspection detailed below gives more information of additional findings.

The database review for this site indicates that the site is free of contamination.

C. Site Inspection

A reconnaissance site visit by Rhino Engineering was used as to answer question on the TSQ and provide visual evidence of any findings. A digital camera was used to photograph areas of the site. All photographs are shown on page 4.

Residential property surrounds most of the site. Pasture and open space land also exist along the north and south boundaries. ***No environmental conditions were recognized***. Existing conditions worth noting include cut rock and soil piles.



Figure 1: Cut soil piles, south side of property



Figure 2: Cut rock piles, center of property



Figure 3: Nearest gas station, Broadway Blvd.



Figure 4: Golf Course to the west

IV. RECOMMENDATIONS

No environmental conditions of concern were recognized per the ASTM Transaction Screen Process. No further inquiry is needed at the site.

V. LIMITATIONS

Environmental conditions that visual observation cannot identify may exist. While significant information is obtained through the Transaction Screen Process based on the reconnaissance visit and the TSQ, no investigation is complete enough to ensure that no hazardous material, petroleum products, or contamination exists on the site in question.

This report presents professional opinions and judgment, but should not be used as a guarantee for a risk- free site. The Transaction Screen Process does not meet the requirements for obtaining Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) liability protection under the U.S. Environmental Protection Agency's proposed "All Appropriate Inquiry" rule. Opinions and judgments in this report do not extend to property conditions beyond the time of the assessment.

VI. REFERENCES

The following manuals and computer programs were used for this report:

- ASTM Document E 1528-00 *Standard Practice for Environmental Site Assessments: Transaction Screen Process*

APPENDIX A:

Transaction Screen Questionnaire

ASTM E1528 Transaction Screen Questionnaire

Site Name: Pinnacle Ridge Subdivision
Client: Two R & D, LLC
Address/Location: 1880 K Road
Fruita, Colorado 81521

	Question	Owner	Occupants(if applicable)	Observed During Site Visit
1a.	Is the property used for an industrial use?	N	N/A	N
1b.	Is any adjoining property used for an industrial use?	N	N/A	N
2a.	Did you observe evidence or do you have any prior knowledge that the property has been used for an industrial use in the past?	N	N/A	N
2b.	Did you observe evidence or do you have any prior knowledge that the adjoining property has been used for an industrial use in the past?	N	N/A	N
3a.	Is the property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing or recycling facility (if applicable, identify which)?	N	N/A	N
3b.	Is any adjoining property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing or recycling facility (if applicable, identify which)?	N	N/A	N
4a.	Did you observe evidence, or do you have prior knowledge that the property has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing or recycling facility (if applicable, identify which)?	N	N/A	N
4b.	Did you observe evidence, or do you have prior knowledge that any adjoining property has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing or recycling facility (if applicable, identify which)?	N	N/A	N

	Question	Owner	Occupants(if applicable)	Observed During Site Visit
5a.	Are there currently any damaged or discarded automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of >5gal (19L) in volume or 50 gal (190L) in the aggregate, stored on or used at the property or at the facility?	N	N/A	N
5b.	Did you observe evidence, or do you have prior knowledge that there have been previously any damaged or discarded automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of >5gal (19L) in volume or 50 gal (190L) in the aggregate, stored on or used at the property or at the facility?	N	N/A	N
6a.	Are there currently any industrial drums (typically 55 gal [208 L]) or sacks of chemical located on the property or at the facility?	N	N/A	N
6b.	Did you observe evidence, or do you have any prior knowledge that there have been previously any industrial drums (typically 55 gal [208L]) or sacks of chemical located on the property or at the facility?	N	N/A	N
7a.	Did you observe evidence or do you have any prior knowledge that fill dirt has been brought onto the property that originated from a contaminated site?	N	N/A	N
7b.	Did you observe evidence or do you have any prior knowledge that fill dirt has been brought onto the property that is of an unknown origin?	N	N/A	N
8a.	Are there currently any pits, ponds, or lagoons located on the property in connection with waster treatment or waste disposal?	N	N/A	N
8b.	Did you observe evidence, or do you have any prior knowledge that there have been previously any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?	N	N/A	N
9a.	Are there currently any stained soils on the property?	N	N/A	N
9b.	Did you observe evidence or do you have any prior knowledge that there has been previously any stained soils on the property?	N	N/A	N
10a.	Are there currently any registered or unregistered storage tanks (above or underground) located on the property?	N	N/A	N
10b.	Did you observe evidence or do you have any prior knowledge that there has been previously any registered or unregistered storage tanks (above or underground) located on the property?	N	N/A	N

	Question	Owner	Occupants(if applicable)	Observed During Site Visit
11a.	Are there currently any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?	N	N/A	N
11b.	Did you observe evidence or do you have any prior knowledge that there has been previously any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?	N	N/A	N
12a.	Is there currently evidence of leaks, spills, or staining by substances other that water, or foul odors, associated with any flooring, drains, walls, ceilings, or exposed grounds on the property?	N	N/A	N
12b.	Did you observe evidence or do you have prior knowledge that there have been previously any leaks, spills, or staining by substances other than water, or foul odors, associated with any flooring, drains, walls, ceilings, or exposed grounds on the property?	N	N/A	N
13a.	If the property is served by a private well or non-public water system, is there evidence or do you have prior knowledge that contaminants have been identified in the well or system that exceed guidelines applicable to the water system?	N	N/A	N
13b.	If the property is served by a private well or non-public water system, is there evidence or do you have prior knowledge that the well has been designated as contaminated by any government environmental/health agency?	N	N/A	N
14.	Does the owner or occupant of the property have any knowledge of environmental liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property?	N	N/A	N
15a.	Has the owner or occupant of the property been informed of the past existence of the hazardous substances or petroleum products with respect to the property or any facility located on the property?	N	N/A	N
15b.	Has the owner or occupant of the property been informed of the current existence of the hazardous substances or petroleum products with respect to the property or any facility located on the property?	N	N/A	N

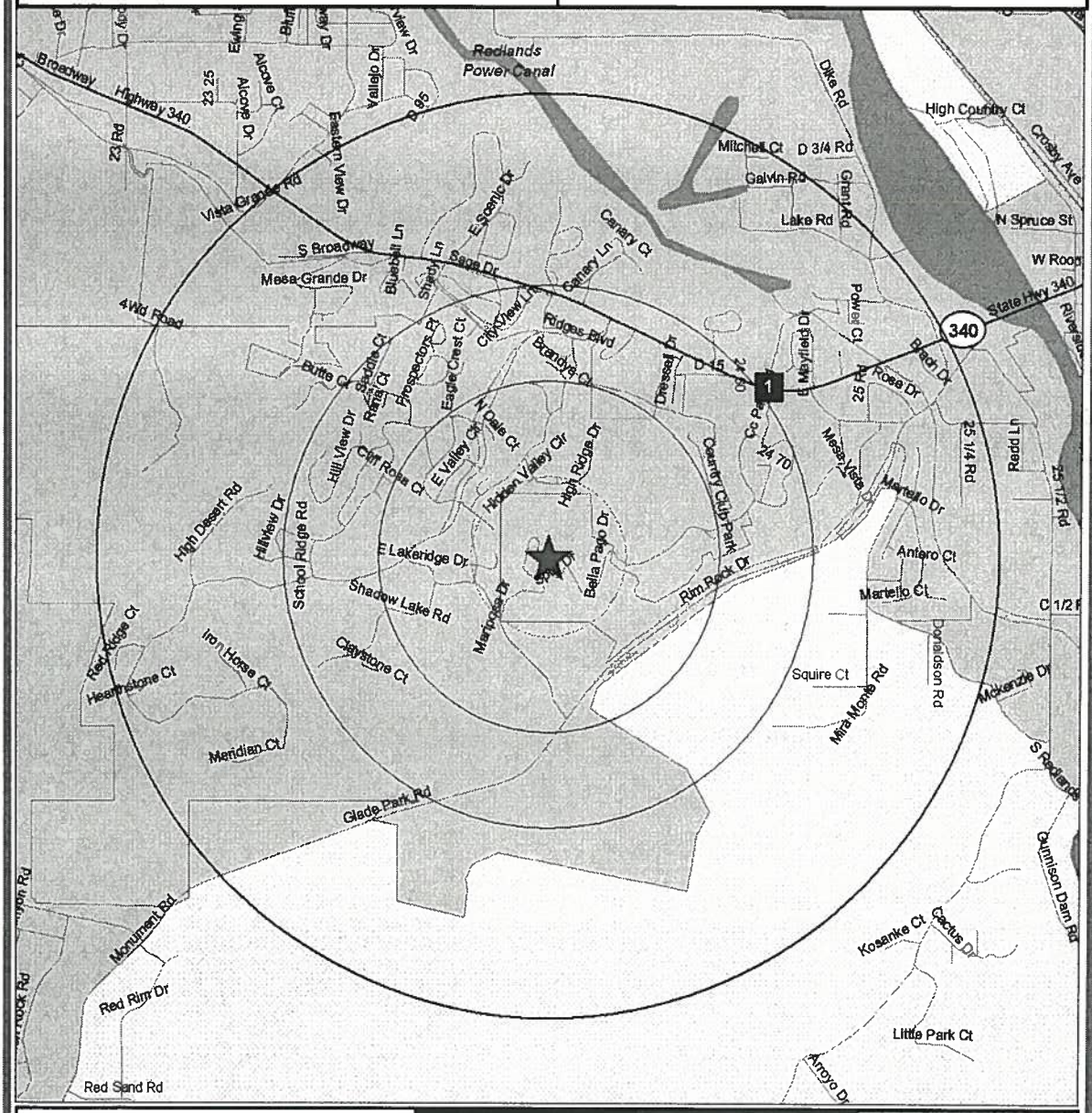
	Question	Owner	Occupants(if applicable)	Observed During Site Visit
15c.	Has the owner or occupant of the property been informed of the past existence of environmental violations with respect to the property or any facility located on the property?	N	N/A	N
15d.	Has the owner or occupant of the property been informed of the currently existence of environmental violations with respect to the property of any facility located on the property?	N	N/A	N
16.	Does the owner or occupant of the property have any knowledge of any environmental site assessment of the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property?	N	N/A	N
17.	Does the owner or occupant of the property know any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum products involving the property by any owner or occupant of the property?	N	N/A	N
18a.	Does the property discharge waste water (not including sanitary waste or storm water) onto or adjacent to the property and/or into a storm water system?	N	N/A	N
18b.	Does the property discharge waste water (not including sanitary waste or storm water) onto or adjacent to the property and/or into a sanitary sewer system?	N	N/A	N
19.	Did you observe evidence or do you have any prior knowledge that any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries, or any other waste materials have been dumped above grade, buried, and/or burned on the property?	N	N/A	N
20.	Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?	N	N/A	N

APPENDIX B:

Government Database Review

Environmental Database Search

Subject Property	Client Information
Pinnacle Ridge Subdivision **East of Mariposa Drive** **Grand Junction, CO 81503** Latitude: 39.057761 Longitude: -108.605310	Rhino Engineering 1334 Ute Avenue Grand Junction, CO 81501 Attention: Gretta Simpson Reference: 21070.01



NORTH

satisfi environmental information

Databases >	NPL, SPL, CORRACT			TSD, CERCLIS, SCL, Landfill, Tank Leak			Tank, NFRAP, Spill, Generator, Other HW		
Search Radius >	1 mile			1/2 mile			1/4 mile		
Subject Property	Single Finding	Multiple Findings	Large Finding	Single Finding	Multiple Findings	Large Finding	Single Finding	Multiple Findings	Large Finding
★	#	#	#	#	#	#	#	#	#

Executive Summary - Mapped Sites

MAP #	SITES FOUND		Distance (miles)*	NPL	SPL	CORRACTS	TSD	CERCLIS	SCL	Landfill	Tank Leak	Tank	NFRAP	Spill	Generator	Other HW
		Search Radius >		1 mile			1/2 mile					1/4 mile				
1	PETRO MART #30	2526 BROADWAY	0.49								■	●			●	
	0 Sites Within 0 - 1/4 mile		0 Findings >	0	0	0	0	0	0	0	0	0	0	0	0	0
	1 Sites Within 1/4 - 1/2 mile		3 Findings >	0	0	0	0	0	0	0	1	1	0	0	1	0
	0 Sites Within 1/2 - 1 mile		0 Findings >	0	0	0	0	0	0	0	0	0	0	0	0	0
	1 SITES TOTAL		3 FINDINGS TOTAL >	0	0	0	0	0	0	0	1	1	0	0	1	0

* Distances are approximate and should not be blindly relied on, for three reasons...

1) Although the subject property is mapped as a point, the ASTM standard requires that distance be measured from the property boundary. To approximate the boundary, Satisfi adds a buffer that may be seen on the map as a faint circle around the star. All distances in this report are measured from this buffer. For example, if the buffer is 0.06 mile, then the 1/4 mile search circle is actually 0.31 mile from the center of the star.

2) Findings are usually mapped as points as well, and distance is measured to these points. However, depending on the size of a finding, its nearest boundary may actually be much closer than the point at which it is mapped.

3) Findings are normally mapped based on their address. Although Satisfi uses the best digital address maps available, mapping by address is not an exact science.

Accordingly, a distance of 0.00 miles does not necessarily mean that a finding is on or adjacent to the property. It only means that the finding was mapped within the buffer described in 1) above.

"OtherHW" includes RCRA listings that do not fall in the categories of Generator, TSD or CORRACTS. These listings may be former or suspected generators, transporters, or identified non-generators. See the RCRIS Activity details in the Detailed Findings for an indication of why a given site is listed in RCRIS. Although OtherHW is not required by ASTM, it can be very helpful at times.

If it appears that a finding has been reported beyond the ASTM-required distance, it is because it's a "tagalong". When Satisfi reports a site, all of the findings for that site are included regardless of distance, in order to provide full detail. For example, if a Tank Leak is found beyond 1/4 mile, the Tank listing is also included in order to add useful information about the number of tanks, their size, age, contents, etc.

Unmapped Sites

SITES FOUND		NPL	SPL	CORRACTS	TSD	CERCLIS	SCL	Landfill	Tank Leak	Tank	NFRAP	Spill	Generator	Other HW
BOOKCLIFF	ADDRESS NOT REPORTED;							■						
CLIMAX MILL	ADDRESS NOT REPORTED;							■						
CONOCO FEATER PETROLEUM	Unknown							■						
COTTER	ADDRESS NOT REPORTED;							■						
FEGA STATE RECREATION AREA	ADDRESS NOT REPORTED;							■						
MATCHETT MEADOWS SUBDIVISION	Unknown							■						
MESA CO SL	ADDRESS NOT REPORTED;							■						
NOWSCO SERVICES	PABCO INDUSTRIAL PARK 2;									●				
PIUTE ENERGY COMPANY	ADDRESS NOT REPORTED;							■						
TRAVEL GALLERY	TRAVEL GALLERY;								■					
UMTRAP	ADDRESS NOT REPORTED;							■						
UTE WATER CONSV. GRAND JUNCT.	ADDRESS NOT REPORTED;							■						
VALLEY VISTA SUB. GRAND JUNCT	ADDRESS NOT REPORTED;							■						
13 TOTAL SITES	13 TOTAL FINDINGS >	0	0	0	0	0	0	11	1	1	0	0	0	0

These sites could not be mapped accurately because of inadequate addresses or street maps. Although Satisfi uses the best digital address maps available, mapping by address is not an exact science. If you locate one of these listings, please call Satisfi at 720-200-9472 to have it mapped.

Unmapped listings are reported on the chance that their location might be revealed during the course of a site visit or other research. However, unless there is some specific reason to believe that a listing is nearby and of potential concern, there is no requirement in the ASTM standard to attempt to track down

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Limitation of Liability: Please note that the accuracy of public records cannot be guaranteed, nor can this search. No warranty is made or implied regarding our products. By reviewing this report, the reader agrees to assume all related risk and to release Satisfi from liability for any damages. However, if this

The body of the report that follows is organized into three sections for quick review:

DETAILED FINDINGS - MAPPED SITES

DETAILED FINDINGS - UNMAPPED SITES

DATABASE SOURCES

Detailed Findings - Mapped Sites

PETRO MARK BROADWAY
2526 BROADWAY, GRAND JUNCTION, CO 81503

Map # ▶ ~0.49 mile NE

1

Conditionally Exempt Small Quantity Generator - Source 71/ RCRIS

Generator

Satisfi ID:	00071-0006260
RCRA Handler ID:	COR000007203
Contact:	CHRIS CLARK 140 NORTH MESA, FRUITA, CO 81521 9708589115
Owner:	WESCOURT GROUP INC
RCRIS Activity:	14-MAR-1997 - Conditionally Exempt Generator Activity
RCRIS Violations:	None

PETRO MART #30
2526 BROADWAY, GRAND JUNCTION, CO, 81503

Map # ▶ ~0.49 mile NE

1

Registered Tank - Source 77/ TANKS

TANK

Satisfi ID:	00077-0008809
Facility ID:	9027
Owner:	7550 - WESTEC FRUITA INC, PO BOX 2184, GRAND JUNCTION, CO, 81502
Tank Details:	9027-1 12000 gal. UST Contents: Gasoline Status: Closed
Tank Details:	9027-2 3000 gal. UST Contents: Gasoline Status: Closed
Tank Details:	9027-3 6000 gal. UST Contents: Gasoline Status: Closed
Tank Details:	9027-4 6000 gal. UST Contents: Gasoline Status: Closed
Tank Details:	9027-5 12000 gal. UST Contents: Gasoline Status: Closed
Tank Details:	9027-6 1000 gal. UST Contents: Gasoline Status: Closed
Tank Details:	9027-7 10000 gal. UST Contents: Gasoline Status: Closed
Tank Details:	9027-8 6000 gal. UST Contents: Gasoline Status: Closed
Tank Details:	9027-9 4000 gal. UST Contents: 4 - Diesel Status: Closed

PETRO MART #30
2526 BROADWAY, GRAND JUNCTION, 81503

Map # ▶ ~0.49 mile NE

1

Tank Leak - Source 78/ Tank Leaks

TANKLEAK

Satisfi ID:	00078-0002805
Alternate Facility Name:	METRO #30
Event ID:	3031
Date Reported:	8/3/1995
File Status:	Open

Unmapped Sites

BOOKCLIFF
ADDRESS NOT REPORTED, CITY NOT REPORTED, CO

Unmapped

Waste or Fill Site - Source 70/ CO Old Landfills — Landfill

Satisfi ID:	00070-0001766
Source Name:	CO Old Waste Sites
Source Description:	"This list represents the collective memory of CDPHE personnel in the 1980's as to where landfilling or illegal dumping were known or suspected to have occurred. The list is not being updated. From CDPHE - Colorado Department of Public Health & Environment
Site Type:	LANDFILL
Fill Material:	REFUSE.
Size (acres):	10 - 50
Comments:	BLM PERMITTED.

CLIMAX MILL
ADDRESS NOT REPORTED, CITY NOT REPORTED, CO

Unmapped

Waste or Fill Site - Source 70/ CO Old Landfills — Landfill

Satisfi ID:	00070-0001764
Source Name:	CO Old Waste Sites
Source Description:	"This list represents the collective memory of CDPHE personnel in the 1980's as to where landfilling or illegal dumping were known or suspected to have occurred. The list is not being updated. From CDPHE - Colorado Department of Public Health & Environment
Township Range Section:	T11S R S24
Site Type:	MILL WASTE
Fill Material:	TAILINGS.
Size (acres):	10 - 50
Comments:	COLORADO RIVER.

CONOCO FEATER PETROLEUM
, No City Reported, CO

Unmapped

Waste or Fill Site - Source 73/ CO CDPHE Landfills — Landfill

Satisfi ID:	00073-0000377
Source Name:	CO Recent Waste Sites
Source Description:	"This list includes solid waste facilities that have been permitted by the state and may be open or closed. Satisfi checks for new listings every 90 days. From CDPHE - Colorado Department of Public Health & Environment
Agency Landfill ID:	999-REM-102
Site Type:	REMEDIATION
Open Date:	2/22/2000
Close Date:	Currently Open

COTTER
ADDRESS NOT REPORTED, CITY NOT REPORTED, CO

Unmapped

Waste or Fill Site - Source 70/ CO Old Landfills — Landfill

Satisfi ID:	00070-0001763
Source Name:	CO Old Waste Sites

Unmapped Sites (Cont.)

(Cont.) — Unmapped

Source Description:	"This list represents the collective memory of CDPHE personnel in the 1980's as to where landfilling or illegal dumping were known or suspected to have occurred. The list is not being updated. From CDPHE - Colorado Department of Public Health & Environment
Operator/Owner/Other:	/ / COTTER
Site Type:	OTHER
Fill Material:	RADIOACTIV.
Comments:	DATE 1978 5(E) CONTAMINATED CLAY POND. HAZARD TYPE: RADIOACTIV. IMPACT: SOIL.

FEGA STATE RECREATION AREA
ADDRESS NOT REPORTED, CITY NOT REPORTED, CO — Unmapped

Waste or Fill Site - Source 70/ CO Old Landfills — Landfill

Satisfi ID:	00070-0001765
Source Name:	CO Old Waste Sites
Source Description:	"This list represents the collective memory of CDPHE personnel in the 1980's as to where landfilling or illegal dumping were known or suspected to have occurred. The list is not being updated. From CDPHE - Colorado Department of Public Health & Environment
Site Type:	LANDFILL
Fill Material:	REFUSE.
Size (acres):	1 - 10

MATCHETT MEADOWS SUBDIVISION
, No City Reported, CO — Unmapped

Waste or Fill Site - Source 73/ CO CDPHE Landfills — Landfill

Satisfi ID:	00073-0000367
Source Name:	CO Recent Waste Sites
Source Description:	"This list includes solid waste facilities that have been permitted by the state and may be open or closed. Satisfi checks for new listings every 90 days. From CDPHE - Colorado Department of Public Health & Environment
Agency Landfill ID:	999-REM-083
Site Type:	REMEDIATION
Open Date:	10/18/1999
Close Date:	Closed, but date not reported.

MESA CO SL
ADDRESS NOT REPORTED, GRAND JUNCTION, CO — Unmapped

Waste or Fill Site - Source 70/ CO Old Landfills — Landfill

Satisfi ID:	00070-0001786
Source Name:	CO Old Waste Sites
Source Description:	"This list represents the collective memory of CDPHE personnel in the 1980's as to where landfilling or illegal dumping were known or suspected to have occurred. The list is not being updated. From CDPHE - Colorado Department of Public Health & Environment
Township Range Section:	02S 1E 5
Site Type:	LANDFILL
Fill Material:	REFUSE.
Size (acres):	10 - 50

Unmapped Sites (Cont.)

NOWSCO SERVICES
PABCO INDUSTRIAL PARK 2, GRAND JUNCTION, CO, 81503

Unmapped

Registered Tank - Source 77/ TANKS — TANK

Satisfi ID:	00077-0008279
Facility ID:	8487
Owner:	551 - BIG THREE INDUSTRIES, 3535 W 12TH ST BOX 3047, HOUSTON, TX, 77253
Tank Details:	8487-1 10000 gal. UST Contents: Gasoline Status: Closed
Tank Details:	8487-2 10000 gal. UST Contents: Kerosene Status: Closed
Tank Details:	8487-3 10000 gal. UST Contents: Z Hazardous Substance Status: Closed
Tank Details:	8487-4 560 gal. UST Contents: 6 - Used Oil (Waste Oil) Status: Closed

PIUTE ENERGY COMPANY
ADDRESS NOT REPORTED, CITY NOT REPORTED, CO

Unmapped

Waste or Fill Site - Source 70/ CO Old Landfills — Landfill

Satisfi ID:	00070-0001761
Source Name:	CO Old Waste Sites
Source Description:	"This list represents the collective memory of CDPHE personnel in the 1980's as to where landfilling or illegal dumping were known or suspected to have occurred. The list is not being updated. From CDPHE - Colorado Department of Public Health & Environment
Township Range Section:	8S 98W 36
Site Type:	OTHER
Fill Material:	LIQUIDS.
Comments:	OIL DISPOSAL SITE. HAZARD TYPE: OTHER. IMPACT: GW.

Travel Gallery
Grand Junction, Mesa, CO

Unmapped

Tank Leak - Source 23/ LUST Trust Tanks — TANKLEAK

Satisfi ID:	00023-0000228
Satisfi Comment:	No other information reported

UMTRAP
ADDRESS NOT REPORTED, CITY NOT REPORTED, CO

Unmapped

Waste or Fill Site - Source 70/ CO Old Landfills — Landfill

Satisfi ID:	00070-0001762
Source Name:	CO Old Waste Sites
Source Description:	"This list represents the collective memory of CDPHE personnel in the 1980's as to where landfilling or illegal dumping were known or suspected to have occurred. The list is not being updated. From CDPHE - Colorado Department of Public Health & Environment
Site Type:	MILL WASTE
Fill Material:	TAILINGS.
Comments:	DATE- 1966 CONTAMINATED GROUND&BUILDG. HAZARD TYPE: RADIOACTIV. IMPACT: AIR.

UTE WATER CONSV. GRAND JUNCT.
ADDRESS NOT REPORTED, GRAND JUNCTION, CO

Unmapped

Waste or Fill Site - Source 70/ CO Old Landfills — Landfill

Satisfi ID:	00070-0001781

Unmapped Sites (Cont.)

(Cont.) — Unmapped

Source Name:	CO Old Waste Sites
Source Description:	"This list represents the collective memory of CDPHE personnel in the 1980's as to where landfilling or illegal dumping were known or suspected to have occurred. The list is not being updated. From CDPHE - Colorado Department of Public Health & Environment
Township Range Section:	T11 R98 S02
Site Type:	IMPOUNDMENT
Fill Material:	LIQUIDS.
Size (acres):	>100
Comments:	5B IND 7E 2PONDS 9C SETTLING PONDS. HAZARD TYPE: CHEMICAL. IMPACT: GW.

VALLEY VISTA SUB. GRAND JUNCT
ADDRESS NOT REPORTED, GRAND JUNCTION, CO — Unmapped

Waste or Fill Site - Source 70/ CO Old Landfills — Landfill

Satisfi ID:	00070-0001780
Source Name:	CO Old Waste Sites
Source Description:	"This list represents the collective memory of CDPHE personnel in the 1980's as to where landfilling or illegal dumping were known or suspected to have occurred. The list is not being updated. From CDPHE - Colorado Department of Public Health & Environment
Operator/Owner/Other:	/ / VALLEY VISTA SUBDIVI
Township Range Section:	T01 R01E S34
Site Type:	IMPOUNDMENT
Fill Material:	LIQUIDS.
Size (acres):	1 - 10
Comments:	5-B IND 7B 3PONDS 8I NONE 9C AIR LAGOO. HAZARD TYPE: CHEMICAL. IMPACT: GW.

Database Sources

◆ 1 mile search radius

NP	**Source: 75 / CERCLIS** The National Priority List (NPL) identifies sites with confirmed contamination that are either proposed to be or are in the process of being cleaned up under the direction of the US EPA Superfund Program. Nationwide, there are approximately 1,600 Superfund sites. NPL sites are a subset of the EPA's Comprehensive Environmental Response, Compensation & Liability Information System (CERCLIS). Agency Name: US EPA - United States Environmental Protection Agency, Superfund Program Agency Website: http://www.epa.gov/superfund/sites/cursites/index.htm			
	Agency Updated:	04/29/05	Updated by Agency:	Monthly
	Satisfi Obtained:	04/29/05	Agency Contact:	None
	Last Requested:	04/29/05		
NPL	**Source: 11 / Denver Radium** Although the Denver Radium site is reported as a single NPL listing, it includes 68 locations grouped into 11 Operable Units spread throughout metro Denver. Because of the large number of scattered locations, Satisfi treats this NPL site as a separate source. For more information, please visit the Denver Radium web site at: www.cdphe.state.co.us/hm/rpdenrad.asp Agency Name: US EPA - United States Environmental Protection Agency, Superfund Program Agency Website: www.epa.gov/region08/sf/shtk/index.html AND http://www.cdphe.state.co.us/hm/rpdenrad.asp			
	Agency Updated:	05/04/04	Updated by Agency:	Monthly
	Satisfi Obtained:	05/04/04	Agency Contact:	None
	Last Requested:	04/01/05		
SPL	**Source: 8 / SPL** There is no State Priority List (SPL) for Colorado. However, there are twenty sites that the state seems to place in the same category as NPL sites. Eighteen of them are UMTRA (Uranium Mill Tailing Remedial Action) sites, one is a NRDS site (Natural Resource Damages Site), and one is a Private Cleanup Site (Non-Superfund). Thousands of UMTRA "vicinity properties" have also been identified where mill tailings were used as sand in concrete, roadbase, trenches, bricks, etc. Such properties have been remediated in Durango, Grand Junction, Fruita, Palisade, Gunnison, Maybell, Naturita and Rifle, but some unidentified tailings may still remain in and around these communities. CDPHE's list of vicinity properties is not publicly available and was not searched for this report. Property-specific information is available through the CDPHE Grand Junction office. See www.cdphe.state.co.us/hm/rptailng.html. Agency Name: CDPHE - CO Dept of Public Health & Environment, Hazardous Materials & Waste Mgmt Div Agency Website: www.cdphe.state.co.us/hm/rp_gen.asp AND http://www.cdphe.state.co.us/hm/sf_sites.asp			
	Agency Updated:	08/26/03	Updated by Agency:	No set schedule
	Satisfi Obtained:	08/26/03	Agency Contact:	None
	Last Requested:	04/29/05		
CORRACTS	**Source: 71 / RCRIS** Corrective Action (CORRACT) sites have hazardous waste problems, often involving contamination. Under the Resource Conservation & Recovery Act (RCRA), the owners or operators of these facilities are responsible for investigating and, as necessary, cleaning up releases. Nationwide, there are approximately 6,500 CORRACT sites. CORRACT sites are a subset of the EPA's Resource Conservation & Recovery Information System (RCRIS). Agency Name: US EPA - United States Environmental Protection Agency, Office of Solid Waste Agency Website: www.epa.gov/epaoswer/hazwaste/ca/facility.htm			
	Agency Updated:	03/15/05	Updated by Agency:	Monthly
	Satisfi Obtained:	03/15/05	Agency Contact:	Tony Selle
	Last Requested:	03/15/05		

■ 1/2 mile search radius

TSD	**Source: 71 / RCRIS** Facilities that Treat, Store or Dispose of hazardous waste (TSD sites) are regulated under the Resource Conservation & RecoveryAct (RCRA). Nationwide, there are approximately 2,000 TSD facilities. TSD sites are a subset of the Resource Conservation & Recovery Information System (RCRIS). Agency Name: US EPA - United States Environmental Protection Agency, Office of Solid Waste Agency Website: www.epa.gov/epaoswer/hazwaste/ca/facility.htm			
	Agency Updated:	03/15/05	Updated by Agency:	Monthly
	Satisfi Obtained:	03/15/05	Agency Contact:	Tony Selle
	Last Requested:	03/15/05		

Database Sources (Cont.)

■ 1/2 mile search radius (Cont.)

CERCLIS	**Source: 75 / CERCLIS** The Comprehensive Environmental Response, Compensation, & Liability Information System (CERCLIS) identifies potential and confirmed hazardous waste sites that are being assessed by EPA for possible inclusion on the National Priority List (NPL). If a site does not qualify for the NPL, it is removed from CERCLIS and archived on the No Further Remedial Action Planned (NFRAP) list. There are over 11,000 CERCLIS sites nationwide. Agency Name: US EPA - United States Environmental Protection Agency, Superfund Program Agency Website: http://www.epa.gov/superfund/sites/cursites/index.htm			
	Agency Updated:	04/29/05	Updated by Agency:	Monthly
	Satisfi Obtained:	04/29/05	Agency Contact:	None
	Last Requested:	04/29/05		
SCL	**Source: 74 / CO VCL VCUP** There is no State Cerclis List (SCL) for Colorado. However, the state's Voluntary Cleanup List (VCL) does identify sites where owners have submitted a Voluntary Cleanup Plan (VCUP) for state approval. The list also includes sites where owners have requested a No Action Determination (NAD) from the state and have been rejected. The state's cleanup decisions are based on existing standards and the proposed use of the property. Owners are responsible for the cleanup and verification. Agency Name: CDPHE - CO Dept of Public Health & Environment, Hazardous Materials & Waste Mgmt Div Agency Website: www.cdphe.state.co.us/hm/rpvoluntarycleanup.asp			
	Agency Updated:	04/25/05	Updated by Agency:	No set schedule
	Satisfi Obtained:	04/25/05	Agency Contact:	Mark Walker
	Last Requested:	04/25/05		
Landfill	**Source: 70 / CO Old Landfills** This database is proprietary to Satisfi and represents a compilation of eleven state and local agency sources. The agencies generated these lists on a one-time basis and do not expect to update them. A more detailed description of the applicable source is included with any findings reported from this database. The eleven sources are: 1. Adams County CO Old Landfills 2. Arapahoe County CO Old Landfills 3. Douglas County CO Old Landfills 4. Weld County CO Old Landfills 5. Boulder County CO Old Landfills 6. Jefferson County CO Old Landfills 7. Denver CO Methane Study 8. CO Methane Study 9. DRCOG Methane Study 10. Denver CO Old Fil Sites 11. CO Old Waste Sites Agency Name: US EPA and various State and Local Agencies Agency Website: No website available			
	Agency Updated:	02/17/05	Updated by Agency:	Never
	Satisfi Obtained:	02/17/05	Agency Contact:	Varies
	Last Requested:	02/06/03		
Landfill	**Source: 73 / CO CDPHE Landfills** These solid waste facilities have received permits from the state. The facilities may be open or closed. Agency Name: CDPHE - CO Dept of Public Health & Environment, Hazardous Materials & Waste Mgmt Div Agency Website: www.cdphe.state.co.us/hm/cp_gen.asp#cp_swu			
	Agency Updated:	04/19/05	Updated by Agency:	No set schedule
	Satisfi Obtained:	04/19/05	Agency Contact:	Mira Neumiller
	Last Requested:	04/19/05		
TANKLEAK	**Source: 23 / LUST Trust Tanks** Suspected tank leaks have been discovered at these sites, but the facility responsible for the leak has not been identified. The state's investigation and search for responsible parties is paid for out of the state's Leaking Underground Storage Tank (LUST) Trust fund. Agency Name: Colorado Dept of Labor & Employment, Division of Oil & Public Safety, State Fund Section Agency Website: http://oil.cdle.state.co.us/OIL/Fund/fund_home.asp			
	Agency Updated:	01/01/00	Updated by Agency:	Database Closed
	Satisfi Obtained:	11/16/02	Agency Contact:	Wendy Shoup
	Last Requested:			

Database Sources (Cont.)

■ 1/2 mile search radius (Cont.)

TANKLEAK	**Source: 78 / Tank Leaks** These are above-ground and underground storage tank leaks that have been reported to the state. Agency Name: Colorado Dept of Labor & Employment, Division of Oil & Public Safety, Oil Inspectors Section Agency Website: http://costis.cdle.state.co.us/home.asp			
	Agency Updated: Satisfi Obtained: Last Requested:	05/09/05 05/09/05 05/09/05	Updated by Agency: Agency Contact:	Frequently Wendy Shoup

● 1/4 mile search radius

Tank	**Source: 77 / TANKS** These are above-ground and underground storage tanks that have been registered with the state. Agency Name: Colorado Dept of Labor & Employment, Division of Oil & Public Safety, Oil Inspectors Section Agency Website: http://costis.cdle.state.co.us/home.asp			
	Agency Updated: Satisfi Obtained: Last Requested:	05/09/05 05/09/05 05/09/05	Updated by Agency: Agency Contact:	Frequently Wendy Shoup
NFRAP	**Source: 76 / NFRAP** The No Further Remedial Action Planned (NFRAP) database identifies sites where assessment has been completed and EPA has determined no further steps will be taken to list the site on the National Priority List (NPL). This may mean that: a) no contamination was found: b) contamination was removed; or c) contamination was not serious enough to qualify for the NPL. Nationwide, there are over 33,000 NFRAP sites. Agency Name: US EPA - United States Environmental Protection Agency, Superfund Program Agency Website: http://www.epa.gov/superfund/sites/arcsites/index.htm			
	Agency Updated: Satisfi Obtained: Last Requested:	04/29/05 04/29/05 04/29/05	Updated by Agency: Agency Contact:	Monthly None
NFRAP	**Source: 74 / CO VCL VCUP** There is no state NFRAP list for Colorado. However, the state's Voluntary Cleanup List (VCL) does identify sites where owners have requested a No Action Determination (NAD) and the state has approved them. The state's cleanup decisions are based on existing standards and the proposed use of the property. Agency Name: CDPHE - CO Dept of Public Health & Environment, Hazardous Materials & Waste Mgmt Div Agency Website: www.cdphe.state.co.us/hm/rpvoluntarycleanup.asp			
	Agency Updated: Satisfi Obtained: Last Requested:	04/25/05 04/25/05 04/25/05	Updated by Agency: Agency Contact:	No set schedule Mark Walker
Spill	**Source: 72 / ERNS** The Emergency Response Notification System (ERNS) contains data on all releases of oil and hazardous substances reported to the National Response Center (NRC) and to the EPA since 1986. The information is usually called in by a person associated with the facility or vehicle that had the release, although government agencies and the public at large may also call. All calls are recorded without regard for their significance or accuracy, and information is often sketchy. Nationwide, approximately 30-35,000 reports are recorded every year. Agency Name: US EPA - United States Environmental Protection Agency, National Response Center (NRC) Agency Website: www.nrc.uscg.mil/wdbcgi/wdbcgi.exe/WWWUSER/WEBDB.foia_query.show_parms			
	Agency Updated: Satisfi Obtained: Last Requested:	01/26/05 04/12/05 04/15/05	Updated by Agency: Agency Contact:	Annually None
Generator	**Source: 71 / RCRIS** These facilities generate hazardous waste and are regulated under the Resource Conservation & Recovery Act (RCRA). Generators are a subset of the Resource Conservation & Recovery Information System (RCRIS). Agency Name: US EPA - United States Environmental Protection Agency, Office of Solid Waste Agency Website: www.epa.gov/epaoswer/hazwaste/ca/facility.htm			
	Agency Updated: Satisfi Obtained: Last Requested:	03/15/05 03/15/05 03/15/05	Updated by Agency: Agency Contact:	Monthly Tony Selle

Database Sources (Cont.)

● 1/4 mile search radius (Cont.)

OTHERHW

Source: 71 / RCRIS These facilites are listed on the Resource Conservation & Recovery Information System (RCRIS) but don't fit into the category of CORRACTS, TSDs, or Generators. They include hazardous waste Transporters, Non-Notifiers (facilities suspected of handling hazardous waste without proper authorization), former Generators, and others.

Agency Name: US EPA - United States Environmental Protection Agency, Office of Solid Waste

Agency Website: www.epa.gov/epaoswer/hazwaste/ca/facility.htm

Agency Updated:	03/15/05	Updated by Agency:	Monthly
Satisfi Obtained:	03/15/05	Agency Contact:	Tony Selle
Last Requested:	03/15/05		

GENERAL NOTES

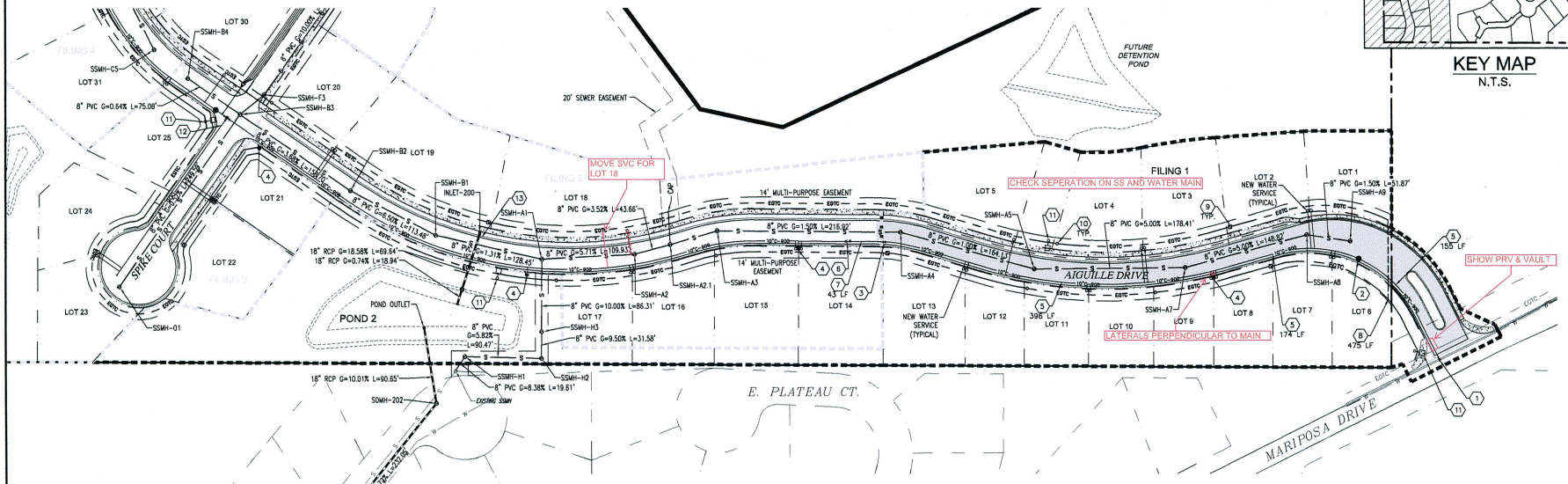
1. REFER TO THE GEOTECHNICAL INVESTIGATION BY GEOTECHNICAL ENGINEERING GROUP, INC., DATED APRIL 16, 2002 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET 3
6. HOUSES CONSTRUCTED ON LOTS 28-29 AND LOTS 55-72 SHALL HAVE SPRINKLER SYSTEMS INSTALLED. A 1" CUSTOMER WATER SERVICE LINE AND ¾" WATER METER WILL BE UTILIZED IN ACCORDANCE WITH UTE WATER CONSERVANCY DISTRICT STANDARDS & SPECIFICATIONS.

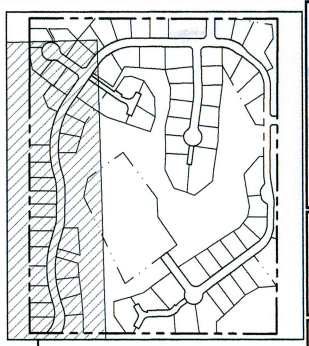
FILING NOTES

1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
2. INSTALL SANITARY SEWER FROM SSMH-A9 TO EXISTING MAN-HOLE IN RIDGEWAY COURT AS SHOWN INCLUDING LINE TO MAN-HOLE B-1.
3. END WATER LINE CONSTRUCTION AT THE MIDDLE OF LOT 14 AS SHOWN.

N

SCALE IN FEET
60 30 0 60 120
1" = 60'





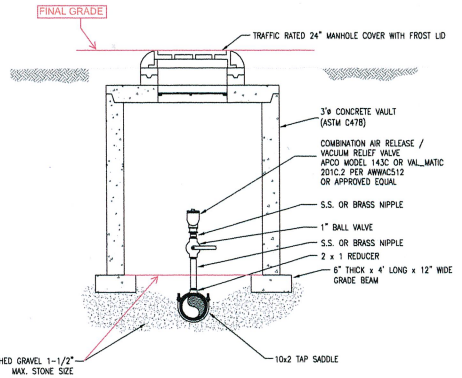
KEY MAP
N.T.S.

LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE
- EXISTING WATER LINE
- PROPOSED IRRIGATION
- PROPOSED SEWER
- EXISTING SEWER
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER SERVICE
- PROPOSED 4" SS SERVICE
- EXISTING GAS LINE
- PROPOSED GAS LINE (BY XCEL ENERGY)
- PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
- PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

Know what's below. Call before you dig.
Colorado 811
1-800-922-1987
co811.org



3'Ø MANHOLE AIR RELEASE/ VACUUM RELIEF VALVE DETAIL
N.T.S.

CONSTRUCTION NOTES:

1. CONNECT TO EXISTING 10" VALVE
2. INSTALL 2" AIR/VAC VALVE ON 10" MAIN RE: UTE WATER DETAILS
3. INSTALL 10" GATE VALVE RE: UTE WATER DETAILS
4. INSTALL FIRE HYDRANT ASSEMBLY RE: UTE WATER DETAILS
5. INSTALL WATER MAIN ALONG CURVE BY DEFLECTING PIPE TO 75% OF MANUFACTURER'S RECOMMENDATIONS
6. INSTALL BLOW-OFF ASSEMBLY & 10" CAP W/ THRUSTBLOCK RE: UTE WATER DETAILS
7. W/ PIPE JOINTS MUST BE RESTRAINED FOR A MINIMUM OF 43', FROM CAP TO VALVE. RE: UTE WATER VALVE INSTALLATION, LINE TERMINATION & TYPE 'A' BLOW-OFF STANDARD
8. INSTALL 4"ø UTILITY SLEEVES (5 SLEEVES @ 3' MIN)
9. PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)
10. PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
11. PROPOSED STREET LIGHT
12. INSTALL 4X10 REDUCER RE: UTE WATER STANDARDS
13. LOWER 10" WATER MAIN IN LIEU OF 45-DEGREE BENDS, DEFLECT PIPE TO DIP UNDER STORM INLET WITH A 6-INCH MINIMUM CLEARANCE BETWEEN PIPES.

ALL WATER METER PITS SHALL BE LOCATED ON OPPOSITE LOT SIDE OF DRY UTILITY TRANSFORMERS AND PEDESTALS. THIS IS A CUSTOMER/ CONSUMER SAFETY ISSUE.

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax: (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 15876

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MAJOR SUBDIVISION
FINAL PLAN

NO.	DATE	COMMENT	BY

FOR REVIEW - NOT FOR CONSTRUCTION

Composite Site Plan - Utility and Water Plan
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 09/08/17
SCALE: 1"= 60'
CAD ID: 3.0utility-f1.dwg

~SHEET~
C3.0

3 PAGE DOCUMENT

(2) 02/26

BK 3826 PG 220

2236038 BK 3826 PG 220-222
01/28/2005 10:29 AM
Janice Ward CLK&REC Mesa County, CO
RecFee $15.00 SurChg $1.00
DocFee $42.50

After Recording Return to:
Two R & D, LLC
1880 K Road
Fruita, CO 81521

Recorded by
First American Heritage Title Co.

WARRANTY DEED

This Deed, made **January 25, 2005**
Between **Claude A. Barlieb, also known as Claude A. Barlieb, Jr. and Marie L. Barlieb** of the County **Mesa**, State of **COLORADO**, grantor(s) and **Two R & D, LLC, a Colorado limited liability company,** whose legal address is **1880 K Road, Fruita, CO 81521**, County of **Mesa**, and State of **COLORADO**, grantee.
WITNESS, That the grantor, for and in the consideration of the sum of **FOUR HUNDRED TWENTY-FIVE THOUSAND AND 00/100 DOLLARS ($425,000.00)** the receipt and sufficiency of which is hereby acknowledged, has granted, bargained, sold and conveyed, and by these presents does grant, bargain, sell, convey and confirm, unto the grantee, their heirs and assigns forever, all the real property together with improvements, if any, situate, lying and being in the County of **Mesa**, State of **COLORADO** described as follows:

See Attached Exhibit "A"

H0032984 / 154500

also known by street and number as **Vacant Land, Grand Junction, CO**
TOGETHER with all and singular hereditaments and appurtenances, thereunto belonging, or in anywise appertaining, and the reversion and reversions, remainder and remainders, rents issues and profits thereof, and all the estate, right, title, interest, claim and demand whatsoever of the grantor, either in law or equity, of, in and to the above bargained premises, with the hereditaments and appurtenances.
TO HAVE AND TO HOLD said premises above bargained and described, with the appurtenances, unto the grantee, his heirs and assigns forever. And the grantor, for himself, his heirs and personal representatives, does covenant, grant, bargain and agree to and with the grantee, his heirs and assigns, that at the time of the ensealing and delivery of these presents, he is well seized of the premises above conveyed, has good, sure, perfect, absolute and indefeasible estate of inheritance, in law, in fee simple, and has good right, full power and lawful authority to grant, bargain, sell and convey the same in manner and form as aforesaid, and that the same are free and clear from all former and other grants, bargains, sales, liens, taxes, assessments, encumbrances and restrictions of whatever kind of nature so ever, **except for taxes for the current year, a lien but not yet due and payable, and those specific Exceptions described by reference to recorded documents as reflected in the Title Documents accepted by Buyer in accordance with section 8a (Title Review) of the contract dated July 26, 2003, between the parties.**

The grantor shall and will WARRANT AND FOREVER DEFEND the above-bargained premises in the quiet and peaceable possession of the grantee, his heirs and assigns, against all and every person or persons lawfully claiming the whole or any part thereof. The singular number shall include the plural, the plural the singular, and the use of any gender shall be applicable to all genders.
IN WITNESS WHEREOF, the grantor has executed this on the date set forth above.

SELLERS:

Claude A. Barlieb

Marie L. Barlieb

STATE OF COLORADO
COUNTY OF **MESA** }ss:

The foregoing instrument was acknowledged, subscribed and sworn to before me **January 25, 2005** by **Claude A. Barlieb and Marie L. Barlieb.**

Witness my hand and official seal.

NOTARY PUBLIC TAMARA M. HEINE STATE OF COLORADO

My Commission Expires 08/24/2006

Notary Public
My Commission expires:

WD-Warranty Deed

ESCROW NO. **915-H0032984-097-THE**

Exhibit A

Parcel 1:

The SW1/4 of the NW1/4 and the South 10 acres of the NW1/4 of the NW1/4 of Section 21, Township 1 South, Range 1 West of the Ute Meridian;
EXCEPT Blocks 1, 2 and 3 of
The Energy Center Subdivision, Phase 1

Parcel 2:

Lot 1 in Block 1 of
The Energy Center Subdivision, Phase 1

Parcel 3:

Lot 2 in Block 1 of
The Energy Center Subdivision, Phase 1

Parcel 4:

Lot 3 in Block 1 of
The Energy Center Subdivision, Phase 1

Parcel 5:

Lot 4 in Block 1 of
The Energy Center Subdivision, Phase 1

Parcel 6:

Lot 5 in Block 1 of
The Energy Center Subdivision, Phase 1

Parcel 7:

Lot 6 in Block 1 of
The Energy Center Subdivision, Phase 1

Parcel 8:

Lot 7 in Block 1 of
The Energy Center Subdivision, Phase 1

Parcel 9:

Lot 8 in Block 1 of
The Energy Center Subdivision, Phase 1

Parcel 10:

Lot 9 in Block 1 of
The Energy Center Subdivision, Phase 1

Parcel 11:

Lot 1 in Block 2 of
The Energy Center Subdivision, Phase 1

Parcel 12:

Lot 3 in Block 2 of
The Energy Center Subdivision, Phase 1

Parcel 13:

Lot 4 in Block 2 of
The Energy Center Subdivision, Phase 1

Parcel 14:

Lot 5 in Block 2 of
The Energy Center Subdivision, Phase 1

Parcel 15:

Lot 6 in Block 2 of
The Energy Center Subdivision, Phase 1

Parcel 16:

Lot 7 in Block 2 of
The Energy Center Subdivision, Phase 1

Parcel 17:

Lot 8 in Block 2 of
The Energy Center Subdivision, Phase 1

Parcel 18:

Lot 9 in Block 2 of
The Energy Center Subdivision, Phase 1

Parcel 19:

Lot 10 in Block 2 of
The Energy Center Subdivision, Phase 1

SPECIAL WARRANTY DEED

THIS DEED OF CONVEYANCE is made and dated this _____ day of _____ 2017, from **Two R & D, LLC,** a Colorado limited liability company, with an address of P.O. Box 39, Fruita, Colorado 81521, as the Grantor, to the **Pinnacle Ridge Home Owners Association, Inc.,** a Colorado non-profit corporation, with an address of 1634 M. Road, Fruita, Colorado 81521, as the Grantee.

WITNESSETH: Grantor, for good and valuable consideration, has granted, bargained, sold and conveyed, and by this instrument does hereby grant, bargain, sell and convey unto Grantee and its successors and assigns, the following described real property in the County of Mesa, State of Colorado (the "Property"):

Tract A and Tract B, Pinnacle Ridge Subdivision, Filing I
Mesa County, Colorado

Subject to taxes for the current year and subsequent years, conditions, restrictions, limitations, reservations, easements and other matters of record including any restrictive covenants.

The benefits and obligations hereunder shall inure to and be binding upon the successors and assigns of the parties. Grantor hereby covenants with Grantee that Grantor is lawfully seized of the Property in fee simple; that Grantor has good right and lawful authority to sell and convey the Property; that Grantor warrants title of the Property and will defend the same against the lawful claims of all persons claiming through Grantor; and that the Property is free of all encumbrances, except those of record.

In witness whereof Grantor has executed this Special Warranty Deed the _____ day of _____, 2017.

GRANTOR: Two R & D, LLC

By:_____
Robert W. Jones, II, Managing Member

STATE OF COLORADO)
) ss
COUNTY OF MESA)

The foregoing Special Warranty Deed was acknowledged before me this _____ day of _____, 2017, by Robert W. Jones, II, Managing Member of Two R & D, LLC, a Colorado limited liability company.

Witness my hand and official seal.

_____
Notary Public

Water Analysis Supplement
For
Pinnacle Ridge Subdivision
Grand Junction, Colorado

Date: November 11, 2016
Revised:

Prepared by: Robert W. Jones II, P.E.
Vortex Engineering, Inc.
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
970-245-9051
VEI# F04-006

Submitted to: City of Grand Junction
250 N. 5th Street
Grand Junction, CO 81501

Type of Design: Single Family Units

Owners: Two R & D, LLC
Fruita, CO

Property Address: East of Mariposa Drive
Grand Junction, CO

Tax Schedule No.: Numerous

Water Analysis Supplement

The purpose of this supplemental report is to present you with an alternate fire flow analysis based on pump curve input for the system's potential energy at the boundary conditions, as requested in Ute Water Conservancy District comments for the Pinnacle Ridge project, dated February 29, 2016. Although, there are no pumps in this portion of the Ute Water System, this analysis is based on a pump curve that best fits the system requirements as it is derived from fire hydrant flow test data. There is an existing fire hydrant located at 2398 Mariposa Dr. near the entrance to the Pinnacle Subdivision. This hydrant is labeled as Fire Hydrant #738 and was flow tested on April 14, 2014. The results of the flow test are the basis for the pump model input into the computer model.

Another change to the previous computer model is the base hydrant fire flow to the upper hydrants in the East and Southest portion of the project (top of the hill).

Fire flow requirements for new hydrants FH-7 to FH-12 (within the site) have been reduced to 1,000 gpm in this study. The houses within the vicinity of these hydrants will be equipped with internal fire sprinkler systems, thus reducing the fire flow requirement from the hydrants to 1000 gpm.

This report does not supersede the already approved "Fire Flow Water System Report for Pinnacle Ridge Subdivision, Vortex Engineering, Inc., dated July 6, 2015. That report was modeled using a reservoir boundary condition, and is also an accurate representation of the Ute water system in the area.

Attached are the results of the above described analysis, for your consideration. Please call if you have further questions, or need clarification on the analysis.

Fire Flow Hydrant Master
With Graph

Company Name: Ute Water Conservancy District
Address: 2190 H 1/4 Rd
City: Grand Junction
State: Colorado
Zip: 81505

Work Order: 147
Operator: Nick/Robert

Test Date: 4/14/15 1:00 pm

NFPA Classification:

Blue	AA
2043.72	

Test Hydrant: 738
Address: 2398 MARIPOSA DR
Cross Street:
Location:
District:
Sub-Division:

Latitude: 706960.304
Longitude: 4325735.005
Elevation: 4788.95
State X / Y: _____ / _____

Pumpers: **Nozzles:** **Open Dir:**

Manuf: Mueller
Model: Centurion 5 1/4

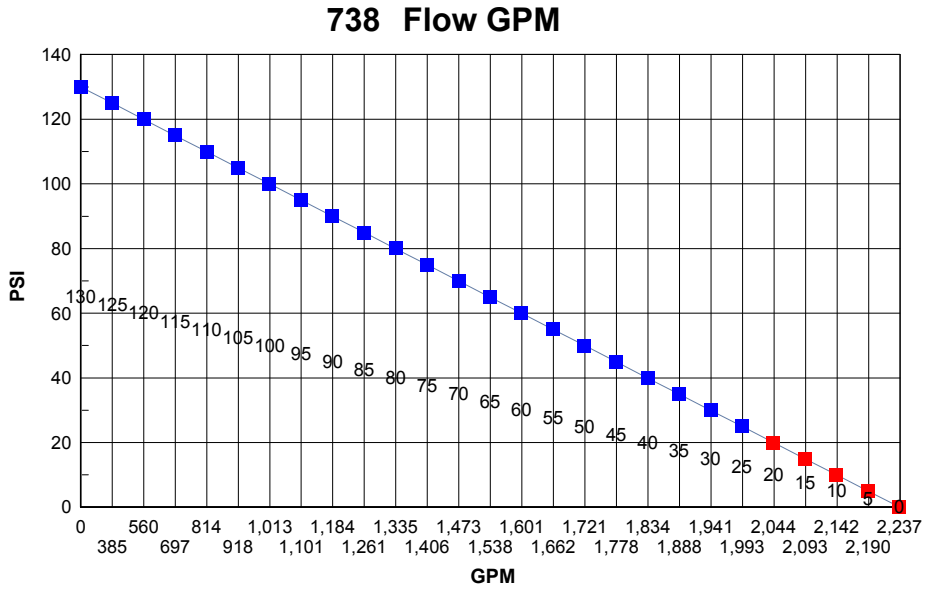
Installed: 01/01/2014
Main Size: 0.00

Vandal Proof:
Bury Depth: 0.00

	Flow Hydrant	Flow Device	Diameter	GPM	Gallon Used
1:	3096	2.5" Hose Monster	2.50	1066.76	5333.81
2:					
3:					
4:					
5:					

Pitot / Nozzle PSI: 40.00
Static PSI: 130.00
Residual PSI: 97.00
Percent Drop: 25.38

Total Gallons Used: 5333.81
Max GPM during test: 1,066.76
Elapsed Time Min:Sec: 5 : 0
Predicted GPM @ 20 PSI: 2043.72



GPM rounded to nearest gallon

Values inside grid below flow line are PSI @ predicted flow

Pinnacle Ridge Subdivision
System and Pump Curve
Grand Junction, CO

Vortex Engineering
November 10, 2016

Elevation of Discharge Point	4880	ft.
Elevation of Proposed Pump:	4790.00	ft.

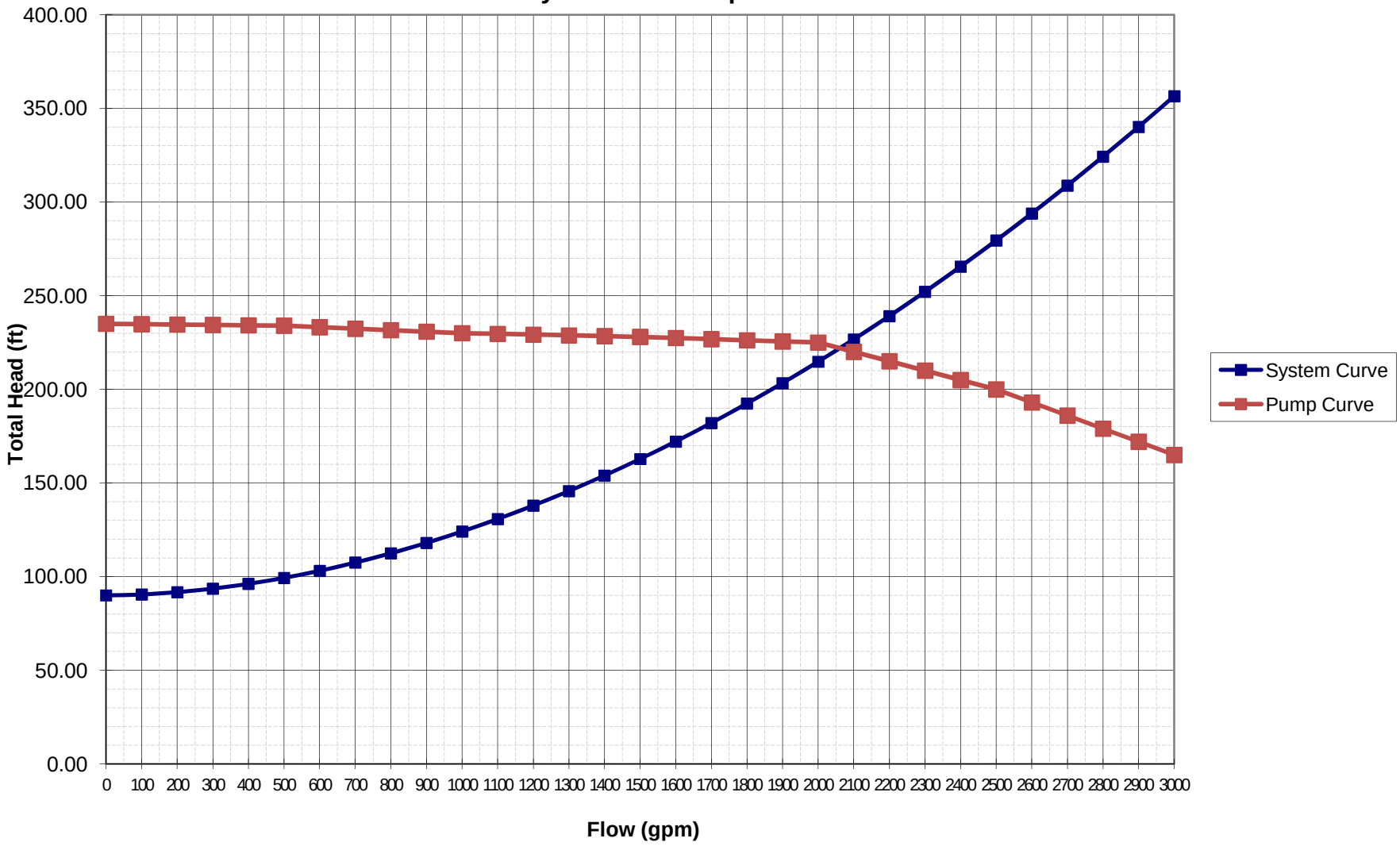
1st Pipe Section
Proposed On-Site Force Main

Diam	Pipe		Length	'K' Factors for Minor Losses						
(in.)	Type	'C'	(ft.)	Inlet	Ells	Entrance	ChkValve	Red/Exp	Valves	Total 'K'
10	PVC	130	4400	0.8	4.5	0.5	0	0.88	10	16.68

Pressure at discharge = 0 psi

Pump Flow GPM	Velocity ft/sec	Required Pump Head (ft)	Mnfg. Curve for Pump (ft)
0	0.00	90.00	235.00
100	0.41	90.46	234.80
200	0.82	91.69	234.60
300	1.23	93.59	234.40
400	1.63	96.15	234.20
500	2.04	99.33	234.00
600	2.45	103.12	233.20
700	2.86	107.50	232.40
800	3.27	112.47	231.60
900	3.68	118.00	230.80
1000	4.09	124.10	230.00
1100	4.49	130.76	229.60
1200	4.90	137.96	229.20
1300	5.31	145.71	228.80
1400	5.72	153.99	228.40
1500	6.13	162.81	228.00
1600	6.54	172.16	227.40
1700	6.94	182.03	226.80
1800	7.35	192.42	226.20
1900	7.76	203.32	225.60
2000	8.17	214.75	225.00
2100	8.58	226.68	220.00
2200	8.99	239.11	215.00
2300	9.40	252.06	210.00
2400	9.80	265.50	205.00
2500	10.21	279.44	200.00
2600	10.62	293.88	193.00
2700	11.03	308.81	186.00
2800	11.44	324.24	179.00
2900	11.85	340.15	172.00
3000	12.26	356.55	165.00

Pinnacle Ridge Subdivision
Potable Water System and Pump Curves



Pump Data Sheet - Griswold Pump Company

Company: Vortex Engineering
Name: Sylvester
Date: 10/24/2016

Ute Water Exercise

Pump:

Size: 8x6-17 A110

Type: 811-ANSI
Synch Speed: 1800 rpm

Speed: 1780 rpm
Dia: 14.875 in

Curve: G-1828

Impeller:

Specific Speeds:

Ns: 1500
Nss: 11525

Dimensions:

Suction: 8 in
Discharge: 6 in

Pump Limits:

Temperature: ---
Pressure: ---
Sphere Size: ---

Power: ---
Eye Area: ---

Search Criteria:

Flow: 2200 US gpm

Head: 210 ft

Fluid:

Water
Density: 62.37 lb/ft³
Viscosity: 1.105 cP

Temperature: 60 °F
Vapor Pressure: 0.2563 psi a
Atm Pressure: 14.7 psi a

NPSHa: ---

Motor:

Standard: NEMA
Enclosure: TEFC

Size: 200 hp
Speed: 1800 rpm
Frame: 447T

Sizing Criteria: Max Power on Design Curve

---- Duty Point ----

Flow:	2208 US gpm
Head:	212 ft
Eff:	76%
Power:	156 hp
NPSHr:	13.2 ft

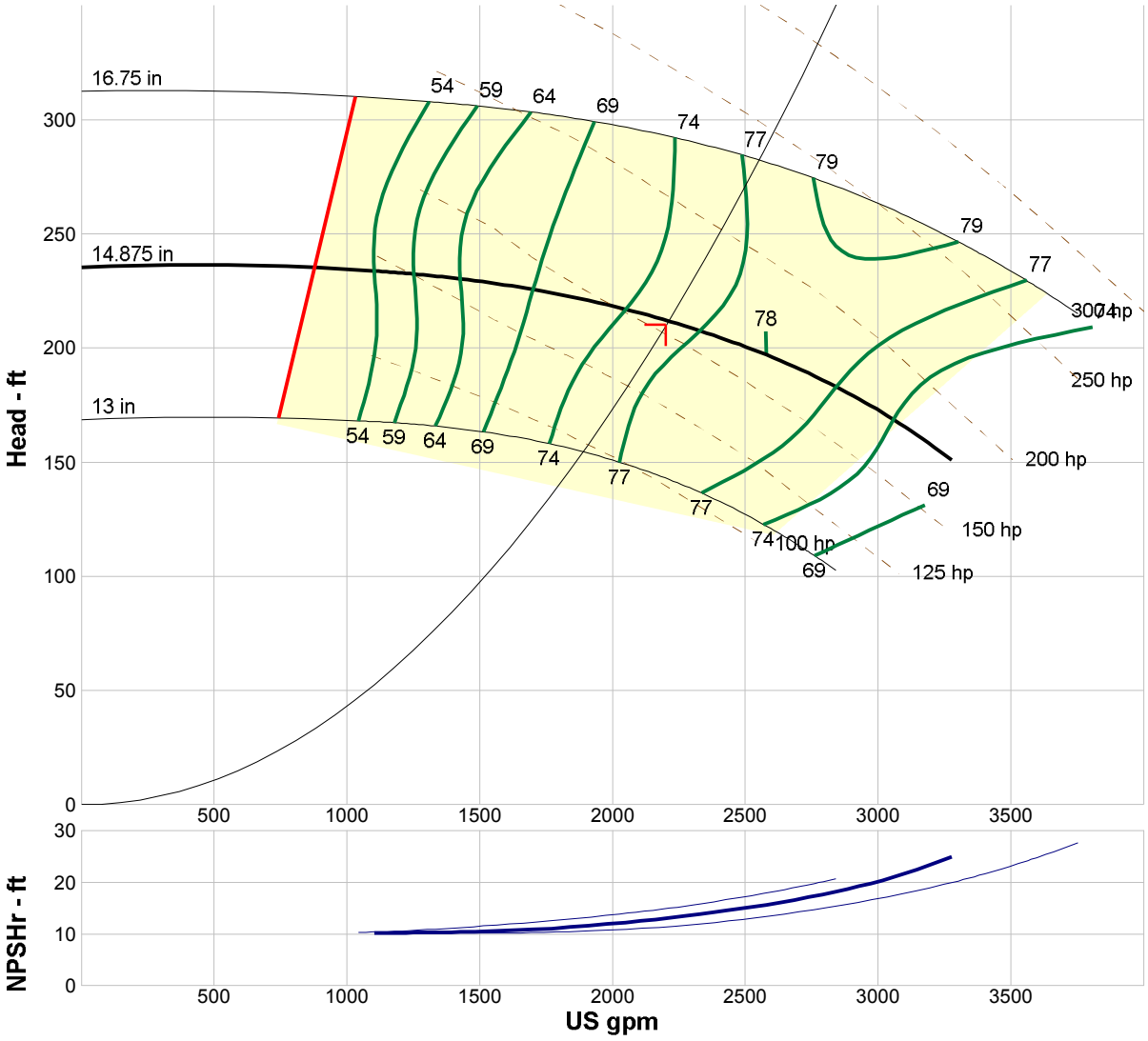
---- Design Curve ----

Shutoff Head:	235 ft
Shutoff dP:	102 psi
Min Flow:	876 US gpm
BEP:	78% @ 2577 US gpm

NOL Power:
178 hp @ 3275 US gpm

-- Max Curve --

Max Power:
273 hp @ 3750 US gpm

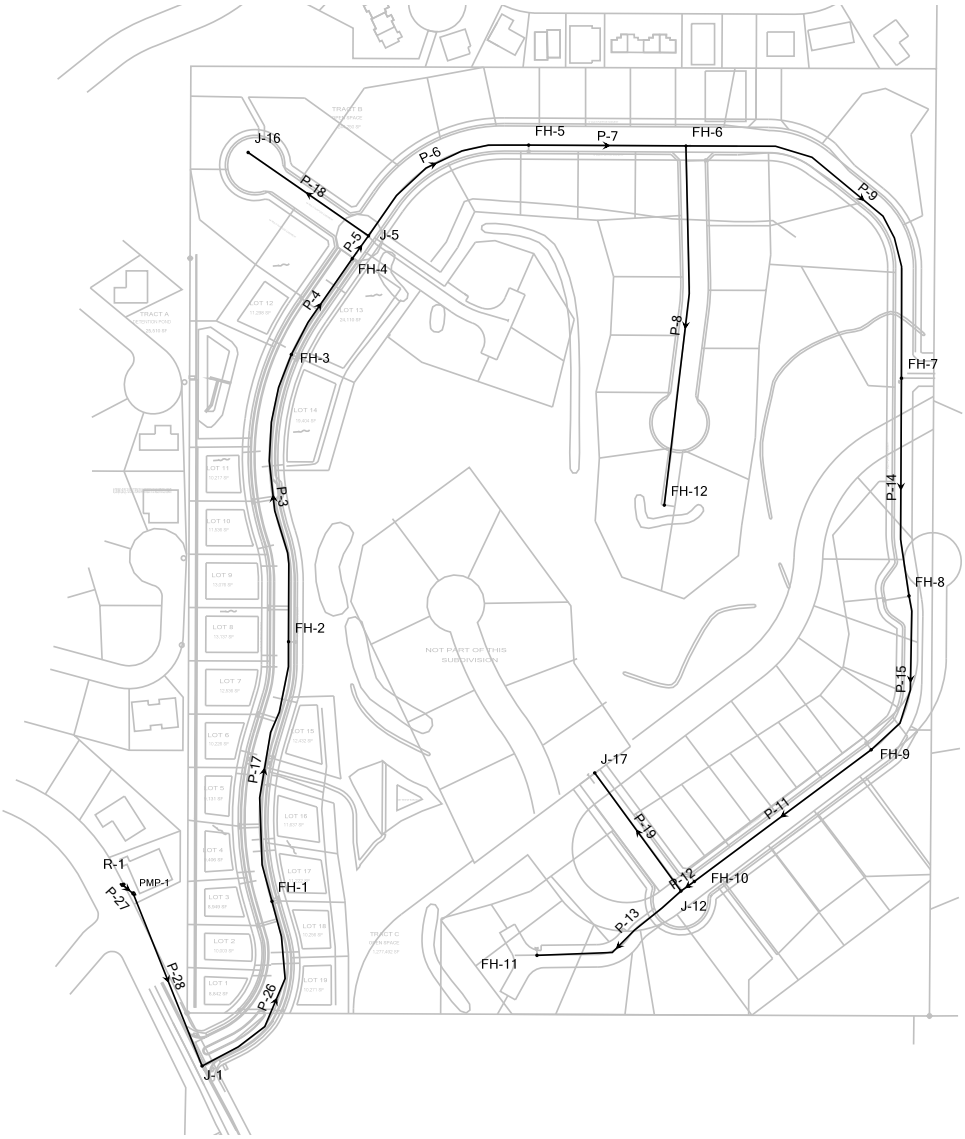


Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
2640	1780	194	78	166	16.3
2200	1780	212	76	155	13.1
1760	1780	224	70	142	11.1
1320	1780	232	61	126	10.3
880	1780	234	47	114	10.2

Selected from catalog: Griswold Pumps.60 Vers: 1.9

Scenario: Automated Fire Flow



Fire Flow Node FlexTable: Fire Flow Report

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Static Pressure @ Peak Domestic Demand (psi)	Residual Pressure (Calculated @ FH Junction) (psi)	Is Fire Flow Run Balanced?	Velocity of Maximum Pipe (ft/s)	Pipe w/ Maximum Velocity	Fire Flow (Total Upper Limit) (gpm)
J-1	(N/A)	2,000.0	(N/A)	20.0	102.3	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
FH-2	True	2,000.0	2,123.3	20.0	106.2	87.4	True	10.00	P-26	2,503.5
FH-3	True	2,000.0	2,123.3	20.0	110.5	85.4	True	10.00	P-26	2,503.5
FH-4	True	2,000.0	2,123.3	20.0	103.6	76.0	True	10.00	P-26	2,500.0
J-5	(N/A)	2,000.0	(N/A)	20.0	106.2	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
FH-5	True	2,000.0	2,123.3	20.0	113.6	81.2	True	10.00	P-26	2,503.5
FH-6	True	2,000.0	2,105.0	20.0	120.0	84.3	True	9.92	P-26	2,503.5
FH-12	True	2,000.0	2,105.0	20.0	103.6	60.4	True	9.92	P-26	2,503.5
FH-7	True	1,750.0	1,925.2	20.0	91.5	58.5	True	9.09	P-26	2,003.5
FH-9	True	1,000.0	1,750.0	20.0	60.3	46.8	True	8.28	P-26	1,753.5
FH-10	True	1,000.0	1,707.4	20.0	60.8	45.9	True	8.09	P-26	1,750.0
J-12	(N/A)	2,000.0	(N/A)	20.0	63.8	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
FH-11	True	1,000.0	1,701.2	20.0	63.4	47.5	True	8.06	P-26	1,753.5
FH-8	True	1,000.0	1,750.0	20.0	65.5	53.0	True	8.28	P-26	1,753.5
FH-1	True	2,000.0	2,123.3	20.0	100.2	87.2	True	10.00	P-26	2,503.5
J-16	(N/A)	2,000.0	(N/A)	20.0	108.8	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-17	(N/A)	2,000.0	(N/A)	20.0	65.5	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)

Pump Definition Detailed Report: Pump-150HP

Element Details			
ID	96	Notes	
Label	Pump-150HP		

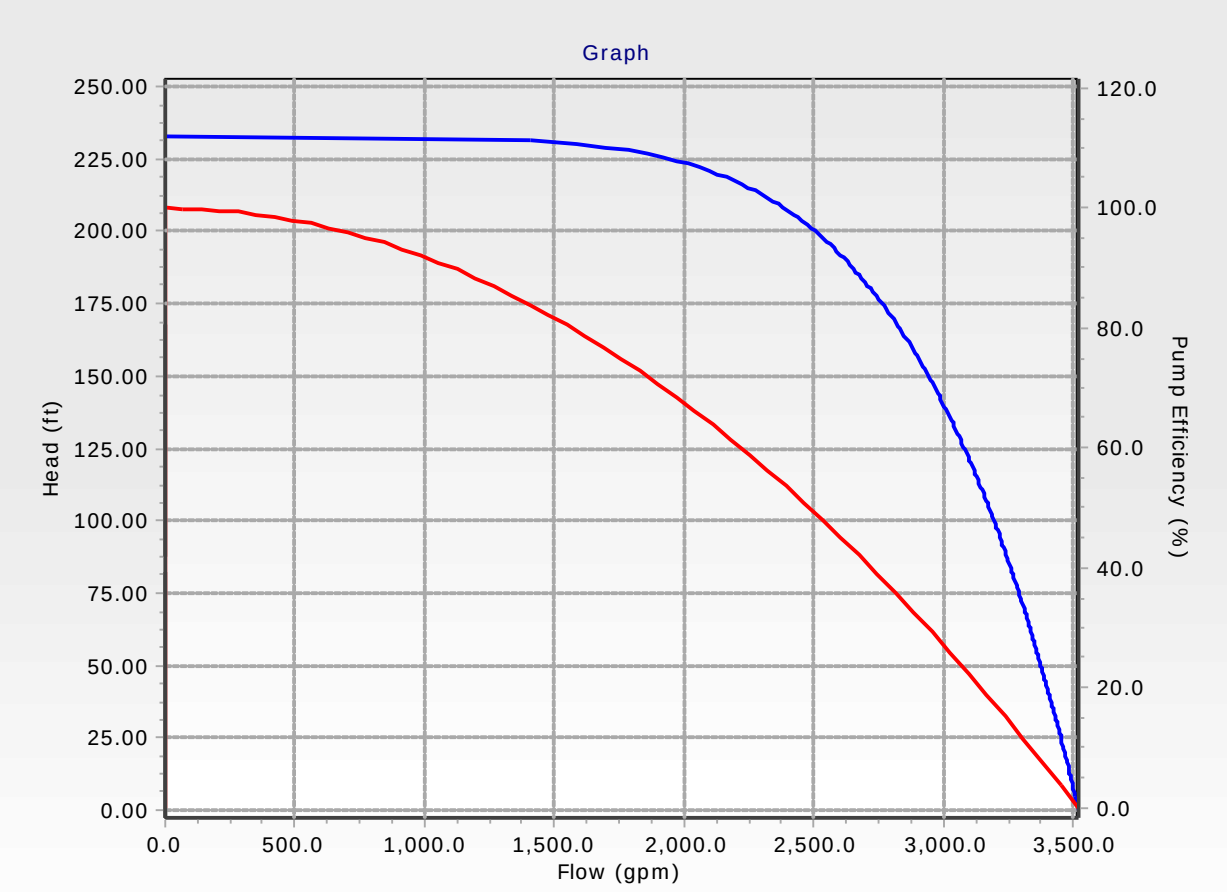
Pump Curve

Flow (gpm)	Head (ft)
0.0	235.00
500.0	234.00
1,000.0	230.00
1,500.0	228.00
2,000.0	225.00
2,500.0	200.00

Pump Efficiency Type			
Pump Efficiency Type	Best Efficiency Point	Motor Efficiency	100.0 %
BEP Efficiency	100.0 %	Is Variable Speed Drive?	False
BEP Flow	0.0 gpm		

Transient (Physical)			
Inertia (Pump and Motor)	0.000 lb·ft²	Specific Speed	SI=25, US=1280
Speed (Full)	0 rpm	Reverse Spin Allowed?	True

Pump Definition Detailed Report: Pump-150HP



5-2-1 Drainage Authority

P.O. Box 3389, 250 N. 5th Street, Grand Junction, CO 81502
Ph. 970-263-7401 Fax 970-256-4022 www.521drainageauthority.org

Stormwater Construction Permit Application

For Office Use Only

Date: _____ CDPHE SW Permit #: _____ 5-2-1 Permit Number: _____

Project Name: _____

CSWMP Review Fee: $ _____ Permit/Inspection Fee: $ _____ Check #'s: _____

Final Construction SWMP & Maps: _____ Final Land Use Approval: _____

5-2-1 Drainage Authority Manager: _____ Date: _____

Notes and Directions:
* This application replaces Stormwater Construction Permit Applications formerly issued by the City of Grand Junction, Mesa County and the Town of Palisade. Complete this form and submit by email as an attachment. 521da@gjcity.org
* Both the Owner and the Permittee (if different than Owner) must complete and sign this Application.
* Please provide all information in the shaded areas.

Construction Stormwater Management Plan Review

Project Information:

Project Name: Pinnacle Ridge Subdivision

Project Address/Location: NE of Mariposa Drive and 1/4 mile north of Monument Road

Land Distribution Schedule:

Net Land Disturbance Area: 30 acres

Expected Start Date: August 1, 2017

Expected Final Stabilization Date: December 31, 2020

Legally Responsible Party - Permittee and Owner PERMITTEE:

Permittee Name: Two R & D, LLC

Address: PO Box 39, Fruita, CO 81521 Phone: 970-245-9051

Contact Name: Robert W. Jones, II Email: rjones@vortexeng.us

Legally Responsible Party - Permittee and Owner OWNER:

Owner Name: Two R & D, LLC

Address: PO Box 39, Fruita, CO 81521 Phone: 970-245-9051

Contact Name: Robert W. Jones, II Email: rjones@vortexeng.us

Designated CSWMP Administrator(s) - Primary Field Contact:

Primary Name: Bob Jones Title: Project Manager Cell Phone: 970-260-3006

Primary Name: _____ Title: _____ Cell Phone: _____

Primary Name: _____ Title: _____ Cell Phone: _____

5-2-1 Drainage Authority

P.O. Box 3389, 250 N. 5th Street, Grand Junction, CO 81502
Ph. 970-263-7401 Fax 970-256-4022 www.521drainageauthority.org

Stormwater Construction Permit Application

Legally Responsible Party - PERMITTEE Acknowledgement and Certifications

A) The undersigned hereby applies for a 5-2-1 Drainage Authority Stormwater Construction Permit for the aforementioned property and acknowledges that a Stormwater Construction Permit is granted with the explicit understanding that it is the Permittee's responsibility to:

1) Maintain the site in compliance with this permit, the Stormwater Management Manual (SWMM), and applicable Land Use Regulations of the governing jurisdiction (City, County, Town).
2) Allow personnel of the 5-2-1 Drainage Authority and the applicable governing jurisdiction (City, County, Town) reasonable access to the project site to conduct regular site inspections and enforcement activities.
3) Comply with any and all directives contained in any Compliance Advisory or written notification pertaining to the project site issued to the Permittee by the 5-2-1 Drainage Authority or the applicable governing jurisdiction (City, County, Town).
4) Immediately cease land-disturbing and all other construction activities upon receipt of a written notification from an authorized representative of the applicable governing jurisdiction (City, County, Town).

B) Furthermore, the undersigned certifies, and agrees:

1) To the best of my knowledge, the information provided herein is correct; and is consistent with the development plans approved by the planning and/or building departments of the applicable governing jurisdiction.
2) A Construction Stormwater Management Plan for the disturbed area on the project site was prepared and submitted in accordance with the SWMM and the applicable Land Use Regulations of the governing jurisdiction (City, County, Town).
3) If the Permittee abandons the site, or becomes insolvent or declares bankruptcy, such that the requirements of this Permit are not being met, the governing jurisdiction may perform any and all necessary corrective actions, at their sole and absolute discretion to provide sufficient remedies to correct project site deficiencies.
4) The governing jurisdiction (City, County, Town) may issue a Stop Work Order and/or a Notice of Violation and/or may revoke this Permit or pursue any other legal remedies available to it based on an enforcement referral request from the 5-2-1Drainage Authority, or if the governing jurisdiction determines the Permittee is not in compliance with the SWMM, Stormwater Construction Permit and applicable Land Use Regulations of the governing jurisdiction, or if the Permittee fails to take all corrective action requested within the time specified on any written notification issued to the Permittee by the governing jurisdiction.
5) That in addition to other remedies, a violation of the Permit shall constitute a violation of Land Use Regulations of the governing jurisdictions; and
6) Any approval obtained from the 5-2-1 Drainage Authority does not relieve the Permittee from complying with requirements of Sections 7 and 9 of the Endangered Species Act of 1973, 16 U.S.C. 11531, et seq., as amended, or with any other applicable federal, state, or local laws or regulations.

Signature of Legally Responsible Person	Robert W. Jones, II	6/7/17
	Printed Name	Date

Legally Responsible Party - Property OWNER Certifications

By signing below, I hereby certify that I am the owner of record, or am legally authorized to sign on behalf of and bind the owner of record. I agree to all of the acknowledgements and certifications of the Permittee listed in Section 5 above, and on behalf of the owner accept full responsibility for compliance with the terms and conditions of this Permit in the event that the Permittee fails to do so.

Two R & D, LLC	6/7/17
Owner of Record	Date

Original Signature of Owner or Official**	Robert W. Jones, II	Managing Member
	Printed Name	Title

***If the Owner of Record is a corporation, LLC or partnership, Mesa County requires a recorded Statement of Authority documenting the legal ability to the official to sign on behalf of the corporation. Corporate signers will need to submit the statement of Authority directly to Mesa County Planning before receiving Final Land Use Approval. Corporate signers must be the same person that signs the Final Plat.*

5-2-1 Drainage Authority

P.O. Box 3389, 250 N. 5th Street, Grand Junction, CO 81502
Ph. 970-263-7401 Fax 970-256-4022 www.521drainageauthority.org

Stormwater Construction Permit Application

Instructions

The Stormwater Construction Permit Application shall be submitted directly to the 5-2-1 Drainage Authority, along with the documentation required by Section 7, only after all reviews and approvals are in place, and just before the start of land disturbance activities.

Project Information

* Local Jurisdiction: This will be the City of Grand Junction, City of Fruita, Town of Palisade, or Mesa County. Write in the underlying jurisdiction that has "approval authority", whether it be for a development application, annexation proposal, building permit, surface alteration permit, Right of Way permit, etc.
* Project #: Use the Project # assigned by the local Jurisdiction.
* Project Name: Use the same name designation as on the development application.
* Project Address/Location: Use a specific address if there is one, particularly for commercial sites. For residential subdivisions, major street intersections are acceptable.

Land Disturbance Schedule

* Net Land Disturbance Area: Net area of land to be disturbed during construction, calculated to the nearest 0.1 acre. Generally equal to Gross size of the Filing of Phase being developed minus any designated protected (undisturbed) areas, plus off-site areas such as storage yards dedicated to the project. For help in determining Net Land Disturbance Area, contact Drainage Authority personnel. All fees are based on Net Land Disturbance Area.
* Start date is the date for <u>any</u> land disturbance activities including stockpiling, grubbing, demolition, excavating, grading, or any other activity that disturbs the ground.
* The date of final stabilization is the date when all disturbed areas have been built on and paved, and a uniform 70% re-vegetation is achieved on the remaining pervious ground. See the SWMM or State rules for details. Even if the Permittee is only doing one part of the project (for example a developer who does the site infrastructure but not the home construction) the estimated final stabilization date must be for the overall project, and Permit coverage must be maintained until final stabilization is achieved.

Legally Responsible Party - Permittee and Owner

* The Permittee (Legally Responsible Party) is <u>usually</u> the same as the permit applicant (Legally Responsible Entity) from the State General Permit Application. The Permittee may be a corporate or partnership entity, or a person. See below under Address. *For project under the land use jurisdiction of Mesa County only, the County <u>requires</u> the Permittee to be the Owner. If this is a project under County jurisdiction, the Owner should fill out ONLY the Permittee section.*
* The Owner is the entity or person who holds title to the property <u>at the time the SCP application is submitted</u>. *Caution: Sales and transfers of property title should be completed <u>before</u> submitting the application. Otherwise, an immediate Permit Transfer may be needed reflecting the ownership change.*
*Address: Please provide a physical mailing address for delivery of official correspondence, or process service, if needed.
* Permittee Contract Name: This should be the person who will serve as the primary point of contact for the Permittee with the responsibility to respond to inspection and compliance issues at the site. This person will usually be the same person that signs the certification under Designated SCWMP Administrator(s), but could be one of the CSWMP Administrators, if that person works <u>directly</u> for the Permittee. Contractors or subcontractors can not be the listed contact for the Permittee.
* Owner Contact Name: This should be the person who will serve as the primary point of contact for the Owner with the responsibility to respond to inspection and compliance issues at the site. This person will usually be the same person that signs the certifications under Permittee Acknowledgement and Certifications, but may also be an attorney or other designated Owner representative.

Designated CSWMP Administrator(s): At least one individual must be named as a primary contact for field issues and inspection notifications. Any individual named must be a Qualified Erosion Control Specialist. These individuals are responsible for day-to-day compliance, including self-inspections and record keeping. These individuals should be carefully selected by the Permittee and/or Owner, since the Permittee and Owner are ultimately liable for any compliance issues caused by the performance (or lack thereof) of the CSWMP Administrators.

Permittee Acknowledgement and Certification: This section acknowledges the Permittee's acceptance of responsibility and liability for stormwater compliance at the site. The actual signer must be an individual. Signature requirements are as follows:

* In the case of corporations, by a principal executive officer of at least the level of vice-president or his or her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge described in the application originates.
* In the case of a partnership, by a general partner.
* In the case of a sole proprietorship, by the proprietor.
* In the case of a municipal, state or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.
* *Specific to projects within the Land Use Jurisdiction of Mesa Count, the County requires the Permittee to be the Owner, and also requires a recorded Statement of Authority (SOA) verifying that a corporate, LLC or partnership officer signing on behalf of the corporation, LLC or partnership has the legal authority to do so. Submit the SOA to Mesa County Planning. The signer shall be the same person that signs the Final Plat for recording.*

Owner Certification: The Owner Certification is required because the Owner carries ultimate liability for the site when all other options or contacts are exhausted. A permit will NOT be issued without an Owner signature. The actual signer must be an individual. Signature requirements are identical to the signature requirements for the Permittee, with one exception:

* *If this project is within Mesa County jurisdiction, DO NOT sign this section. (See above Permittee Acknowledgement and Certification)*

Required Submittals: Before a permit is issued by the 5-2-1 Drainage Authority, we must have in our possession a copy of the State issued stormwater discharge permit, a complete copy of the final approved CSWMP and maps, and payment of the assessed inspection fees. Final Approval from the local land use jurisdiction to begin construction will be verified via mail.

END OF INSTRUCTIONS

5-2-1 Drainage Authority

P.O. Box 3389, 250 N. 5th Street, Grand Junction, CO 81502
Ph. 970-263-7401 Fax 970-256-4022 www.521drainageauthority.org

Stormwater Construction Permit Application

Stormwater Construction Permit Fee Schedule

Disturbed Land Area (To the nearest 0.1 acre)	**Part A Review Fee**	**Part B SW Permit/ Inspection Fee**	**Additional Inspections**	**Fee**
1 - 7.9 Acres	$250.00	$250.00	Screening Inspection	$0.00
8.0 Acres to 19.9 Acres	$400.00	$500.00	Field Inspection w/ Follow-Up (Under 20 Acres)	$150.00
20 Acres and Above	$800.00	$900.00	Field Inspection w/ Follow-Up (Over 20 Acres)	$200.00
			Full Audit (Under 20 Acres)	$275.00
			Full Audit (20 Acres and Over)	$325.00

Disturbed Land Area includes all area of cut, fill, stockpile, staging, equipment and material storage, or any other project area associated with Construction Activity, as defined by State of Colorado stormwater regulations. No reductions are given for public land dedications such as streets and open space. Undisturbed land areas may be omitted from the calculations if they are specifically identified in the Construction Stormwater Management Plan as remaining in undisturbed natural conditions, and controls are specified in the Plan to ensure the area remains undisturbed during construction.

See Drainage Authority Resolution 2008-007 for a full description of the fee basis, including when fees for additional inspections are charged.

DECLARATION OF
COVENANTS, CONDITIONS AND RESTRICTIONS OF
PINNACLE RIDGE SUBDIVISION

THIS DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS OF PINNACLE RIDGE SUBDIVISON (the "Declaration"), is hereby declared effective this _____day of _____, 201__ by **Two R&D, LLC,** a Colorado limited liability company, hereafter referred to as "Declarant".

RECITALS

A. Declarant is the owner of that certain real property situated in the City of Grand Junction, Mesa County, Colorado, described as follows:

Tax Parcel No. – 2945-212-00-011, 2945-212-08-001-010, 2945-212-10-001-009

A parcel of land situated in the W ½ NW ½ of Section 21, Township 1 South, Range 1 West of the Ute Meridian, Mesa County, Colorado. The South 10 acres of the NW ¼ NW ¼ and the SW ¼ NW ¼ of said Section 21.

EXCEPTING THEREFROM:

Lots 1-9, Block 3 and the adjoining dedicated right-of-way known as Spur Drive and Lot 2, Block 2, Energy Center Subdivision, Phase I as platted and recorded in Plat Book 8 at Page 55 with a Reception Number 644620 of the Mesa County records.

~~To~~Hereinafter referred to as the Property, the Property will be platted as Pinnacle Ridge Subdivision, Filing 1 (referred to as the Plat).~~Lots _____ through _____, inclusive, and Tracts ____ and ____, Pinnacle Ridge Filing _____, hereinafter referred to as the "Property", and Lot _____, Pinnacle Ridge, Filing ____, hereinafter referred to as "Future Development Lots."~~

B. The Common Interest Community has been approved for development pursuant to a Preliminary Plan for Pinnacle Ridge adopted by the City of Grand Junction, Colorado. ~~(the "Major Subdivision Plan for Pinnacle Ridge Subdivision").~~

C. Declarant desires to develop and improve the Property as a Common Interest Community as defined in Section 38-33.3-103(22), C.R.S., under the name and style of Pinnacle Ridge Subdivision and subject the same to the covenants, conditions and restrictions hereinafter set forth. Such development shall be in phases or filings for a total number of lots not to exceed seventy-two 72 residential lots.

D. Pinnacle Ridge Home Owners Association, a Colorado non-profit corporation, has been formed as a Home Owners Association to exercise the functions set forth herein and to own, lease, hold, operate, care for and manage certain property for the common benefit of Owners and Occupants of Lots within, and of any other person acquiring an interest in, the Common Interest Community.

E. Declarant desires to establish covenants, conditions and restrictions upon the Common Interest Community and all properties that may hereafter be included thereto, and certain mutually beneficial restrictions and limitations with respect to the proper use, occupancy, improvement and enjoyment thereof, all for the purposes of enhancing and protecting the value, desirability and attractiveness of the Common Interest Community and enhancing the quality of life within the Common Interest Community.

NOW, THEREFORE, for the purposes set forth above and herein, Declarant for itself and its successors and assigns hereby declares that the Common Interest Community and all other property which becomes subject to this Declaration in the manner hereinafter provided, and each part thereof, shall be owned, held, transferred, conveyed, sold, leased, rented, improved, altered, maintained and enjoyed subject to the covenants, conditions, restrictions, assessments, charges, liens, easements, privileges, rights and other provisions hereinafter set forth, for the duration hereof, all of which are declared to be pursuant to, and in furtherance of a common and general plan of development, improvement, enhancement, use, occupancy and enjoyment of the Common Interest Community, and all of which shall run with the land and be binding upon and inure to the benefit of the Common Interest Community and every part thereof. Provided always, that to the extent this Declaration provides that Declarant shall not be bound by or is exempt from the application of certain covenants, conditions and restrictions contained herein, Declarant shall not be considered subject to such covenants, conditions or restrictions.

This Declaration shall be recorded in Mesa County, Colorado and shall be indexed in the Grantee's index in the name of Pinnacle Ridge and the Home Owners Association and in the Grantor's Index in the name of Two R&D, LLC.

ARTICLE I
DEFINITIONS

Unless otherwise expressly provided herein, the following words and phrases when used in this ~~Master~~ Declaration shall have the meanings hereafter specified.

1.1 **Act** - shall mean the Colorado Common Interest Ownership Act, section 38-33.3-101, et seq., C.R.S., as presently existing or subsequently amended from time to time.

1.2 **Allocated Interests** - shall means and refers to the common expense liability and the ownership interest and votes in the Home Owners Association as allocated to each Lot, which interests are allocated as follows:

(a) The Common Expenses liability for each Lot is calculated on the basis of a fraction, the numerator of which is one (1) and the denominator of which is the total number of Lots in the Common Interest Community as of the date of the calculation. The denominator may be increased from time to time upon the addition of Lots to the Common Interest Community, which can be conveyed to third parties. Such fraction is then multiplied by the Common Expense or the Assessment in question to determine that Lot's share. The Common Expense liability of a Lot is determined without reference to the size, location, value or use of the Lot.

(b) One (1) vote in the Home Owners Association is allocated to each Lot in the Common Interest Community.

1.3 **Article of Incorporation** - or "Articles" means the Articles of Incorporation of Pinnacle Ridge Home Owners Association, which have been or will be filed with the Office of the Secretary of State of the State of Colorado, as the same may be amended from time to time.

1.4 **Assessment** - shall mean a Regular Assessment, Special Assessment or Reimbursement Assessment.

1.5 **Association** - shall mean and refer to Pinnacle Ridge Subdivision Home Owners Association, a Colorado nonprofit corporation, formed for the purpose of being and constituting the entity for the furtherance of the interests of the owners of property in Pinnacle Ridge and performing duties and responsibilities and exercising the powers set forth in this Declaration.

1.6 **Budget** - shall mean a written itemized estimate of the Common Expenses to be incurred by the Association in performing its functions under this Declaration and adopted by the Executive Board pursuant to this Declaration.

1.7 **Building Envelope** - shall mean that portion of a Lot which may be depicted and designated as the "Building Envelope" on any Plat of all or part of the Property. If a Lot contains a platted Building Envelope, all Improvements on that Lot must be located entirely within the Building Envelope, including but not limited to dwellings, attached patios and decks, garages, swimming pools and storage building, but excluding roof overhangs, access driveways, underground utilities, and irrigation and drainage systems. The Design Review Committee may approve the location of certain Improvements outside the Building Envelope, such as landscaping and fences.

1.8 **Bylaws** - shall mean the Bylaws of the Association which have been or will be adopted by the Executive Board of the Association, and may be amended from time to time.

1.9 **City** - shall mean the City of Grand Junction, Colorado.

1.10 **Common Elements** - shall mean and refer to that portion of the Property that is not a Lot, to wit that designated as Tracts A and B on the Plat, or on any subsequent replat of a future development lot, to be owned by the Association for the benefit of the Owners, including any Improvements and all easements and facilities for the benefit of the Property, as well as any common elements created in future subdivision filings.

1.11 **Common Expenses** - shall mean any expenditures made or liabilities incurred by or on behalf of the Association, together with any allocations to reserves, including, but not limited to the costs of maintenance, management, operation, repair and replacement of the Association Property, and of all other parts of the Common Interest Community which are managed or maintained by the Association, but excluding any areas being managed or maintained at the expense of a Sub association.

1.12 **Declarant** - shall mean Two R&D, LLC a Colorado limited liability company, its successors, assigns, and affiliates. A Person shall be deemed to be a "successor and assign" of Declarant if specifically designated in a duly Recorded instrument as a successor or assign of Declarant under this Declaration and shall be deemed a successor and assign of Declarant only as to the particular rights or interests of Declarant under this Declaration which are specifically designated in that written instrument. The term "affiliate of Declarant" shall have the meaning set forth in Section 38-33.3-103(1) of the Act.

1.13 **Declaration** - shall mean and refer to this Declaration of Covenants, Conditions and Restrictions for Pinnacle Ridge Subdivision, and any duly adopted ad~~d~~mendments hereto.

1.14 **Design Guidelines** - shall mean the rules, procedures, standards, guidelines and requirements promulgated from time to time by the Design Review Committee, and all amendments thereto, governing the review and approval or disapproval of proposed Improvements within the Common Interest Community, the registration of Builders, and such other matters as the Design Review Committee considers necessary or appropriate.

1.15 **Design Review Committee** - shall mean the Committee provided for in this Declaration.

1.16 **Executive Board or Board** - shall mean the Executive Board of the Association.

1.17 **Household Pets** - shall mean generally recognized household pets such as dogs, cats, fish, birds, rodents, and non-poisonous reptiles.

1.18 **Improvements** - shall mean and refer to any and all buildings, parking areas, fences screening fences, retaining walls, stairs, decks, hedges, windbreaks, plants, trees, shrubs, berms, ponds, signs, objects of art, mailboxes, drainage facilities (including pumps, pipelines, drip lines and sprinklers),

diversion ditches and other structures or landscaping of every type and kind situated on the property, and future lots created in subsequent replats.

1.19 **Lease** - shall mean and refers to any agreement for the leasing, rental, use or occupancy of a Unit, or of a residential dwelling located on a Lot, within the Common Interest Community.

1.20 **Limited Common Areas** - shall mean a Common area that is designated by this Declaration, by a Supplemental Declaration, on the Plat or on any Supplemental ~~P~~Replat, for the exclusive use of one or more Lots in the Common Interest Community but fewer than all of the Lots.

1.21 **Lot** - shall mean and refer to that part of the Property shown on the Plat as a Lot, as well as any lots created by future subdivision filings.

1.22 **Map** - shall mean any map that is incorporated in a Supplemental Declaration or amendment and that depicts a portion of the Common Interest Community in three dimensions. A Map is required for any portion of the Common Interest Community with Units having a horizontal boundary. A Map and a Plat may be combined in one instrument.

1.23 **Master Declaration** - shall mean this instrument and all Supplemental Declaration, as this instrument and such Supplemental Declarations may be amended from time to time.

1.24 **Master Rules and Regulations** - shall mean rules and regulations adopted from time to time by the Executive Board.

1.25 **Member** - shall mean the owner of each Lot and also ~~including~~ the Declarant. Membership in the Home Owners Association shall be appurtenant to, and may not be separated from, ownership of a Lot.

1.26 **Mortgage** - shall mean any mortgage, deed of trust or other security instrument, given voluntarily by the Owner of a Lot, creating a real property security interest in a Lot and Recorded in the real property records of the Clerk and Recorder if Mesa County. "First Mortgage," means a mortgage, which are the first and most senior of the Mortgages on the same Lot. The term "Mortgage" does not mean a statutory, tax or judicial lien. The term "Deed of Trust" when used herein shall be synonymous with the term "Mortgage."

1.27 **Mortgagee** - shall mean a mortgagee under a Mortgage or a beneficiary under a Deed of Trust, as the case may be, and the assignees of such Mortgagee.

1.28 **Mortgagor** - shall mean the maker, obligator or grantor of a Mortgage. The term "Mortgagor" includes a trustor or grantor under a Deed of Trust.

1.29 **Notice and Hearing** - shall mean a written notice and public hearing before the Executive Board, or a panel appointed by the Executive Board, as set forth in the Bylaws.

1.30 **Occupant** - shall mean any Person who is a tenant in a residence on a Lot, pursuant to a Lease with the Owner thereof. "Occupant" also means any Person who is present within the Common Interest Community as a family member, guest or invitee of an Owner, an Occupant, the Declarant, or the Association.

1.31 **Owner** - shall mean the Person, including Declarant, or, if more than one, all Persons collectively, who hold fee simple title of Record to a Lot, including sellers under executor contracts of sale and excluding buyers there under. The term "Owner" shall be analogous to the term "Unit Owner", as that term is defined in the Act.

1.32 **Permitted Exceptions** - shall mean all liens, encumbrances, reservations, restrictions, conditions, easements and other matters of record which encumber the title to all or any part of the Common Interest Community, as of the date this Declaration or a Supplemental Declaration or Map is recorded. This Declaration and any Supplemental Declaration or Map shall be subject to such Permitted Exceptions.

1.33 **Persons** - shall mean a natural person, a corporation, a partnership, a limited liability company, a trust, or any other entity capable of holding title to real property pursuant to the laws of the State of Colorado.

1.34 **Plat** - shall mean and refer to that certain plat of the property or plat(s) upon future subdivision filings recorded (or to be recorded) in the Mesa County Clerk and Recorder's official records. The Plat is incorporated herein by this reference.

1.35 **Property** - shall mean and refer to all of the real estate situated and described in the recitals and any future additions of property to the Subdivision.

1.36 **Registered Builder** - shall mean a general contractor that has been registered to perform work within Pinnacle Ridge with the Design Review Committee pursuant to the guidelines and procedures set forth herein and in the Design Guidelines.

1.37 **Record or Recorded** - shall mean an instrument of record in, or the act of recording an instrument with, the office of the Clerk and Recorder of Mesa County.

1.38 **Regular Assessment** - shall mean a charge against an Owner and the Owner's Lot for purposes of covering the annual costs of operating and administering the Association and all other Common Expenses. Regular Assessments are based on a Budget adopted by the Executive Board and are allocated to the Lots in accordance with the Allocated Interests, except that Common Expenses that in the judgment of the Executive Board benefit fewer than all of the Lots shall be allocated exclusively to the Lots benefited.

1.39 **Reimbursement Assessment** - shall mean a charge against a particular Owner and the Owner's Lot for purpose of reimbursing the Association for costs and expenses incurred by the

Association in connection with the enforcement of any provision hereof or the remedying of any violation by the Owner or an Occupant of this Declaration or any amendment hereto or any Supplemental Declaration, the Articles, Bylaws, Master Rules and Regulations, or Design Guidelines, or any approvals granted by the Design Review Committee, or for other purposes set forth in the Declaration, pursuant to Section 10.9 hereof, together with late charges and interest as provided for herein. Reimbursement Assessment shall include without limitation any Common Expense cause by the misconduct of any Lot Owner or of such Owner's Occupants.

1.40 **Special Assessment** - shall means a charge against an Owner and the Owner's Lot for purpose of reimbursing the Association for costs and expenses incurred or to be incurred by the Association for the purpose of paying for the construction, reconstruction, repair, maintenance or replacement of capital improvements to or upon serving the Common Interest Community, the costs of which were not included in a Regular Assessment, or for excess reconstruction costs or other extraordinary expenses, or to acquire Association Property, or for funding any operating deficit of the Association, as authorized by the Executive Board from time to time as provided herein. Special Assessment shall be based on a Budget adopted by the Executive Board in accordance with below.

1.41 **Sub Association** - shall mean any Colorado nonprofit corporation, and its successors and assigns, organized and established by Declarant pursuant to or in connection with any supplemental Declaration.

1.42 **Sub Association Common Areas** - shall mean all real property interests (not just fee title and leasehold interests) and the Improvements or amenities and personal property thereon which may from time to time be owned, leased or maintained by a Sub Association or otherwise held by a Sub Association for the use, enjoyment and benefit of the members of such Sub Association or some of them.

1.43 **Subdivision** - shall mean and refer to Pinnacle Ridge a residential subdivision in the City of Grand Junction, Mesa County, Colorado.

1.44 **Supplemental Declaration** - shall mean an amendment to this Declaration which adds real property to the Common Interest Community, subjects such real property to this Declaration, and sets forth such amendments to the Declaration and such additional covenants, conditions uses and restrictions as may be applicable to the acquired property, executed by Declarant and Recorded in the Office of the Clerk and Recorder of Mesa County, and any Recorded amendments thereto.

1.45 **Supplemental Plat**- shall mean any land survey plat of the Property or any part thereof which is Recorded by Declarant ~~for the purpose of acquiring the real property described therein to the Common Interest Community, and any Recorded amendments to such Supplemental Plat~~. Supplemental Plats shall include, without limitation, those City-approved Plats or subsequent filings of Pinnacle Ridge~~, or those portions of such Plats, as are made subset to this Declaration from time to time by Supplemental Declaration.~~

ARTICLE II
GENERAL DECLARATION

2.1 **Intent** It is the intention of this Declarant is to enhance, perfect and preserve the value, desirability and attractiveness of the Property and the Common Elements, Improvements and Buildings thereon in a manner beneficial to all Owner and to subject the Subdivision to the Act as a Common Interest Community.

2.2 **Estate Subject to Declaration** Declarant does hereby subject the Property to the provisions of the Declaration. All easements, restrictions, conditions, covenants, reservations, liens, charges, right, benefits, and privileges which are granted, created, ~~covenants reservations, liens, charges, rights, benefits, and privileges which are granted, created,~~ reserved or declared by this Declaration shall be deemed to be covenants appurtenant to, touching and concerning and running with the land and shall at tall times inure to the benefit of and be binding upon any Person having at any time any interest or estate in the Property, and their respective heirs, successors, representatives or assigns. All of the easements, restrictions, conditions, covenants, reservations, liens, charges, rights, benefits and privileges which are granted, created, reserved or declared herein shall be fully and completely set forth in their entirety in any document or instrument filed for record in the Mesa County Clerk and Recorder's office subsequent to the recording of this Declaration or Supplemental Declaration.

2.3 **Owners' Rights to Common Elements** Every Owner, Mortgagee, Occupant and all other persons hereafter acquiring any interest in the Common Interest Community shall have a right and easement of enjoyment in and to the Common Elements which shall be appurtenant to and shall pass with the title to every Lot subject to the provisions of this Declaration, Supplemental Declaration, the Articles and Bylaws of the Association and any rules and regulations promulgated by the Association. Any Owner may delegate, in accordance with the Bylaws, his right of enjoyment to the Common Elements and facilities for the members of his family, his tenants, or occupants who reside on his Lot.

ARTICLE III
GENERAL RESTRICTIONS

3.1 **Master Development Control** Except as otherwise expressed in this Declaration or in any Supplemental Declaration, no residence, building, structure, fence, wall, landscaping or other Improvement shall be commenced, erected, improved, altered, made, done, permitted, located or removed within the Common Interest Community without the prior written approval of the Design Review Committee, and all subsequent additions to or changes or alterations in any residence, building structure, fence, wall, landscaping or other Improvement, including without limitation exterior color scheme, and all changes in the grade of Lots, shall also be subject to the prior written approval of the Design Review Committee.

No modifications from the approvals granted by the Design Review Committee shall be made without the prior written approval of the Design Review Committee. Notwithstanding the foregoing, in the event of an emergency or the sudden occurrence of unanticipated conditions which threaten the health, safety or physical well-being of Persons or property within the Common Interest Community, the Executive Board and/or the Design Review Committee shall have the authority (without the prior approvals described above), to take whatever remedial action may be necessary anywhere in the Common Interest Community to protect Persons and property until such time as applicable notice and/or approval procedures can reasonably be utilized. Further notwithstanding the foregoing, Design Review Committee approval shall not be required for Improvements made by Declarant in the exercise of any development rights or special Declarant rights reserved by Declarant in this Declaration or in any Supplemental Declaration.

3.2 **Residential Use and Occupancy** All Lots shall be improved, occupied and used only for private single-family residential purposes. Only single-family dwellings, including a private garage which holds a minimum of two (2) automobiles, which garage shall be an enclosed structure, and other outbuildings directly incidental to single-family residential use shall be erected, altered, placed or permitted to remain on any Lot. No structures shall be permitted unless they meet the Pinnacle Ridge Design Guidelines and the requirements of these Covenants and which are constructed in accordance with City of Grand Junction zoning regulations .

3.3 **Vehicle Parking, Storage, Operation and Repair** Passenger automobiles and pick-up trucks not exceeding one ton owned by the Owner or occupant of a Lot shall be parked within the garage situate on the Lot or on the driveway of the Lot. No other portion of the Lot may be used by the Owner or the occupant for the parking or storage of automobiles or pick-ups except to the extent permitted under section 38-33.3-106.5(l)(d), C.R.S.

Recreational vehicles, boats, trailers, buses, motor homes, mobile homes, campers (on or off supporting vehicles), motorcycles, snowmobiles, recreational vehicles, all terrain vehicles, golf carts, trucks, industrial or commercial vehicles (both cabs or trailers), abandoned or inoperable vehicles (as defined), or any other similar vehicles (excepting passenger automobiles and one ton or smaller pick-up trucks) may be stored on a Lot only if placed within a garage or placed in a Design Review committee approved outbuilding or screened storage facility. All recreation vehicle shall be behind fences and behind the front of the Residential Building on the Lot.

Notwithstanding the forgoing, vehicles may be temporarily parked on driveways on Lots ~~and on public streets~~ within the Common Interest Community for loading, delivery, services or emergency purposes, but only for the time required to accomplish such purpose, and as necessary on a daily basis for the construction, maintenance or servicing of Improvement within the Common Interest Community.

If Executive Board determines that a vehicle is abandoned, inoperable or improperly parked, a written notice of violation describing the vehicle shall be personally delivered to the vehicle owner, or

notice may be sent by registered or certified mail or by email or facsimile, and shall be conspicuously placed upon the vehicle. If the offending vehicle is not removed within seventy-two (72) hours thereafter, the Executive Board or its agent shall have the right to remove and store the offending vehicle, or cause the vehicle to be removed and stored, at the sole expense of the owner of the vehicle. The Executive Board or its agent shall have the authority to enter upon an Owner's Lot for such purposes without liability on the part of the Executive Board .

Snowmobiles, motorcycles, trail bikes, mini bikes, dirt bikes, all-terrain vehicles, and similar motorized vehicles shall not be used or operated within the Common Interest Community.~~, except that motorcycles properly licensed for operations on public roads may be used on public streets within the Common Interest Community. The Association shall have the authority to adopt Master Rules and Regulations governing the type and use of golf carts on streets within the Common Interest Community, subject always to City rule, ordinance or regulation.~~

3.4 **New Construction Required: No Temporary Buildings or Occupancy** Only new I.R.C. (International Residential Code) residential buildings shall be permitted within the Common Interest Community. Furthermore, no pre-fabricated or manufactured housing, no mobile homes (single or double wide), and no used or temporary house, structure, or non-permanent out-buildings (specifically including mobile homes and trailers) shall ever be placed, erected or allowed to remain within the Common Interest Community except temporary structures or construction trailers approved in advance by the Design Review Committee which are used for construction purpose during the construction of a residence. Such temporary facilities shall be removed immediately following completion of construction or 18 months following commencement of construction, whichever first occurs, unless a written extension is granted by the Design Review Committee. No completed residence on a Lot shall be occupied in any manner until all provisions of the Declaration and the Design Guidelines and all conditions of development approval have been complied with and a Certificate of Compliance has been issued.

3.5 **House Size Regulations** Single-family residences in the Common Interest Community shall contain a minimum of 2,000 square feet and a maximum of 6,000 square feet of interior living space measured from the interior surfaces of the walls, excluding garages, patios, covered porches, and any walkouts that may be approved by the Design Review Committee.

3.6 **Structure Sprinkler Systems** Structures on Lots 26 through 29, 55 through 72 must have sprinkler systems installed for fire protection of the units. The sprinkler system shall be an approved fire sprinkler system designed to meet the minimum design standards of NFPA 13D and the International Fire Code, 2006 edition, as amended by the City of Grand Junction. The amendment prohibits the use of separate water supplies (such as tanks and pumps) when the home is served by a public water purveyor.

3.7 **Setbacks** The Subdivision is located in the City of Grand Junction, Colorado. All buildings shall meet or exceed setbacks established by the applicable zoning authority.

3.8 **Re-subdivision, Re-Platting, Rezoning or Combining** Except for future development lots shown on the Plat or on any Supplemental Plat, ~~as expressly permitted in this Declaration or in a Supplemental Declaration by which additional property is added to the Common Interest Community,~~ no Lot shall be subdivided or re-platted by an Owner into smaller lots or parcels, no Owner shall seek to change the zoning of such Owner's Lot, and no Lot may be combined with other Lots, except as related to the declarant's future development rights. There shall be no boundary line adjustment between any Lots, such that the original configuration is modified or altered; provided, however, underlying adjustment shall be permitted in the event there is an error in surveying the Plat, or error in the construction of the home such that a boundary line adjustment shall be reasonable and necessary to accommodate such error.

(a) Declarant reserves the right to subdivide a Lot, or to combine two (2) lots owned by Declarant, or to adjust or remove boundary lines between Lots owned by Declarant, provided any necessary City approvals are obtained, all Declaration and Plat amendments required by the Act and/or local land use laws are prepared, executed and Recorded, and any necessary reallocation of Allocated Interests of the Owners is accomplished. In the case of the combination of two or more Lots, no change in Allocated Interest shall occur. In other words, if two Lots are combined, the resulting Lot shall continue to constitute two (2) Lots for assessment and voting purposes. All costs relating to the foregoing activities shall be the sole responsibility and obligation of Declarant, or of the Owner performing the same. Declarant's rights under this subsection (a) shall terminate upon the first to occur of (i) the date which is 10 years after the Recording of this Declaration, or (ii) Declarant's relinquishing of these rights by a Recorded instrument.

(b) No further covenants, conditions, restrictions or easements shall be Recorded by any Owner (except Declarant in the exercise of its reserved rights) or other Person against any Lot without the provisions thereof having been first approved in writing by the Executive Board for consistency with the Declaration, any applicable Supplement Declaration, and the general plan of development for the Common Interest Community. Any covenants, conditions, restrictions or easements Recorded without such approvals being evidenced thereon shall be null and void. This provision does not apply to Mortgages.

3.9 **Fences Prohibited or Restricted** Perimeter fencing shall be limited to fences not exceeding six (6) feet in height and shall not extend beyond the front of the residential Building as approved by the Design Review Committee. Front yard perimeter fencing shall be as approved by the Design Review Committee and shall not exceed thirty inches~~three (3) feet~~ in height. Fencing shall not block drainage easements or drainage facilities. Owner shall be responsible for obtaining a permit prior to construction of perimeter fencing from the City of Grand Junction.

3.10 **Annoying Light, Sound or Odor** All exterior lighting installed or maintained on a Lot is limited to six (6) feet or lower and placed so that the light source is screened or shielded from the residence on any other Lots. No light shall be emitted from any part of the Common Interest Community, which is unreasonably bright or causes unreasonable glare. Without limiting the generality

of the foregoing, no spotlights, floodlights or other high-intensity lights shall be permitted within the Common Interest Community and will meet the City of Grand Junction lighting standards.

No sound shall be emitted from any part of the Common Interest Community which is unreasonably loud or annoying to others, and no odor shall be emitted from any part of the Common Interest Community which is noxious or unreasonably offensive to others. Again without limiting the generality of the foregoing, no exterior speakers, horns, whistles, bells, or other sound devices, other than security devices used exclusively for security purposes, shall be located or used within the Common Interest Community.

3.11 **Violation of Law, Insurance, Etc** No Owner or Occupant or Person shall do any act or cause or permit anything to be done or kept in or upon a Lot, Buildings or Improvements constructed thereon, or the Association Property which would result in the increase of, or cancellation of, insurance maintained by the Association or would be in violation of any federal, state, city or other law, ordinance, regulation or code of any governmental body having jurisdiction, or of any Master Rule and Regulation promulgated by the Association, or of any provisions of this Declaration.

3.12 **General Maintenance of Lots, Buildings and Improvements**

(a) Maintenance The Owners shall keep, maintain and repair their Lots, Buildings and Improvements situated thereon, including any fencing or landscape Improvements installed by the Declarant in a neat, clean, cultivated, attractive and well maintained condition, free from the accumulation of trash or debris or visual deterioration. The Owners shall repair and maintain any fencing on the common boundary with other Owners, including fencing installed by the Declarant, and the costs and expenses therefore shall be shared equally between the Owners sharing the common boundary.

(b) Trash No Lot shall be used as a dumping ground for rubbish. No garbage, rubbish or trash shall be allowed to accumulate on any Lot. All garbage, rubbish and trash shall be placed and kept in covered containers. All containers shall be kept within garages or enclosed backyards so as to not be visible from neighboring property, except to make the same available for collection during regular trash collection days.

(d) Association Authority In the event any Owner fails to keep, maintain or repair such Owner's Lot or the Building(s) or Improvement(s) situated thereon, including landscape and fence Improvements installed by the Declarant, in accordance with this section, a written notice will be issued. If an Owner fails to perform any of such obligations within ten (10) days following the receipt of a written notice from the Association then the Association shall be authorized to conduct such maintenance, repairs or restoration and assess the cost thereof to Owners on whose Lot or for whose benefit such maintenance or repairs were conducted as a reimbursement assessment.

3.13 **Duty to Maintain: Erosion and Sediment Control** Each Lot owner shall be responsible for making certain that any builder who performs any construction on such Lot adheres to and regularly

notifies suppliers and subcontractors of their obligation by virtue of this Declaration to adhere to the Stormwater Best Management Practices during construction activities.

The Owner or its contractor shall install silt fences or straw bales around the site at the beginning of construction as needed to prevent sediment from leaving or entering the Lot in any direction, and shall comply with the Subdivision drainage plans. Backfill and rough grade of the Lots shall be completed as soon as possible in the construction process and final grade shall be established as soon as practical.

Permanent erosion and sediment control measures shall be installed and functioning within 6 months of the issuance of the certificate of occupancy on a residential building.

3.14 **Design Guidelines** All excavation and other land disturbance, construction, landscaping and irrigation activities within the Common Interest Community shall be governed by the procedures, standards, guidelines, restrictions and requirements set forth in the Design Guidelines. A violation of the Design Guidelines shall constitute a violation of this Declaration and may be enforced in accordance with the terms thereof.

3.15 **Noxious or Offensive Activities; Nuisances; Construction Activities** No noxious or offensive activity shall occur or be allowed at anytime on any property within the Common Interest Community, nor shall anything be done or placed thereon which is or may become a nuisance or cause an unreasonable embarrassment, disturbance, or annoyance to Owners, Occupants, Declarant, or the Association, or which interferes with the peaceful enjoyment or possession and proper use of the Common Interest Community, or any part thereof, by Owners or Occupants. As used herein, the term "nuisance" shall not apply to any activities of Declarant, which are reasonable necessary or appropriate to the development, improvement, maintenance, marketing and/or sale of the Common Interest Community or any part thereof. The Executive Board, in its sole discretion, shall have the right and authority to determine the existence of any nuisance or unreasonable annoyance.

Each Owner shall comply with the Master Rules and Regulations and the requirements of all health authorities and other governmental authorities having jurisdiction over the Common Interest Community. Normal construction activities and parking, during normal working hours, in connection with the building of Improvements on a Lot shall not be considered a nuisance or otherwise prohibited by the Master Declaration unless they are in violation of the Design Guidelines or other requirements of the Design Review Committee, but Lots and Association Property shall be kept in a neat and tidy condition during construction periods, trash, and debris shall not be permitted to accumulate, and supplies of brick, block, lumber and other building materials shall be neatly piled. In addition, construction equipment and building materials may only be stored or kept within the Common Interest Community during and in connection with the construction of Improvements thereon. All such equipment and materials and equipment shall be removed immediately following completion of construction.

3.16 **No Hazardous or Unsafe Activities** No activity shall be conducted on, and no Improvement shall be constructed on, any property within the Common Interest Community, which is or might be unsafe or hazardous to any Person or property. Without limiting the generality of the foregoing, and except as allowed below, no explosives, gasoline, or other volatile and/or incendiary materials or devices or any materials deemed hazardous or toxic substances under applicable environmental laws, or regulations shall ever be used, kept, stored, permitted to remain or be released or disposed of on any Lot or elsewhere within the Common Interest Community. Gasoline or fuel for the Owner's lawn mower, snow blower, and the like may be maintained on an incidental basis in an enclosed structure on a Lot in an amount not to exceed 10 gallons, except for construction purposes.

3.17 **Outside Burning; Fire Hazards** No exterior fires shall be lighted or permitted on any property within the Common Interest Community except in a contained barbeque unit while attended and in use for cooking purposes, or in a landscaped exterior fire pit, so long as such burning complies with local, state and federal laws. Notwithstanding the foregoing, the Declarant shall have the right to perform burning activities in connection with the development and marketing of the Common Interest Community.

3.18 **No Firearms or Hunting** The discharge of firearms and hunting on any part of the Common Interest Community is expressly prohibited.

3.19 **No Unsightliness** All unsightly structures, facilities, equipment, objects, and conditions sporting equipment (e.g., skis, snowboards, bikes, mountain bikes, kayaks, etc.) and snow removal, garden or maintenance equipment except when in actual use, shall be kept in an enclosed structure or in a screened area approved by the Design Review Committee. No laundry or wash shall be dried or hung outside any residence.

3.20 **Animals** Except as specifically permitted below or by the Master Rules and Regulations, no animals, reptiles, primates, fish, fowl or insects of any kind shall be kept, raised, bred, maintained or boarded within or upon any part of the Common Interest Community.

Each Lot shall be entitled to a Maximum of no more than two (2) dogs or cats (or one of each) and a reasonable number of other household Pets, so long as such dogs, cats and other Household Pets are not kept for any commercial purpose, are not kept in unreasonable numbers, do not cause an unreasonable amount of noise or odor, or do not otherwise become a nuisance or threat to other Lot Owners or Occupants. Permitted dogs, cats, and other Household Pets must be fenced or restrained at all times within the Owner's or Occupant's Lot and shall not be permitted outside such Lot except when leashed and accompanied by the pet's owner or the owner's representative. All Household Pets shall be properly immunized and otherwise maintained and cared for as a required by applicable laws.

The Owner of Lot where a Household Pet is kept, as well as the legal owner of the pet (if not such Owner), shall be jointly and severally liable for any and all damage and destruction caused by the

pet, and for any clean-up on the Owner's Lot and of streets, sidewalks, Association Property or other Lots necessitated by such pet.

The Executive Board shall be responsible for enforcing the restrictions set forth in this Section, and shall have, and is hereby given, the right and authority to determine in its sole discretion that dogs, cats and other Household Pets are being kept for commercial purposes, or are being kept in unreasonable numbers, or are causing an unreasonable amount of noise or odor, or are a nuisance or threat to other Lot Owners or Occupants, or that a Lot Owner or Occupant is otherwise in violation of this Section, and to take such action or actions as it deems reasonably necessary to remedy the violation, including without limitation the levying of fines and/or Reimbursement Assessments as provided in hereof. Also, without limiting the generality of the foregoing, the Executive Board may require the owner or custodian of a dog that barks or howls excessively, or of a dog, cat or other Household Pet with other offensive habits or threatening behavior, to confine such animal indoors, or to permanently remove such animal from the Common Interest Community, and may adopt Master Rules and Regulations governing pets.

3.21 **Restriction on Equipment, Tanks, Antennae, Satellite Dishes, Etc.** Air movement, air conditioning (including swamp coolers), heating, wind collection, or refrigeration equipment must be screened from the view of neighboring properties. Solar power units meeting all governmental guidelines for residential uses may be incorporated into a residence if the solar power unit meets the same architectural criteria as are applied to other Improvements within the Common Interest Community, and the solar power unit is approved in advance by the Design Review Committee. No tanks of any kind, whether elevated or buried, shall be erected, placed or permitted to remain upon any Lot or Association Property except in compliance with applicable federal and state regulations, and then only with the prior written consent of the Design Review Committee.

Satellite dishes that exceed one meter in diameter, and MDS antennas that exceed one meter in diameter or diagonal measurement, shall not be allowed within the Common Interest Community. Mast antennas that are extended higher than 12 feet above the roof line and antennas that are not used to receive video programming shall only be permitted within the Common Interest Community if they receive the prior written approval of the Design Review Committee as to design, location and screening from neighboring Lots, Units, and the Association Property.

3.22 **Restrictions on Mining or Drilling** No Lot within the Subdivision shall be used for any exploration or extraction of oil, gas or other minerals, including but not limited to, the drilling mining, quarrying, boring or developing water, geothermal resources, hydrocarbons, minerals, rocks, stones, gravel, or underground water.

3.23 **Excavation; Natural Rock Features** No excavation or other earth disturbances shall be performed or permitted within the Subdivision except in connection with the construction of Improvements. Whenever possible significant natural rock features shall be preserved, and shall not in any event be disturbed unless the written approval of the Design Review Committee is first obtained.

Upon completion of construction, openings in the ground shall be backfilled and compacted and all disturbed ground shall be graded and landscaped in accordance with the Design Guidelines and the requirements of the Design Review Committee.

3.24 **No Interference with Waterways or Drainage Systems** All runoff shall be properly channeled into a storm drain, storage area, or other storm water management facility in conformance with the drainage portion of the approved site plan. All elements of the drainage control system shall be constructed and maintained in accordance with the approved site plan.

No Owner or Lessee shall construct, install, maintain or permit any fence or other improvement or obstruction or plant trees or take any other action which damages or interrupts or interferes in any way with the normal flow of water through and along waterways and water features within the Subdivision, any ditch, lateral, pond or other water collection, storage or distribution system within or serving the Subdivision, or normal drainage patterns within the Subdivision, subject always to the rights of owners of ditches and other water rights and the requirements of the Design Review Committee.

The Association shall have the authority to take such action as may be necessary to abate any such damage or interference, and shall have the right to enter upon a Lot or Common Element for purposes of correcting or removing obstructions, and any costs incurred by the Association in connection with such abatement, injunctive or corrective activities shall be assessed to the responsible Lot Owner in the form of a Reimbursements Assessment.

3.25 **Ponds** No swimming or boating or ice-skating activities shall be conducted on any ponds within the Subdivision.

3.26 **Tree and Natural Shrub Preservation** All Improvements within the Subdivision shall be located, designed, and constructed so as to preserve and protect trees and natural shrubs. In order to conserve the natural shrubs (e.g., pine, cedar, pinon, other evergreens, and gamble oak or sage brush) may be removed or trimmed except with the prior written approval of the Design Review Committee. This restriction shall not apply to the removal or trimming of dead or diseased vegetation, or essential clearing by a Lot Owner in connection with the construction of a residence on a site previously approved by the Design Review Committee. Any violation of this Section shall subject the offending Lot Owner to such penalties, fines and/or other conditions as the Design Review Committee considers appropriate, including without limitation the withdrawal or modification of previously granted development approvals, or the requirement that replacement trees or shrubs or equivalent or different size and type be planted and maintained by the Lot Owner.

3.27 **Use of Easement Areas; Utility Installation** All easements shown on a Plat or Supplemental Plat covering any portion of the Subdivision have been created or reserved for the purposes indicated on such Plat and/or Article. No Lot Owner may erect any structure in such easement areas, nor may an Owner or Occupant use the surface of such easement areas for any private use, other than landscaping

which will not interfere with the use of said easement by the Persons or entities for whose benefit it has been created or reserved and which received the prior written approval of the Design Review Committee.

With respect to easements created for access and/or utility purposes either by the terms of this Master Declaration or any other Recorded agreement or on a Plat, any and all bona fide public and private utility service companies, including special districts, shall have the right of access, ingress, egress, and use of such easement areas for the installation, operation and maintenance of utility facilities service the Subdivision.

3.28 **Landscaping and Irrigation Regulations** No landscaping shall be performed on any Lot or Common Element or on Association Property unless a landscaping plan has received prior written approval of the Design Review Committee, and all landscaping shall comply with the Design Guidelines. A landscaping plan for each Lot must be approved by the Design Review Committee before construction is commenced on the residence on that Lot. Any substantial change in the type or location of approved landscaping vegetation shall require the further approval of the Design Review Committee.

The only type of Turf Grass permitted to be installed in the Subdivision is low-maintenance turf. A maximum of fifteen percent (15%) green space of the Lot may be planted with turf grass configured and shall have a permanent irrigation system installed. Green space is defined as the entire parcel less any Improvement footprints, driveways, vehicle use areas, and other impervious areas. Storm water management system areas are excluded in the calculation of green space area.

The Planting of low water requirement plants, trees and shrubs shall be regulated by the Design Review Committee, and shall be limited in accordance with Design Guidelines. The preservation of the natural high desert look of Pinnacle Ridge and the views of each Lot owner shall be respected.

Subsurface and soils conditions may vary substantially from Lot to Lot in Pinnacle Ridge, ranging from sand to clay to rock. Over-watering under some soil conditions has the potential of causing damage to the Lot Owners' Improvements as well as to neighboring properties. Each Lot Owner shall obtain a soil and subsurface conditions report from an independent qualified geotechnical firm before constructing any improvements on his Lot. The Lot Owner shall comply with all restrictions and recommendations contained in the report with respect to construction and methods and practices appropriate for the specific soils and subsurface conditions encountered on the Lot. Irrigation plans and systems proposed within each Lot shall also be in compliance with the Design Guidelines and approved by the Design Review Committee. By virtue of the fact that neither the Declarant nor the Association shall have the means to monitor irrigation systems installed or actual irrigation practices, the assumption of risk, waiver and release provisions of Section below shall in all cases apply notwithstanding approval of a landscaping plan by the Design Review Committee.

Each Owner shall diligently maintain, trim, weed, cultivate, husbandry, protect, preserve and otherwise keep in a healthy and attractive condition of the low maintenance shrubs, trees, hedges, grass, planters, gardens and other landscaping upon the Owner's Lot, including, without limitation, the removal of dead and diseased branches and brush and the performance of other tasks necessary to remove or eliminate material which constitutes or creates a fire hazard or nuisance, and shall keep the Owner's Lot free of noxious weeds. Each Owner shall also maintain all paved, concrete and other synthetically surfaced areas within the Owner's Lot, including but not limited to, driveway and parking areas, in good condition and repair.

3.29 **Tennis Courts and Basketball Hoops** Tennis courts, and basketball hoops, backboards and nets shall not be allowed unless they comply with the Design Guidelines and the approval of the Design Review Committee is first obtained.

3.30 **Swimming Pools, Spas, and Related Equipment** Pools, spas or hot tubs may be erected, constructed or installed on Lots or Common Elements within the Subdivision, provided they comply with the Design Guidelines and that have received the prior written consent of the Design and Review Committee. If a pool, spa or hot tub is approved, all service equipment shall be fenced and located in either a side yard between the front and rear boundaries of the residence, or in the rear yard adjacent to the residence, and shall be adequately screened from any neighboring Lot, the Association Property, and all streets in the Common Interest Community.

3.31 **Signs and Advertising** With the exception of one entry/identification sign per Lot during the period of actual construction on the Lot, which sign shall comply with the Design Guidelines, no sign, poster, billboard or advertising device of any kind shall be allowed or displayed upon any Lot or any Association Property within the Common Interest Community except:

(a) Such signs as may be used by the Declarant or builders approved by Declarant in connection with the development, marketing and sale of Lots in the subdivision;

(b) Such signs as may be required for traffic control and regulation of Association Property;

(d) Neighborhood monuments (e.g., entrance and directional signs) which are compatible with the architecture of the area;

(e) One security company sign;

(f) One "For Sale" or "For Rent" sign on any Lot,

(g) One "Private Residence" sign on any Lot. All such signs must comply with the Design Guidelines.

3.32 **Camping and Picnicking** No camping or picnicking shall be allowed on Association Property except in areas, designated for such purpose by the Association.

3.33 **No Individual Water Wells or Individual Sewage Disposal Systems** No individual water wells, and no cesspools, septic tanks or other individual sewage disposal systems, shall be drilled, constructed, maintained or permitted to remain within the Common Interest Community, except such water and/or septic systems as may be installed by Declarant or Declarant's successor, assign or agent or the Association to serve the Common Interest Community.

3.34 **Regulation of Pesticides** The Design Review Committee may adopt reasonable rules and regulations governing the use and application of pesticides, herbicides, fertilizers and fungicides within the subdivision.

~~3.35 **Untreated Water Irrigation System, Ditches, Laterals, Ponds, and Water Use Obligations** Declarant hereby discloses that certain irrigation systems, pipes, stub-outs, ditches, ditch laterals and ponds are currently located or may be constructed within ditch and irrigation easement areas located upon certain Lots in the Common Interest Community, upon Association Property, and/or within City-owned right-of-ways (collectively referred to as the "Untreated Water Irrigation System"). Declarant reserves the right, in its sole discretion, to extend said Untreated Water Irrigation System into the acquired property, as shall be more specifically set forth in the Supplement Declaration(s) therefore. Declarant further discloses that as of the date of this Master Declaration, the ownership of any and all water rights carried or to be carried in said Untreated Water Irrigation System is vested in the City of Grand Junction, and the City has no obligation to transfer ownership of any of such water rights to any Lot Owner or the Association. In no event shall the Association or any Lot Owner be entitled to the right of use of the Untreated Water Irrigation System or any water flowing through said Untreated Water Irrigation System, except pursuant to the payment of fees and compliance with the rules and regulations of the City of Grand Junction. Furthermore, in no event shall any Lot Owner be entitled to install irrigation facilities, to divert water from the Untreated Water Irrigation System or to make Modifications to the Untreated Water Irrigation System for diversion purposes. In addition, in no event shall any Lot Owner or the Association obstruct or impede the flow of water through the Untreated Water Irrigation System.~~

~~The City's operation of the Untreated Water Irrigation System is solely pursuant to the Plan and Agreement between the City and the Ridges Metropolitan District, Dated November 1, 1991, approved by the District Court of Mesa County in Case No. 26330.~~

~~As long as the City operates the Untreated Water Irrigation System, the City will provide untreated water to Pinnacle Ridge for irrigation purposes through the Untreated Water Irrigation System. To the extent possible, all irrigation within Pinnacle Ridge shall be accomplished with untreated water from the Untreated Water Irrigation System. City will also provide untreated water for the Association for purposes of irrigating Association Property, and the Home Owners Association will pay the monthly fee associated therewith. The Association is responsible for irrigating Association Property and the landscaping along certain public roadways.~~

~~All Owners hereby assume any risk involved with respect to the operation of the Untreated Water Irrigation System and hereby acknowledge that the Association, the Declarant, and the City shall not have any responsibility or liability of any kind to any loss, damage, cost or expense arising from or relating to said Untreated Water Irrigation System, including, but not limited to, any loss or damage caused by over watering, failure of irrigation system components, flooding or the failure to deliver water. In accordance with the foregoing, such Owners, on behalf of themselves and their Occupants, successors and assigns, by acceptance of a deed acknowledge their assent to the provisions hereof, and hereby waive and release Declarant, the City, and the Association and each of their officers, directors, partners, trustees, members, agents, employees, stockholders, and contractors, from and against any and all obligations, claims, demands, liabilities, costs, expenses, attorneys' fees, or causes of action of any kind whatsoever, whether arising prior or subsequent to the date hereof, whether known or unknown, based upon, arising out of, or in any manner related to the Untreated Water Irrigation System.~~

3.36 **Restoration of Improvements in the Event of Damage or Destruction** In the event of damage to or destruction of any Improvement on any Lot, the Owner thereof shall cause the damaged or destroyed Improvement to be restored or replaced to its original condition or such other conditions as may be approved in writing by the Design Review Committee, or the Owner shall cause the damaged or destroyed Improvement to be demolished and the Lot to be suitably landscaped, subject to the approval of the Design Review Committee, so as to present a pleasing and attractive appearance. Such Improvements shall be repaired, restored, or otherwise demolished and suitably landscaped within such reasonable time frame as may be established by the Design Review committee.

3.37 **Leases** Any Owner shall have the right to Lease his Lot including the Improvements under the following conditions.

(a) All Leases shall be in writing.

(b) All Leases shall provide the terms of the lease and the tenant's (Occupant's) use of the Lot shall be subject in all respects to the provisions of this Declaration or any pertinent Supplemental Declaration, and the Articles, the Bylaws, and the Master Rules and Regulations, and the Design Guidelines, that the Occupant has received and reviewed copies of said documents, and any failure by the Occupant to comply with any of the aforesaid documents, in any respect, shall be a default by Occupant under the Lease and a default by Occupant and Owner under said documents which may be enforced against Occupant and/or Owner by the Executive Board.

(c) Each Owner who leases a Lot shall be responsible for assuring compliance by the Occupant with all of the provisions of this Declaration, any pertinent Supplemental Declaration, the Articles, the Bylaws, the Master Rules and Regulations, and the Design Guidelines, and shall be jointly and severally responsible with the Occupant of any violations thereof by the occupant.

(d) Each Lease shall expressly provide that the Association (via the Executive Board) shall have the right to give the Occupant written notice that the Occupant is in violation of one or more

of the documents listed in subsection above, which notice shall specify a period of time (at least 5 days) in which the Occupant may cure the violation.

(e) All legal fees and costs incurred by the Association in connection with a Lease shall be the joint and several liabilities of the Lot Owner and the Occupant and may be collected by legal action in which the prevailing party shall be entitled to an award of its reasonable costs and attorney's fees.

3.38 **Right of Entry** During reasonable hours and upon notice to the Owner and Occupant of a Lot, any member of the Executive Board, shall have the right to enter upon and inspect any Lot, and the Improvements thereon, except for the interior portions of any occupied dwelling (which shall require the permission of the Owner or Occupant, except in case of emergency, when no notice or permission shall be required), for the purpose of ascertaining or not the provisions of the Declaration and of the Design Guidelines have been or are being complied with, or for the purpose of exercising any rights or performing any responsibilities (maintenance, repair, etc.) provided for in this Declaration or in any Supplemental Declaration, and such individuals shall not be deemed guilty of trespass by reason of entry.

3.39 **Damage by Owners During Construction** Each owner is responsible for any damage caused to roads, streets, ditches, fences, trails, natural drainage courses, utilities, Association Property, or to other Lots, Units, or Improvements thereon, during the construction or alteration of Improvements upon the Owner's Lot, including without limitation damage caused by any construction vehicles using the roads or streets within the Common Interest Community. Damage shall include any degradation in the appearance or condition of such roads, streets, Association Property, or other Lots, Units, or Improvements. The responsible Owner shall promptly repair and clean up any such damage, at its sole expense. Each Owner shall also be responsible for any damage caused by utility cuts in roads, washouts and runoff damage caused by failure to properly install culverts, and to promptly repair any such damage. If the Owner fails to repair any such damage within 5 days following receipt of a written notice from the Executive Board requesting the same, the Executive Board shall have the right to perform such repairs on behalf of the Owner, and to levy a Reimbursement Assessment upon the Owner and its Lots to recover the costs thereof. All construction activity must maintain the integrity of the City's Stormwater Management Manual. All violations are subject to penalty under the City's ordinance.

3.40 **Health, Safety, and Welfare** In the event any uses, activities, and facilities within the Subdivision are deemed by the Executive Board to be an unreasonable annoyance or nuisance, or to adversely affect the health, safety or welfare of Owners or Occupants, the Executive Board may amend the Master Rules and Regulations In order to appropriately restrict and regulate such uses, activities or facilities within the Subdivision. Such rules shall be consistent with the purposes and provisions of this Declarations.

3.41 **Implementation and Variances** The Executive Board is charged with implementing and enforcing the restrictions in this Article, or otherwise restrict and regulate the use and occupancy of the

Subdivision and the Lots by reasonable Master Rules and Regulations of general application adopted by the Executive Board from time to time. The Executive Board may, in its sole discretion and in extenuating circumstances, grant variances from any of the restrictions set forth in Article 3 (excepting any such restrictions with respect to which the Design Review Committee has the authority to grant variances under Article IV), if the Executive Board determines, in its discretion, (a) either (i) that a particular restriction a substantial hardship or burden on an Owner or Occupant, which hardship or burden was not caused by said Owner or Occupant, or (ii) that a change of circumstances since the Recordation of this Declaration has rendered such restriction obsolete, and (b) that the activity permitted under the variance, in the judgment of the Executive Board will not have any material adverse effect on the Owners and Occupants of the Subdivision (including neighboring Lots) and is consistent with the high quality of living intended to be promoted hereby throughout the Subdivision. When an Owner applies for a variance, the Board must give at least ten (10) days advance written notice of the variance hearing and the nature of the variance requested, postage paid, by certified mail, return receipt requested, to all Owners of Lots that are situated within a radius of 300 feet of the Lot for which the variance is sought, at current addresses for such Owner reflected in the Association files. The applying Owner must provide the Committee with an accurate list of the Owners to be so notified. If the foregoing notice requirements are complied with, it is not necessary that the Owners actually receive the notice that is mailed to them, such notices being deemed received upon mailing.

No variance shall conflict with the Master Subdivision Plan for Pinnacle Ridge or with ordinances or regulations of the City. If a variance from the Master Subdivision Plan or City laws or regulations is also required in connection with a matter for which a variance is desired, it shall be the Owner's responsibility to obtain such City variance before submitting a variance application to the Executive Board.

3.42 **Declarant Activities** Nothing contained in this Declaration is intended or shall be interpreted to prevent, regulate or delay or to restrict Declarant's right and ability to develop, improve, maintain, repair, regulate, operate, administer, manage, market, sell, lease, encumber or dispose of the Common Interest Community, the Lots, the Association Property, additional unspecified real estate, or any part thereof, including the right to construct Improvements, place a construction office, construction trailers, and install signs thereon, all in the discretion of Declarant.

ARTICLE IV
DESIGN REVIEW COMMITTEE

4.1 **Establishment of Design Review Committee** The Association shall establish and maintain the Design Review Committee, consisting of three (3) members, each of whom shall be appointed and removed by the Executive Board of the Association from time to time in its discretion. The qualifications for members of the DRC shall be set forth in the bylaws. The Design Review Committee and the members thereof shall not be liable for damage to any Person submitting requests for approval or to any Owner within the Property by reason of any act, omission, approval, disapproval or failure to

approve or disapprove with regard to any request. The actions of the Design Review Committee shall be deemed conclusively binding upon the Owners.

4.2 **Meetings and Action of Committee** The Design Review Committee shall meet as often as necessary to review applications. The meetings shall be held at locations, times and dates determined by the Design Review Committee. Such meetings shall be conducted according to the procedures adopted by the Design Review Committee. The applicant may attend the meetings, and address the Committee or answer questions in the Design Review Committee's discretion. The majority vote of the Design Review Committee members shall be required to take any action on behalf of the Committee.

4.4 **Compensation of Committee Members** The Design Review Committee may be compensated for services performed pursuant to this Declaration within the discretion of the Executive Board.

4.5 **Records of Actions** The Design Review Committee shall keep a permanent record of all actions of the Design Review Committee.

4.6 **Design Guidelines** The Design Review Committee shall establish the initial set of rules, procedures, standards, guidelines and requirements, including without limitation architectural, design and development standards and guidelines, governing the review and approval or disapproval of all Improvements proposed for new construction or the restoration or modification of existing, roof construction within the Common Interest Community consistent with this Declaration. The design standards and guidelines may be amended from time to time as the Design Review Committee deems reasonable or necessary.

4.7 **Submission of Plan** Prior to commencement of any work to accomplish any proposed Improvements, the Owner proposing such Improvements shall submit three (3) sets of plans, designs, drawings, specifications and samples as the Design Review Committee shall require pursuant to its design and development standards and guidelines, which may include, but are not necessarily limited to the following: construction plans and specifications, including floor plan and exterior elevations, site plan of house to be built on the Lot, sample of exterior colors; sample of trim and soffit colors, sample of roof shingle, landscape plan, including sprinkler system, drainage and grading, and application for Design Review Committee approval form required by the Design Review Committee.

From and after the day on which the Design Review Committee receives all required information and materials in connection with the proposed Improvements and Builder, The Design Review Committee shall have 30 calendar days in which to approve, approve with conditions, or deny the application. In the discretion of the Committee, one or more meetings may be held with the Owner during that period. If the Design Review Committee fails to approve or deny the application within said 30-day period, the final plans and specifications submitted to the Committee by the Owner shall be deemed approved.

4.8 **Design Review Fee** The Design Review Committee shall adopt a design review fee schedule for processing requests for the original construction of a residential improvement, and for subsequent requests for approval of Improvements on a Lot including remodels, renovations or other alterations of the original approval. No fee shall be charged for any proposed alteration or addition to an approved landscaping plan. The design review fee schedule may be modified from time to time and shall be set forth in the Design Guidelines.

4.10 **Design Review and Construction Process** Every owner proposing to make Improvements on its Lot must comply with the design review and construction procedures that are set forth in the Design Guidelines. The Declarant is exempt from this requirement.

4.11 **Approval of Plans** The Design Review Committee shall approve any plans submitted if it determines in its discretion that such plans comply with the Committee rules and procedures, the design and development standards and guidelines, and the requirements of the Plat and the Declaration. Upon approval of any plans, the Design Review Committee shall stamp both sets of the plans accordingly and return one set to the applicant. The other set shall be retained by the Design Review Committee, along with the application form. In the event of any later discrepancies between the set of plans given to the applicant and the set retained, the set of plans on file with the Design Review Committee shall control.

Approval by the Committee on any Improvement shall not imply or require that such approval will be granted again in the future for the same or similar Improvements, and the Committee shall have complete discretion, consistent with the standards and criteria contained herein and in the Design Guidelines, to grant or deny such approval in each instance on the merits of the particular application or proposal and considering the circumstances surrounding the same.

4.12 **Decisions of Committee** Decisions of the Design Review Committee shall be made in accordance with the procedures established in the Design Guidelines and shall be binding on all parties.

4.14 **Completion of Work After Approval** Following the approval of any proposed Improvements by the Design Review Committee, the proposed Improvements shall be completed by the Lot Owner: (a) as promptly and diligently as possible but in no event in excess of the time periods set forth below; (b) in compliance with the Design Guidelines and with all applicable laws, regulations and codes, (c) in strict conformance with all plans and specifications and other materials furnished to and approved by the Design Review Committee and with the Certificate of Approval; and (d) in accordance with any and all conditions imposed by the Design Review Committee. All Improvements approved be the Design Review Committee shall be completed, a Certificate of Compliance shall be obtained in accordance with Section 4.15 below, and all construction equipment, materials and debris shall be removed, (i) within 18 months from the date of approval of such Improvements by the Design Review Committee, or (ii) within such other time period as the Design Review Committee may prescribe. Provided, however, that any and all landscaping and/or gardening approved by the Design Review Committee which is related to the initial construction of a residence on a Lot shall be completed no later than 180 days immediately following the issuance of the Certificate of Occupancy

for such residence. Failure to comply with the terms and conditions of this Section 4.14shall constitute noncompliance with the terms and provisions of this Declaration and the Design Review Committee and/or the Executive Board shall have the right to invoke all rights and remedies provided to them hereunder, including but not limited to, the right to seek injunctive relief and/or to impose fines and penalties.

4.13 **Right to Inspect** Designated members or authorized consultants of the Design Review Committee or of the Executive Board, or any authorized officer, agent of the Association, may with notice at any reasonable time enter upon any Lot without being deemed guilty of trespass, in order to inspect Improvements constructed or being constructed on such Lot, to ascertain whether such Improvements have been or are being built or changed in compliance with the Design Guidelines, the approvals granted by the Design Review Committee, and this Declaration.

4.14 **Notice of Completion; Inspection of Work; Correction of Defects**

(a) Upon completion of any Improvements (excepting the related landscaping) for which plans and specifications have been approved by the Design Review Committee, the Owner shall submit to the Committee a written Notice of Completion, on a one page form to be provided by the Committee, which Notice shall certify that the Improvements have been completed in accordance with all plans, specifications and other materials furnished to and approved by the Committee, the Certificate of Approval, any conditions imposed by the Committee, and with the Design Guidelines. Until receipt of such Notice, the Committee shall not be deemed to have any notice regarding completion of the Improvements.

(b) Within seven (7) days following the receipt of the Notice of Completion, the Design Review Committee or its duly authorized representative shall inspect the Improvements. If the Committee finds that the Improvements have not been completed at set forth in the Notice of Completion, it shall notify the Lot Owner in writing of such noncompliance within said seven (7) day period, specifying the particulars of noncompliance, and shall require the Owner to remedy the same. If for any reason other than the Lot Owner's act or neglect, the Committee fails to notify the Owner of any noncompliance or to issue the Owner a Certificate of Compliance pursuant to Section4.15 below prior to the expiration of said seven (7) day period, the Improvements shall be deemed in compliance if the Improvements were, in fact, completed as of the date of the Notice of Completion and the Owner or Registered Builder may proceed to request a Certificate of Occupancy from the City.

(c) If upon the expiration of thirty (30) days from the date of such notification of noncompliance the Lot Owner shall have failed to remedy such noncompliance, the Design Review Committee shall notify the Executive Board in writing of such failure. The right of the Home Owners Association to remedy or remove any noncompliance shall be in addition to all other rights ad remedies which the Association may have at law, in equity, or under this Declaration or any Supplemental Declaration, and the Lot shall have no claim for damages or otherwise on account of the entry upon the property and remedying or removal of the non-complying Improvement.

4.15 **Certificate of Compliance** When the Design Review Committee is satisfied that the Improvements have completed in accordance with all plans, specifications and other materials furnished to the Design Review Committee, the Certificate of Approval, any conditions imposed by the Committee, and with the Design Guidelines, it shall issue within seven (7) days to the Owner a Certificate of Compliance with respect to said Improvements. Upon receipt of such Certificate, but not before, the Owner or Registered Builder may apply to the City for a Certificate of Occupancy. No newly-constructed residence on a Lot shall be occupied until a Certificate of Occupancy has been issued therefore by Mesa County.

4.16 **Improvements Must Conform to Approvals** No building, fence, landscaping, wall, structure or other Improvement shall be commenced, constructed, erected, placed, installed, located, maintained or removed within the Common Interest Community, nor shall there be any additions or changes to the exterior of any residence or other structure or Improvement upon a Lot or the landscaping, grading or drainage thereof, including without limitation, the painting or staining (other than painting or staining with the same color and type of paint or stain as previously existed) of exterior walls, patio covers and fences, except in accordance with plans and specifications therefore which have been submitted to and approved by the Design Review Committee and in compliance with the Design Guidelines.

4.17 **Committee Power to Grant Variances** The Design Review Committee may grant variances from any of the restrictions in this Declaration or any Supplemental Declaration or the Design Guidelines including restrictions upon height, size, floor area, setbacks, location or placement of structures, or similar restrictions, when unique circumstances not created by the Lot Owner, such as topography, natural obstructions, or aesthetic or environmental considerations would otherwise result in substantial hardship or burden which is not suffered by other similarly-situated Lots, or when a change of circumstances since the Recording of this Declaration has rendered such restriction obsolete. In granting a variance the Design Review Committee shall determine that the activity allowed by the variance will not have any material adverse effect on the Owners and Occupants of the Common Interest Community (including neighboring Lots) and is consistent with the quality of living intended to be promoted throughout the Common Interest Community. When an Owner applies for a variance, the Committee must give at least seven (7) days written notice of the variance hearing, and of the nature of the variance requested, postage prepaid by certified mail, return receipt requested, or by other means provided for in the Bylaws, to all Owners of Lots that are situated within a radius of 300 feet of the Lot for which the variance is sought, at the current addresses for such Owners reflected in the Association files. The applying Owner must provide the Committee with an accurate list of the Owners to be so notified. If the foregoing notice requirements are complied with, it is not necessary that the Owners actually receive the notice that is mailed to them, such notices being deemed received upon mailing.

All variances granted by the Design Review Committee must be evidenced in writing, must specify the Lot for which the variance, and must be signed by at least the majority of the members of the Committee. If any such variance is granted, no violation of the covenants, conditions and restrictions

contained in this Declaration or any Supplemental Declaration or the Design Guidelines shall be deemed to have occurred with respect to the matter for which the variance was granted. The granting of such a variance shall not operate to waive any of the terms and provisions of this Declaration or of any Supplemental Declaration or the Design Guidelines for any purpose except as to the particular property and particular provision hereof covered by the variance. A copy of each variance request and approval, or denial, will be kept on file at the Association offices.

The granting of a variance in a particular instance shall in no event imply or require that such a variance will be granted again in the future in a similar situation, and the Committee shall have complete discretion, consistent with the standards and criteria contained herein and in the Design Guidelines, to grant or deny a variance in each instance on the merits of the particular application and considering the circumstances surrounding the same.

No variance shall conflict with the Master Subdivision Plan for Pinnacle Ridge or with ordinances or regulations of the City. If a variance from the Master Subdivision Plan or City laws or regulations is also required in connection with a matter for which a variance is desired hereunder, it shall be the Owner's responsibility to obtain such City variance before submitting a variance application to the Design Review Committee.

4.18 **Non-liability for Approval or Disapproval of Plans and Specifications, for Issuance of Certificates of Approval or Compliance, or Restriction of Builders** The Design Review Committee shall not be responsible for reviewing plans and specifications with respect to engineering design or for compliance with zoning, building ordinances, environmental laws, or any other applicable laws or regulations. By its approval of any such plans and specifications, and by its issuance of a Certificate of Approval, neither the Design Review Committee, the members thereof, the Association, any member, the Executive Board not the Declarant assumes or shall have any liability or responsibility with respect to engineering design or for compliance with zoning, building ordinances, environmental laws, or any other applicable laws or regulations, or for any defect in any Improvement constructed from such plans and specifications.

Likewise, Builders shall register with Design Review Committee in the manner set forth in the Design Guidelines. By registering a Builder, the Design Review Committee does not represent or warrant, either expressly or by implication, and hereby disclaims any representations or warranties, that the Registered Builder will in fact complete the Improvements on schedule, within the Owner's budget, or in a competent and workmanlike manner, or that the Registered Builder is or will remain financially sound, and the Lot Owner's assume all risks regarding such matters.

4.19 **Registration of Builders** The construction or renovation of Units or of residential improvements on Lots within the Common Interest Community shall be accomplished only by licensed general contractors.

ARTICLE V

THE ASSOCIATION

5.1 **General Powers** The Association's general purpose is to be and constitute the entity to further the mutual interests of the Declarant and the Owners pursuant to this Declaration, the Articles and Bylaws and the Act, including without limitation, enforcement of the Master Declaration; Owning, repairing and maintaining the Common Elements; Maintenance and use of any Lots, Buildings and Improvements as authorized in the Declaration; Levying and enforcing assessments to defray the cost and expenses of the Association's duties and responsibilities in this Declaration; and, providing other utilities and services pursuant to the Articles and Bylaws. The Association shall have and may exercise all of the powers and duties of the Colorado corporation formed under the Colorado Revised Nonprofit Corporation Act.

5.2 **Association Executive Board** The affairs of the Association shall be managed by an Executive Board of three (3) directors (the "Board") initially. When Declarant relinquishes control of the Board to the Owners pursuant to Section 5.5 below, the Board shall be managed by at least three (3) directors. Directors shall meet the qualifications described in the Articles of Incorporation and Bylaws of the Association.

A quorum shall be present throughout any meeting of the Executive Board, and all regular and special meetings of the Executive Board or any committee thereof shall be open to attendance by all members of the Association or their representatives. Without limiting the generality of the foregoing, no Master Rule or Regulation may be adopted during an executive session. Agendas for meetings of the Executive Board shall be made reasonably available for examination by all Members of the Association or their representatives.

The Executive Board may not act on behalf of the Association to amend this Declaration, terminate the Common Interest Community, elect members of the Executive Board or determine the qualifications, powers and duties, or terms of office of Executive Board members, but the Executive Board may fill vacancies in its membership for the unexpired portion of any term.

5.3 **Membership in Home Owners Association** By acceptance of a deed to a Lot within the Subdivision, each Owner shall be a Member of the Association. A membership shall be appurtenant to and may not be separated from ownership of any Lot. Declarant shall hold a Membership in the Association for each Lot owned by Declarant. Membership in the Association shall not be assignable separate and apart from fee simple title to a Lot, and may not otherwise be separated from ownership of a Lot.

5.4 **Voting Rights of Member** The Association shall have one class of voting membership, each Owner being entitled to vote one (1) vote for each Lot owned upon matters subject to vote by the Members as provided in the Articles and Bylaws of the Association. A vote for each Lot shall be exercised as the Owner or Owners may determine, but in no event shall more than one (1) vote be cast with respect to any Lot.

Provided a quorum of Members entitled to vote is present in person or by proxy, the affirmative vote of a majority of the Members so present shall constitute approval of any matter voted upon unless a different number is required on a particular matter by the Act, this Declaration, any Supplemental Declaration, the Articles, or the Bylaws.

The Lot Owners, by a vote of sixty-seven percent (67%) of all Members present and entitled to vote at any meeting of the Lot Owners at which a quorum is present, may remove any member of the Executive Board with or without cause, other than a member appointed by Declarant.

5.5 **Declarant Control of Association** From the date of the formation of the Association until termination of Declarant's control as provided below, Declarant shall have and hereby reserves the power to appoint and remove, in its sole discretion, the members of the Executive Board and the officers of the Association during the period commencing upon the Recording of this Declaration and terminating upon the first to occur of either sixty (60) days after conveyance of seventy-five percent (75%) of the Lots to Owners other than Declarant or two (2) years after the last conveyance of a Lot by Declarant in the ordinary course of business.

Declarant may voluntarily surrender the right to appoint and remove officers of the Association and members of the Board before termination of the period of Declarant's control, but in that event Declarant may require, for the duration of the period of Declarant's control, that specified actions of the Association or Board, as described in a recorded instrument executed by Declarant, be approved by Declarant before they become effective. Not later than sixty (60) days after conveyance of twenty-five percent (25%) of the Lots to Owners other than Declarant, at least one (1) member and not less than twenty-five percent (25%) of the members of the Executive Board must be elected by Lot Owners other than Declarant. Not later than sixty (60) days after conveyance of fifty percent (50%) of the Lots to Owners other than Declarant, not less than thirty-three and one-third percent (33%) of the members of the Executive Board must be elected by Lot Owners other than Declarant.

Within sixty (60) days after Lot Owners other than Declarant elect a majority of the members of the Executive Board, Declarant shall deliver to the Association all property of the Lot Owners and of the Association held or controlled by Declarant, including, without limitation, those items specified in the Act.

5.6 **Termination of Contracts and Leases of Declarant** The following contracts and leases, if entered into before the Executive Board elected by the Lot Owners pursuant to Section 38-33.3-303(7) takes Office, may be terminated without penalty by the Association at any time after the Executive Board elected by the Lot Owners pursuant to said Section 38-33.3-303(7) takes office, upon not less than ninety (90) days notice to other party; (i) Any management contract, employment contract or lease of recreational or parking areas or facilities; (ii) Any other contract or lease between the Association and Declarant or an affiliate of Declarant; or (iii) Any contract or lease that is not bona fide or was unconscionable to the Lot Owners at the time entered into under the circumstances then prevailing.

ARTICLE VI
ASSOCIATION PROPERTY

6.1 **Use and Enjoyment of Association Property** With the exception of Limited Common Areas, and except as otherwise provided in the Declaration, in any Supplemental Declaration, or in the Master Rules and Regulations, each Owner shall have the non-exclusive right to use and enjoy Association Property in common with all other Owners. This right to use and enjoy Association Property shall extend to each Owner, Occupant, and the family members, guests and invitees of each Owner, and to such other users as may be authorized by this Declaration or by the Executive Board from time to time, and shall be appurtenant to each Lot, subject at all time to the provisions of the Declaration, the Articles, Bylaws, and the Master Rules and Regulations. No Owner or Occupant shall place any structure or store or leave any materials or personal property upon Association Property, nor shall any Owner or Occupant engage in any activity, which will temporarily or permanently impair free and unobstructed access to all parts of the Association Property by all Owners. Use of the Association Property is also subject to any applicable terms of the Declaration of Easements, and may not interfere with any of the purposes of the easements. Use is also subject to duly adopted rules and regulations of the Association.

6.2 **Home Owners Association May Regulate Use of Association Property** The Association, acting through the Executive Board, shall have the right and authority to regulate the use of Association Property by the promulgation, enforcement and interpretation from time to time of such Master Rules and Regulations relating thereto as the Association considers necessary or appropriate for the protection and preservation of Association Property and the enhancement of the use and enjoyment thereof by Owners and Occupants and other authorized users.

The Association, acting through the Executive Board, may for good cause suspend the right of any person to use and enjoy the Association Property, including the right of a Member who or which is delinquent in the payment of any Assessments, and the right of any Member or other authorized user who is in violation of the terms and provisions of this Declaration or any Supplemental Declaration, the Articles, Bylaws, Master Rules and Regulations, Design Guidelines or the terms and provisions of any approvals granted by the Design Review Committee.

6.3 **Association to Maintain and Improve Association Property** The Association, its agents and employees, shall maintain and repair, snowplow as necessary, and otherwise manage the Association Property (including the Limited Common Area), including, but not limited to, any Improvements, landscaping, paths, trails, parking areas, drives, and recreational and other facilities located thereon. The Association may construct, alter and remove such Improvements and landscaping upon Association Property as the Association in its discretion considers necessary, desirable or appropriate from time to time, and may do all such other and further acts which the Executive Board deems necessary or appropriate to preserve, protect and enhance the Association Property and the beauty thereof in accordance with the general objectives for the Common Interest Community reflected

in the Declaration. Separate bids shall be let for the maintenance of Limited Common Areas so that the costs thereof can be assessed exclusively to the Lots benefited thereby.

The Association shall take title to, own, manage and maintain the Common Areas, particularly the private streets, recreational areas, open space, and areas for storm water management, erosion and sediment control. The Association shall maintain the private streets, the parking areas included within the same tracts as the private streets and maintain a vegetation-free zone along the private streets that is 20 feet in width (10 feet each side from the center of the private street).

The Association shall grant the City of Grand Junction Police Department the right and power to enter the private streets for the purpose of enforcing parking restrictions.

6.4 **No Partition of Association Property** No Owner or other Person shall have any right to partition or to seek the partition of Association Property thereof.

6.5 **Owner Liability for Owner or Occupant Damage to Association Property** Each Owner shall be liable to the Association for any damage to Association Property of for any expense, loss or liability suffered or incurred by the Association in connection with Association Property arising from the negligence or willful misconduct of such Owner or of any Occupant, agent, employee, family member, guest or invitee of such Owner, or any violation by such Owner or any Occupant, agent, employee, family member, guest or invite of such Owner of any law, regulation, or code, including without limitation any environmental law, or of any provisions of this Declaration, and Supplemental Declaration, or the Master Rules and Regulations, relating to Association Property. Each Owner shall indemnify, defend and hold the Association harmless from any loss, damage, expense or liability arising from the circumstances described above. The Association shall have the power to levy and collect a Reimbursement Assessment against a Lot Owner to recover the costs, expenses, damages, losses or liabilities incurred by the Association as a consequence of any such negligence, willful misconduct or violations.

6.6 **Damage or Destruction to Association Property** In the event of damage to or destruction of Association Property, including Improvements thereon, by fire or other casualty, the Association shall repair or replace the same in accordance with the provisions in the Declaration. Repair, reconstruction, or replacement of Association Property shall be accomplished under such contacting and bidding procedures as the Association shall determine are appropriate. If insurance proceeds available to the Association on account of damage or destruction exceed the maintenance, repair, improvement, and operation of Association Property or for any other use deemed appropriate by the Executive Board.

6.7 **Condemnation of Association Property** If any Association Property or part thereof or interest therein is taken under exercise of the power of eminent domain or by purchase in lieu thereof, the portion of any award in condemnation or the price payable for the deed in lieu that is attributable to the Association Property taken or purchased shall be paid to the Association. The Association shall

have the exclusive right to participate in such condemnation proceedings and to represent the interest of all Owners and Occupants and other Persons therein. Any award or funds received by the Association shall be held by the Association for the purposes stated above or as a reserve for future maintenance, repair, reconstruction, or replacement of Association Property or may be used for Improvements or additions to or operation of Association Property or for such other uses as may be deemed appropriate by the Executive Board. Except as may otherwise be provided by the Act, no Owner or other Person shall be entitled to participate as a party or otherwise in any condemnation proceedings nor to receive any proceeds therefore.

6.8 **Title of Association Property Upon Dissolution of Association** In the event of dissolution of the Association, the Association Property shall, to the extent permitted by law and reasonably possible, be conveyed or transferred to an appropriate public, government or quasi-governmental agency or organization or to a nonprofit corporation, association, trust, or other organization, to be used, in any such event, for the common benefit of Owners for the purposes for which the Association Property was held by the Association. If the foregoing is not possible, the Association Property shall be sold or disposed of and the proceeds from the sale or disposition shall be distributed to Owners in proportion to each Owner's Allocated Interest in the Common Expense of the Association.

6.9 **Mechanic's Liens on Association Property** Declarant shall be responsible for the release of mechanics' liens filed with respect to Association Property, or any part thereof, if such liens arise from labor performed or materials furnished at the instance of Declarant, its agents, contractors or subcontractors. Likewise, the Association shall be responsible for the release of mechanics' liens filed with respect to Association Property, or any part thereof, is such liens arise from labor performed or material furnished at the instance of the Association, its directors, officers, agents, contractors or subcontractors. No labor performed or materials furnished with respect to Association Property at the instance of the Executive Board shall be the basis for filing a lien against any Lot.

ARTICLE VII
DECLARATION'S RESERVED RIGHTS

7.1 **Statement of Interest** Declarant hereby expressly reserves to itself and its successors and assigns the Development Rights set forth herein, any one or more of which rights may be exercised, in the sole and absolute discretion of Declarant, at any time and from time to time during the period commencing upon the recording of this Declaration or in any Supplemental Declaration and ending on the date of termination of such rights established under Section below. It is expressly understood that Declarant shall not be obligated to exercise any of these Development Rights, and that no consent be required from any Owner, Mortgagee, or the Association for the effective exercise of any of the Development Rights. Declarant reserves the right to create up to 72 single family residential lots in one or more phasing's of the subdivision.

The Developer Rights hereinafter set forth shall be prior and superior to any other provisions of this Declaration and may not be amended, modified, terminated or otherwise altered in

any way without the express prior written consent of Declarant. All conveyances of Lots, whether by Declarant or otherwise, shall be deemed and construed to reserve to Declarant and/or to grant to Declarant all of the Development Rights reserved by and to Declarant in this Article VI and elsewhere in this Declaration or in any Supplemental Declaration, even though no specific reference to such rights appears in the conveying instruments.

7.2 **Construction of Improvements** The Declarant reserves the right, but not obligation, to construct additional Improvements on the Common Elements at any time and from time to time for the improvement and enhancement thereof for the benefit of the Association and Lot Owners. The right to complete Improvements indicated on the Plat or this Declaration or in any Supplemental Declaration may be amended from time to time. The right to construct and complete Improvements required by the terms of any development improvements agreement with applicable governmental entity may be amended from time to time. The Declarant shall have the right to create, grant and/or use and enjoy additional nonexclusive easements, and to relocate existing platted or other easements, upon or across any portion of the Property (including Lots and Common Elements), as may be reasonably required for the construction by Declarant of Improvements to the Common Elements or the effective exercise by Declarant of any of the other Development Rights described in this Article.

7.3 **Sales, Marketing and Management** The Declarant shall have the right to construct, locate or operate, and to maintain upon, and to remove from any part of the Property, in the discretion of Declarant, and in such number, size and location as may be reasonably required by Declarant in connection with the completion of Improvements, the management of the development, and/or the promotion, marketing, sale or rental of Lots, the following:

(a) Sales offices, management offices, and/or construction offices, and structures containing or relating to the same, including without limitation mobile homes, office trailers and construction trailers. Such offices, to the extent they are not situated on a Lot, are hereby declared to be personal property of the Declarant and shall in any case be successors or assigns ceasing to be a Lot Owner;

(b) Signs identifying, advertising the Common Interest Community and the Lots therein, or relating to development or construction thereon;

(c) Model residences constructed or to be constructed on Lots;

(d) Parking areas and facilities and lighting necessary or desirable in the marking of the Property and the Lots; and

(e) Employees, equipment, vehicles and marketing and construction materials.

7.4 **Declarant Control of Association** Declarant shall have the right to appoint or remove any Executive Board member or officer of the Association as more specifically set forth in Article 5.5 above consistent with the Act.

7.5 **Other Reserved Development Rights** Subject to compliance with the requirements of the applicable governmental authority, the Declarant may as to all or any portion of the Declarant Owner Property; (a) create additional Lots; (b) subdivide Lots; (c) combine Lots; (d) create Common Elements; and (e) reconfigure Lots, or streets. Additionally, in order to effectively exercise the Development Rights reserved to Declarant under this Article VI, the Declarant may amend this Declaration or in any Supplemental Declaration and the Plat (without the consent of Owners, Mortgagees or the Association being required) for purposes of complying with or qualifying for any required federal or state registration of the project, satisfying title insurance requirements, bringing any provision or provisions of the Declaration or in any Supplemental Declaration or the Plat into compliance with the Act, or cure technical errors, typographical errors or deficiencies in the Declaration or Plat.

7.6 **Transfer of Declarant's Reserved Rights** Any one or more rights created or reserved for the benefit of Declarant under this Article VII or elsewhere in this Declaration or in any Supplemental Declaration may be transferred to any Person by an instrument describing the rights or rights transferred and recorded in Mesa County records. Such instrument shall be executed by the Declarant and the transferee. The provisions of Section 38-33.3-304 of the Act shall apply to any transfer of special Declarant reserved rights.

7.7 **Termination of Declarant's Reserved Rights** With the exception of Declarant's right to appoint or remove Executive Board members and officers of the Association, the rights reserved by Declarant in this Article VII shall automatically terminate and expire upon the first to occur of the date which is thirty (30) years after the recording of this Declaration or in any Supplemental Declaration, or Declarant's relinquishment and surrender of such rights by recorded instrument. The Association is authorized and empowered to extend the time period for Declarant's exercise of the Development Rights, or reinstate a lapsed Development Right, without requiring Lot Owner or Mortgagee approval thereof. The extension or renewal of a Development right shall be made as an amendment to the Declaration or in any Supplemental Declaration or Plat, as the circumstances require, and shall be executed by Declarant and the Association.

7.8 **Owner Acceptance and Waiver of Rights Regarding Declarant's Reserved Rights** Each Owner, by his/her acceptance of a deed to a Lot, acknowledges that the Owner has carefully read and understands the Declarant's reserved Development Rights as set forth in this Article VII or elsewhere in this Declaration or in any Supplemental Declaration, that the Owner accepts, approves and understands the Declarant's reserved Development Rights and waives and releases any rights the Owner may have to object to or to interfere with the implementation or the exercise of the Development Rights reserved by the Declarant.

7.9 **Withdrawal Rights and Procedure** The right at any time and from time to time to withdraw from the Subdivision (and any additions thereto) any Declarant-owned Lot or Lots, or Association Property. Withdrawal may only be accomplished be the recording by Declarant of an

amendment to this Declaration or any Supplemental Declaration affected by the withdrawal, and an amendment to the Plat or any Supplemental Plat affected by the withdrawal. Upon the recording of such amendments, the withdrawn Lots or Association Property shall no longer be part of the Subdivision or subject to this Declaration or any applicable Supplemental Declaration in any way.

Each Declarant-owned Lot, and each Declarant-owned Association Property, is hereby described and declared to be a separate portion of real estate that is subject to this right of withdrawal, and Declarant expressly reserves the right to withdraw one or more Declarant-owned Lots and/or portion of any Declarant-owned Association Property from the Subdivision. Once a Lot has been conveyed to a Lot Owner other than Declarant, that portion of the real estate is no longer subject to this right to withdrawal. Likewise, once an Association Property has been conveyed to the Association, that portion of the real estate is no longer subject to this right of withdrawal.

7.10 **Subdivision of Blocks or Lots** Declarant shall have and hereby reserves the right to subdivide any Declarant-owned Block or Lot located within the Subdivision to create additional Lots, Association Property, and/or streets, subject to the maximum number of Lots set forth in the Recitals to this Declaration; provided, however, that such subdivision is consistent with the Declaration Plan for Pinnacle Ridge or that said Master Subdivision Plan is amended if necessary, and that the subdivision of any Block or Lot in compliance with City subdivision requirements. Upon the subdivision of any Block, or Lot in accordance with the terms and conditions contained herein, the Allocated Interest contained in this Master Declaration.

7.11 **Declarant as Attorney-In-Face For Owners** Each Owner, by its acceptance of a deed or other conveyance vesting in the Owner on interest Lot in the Subdivision, does hereby irrevocably constitute and appoint Declarant (with full power of substitution) as said Owner's attorney-in-fact, in said Owner's name, place and stead, to take any and all actions and to execute and deliver any and all instruments as may be necessary or appropriate to Declarant's exercise of the various rights reserved Declarant under this Article VII or elsewhere in this Declaration or in any Supplemental Declaration specifically including without limitation Declarant's reserved right to use all existing easements within the Subdivision or to create, grant, use and/or replat and relocate additional or existing easements across any portion of the Subdivision excepting platted Building Envelopes.

ARTICLE VIII
GENERAL PROVISIONS

8.1 **Duration of Master Declaration** The term of this Declaration shall be perpetual.

8.2 **Enforcement** The provisions of the Declaration or in any Supplemental Declaration may be enforced by the Association or any Owner against any Person, including any Owner or the Association, as a result of any failure to comply with the terms of the Declaration or in any Supplemental Declaration, the Bylaws or the Act to the fullest extent permitted under the Act including the recovery of costs and attorney's fees with or without commencing legal proceedings. The failure by

the Association or by any Owner to enforce any covenant or restriction herein contained shall in no event be deemed an estoppels or waiver of the right to enforce this Declaration, or a waiver of any other or subsequent breach of any covenant, condition or restriction herein contained.

(a) Acceleration The Association may elect to accelerate and declare immediately due and payable the remaining balance of any assessment payable in installments for such fiscal year.

(b) Collection The Association may bring a suit at law to collect delinquent assessments, including any accelerated assessment. Any judgment rendered in such action shall include a sum for costs of suite, including a reasonable attorney's fees.

(c) Lien All delinquent assessments shall be and constitute a lien upon the Owner's Lot in addition to being the personal obligation of the Owner. Such lien shall have the priority and shall be enforced in accordance with section 38-33.3-316 of the Act.

(d) Penalty Beginning with second month of delinquency, a five percent (5%) penalty will be added to all delinquent amounts each month until payments are current.

8.3 **Interpretation of Master Declaration and Supplemental Declaration; Conflicts with Act** The provisions of this Declaration and of all Supplemental Declaration shall be liberally construed to effectuate their purpose of creating a common and general plan for the development, improvement, enhancement, protection and enjoyment of the Common Interest Community, and to the extent possible, shall be construed so as to be consistent with the Act. In the event that any of the terms and conditions of this Declaration or of any Supplemental Declaration is determined to be inconsistent with the Act, the Act shall control. Notwithstanding anything to the contrary in this Declaration or in any Supplemental Declaration, no rights or powers reserved to Declarant hereunder or in any Supplemental Declaration shall exceed the time limitations upon or the permissible under the Act, and in the event any of such reserved rights or powers are determined to be inconsistent with the Act, the related provisions shall not be invalidated but shall be modified to the extent required to comply with the Act.

8.4 **Conflict With Plats** In the event of any conflict or inconsistency between the provisions of this Declaration or any Supplemental Declaration and the Plat, or any Supplemental Plat, including the Plat notes thereon, the provisions of said Plat or Supplemental Plat or Plat notes, as the case may be, shall govern and control and this Declaration or any Supplemental Declaration shall automatically be amended, but only to the extent necessary to conform the conflicting provisions hereof with the provisions of said Plat or Plat notes.

8.5 **Costs and Attorneys' Fees** In any action or proceeding involving the interpretation or enforcement or any provision of the Declaration or of any Supplemental Declaration, the prevailing party shall be entitled to recover its reasonable attorneys' fees and costs incurred in connection therewith.

8.6 **No City Liability** Notwithstanding any other provisions therein to the contrary, no obligation, duty or liability including a duty to pay money, interest, attorneys' fees or other costs, shall be assumed by, transferred to, or imposed on the City of Grand Junction pursuant to this Declaration, or by virtue of the City's ownership of any Tract within Pinnacle Ridge.

8.7 **Disclaimer Regarding Safety** Declarant and the Association hereby disclaim any obligation regarding the security of any persons or property within the Common Interest Community. Any owner of property within the Common Interest Community acknowledges that Declarant and the Association are only obligated to do those acts specifically enumerated herein, or in the Articles of Incorporation and Bylaws, and are not obligated to do any other acts with respect to the safety or protection of persons or property within the Common Interest Community.

8.8 **Amendment of Master Declaration and Plat** The Declaration and/or the Plat may be amended by Declarant at any time and for any purpose to the conveyance of the first Lot to an Owner. Subsequent to the conveyance of the first Lot to an Owner, the Declarant may amend the Declaration or the Plat: (i) to correct any clerical, typographical or technical errors, (ii) to comply with the requirements, standards or guidelines of recognized secondary markets, the Department of Housing and Urban Development, the Federal Housing Administration, the Veterans Administration, the Federal Home Loan Mortgage Corporation, the Government National Mortgage Association, or the Federal National Mortgage Association, (iii) to exercise any of the reserved Development Rights as set forth in Article above or (iv) to effect the Declarant's intent as expressed in the Declaration or the Plat. This Declaration may also be amended at any time and for any purpose and in such manner as is provided in the Act.

This Declaration and any Supplemental Declaration ~~(including the Plat and any Supplement Plats)~~ may be amended by the vote or agreement of Owners of Lots to which at least fifty-one percent (51~~0~~%) of the votes in the Association are allocated, provided such amendment does not impair, restrict or modify any of the reserved Development Rights of the Declarant, or conflicts with any provision of the Act. Any amendment must be recorded. The Declaration, Supplemental Declaration and Plat may not be amended without the approval of the City of Grand Junction in regard to amendments that relate to the Common Elements

8.9 **Governing Law; Jurisdiction** This Declaration shall control and govern over any conflicting provision of the Act, except to the extent that such conflicting provision in the Act is mandatory according to the terms of Sections -105, -106, and -107 of the Act. This Declaration shall further control any conflicting term in the Articles, Bylaws or any rule or regulation promulgated by the Association or the Design Board.

8.10 **Resolution Procedures**

(a) Dispute Resolution All actions, disputes, claims or controversy between any Owner, the Design Review Board, the Association, the Declarant, and their respective agents,

contractors, successors and assigns, whether in contract, tort or otherwise, shall be resolved by the procedures as set forth in this Section or as set forth in any limited warranty (if any), or any applicable agreement between Declarant and any Owner or his/her heirs, successors or assigns.

(b) Initial Notification; Negotiation For each claim governed by this section (a "Claim"), the claimant ("Claimant") shall give notice to the other party(ies) against whom the claim is asserted ("Respondent"), setting forth; the nature of the Claim; the basis or reason for the Claim; any other material information regarding the Claim; the specific relief and/or proposed remedy sought; and the intent to invoke this Section (the "Notice of Claim"). Claimant and Respondent shall use good faith efforts to resolve the Claim through negotiations following delivery of the notice, pending mediation pursuant to Section 7.2(c).

(c) Mediation The Claim shall first be mediated before a mediator jointly selected by the parties. Mediation is a process in which the parties meet with an impartial person who helps to resolve the dispute formally and confidentially. Mediators cannot impose binding decisions. The parties to the dispute must agree before any settlement is binding. The mediation shall occur within thirty (30) days following delivery of the Notice of Claim (the "Mediation Period"). Mediation shall be a condition precedent to arbitrating any dispute. In the event Claimant does not appear for mediation, Claimant shall be deemed to have irrevocably waived the Claim, and Respondent shall be released from any and all liability to Claimant on account of such Claim. The costs of the mediation shall be borne by Claimant and Respondent. In the event mediation is successful, the resolution shall be documented in writing and signed by the parties. Thereafter, if either party violates the resolution, the other party may apply immediately to a court for relief. The mediation, unless otherwise agreed, shall terminate in the event that the entire dispute is not resolved before the expiration of the Mediation Period. In the event the mediation is unsuccessful, then the Claimant may make written demand for arbitration pursuant to Section 7.2(d) within sixty (60) days following the expiration of the Mediation Period. If no written demand for arbitration is made within the specified time, Claimant shall irrevocably waiver the Claim and any and all right to proceed to arbitration regarding the Claim.

(d) Arbitration Following the Mediation Period and a written demand for arbitration, the Claim shall be resolved by binding arbitration administered by the American Arbitration Association (or any successor to such association) in accordance with the current American Arbitration Association Construction Industry Arbitration Rules in effect at the time of submission to arbitration, and as provided for in this subsection. In the event of any inconsistency between such rules and these arbitration provisions, these provisions shall supersede such rules. Should an action, dispute, claim or controversy be brought against Declarant and or any builder by a third party who is not bound by a binding arbitration provision similar to the arbitration provision contained herein, the terms of this subsection shall apply to such action, dispute, claim or controversy. The Arbitrator shall be selected from a panel of Arbitrators from Mesa County, Colorado (or if such panel is available, from Denver County, Colorado), with an Arbiter mutually acceptable to the parties. If the parties are unable to jointly agree upon the Arbiter, then each party shall select an arbiter and the two arbiters shall select a

third person to serve as the sole Arbiter. The parties agree that the Arbiter shall have substantial experience in the real estate field. The parties shall share equally in the arbitrator's fees and the costs of the arbitration. All parties shall have the right to be represented by legal, counsel. In determining any question, matter, or dispute before them, the Arbiter shall apply the provisions of the Declaration or in any Supplemental Declaration, and Articles and Bylaws, without varying from them in any respect, and they shall not have the power to add to, modify or change any of the provisions hereof. Any arbitration award may be enforced through entry of judgment by any court having jurisdiction there over. Exclusive venue for any arbitration proceeding shall be in Mesa County, Colorado. Except as may be required by law or for enforcement, neither a party nor the arbiter may disclose the existence, content, or results of any arbitration without the prior written consent of all parties to the Claim.

The Arbiter's decision may contain findings of fact and conclusions of law to the extent applicable and the Arbiter shall have the authority to rule on all post-hearing motions in the same manner as a trial judge. The statement of decision of the Arbiter upon all of the issues considered by the arbitrator is conclusive, final and binding upon the parties. Judgment upon any award rendered by the Arbiter may be entered by any State or Federal Court, as appropriate.

(e) Standards of Construction If any claim regarding defects in construction is made, each claim shall be specified with particularity. Each location of any claimed defect must be identified and all evidence supporting each claim, along with all repair methodologies and costs of repair, must be provided by the claimant in advance of any mediation hereunder. In any arbitration or other proceedings, it shall be rebuttably presumed that any construction done by the builder or Declarant was not defective, that the builder or Declarant adequately performed its obligations under its contract, and that the builder or Declarant was not negligent if the builder or Declarant's performance was substantially in accordance with any of the following: (A) the standards of trade in the Grand Junction Area on the date hereof or (B) Any applicable building code in Grand Junction on the date hereof; or (C) any applicable national association of home builders residential construction guidelines. In any such proceedings, evidence of any scientific, engineering, or technical advancements or other knowledge or techniques, where such advancements were discovered subsequent to the date hereof, shall not be admissible for any purpose. If any of Claimant's claims relate, in any way, to any work completed by any of Declarant's or builder's subcontractors or any materials and/or equipment provided by any suppliers, Declarant or builder, as applicable, in its sole discretion, may join such subcontractors and/or suppliers to any arbitration proceeding with Claimant. The sole manner which may be used to establish breach of any obligations under this Declaration, any obligations which may exist by law or reason of any statute, any applicable industry standards, and/or Claimant's damages, including, but not limited to, appropriate repair costs, shall be through the testimony of a homebuilder with experience in Mesa County, Colorado. The Arbiter shall completely exclude the testimony of any tendered expert who does not meet the foregoing qualifications.

(f) Limitation of Remedies Each party hereby disclaims and waives any claims for the following remedies and damages for any matters related to any Claim, whether a Claim is made on

the basis of contract, tort or any other theory or basis at law or in equity; (i) punitive or exemplary damages, (ii) claims for emotional distress or pain and suffering and/or (iii) claims for incidental and/or consequential damages (except as otherwise provided herein). Claimant further agrees that, subject to the other limitations contained herein, Respondent's total liability to Claimant shall be limited to, and in no event exceed, the amount of any insurance proceeds actually available with respect to any and all Claims, whether in contract, tort or otherwise.

(g) Acknowledge of Waivers of Rights to Jury Trail Each party understands that by using binding arbitration to resolve disputes they are voluntarily waiving and giving up any right that they may have to a judge or jury trial with regard to all issues concerning the Lot, Home, Common Elements, the Property, Improvements, and matters related thereto.

8.11 **Severability** Invalidation of any one of these covenants or restrictions by judgment or court order shall not affect any other provisions which shall remain in full force and effect.

8.12 **Limitation on Association** Any action, resolution or attempted action of the Association in conflict with any term or provision of this Declaration shall be void and of no force and effect whatsoever.

ARTICLE IX
POWERS AND DUTIES OF HOME OWNERS ASSOCIATION

9.1 **General Powers & Duties of the Home Owners Association** The Association shall have and may exercise all of the powers and rights and duties of a Colorado corporation formed under the Colorado Revised Nonprofit Corporation Act, and all of the powers and duties provided for in the Act including those enumerated in Section 38-33.3-302 of the Act, as such laws may be amended from time to time, subject only to the limitations upon such powers as are contained in this Declaration. More Sspecifically, and without limiting the generality of the foregoing, the Association shall have all of the powers and duties necessary (i) for the administration, management, governance and operation of the Common Interest Community and the Association, (ii) to own, operate, improve, maintain, repair, manage, lease, encumber, and otherwise deal with Association Property, (iii) to improve, maintain and repair the Limited Common Areas, and (iv) to do any and all lawful things that may be authorized, required or permitted to be done by the Association under the Act and/or under the provisions of this Declaration and of any Supplemental Declarations.

9.2 **Power to Grant Easements** The Association shall have the power to grant access, utility, drainage, irrigation, and such other easements upon, over, across or under Association Property as it deems necessary or desirable for the benefit of the Common Interest Community or parts thereof, or for the benefit of all or less than all of the Lot Owners, or for the benefit of lands situated outside the Common Interest Community.

9.3 **Power to Convey or Encumber Association Property** The Association shall have the power to convey, or subject to a security interest, portion of the Association Property if Owners entitled to cast at least sixty-seven percent (67%) of the votes in the Association, including sixty-seven percent (67%) of the votes allocated to Lots not owned by the Declarant, agree to that action, except that all Owner(s) of Lots to which any Limited Common Area is allocated must agree in order to convey that Limited Common Area or to subject it to a security interest. Proceeds of the sale are an asset of the Association.

An agreement to convey, or subject to a security interest, Association Property must be evidenced by the execution of an agreement, in the same manner as a deed, by the Association. The agreement must specify a date after which the agreement will be void unless approve by the required percentage of Lot Owners. Any grant, conveyance or deed executed by the Association must be recorded in the County, and is effective only upon Recordation. The Association, on behalf of the Lot Owners, may contract to convey an interest in at Association Property, but the contract is not enforceable against the Association until approved, executed and ratified pursuant to this Section.

Thereafter, the Association shall have all the powers necessary and appropriate to affect the conveyance or encumbrance, including the power to execute deeds or other instruments. Unless in compliance with this Section, any purported conveyance, encumbrance, judicial sale, or other transfer of Association Property is void. A conveyance or encumbrance of Association Property pursuant to this Section shall not deprive any Lot of its rights of (i) access, ingress and egress to the Lot, and (ii) support of the Lot. A conveyance or encumbrance of Association Property pursuant to this Section shall not affect the priority or validity of pre-existing encumbrance.

9.4 **General Power to Provide Services and Facilities to Owners** The Association shall have the power, but not the obligation, to acquire, construct, operate, manage, maintain, repair and administer services and facilities for the benefit of the Owners, or some of them, including, without limitation, security, animal control, vegetation control, insect and pest control, television service, parking facilities, transportation facilities, snow removal, signage, (including entry monuments), lighting, (including seasonal lighting), interior and perimeter fencing, landscape walls, landscaping services and facilities, drainage facilities, including retention and detention pods, irrigation facilities, water features, trash and sold waste disposal services, including recycling programs, utility services, recreational facilities and services, maintenance, and such other service, functions and facilities as are deemed appropriate by the Executive Board. The foregoing list shall not be deemed to be a representation by Declarant of services or facilities that will in fact be available for use by the Owners. The Association may enter into such agreements and arrangements as it may deem appropriate with any provider of utilities or services to the Common Interest Community or any portion thereof, including any special district that provides such services, and may form or join any districts created to provide such services.

9.5 **Power to Provide Special Services to Owners** The Association shall have the power to provide services to an Owner or group of Owners. Any service or services to an Owner or group of Owners shall be provided pursuant to an agreement in writing, or through one (1) or more Supplemental Declarations, which shall provide for payment to the Association by such Owner or group of Owners of the costs and expenses of the Association in providing such services, including a fair share of the overhead expenses of the Association, and shall contain reasonable provisions assuring that the obligation to pay for such services shall be binding upon any heirs, personal representatives, successors and assigns of the Owner or group of Owners and that the payment for such service shall be secured by a lien on the Lot(s) of the Owner or group of Owners.

9.6 **Power to Charge for Special Association Property Uses and Special Association Services** The Association shall have to power to establish reasonable admission or other fees or charges for any special or extraordinary Association Property uses or Association services such as special parking privileges, special recreation facilities, conference rooms, instruction, or similar uses beyond the ordinary use of Association Property and ordinary Association services. Such charges or fees shall be set forth-in schedules of charges and fees adopted from time to time by the Executive Board.

9.7 **Power to Adopt Master Rules and Regulations** The Association may adopt, amend, repeal, and enforce such reasonable Master Rules and Regulations as the Executive Board may consider necessary, desirable or appropriate from time to time with respect to the interpretation and implementation of this Declaration, the operation of the Association, the use and enjoyment of Association Property (including Limited Common Areas), and the use of any other property within the Common Interest Community, including Lots. Any such Master Rules and Regulations shall be effective only upon adoption by resolution at an open meeting of the Executive Board. Notice of the adoption, amendment, or repeal of any Master Rule or Regulation shall be given in writing to each Owner, and copies of the currently effective Master Rules and Regulations shall be made available to each Owner and Occupant upon request and payment of the reasonable expense of copying the same. Each Owner and Occupant (and all other Persons who are authorized users of Association Property) shall comply with such Master Rules and Regulations, and each Owner shall see that Occupant claiming through such Owner comply with such Master Rules and Regulations. Such Master Rules and Regulations shall have the same force and affect as if they were set forth in and were part of this Declaration. In the event of conflict between the Master Rules and Regulations and the provisions of this Declaration, the provisions of this Master Declaration shall govern. Such Master Rules and Regulations may establish reasonable and uniformly applied penalties (including the levying and collection of fines) for the violation of such Master Rules and Regulations or of any provisions of this Declaration, the Articles, or the Bylaws.

9.8 **Power to Contract with Employees, Agents, Contractors, Districts, Consultants and Managers** The Association shall have the power to contract with, and/or to employ and discharge employees, agents, independent contractors and consultants, including lawyers and accountants, and special districts, to perform any of the responsibilities of the Association under this Declaration,

including without limitation maintenance responsibilities. The Association shall also have the power to retain and pay for the services of a manager or managers, which may be an affiliate of Declarant, to undertake any of the administrative or managerial responsibilities for which the Association may have responsibility under this Declaration, to the extent deemed advisable by the Association, and may delegate any of its duties, powers, or functions to any such manager. Notwithstanding and delegation to a manager of any duties, powers, or functions of the Association, the Association and its Executive Board shall remain ultimately responsible for the performance and exercise of such duties, powers, and functions.

9.9 **Power to Assign Future Income** The Association shall have the power to assign its right to future income, including the right to receive Regular Assessments, but only following the affirmative vote of the Owners Lots to which at least fifty-one percent (51%) of the votes in the Home Owners Association are allocated, at a dully-called meeting of the Members of the Association.

9.10 **Duty to Accept Property and Facilities Transferred by Declarant** The Association shall accept title to any real property, or interests in real property, including any Improvements and personal property thereon, and including water rights and related facilities, transferred to the Association by Declarant, or Declarant's successors or assigns. Property interests transferred to the Association by Declarant or its successors or assigns may include fee simple title, undivided interests, easements, leasehold interest and licenses to use. Except as may otherwise be approved by the Executive Board, any property or interest in property transferred to the Association by Declarant to its successors or assigns shall be within the boundaries of the Common Interest Community. Provided, however, the Declarant shall be entitled to transfer and convey the beneficial use of an easement, subject to any obligations there under, located outside of the Common Interest Community but which benefits the Association and the Owners.

Any property or interest in property transferred to the Association by Declarant shall, except to the extent otherwise specifically approved by resolution of the Executive Board, be transferred to the Association free and clear of all monetary obligations, liens and encumbrances (other than the lien of property taxes and assessments not then due and payable), but shall be subject to the terms of this Declaration, and easements, covenants, conditions, restrictions, and equitable servitudes or other encumbrances of record or otherwise in existence. Except as otherwise specifically approved by resolution of the Executive Board, no property or interest in property transferred to the Association by Declarant shall impose upon the Association any obligation to make monetary payments to Declarant or any affiliate of Declarant, including but not limited to, any purchase price, rent, charge, or fee.

Any Improvements or personal property transferred to the Association by Declarant shall be in good working order, ordinary wear and tear excepted, and at the time of transfer Declarant shall make any repairs reasonably required to bring the transferred property into good working order. Subject only to the foregoing, the Association shall accept all properties transferred to it by Declarant in their "Where is, As is" condition, without recourse of any kind, and Declarant disclaims and shall not

be deemed to make or have made any representations or warranties, express or implied, by fact or law, with respect to the transferred properties or any aspect or element thereof, including without limitation warranties of merchantability, fitness for a particular purpose, or workman like construction.

9.11 **Duty to Mange and Care for Association Property** The Association shall manage, care for, operate, maintain, repair and replace all Association Property and keep the same in a functional, clean and attractive condition for the benefit and enjoyment of the Owners.

9.12 **Duty to Provide Winter Snow Removal for a portion of Elysium Drive** The Association shall be responsible for snow removal along the north facing slope on Elysium Drive generally located between lots 54 and 55. The Association shall maintain signage along this portion of Elysium Drive stating that the Association is responsible for snow removal and not the City of Grand Junction.

9.13 **Duty to Pay Taxes** The Association shall pay any taxes and assessments levied upon Association Property (excepting Limited Common Area) and any other taxes and assessments payable by the Association before they become delinquent. The Association shall have the right to contest any such taxes or assessments by appropriate legal proceedings provided no sale or foreclosure of any lien for such tax or assessment occurs and provided further that the Association shall keep and hold sufficient funds to pay and discharge the taxes and assessments, together with any other interest and penalties which may accrue with respect thereto, if the contest of such taxes in unsuccessful.

9.14 **Duty to Keep Association Records** The Association shall keep financial records in sufficient detail to enable the Association to carry out its responsibilities under this Declaration and to comply with the requirements of the Act, including, but not limited to, current records of paid and unpaid Assessments for each Lot. All financial and other records of the Association shall be made reasonably available for examination by the Owners and the authorized agents of the Owners.

9.15 **Duty to Support the Design Review Committee** The Association shall take such actions, provide such funds, and do such other things as may be necessary or appropriate from time to time to support and assist the Design Review Committee in the performance of its responsibilities under this Declaration, and shall cooperate with said Committee to the fullest extent possible in such matters.

9.16 **Insurance** Commencing not later than the time of the first conveyance of a Lot to a Person other than Declarant, the Home Owners Association shall maintain and keep in effect at all times the following types of insurance, and the cost of said coverage shall be paid by the Association as a Common Expense:

(a) *Casualty Insurance*. To the extent reasonably available, property insurance on all Association Property, including but limited to Improvements and personality, owned or lease by the Association, and on all property that must become Association Property. Such insurance shall be for broad form covered causes of loss, including casualty, fire, and extended insurance including, if available at reasonable cost, coverage for vandalism and malicious mischief and, if available and if

deemed appropriate, coverage for flood, earthquake, and war risk. Such insurance shall, to the extent reasonably, obtainable, be for the full insurable replacement cost of the insured property, less applicable deductibles at the time the insurance is purchased and at each renewal date, exclusive of land, excavation, foundations and other items normally excluded from property policies.

(b) *Liability Insurance*. Comprehensive general liability insurance against claims and liabilities arising in connection with the ownership, existence, use, maintenance or management of the Association Property (including the Limited Common Areas), and covering public liability or clams of liability for injury to persons and/or property, and death of any person or persons, and, if the Association owns or operates motor vehicles, public liability or claims of liability for bodily injury (including death) and property damage arising as a result of the ownership and operation of motor vehicles. Such liability insurance shall be in such amounts as deemed advisable by the Executive Committee and shall (a) insure the Executive Board, the Design Review Committee, the Association and its officers, the manager, if any, and their respective employees, agents and all Persons acting as agents; (b) include the Declarant as an additional insured as its interest may appear; (c) include the Owners as insured's, but only for claims and liabilities arising in connection with the ownership, existence, use, maintenance or management of Association Property; (d) cover claims of one or more insured parties against other insured parties; (e) be written on an occurrence basis; and (f) shall name as additional insured's such other parties as may be required by specific agreements.

(c) *Contractual Liability Insurance*. To the extent reasonably available, contractual liability insurance covering such contractual obligations and liabilities, indemnifications, hold harmless agreements, and agreements to defend, and the Association may have or be party to from time to time, with coverage in amounts determined by the Executive Committee.

(d) *Fidelity Bonds*. To the extent reasonably available, fidelity bond coverage against dishonest act on the part of directors, officers, managers, trustees, agents, employees or volunteers responsible for handling funds belonging to or administered by the Association. If funds of the Home Owners Association are handled by a management agent, then fidelity bond coverage may also be obtained for the officers, employees, or agents thereof handling or responsible for Association funds. The fidelity bond or insurance must name the Association as the named insured and shall be written to provide protection in an amount no less than the lesser of (a) fifty thousand dollars, (b) a sum equal to two (2) months aggregate Regular Assessments, plus reserves, as calculated from the current Budget of the Association; or (c) the estimated maximum amount of funds, including reserves, in the custody of the Association (and its management agent) at any one time. In connection with such coverage, an appropriate endorsement to the policy to cover any person who serves without compensation shall be added if the policy would not otherwise cover volunteers.

(e) *Worker's Compensation*. A Worker's Compensation policy, if necessary, to meet the requirements of law.

(f) *Directors and Officers Liability Insurance*. Directors and officers liability insurance with coverage as the Executive Board shall approve for all Association, Executive Board and Design Review Committee directors, officers, members and managers, for any and all errors and/or omissions and other covered actions that occur during their tenure in office or employment. This insurance coverage shall be mandatory.

(g) *Other Insurance*. Such other insurance in such amounts as the Executive Board shall determine, from time to time, to be appropriate to protect the Association or the Lot Owners, or as may be required by the Act.

(h) *General Provisions Respecting Insurance*. Insurance obtained by the Association may contain such deductible provisions as good business practice may dictate. If the insurance described is not reasonably available, or if any policy of such insurance is canceled or not renewed without a replacement policy therefore having been obtained by it, the Association shall promptly cause notice of that fact to be delivered or sent prepaid by U.S. Mail to all Owners.

Insurance policies carried pursuant to Sections 9.16(a) and 9.16(b) above shall provide that each Owner is an insured Person under the policy with respect to liability arising out of such Owner's interest in the Association Property or membership in the Association; the insurer waives its rights of subrogation under the policy against the Association, each Owner, and any Person claiming by, through, or under such Owner or any other director, agent, or employee of the foregoing; no act or omission by any Owner, unless acting within the scope of such Owner's authority on behalf of the Association, will void the policy or be a condition to recovery under the policy; if at the time of a loss under the policy, there is other insurance in the name of an Owner covering the same risk covered by the policy, the Association's policy shall be the primary insurance. An insurer that has issued an insurance policy for the insurance described above shall issue certificates or memoranda of insurance to the Association and, upon request, to any Lot Owner or holder of a security interest. Unless otherwise provided by statute, the insurer issuing the policy may not cancel or refuse to renew it until thirty (30) days after the notice of the proposed cancellation or nonrenewal has been mailed to the Association, and each Lot Owner and holder of a security interest to whom a certificate or memorandum of insurance has been issued, at their respective last-known addresses.

Any loss covered by the property insurance policy described above must be adjusted with the Association, but the insurance proceeds for that loss shall be payable to any insurance trustee designated for that purpose, or otherwise to the Association, and not to any holder of security interest. The insurance trustee or the Association shall hold any insurance proceeds in trust for the Association Lot Owners and lien holders as their interests may appear. Subject to the provisions of Section 38.33.3-313(9) of the Act, the proceeds must be disbursed first for the repair or restoration of the damage property, and the Association, Lot Owners, and lien holders are not entitled to receive payment of any portion of the proceeds unless there is a surplus of proceeds after the property has been completely repaired or restored or the Common Interest Community is terminated.

The Association may adopt and establish written nondiscriminatory policies and procedures relating to the submittal of claims, responsibility for deductibles, and any other matters of claims adjustment. To the extent of the Association settles claims for damages to real property, it shall have the authority to assess negligent Owners causing such loss or benefiting from such repair or restoration for all deductibles paid by the Association. In the event more than on Lot is damaged by loss, the Association in its reasonable discretion may assess each Lot Owner a pro rata share of any deductible paid by the Association. Insurance obtained by the Association shall, to the extent reasonably possible, and provided Declarant reimburses the Association for any additional premium payable on account thereof, name Declarant as an additional insured and shall contain a waiver or rights of subrogation as against Declarant.

Insurance policies and insurance coverage shall be reviewed at least annually by the Executive Board to ascertain whether coverage under the policies is sufficient in light of the current values of the Association Property and in light of the possible or potential liabilities of the Association and other insured parties. The aforementioned insurance may be provided under blanket policies covering the Association Property and property of Declarant.

In no event shall insurance coverage obtained or maintained by the Association obviate the need for Owners and Occupants to obtain insurance for their own benefit.

Furthermore, to the extent reasonable available, insurance policies obtained by the Association shall contain the following provisions:

(a) The coverage afforded by such policies shall not be brought into contribution or proration with any insurance which may be purchased by a Lot Owner, Occupant or Mortgagee.

(b) The conduct of any one or more Lot Owners or Occupants shall not constitute grounds for avoiding liability on any such policies.

(c) Each policy must contain a waiver of any defenses based on co-insurance or on invalidity arising from the acts of the insured.

(d) A "severability if interest" endorsement shall be obtained which shall prelude the insurer from denying the claim of a Lot Owner or Occupant because of the conduct or negligent acts of the Association and its agents or other Lot Owners or Occupants.

(e) Any "no other insurance" clause shall exclude insurance purchased by Lot Owners, Occupants or Mortgagees.

(f) Coverage must not be prejudice by any act or neglect of Lot Owners or Occupants when such act or neglect is not within the control of the Association, or any failure of the Association to comply with any warranty or condition regarding any portion of the Common Interest Community over which the Association had no control.

(g) Coverage may not be canceled or substantially modified without at least thirty (30) days (or such lesser period as the Association may reasonably deem appropriate) prior written notice to the Association.

(h) Any policy of property insurance which give the carrier the right to elect to restore damage in lieu of a cash settlement must provide that such election is not exercisable without the prior written approval of the Association, or when in conflict with the insurance trust provisions contained herein, or any requirement of law.

(i) A recognition of any insurance trust agreement entered into by the Association.

(j) Each hazard insurance policy shall be written by a hazard insurance carrier, which has a financial rating as designated in *Best's Key Rating Guide* of Class VI or better, or if such rating service be discontinued, an equivalent rating by a successor thereto or a similar such rating service. Each insurance carrier must be specifically licensed or authorized by law to transact business within the State of Colorado.

(k) *Nonliability of Association or Executive Board.* Notwithstanding the duty of the Association to obtain insurance coverage, as stated herein, neither the Association nor Executive Board member, nor the Declarant, shall be liable to any Lot Owner, Occupant, Mortgagee or other Person, if any risks or hazards are not covered by insurance, or if the appropriate insurance is not obtained because such insurance coverage is not reasonably obtainable on the Association's behalf, or if the amount of insurance is not adequate, and it shall be the responsibility of each Lot Owner and Occupant to ascertain the coverage and protection afforded by the Association's insurance and to procure and pay for such additional insurance coverage and protection as the Lot Owner or Occupant may desire.

(j) *Master Premiums.* Premiums for insurance policies purchased by the Association and other expenses connected with acquiring such insurance shall be paid by the Association as a Common Expense, except that (i) liability insurance on Limited Common Areas shall be separately bid and the cost thereof shall only be included in the Regular Assessments of the Lots entitled to use such Limited Common Areas, and (ii) the amount of increase over any annual or other premium occasioned by the use, misuse, occupancy or abandonment of a Lot or its appurtenances, or Association Property, by a Lot Owner or Occupant, may at the Executive Board's election, be assessed against that particular Lot Owner and its Lot as a Reimbursement Assessment.

(l) *Insurance Claims.* The Association is hereby irrevocably appointed and authorized, subject to the provisions contained herein, to adjust all claims arising under insurance policies purchased by the Association and to executive and deliver releases upon the payment of claims, and to do all other acts reasonable necessary to accomplish any of the foregoing. The Executive Board has full and complete power to act for the Association in this regard, and may, in its discretion, appoint an authorized representative, or enter into an insurance trust agreement, wherein the trustee shall have the authority to negotiate losses under any policy purchased by the Association.

(m) *Benefit***.** Except as otherwise provided herein, all insurance policies purchased by the Association shall be for the benefit of, and any proceeds of insurance received by the Association or any insurance trustee shall be held or disposed of in trust for the Association, the Lot Owners, or the Occupants, as their interest may appear.

(n) *Other Insurance to be Carried by Lot Owners*. Insurance coverage on the furnishings and other personal property owned by a Lot Owner or Occupant, public liability insurance coverage upon each Lot, and casualty insurance coverage on the Improvements constructed on Lots, shall be the responsibility of the Owner or Occupant of the Lot. No Lot Owner or Occupant shall maintain any insurance, whether on its Lot or otherwise, which would limit or reduce the insurance proceeds payable under casualty insurance maintained by the Association in the event damage to the Improvements or fixtures on Association Property.

9.17 **Damage to Common Interest Community** Any portion of the Common Interest Community for which insurance is required under Section 39-33.3-313 of the Act (except any portion on which insurance is carried by a Sub association) which is damaged or destroyed must be repaired or replaced promptly by the Association unless; repair or replacement is the responsibility of a Sub association under a Supplemental Declaration, the Common Interest Community is terminated; repair or replacement would be illegal under any state or local statue or ordinance governing health or safety; seventy-six percent (76%) of the Lot Owners, including owners of every Lot that will not be rebuilt, vote not to rebuild; or prior to the conveyance of any Lot to a person other than Declarant, a Mortgagee on the damaged portion of the Common Interest Community rightfully demands all or substantial part of the insurance proceeds.

The cost of repair or replacement in excess of insurance proceeds and reserves is a Common Expense. If the entire Common Interest Community is not repaired or replaced, the insurance proceeds attributable to the damaged Association Property must be used to restore the damaged area to a condition compatible with the remainder of the Common Interest Community, and, except to the extent that other Persons will be distributes, the insurance proceeds attributable to Lots that are not rebuilt must be distributed to the Owners of those Lots, or to lien holders, as their interests may appear, and the remainder of the proceeds must be distributed to all Lot Owners or lien holders as their interest may appear in proportion to the Common Expense liabilities of all the Lots.

In the event of damage to or destruction of all or a portion of the Association Property due to fire or other adversity or disaster, the insurance proceeds, if sufficient to reconstruct or repair the damage, shall be applied by the Association to such reconstruction and repair. If the insurance proceeds with respect to such Association Property damage or destruction area insufficient to repair and reconstruct the damage or destruction, the Association may levy a Special Assessment in the aggregate amount of such deficiency, or if any Owner group of Owners responsible therefore, and shall proceed to make such repairs or reconstruction. Such Assessment shall be due and payable as provided by resolution of the Executive Board, but no sooner than sixty (60) days after written notice thereof. The

Assessment provided for herein shall be a debt of each Lot Owner assessed and a lien on his Lot, and may be enforced and collected in the same manner as any Assessment Lien provided for in this Declaration. In the entire damaged Association Property is not repaired or replaced, the insurance proceeds attributable to the damaged Association Property must be used to restore the damaged area to a condition compatible with the remainder of the Common Interest Community. No distributions of insurance proceeds shall be made unless made jointly payable to the Lot Owner and first Mortgagees of their respective Lots.

9.18 **Limited Liability** Neither the Association nor its past, present or future officers or directors, nor any other employee, agent or committee member or the Association shall be liable to any Owners or Occupant or to any other Person for actions taken or omissions made in the course of Association business except for wanton and willful acts or omissions. Without limiting the generality of the foregoing, the Association, the Executive Board and the Design Review Committee shall not be liable to any Owner or Occupant or other Person for any action or for any failure to act with respect to any matter related to Association business~~in the action~~ where the action taken or failure to act, was in good faith and without malice. Acts taken upon the advice of legal counsel, certified public accountants, registered or licensed engineers, architects or surveyors shall conclusively be deemed to be in good faith without malice. To the extent insurance carried by the Association for such purposes shall not be adequate, the Owners severally agree to indemnify and to defend the Association, the Executive Board and the Design Review Committee against claims, damages or other liabilities resulting from such good faith action or failure to act in relation to Association business.

ARTICLE X
ASSESSMENTS

10.1 **Owner's Obligation** By accepting a deed to any Lot, each Owner agrees to pay to the Association all the assessments, to be fixed and levied from time to time as provided in the Declaration, the Articles and Bylaws. Such assessments, together with interest accruing thereon and the costs of collection in the event of delinquency of payment, shall be the personal obligation of the person who is the Owner, or the Persons who are jointly and severally the Owner, at the time the assessment was made.

10.2 **Regular Assessments**

(a) At least thirty (30) days prior to the commencement of each fiscal year, the Executive Board shall estimate the cost and expenses to be incurred by the Association during such fiscal year in performing its functions, and shall subtract from such estimate an amount equal to the anticipated balance (exclusive of any reserves) in the operating fund at the state of such fiscal year which is attributable to the operation and maintenance assessments for the prior fiscal year. The annual assessments made or common expense shall be based upon the advance estimate of the cash requirements by the Association to provide for the payment of all common expenses growing out of or connected with the maintenance and operation of the Common Elements, or the other duties and

obligations of the Association as provided in the Declaration, Articles or Bylaws, which sums may include, among other things, expenses of management, taxes and special assessments, premiums for all insurance which the Association is required or permitted to maintain, care of grounds, landscape improvements, common lighting and heating, repairs and renovations, legal and accounting fees, management fees, expenses and liabilities incurred by the Association under or by reasons of this Declaration, the Articles of Incorporation and the Bylaws of the Association, any deficit remaining from a previous assessment, the creation of a reasonable contingency or other reserve or surplus fund and any other expenses and liabilities which may be incurred by the Association for the benefit of the Owners. Subject to Section 10.2(b) hereof, the sum or net estimate so determined shall be allocated to the Owners by dividing the total estimate by the total number of single family residential Lots and assessing the resulting amount to the Owner of each Lot equally. Assessment shall be paid in one (1) or more installments and be due on such date(s) as the Association shall determine.

(b) Within ninety days after adoption of any proposed budget for the Association, the executive board shall mail, by ordinary first-class mail, or otherwise deliver a summary of the budget to all the unit owners and shall set a date for a meeting of the unit owners to consider the budget not less than fourteen (14) days nor more than sixty (60) days after the mailing or other delivery of the summary. Such meeting shall occur within a reasonable time after mailing or other delivery of the summary, or as allowed for in the bylaws. The executive board shall give notice to the unit owners of the meeting as allowed for in the bylaws. The budget proposed by the executive board does not require approval from the unit owners and it will be deemed approved by the unit owners in the absence of a veto at the noticed meeting by a majority of all unit owners. If the proposed budget is vetoed, the periodic budget last proposed by the executive board and not vetoed by the unit owners must be continued until a subsequent budget proposed by the executive board is not vetoed by the unit owners.

10.3 **Special Assessments** If at any time during the fiscal year the regular assessment proves inadequate for any reason, including nonpayment of any Owner's share thereof, the Board may levy a special assessment in the amount of such actual or estimated inadequacy. The special assessment shall be assessed to the Owners by dividing the total estimate by the total number of residential Lots and assessing the resulting amount equally to the Owner of each Lot, such assessment to be paid either in equal monthly installments over the balance of the remaining fiscal year, or in a lump sum upon billing as the Board shall determine.

10.4 **Reimbursement Assessments** The Association may levy an assessment against any Owner or Owners as a result of such Owner's failure to landscape such Owner's Lot, or failure to repair, maintain or restore the Improvements and Buildings situated on such Owner's Lot including landscape or fence Improvements installed by the Declarant or as is otherwise authorized by this Declaration. Such assessment shall be for the purpose of reimbursing the Association for its actual costs and expenses paid or incurred for such purposes and shall be due and payable to the Association when levied, or at such time or times as the Association shall determine.

10.5 **Reserve Fund** The Association may establish a reserve fund for the maintenance, repair and replacement of the Common Elements. The amount of such fund shall be determined by the Association and shall be funded through annual payments of the common assessments and shall be held by the Association in a separate account, which may be an interest-bearing account, to be held in trust for the Owners for such purposes.

10.6 **Capital Improvements** In addition to regular and special assessments, the Association may levy, in any assessment year, a special assessment for the purposes of defraying in whole or in part the cost of any capital improvement upon the Common Elements, including fixtures, landscape improvements, personal property related thereto or the Irrigation Facilities, provided that such assessment shall have the affirmative vote of a majority of the Members of the Association approving the assessment.

10.8 **Out-of-State Owners Who Are Not Occupants** If an Owner does not occupy the residence and maintains his or her principal residence outside of the State of Colorado, the Board may at its discretion require a guarantee of payment of the assessments by (a) posting a surety bond with the Association indemnifying the Association against the default of such Owner in the payment of assessment the amount of two times the amount of the regular assessment for the preceding fiscal year, or (b) payment of the regular assessment pursuant in advance by the 10th days of the first month of the fiscal year.

ARTICLE XI
EMINENT DOMAIN

11.1 **Definition of Taking** The term "taking" shall mean condemnation by eminent domain or sale under threat of condemnation.

11.2 **Representation in Condemnation Proceeding of Association Property** In the event of a threatened taking of all or any portion of the Association Property, the Lot Owners hereby appoint the Association through such persons as the Executive Board may designate to represent the Association and all of the Lot Owners in connection therewith. The Association shall act in its sole discretion with respect to any awards being made in connection with the taking and shall be entitled to make voluntary sale to the condemner in lieu of engaging in a condemnation action. Service of process on the Association shall constitute sufficient notice to all Lot Owners, and service of process on each individual Lot Owner shall not be necessary.

11.3 **Award for Association Property** Any awards received by the Association on account of taking of Association Property shall be paid to the Association. The Association may, in its sole discretion, retain any award in the general funds of the Association or distribute all or any portion thereof to the Lot Owners as their interest may appear. The Rights of a Lot Owner and the Mortgagee of a Lot as to any such distribution shall be governed by the provisions of the Mortgage encumbering the Lot.

11.4 **Taking Of Lots** If a Lot is acquired by eminent domain or part of a Lot is acquired by eminent domain leaving the Lot Owner with a remnant which may not practically or lawfully be used for any purpose permitted by this Declaration, the award must include compensation to the Lot Owner for that Lot and its Allocated Interests whether or not any Association Property was acquired. Upon acquisition, unless the decree otherwise provides, that Lots in proportion to the respective Allocated Interests of those Lots before the taking. Any remnant of a Lot remaining after part of the Lot is taken is thereafter Association Property. Otherwise, if part of a Lot is acquired by eminent domain, the award must compensate the Lot Owner for the reduction in value of the Lot and its interest in the Association Property whether or not any Association Property was acquired. Upon acquisition, unless the decree otherwise provides:

(a) That Lot's Allocated Interests are reduce in proportion to the reduction in the size of the Lot; and

(b) The portion of Allocated Interests divested from the partially acquired Lot is automatically reallocated to that Lot and to the remaining Lots (as appropriate) in proportion to the respective interest of those Lots before taking, with the partially acquired Lot participating in the reallocation on the basis of its reduced Allocated Interests.

11.5 **Governing Clause** This Declaration shall control and govern over any conflicting provision of the Act, except to the extent that such conflicting provisions in the Act is mandatory according to the terms of Sections -105, -106, -106.5 and -107 of the Act. This Declaration shall further control any conflicting term in the Articles, Bylaws or any rule or regulation promulgated by the Association or the Design Review Board.

IN WITNESS WHEREOF, Declarant sets its hand and seal the _____ day of _____, 2017.

Two R&D, LLC

By: _____

Title: _____

STATE OF COLORADO)
) ss.
COUNTY OF MESA)

The foregoing Declaration was acknowledged before me this _____ day of _____,

2017 by _____the_____

of Two R&D, LLC a Colorado limited liability company.

Witness my hand and official seal.

_____
Notary Public

Final Plan of Subdivision

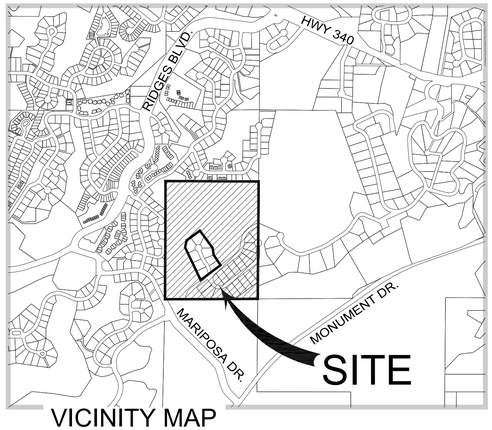
Pinnacle Ridge Subdivision

Filing 1

Grand Junction, Colorado

LEGEND

- 4560 — EXISTING CONTOUR
- PROPERTY BOUNDARY
- OLD PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- W W W — PROPOSED WATER LINE
- W W W — EXISTING WATER LINE
- IRR IRR IRR — PROPOSED IRRIGATION
- X X X — EXISTING FENCE
- EGTC — PROPOSED DRY UTILITIES (BY OTHERS)
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- 4550.00 — LOT CORNER SPOT ELEVATION
- G 4550.00 — PROPOSED SWALE/BERM ELEVATION.
- FL 4550.00 — PROPOSED FL CURB/V-PAN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER METER
- I — PROPOSED IRRIGATION RISER
- V — PROPOSED IRRIGATION VALVE
- CO ● — PROPOSED IRRIGATION CLEANOUT
- 4550.00 — EXISTING CONTOUR LABEL
- 4550.00 — PROPOSED CONTOUR LABEL



VICINITY MAP

SHEET NUMBER	SHEET TITLE
C0.0	COVER
C0.1	PROJECT NOTES
C0.2	OVERALL SITE PLAN AND FILING PLAN
C1.0	COMPOSITE SITE PLAN - LAYOUT AND GEOMETRY PLAN
C1.1	COMPOSITE SITE PLAN - SIGNAGE & LIGHTING PLAN
C2.0 - C2.2	COMPOSITE SITE PLAN - GRADING PLAN, ROAD CROSS SECTIONS
C3.0	COMPOSITE SITE PLAN - OVERALL UTILITY AND WATER PLAN
C4.0	ROAD AND SEWER PLAN AND PROFILE - AIGUILLE DRIVE
C4.1	ROAD AND SEWER PLAN AND PROFILE - SPIRE CT. & TALUS CT.
C5.0 - C5.1	STORM SEWER PLAN & PROFILE
C6.0 - 6.2	CONSTRUCTION STORM WATER MANAGEMENT PLAN

ABBREVIATION LEGEND

&	AND	MCSM	MESA COUNTY SURVEY MONUMENT
℄	CENTERLINE	MFG'S	MANUFACTURER'S
Ø	DIAMETER	M.P.E.	MULTI-PURPOSE EASEMENT
'	FEET	MPH	MILES PER HOUR
"	INCHES	NE COR	NORTHEAST CORNER
±	PLUS OR MINUS	N&S&E	NORTH AND SOUTH AND EAST
APPROX.	APPROXIMATELY	NO.	NUMBER
BRL	BUILDING RESTRICTION LINE	N.T.S.	NOT TO SCALE
BVCS	BEGIN VERTICAL CURVE STATION	PROP.	PROPOSED
BVCE	BEGIN VERTICAL CURVE ELEVATION	PRV	PRESSURE REDUCING VALVE
CB	CATCH BASIN	PSI	POUNDS PER SQUARE INCH
CL III	CLASS 3	PVC	POLYVINYL CHLORIDE
CMP	CORRUGATED METAL PIPE	PVI	POINT OF VERTICAL INTERSECTION
CR	CURB RETURN	PVMT	PAVEMENT
CT.	COURT	O.C. E.W.	ON CENTER EACH WAY
DR.	DRIVE	RCP	REINFORCED CONCRETE PIPE
EL.	ELEVATION	RD	ROAD
ELEV	ELEVATION	RET. WALL	RETAINING WALL
EX.	EXISTING	R.O.W.	RIGHT-OF-WAY
EXIST.	EXISTING	RT	RIGHT
EVCS	END VERTICAL CURVE STATION	SCH	SCHEDULE
EVCE	END VERTICAL CURVE ELEVATION	SD	STORM DRAIN
FL	FLOWLINE	SEC	SECTION
FH	FIRE HYDRANT	SF	SQUARE FEET
FT	FEET	SQ. FT.	SQUARE FEET
GPM	GALLONS PER MINUTE	SS	SANITARY SEWER
GV	GAS VALVE	ST.	STREET
G.V.A.L.C.S.	GRAND VALLEY ALIQUOT LOCAL COORDINATE SYSTEM	STA	STATION
		THRU	THROUGH
HGL	HYDRAULIC GRADE LINE	TYP.	TYPICAL
HI PT	HIGH POINT	TW	TOP OF WALL
HP	HORSE POWER	U.W.C.D.	UTE WATER CONSERVANCY DISTRICT
INV	INVERT	VC	VERTICAL CURVE
LT	LEFT	VCP	VITRIFIED CLAY PIPE
MAX	MAXIMUM	W/	WITH
MIN	MINIMUM	WM	WATER METER
MH	MANHOLE	WV	WATER VALVE

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21. TOWNSHIP 1 SOUTH. RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM. LOTS 1 – 9. BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK 8 AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = RSF-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'
   REAR = 25'
   SIDE = 7'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

UTILITY PROVIDERS INFORMATION

UTILITY	PROVIDER	PHONE NUMBER
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.

Colorado 811
1-800-922-1987
co811.org

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
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COLORADO LICENSED JAMES C. ATKINSON 18828 8-15-17 PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY
1	8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

Cover
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE:
CAD ID: **0.0cover-f1.dwg**

~SHEET~
C0.0

LOCAL CONTACT INFORMATION
GRAND JUNCTION DEVELOPMENT INSPECTOR: MARK BARSLUND 970-201-1362

GENERAL NOTES:

1. THESE GENERAL NOTES SHALL BE APPLICABLE TO ALL SHEETS WITHIN THIS SET OF DRAWINGS.
2. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE GOVERNING AGENCY. CONTRACTOR MUST CONTACT THE APPROPRIATE AGENCY PRIOR TO CONSTRUCTION IN THE RIGHT-OF-WAY.
3. PLANNING PERMIT APPROVAL MUST BE OBTAINED BY INDIVIDUAL LOT OWNERS PRIOR TO CONSTRUCTION. THE LOT OWNER MUST SUBMIT A PROPOSED DRAINAGE PLAN OF EACH SITE TO THE GOVERNING AGENCY FOR REVIEW.
4. EXISTING WATER, SANITARY, AND STORM SEWER LINES ARE SHOWN BASED ON BEST AVAILABLE INFORMATION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS SPECIFICALLY AT CONNECTION POINTS AND AT POTENTIAL POINTS OF CONFLICT. ALL INFORMATION SHALL BE SUPPLIED TO THE ENGINEER PRIOR TO CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR:
   (A) CONTACTING THE APPROPRIATE AGENCY TO ARRANGE A PRE-CONSTRUCTION MEETING AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
   (B) OBTAINING ALL PERMITS FOR STREET CUTS, UTILITIES CONSTRUCTION AND GRADING. THE COST OF ALL PERMITS SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S BID.
   (C) COORDINATING WITH ALL UTILITY COMPANIES INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. ADVANCE COORDINATION BY THE CONTRACTOR TO ALL UTILITY COMPANIES INVOLVED SHALL BE REQUIRED FOR ANY SERVICE INTERRUPTIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER, PROJECT MANAGER AND THE UTILITY COMPANY 48 HOURS PRIOR TO START OF CONSTRUCTION. NO UTILITY TAPS SHALL BE MADE WITHOUT WRITTEN AUTHORIZATION BY THE UTILITY COMPANY AND THE CITY.
   (D) VERIFICATION OF ALL OTHER UNDERGROUND FACILITIES WHICH MAY BE AFFECTED BY THIS PROJECT AND REPAIR THEREOF IN CASE OF DAMAGE.
   (E) CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO OBTAIN TEMPORARY POWER AND TELEPHONE SERVICE DURING CONSTRUCTION. ALL COST FOR TEMPORARY SERVICES SHALL BE THE CONTRACTORS RESPONSIBILITY.
   (F) RESTORATION OF DISTURBED STREET PAVEMENT AS REQUIRED BY THE CITY AND THE STATE'S DEPARTMENT OF TRANSPORTATION.
   (G) ALL PROJECT SAFETY INCLUDING, BUT NOT LIMITED TO, TRENCH EXCAVATION AND SHORINGS, TRAFFIC CONTROL, AND SECURITY.
   (H) COORDINATING ALL WORK AND INSPECTIONS AS REQUIRED BY THE CITY OR THE STATE.
   (I) OBTAINING NECESSARY PERMITS FROM THE DEPARTMENT OF TRANSPORTATION FOR ALL WORK IN AND ADJACENT TO STATE RIGHT-OF-WAY.
   (J) RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE. AS-BUILTS SHALL INCLUDE UNDERGROUND UTILITIES AS WELL AS ANY FIELD MODIFICATIONS OF THE PLANS.
   (K) KEEPING ADJACENT STREETS FREE AND CLEAN OF ALL DEBRIS AND DIRT FROM THE JOB SITE.
   (L) THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED AT THE JOB SITE AT ALL TIMES. EACH SUBCONTRACTOR (INCLUDING THE SURVEYOR) SHALL HAVE A SIGNED COPY OF THE PLANS AND THE APPROPRIATE STANDARDS AND SPECIFICATIONS IN HIS POSSESSION AT ALL TIMES WHEN IMPROVEMENTS ARE BEING INSTALLED.
   (M) THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR COMPLETION OF INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED BY NOTE TO BE "PROVIDED," "INSTALLED" OR "CONSTRUCTED" UNLESS SPECIFICALLY NOTED OTHERWISE.
   (N) CONTRACTOR WILL HAVE A COPY OF APPROVED SOILS REPORTS FOR PAVEMENT DESIGN AND COMPACTION REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL RECOMMENDATIONS CONTAINED WITHIN THE SOILS REPORT.
   (O) VERIFYING THE ACCURACY OF THE VERTICAL BENCHMARK INFORMATION. CONTRACTOR SHALL USE BENCHMARKS AND DATUMS SHOWN HEREON TO SET PROJECT BENCHMARK(S), BY RUNNING A LEVEL LOOP BETWEEN AT LEAST TWO BENCHMARKS, AND SHALL PROVIDE SURVEY NOTES OF SUCH TO PROJECT ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
6. IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
7. TWO WORKING DAYS BEFORE YOU DIG, GRADE, OR EXCAVATE, CALL THE APPROPRIATE UTILITY NOTIFICATION CENTER FOR THE MARKING OF MEMBER UNDERGROUND UTILITIES. THE UTILITIES SHOWN ON THESE PLANS ARE PLOTTED BASED ON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION, AND REPAIR OF ANY EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. ANY UTILITY DAMAGED BY CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
8. THIS PLAN WAS PREPARED BASED ON SURVEY INFORMATION PROVIDED BY A LICENSED SURVEYOR. VORTEX ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR ERRORS DUE TO INCOMPLETE OR INACCURATE SURVEY INFORMATION.
9. SUBGRADE DENSITY SHALL BE TESTED BY A PRIVATE SOILS TESTING FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING BASE COURSE OR CONCRETE. BASE COURSE DENSITY SHALL ALSO BE TESTED BY THE PRIVATE GEOTECHNICAL FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING PAVEMENT.
10. THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM ALL UTILITY COMPANIES PRIOR TO ANY DEMOLITION WORK OR DISCONNECTION OF ANY SERVICE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANIES.
2. ALL UTILITIES INCLUDING STORM SEWER, SANITARY SEWER AND WATER MAINS SHALL BE COMPLETELY REMOVED FROM THE GROUND UNLESS OTHERWISE SPECIFIED. NO EXISTING UTILITY, STRUCTURE OR UNDERGROUND IMPROVEMENT SHALL BE ABANDONED IN PLACE WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER, OWNER AND GOVERNING AGENCY.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES WHICH ARE TO REMAIN IN SERVICE. INCLUDING BUT NOT LIMITED TO GAS, ELECTRIC, CABLE AND TELEPHONE SERVICES.
4. ALL STRUCTURE INCLUDING BASEMENT WALLS AND FLOOR SLABS SHALL BE COMPLETELY REMOVED FROM THE SITE.
5. ALL DEMOLITION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS INCLUDING BUT NOT LIMITED TO HAZARDOUS MATERIALS, DISPOSAL, HOURS OF OPERATION.
6. ALL EROSION CONTROL MEASURES DESIGNED FOR THE SITE PERIMETER OR TO PROTECT EXISTING IMPROVEMENTS SHALL BE IN PLACE PRIOR TO THE START OF ANY DEMOLITION ACTIVITIES.
7. THE CONTRACTOR SHALL OBTAIN AND REVIEW THE ENVIRONMENTAL STUDIES PROVIDED BY THE OWNER AND TAKE ALL NECESSARY PRECAUTIONS FOR ENVIRONMENTAL SAFETY DURING DEMOLITION ACTIVITIES. IT SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE EXISTING STRUCTURES FOR ANY OTHER CONDITIONS WHICH MAY AFFECT THE DEMOLITION PROCEDURES.
8. ANY CONDITIONS WHICH MAY BE UNCOVERED DURING THE PROCESS OF DEMOLITION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER IMMEDIATELY. ADDITIONAL EXPENSES INCURRED BY UNFORESEEN CONDITIONS SHALL BE APPROVED BY THE OWNER PRIOR TO THE ADDITIONAL WORK.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE PROPERTY FOR THE TYPE AND QUANTITY OF DEMOLITION REQUIRED, PRIOR TO SUBMISSION OF A BID.
10. THE CONTRACTOR SHALL HAVE WATER ON SITE FOR DUST ABATEMENT AT ALL TIMES DURING DEMOLITION ACTIVITIES.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF ALL DEBRIS. BURNING ON SITE SHALL NOT BE PERMITTED. NO DEBRIS INCLUDING CONCRETE OR ASPHALT MAY BE PLACED IN ANY FILL AREA.
12. ANY DAMAGE TO PUBLIC UTILITIES OR ADJACENT PROPERTIES AS A RESULT OF THE DEMOLITION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. REPAIRS SHALL BE MADE IN A TIMELY MANNER TO THE SATISFACTION OF THE DAMAGED PARTY.
13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH DOCUMENTATION OF THE CONDITION OF EXISTING IMPROVEMENTS TO REMAIN IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS NOT DOCUMENTED AS PRE-EXISTING. DOCUMENTATION SHALL BE PROVIDED PRIOR TO COMMENCEMENT OF WORK.
14. ALL EXISTING UTILITY SERVICES SHALL BE COMPLETELY REMOVED FROM THE SITE. SERVICE SHALL BE CUT AND PLUGGED AT THE PROPERTY LINE IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS. THE DEMOLITION CONTRACTOR SHALL CLEARLY MARK ALL STUBS AT THE PROPERTY LINE WITH A 4 X 4 WOOD POST (MINIMUM 4' ABOVE GRADE, 4' BELOW GRADE) MARKED WITH THE SERVICE TYPE.
15. ALL EXISTING WELLS SHALL BE CAPPED AND ABANDONED IN ACCORDANCE WITH ALL STATE REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL REQUIRED PROCEDURES, FILE ALL REQUIRED FORMS, APPLICATIONS AND REPORTS, AND OBTAIN ALL REQUIRED APPROVALS FROM THE STATE ENGINEER'S OFFICE.
16. DURING THE COURSE OF DEMOLITION, CONTRACTOR SHALL PROVIDE SECURITY FENCING AND OTHER PRECAUTIONARY SAFETY MEASURE AS NECESSARY.

EROSION CONTROL NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL FACILITIES SHOWN.
3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORESEEN PROBLEMS OR IF THE PLAN DOES NOT FUNCTION AS INTENDED. A JURISDICTION REPRESENTATIVE MAY REQUIRE ADDITIONAL CONTROL DEVICES UPON INSPECTION OF PROPOSED FACILITIES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED, STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM TRAFFIC FROM THE SITE.
5. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE PAVED, SEEDED WITH NATIVE VEGETATION OR LANDSCAPED. REFER TO LANDSCAPE PLANS FOR SEED MIX AND PLANTING SPECIFICATIONS.
6. EROSION CONTROL STRUCTURES BELOW SODDED AREAS MAY BE REMOVED ONCE SOD AND FINAL LANDSCAPING IS IN PLACE. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION. EROSION CONTROL IN PROPOSED PAVED AREAS SHALL REMAIN IN PLACE UNTIL PAVEMENT IS COMPLETE.
7. THIS PLAN IS ONLY TO BE USED FOR INSTALLATION OF EROSION CONTROL FACILITIES. DO NOT USE THIS PLAN FOR GRADING OR STORM SEWER CONSTRUCTION.
8. CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLE WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES WILL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS, MOVED WHEN NECESSARY AND REMOVED WHEN THE SITE IS PAVED.
9. INLET PROTECTION DEVICES SHALL BE INSTALLED IMMEDIATELY UPON INDIVIDUAL INLET'S BECOMING FUNCTIONAL.
10. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH GRADING AND/OR UTILITY CONSTRUCTION SHALL OBTAIN A COPY OF THE STORM WATER MANAGEMENT PLAN (SWMP) AND ANY OTHER DOCUMENTATION REGARDING "STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY" AND BECOME FAMILIAR WITH THEIR CONTENTS.
11. THE TEMPORARY PARKING AND STORAGE AREA SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AREA, EQUIPMENT CLEANING AREA, EMPLOYEE BREAK AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
12. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, ETC.) SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT WITH STORM WATER DISCHARGES FROM THE SITE.
13. MAINTAIN ON THE SITE OR HAVE READILY AVAILABLE SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
14. FUGITIVE DUST BLOWING FROM THE SITE SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS ABSOLUTELY PROHIBITED.
15. NO RUBBISH, TRASH, GARBAGE, OR OTHER SUCH MATERIALS SHALL BE DISCHARGED INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
16. ALL MEASURES PRESENTED IN THE SWMP SHALL BE INITIATED AS SOON AS PRACTICABLE.
17. IF THE GRAVEL CONSTRUCTION ENTRANCES ARE NOT EFFECTIVE IN REMOVING THE MAJORITY OF DIRT OR MUD FROM THE TIRES OF THE CONSTRUCTION VEHICLES, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP AND THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.
18. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
19. IF SOIL STOCKPILING IS EMPLOYED ON THE SITE, SILT FENCES SHALL BE USED TO HELP CONTAIN THE SEDIMENT.
20. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
21. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN 30 DAYS AFTER FINAL STABILIZATION. FINAL STABILIZATION HAS OCCURRED WHEN ALL SOIL DISTURBING ACTIVITIES ARE COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OF THE COVER FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES HAS BEEN EMPLOYED.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) DUE TO GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT.
23. ALL OFF-SITE CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR STORM DRAIN CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.

EROSION CONTROL MAINTENANCE NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL MEASURES CONTAINED IN THIS PLAN SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT, AND SHOULD BE CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:
3. STRAW BALE INLET PROTECTION DEVICES AND BARRIERS SHALL BE FIXED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR SHALL BE REPLACED IF THEY SHOW SIGNS OF DETERIORATION.
4. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, RE-SEEDED, AND WATERED AS NEEDED.
5. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-THIRD TO ONE-HALF THE HEIGHT OF THE SILT FENCE.
6. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
7. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
8. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES, SEDIMENT IN THE SEDIMENTATION BASINS SHALL NOT EXCEED THE SEDIMENTATION CLEANOUT LEVEL.
9. IF THE STONES IN THE GRAVEL CURB INLET SEDIMENT FILTERS BECOME CLOGGED WITH SEDIMENT, THE STONES MUST BE PULLED AWAY, CLEANED AND REPLACED.
10. THE EMBANKMENT OF THE SEDIMENTATION BASIN SHALL BE CHECKED REGULARLY TO INSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
11. THE TEMPORARY SEDIMENT TRAP AND SEDIMENTATION BASIN STRUCTURES SHALL BE CHECKED REGULARLY TO INSURE THAT THEY ARE STRUCTURALLY SOUND AND HAVE NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. SEDIMENT DEPOSITION SHALL BE REMOVED PERIODICALLY TO ENSURE FULL VOLUME IS AVAILABLE IN THE POND.

GRADING NOTES:

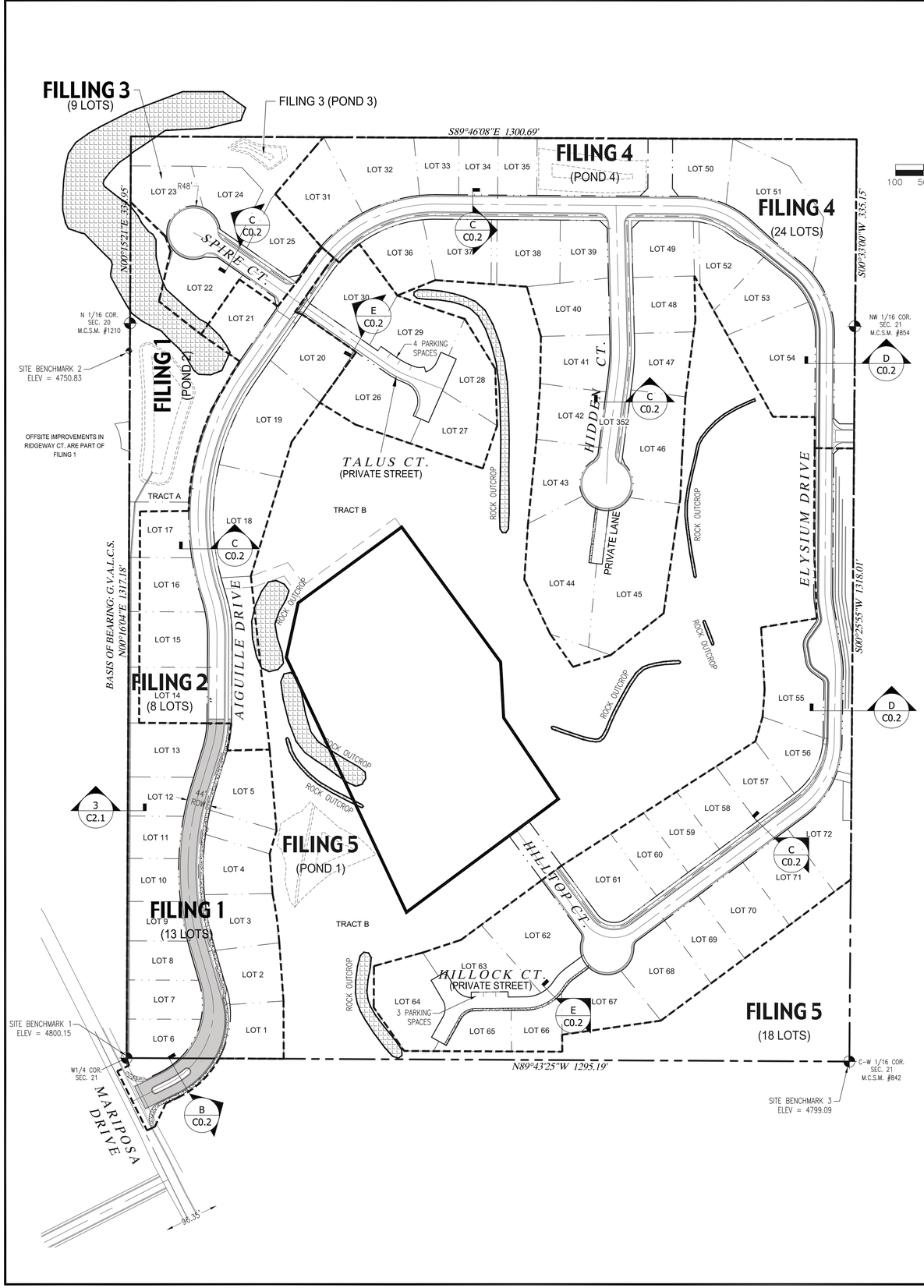
1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. CONTOURS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY. CONTOUR INTERVAL = 1 FOOT UNLESS OTHERWISE NOTED ON PLANS.
3. ALL DISTURBED AREAS THAT ARE UNSURFACED OR ARE NOT DESIGNATED AS LANDSCAPE AREAS ARE TO BE RE-SEEDED WITH DRY NATIVE GRASS SEED MIX.
4. IF DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE SOILS ENGINEER SHALL BE CONTACTED FOR RECOMMENDATIONS.
5. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND STANDARDS OF THE GOVERNING AGENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED AS SPECIFIED BY THE GEOTECH REPORT. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED, LICENSED, SOILS ENGINEER, CERTIFYING THAT THE SUBBASE WITHIN THE AREAS TO BE PAVED HAS BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECS.
6. NO PROPOSED SLOPE SHALL EXCEED TWO (2) HORIZONTAL TO ONE (1) VERTICAL, EXCEPT FOR DIVERSION DITCHES. ALL SLOPED AREAS MUST BE PROTECTED FROM EROSION.
7. IF STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS ARE STOCKPILED ON THE SITE, TOPSOIL MAY BE PLACED TO A HEIGHT OF FIVE FEET. SILT FENCE SHALL BE PLACED AROUND THE BASE OF THE STOCKPILE AND THE STOCKPILE SHALL BE SEEDED WITH NATIVE SEED MIX IMMEDIATELY AFTER STRIPING OPERATIONS ARE COMPLETE.
8. ON-SITE MATERIALS SUITABLE FOR FILL BENEATH DRIVES, AND PARKING AREAS BEYOND 5' OF THE BUILDING SHALL BE COMPACTED IN ACCORDANCE WITH THE GUIDELINES PRESENTED IN THE SOILS REPORT.
9. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHY AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO ENSURE 0.75% MIN. SLOPE AGAINST ALL GUTTERS TO PREVENT PUDDLING. ANY DISCREPANCIES SHALL BE PROVIDED TO THE ENGINEER IN WRITING IMMEDIATELY.
10. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED AS SPECIFIED IN THE GEOTECH REPORT.
11. SPOT ELEVATIONS REPRESENT FLOWLINE OR TOP OF ASPHALT UNLESS OTHERWISE NOTED.
12. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS WHICH DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB AND GUTTER AND UTILITIES.
13. ALL UTILITIES (MANHOLES, VALVE COVERS, CLEANOUTS, VAULTS, BOXES, ETC.) SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
14. ALL EARTH MOVING AND PLACEMENT OPERATIONS SHALL BE IN CONFORMANCE WITH THE RECOMMENDATIONS IDENTIFIED IN THE SOILS REPORT. THE CONTRACTOR SHALL HAVE A SIGNED AND SEALED COPY OF THE SOILS REPORT ON THE SITE AT ALL TIMES.
15. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.
16. WHERE NEW CURB AND GUTTER IS BEING CONSTRUCTED ADJACENT TO EXISTING ASPHALT, THE FOLLOWING SHALL APPLY: PRIOR TO PLACEMENT OF ANY CONCRETE THE CONTRACTOR SHALL HAVE A LICENSED SURVEYOR VERIFY GRADE AND CROSS SLOPE OF THE CURB AND GUTTER FORMS. THE CONTRACTOR SHALL SUBMIT THE SLOPES AND GRADES TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY SECTION WHICH DOES NOT CONFORM TO THE DESIGN OR TYPICAL CROSS SECTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CURB AND GUTTER POURS WITHOUT APPROVAL OF THE ENGINEER.
17. MAINTENANCE OF ANY STORMWATER MANAGEMENT FACILITY SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL GUIDELINES FOR PRIVATE STORMWATER MANAGEMENT FACILITIES AND SHALL BE THE RESPONSIBILITY OF THE OWNER AND THE ASSIGNEES.
18. SURFACE RESTORATION SHALL BE AS FOLLOWS:
   (A) FINE GRADE ALL AREAS DISTURBED BY THE CONSTRUCTION OPERATIONS AFTER COMPLETION OF BACKFILLING AND COMPACTING. AREAS WHICH ARE TO RECEIVE PAVEMENTS, SURFACING, TOPSOIL OR LANDSCAPING SHALL BE GRADED AS REQUIRED TO ALLOW INSTALLATION OF THE SPECIFIC SURFACE TREATMENT. GRADE ALL OTHER AREAS TO MATCH THE EXISTING GROUND LINE.
   (B) REPLACE AND REPAIR ANY SURFACE IMPROVEMENTS DAMAGED OR REMOVED. CONFORM TO CITY STANDARDS & SPECIFICATIONS.
19. BITUMINOUS PAVEMENT
   (A) BITUMINOUS PAVEMENT SHALL BE REMOVED TO CLEAN STRAIGHT LINES AT THE LOCATIONS INDICATED ON PLANS. WIDTH OF REMOVAL FOR PIPELINES SHALL BE KEPT TO A MINIMUM AS DICTATED BY TRENCHING OPERATIONS, BUT SHALL EXTEND AT LEAST 6 INCHES BEYOND THE LIMITS OF TRENCH EXCAVATION.
   (B) THE CUT SHALL BE MADE WITH PAVEMENT CUTTING WHEEL, SAW OR OTHER APPROVED METHOD, SO AS TO PROVIDE A REASONABLY STRAIGHT AND SQUARE EDGE.

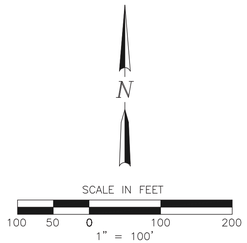
SANITARY SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL GRAVITY SANITARY SEWER LINES SHALL BE POLYVINYL CHLORIDE PIPE (PVC), ASTM D-3034 SDR.35, SEWER LINE MATERIALS AND CONSTRUCTION SHALL CONFORM TO ASTM STANDARDS AND SPECIFICATIONS.
3. DISTANCES FOR SANITARY SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. THEREFORE, DISTANCES SHOWN ON PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT.
4. RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATION. PIPELINE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT AND STEEL SHIMS TO ADJUST THE MANHOLE FRAME TO THE REQUIRED FINAL GRADE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS. ALL FRAMES SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
5. ALL SANITARY SEWER MAINS TESTING SHALL BE IN ACCORDANCE WITH LOCAL SPECIFICATIONS. COPIES OF ALL TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER, THE OWNER AND THE GOVERNING AUTHORITY PRIOR TO THE START OF THE WARRANTY PERIOD.
6. COMPACTION OF ALL TRENCHES WITHIN THE PROJECT SITE MUST BE ATTAINED AND COMPACTION RESULTS SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE. .
7. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING STRUCTURES AND IMPROVEMENTS DURING INSTALLATION OF THE SANITARY SEWER LINE.
8. THE CONTRACTOR SHALL POTHOLE THE EXISTING SEWER MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
9. SANITARY SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.

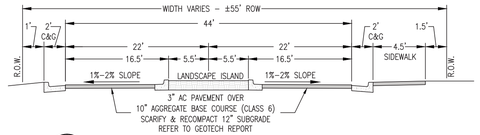
STORM SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING:
   (A) OBTAINING ALL REQUIRED PERMITS FROM THE CITY, THE DOT, OR ANY REGULATORY AUTHORITY AT THE CONTRACTOR'S COST INCLUDING PERMITS REQUIRED FOR WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
   (B) RESTORATION OF ANY EXISTING IMPROVEMENTS INCLUDING (BUT NOT LIMITED TO) FENCES, SOD, LANDSCAPING, PAVEMENT, SPRINKLER SYSTEMS.
   (C) VERIFICATION AND PROTECTION OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF THE PROJECT.
   (D) PROVIDING AS-BUILT DRAWINGS TO THE CITY AND ENGINEER.
   (E) ALL PERMITTING, DEVELOPMENT, CONNECTION, LOCATION INSPECTION AND TESTING FEES REQUIRED FOR STORM SEWER CONSTRUCTION.
   (F) VERIFYING ALL STANDARD DETAILS CONFORM TO CURRENT CITY/COUNTY STANDARDS AND SPECIFICATIONS.
   (G) FOR OBTAINING AND UNDERSTANDING ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THE CONSTRUCTION OF THE STORM SEWER IMPROVEMENTS.
   (H) FOR SCHEDULING ALL REQUIRED INSPECTIONS.
3. THE CONTRACTOR SHALL POTHOLE THE EXISTING STORM MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
4. STORM SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.
5. THE CONTRACTOR SHALL COORDINATE HIS WORK SCHEDULE WITH THE DITCH COMPANY TO ENSURE ALL DITCH FACILITIES ARE CONSTRUCTED WITHOUT DISRUPTION TO DITCH COMPANY OPERATIONS.
6. ALL STORM SEWER CONSTRUCTION SHALL BE IN CONFORMANCE WITH LOCAL STANDARDS AND SPECIFICATIONS.
7. DISTANCES FOR STORM SEWER ARE THE HORIZONTAL DISTANCES FROM CEN

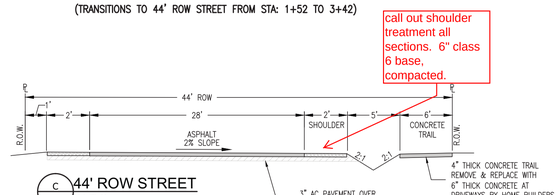




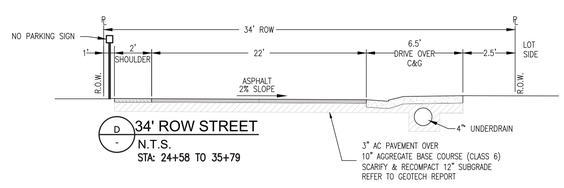
PROPOSED LAND USE TABLE			
SINGLE FAMILY LOTS (72 TOTAL)	934,944 S.F. – 21.46 AC	47.58%	OWNER: PRIVATE
TRACT A:	57,533 S.F. – 1.32 AC	2.93%	OWNER: HOA
TRACT B: OPEN SPACE	658,275 S.F. – 15.11 AC	33.50%	OWNER: HOA
FUTURE TRACTS	122,687 S.F. – 2.82 AC	6.24%	OWNER: HOA
RIGHT-OF-WAY:	191,434 S.F. – 4.39 AC	9.74%	OWNER: PUBLIC
TOTAL SITE AREA:	1,964,873 S.F. – 45.11 AC		



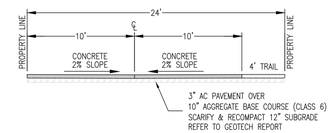
B - MARIPOSA DRIVE ENTRANCE
N.T.S.
STA: 0+24 TO STA: 1+52
(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 3+42)



C - 44' ROW STREET
N.T.S.
STA: 3+42 TO 24+58
STA: 35+79 TO 41+50



D - 34' ROW STREET
N.T.S.
STA: 24+58 TO 35+79



E - PRIVATE STREET & LANE DETAIL
N.T.S.
TRACTS C,F,J

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21. TOWNSHIP 1 SOUTH. RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM: LOTS 1 – 9. BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK B AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = RSF-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'
   REAR = 25'
   SIDE = 7'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

LEGEND

FILING & LIMITS OF DEVELOPMENT DESIGNATION

PROJECT BENCHMARK

PROJECT BENCHMARK #1
LOCATED AT THE SOUTHWEST CORNER OF THE SITE.
MONUMENT ID: PLS 18480, THE W1/4 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31563.18 EASTING: 78944.74 ELEV: 4800.15 (NAVD88)

PROJECT BENCHMARK #2
LOCATED AT THE WEST PROPERTY LINE, NEAR OUTLOOK COURT.
MONUMENT ID: NCSN #1210, THE N1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 32880.35 EASTING: 78949.85 ELEV: 4750.83 (NAVD88)

PROJECT BENCHMARK #3
LOCATED AT THE SOUTHEAST CORNER OF THE SITE.
MONUMENT ID: NCSN #842, THE W1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31558.05 EASTING: 80239.95 ELEV: 4799.09 (NAVD88)

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED 18828 PROFESSIONAL ENGINEER 8-15-17

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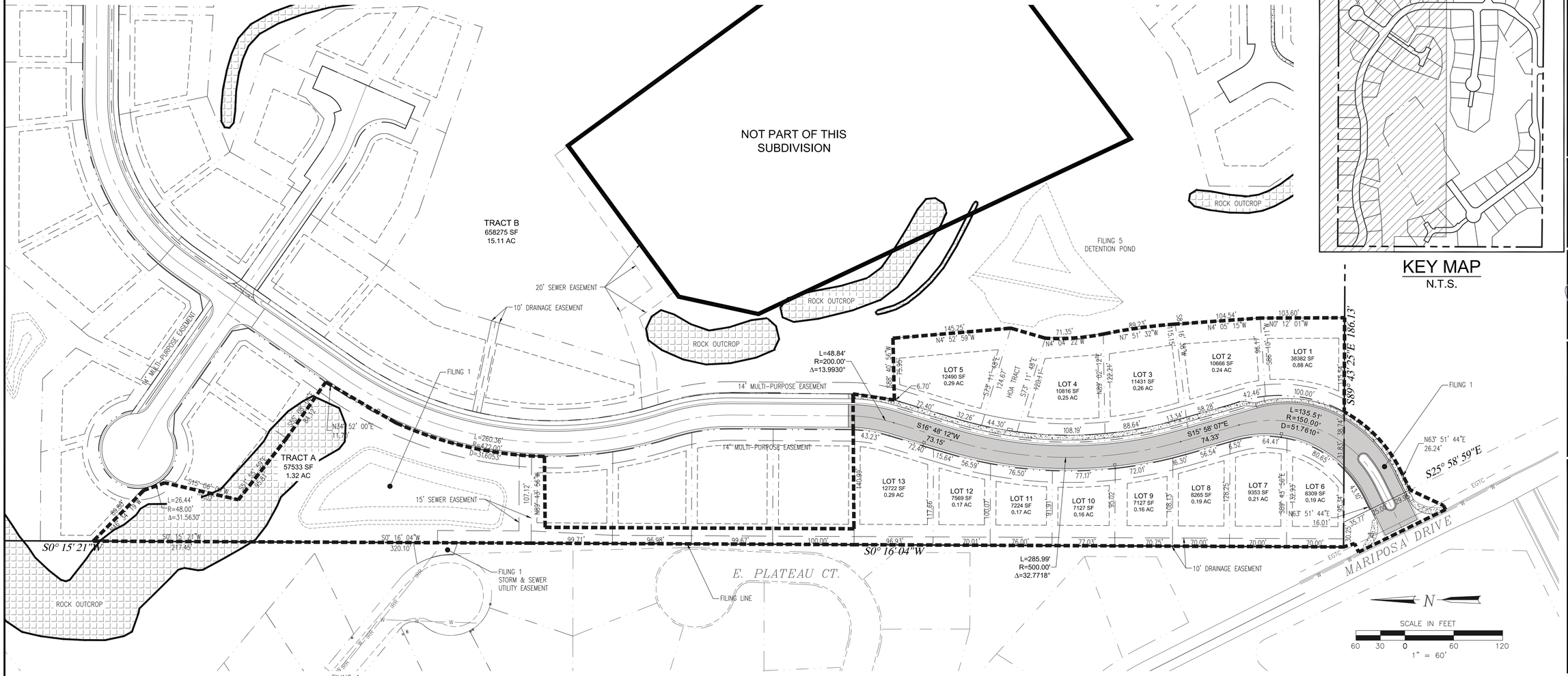
MAJOR SUBDIVISION
FINAL PLAN

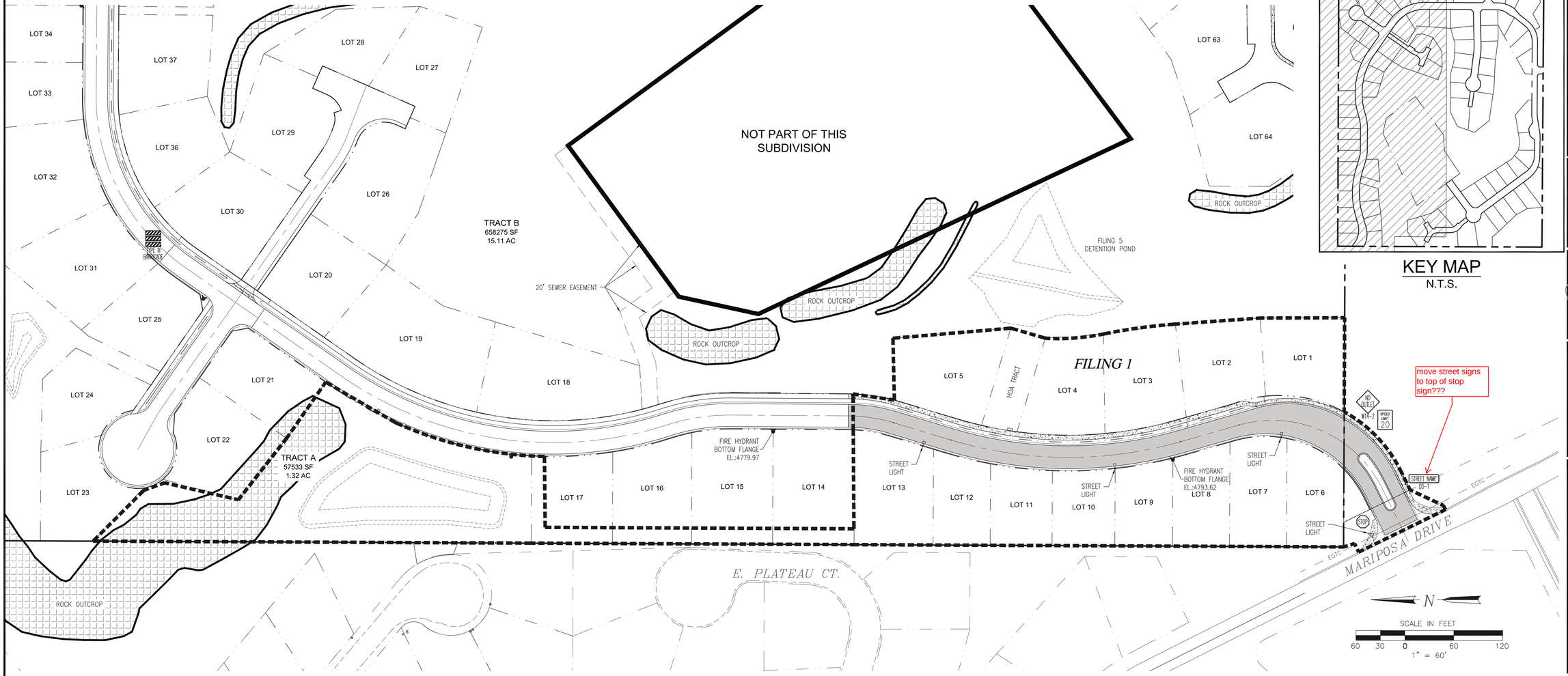
BY	REV. DATE	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017
DLS	8/09/17	COMMENT
	1	

Filing Plan
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 100'**
CAD ID: **0.0cover-f1.dwg**

~SHEET~
C0.2


NOT PART OF THIS SUBDIVISION
TRACT B
658275 SF
15.11 AC
TRACT A
57533 SF
1.32 AC
FILING 5
DETENTION POND
ROCK OUTCROP
ROCK OUTCROP
ROCK OUTCROP
20' SEWER EASEMENT
10' DRAINAGE EASEMENT
14' MULTI-PURPOSE EASEMENT
14' MULTI-PURPOSE EASEMENT
14' MULTI-PURPOSE EASEMENT
15' SEWER EASEMENT
FILING 1
FILING 1
FILING 1
L=260.36'
R=272.00'
D=31.6053°
L=48.84'
R=200.00'
Δ=13.9930°
L=26.44'
R=48.00'
Δ=31.5630°
L=285.99'
R=500.00'
Δ=32.7718°
L=135.51'
R=150.00'
D=51.7610°
LOT 1
38382 SF
0.88 AC
LOT 2
10668 SF
0.24 AC
LOT 3
11431 SF
0.26 AC
LOT 4
10816 SF
0.25 AC
LOT 5
12490 SF
0.29 AC
LOT 6
8309 SF
0.19 AC
LOT 7
9353 SF
0.21 AC
LOT 8
8265 SF
0.19 AC
LOT 9
7127 SF
0.16 AC
LOT 10
7127 SF
0.16 AC
LOT 11
7224 SF
0.17 AC
LOT 12
7569 SF
0.17 AC
LOT 13
12722 SF
0.29 AC
S89° 43' 25"E 186.13'
S0° 15' 21"W
S0° 16' 04"W
S0° 16' 04"W
S16° 48' 12"W
S15° 58' 07"E
S25° 58' 59"E
N63° 51' 44"E
N63° 51' 44"E
N34° 52' 00"E
N89° 43' 56"W
MARIPOSA DRIVE
E. PLATEAU CT.
FILING LINE
EGTC
W
W
W



KEY MAP
N.T.S.

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

Know what's below. Call before you dig.
Colorado 811
1-800-922-1987
co811.org

SIGN SCHEDULE

- STOP SIGN (30"x30") & D3-1 STREET SIGN COMBINED
- NO OUTLET SIGN W14-2
- FIXED TYPE III CDOT ROAD BARRICADES (3' x 8' SECTIONS, SEE STD. S-630-2)
- NO TRESPASSING SIGN
- STREET NAME SIGN D3-1
- SPEED LIMIT SIGN R2-1

ALL SIGN POST MOUNTING AND PLACEMENT SHALL BE PER MUTCD OR MESA COUNTY SPECIFICATIONS. CONTRACTOR TO CONTACT MESA COUNTY TRAFFIC PRIOR TO INSTALLATION OF SIGNS. (ph. 970-244-1817)

PROPOSED LAND USE TABLE

USE	AREA	AC	% OF TOTAL	OWNER
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. - 45.11 AC			

UTILITY PROVIDERS INFORMATION

UTILITY	PROVIDER	PHONE NUMBER
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET C0.2

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 8-15-17 PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

NO.	REV. DATE	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017	BY
		COMMENT	DLS
1	8/15/17		

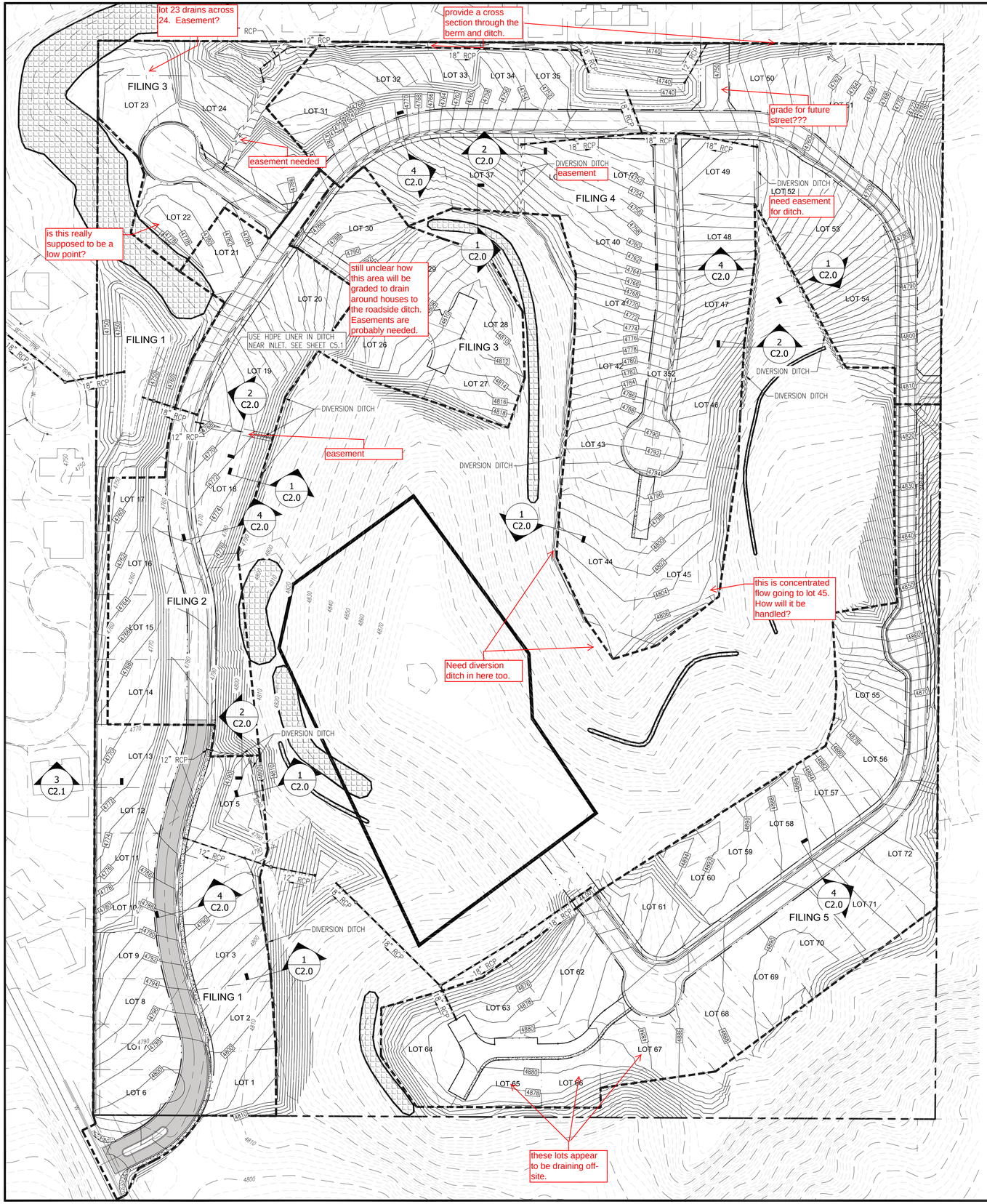
Signage & Lighting Plan

Filing 1 Pinnacle Ridge Subdivision

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 60'**
CAD ID: **1.0layout-f1.dwg**

~SHEET~
C1.1



Address whether each lot is a type A, b, C, or something else and give typicals for each lot.

N

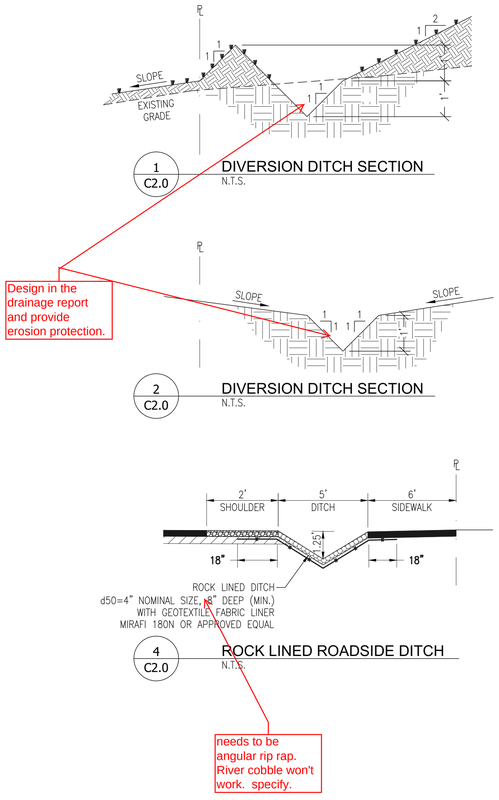
SCALE IN FEET
80 40 0 80 160
1" = 80'
CONTOUR INTERVAL = 2'

GRADING NOTE:

FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

GENERAL NOTES

1. ALL CONSTRUCTION TO CONFORM TO THE CURRENT CITY OF GRAND JUNCTION DEPARTMENT OF PUBLIC WORKS AND PLANNING STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR MUST CONTACT CITY OF GRAND JUNCTION TRAFFIC OPERATIONS SUPERVISOR PRIOR TO CONSTRUCTION OR PLACEMENT OF TRAFFIC CONTROL DEVICES/FEATURES (STRIPING, SIGNALS, MEDIANS, ETC.) FOR CONSTRUCTION IN THE RIGHT-OF-WAY ONLY.
3. REFER TO THE GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE STORM SEWER, SEE SHEET C5.0 & C5.1.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE FILING PLAN.
8. REFER TO SHEETS C0.1, C6.0, THRU C6.2 FOR STORMWATER MANAGEMENT CONTROL PLANS AND EROSION CONTROL NOTES.
9. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
10. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL.



Design in the drainage report and provide erosion protection.

needs to be angular rip rap. River cobble won't work. specify.

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
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2394 Patterson Road, Suite 201
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MAJOR SUBDIVISION FINAL PLAN

NO.	REV. DATE	COMMENT	BY
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

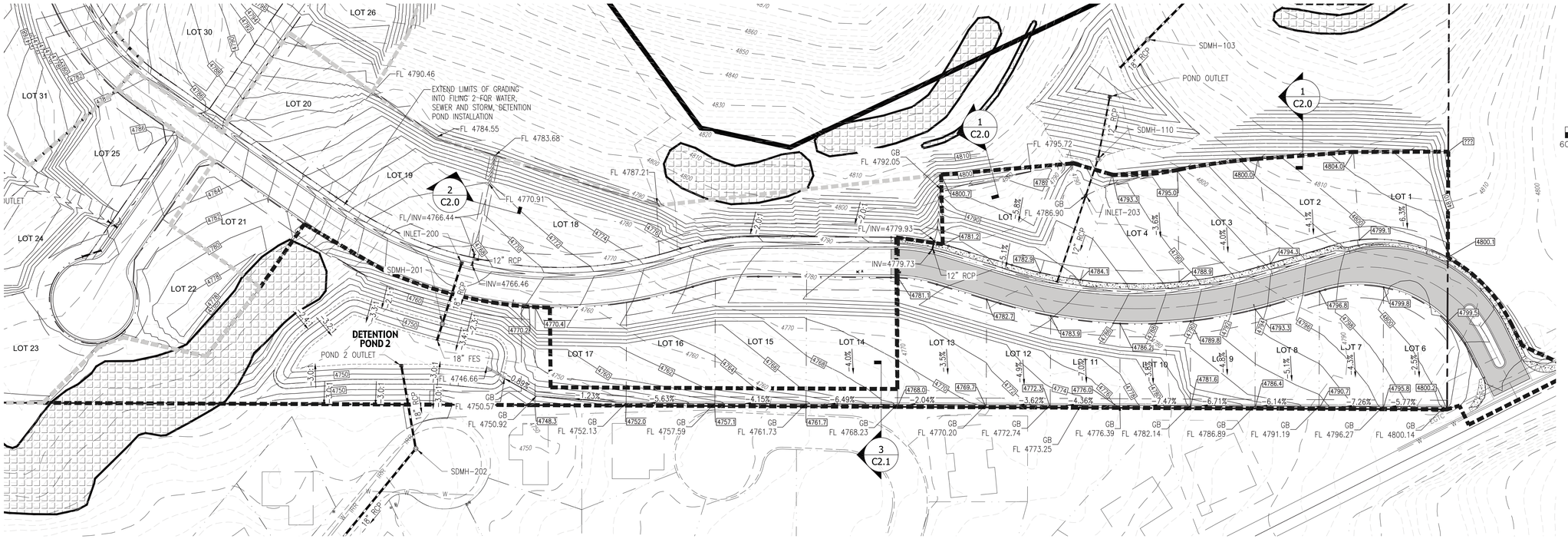
Overall Grading Plan Filings 1 - 5

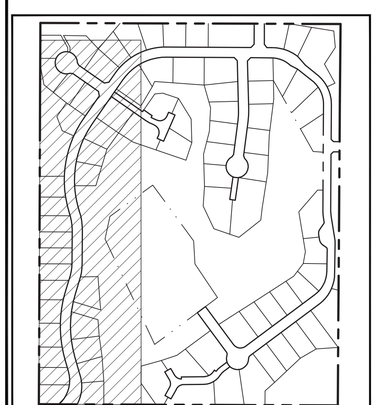
Pinnacle Ridge Subdivision Filing 1

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1"= 80'**
CAD ID: **2.0grad-f1.dwg**

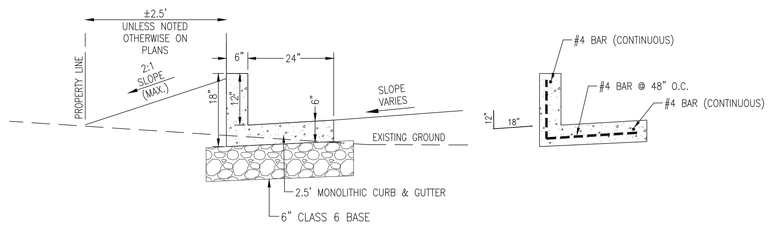
~SHEET~
C2.0





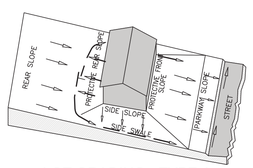
KEY MAP
N.T.S.

FILING 1 TOF TABLE			
Lot	Grading	Min. TOF	Max. TOF
1	Type A	4801.00	4801.50
2	Type A	4798.70	4799.20
3	Type A	4793.30	4793.80
4	Type A	4787.90	4788.40
5	Type A	4783.60	4784.10
6	Type C	4801.60	4802.10
7	Type C	4799.30	4799.80
8	Type C	4796.00	4796.50
9	Type C	4792.50	4793.00
10	Type C	4789.00	4789.50
11	Type C	4786.00	4786.50
12	Type C	4784.30	4784.80
13	Type C	4783.10	4783.60

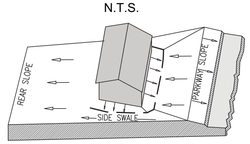


WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

3 C2.1 CONCRETE CURB & GUTTER DETAIL
N.T.S.



LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.



LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.

GRADING NOTE:

FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

GENERAL NOTES

1. ALL CONSTRUCTION TO CONFORM TO THE CURRENT CITY OF GRAND JUNCTION DEPARTMENT OF PUBLIC WORKS AND PLANNING STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR MUST CONTACT CITY OF GRAND JUNCTION TRAFFIC OPERATIONS SUPERVISOR PRIOR TO CONSTRUCTION OR PLACEMENT OF TRAFFIC CONTROL DEVICES/FEATURES (STRIPING, SIGNALS, MEDIANS, ETC.) FOR CONSTRUCTION IN THE RIGHT-OF-WAY ONLY.
3. REFER TO THE GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE SANITARY SEWER, SEE SANITARY SEWER PLAN & PROFILE.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE FILING PLAN.
8. REFER TO SHEETS C0.1, C6.0, THRU C6.2 FOR STORMWATER MANAGEMENT CONTROL PLANS AND EROSION CONTROL NOTES.
9. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
10. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL.

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

N
SCALE IN FEET
60 30 0 60 120
1" = 60'
CONTOUR INTERVAL = 2'

COLORADO LICENSED
JAMES C. ATKINSON
18828
8-15-17
PROFESSIONAL ENGINEER

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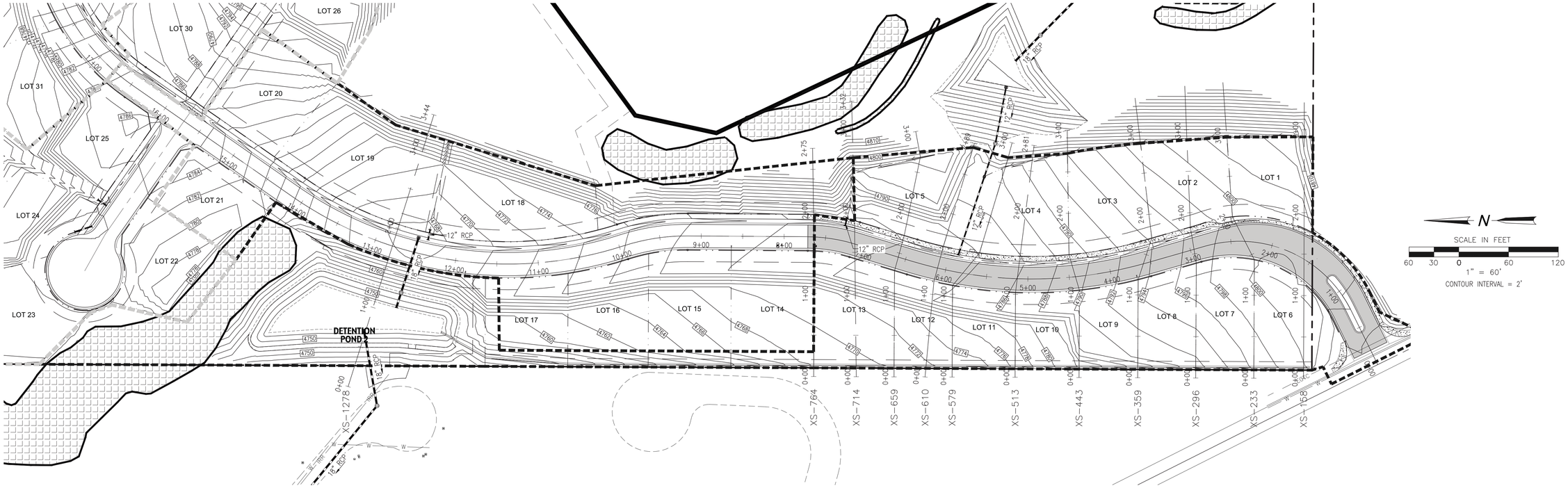
MAJOR SUBDIVISION
FINAL PLAN

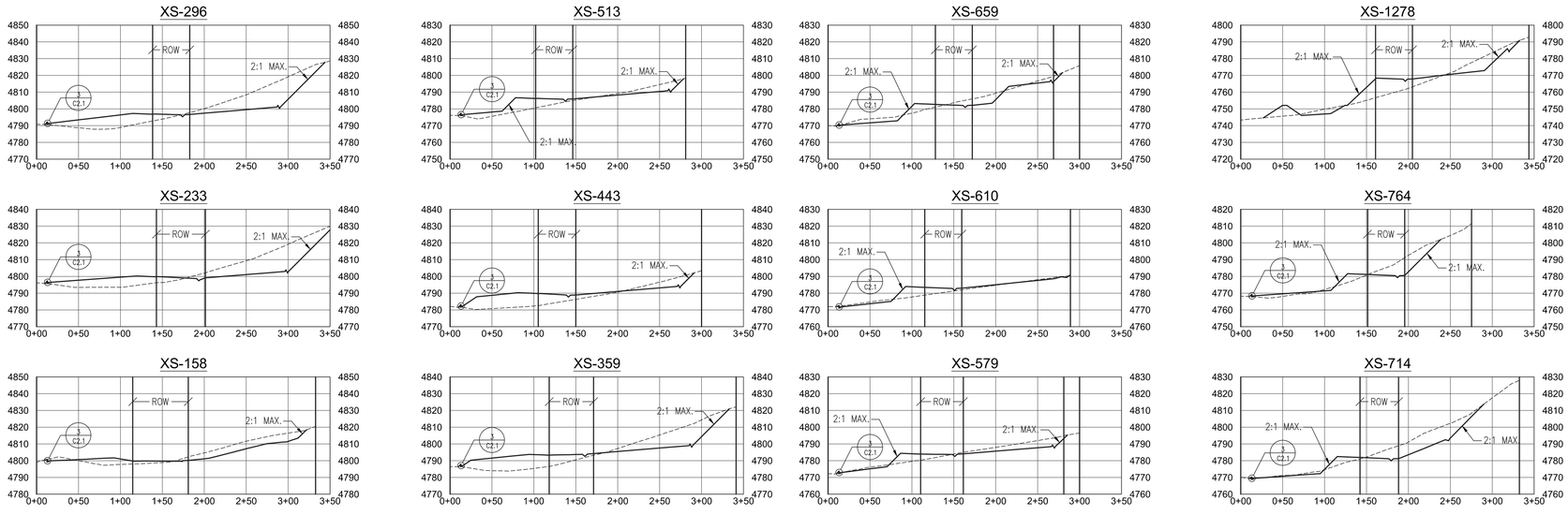
REV.	DATE	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017	BY
1	8/09/17	COMMENT	DLS

Grading Plan Filing 1
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **SEE PLAN**
CAD ID: **2.0grad-f1.dwg**

~SHEET~
C2.1





SECTIONS ALONG LOT LINES

SCALE: 1" = 80' HORIZONTAL
1" = 40' VERTICAL

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

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• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED PROFESSIONAL ENGINEER JAMES C. ATKINSON 18828 8-15-17

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MAJOR SUBDIVISION FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

Grading Plan Filing 1 - Road Cross Sections

Pinnacle Ridge Subdivision Filing 1

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **SEE PLAN**
CAD ID: **2.0grad-f1.dwg**

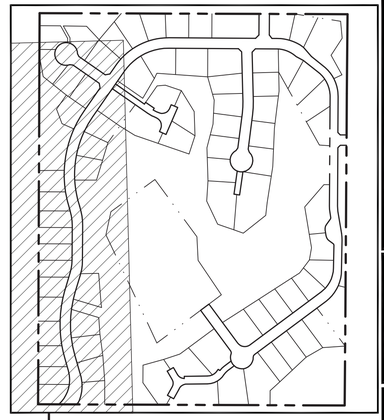
~SHEET~
C2.2

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET 3
6. HOUSES CONSTRUCTED ON LOTS 26-29 AND LOTS 55-72 SHALL HAVE SPRINKLER SYSTEMS INSTALLED. A 1" CUSTOMER WATER SERVICE LINE AND ¾" WATER METER WILL BE UTILIZED IN ACCORDANCE WITH UTE WATER CONSERVANCY DISTRICT STANDARDS & SPECIFICATIONS.
7. ALL WATER SERVICES SHALL HAVE A PRESSURE REGULATED YOKE INSTALLED BASED ON PRESSURE LIMITS AS DETERMINED IN THE HYDRAULIC ANALYSIS.

FILING NOTES

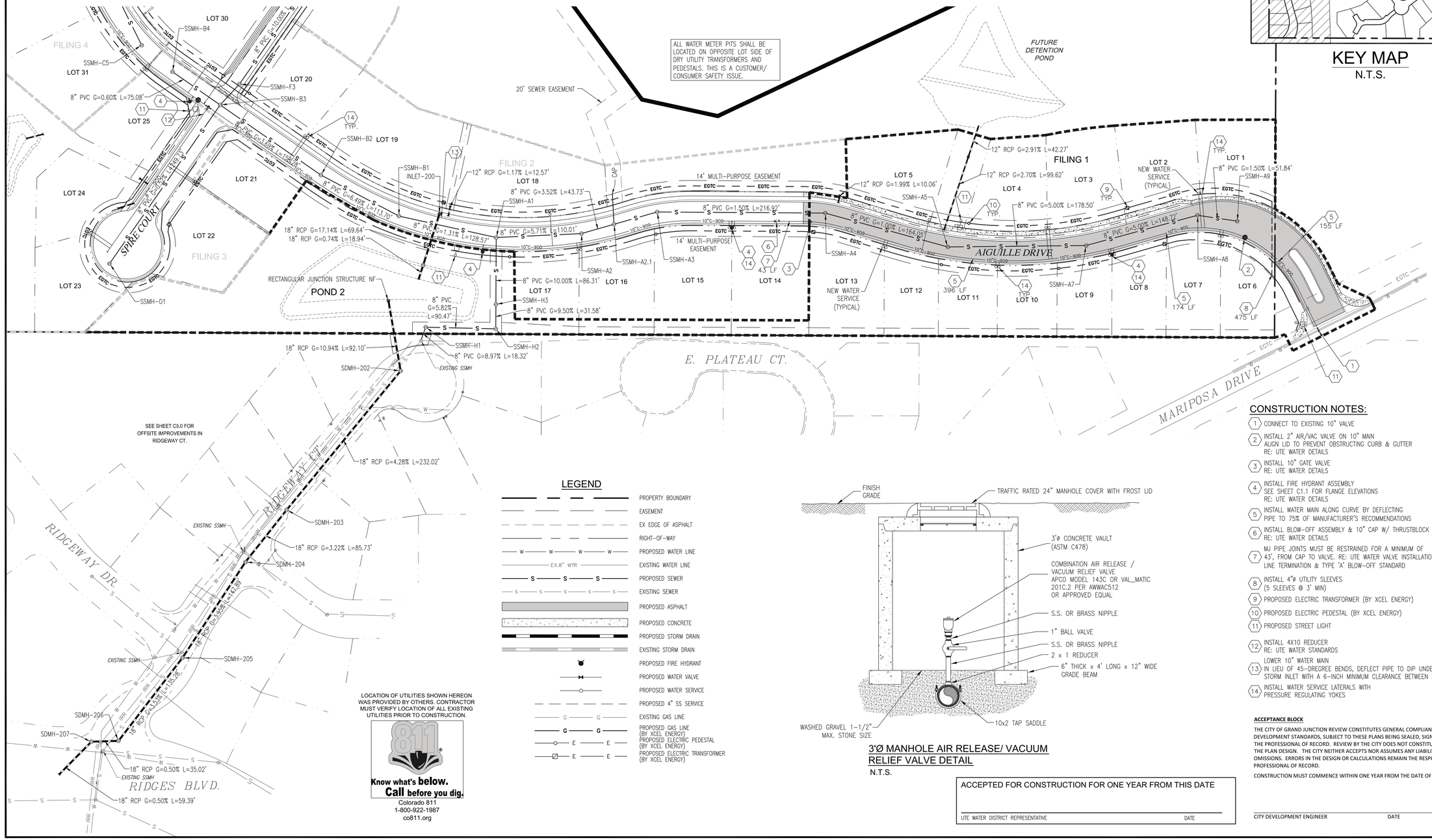
1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
2. INSTALL SANITARY SEWER FROM SSMH-A9 TO EXISTING MAN-HOLE IN RIDGEWAY COURT AS SHOWN INCLUDING LINE TO MAN-HOLE B-1.
3. END WATER LINE CONSTRUCTION AT THE MIDDLE OF LOT 14 AS SHOWN.
4. ASPHALT PAVEMENT TO END AT THE NORTH END OF LOT 13 FOR FILING 1.
5. ROAD ALIGNMENT TO BE GRADED AND BASE COURSE INSTALLED TO THE NORTH END OF LOTS 20 & 21.



KEY MAP
N.T.S.

N

SCALE IN FEET
60 30 0 60 120
1" = 60'



LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.
Colorado 811
1-800-922-1987
co811.org

LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE
- EXISTING WATER LINE
- PROPOSED SEWER
- EXISTING SEWER
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER SERVICE
- PROPOSED 4" SS SERVICE
- EXISTING GAS LINE
- PROPOSED GAS LINE (BY XCEL ENERGY)
- PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
- PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)

3'Ø MANHOLE AIR RELEASE/ VACUUM RELIEF VALVE DETAIL
N.T.S.

CONSTRUCTION NOTES:

1. CONNECT TO EXISTING 10" VALVE
2. INSTALL 2" AIR/VAC VALVE ON 10" MAIN ALIGN LID TO PREVENT OBSTRUCTING CURB & GUTTER RE: UTE WATER DETAILS
3. INSTALL 10" GATE VALVE RE: UTE WATER DETAILS
4. INSTALL FIRE HYDRANT ASSEMBLY SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL WATER MAIN ALONG CURVE BY DEFLECTING PIPE TO 75% OF MANUFACTURER'S RECOMMENDATIONS
6. INSTALL BLOW-OFF ASSEMBLY & 10" CAP W/ THRUSTBLOCK RE: UTE WATER DETAILS
7. MJ PIPE JOINTS MUST BE RESTRAINED FOR A MINIMUM OF 43', FROM CAP TO VALVE. RE: UTE WATER VALVE INSTALLATION, LINE TERMINATION & TYPE 'A' BLOW-OFF STANDARD
8. INSTALL 4"ø UTILITY SLEEVES (5 SLEEVES @ 3' MIN)
9. PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)
10. PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
11. PROPOSED STREET LIGHT
12. INSTALL 4X10 REDUCER RE: UTE WATER STANDARDS
13. LOWER 10" WATER MAIN IN LIEU OF 45-DREGREE BENDS, DEFLECT PIPE TO DIP UNDER STORM INLET WITH A 6-INCH MINIMUM CLEARANCE BETWEEN PIPES.
14. INSTALL WATER SERVICE LATERALS WITH PRESSURE REGULATING YOKES

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

ACCEPTED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE

UTE WATER DISTRICT REPRESENTATIVE DATE

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED
JAMES C. ATKINSON
18828
8-15-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

BY	REV. DATE	COMMENT
DLS	1 8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017

Composite Site Plan - Utility and Water Plan

Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1"= 60'**
CAD ID: **3.0utility-f1.dwg**

~SHEET~
C3.0

FILING NOTES

1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
2. INSTALL SANITARY SEWER FROM SSMH-A9 TO EXISTING MAN-HOLE IN RIDGEWAY COURT AS SHOWN INCLUDING LINE TO MAN-HOLE B-1.
3. END WATER LINE CONSTRUCTION AT THE MIDDLE OF LOT 14 AS SHOWN.
4. ASPHALT PAVEMENT TO END AT THE NORTH END OF LOT 13 FOR FILING 1.
5. ROAD ALIGNMENT TO BE GRADED AND BASE COURSE INSTALLED TO THE NORTH END OF LOTS 20 & 21.

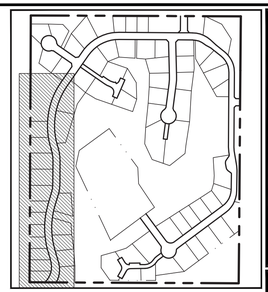
CONSTRUCTION NOTES:

1. INSTALL STOP SIGN & STREET SIGN RE: MUTCD
2. CONSTRUCT HANDICAPPED RAMP RE: CITY OF GJ DETAILS
3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL 6" STANDARD CURB & GUTTER W/ATTACHED SIDEWALK – 87 LF
6. INSTALL 6" DRIVE-OVER CURB & GUTTER W/ATTACHED SIDEWALK – 158 LF
7. INSTALL 6" STANDARD CURB & GUTTER 74 LF
8. SAWCUT & REMOVE ±106 LF EXISTING CONCRETE CURB USE CARE TO ENSURE PAVEMENT EDGE PROVIDES A CLEAN JOIN FOR INSTALL OF NEW CONCRETE VALLEY PAN
9. 15' SIDEWALK TRANSITION FROM ATTACHED TO DETACHED

this is 7', not 6'.

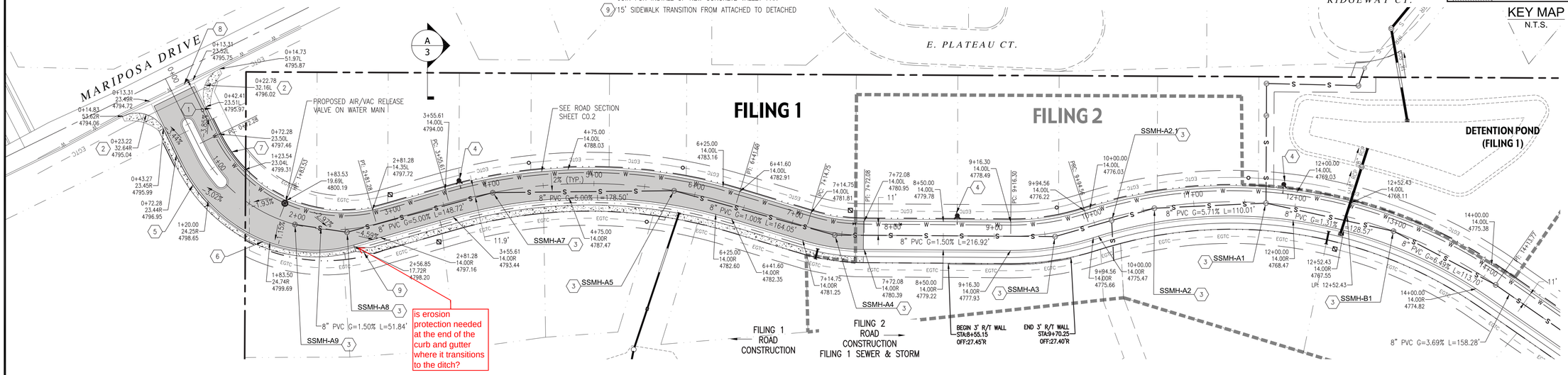
GENERAL NOTES:

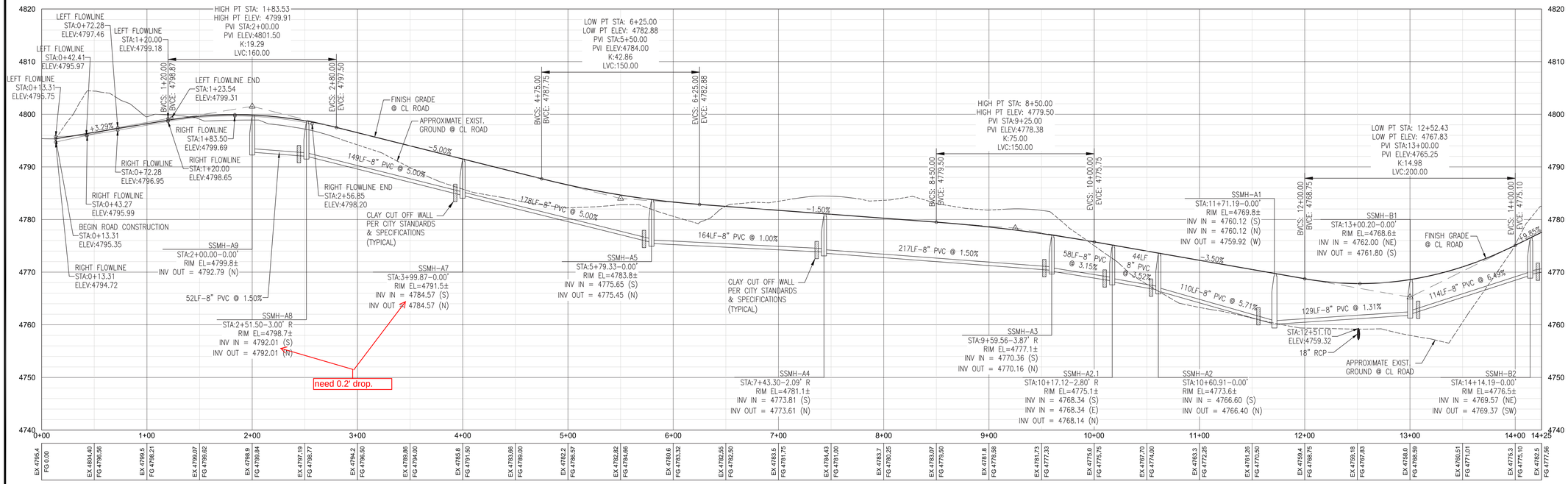
1. REFERENCE SHEET C0.1 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET C0.2 FOR STREET SECTIONS
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION



ROAD AND SAN. SEWER PLAN - AIGUILLE DRIVE

SCALE: 1" = 50'





EX 4795.4	EX 4804.40	EX 4799.5	EX 4799.07	EX 4798.9	EX 4797.19	EX 4794.2	EX 4789.86	EX 4785.8	EX 4783.66	EX 4782.2	EX 4782.82	EX 4780.6	EX 4782.55	EX 4783.5	EX 4784.43	EX 4783.7	EX 4783.07	EX 4781.8	EX 4781.73	EX 4775.0	EX 4767.70	EX 4763.3	EX 4761.26	EX 4759.4	EX 4759.18	EX 4758.0	EX 4760.51	EX 4775.3	EX 4782.5
FG 0.00	FG 4796.36	FG 4798.21	FG 4799.62	FG 4799.84	FG 4798.77	FG 4796.50	FG 4794.00	FG 4791.50	FG 4789.00	FG 4786.57	FG 4784.66	FG 4783.32	FG 4782.50	FG 4781.75	FG 4781.00	FG 4780.25	FG 4779.50	FG 4778.98	FG 4777.33	FG 4775.75	FG 4774.00	FG 4772.25	FG 4770.50	FG 4768.75	FG 4767.83	FG 4768.99	FG 4771.01	FG 4775.10	FG 4777.56

ROAD AND SAN. SEWER PROFILE - AIGUILLE DRIVE

HORIZONTAL SCALE: 1" = 50'

VERTICAL SCALE: 1" = 5'

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER _____ DATE _____

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COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 PROFESSIONAL ENGINEER 8-15-17

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MAJOR SUBDIVISION
FINAL PLAN

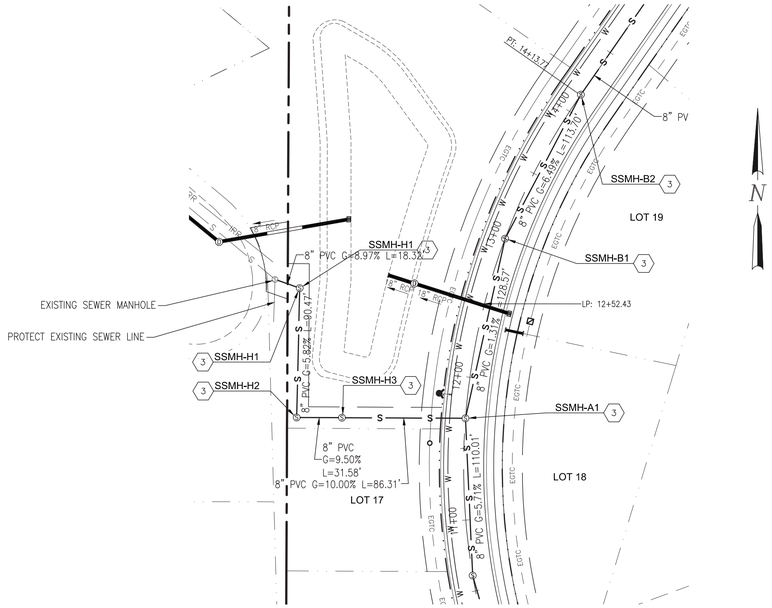
NO.	REV. DATE	COMMENT	BY
1	8/15/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

Road & Sanitary Sewer Plan & Profile

Aiguille Drive
Pinnacle Ridge Subdivision Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/02/17**
SCALE: **1" = 50'**
CAD ID: **4.0ss-road-f1.dwg**

~SHEET~
C4.0



ROAD AND SAN. SEWER PLAN - RIDGEWAY CT. CONNECTION

SCALE: 1" = 50'

FILING NOTES

1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
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5. ROAD ALIGNMENT TO BE GRADED AND BASE COURSE INSTALLED TO THE NORTH END OF LOTS 20 & 21.

CONSTRUCTION NOTES:

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2. CONSTRUCT HANDICAPPED RAMP RE: CITY OF GJ DETAILS
3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL 6" STANDARD CURB & GUTTER W/ATTACHED SIDEWALK – 87 LF
6. INSTALL 6" DRIVE-OVER CURB & GUTTER W/ATTACHED SIDEWALK – 158 LF
7. INSTALL 6" STANDARD CURB & GUTTER 74 LF
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GENERAL NOTES:

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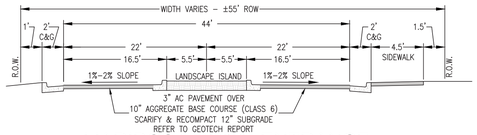
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET C0.2 FOR STREET SECTIONS
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION

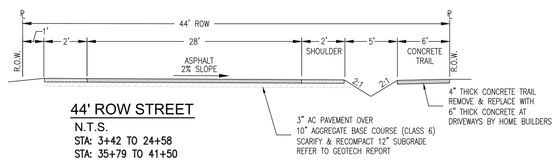


MARIPOSA DRIVE ENTRANCE

N.T.S.

STA: 0+24 TO STA: 1+52

(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 3+42)

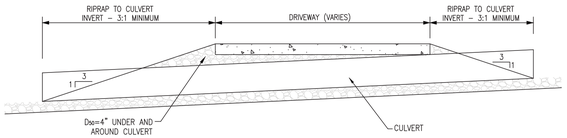


44' ROW STREET

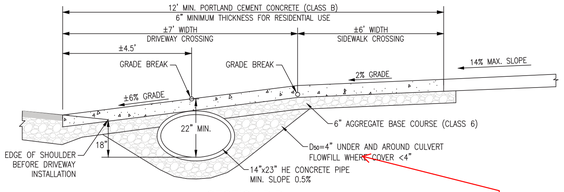
N.T.S.

STA: 3+42 TO 24+58

STA: 35+79 TO 41+50

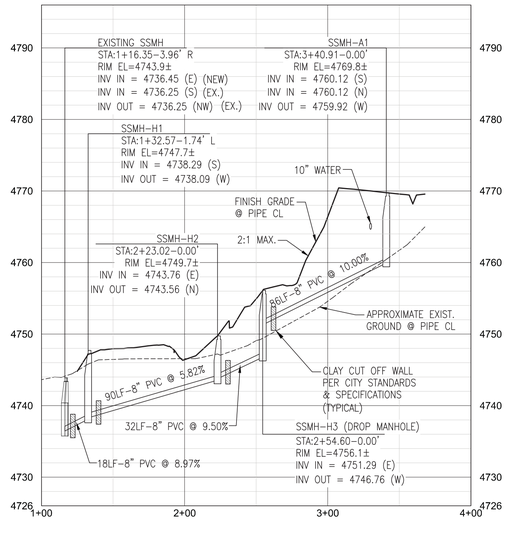


SECTION A-A



SECTION B-B

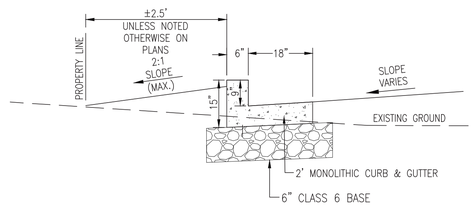
Don't want 4" rock under and around culvert. This will promote piping along the culvert. It may be a good idea to use a low permeability bedding and backfill for the culvert. Ask HB.



ROAD AND SAN. SEWER PROFILE - RIDGEWAY CT. CONNECTION

HORIZONTAL SCALE: 1" = 50'

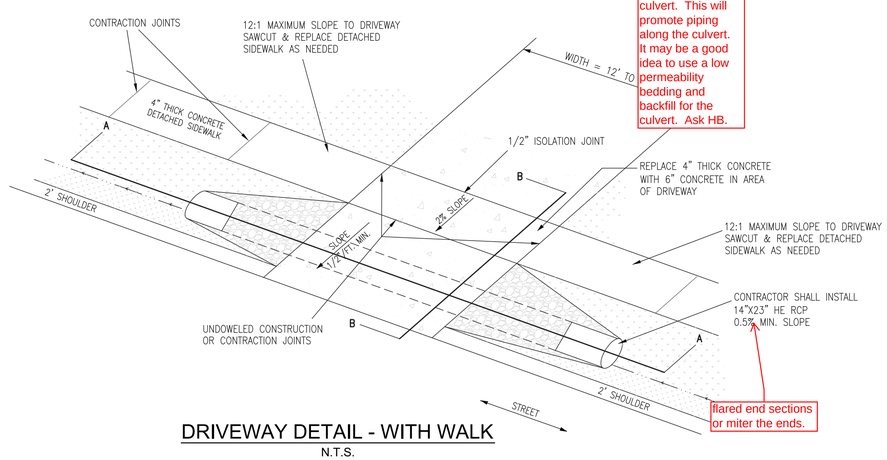
VERTICAL SCALE: 1" = 5'



WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

CONCRETE CURB DETAIL

N.T.S.



DRIVEWAY DETAIL - WITH WALK

N.T.S.

NOTE:

CARE SHALL BE TAKEN TO REMOVE EXISTING ROCK LINING AND GEOTEXTILE FABRIC PRIOR TO NEW CULVERT INSTALLATION. FABRIC AND ROCK TO BE CAREFULLY REPLACED AROUND NEW CULVERT.

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED
JAMES C. ATKINSON
18828
8-15-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

BY	REV. DATE	COMMENT
DLS	1 8/15/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017

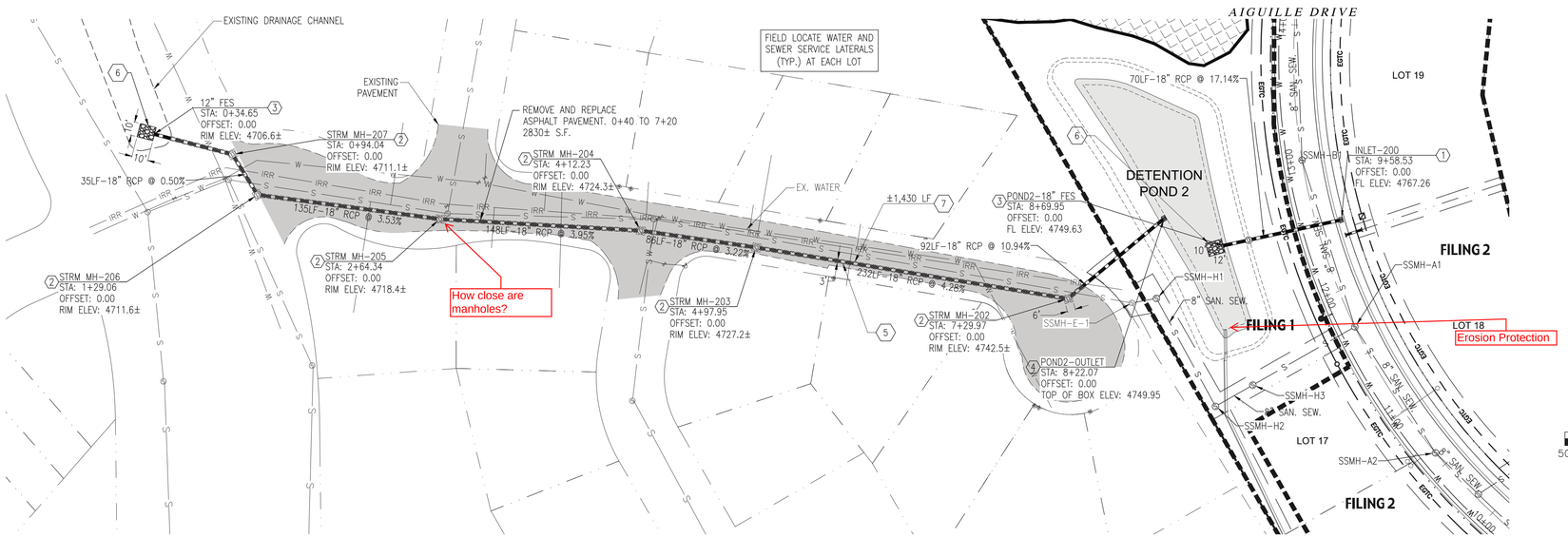
Road & Sanitary Sewer Plan & Profile

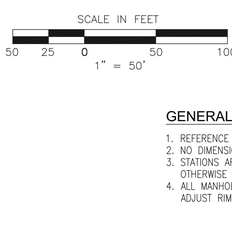
Ridgeway Court Sewer Connection
Pinnacle Ridge Subdivision Filing 1

Mariposa Drive
Grand Junction, Colorado 81507

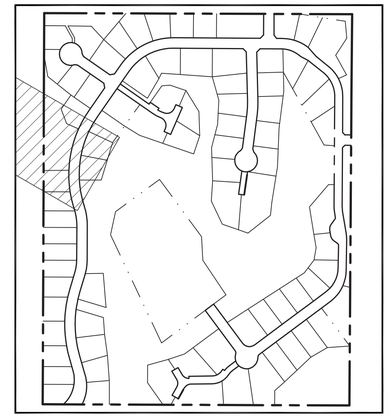
PROJECT NO: **F04-006**
DATE: **06/02/17**
SCALE: **1" = 50'**
CAD ID: **4.0ss-road-f1.dwg**

~SHEET~
C4.1





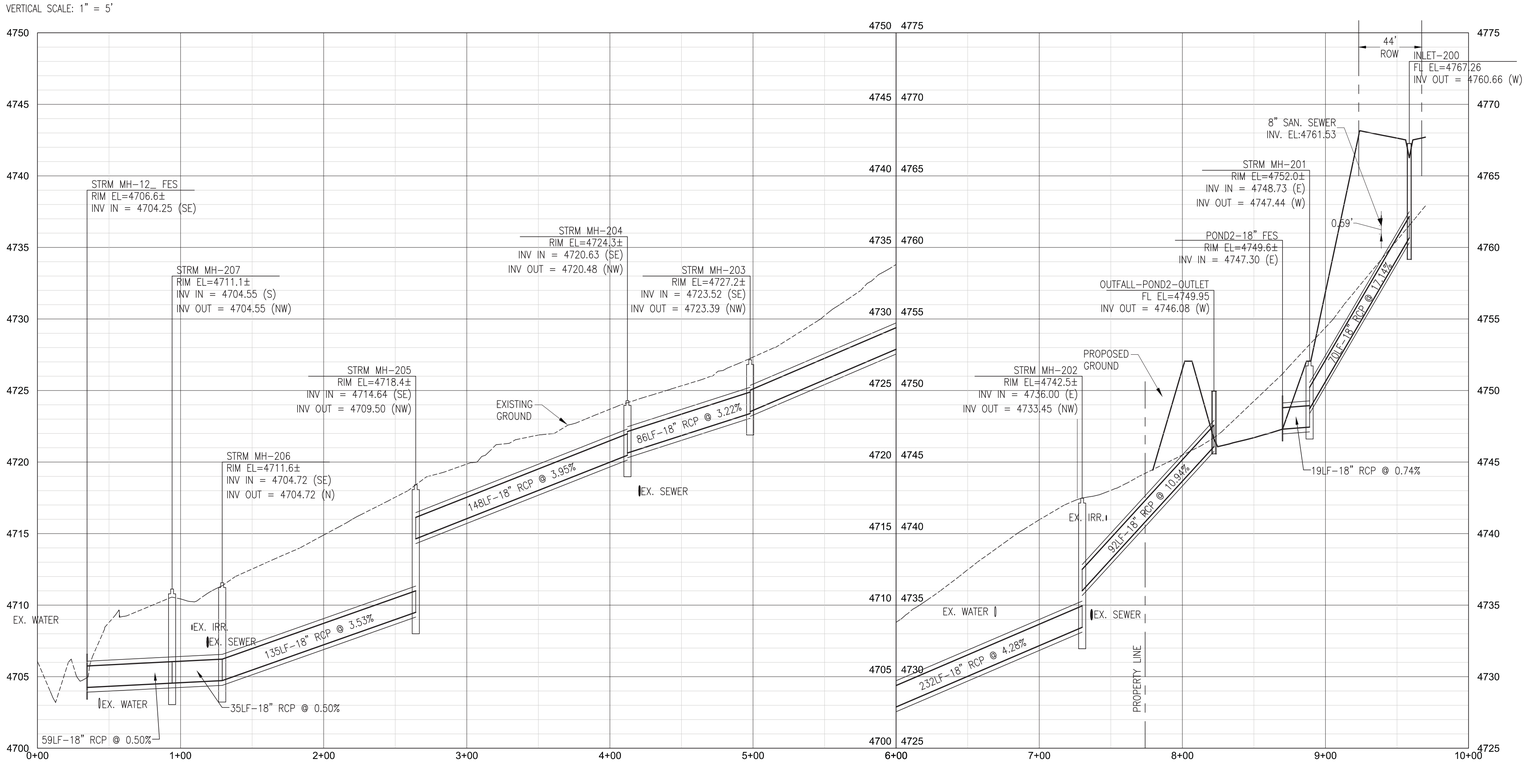
SCALE IN FEET
50 25 0 50 100
1" = 50'

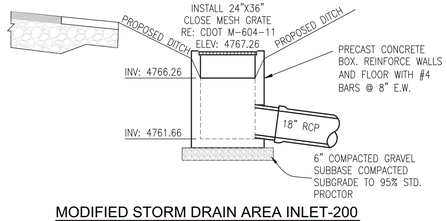


KEY MAP
N.T.S.

STORM SEWER PLAN AND PROFILE - POND 2 OUTFALL

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'





MODIFIED STORM DRAIN AREA INLET-200
N.T.S.

GENERAL NOTES:

1. REFERENCE SHEET C0.1 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. STATIONS ARE IN REFERENCE TO CENTER LINE OF ROAD, UNLESS OTHERWISE INDICATED.
4. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.

CONSTRUCTION NOTES:

1. INSTALL/MODIFY 2'x3' AREA INLET RE: CITY STD. DETAILS, & THIS SHEET
2. INSTALL 48"ø MANHOLE RE: CITY STD. DETAILS
3. INSTALL FES WITH RIP RAP AT SHOWN SIZE RE: CITY STD. DETAILS
4. INSTALL POND OUTLET STRUCTURE. RE: SEE DETAIL ON SHEET 21
5. PAVEMENT PATCH BACK AT SHOWN DIMENSIONS. RE: CITY OF GJ DETAILS
6. INSTALL D_{50}=6", 12" DEEP RIPRAP OVER GEOFABRIC AT SHOWN DIMENSIONS.
7. SAWCUT LINE.

NOTE:

CONTRACTOR TO LOCATE INDIVIDUAL WATER AND SANITARY SEWER LATERALS TO EACH HOUSE PRIOR TO BEGINNING CONSTRUCTION. NOTIFY ENGINEER IF CONFLICTS ARE FOUND.

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COLORADO LICENSE No. 18828

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MAJOR SUBDIVISION
FINAL PLAN

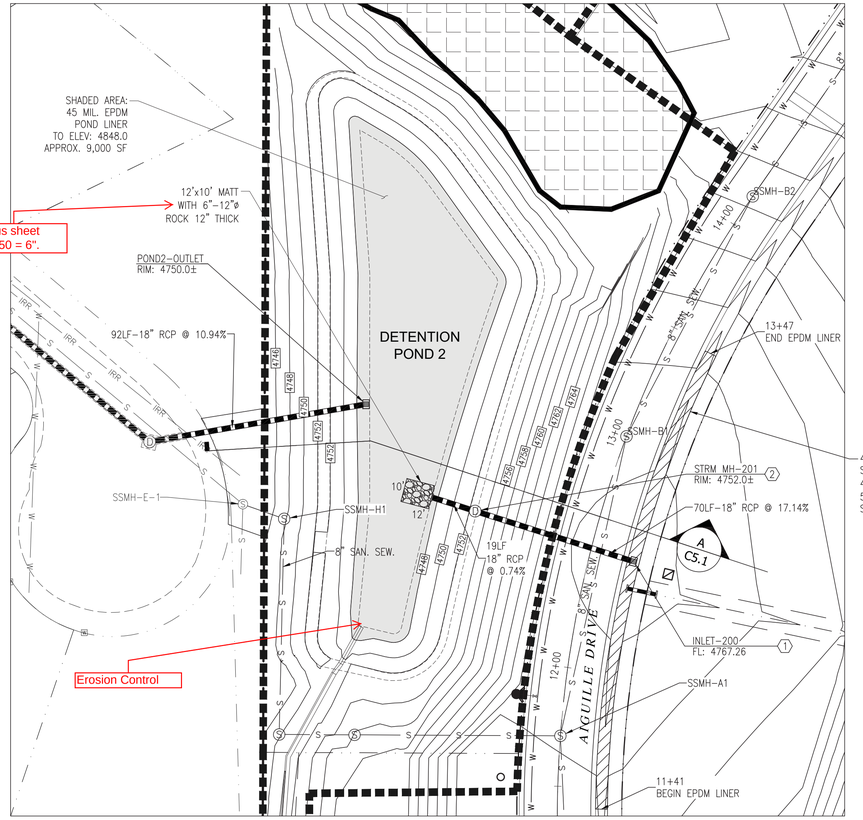
REV.	DATE	COMMENT	BY
1	8/08/17	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017	DLS

Storm Sewer Plan and Profile
Pond 2 Outfall

Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

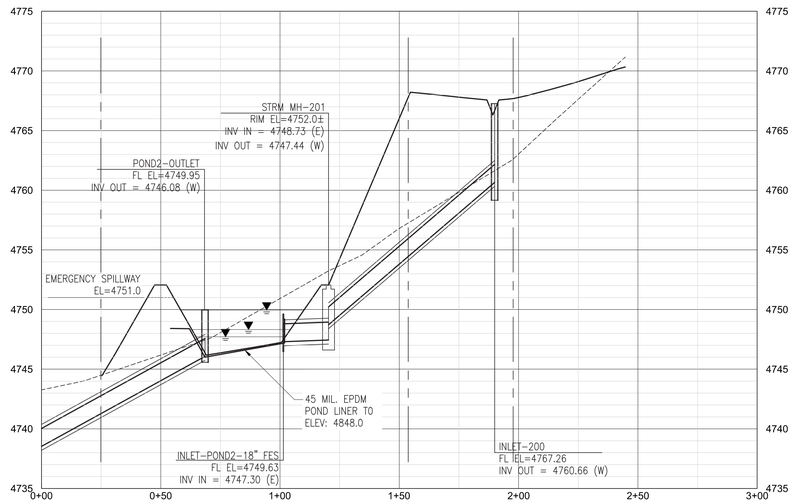
PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 50'**
CAD ID: **5.0storm-f1.dwg**

~SHEET~
C5.0



POND 2 - PLAN

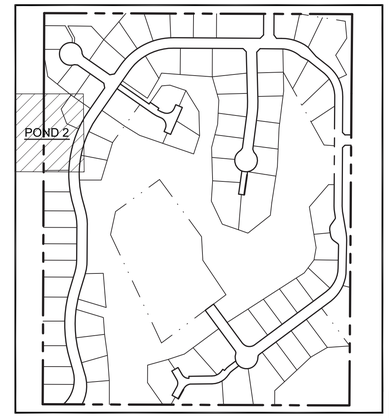
SCALE: 1" = 30'



A
C5.1

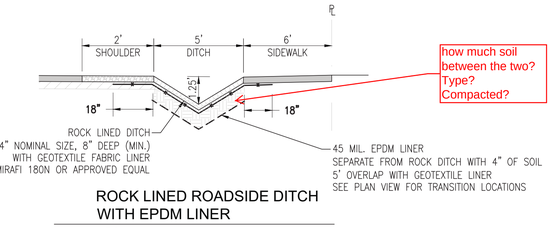
POND 2 SECTION

H: 1"=30'
V: 1"=1.5'



KEY MAP

N.T.S.

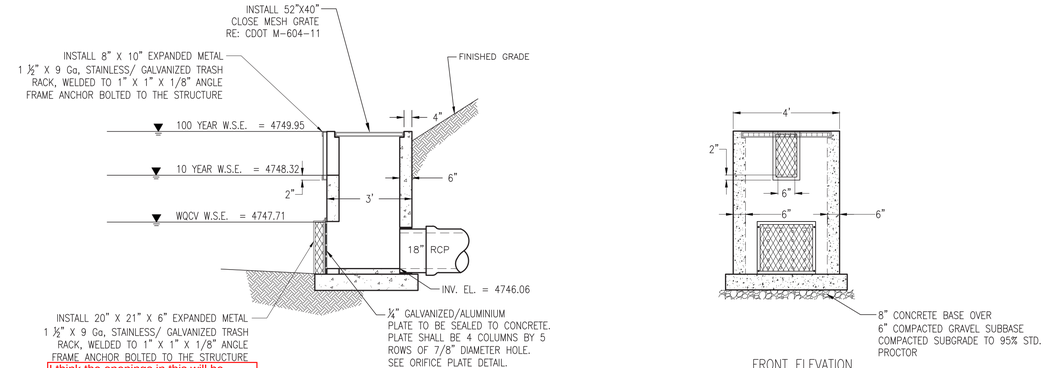


ROCK LINED ROADSIDE DITCH WITH EPDM LINER

N.T.S.

CONSTRUCTION NOTES:

1. INSTALL/MODIFIY 3'X4' AREA INLET
   RE: CITY STD. DETAILS, & THIS SHEET
2. INSTALL 48"ø MANHOLE
   RE: CITY STD. DETAILS



POND OUTLET STRUCTURE DETAIL

N.T.S.

POND 2 - SUMMARY TABLES

POND 2	VOLUME (CF)	WSEL (FT)	PEAK DISCHARGE FLOW (CFS)	ALLOWABLE PEAK DISCHARGE FLOW (CFS)
WQCV	7,575	4847.71	NA	NA
10 YEAR	13,992	4748.32	0.52	1.87
100 YEAR	31,059	4749.95	4.21	7.79

GENERAL NOTES:

1. REFERENCE SHEET C0.2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. STATIONS ARE IN REFERENCE TO CENTER LINE OF ROAD, UNLESS OTHERWISE INDICATED.
4. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
5. REFER TO SHEET C5.0 FOR CONSTRUCTION KEY NOTES.

ACCEPTANCE BLOCK

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18828
8-15-17
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MAJOR SUBDIVISION
FINAL PLAN

NO.	REV. DATE	BY
1	8/08/17	DLS

REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017

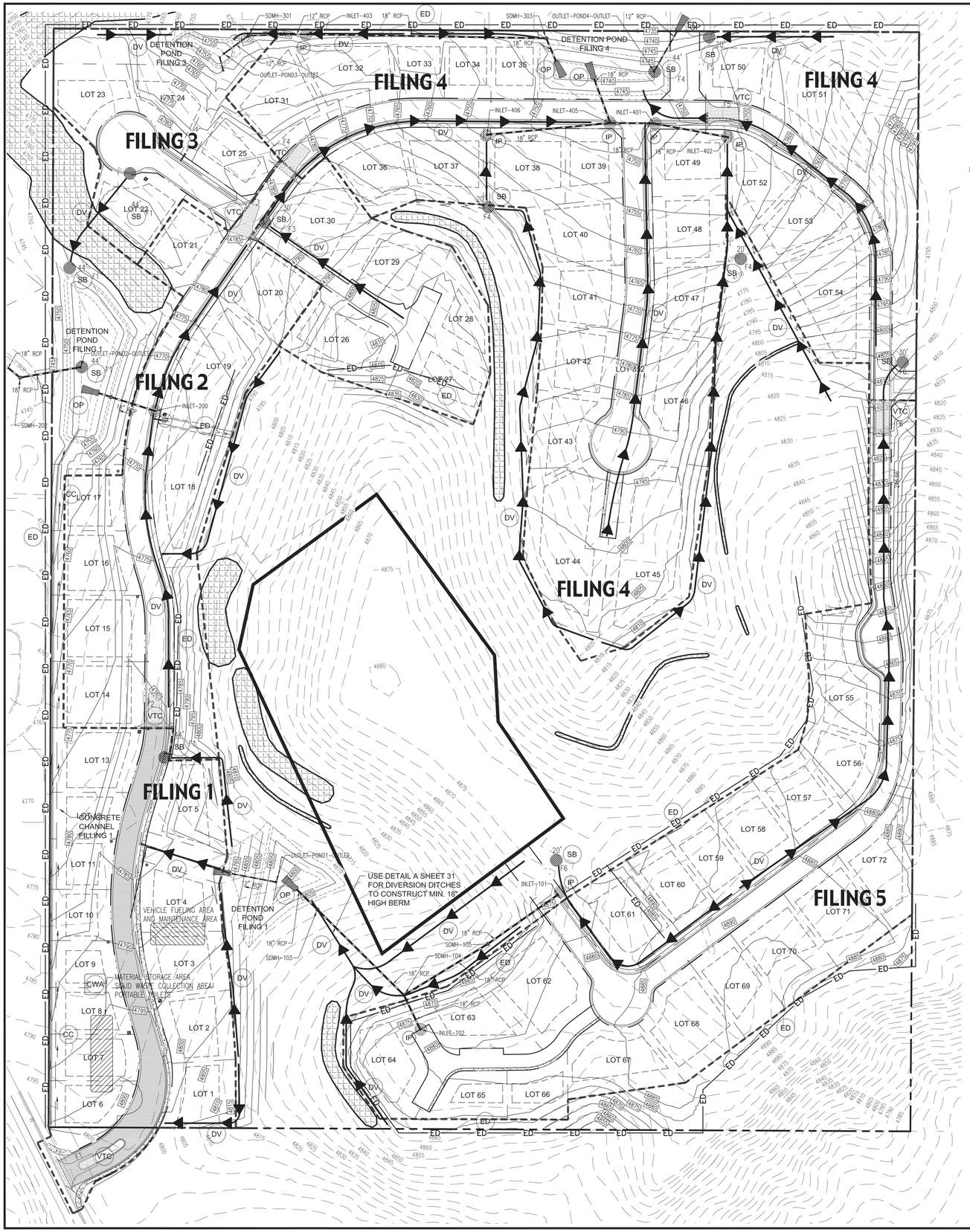
COMMENT

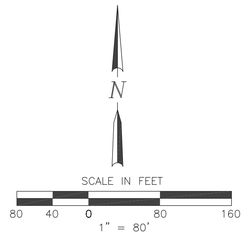
Storm Sewer Plan
Pond 1 and 2 Details

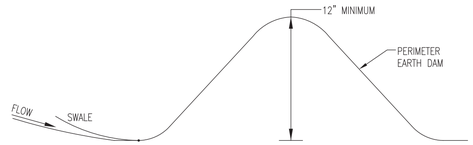
Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 30'**
CAD ID: **5.0storm-f1.dwg**

~SHEET~
C5.1







EARTH DAM SECTION
SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
EARTHEN DAM	ED	ED
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
SEDIMENT BASIN	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

GRADING NOTE:

FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

GENERAL NOTES:

1. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL REQUIRED EASEMENTS, RIGHT AND/OR RIGHTS-OF-WAY PURSUANT TO THE DISCHARGE FROM THE SEDIMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS AND GRADING OR OTHER WORK TO BE PERFORMED ON ADJACENT OR DOWNSTREAM PROPERTIES AFFECTED BY THE PLAN.
2. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1); FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE, THE IN-PLACE SEDIMENT CONTROL MEASURES WILL BE MAINTAINED ON A CONTINUING BASIS UNTIL THE SITE IS PERMANENTLY STABILIZED AND ALL PERMIT REQUIREMENTS ARE MET.
3. REFER TO CITY OF GRAND JUNCTION STANDARD DRAWINGS AND SPECIFICATIONS.
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE 5-2-1 DRAINAGE AUTHORITY. CONTACT MARK BARSLUND 970-201-1362

ACCEPTANCE BLOCK

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MAJOR SUBDIVISION
FINAL PLAN

NO.	REV. DATE	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017	BY
		COMMENT	DLS
1	8/15/17		

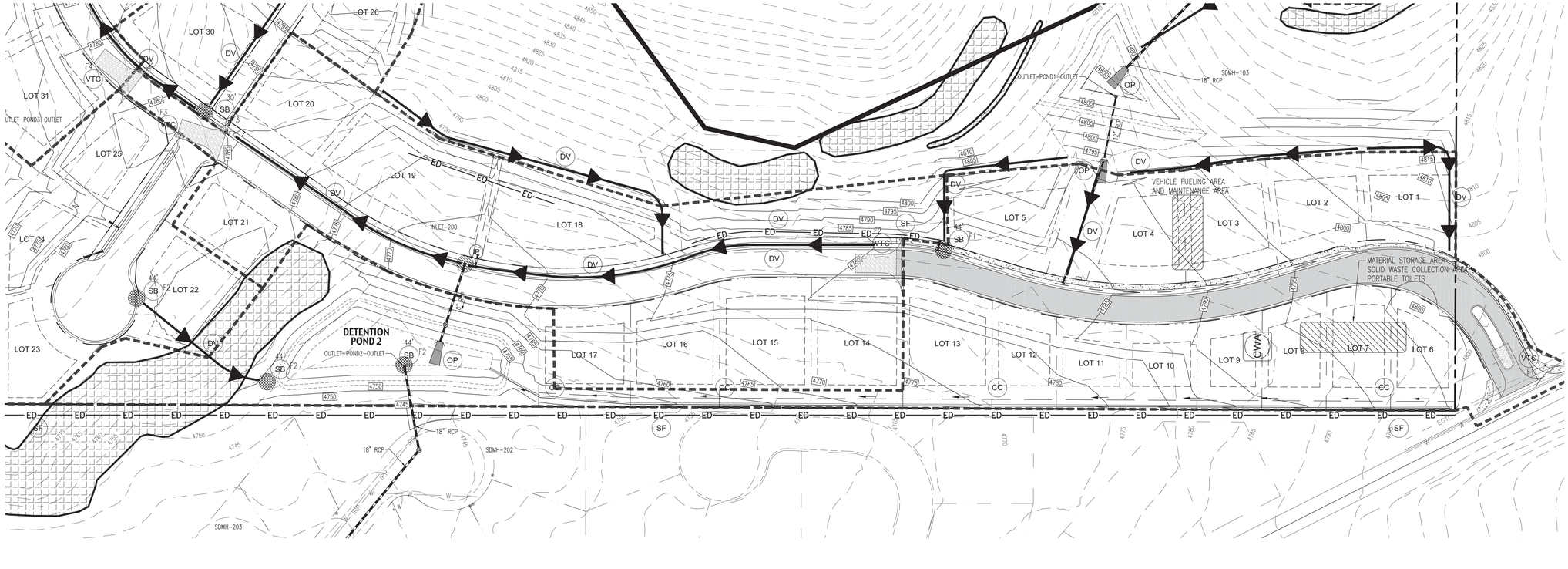
Overall Construction Stormwater Management Plan

Pinnacle Ridge Subdivison Filing 1

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **07/08/15**
SCALE:
CAD ID: **6.0swm-f1.dwg**

~SHEET~
C6.0



N

SCALE IN FEET

60 30 0 60 120

1" = 60'

CONTOUR INTERVAL = 2'

GRADING NOTE:

FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

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2. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1); FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE, THE IN-PLACE SEDIMENT CONTROL MEASURES WILL BE MAINTAINED ON A CONTINUING BASIS UNTIL THE SITE IS PERMANENTLY STABILIZED AND ALL PERMIT REQUIREMENTS ARE MET.
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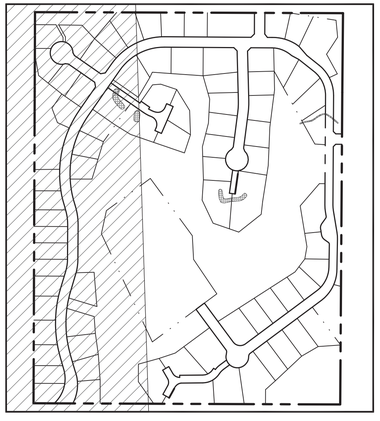
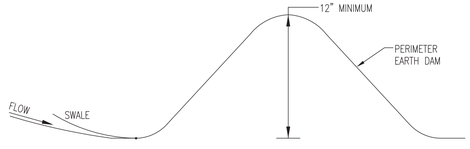


KEY MAP

N.T.S.



EARTH DAM SECTION

SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
EARTHEN DAM	ED	ED
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
SEDIMENT BASIN	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

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8-15-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

NO.	REV. DATE	COMMENT	BY
1	8/15/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

Construction Stormwater Management Plan Filling 1

Pinnacle Ridge Subdivison
Filing 1

Mariposa Drive
Grand Junction, Colorado

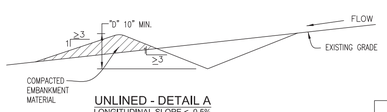
PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **SEE PLAN**
CAD ID: **6.0swm-f1.dwg**

~SHEET~

C6.1

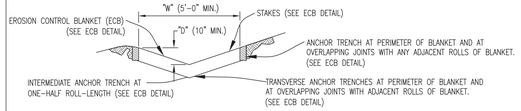
DIVERSION DITCH DETAIL A

DV

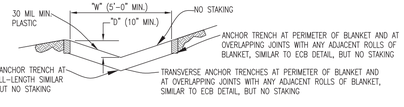


UNLINED - DETAIL A
LONGITUDINAL SLOPE < 0.5%

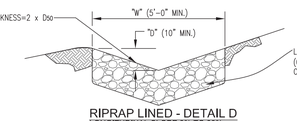




EROSION CONTROL BLANKET (ECB) LINED - DETAIL B
LONGITUDINAL SLOPE 0.5% TO 3 %



PLASTIC LINED - DETAIL C
LONGITUDINAL SLOPE 3% TO 33%



RIPRAP LINED - DETAIL D
LONGITUDINAL SLOPE 3% TO 33%

DIVERSION DITCH INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF DIVERSION DITCH.
   - TYPE OF DITCH (UNLINED, ECB PLASTIC LINED OR RIPRAP LINED).
   - LENGTH OF EACH TYPE OF DITCH.
   - DEPTH, "D", AND WIDTH, "W" DIMENSIONS.
   - FOR ECB LINED DITCH, EROSION CONTROL BLANKET TYPE (SEE ECB DETAIL).
   - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, "D 50 ".
2. SEE DRAINAGE PLANS FOR DETAILS OF ANY PERMANENT CONVEYANCE FACILITIES OR DIVERSION DITCHES EXCEEDING A 2 YEAR FLOOD 10 CFS.
3. DIVERSION DITCHES INDICATED ON INITIAL SWMP PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES..
4. FOR ECB LINED DITCHES, INSTALLATION OF EROSION CONTROL BLANKET SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.
5. IN LOCATIONS WHERE CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION DITCH, THE PERMITTEES SHALL INSTALL A TEMPORARY CULVERT WITH A MINIMUM DIAMETER OF 12-INCHES.

DIVERSION DITCH MAINTENANCE NOTES

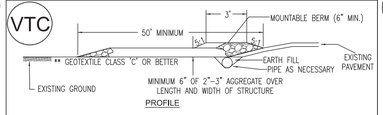
1. THE SWMP MANAGER SHALL INSPECT DIVERSION DITCHES WEEKLY AND DURING AND AFTER ANY STORM. MAKE REPAIRS AS NECESSARY.
2. DIVERSION DITCHES ARE TO REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION, OR IF APPROVED BY LOCAL JURISDICTION MAY BE LEFT IN PLACE.
3. IF DIVERSION DITCHES ARE REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, DRILL SEEDED, HAY CRIMPED MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

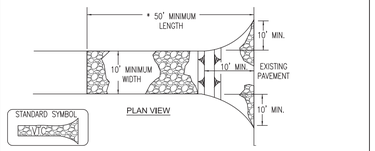
DETAIL BASED ON DETAILS PROVIDED BY DOUGLAS COUNTY

Urban Drainage and Flood Control District Drainage Criteria Manual (V.3)	Figure C5-3 DIVERSION DITCH AND DIKE

STABILIZED CONSTRUCTION ENTRANCE

VTC

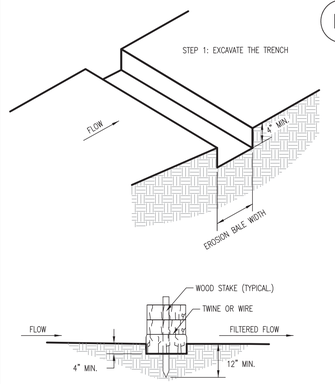




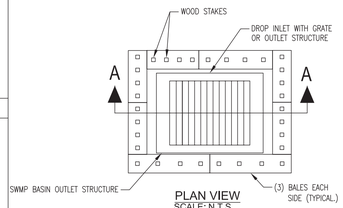
Construction Specification

1. Length – minimum of 50' (*30' for single residence lot).
2. Width – 10' minimum, should be flared at the existing road to provide a tuning radius
3. Geotextile fabric (filter cloth) shall placed over the exiting around prior to placing stone. **This plan approval authority may not require single family residence to use geotextile.
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water – all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location – A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

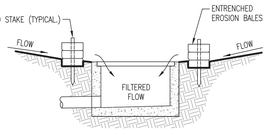
IP



EROSION BALE TRENCHING AND STAKING
SCALE: N.T.S.



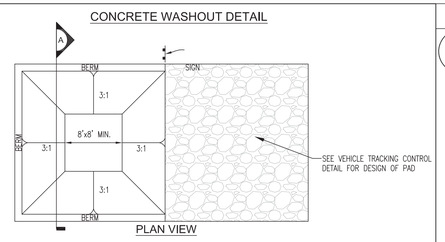
PLAN VIEW
SCALE: N.T.S.



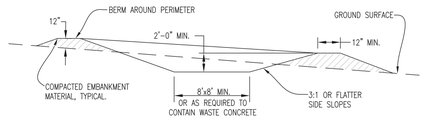
SECTION A-A
EROSION FILTER AT DROP INLET
SCALE: N.T.S.

CONCRETE WASHOUT DETAIL

CWA



PLAN VIEW



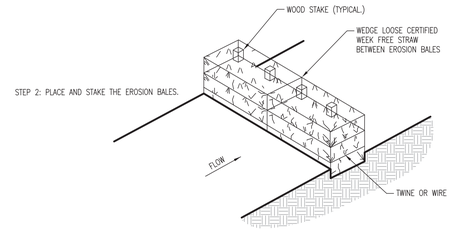
SECTION A

CONCRETE WASHOUT AREA INSTALLATION NOTES

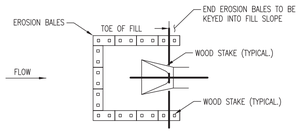
1. SEE PLAN VIEW FOR LOCATIONS OF CONCRETE WASHOUT AREA
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL IS REQUIRED AT THE ACCESS POINT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION

CONCRETE WASHOUT AREA MAINTENANCE NOTES

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, DRILL SEED AND CRIMP MULCH OR OTHERWISE STABILIZE IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
4. INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.



EROSION BALE BMP
SCALE: N.T.S.



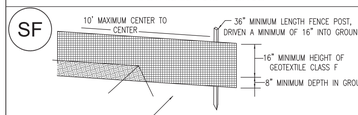
PLAN VIEW
EROSION BALE CULVERT INLET PROTECTION
SCALE: N.T.S.

NOTES

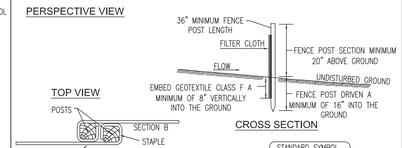
1. STAKES SHALL BE WOOD AND SHALL BE 2" X 2" NOMINAL.
2. EROSION BALES SHALL BE 18" X 18" X 36".
3. EROSION BALES SHALL BE ENTRENCHED 4 IN. MINIMUM INTO THE SOIL TIGHTLY ABUTTED WITH NO GAPS, STAKED, AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERIMETER.

DETAIL 22 - SILT FENCE

SF



PERSPECTIVE VIEW



JOINING TWO ADJACENT SILT FENCE SECTIONS

Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-setion and shall meet the following requirements for Geotextile Class F:

Tensile Strength:	50 lbs./in. (min.)	Test: MSMT 509
Tensile Modulus:	20 lbs./in. (min.)	Test: MSMT 509
Flow Rate	0.3 gal. ft. / minute (max.)	Test MSMT 322
Efficiency	75% (min.)	Test: MSMT 322

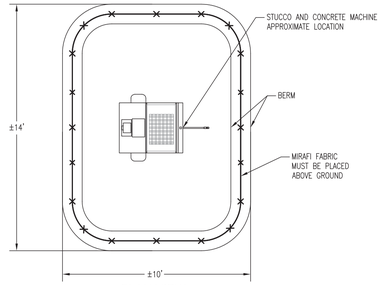
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

SILT FENCE

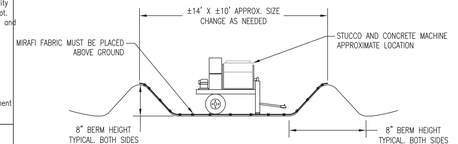
Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

NOTE:
In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.



PLAN VIEW
SCALE: N.T.S.



ELEVATION VIEW
SCALE: N.T.S.

STUCCO & CONCRETE MACHINE BMP
SCALE N.T.S.

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED 18828 PROFESSIONAL ENGINEER 8-16-17

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/15/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

Construction Stormwater Management Plan Details

Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **07/06/15**
SCALE:
CAD ID: **6.0swm-f1.dwg**

~SHEET~
C6.2

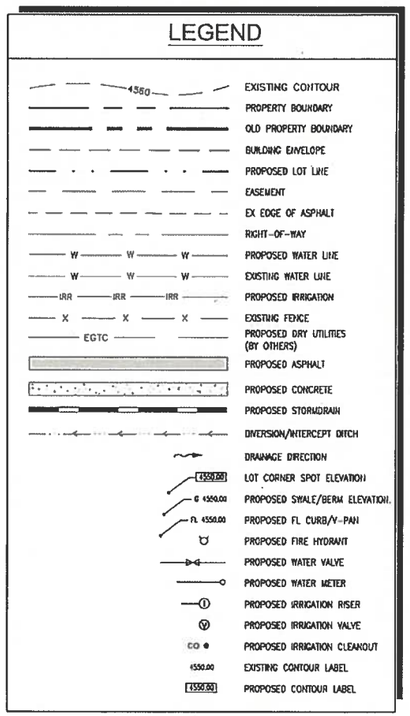
Final Plan of Subdivision

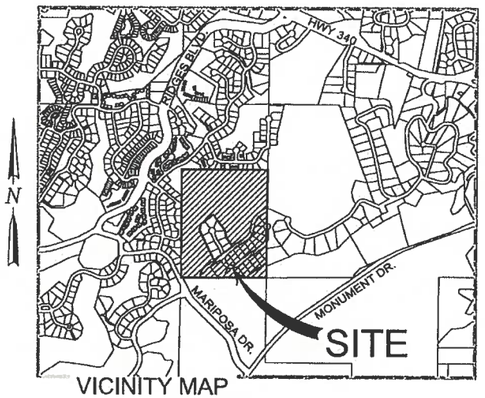
Pinnacle Ridge Subdivision

Filing 1

Grand Junction, Colorado

Vortex "Green-line" Responses





VICINITY MAP

SHEET NUMBER	SHEET TITLE
C0.0	COVER
C0.1	PROJECT NOTES
C0.2	OVERALL SITE PLAN AND FILING PLAN
C1.0	COMPOSITE SITE PLAN - LAYOUT AND GEOMETRY PLAN
C2.0 - C2.2	COMPOSITE SITE PLAN - GRADING PLAN, ROAD CROSS SECTIONS
C3.0	COMPOSITE SITE PLAN - OVERALL UTILITY AND WATER PLAN
C4.0 - C4.1	ROAD AND SEWER PLAN AND PROFILE - AIGUILLE DRIVE
C5.0 - C5.1	STORM SEWER PLAN & PROFILE
C6.0 - 6.2	CONSTRUCTION STORM WATER MANAGEMENT PLAN

ABBREVIATION LEGEND

&	AND	MCSM	MESA COUNTY SURVEY MONUMENT
℄	CENTERLINE	MFG'S	MANUFACTURER'S
Ø	DIAMETER	M.P.E.	MULTI-PURPOSE EASEMENT
'	FEET	MPH	MILES PER HOUR
"	INCHES	NE COR	NORTHEAST CORNER
±	PLUS OR MINUS	N&S&E	NORTH AND SOUTH AND EAST
APPROX.	APPROXIMATELY	NO.	NUMBER
BRL	BUILDING RESTRICTION LINE	N.T.S.	NOT TO SCALE
BVCS	BEGIN VERTICAL CURVE STATION	PROP.	PROPOSED
BVCE	BEGIN VERTICAL CURVE ELEVATION	PRV	PRESSURE REDUCING VALVE
CB	CATCH BASIN	PSI	POUNDS PER SQUARE INCH
CL ⊠	CLASS 3	PVC	POLYVINYL CHLORIDE
CMP	CORRUGATED METAL PIPE	PVI	POINT OF VERTICAL INTERSECTION
CR	CURB RETURN	PVMT	PAVEMENT
CT.	COURT	O.C. E.W.	ON CENTER EACH WAY
DR.	DRIVE	RCP	REINFORCED CONCRETE PIPE
EL.	ELEVATION	RD	ROAD
ELEV	ELEVATION	RET. WALL	RETAINING WALL
EX.	EXISTING	R.O.W.	RIGHT-OF-WAY
EXIST.	EXISTING	RT	RIGHT
EVCS	END VERTICAL CURVE STATION	SCH	SCHEDULE
EVCE	END VERTICAL CURVE ELEVATION	SD	STORM DRAIN
FL	FLOWLINE	SEC	SECTION
FH	FIRE HYDRANT	SF	SQUARE FEET
FT	FEET	SQ. FT.	SQUARE FEET
GPM	GALLONS PER MINUTE	SS	SANITARY SEWER
GV	GAS VALVE	ST.	STREET
G.V.A.L.C.S.	GRAND VALLEY ALIQUOT LOCAL COORDINATE SYSTEM	STA	STATION
		THRU	THROUGH
HGL	HYDRAULIC GRADE LINE	TYP.	TYPICAL
HI PT	HIGH POINT	TW	TOP OF WALL
HP	HORSE POWER	U.W.C.D.	UTE WATER CONSERVANCY DISTRICT
INV	INVERT	VC	VERTICAL CURVE
LT	LEFT	VCP	VITRIFIED CLAY PIPE
MAX	MAXIMUM	W/	WITH
MIN	MINIMUM	WM	WATER METER
MH	MANHOLE	WV	WATER VALVE

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21, EXCEPTING THEREFROM, LOTS 1 – 9, BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK B AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = RSF-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'
   REAR = 25'
   SIDE = 7'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY GEOTECHNICAL ENGINEERING GROUP, INC. REFER TO REPORT DATED APRIL 16, 2002.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

latest geotech. Latest report is referenced.

UTILITY PROVIDERS INFORMATION

UTILITY	PROVIDER	PHONE NUMBER
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1504
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
GRANDE R. IRRIGATION	ORCHARD MESA IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-263-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-003-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-373-7628

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.

Colorado 811
1-800-922-1987
co811.org

FOR REVIEW - NOT FOR CONSTRUCTION

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 13626

for Final

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NO.	DATE	COMMENT

MAJOR SUBDIVISION
FINAL PLAN

Cover
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 08/08/17
SCALE:
CAD ID: 0_0cover-f1.dwg

SHEET
C0.0

Notes have been revised

LOCAL CONTACT INFORMATION
GRAND JUNCTION DEVELOPMENT INSPECTOR: MARK BARSUHN 970-201-1362

GENERAL NOTES:

1. THESE GENERAL NOTES SHALL BE APPLICABLE TO ALL SHEETS WITHIN THIS SET OF DRAWINGS.
2. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE GOVERNING AGENCY. CONTRACTOR MUST CONTACT THE APPROPRIATE AGENCY PRIOR TO CONSTRUCTION IN THE RIGHT-OF-WAY.
3. PLANNING PERMIT APPROVAL MUST BE OBTAINED BY INDIVIDUAL LOT OWNERS PRIOR TO CONSTRUCTION. THE LOT OWNER MUST SUBMIT A PROPOSED DRAINAGE PLAN OF EACH SITE TO THE GOVERNING AGENCY FOR REVIEW.
4. EXISTING WATER, SANITARY, AND STORM SEWER LINES ARE SHOWN BASED ON BEST AVAILABLE INFORMATION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS SPECIFICALLY AT CONNECTION POINTS AND AT POTENTIAL POINTS OF CONFLICT. ALL INFORMATION SHALL BE SUPPLIED TO THE ENGINEER PRIOR TO CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR:
   (A) COORDINATING THE APPROPRIATE AGENCY TO ARRANGE A PRE-CONSTRUCTION MEETING AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
   (B) OBTAINING ALL PERMITS FOR STREET CUTS, UTILITIES CONSTRUCTION AND GRADING. THE COST OF ALL PERMITS SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S BID.
   (C) COORDINATING WITH ALL UTILITY COMPANIES INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. ADVANCE COORDINATION BY THE CONTRACTOR TO ALL UTILITY COMPANIES INVOLVED SHALL BE REQUIRED FOR ANY SERVICE INTERRUPTIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER, PROJECT MANAGER AND THE UTILITY COMPANY 48 HOURS PRIOR TO START OF CONSTRUCTION. NO UTILITY CUTS SHALL BE MADE WITHOUT WRITTEN AUTHORIZATION BY THE UTILITY COMPANY AND THE CITY.
   (D) VERIFICATION OF ALL OTHER UNDERGROUND FACILITIES WHICH MAY BE AFFECTED BY THIS PROJECT AND REPAIR THEREOF IN CASE OF DAMAGE.
   (E) CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO OBTAIN TEMPORARY POWER AND TELEPHONE SERVICE DURING CONSTRUCTION. ALL COST FOR TEMPORARY SERVICES SHALL BE THE CONTRACTORS RESPONSIBILITY.
   (F) RESTORATION OF DISTURBED STREET PAVEMENT AS REQUIRED BY THE CITY AND THE STATE'S DEPARTMENT OF TRANSPORTATION.
   (G) ALL PROJECT SAFETY INCLUDING, BUT NOT LIMITED TO, TRENCH EXCAVATION AND SHORINGS, TRAFFIC CONTROL AND SECURITY.
   (H) COORDINATING ALL WORK AND INSPECTIONS AS REQUIRED BY THE CITY OR THE STATE.
   (I) OBTAINING NECESSARY PERMITS FROM THE DEPARTMENT OF TRANSPORTATION FOR ALL WORK IN AND ADJACENT TO STATE RIGHT-OF-WAY.
   (J) RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE. AS-BUILTS SHALL INCLUDE UNDERGROUND UTILITIES AS WELL AS ANY FIELD MODIFICATIONS OF THE PLANS.
   (K) KEEPING ADJACENT STREETS FREE AND CLEAN OF ALL DEBRIS AND DIRT FROM THE JOB SITE.
   (L) THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED AT THE JOB SITE AT ALL TIMES. EACH SUBCONTRACTOR (INCLUDING THE SURVEYOR) SHALL HAVE A SCALED COPY OF THE PLANS AND THE APPROPRIATE STANDARDS AND SPECIFICATIONS IN HIS POSSESSION AT ALL TIMES WHEN IMPROVEMENTS ARE BEING INSTALLED.
   (M) THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR COMPLETION OF INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED BY NOTE TO BE "PROVIDED," "INSTALLED" OR "CONSTRUCTED" UNLESS SPECIFICALLY NOTED OTHERWISE.
   (N) CONTRACTOR WILL HAVE A COPY OF APPROVED SOILS REPORTS FOR PAVEMENT DESIGN AND COMPACTION REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL RECOMMENDATIONS CONTAINED WITHIN THE SOILS REPORT.
   (O) VERIFYING THE ACCURACY OF THE VERTICAL BENCHMARK INFORMATION. CONTRACTOR SHALL USE BENCHMARKS AND DATUMS SHOWN HEREON TO SET PROJECT BENCHMARK(S), BY RUNNING A LEVEL LOOP BETWEEN AT LEAST TWO BENCHMARKS, AND SHALL PROVIDE SURVEY NOTES OF SUCH TO PROJECT ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
6. IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH INDICATE AN UNFORESEEN SITUATION IS PRESENT, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
7. TWO WORKING DAYS BEFORE YOU DIG, GRADE, OR EXCAVATE, CALL THE APPROPRIATE UTILITY NOTIFICATION CENTER FOR THE MARKING OF MEMBER UNDERGROUND UTILITIES. THE UTILITIES SHOWN ON THESE PLANS ARE PLOTTED BASED ON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION, AND REPAIR OF ANY EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. ANY UTILITY DAMAGED BY CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
8. THIS PLAN WAS PREPARED BASED ON SURVEY INFORMATION PROVIDED BY A LICENSED SURVEYOR. VORTEX ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR ERRORS DUE TO INCOMPLETE OR INACCURATE SURVEY INFORMATION.
9. SUBGRADE DENSITY SHALL BE TESTED BY A PRIVATE SOILS TESTING FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING BASE COURSE OR CONCRETE. BASE COURSE DENSITY SHALL ALSO BE TESTED BY THE PRIVATE GEOTECHNICAL FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING PAVEMENT.
10. THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THEREIN APPURTENANT.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM ALL UTILITY COMPANIES PRIOR TO ANY DEMOLITION WORK OR DISCONNECTION OF ANY SERVICE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANIES.
2. ALL UTILITIES INCLUDING STORM SEWER, SANITARY SEWER AND WATER MAINS SHALL BE COMPLETELY REMOVED FROM THE GROUND UNLESS OTHERWISE SPECIFIED. NO EXISTING UTILITY, STRUCTURES OR UNDERGROUND IMPROVEMENT SHALL BE ABANDONED IN PLACE WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER, OWNER AND GOVERNING AGENCY.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES WHICH ARE TO REMAIN IN SERVICE, INCLUDING BUT NOT LIMITED TO GAS, ELECTRIC, CABLE AND TELEPHONE SERVICES.
4. ALL STRUCTURE INCLUDING BASEMENT WALLS AND FLOOR SLABS SHALL BE COMPLETELY REMOVED FROM THE SITE.
5. ALL DEMOLITION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS INCLUDING BUT NOT LIMITED TO HAZARDOUS MATERIALS, DISPOSAL, HOURS OF OPERATION.
6. ALL EROSION CONTROL MEASURES DESIGNED FOR THE SITE PERIMETER OR TO PROTECT EXISTING IMPROVEMENTS SHALL BE IN PLACE PRIOR TO THE START OF ANY DEMOLITION ACTIVITIES.
7. THE CONTRACTOR SHALL OBTAIN AND REVIEW THE ENVIRONMENTAL STUDIES PROVIDED BY THE OWNER AND TAKE ALL NECESSARY PRECAUTIONS FOR ENVIRONMENTAL SAFETY DURING DEMOLITION ACTIVITIES. IT SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE EXISTING STRUCTURES FOR ANY OTHER CONDITIONS WHICH MAY AFFECT THE DEMOLITION PROCEDURES.
8. ANY CONDITIONS WHICH MAY BE UNFORESEEN DURING THE PROCESS OF DEMOLITION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER IMMEDIATELY. ADDITIONAL EXPENSES INCURRED BY UNFORESEEN CONDITIONS SHALL BE APPROVED BY THE OWNER PRIOR TO THE ADDITIONAL WORK.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE PROPERTY FOR THE TYPE AND QUANTITY OF DEMOLITION REQUIRED, PRIOR TO SUBMISSION OF A BID.
10. THE CONTRACTOR SHALL HAVE WATER ON SITE FOR DUST ABATEMENT AT ALL TIMES DURING DEMOLITION ACTIVITIES.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF ALL DEBRIS. BURNING ON SITE SHALL NOT BE PERMITTED. NO DEBRIS INCLUDING CONCRETE OR ASPHALT MAY BE PLACED IN ANY FILL AREA.
12. ANY DAMAGE TO PUBLIC UTILITIES OR ADJACENT PROPERTIES AS A RESULT OF THE DEMOLITION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. REPAIRS SHALL BE MADE IN A TIMELY MANNER TO THE SATISFACTION OF THE DAMAGED PARTY.
13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH DOCUMENTATION OF THE CONDITION OF EXISTING IMPROVEMENTS TO REMAIN IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS NOT DOCUMENTED AS PRE-EXISTING. DOCUMENTATION SHALL BE PROVIDED PRIOR TO COMMENCEMENT OF WORK.
14. ALL EXISTING UTILITY SERVICES SHALL BE COMPLETELY REMOVED FROM THE SITE. SERVICE SHALL BE CUT AND PLUGGED AT THE PROPERTY LINE IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS. THE DEMOLITION CONTRACTOR SHALL CLEARLY MARK ALL STUBS AT THE PROPERTY LINE WITH A 4 X 4 WOOD POST (MINIMUM 4' ABOVE GRADE, 4' BELOW GRADE) MARKED WITH THE SERVICE TYPE.
15. ALL EXISTING WELLS SHALL BE CAPPED AND ABANDONED IN ACCORDANCE WITH ALL STATE REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL REQUIRED PROCEDURES, FILE ALL REQUIRED FORMS, APPLICATIONS AND REPORTS, AND OBTAIN ALL REQUIRED APPROVALS FROM THE STATE ENGINEER'S OFFICE.
16. DURING THE COURSE OF DEMOLITION, CONTRACTOR SHALL PROVIDE SECURITY FENCING AND OTHER PRECAUTIONARY SAFETY MEASURE AS NECESSARY.

EROSION CONTROL NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL FACILITIES SHOWN.
3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORESEEN PROBLEMS OR IF THE PLAN DOES NOT FUNCTION AS INTENDED. A JURISDICTION REPRESENTATIVE MAY REQUIRE ADDITIONAL CONTROL DEVICES UPON INSPECTION OF PROPOSED FACILITIES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED, STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM TRAFFIC FROM THE SITE.
5. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE PAVED, SEEDED WITH NATIVE VEGETATION OR LANDSCAPED. REFER TO LANDSCAPE PLANS FOR SEED MIX AND PLANTING SPECIFICATIONS.
6. EROSION CONTROL STRUCTURES BELOW SODDED AREAS MAY BE REMOVED ONCE SOD AND FINAL LANDSCAPING IS IN PLACE. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERAGE OF HEALTHY VEGETATION. EROSION CONTROL IN PROPOSED PAVED AREAS SHALL REMAIN IN PLACE UNTIL PAVEMENT IS COMPLETE.
7. THIS PLAN IS ONLY TO BE USED FOR INSTALLATION OF EROSION CONTROL FACILITIES. DO NOT USE THIS PLAN FOR GRADING OR STORM SEWER CONSTRUCTION.
8. CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLE WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES WILL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS. MOVED WHEN NECESSARY AND REMOVED WHEN THE SITE IS PAVED.
9. INLET PROTECTION DEVICES SHALL BE INSTALLED IMMEDIATELY UPON INDIVIDUAL INLET'S BECOMING FUNCTIONAL.
10. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH GRADING AND/OR UTILITY CONSTRUCTION SHALL OBTAIN A COPY OF THE STORM WATER MANAGEMENT PLAN (SWMP) AND ANY OTHER DOCUMENTATION REGARDING "STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY" AND BECOME FAMILIAR WITH THEIR CONTENTS.
11. THE TEMPORARY PARKING AND STORAGE AREA SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AREA, EQUIPMENT CLEANING AREA, EMPLOYEE BREAK AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
12. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, ETC.) SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT WITH STORM WATER DISCHARGES FROM THE SITE.
13. MAINTAIN ON THE SITE ON HAND READILY AVAILABLE SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
14. FUGITIVE DUST BLOWING FROM THE SITE SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS ABSOLUTELY PROHIBITED.
15. NO RUBBISH, TRASH, GARBAGE, OR OTHER SUCH MATERIALS SHALL BE DISCHARGED INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
16. ALL MEASURES PRESCRIBED IN THE SWMP SHALL BE INITIATED AS SOON AS PRACTICABLE.
17. IF THE GRAVEL CONSTRUCTION ENTRANCES ARE NOT EFFECTIVE IN REMOVING THE MAJORITY OF DIRT OR MUD FROM THE TIRES OF THE CONSTRUCTION VEHICLES, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP AND THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.
18. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
19. IF SOIL STABILIZERS IS EMPLOYED ON THE SITE, SILT FENCES SHALL BE USED TO HELP CONTAIN THE SEDIMENT.
20. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
21. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN 30 DAYS AFTER FINAL STABILIZATION. FINAL STABILIZATION HAS OCCURRED WHEN ALL SOIL DISTURBING ACTIVITIES ARE COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OF THE COVER FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES HAS BEEN EMPLOYED.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) DUE TO GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT.
23. ALL OFF-SITE CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR STORM DRAIN CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.

EROSION CONTROL MAINTENANCE NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL MEASURES CONTAINED IN THIS PLAN SHALL BE MAINTAINED IF FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT, AND SHOULD BE CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:
3. STRAW BALE INLET PROTECTION DEVICES AND BARRIERS SHALL BE FIXED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR SHALL BE REPLACED IF THEY SHOW SIGNS OF DETERIORATION.
4. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, RE-SEEDED, AND WATERED AS NEEDED.
5. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-THIRD TO ONE-HALF THE HEIGHT OF THE SAT FENCE.
6. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
7. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE) THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
8. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES. SEDIMENT IN THE SEDIMENTATION BASINS SHALL NOT EXCEED THE SEDIMENTATION CLEANOUT LEVEL.
9. IF THE STONES IN THE GRAVEL CURB INLET SEDIMENT FILTERS BECOME CLOGGED WITH SEDIMENT, THE STONES MUST BE PULLED AWAY, CLEANED AND REPLACED.
10. THE EMBANKMENT OF THE SEDIMENTATION BASIN SHALL BE CHECKED REGULARLY TO INSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
11. THE TEMPORARY SEDIMENT TRAP AND SEDIMENTATION BASIN STRUCTURES SHALL BE CHECKED REGULARLY TO INSURE THAT THEY ARE STRUCTURALLY SOUND AND HAVE NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. SEDIMENT DEPOSITION SHALL BE REMOVED PERIODICALLY TO ENSURE FULL VOLUME IS AVAILABLE IN THE POND

don't think this is true

NOTES HAVE BEEN UPDATED

seed mix & soil prep. conflict w/ Geotech I think.

GRADING NOTES:

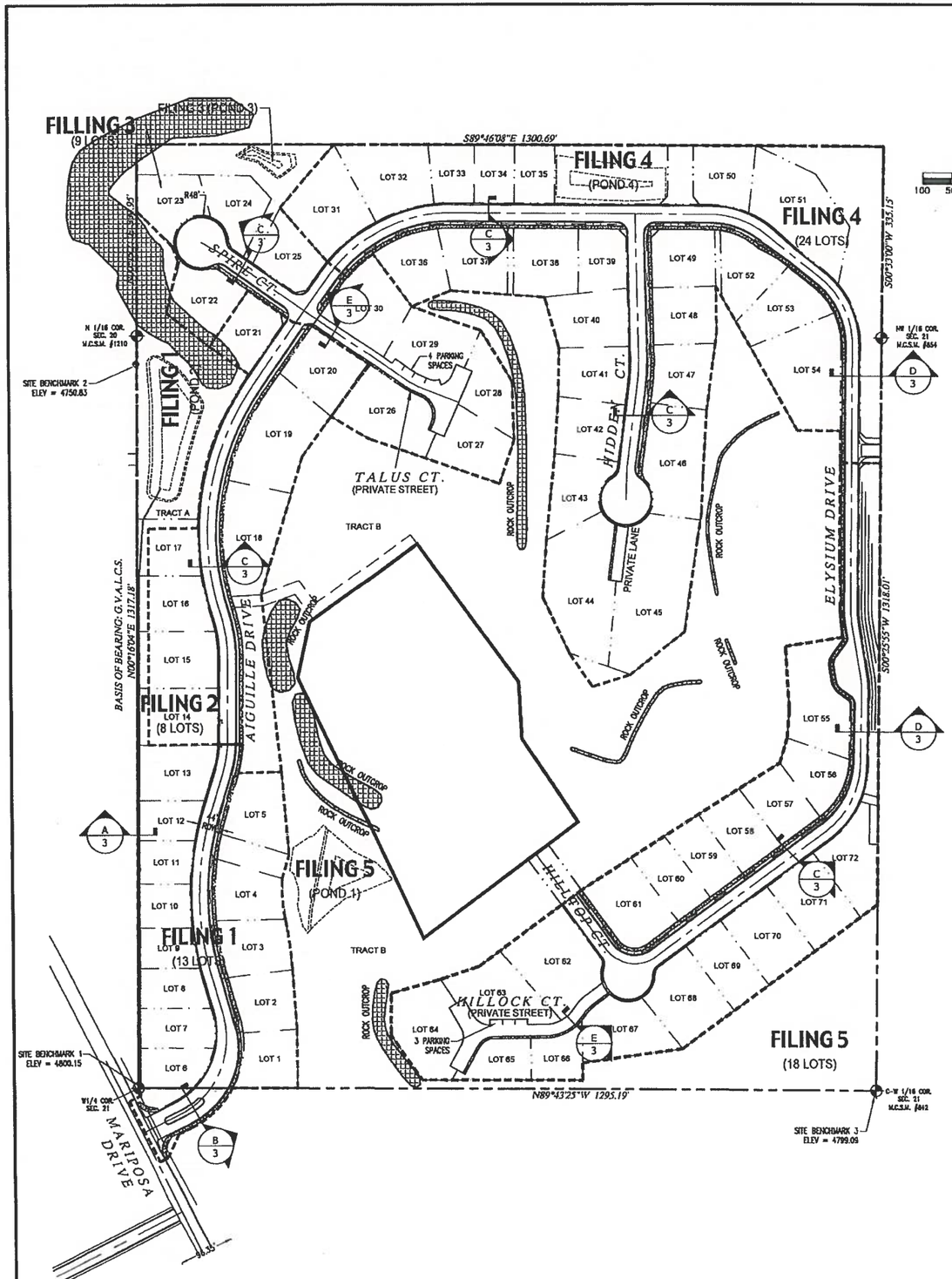
1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. CONTOURS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY. CONTOUR INTERVAL = 1 FOOT UNLESS OTHERWISE NOTED ON PLANS.
3. ALL DISTURBED AREAS THAT ARE UNSURFACED OR ARE NOT DESIGNATED AS LANDSCAPE AREAS ARE TO BE SEEDED, FERTILIZED, AND WATERED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
4. IF DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE SOILS ENGINEER SHALL BE CONTACTED FOR RECOMMENDATIONS.
5. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND STANDARDS OF THE GOVERNING AGENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DENSITY PER A.S.T.M. TEST D-1557, MOISTURE CONTENT AT TIME OF PLACEMENT SHALL NOT EXCEED 2% ABOVE NOR 3% BELOW OPTIMUM. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED, LICENSED, SOILS ENGINEER, CERTIFYING THAT THE SUBGRADE WITHIN THE AREAS TO BE PAVED HAS BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECS
6. NO PROPOSED SLOPE SHALL EXCEED THREE (3) HORIZONTAL TO ONE (1) VERTICAL. ALL SLOPED AREAS MUST BE PROTECTED FROM EROSION.
7. IF STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS ARE ENCOUNTERED ON THE SITE, TOPSOIL MAY BE PLACED TO A HEIGHT OF FIVE FEET. SILT FENCE SHALL BE PLACED AROUND THE BASE OF THE STOCKPILE AND THE STOCKPILE SHALL BE SEEDED WITH NATIVE SEED MIX IMMEDIATELY AFTER STRIPPING OPERATIONS ARE COMPLETE.
8. ON-SITE MATERIALS SUITABLE FOR FILL, REMOVAL GROVES, AND PARKING AREAS BEYOND 5' OF THE BUILDING SHALL BE COMPACTED IN ACCORDANCE WITH THE GUIDELINES PRESENTED IN THE SOILS REPORT.
9. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHY AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO ENSURE 0.75% MIN. SLOPE AGAINST ALL GUTTERS TO PREVENT PUDDLING. ANY DISCREPANCIES SHALL BE PROVIDED TO THE ENGINEER IN WRITING IMMEDIATELY.
10. SUBBASE MATERIAL FOR SIDEWALKS, CURB AND ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED TO 95% OPTIMUM DENSITY (AS DETERMINED BY MODIFIED PROCTOR METHOD)
11. SPOT ELEVATIONS REPRESENT FLOWLINE OR TOP OF ASPHALT UNLESS OTHERWISE NOTED.
12. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS WHICH DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB AND GUTTER AND UTILITIES.
13. ALL UTILITIES (MANHOLES, VALVE COVERS, CLEANOUTS, VAULTS, BOXES, ETC.) SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
14. ALL EARTH MOVING AND PLACEMENT OPERATIONS SHALL BE IN CONFORMANCE WITH THE RECOMMENDATIONS IDENTIFIED IN THE SOILS REPORT. THE CONTRACTOR SHALL HAVE A SIGNED AND SEALED COPY OF THE SOILS REPORT ON THE SITE AT ALL TIMES.
15. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.
16. WHERE NEW CURBS AND GUTTER IS BEING CONSTRUCTED ADJACENT TO EXISTING ASPHALT, THE FOLLOWING SHALL APPLY: PRIOR TO PLACEMENT OF ANY CONCRETE THE CONTRACTOR SHALL HAVE A LICENSED SURVEYOR VERIFY GRADE AND CROSS SLOPE OF THE CURB AND GUTTER PANS. THE CONTRACTOR SHALL SUBMIT THE SLOPES AND GRADES TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY SECTION WHICH DOES NOT CONFORM TO THE DESIGN OR THE TYPICAL CROSS SECTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CURB AND GUTTER POURED WITHOUT APPROVAL OF THE ENGINEER.
17. MAINTENANCE OF ANY STORMWATER MANAGEMENT FACILITY SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL GUIDELINES FOR PRIVATE STORMWATER MANAGEMENT FACILITIES AND SHALL BE THE RESPONSIBILITY OF THE OWNER AND THE ASSIGNEES.
18. SURFACE RESTORATION SHALL BE AS FOLLOWS:
   (A) FINE GRADE ALL AREAS DISTURBED BY THE CONSTRUCTION OPERATIONS AFTER COMPLETION OF BACKFILLING AND COMPACTING. AREAS WHICH ARE TO RECEIVE PAVEMENTS, SURFACING, TOPSOIL OR LANDSCAPING SHALL BE GRADED AS REQUIRED FOR INSTALLATION OF THE RESPECTIVE BASE COURSE, TREATMENT. GRADE ALL OTHER AREAS TO MATCH THE EXISTING GROUND LINE.
   (B) REPLACE AND REPAIR ANY SURFACE IMPROVEMENTS DAMAGED OR REMOVED, CONFORM TO CITY STANDARDS & SPECIFICATIONS.
19. BITUMINOUS PAVEMENT
   (A) BITUMINOUS PAVEMENT SHALL BE REMOVED TO CLEAN STRAIGHT LINES AT THE LOCATIONS INDICATED ON PLANS. WIDTH OF REMOVAL FOR PIPELINES SHALL BE KEPT TO A MINIMUM AS DICTATED BY TRENCHING OPERATIONS, BUT SHALL EXTEND AT LEAST 6 INCHES BEYOND THE LIMITS OF TRENCH EXCAVATION.
   (B) THE CUT SHALL BE MADE WITH PAVEMENT CUTTING WHEEL, SAW OR OTHER APPROVED METHOD, SO AS TO PROVIDE A REASONABLY STRAIGHT AND SQUARE EDGE.

SANITARY SEWER NOTES:

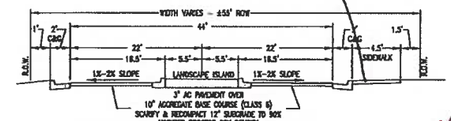
1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL SEWER SANITARY SEWER LINES SHALL BE POLYVINYL CHLORIDE PIPE (PVC), ASTM D-3034 SDR35, SEWER LINE MATERIALS AND CONSTRUCTION SHALL CONFORM TO ASTM STANDARDS AND SPECIFICATIONS.
3. DISTANCES FOR SANITARY SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. INTERSTORE, DISTANCES SHOWN ON PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT.
4. RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATIONS. PIPELINE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT AND STEEL SHIMS TO ADJUST THE MANHOLE FRAME TO THE PROPERED FINAL GRADE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS. ALL FRAMES SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
5. ALL SANITARY SEWER MAINS TESTING SHALL BE IN ACCORDANCE WITH LOCAL SPECIFICATIONS. COPIES OF ALL TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER. THE OWNER AND THE GOVERNING AUTHORITY PRIOR TO THE START OF THE WARRANTY PERIOD.
6. COMPACTION OF ALL TRENCHES WITHIN THE PROJECT SITE MUST BE ATTAINED AND COMPACTION RESULTS SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE. .
7. ALL STORM SEWER MAINS TESTING SHALL BE IN ACCORDANCE WITH LOCAL SPECIFICATIONS. COPIES OF ALL TESTING RESULTS SHALL BE PROVIDED TO THE ENGINEER, THE OWNER AND THE GOVERNING AUTHORITY PRIOR TO THE START OF THE WARRANTY PERIOD.
8. THE CONTRACTOR SHALL PROTECT THE EXISTING SEWER MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION
9. SANITARY SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.

STORM SEWER NOTES:

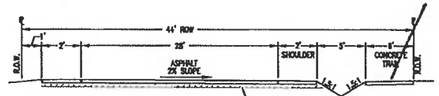
1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING:
   (A) OBTAINING ALL REQUIRED PERMITS FROM THE CITY, THE DOT, OR ANY REGULATORY AUTHORITY AT THE CONTRACTOR'S COST INCLUDING PERMITS REQUIRED FOR WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
   (B) RESTORATION OF ANY EXISTING IMPROVEMENTS INCLUDING (BUT NOT LIMITED TO) FENCES, SOD, LANDSCAPING, PAVEMENT, SPRINKLER SYSTEMS.
   (C) VERIFICATION AND PROTECTION OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF THE PROJECT.
   (D) PROVIDING AS-BUILT DRAWINGS TO THE CITY AND ENGINEER.
   (E) ALL PERMITTING, DEVELOPMENT, CONNECTION, LOCATION INSPECTION AND TESTING FEES REQUIRED FOR STORM SEWER CONSTRUCTION.
   (F) VERIFYING ALL STANDARD DETAILS CONFORM TO CURRENT CITY/COUNTY STANDARDS AND SPECIFICATIONS.
   (G) FOR OBTAINING AND UNDERSTANDING ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THE CONSTRUCTION OF THE STORM SEWER IMPROVEMENTS.
   (H) FOR SCHEDULING ALL REQUIRED INSPECTIONS.
3. THE CONTRACTOR SHALL PROTECT THE EXISTING STORM MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
4. STORM SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGEN



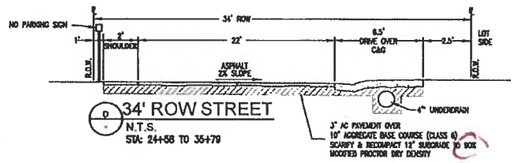
PROPOSED LAND USE TABLE			
SINGLE FAMILY LOTS (72 TOTAL)	934,944 S.F. – 21.46 AC	47.58%	OWNER: PRIVATE
TRACT A:	57,533 S.F. – 1.32 AC	2.93%	OWNER: HOA
TRACT B: OPEN SPACE	658,275 S.F. – 15.11 AC	33.50%	OWNER: HOA
FUTURE TRACTS	122,687 S.F. – 2.82 AC	6.24%	OWNER: HOA
RIGHT-OF-WAY:	191,434 S.F. – 4.39 AC	9.74%	OWNER: PUBLIC
TOTAL SITE AREA:	1,964,873 S.F. – 45.11 AC		



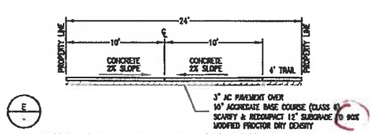
B-3 MARIPOSA DRIVE ENTRANCE
N.T.S.
STA: 0+24 TO STA: 1+62
(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 3+42)



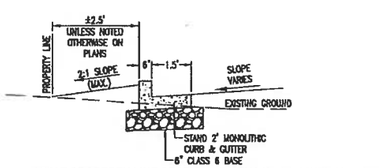
C-3 44' ROW STREET
N.T.S.
STA: 3+42 TO 24+58
STA: 35+79 TO 41+50



D-3 34' ROW STREET
N.T.S.
STA: 24+58 TO 35+79



E-3 PRIVATE STREET & LANE DETAIL
N.T.S.
TRACT C,F,J



WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

A-3 CONCRETE CURB DETAIL
N.T.S.

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY DH SURVEYS INC., DATED: JANUARY, 2006.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM: LOTS 1 – 9, BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK 6 AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = RSF-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'
   REAR = 25'
   SIDE = 7'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY GEOTECHNICAL ENGINEERING GROUP, INC. REFER TO REPORT DATED APRIL 16, 2002.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

LEGEND

FILING & LIMITS OF DEVELOPMENT DESIGNATION

PROJECT BENCHMARK

PROJECT BENCHMARK #1
LOCATED AT THE SOUTHWEST CORNER OF THE SITE.
MONUMENT ID: PLS 18480, THE W1/4 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31583.18 EASTING: 78944.74 ELEV: 4800.15 (NAVD88)

PROJECT BENCHMARK #2
LOCATED AT THE WEST PROPERTY LINE, NEAR OUTLOOK COURT.
MONUMENT ID: NCSH #1210, THE W1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 32880.35 EASTING: 78943.85 ELEV: 4750.83 (NAVD88)

PROJECT BENCHMARK #3
LOCATED AT THE SOUTHEAST CORNER OF THE SITE.
MONUMENT ID: NCSH #842, THE W1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31558.05 EASTING: 80239.95 ELEV: 4799.09 (NAVD88)

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VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-8051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No 18475

FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

NO.	REV. DATE	COMMENT	BY

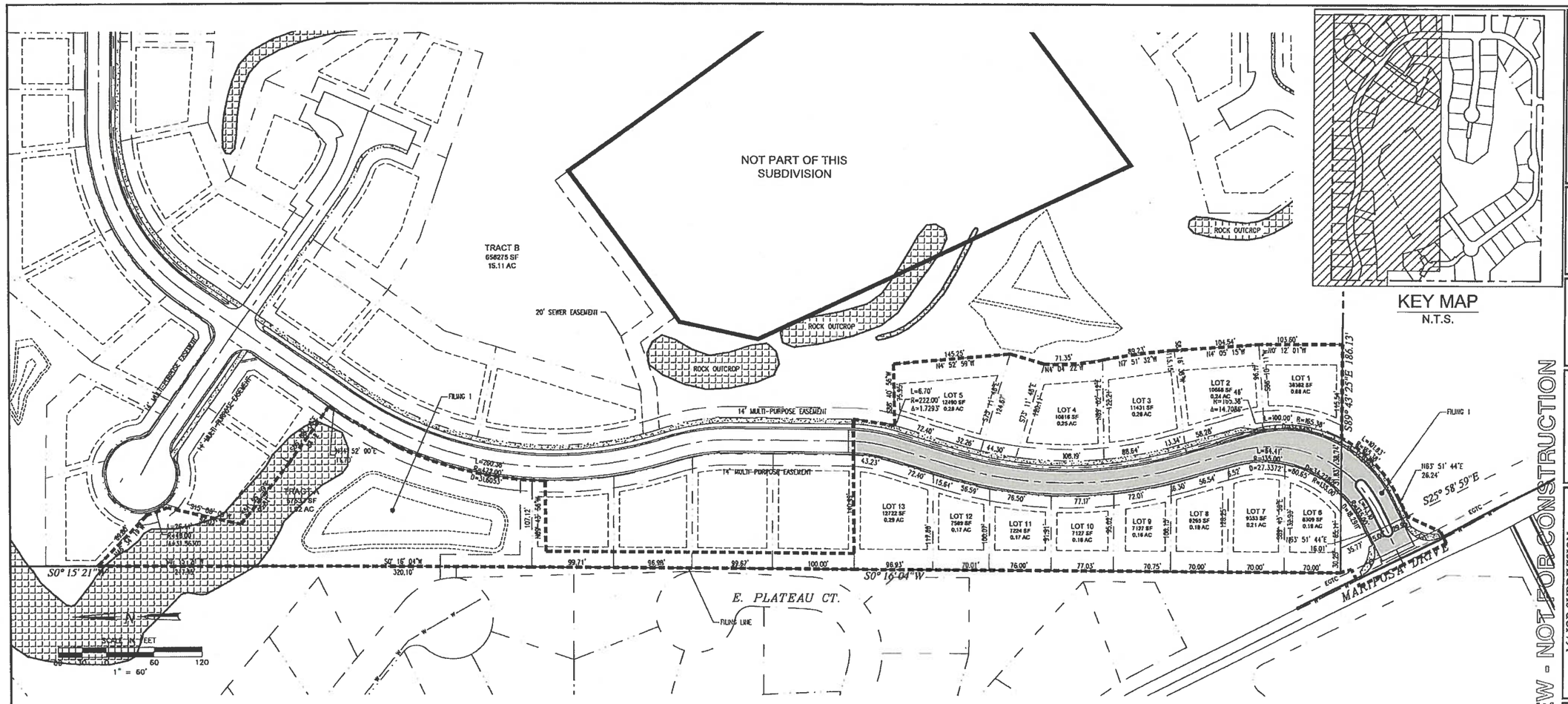
Filing Plan
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

ACCEPTANCE BLOCK
THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.
CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____

PROJECT NO F04-005
DATE 08/08/17
SCALE 1" = 100'
CAD ID 0.0cover-f1.dwg

--SHEET--
C0.2



UTILITY PROVIDERS INFORMATION		
UTILITY	*PROVIDER*	*PHONE NUMBER*
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

PROPOSED LAND USE TABLE				
USE	*AREA*	*AC*	*% OF TOTAL*	*OWNER*
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. = 45.11 AC			

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's **below.** **Call** before you dig.
Colorado 811
1-800-922-1987
co811.org

current — Not has been revised

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY GEOTECHNICAL ENGINEERING GROUP, INC., DATED APRIL 16, 2002 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET C0.2

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____

FOR REVIEW - NOT FOR CONSTRUCTION

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 15673

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MAJOR SUBDIVISION
FINAL PLAN

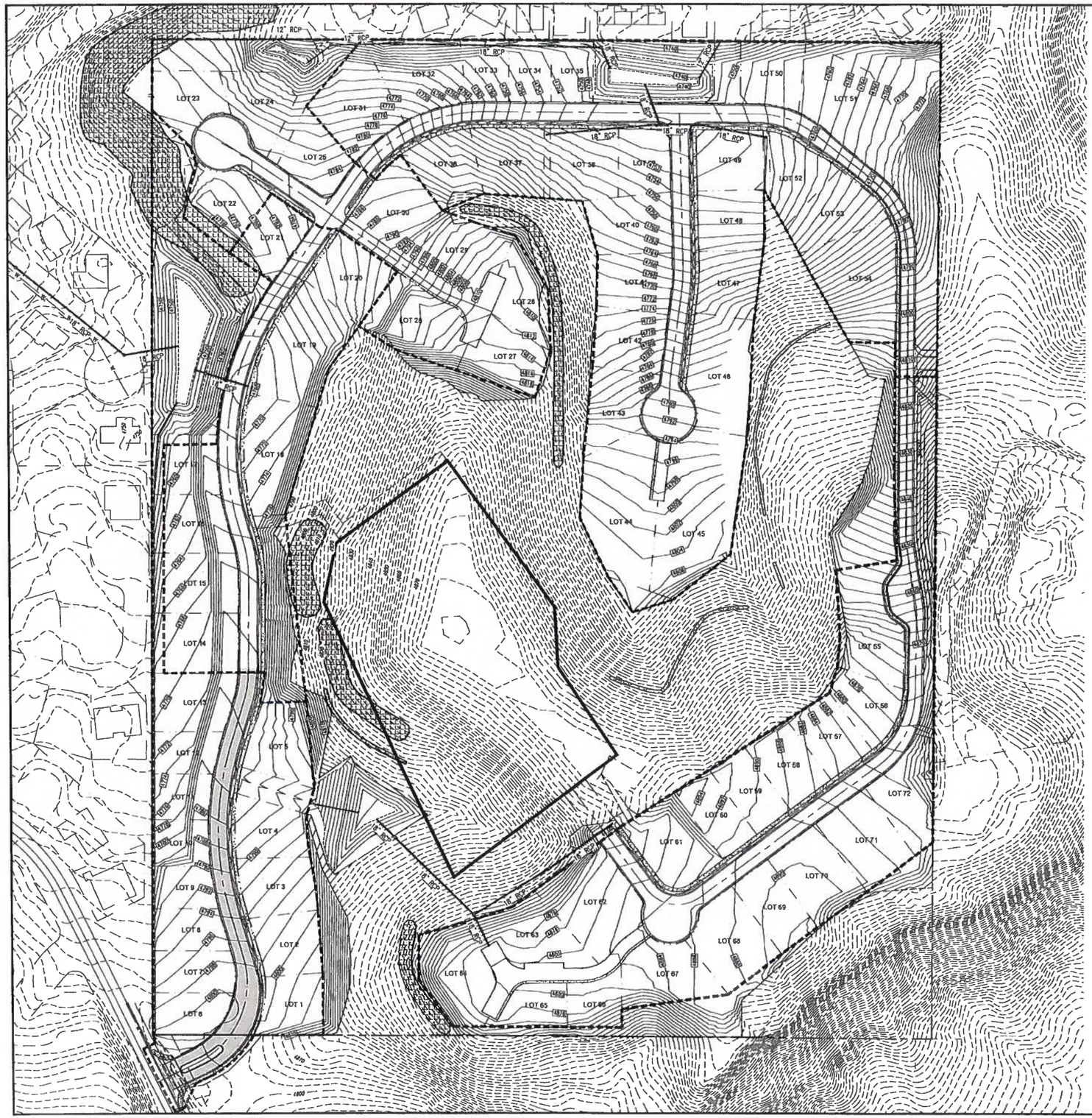
REV. DATE	COMMENT	BY

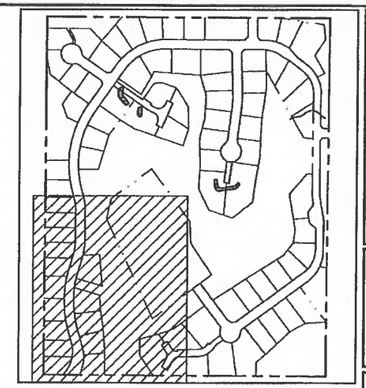
Composite Site Plan - Layout and Geometry Plan

Filing 1
Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1" = 60'
CAD ID: 1.0layout-f1.dwg

SHEET
C1.0





KEY MAP
N.T.S.

N

SCALE IN FEET
80 40 0 80 160
1" = 80'
CONTOUR INTERVAL = 2'

Notes have been revised — also storm?

GENERAL NOTES

1. ALL CONSTRUCTION TO CONFORM TO THE CURRENT CITY OF GRAND JUNCTION DEPARTMENT OF PUBLIC WORKS AND PLANNING STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR MUST CONTACT CITY OF GRAND JUNCTION TRAFFIC OPERATIONS SUPERVISOR PRIOR TO CONSTRUCTION OR PLACEMENT OF TRAFFIC CONTROL DEVICES/FEATURES (STRIPING, SIGNALS, MEDIANS, ETC.) FOR CONSTRUCTION IN THE RIGHT-OF-WAY ONLY.
3. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY, DATED 8/2/12 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE SANITARY SEWER, SEE SANITARY SEWER PLAN & PROFILE.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE FILING PLAN.
8. REFER TO SHEETS C0.1, C6.0 AND C6.2 FOR STORMWATER MANAGEMENT CONTROL PLANS AND EROSION CONTROL NOTES.

current

where is grading proposed for filing 1 construction?

(Note has been added)

FOR REVIEW - NOT FOR CONSTRUCTION

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

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CITY DEVELOPMENT ENGINEER _____ DATE _____

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• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
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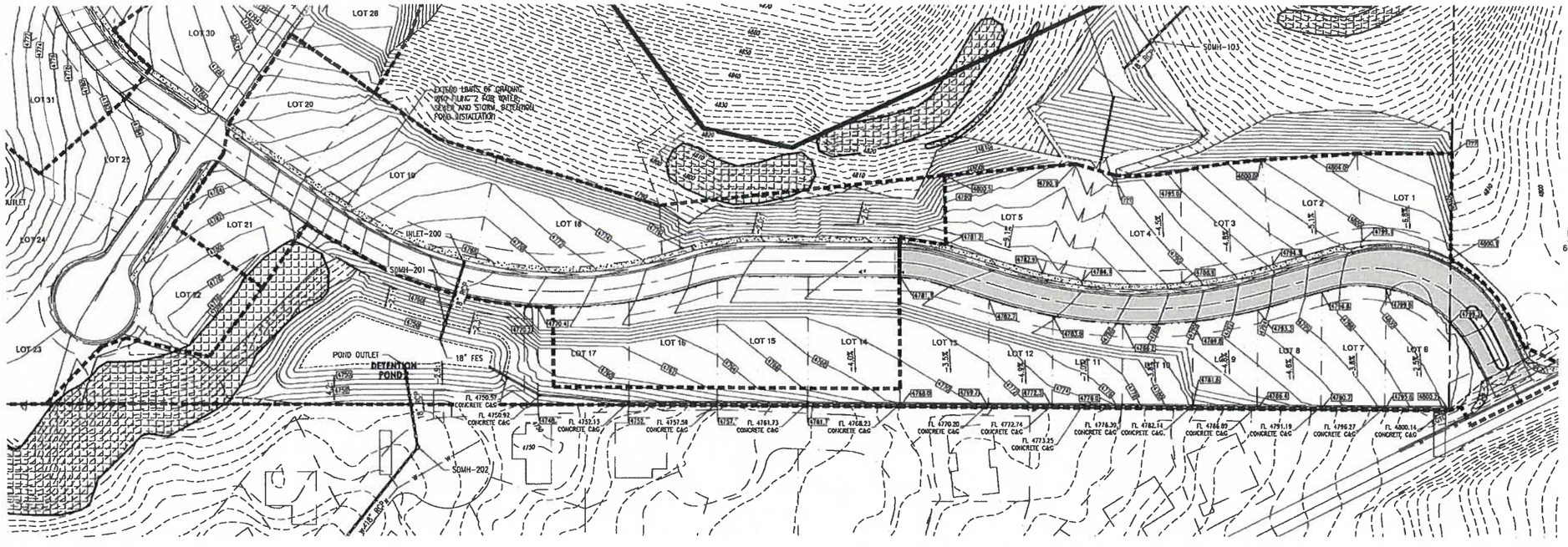
MAJOR SUBDIVISION
FINAL PLAN

REV. DATE	COMMENT	BY

Overall Grading Plan Filings 1 - 5
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-005
DATE: 08/08/17
SCALE: 1"= 80'
CAD ID: 2.0grad-f1.dwg

SHEET
C2.0



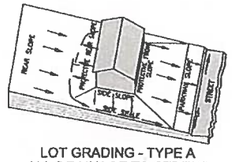
FILING 1 TOF TABLE			
Lot	Grading	Min. TOF	Max. TOF
1	Type A	4801.00	4801.50
2	Type A	4798.70	4799.20
3	Type A	4793.30	4793.80
4	Type A	4787.90	4788.40
5	Type A	4783.60	4784.10
6	Type C	4801.60	4802.10
7	Type C	4799.30	4799.80
8	Type C	4796.00	4796.50
9	Type C	4792.50	4793.00
10	Type C	4789.00	4789.50
11	Type C	4786.00	4788.50
12	Type C	4784.30	4784.80
13	Type C	4783.10	4783.60

current

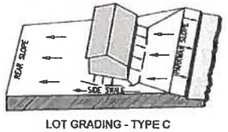
Note has been revised

GENERAL NOTES:

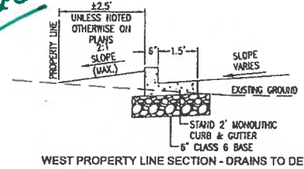
1. ALL CONSTRUCTION TO CONFORM TO THE CURRENT CITY OF GRAND JUNCTION DEPARTMENT OF PUBLIC WORKS AND PLANNING STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR MUST CONTACT CITY OF GRAND JUNCTION TRAFFIC OPERATIONS SUPERVISOR PRIOR TO CONSTRUCTION OR PLACEMENT OF TRAFFIC CONTROL DEVICES/FEATURES (STRIPING, SIGNALS, MEDIANS, ETC.) FOR CONSTRUCTION IN THE RIGHT-OF-WAY ONLY.
3. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY, DATED 8/2/12 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE SANITARY SEWER, SEE SANITARY SEWER PLAN & PROFILE.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE SHEETS C2.2



LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.

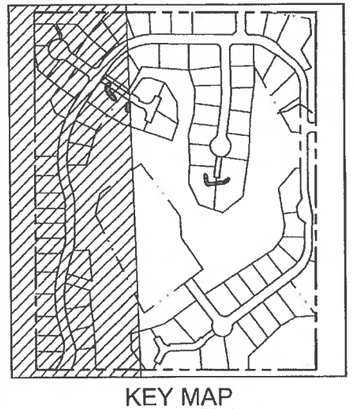


LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.



WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

CONCRETE CURB DETAIL
N.T.S.



KEY MAP
N.T.S.

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS, ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____

FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

REV. DATE	COMMENT	BY

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 15819

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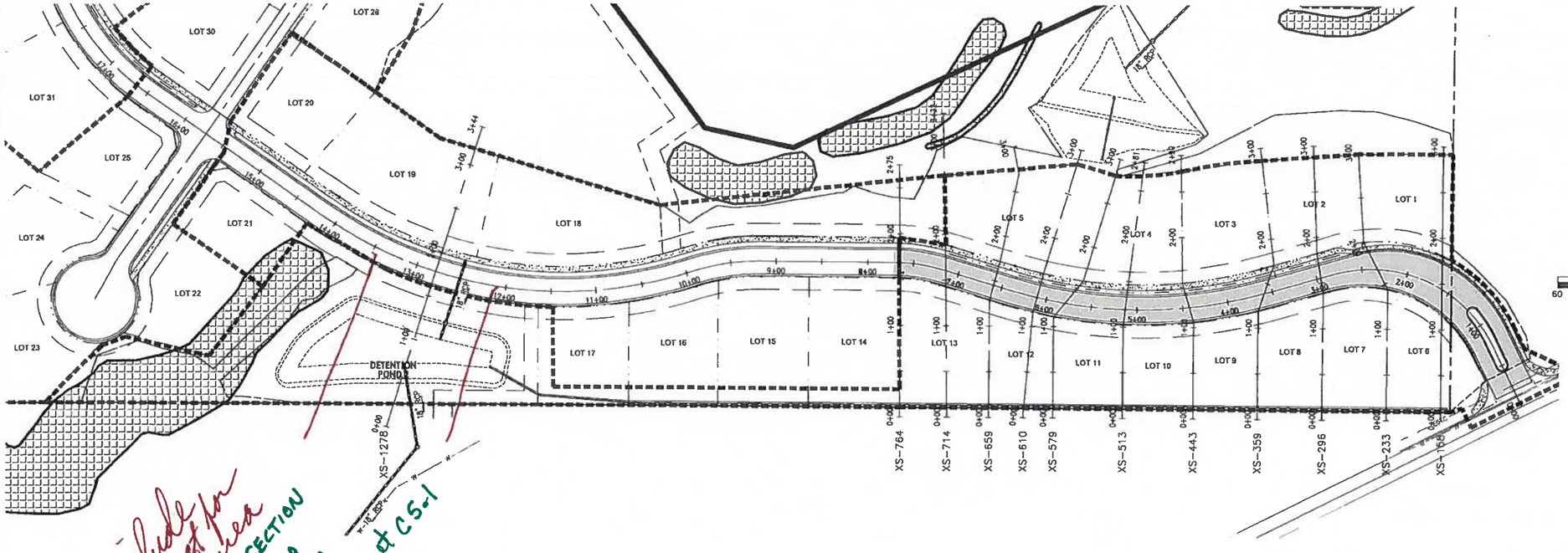
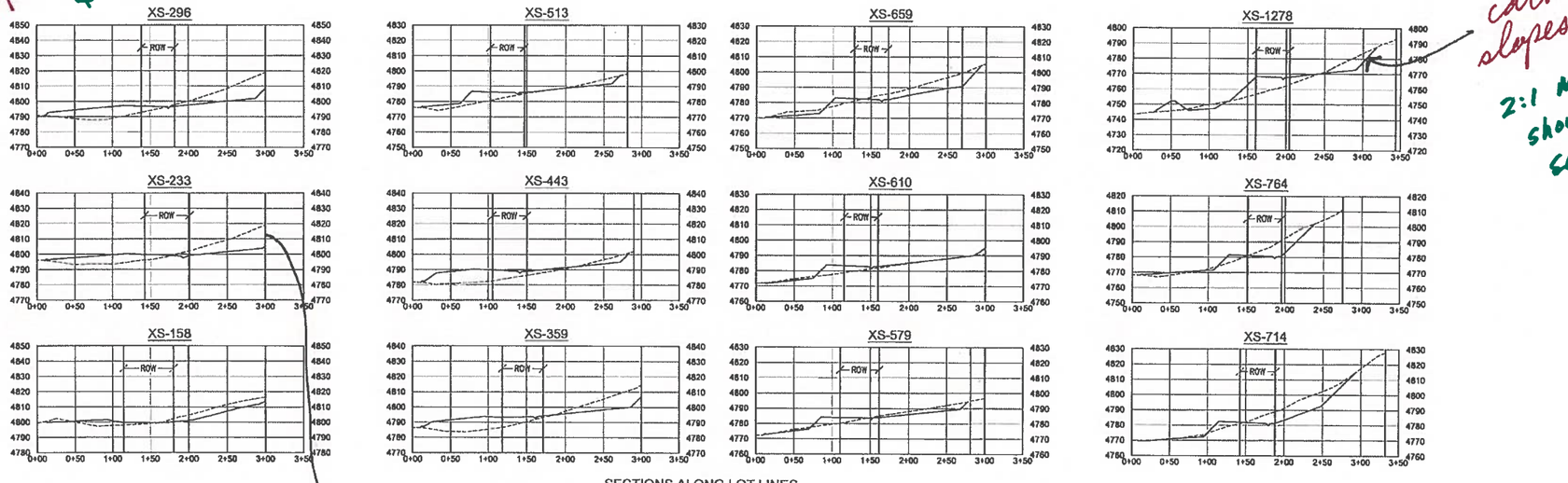
Grading Plan Filing 1
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-008
DATE: 08/08/17
SCALE: SEE PLAN
CAD ID: 2.0grad-f1.dwg

--SHEET--
C2.1



include x-sect for pond area
SEE SECTION XS-1278 Below
And Sheet C5-1



call out slopes, typical
2:1 Max shown in sections.

SECTIONS ALONG LOT LINES
SCALE: 1" = 80' HORIZONTAL
1" = 40' VERTICAL

show catch points
x-section expanded

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

FOR REVIEW - NOT FOR CONSTRUCTION

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• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2284 Patterson Road, Suite 201
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MAJOR SUBDIVISION
FINAL PLAN

REV. DATE	COMMENT	BY

Grading Plan Filing 1 - Road Cross Sections
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO. F04-005
DATE 06/08/17
SCALE SEE PLAN
CAD ID 2.0grad-f1.dwg

~SHEET~
C2.2

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY GEOTECHNICAL ENGINEERING GROUP, INC., DATED APRIL 18, 2002 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET 3
6. HOUSES CONSTRUCTED ON LOTS 26-29 AND LOTS 55-72 SHALL HAVE SPRINKLER SYSTEMS INSTALLED. A 1" CUSTOMER WATER SERVICE LINE AND ¾" WATER METER WILL BE UTILIZED IN ACCORDANCE WITH UTE WATER CONSERVANCY DISTRICT STANDARDS & SPECIFICATIONS.

FILING NOTES

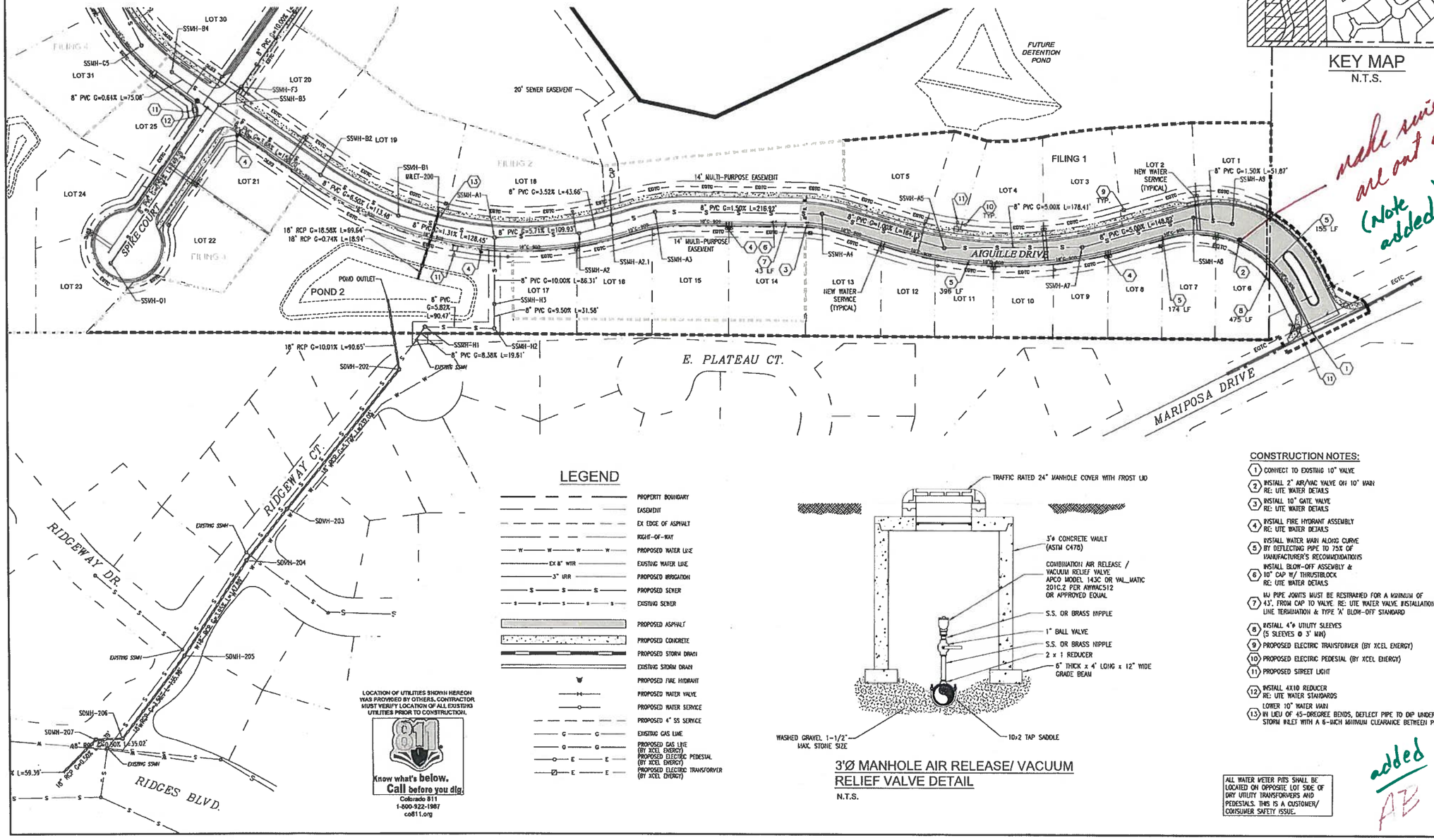
1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
2. INSTALL SANITARY SEWER FROM SSMH-A9 TO EXISTING MAN-HOLE IN RIDGEWAY COURT AS SHOWN INCLUDING LINE TO MAN-HOLE B-1.
3. END WATER LINE CONSTRUCTION AT THE MIDDLE OF LOT 14 AS SHOWN.

N

SCALE IN FEET
60 30 0 60 120
1" = 60'



KEY MAP
N.T.S.



LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE
- EX 8" WTR — EXISTING WATER LINE
- 3" IRR — PROPOSED IRRIGATION
- PROPOSED SEWER
- EXISTING SEWER
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER SERVICE
- PROPOSED 4" SS SERVICE
- G — EXISTING GAS LINE
- PROPOSED GAS LINE (BY XCEL ENERGY)
- E — PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
- PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.
Colorado 811
1-800-922-1987
co811.org

3'Ø MANHOLE AIR RELEASE/ VACUUM RELIEF VALVE DETAIL
N.T.S.

CONSTRUCTION NOTES:

1. CONNECT TO EXISTING 10" VALVE
2. INSTALL 2" AIR/VAC VALVE ON 10" MAIN RE: UTE WATER DETAILS
3. INSTALL 10" GATE VALVE RE: UTE WATER DETAILS
4. INSTALL FIRE HYDRANT ASSEMBLY RE: UTE WATER DETAILS
5. INSTALL WATER MAIN ALONG CURVE BY DEFLECTING PIPE TO 75% OF MANUFACTURER'S RECOMMENDATIONS
6. INSTALL BLOW-OFF ASSEMBLY & 10" CAP W/ THRUSTBLOCK RE: UTE WATER DETAILS
7. MJ PIPE JOINTS MUST BE RESTRAINED FOR A MINIMUM OF 43' FROM CAP TO VALVE RE: UTE WATER VALVE INSTALLATION, LINE TERMINATION & TYPE 'A' BLOW-OFF STANDARD
8. INSTALL 4'ø UTILITY SLEEVES (5 SLEEVES @ 3' MIN)
9. PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)
10. PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
11. PROPOSED STREET LIGHT
12. INSTALL 4X10 REDUCER RE: UTE WATER STANDARDS
13. LOWER 10" WATER MAIN IN LIEU OF 45-DEGREE BENDS, DEFLECT PIPE TO CAP UNDER STORM INLET WITH A 6-INCH MINIMUM CLEARANCE BETWEEN PIPES.

ALL WATER METER PITS SHALL BE LOCATED ON OPPOSITE LOT SIDE OF DRY UTILITY TRANSFORMERS AND PEDESTALS. THIS IS A CUSTOMER/ CONSUMER SAFETY ISSUE.

make sure ring & cover are out of curb & gutter (Note added)

added AB

FOR REVIEW - NOT FOR CONSTRUCTION

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY

Composite Site Plan - Utility and Water Plan
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-008
DATE: 06/08/17
SCALE: 1"= 60'
CADD: 3.0utility-f1.dwg

SHEET
C3.0

callout to saw cut & lip remove conc. carefully & pour against asph.
Note added.

duplicate? one is vert. curb. other is rollover

show asphalt cross slopes

shown on typical section.

need c&g profile

detail on walk transition dimension added

show waypoint cross slopes between sections added

show clearly what gets built with phase I. (added)

storm cross (Now shown)

Now shown

MH data

MH data

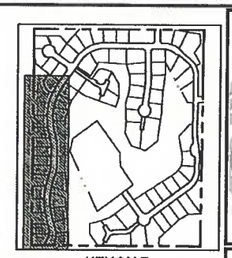
A B added

CONSTRUCTION NOTES:

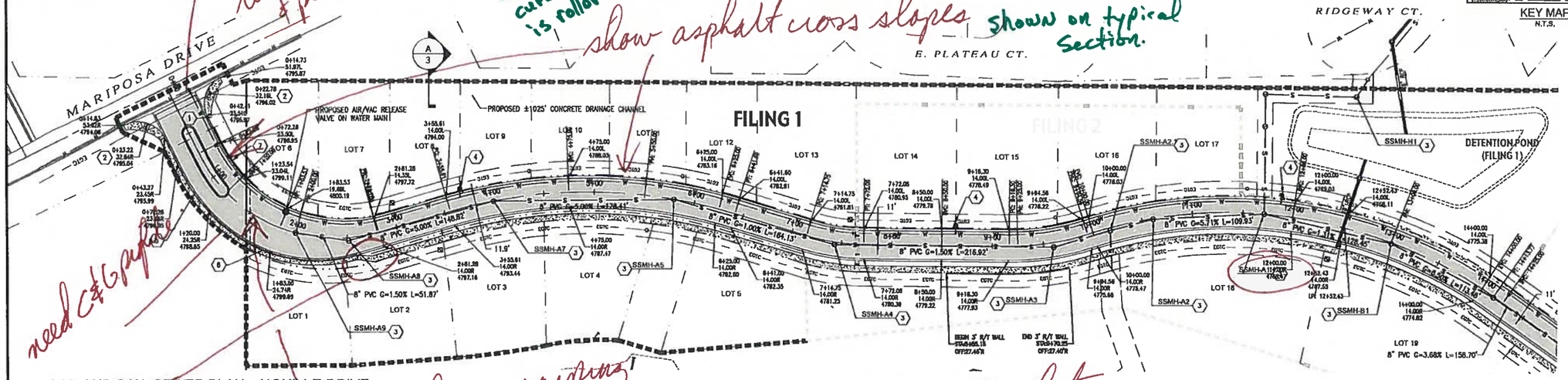
1. INSTALL STOP SIGN & STREET SIGN RE: MUTCD
2. CONSTRUCT HANDICAPPED RAMP RE: CITY OF GJ DETAILS
3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT RE: UTE WATER DETAILS
5. INSTALL 6" STANDARD CURB & GUTTER W/ATTACHED SIDEWALK – 87 LF
6. INSTALL 8" DRIVE-OVER CURB & GUTTER W/ATTACHED SIDEWALK – 159 LF
7. INSTALL 6" STANDARD CURB & GUTTER 74 LF

GENERAL NOTES:

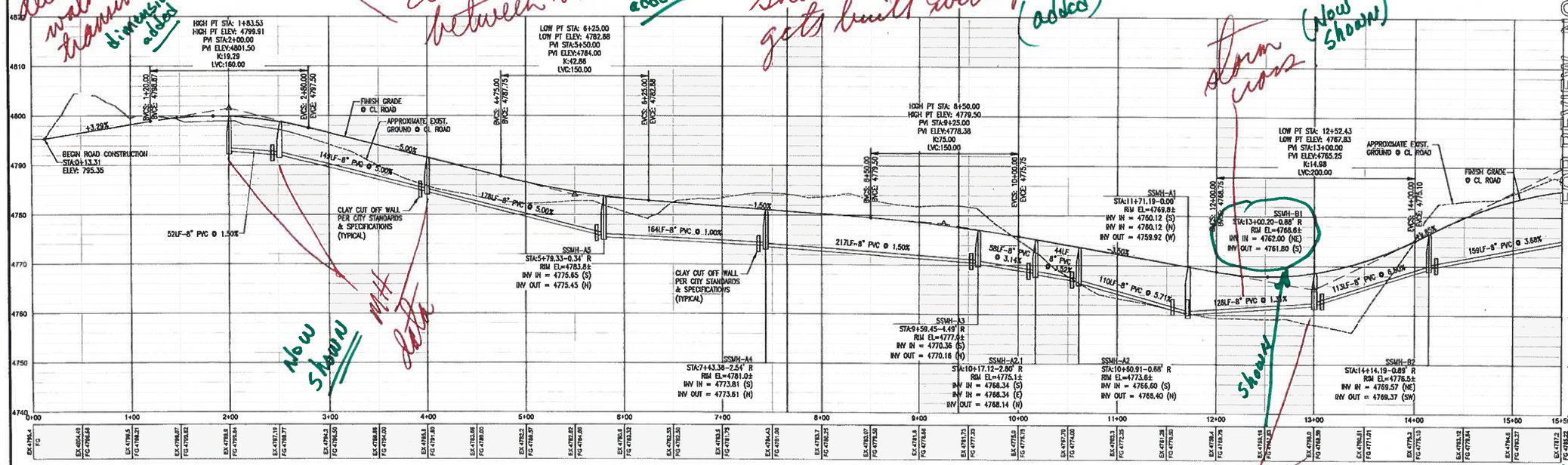
1. REFERENCE SHEET 2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET C0.2 FOR STREET SECTIONS
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION



KEY MAP
N.T.S.



ROAD AND SAN. SEWER PLAN - AIGUILLE DRIVE
SCALE: 1" = 50'



ROAD AND SAN. SEWER PROFILE - AIGUILLE DRIVE
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

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MAJOR SUBDIVISION
FINAL PLAN

NO.	DESCRIPTION	BY	DATE

Road & Sanitary Sewer Plan & Profile
Aiguille Drive
Pinnacle Ridge Subdivision Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

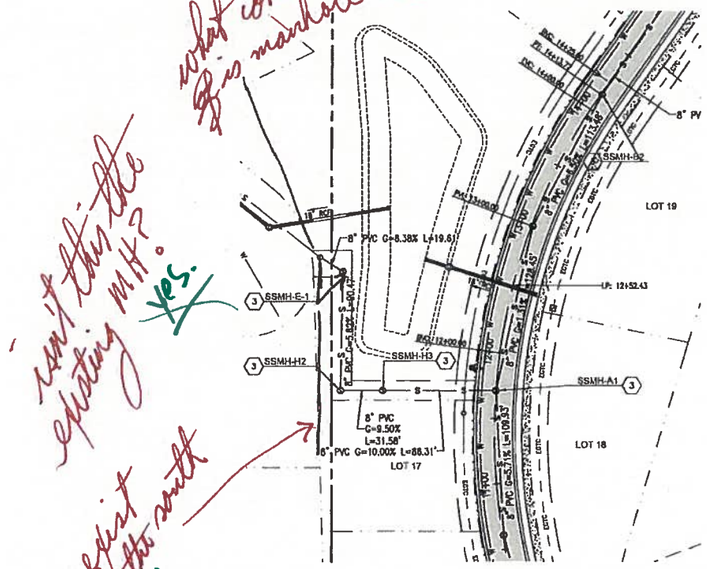
PROJECT NO FB4-006
DATE 05/02/17
SCALE 1" = 50'
CAD ID 4.0as-road-f1.dwg

SHEET
C4.0

what condition is manhole? (unknown)

can't there be existing MH? yes.

show exist san. to the south added.



ROAD AND SAN. SEWER PLAN - RIDGEWAY CT. CONNECTION

SCALE: 1" = 50'

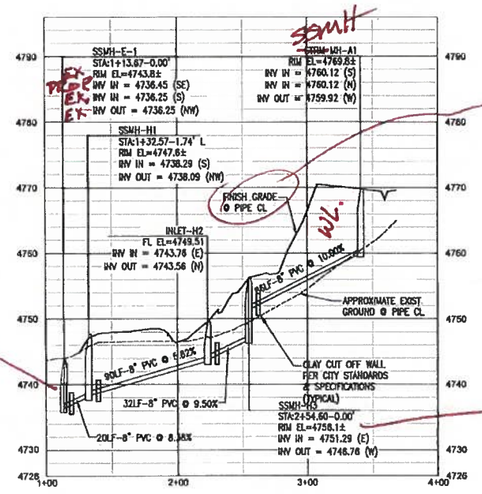
tag notes added.

GENERAL NOTES:

1. REFERENCE SHEET 2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET ø FOR STREET SECTIONS
10. SEE SHEETS 4 & 5 FOR ALL EASEMENT INFORMATION

CO.2 where? Revised

show slopes in steepest area. added



ROAD AND SAN. SEWER PROFILE - RIDGEWAY CT. CONNECTION

HORIZONTAL SCALE: 1" = 50'

VERTICAL SCALE: 1" = 5'

SSMH ?

EXIST. ? yes

DROP MH. added

Has been added

4/5

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

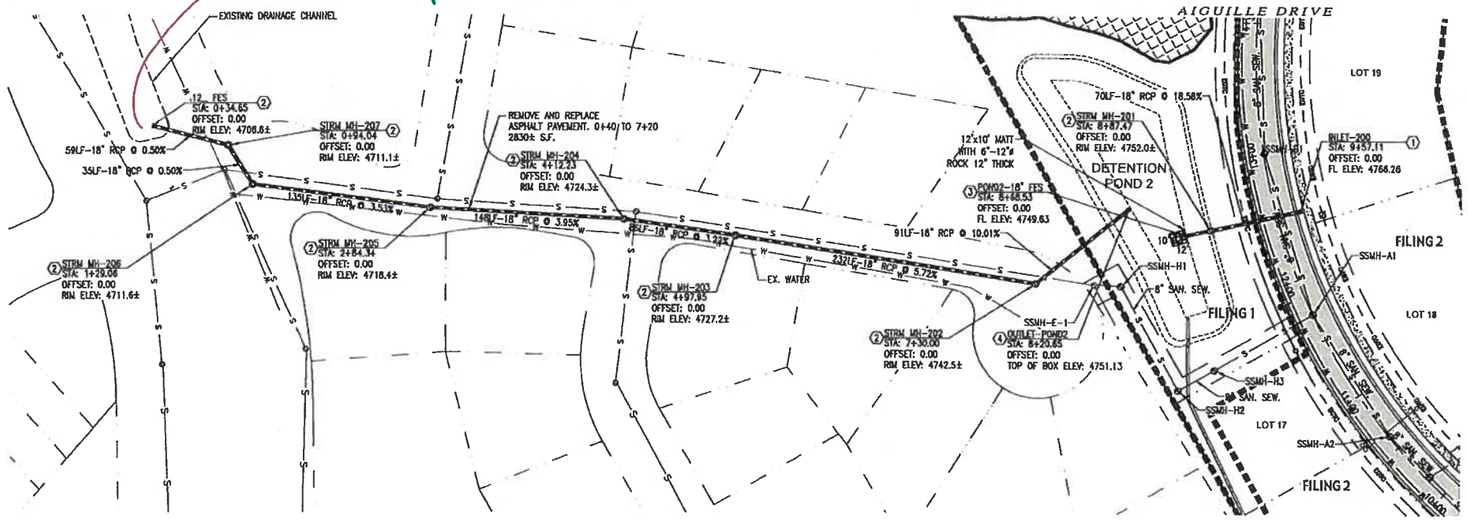
REV.	DATE	COMMENT

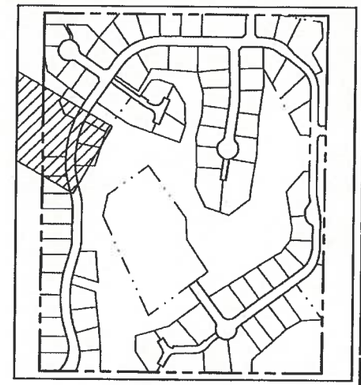
Road & Sanitary Sewer Plan & Profile
Ridgeway Court Sewer Connection
Pinnacle Ridge Subdivision Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

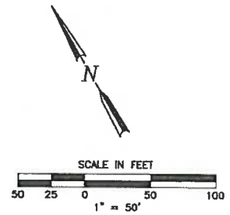
PROJECT NO F04-008
DATE 05/02/17
SCALE 1" = 50'
CAD ID 4.0ss-road-f1.dwg

SHEET
C4.1

FES. erosion control. info. added



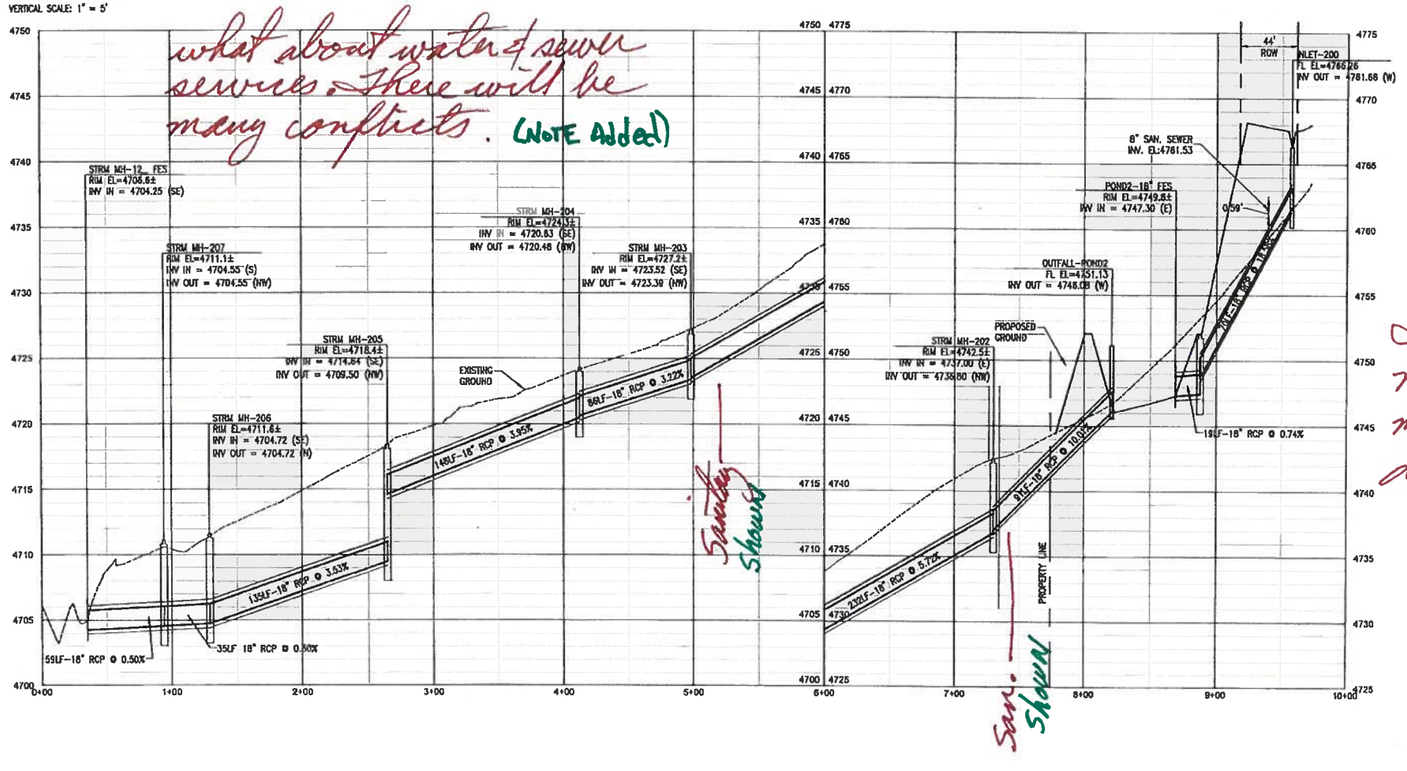




STORM SEWER PLAN AND PROFILE - POND 2 OUTFALL

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

what about water & sewer services. There will be many conflicts. (NOTE Added)



GENERAL NOTES:

1. REFERENCE SHEET 2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. STATIONS ARE IN REFERENCE TO CENTER LINE OF ROAD, UNLESS OTHERWISE INDICATED.
4. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.

CONSTRUCTION NOTES:

(1) INSTALL 3'X4' AREA INLET RE: CITY STD. DETAILS

(2) INSTALL 48"ø MANHOLE RE: CITY STD. DETAILS

(3) INSTALL FES WITH RIP RAP AT SHOWN SIZE RE: CITY STD. DETAILS

(4) INSTALL POND OUTLET STRUCTURE. RE: SEE DETAIL ON SHEET 21

This sheet needs a lot more detail. Will review more thoroughly when more detail is provided.
- typical crosssection
- limits of street repair 3' wide SHOWN
- identify existing asphalt
- see the SSID manual.

AB Added.

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

BY	COMMENT	PREV. DATE

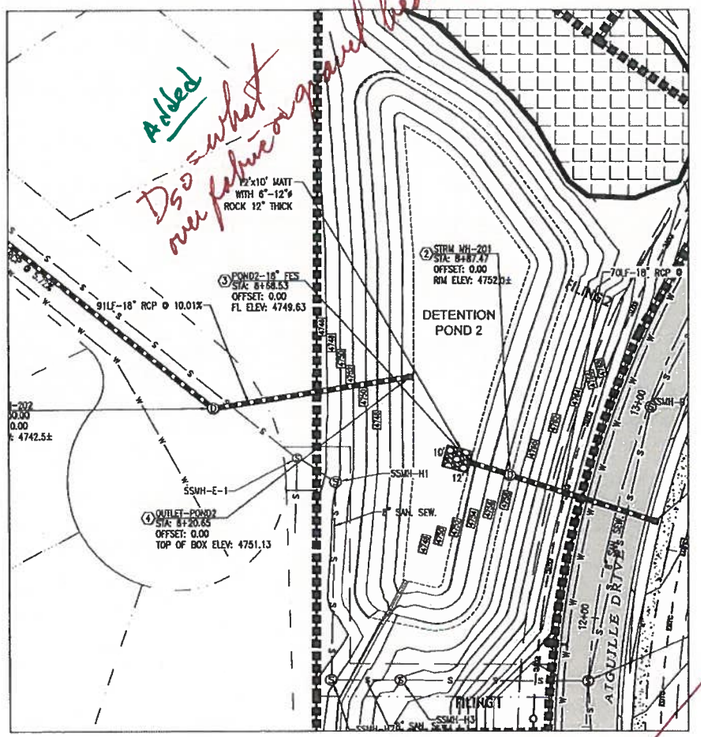
Storm Sewer Plan and Profile
Pond 2 Outfall

Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO F04-006
DATE 06/08/17
SCALE 1"=50'
CADD 5.0storm-f1.dwg

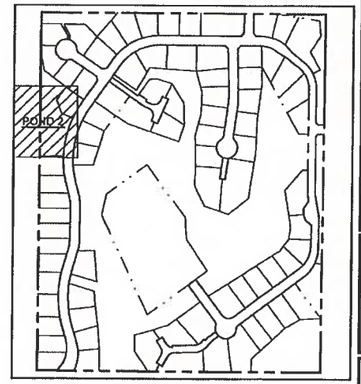
~SHEET~
C5.0

Added
D50 = what was specified on grading & drainage plan



POND 2 - PLAN
SCALE: 1" = 30'





KEY MAP
N.T.S.

what about other ponds? only pond 2 info. now.

opening size removable

need plate detail for 10 & 100 yr. added

OUTLET STRUCTURE TABLES

POND	A	B	C	D	E	F	G	H	I
POND 1	4799.00	4801.50	4802.31	4804.31	6"	32"	1	7	5/8"
POND 2	4747.00	4748.83	4749.39	4750.94	20"	21"	1	4	7/8"
POND 3	4751.00	4752.64	4752.88	4754.06	6"	21"	1	4	5/16"
POND 4	4739.00	4742.19	4742.73	4745.13	20"	35"	1	8	13/16"

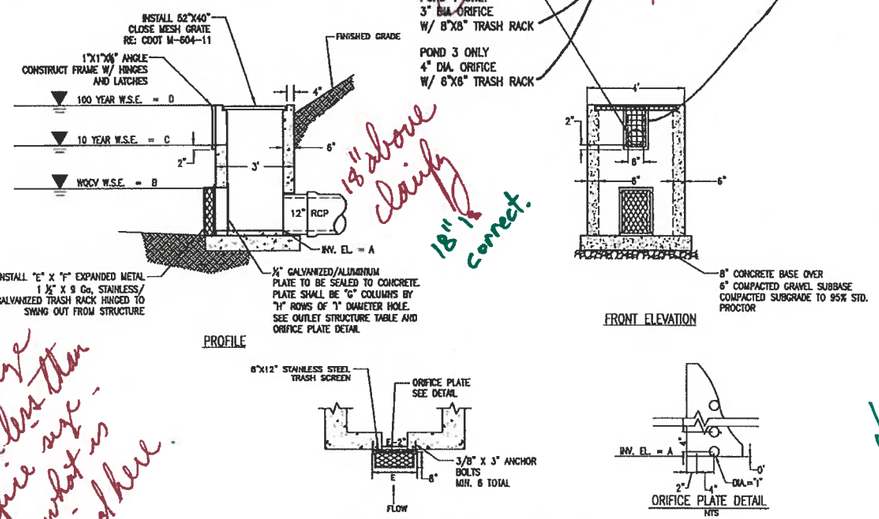
Got it.

only Pond 2 info. given Now.

PONDS' SUMMARY TABLES

POND 2	VOLUME (CF)	WSEL (FT)	PEAK DISCHRGE FLOW (CFS)	ALLOWABLE PEAK DISCHRGE FLOW (CFS)
WQCV	7,575	4848.83	NA	NA
10 YEAR	13,992	4748.32	0.52	1.87
100 YEAR	31,059	4749.95	4.21	7.79

these conflict with above table



POND OUTLET STRUCTURE DETAIL
N.T.S.

opening size to be much less than WQ orifice size - Unsure what is specified here.

details have been simplified for this

GENERAL NOTES:
1. REFERENCE SHEET 2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. STATIONS ARE IN REFERENCE TO CENTER LINE OF ROAD, UNLESS OTHERWISE INDICATED.
4. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
5. REFER TO SHEET C5.0 FOR CONSTRUCTION KEY NOTES.

Has been added.
AB

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FOR REVIEW - NOT FOR CONSTRUCTION

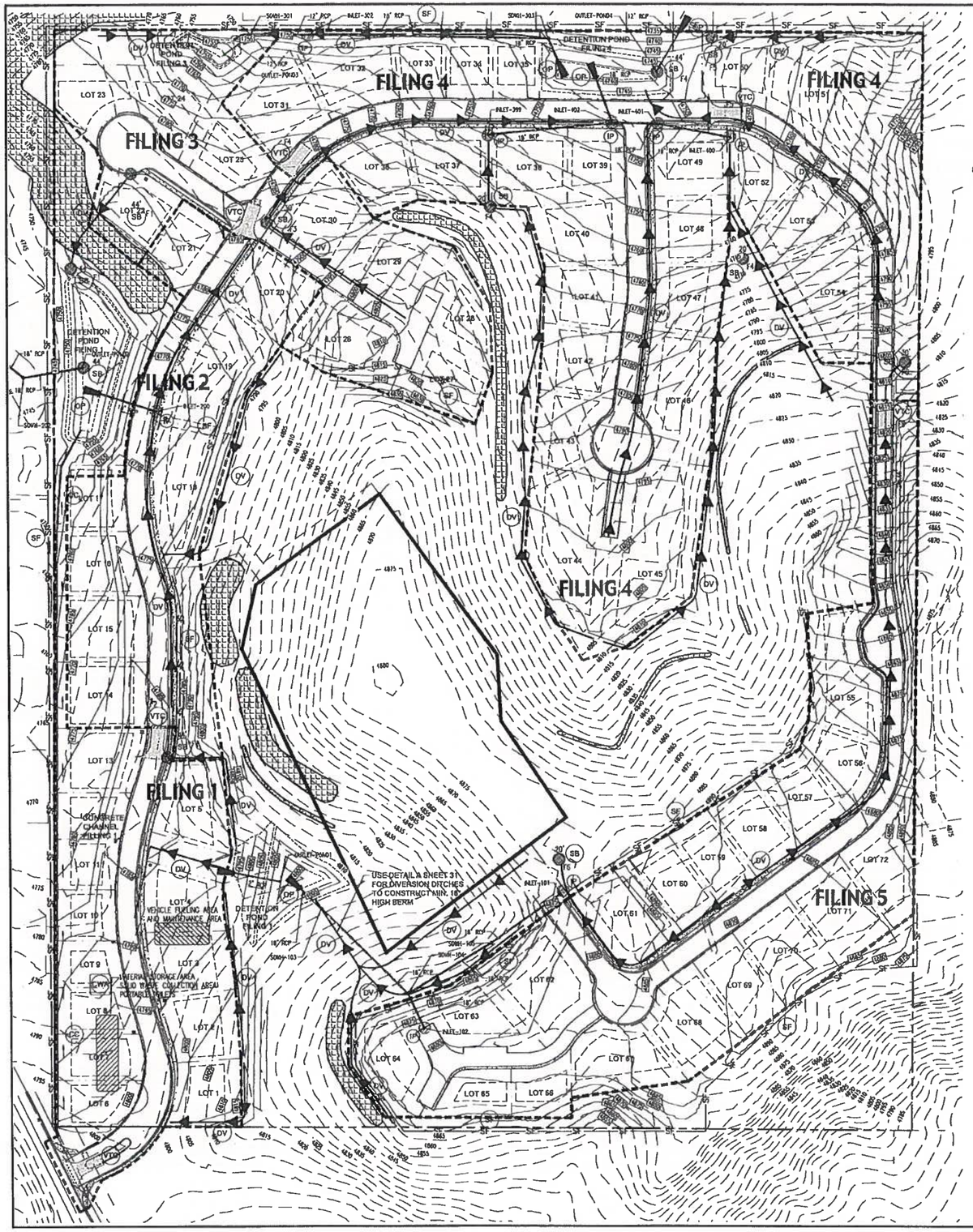
MAJOR SUBDIVISION FINAL PLAN

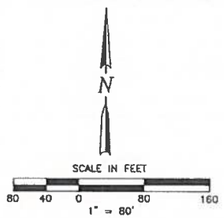
NO.	REV. DATE	COMMENT	BY

Storm Sewer Plan
Pond 1 and 2 Details
Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO. F04-005
DATE 05/08/17
SCALE 1" = 30'
CAD ID 5.0storm-f1.dwg

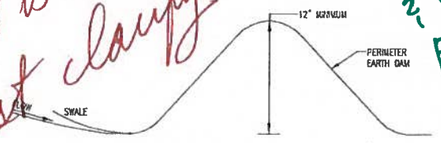
-SHEET-
C5.1





- what is disturbed w/ each phase?
- Must clarify.

Plan is to do work in all Filings & work with Mark Barsland to implement EC & BMP's....



EARTH DAM SECTION
SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
SILT FENCE	SF	SF
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
VEHICLE TRACKING CONTROL	SB	25" — INVERT DIAMETER F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

GENERAL NOTES:

1. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL REQUIRED EASEMENTS, RIGHT AND/OR RIGHTS-OF-WAY PURSUANT TO THE DISCHARGE FROM THE SEDIMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS AND GRADING OR OTHER WORK TO BE PERFORMED ON ADJACENT OR DOWNSTREAM PROPERTIES AFFECTED BY THE PLAN.
2. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1); FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE, THE IN-PLACE SEDIMENT CONTROL MEASURES WILL BE MAINTAINED ON A CONTINUING BASIS UNTIL THE SITE IS PERMANENTLY STABILIZED AND ALL PERMIT REQUIREMENTS ARE MET.
3. REFER TO CITY OF GRAND JUNCTION STANDARD DRAWINGS AND SPECIFICATIONS.
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE 5-2-1 DRAINAGE AUTHORITY. CONTACT MARK BARSLUND 970-201-1362

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

FOR REVIEW

MAJOR SUBDIVISION
FINAL PLAN

REV. DATE	COMMENT	BY

Overall Construction Stormwater Management Plan

Pinnacle Ridge Subdivison
Filing 1

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-008
DATE: 07/08/15
SCALE:
CAD ID: 8.0swm-f1.dwg

-SHEET-
C6.0

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 15203

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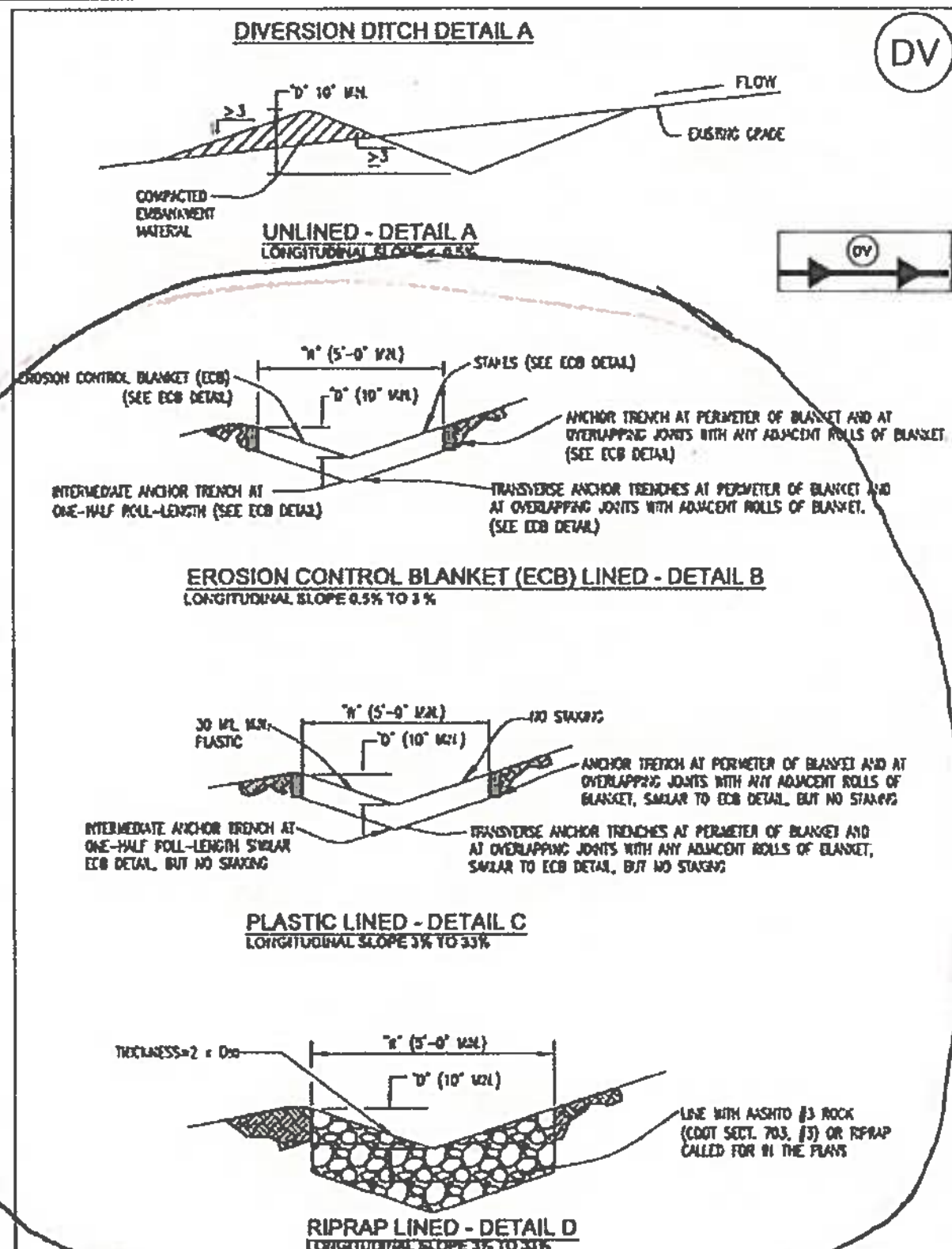
DIVERSION DITCH DETAIL A (DV)



DIVERSION DITCH INSTALLATION NOTES
1. SEE PLAN VIEW FOR:
   - LOCATION OF DIVERSION DITCH.
   - TYPE OF DITCH (UNLINED, ECB PLASTIC LINED OR RIPRAP LINED)
   - LENGTH OF EACH TYPE OF DITCH.
   - DEPTH, "D", AND WIDTH, "W" DIMENSIONS.
   - FOR ECB LINED DITCH, EROSION CONTROL BLANKET TYPE (SEE ECB DETAIL).
   - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, "D 50".
2. SEE DRAINAGE PLANS FOR DETAILS OF ANY PERMANENT CONVEYANCE FACILITIES OR DIVERSION DITCHES EXCEEDING A 2 YEAR FLOOD 10 CFS.
3. DIVERSION DITCHES INDICATED ON INITIAL SWMP PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES.
4. FOR ECB LINED DITCHES, INSTALLATION OF EROSION CONTROL BLANKET SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.
5. IN LOCATIONS WHERE CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION DITCH, THE PERMITTEES SHALL INSTALL A TEMPORARY CULVERT WITH A MINIMUM DIAMETER OF 12-INCHES.

DIVERSION DITCH MAINTENANCE NOTES
1. THE SWMP MANAGER SHALL INSPECT DIVERSION DITCHES WEEKLY AND DURING AND AFTER ANY STORM, MAKE REPAIRS AS NECESSARY.
2. DIVERSION DITCHES ARE TO REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION, OR IF APPROVED BY LOCAL JURISDICTION MAY BE LEFT IN PLACE.
3. IF DIVERSION DITCHES ARE REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, DRILL SEEDED, HAY CRIMPED MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

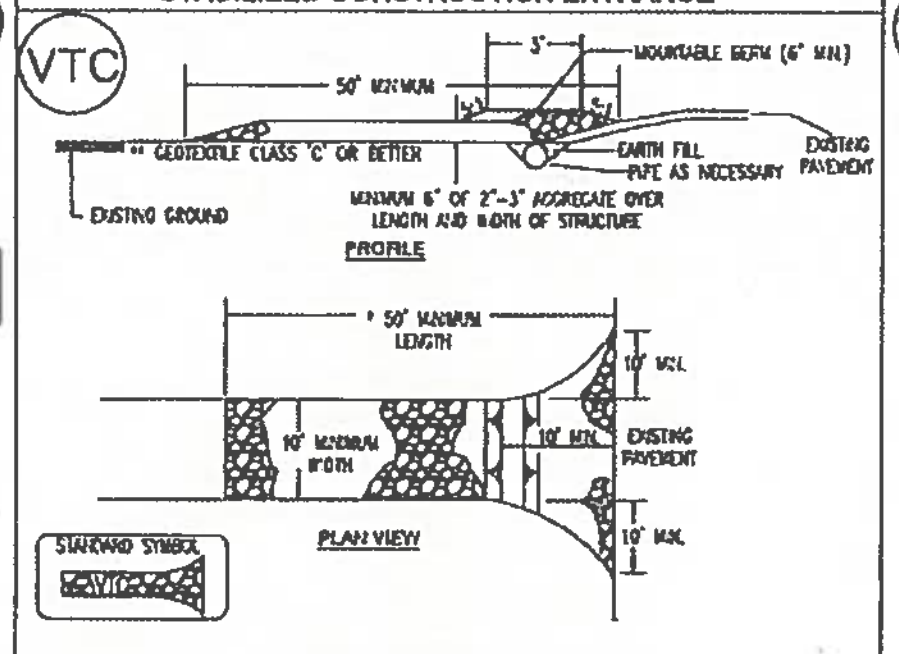
DETAIL BASED ON DETAILS PROVIDED BY DOUGLAS COUNTY

Urban Drainage and Flood Control District Drainage Criteria Manual (V.3)	Figure C5-3 DIVERSION DITCH AND DIKE

are these used anywhere?

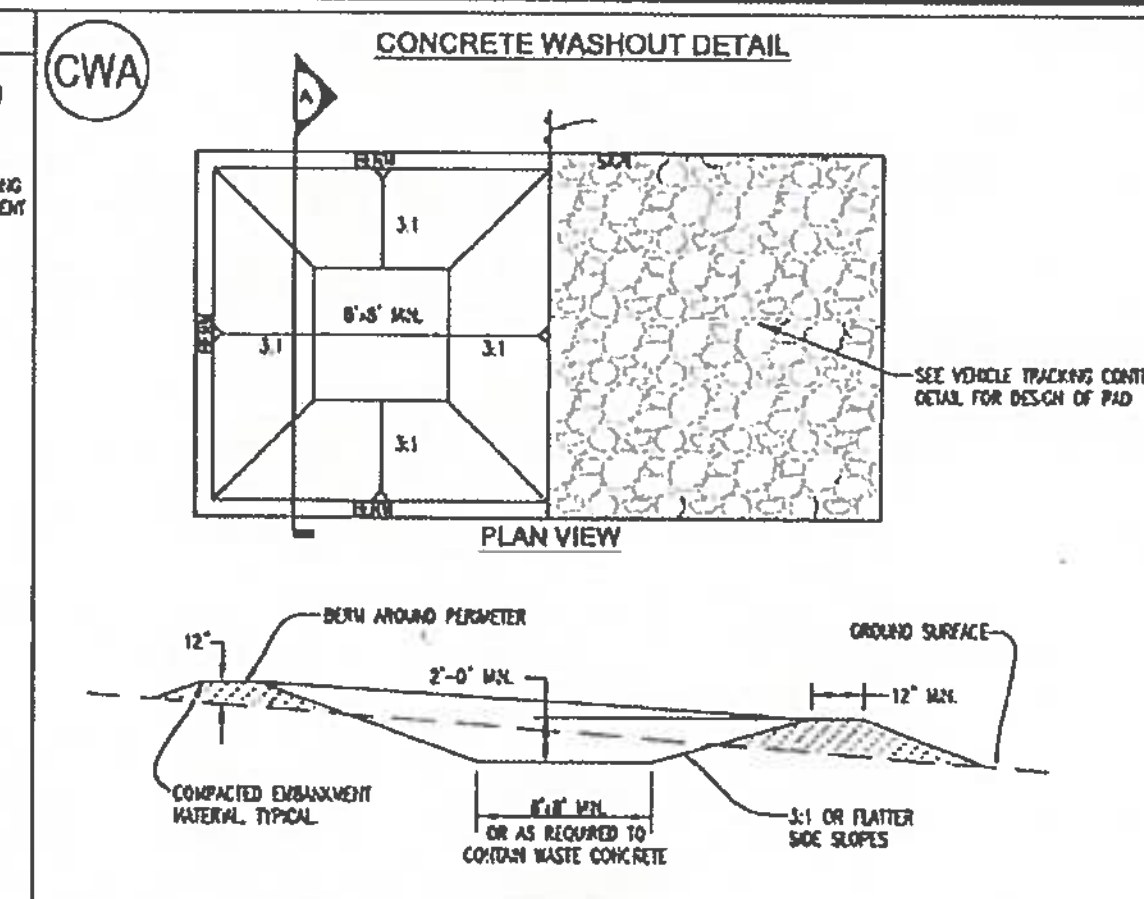
Specific permanent ditch details have been added to the plans.

STABILIZED CONSTRUCTION ENTRANCE (VTC)



Construction Specification
1. Length – minimum of 50' (*30' for single residence lot).
2. Width – 10' minimum, should be flared at the existing road to provide a turning radius.
3. Geotextile fabric (filter cloth) shall placed over the existing ground prior to placing stone. **This plan approval authority may not require single family residence to use geotextile.
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water – all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location – A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

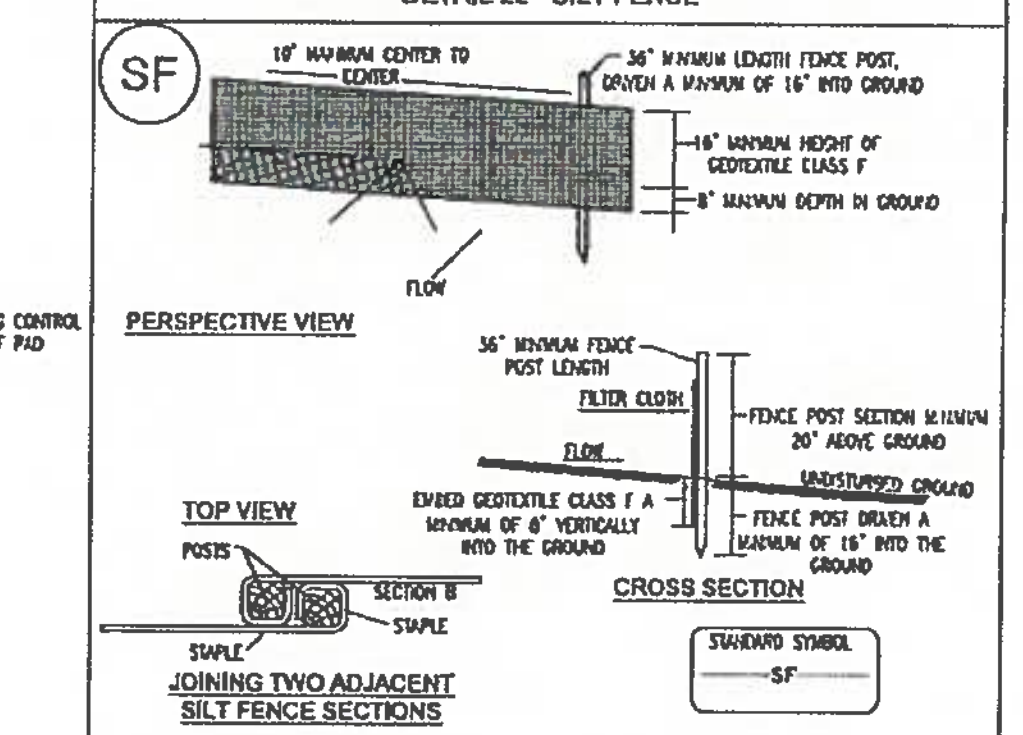
CONCRETE WASHOUT DETAIL (CWA)



CONCRETE WASHOUT AREA INSTALLATION NOTES
1. SEE PLAN VIEW FOR LOCATIONS OF CONCRETE WASHOUT AREA
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL IS REQUIRED AT THE ACCESS POINT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION

CONCRETE WASHOUT AREA MAINTENANCE NOTES
1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, DRILL SEED AND CRIMP MULCH OR OTHERWISE STABILIZE IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
4. INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.

DETAIL 22 - SILT FENCE (SF)



Construction Specifications
1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 1 1/2" x 1 1/2" square (minimum) cut, or 1 3/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighing not less than 1.00 pound per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:
   - Tensile Strength: 50 lbs/in. (min.) Test: MSMT 509
   - Tensile Modulus: 20 lbs/in. (min.) Test: MSMT 509
   - Flow Rate: 0.3 gal. ft. / minute (max.) Test MSMT 322
   - Efficiency: 75% (min) Test: MSMT 322
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

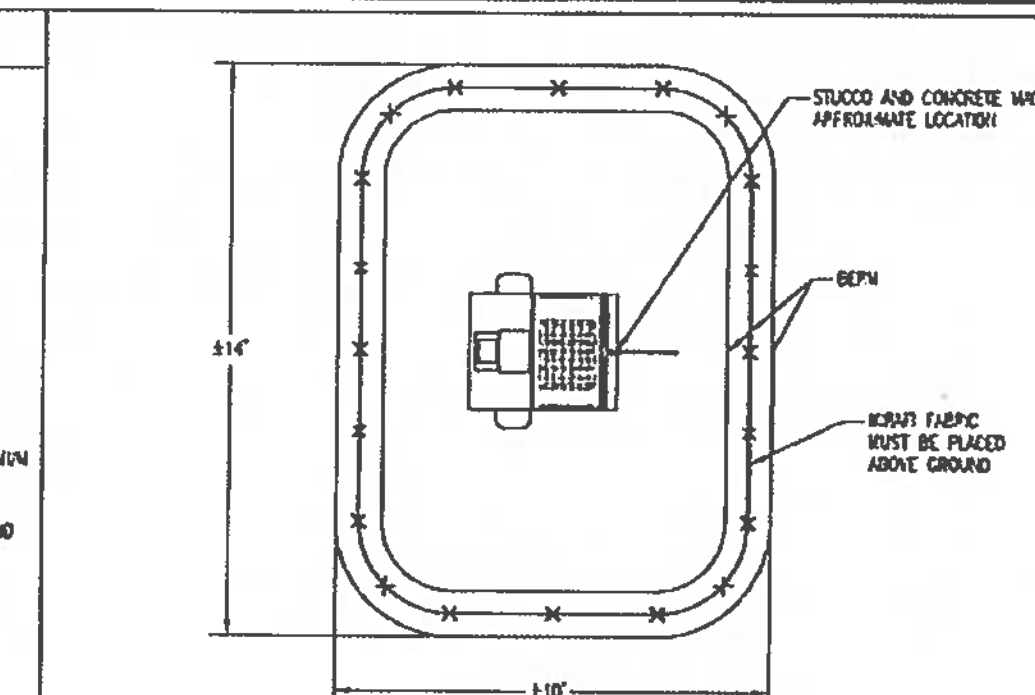
SILT FENCE

Silt Fence Design Criteria

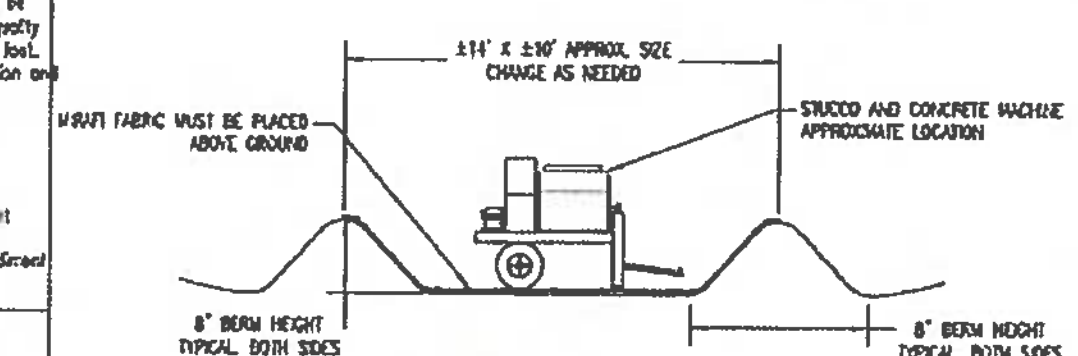
Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

NOTE:
In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these cases a silt fence may be the only perimeter control required.

STUCCO & CONCRETE MACHINE BMP



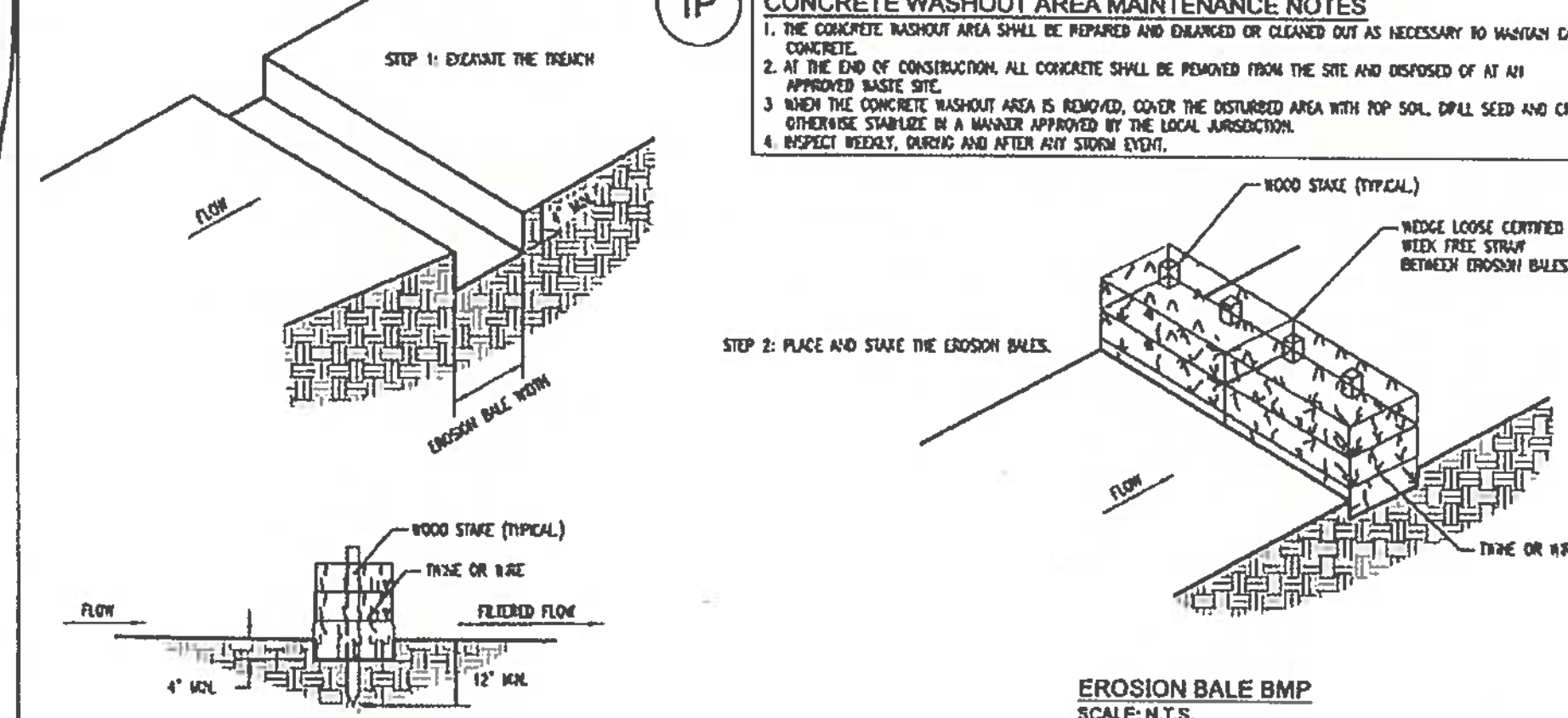
PLAN VIEW
SCALE: N.T.S.



ELEVATION VIEW
SCALE: N.T.S.

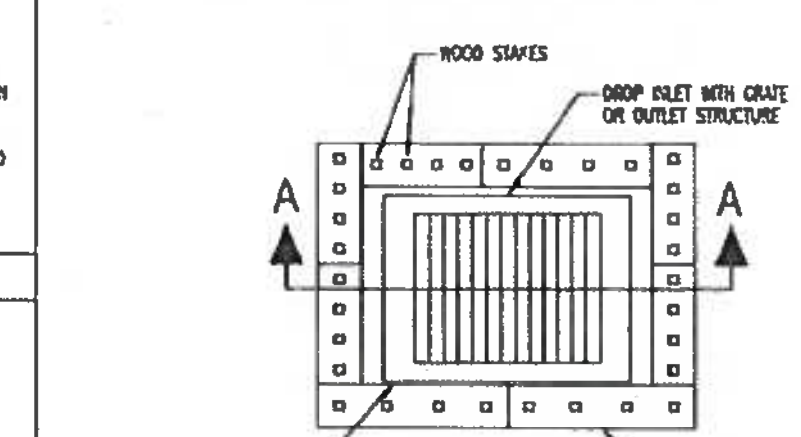
STUCCO & CONCRETE MACHINE BMP
SCALE N.T.S.

(IP)

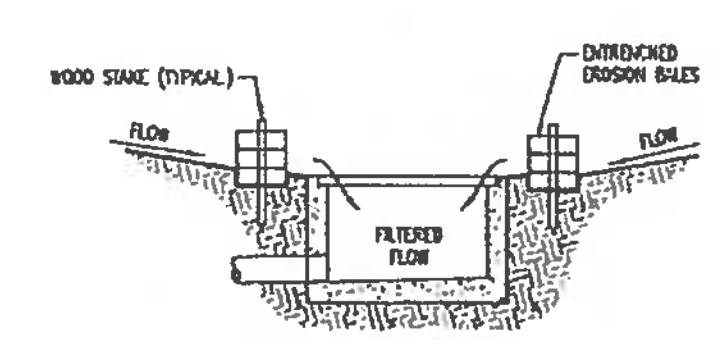


EROSION BALE BMP
SCALE: N.T.S.

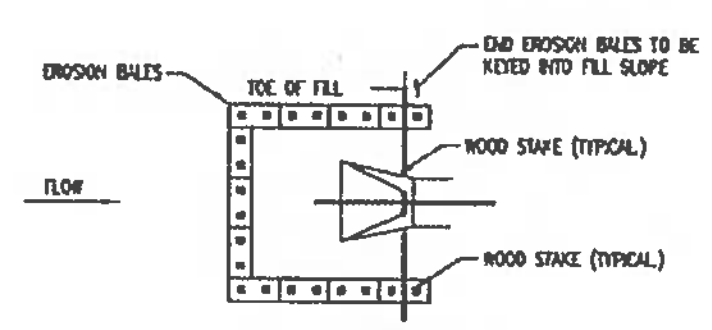
EROSION BALE TRENCHING AND STAKING
SCALE: N.T.S.



PLAN VIEW
SCALE: N.T.S.



SECTION A-A
EROSION FILTER AT DROP INLET
SCALE: N.T.S.



PLAN VIEW
EROSION BALE CULVERT INLET PROTECTION
SCALE: N.T.S.

NOTES
1. STAKES SHALL BE WOOD AND SHALL BE 2" X 2" NOMINAL.
2. EROSION BALES SHALL BE 18" X 18" X 36".
3. EROSION BALES SHALL BE ENTRENCHED 4 IN. MINIMUM INTO THE SOIL TIGHTLY ABUTTED WITH NO GAPS, STAKED, AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERIMETER.

VORTEX ENGINEERING, INC.
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• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18829

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REV. DATE	COMMENT	BY

FOR REVIEW

MAJOR SUBDIVISION
FINAL PLAN

Construction Stormwater Management Plan Details
Pinnacle Ridge Subdivison
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 07/08/15
SCALE:
CAD ID: 6.0swm-f1.dwg

–SHEET–
C6.2

Final Plan of Subdivision

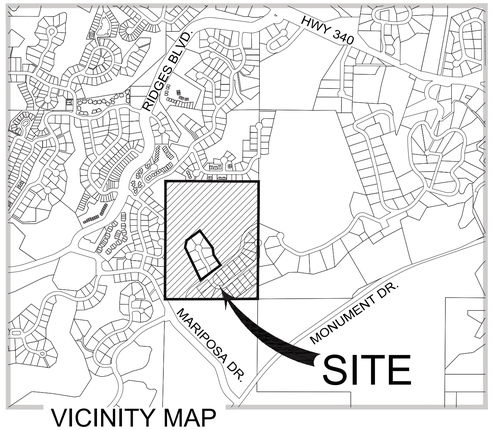
Pinnacle Ridge Subdivision

Filing 1

Grand Junction, Colorado

LEGEND

- 4560 — EXISTING CONTOUR
- PROPERTY BOUNDARY
- OLD PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- W W W — PROPOSED WATER LINE
- W W W — EXISTING WATER LINE
- IRR IRR IRR — PROPOSED IRRIGATION
- X X X — EXISTING FENCE
- EGTC — PROPOSED DRY UTILITIES (BY OTHERS)
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- 4550.00 — LOT CORNER SPOT ELEVATION
- G 4550.00 — PROPOSED SWALE/BERM ELEVATION.
- FL 4550.00 — PROPOSED FL CURB/V-PAN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER METER
- I — PROPOSED IRRIGATION RISER
- V — PROPOSED IRRIGATION VALVE
- CO ● — PROPOSED IRRIGATION CLEANOUT
- 4550.00 — EXISTING CONTOUR LABEL
- 4550.00 — PROPOSED CONTOUR LABEL



VICINITY MAP

SHEET NUMBER	SHEET TITLE
C0.0	COVER
C0.1	PROJECT NOTES
C0.2	OVERALL SITE PLAN AND FILING PLAN
C1.0	COMPOSITE SITE PLAN - LAYOUT AND GEOMETRY PLAN
C1.1	COMPOSITE SITE PLAN - SIGNAGE & LIGHTING PLAN
C2.0 - C2.2	COMPOSITE SITE PLAN - GRADING PLAN, ROAD CROSS SECTIONS
C3.0	COMPOSITE SITE PLAN - OVERALL UTILITY AND WATER PLAN
C4.0	ROAD AND SEWER PLAN AND PROFILE - AIGUILLE DRIVE
C4.1	ROAD AND SEWER PLAN AND PROFILE - SPIRE CT. & TALUS CT.
C5.0 - C5.1	STORM SEWER PLAN & PROFILE
C6.0 - 6.2	CONSTRUCTION STORM WATER MANAGEMENT PLAN

ABBREVIATION LEGEND

&	AND	MCSM	MESA COUNTY SURVEY MONUMENT
℄	CENTERLINE	MFG'S	MANUFACTURER'S
Ø	DIAMETER	M.P.E.	MULTI-PURPOSE EASEMENT
'	FEET	MPH	MILES PER HOUR
"	INCHES	NE COR	NORTHEAST CORNER
±	PLUS OR MINUS	N&S&E	NORTH AND SOUTH AND EAST
APPROX.	APPROXIMATELY	NO.	NUMBER
BRL	BUILDING RESTRICTION LINE	N.T.S.	NOT TO SCALE
BVCS	BEGIN VERTICAL CURVE STATION	PROP.	PROPOSED
BVCE	BEGIN VERTICAL CURVE ELEVATION	PRV	PRESSURE REDUCING VALVE
CB	CATCH BASIN	PSI	POUNDS PER SQUARE INCH
CL III	CLASS 3	PVC	POLYVINYL CHLORIDE
CMP	CORRUGATED METAL PIPE	PVI	POINT OF VERTICAL INTERSECTION
CR	CURB RETURN	PVMT	PAVEMENT
CT.	COURT	O.C. E.W.	ON CENTER EACH WAY
DR.	DRIVE	RCP	REINFORCED CONCRETE PIPE
EL.	ELEVATION	RD	ROAD
ELEV	ELEVATION	RET. WALL	RETAINING WALL
EX.	EXISTING	R.O.W.	RIGHT-OF-WAY
EXIST.	EXISTING	RT	RIGHT
EVCS	END VERTICAL CURVE STATION	SCH	SCHEDULE
EVCE	END VERTICAL CURVE ELEVATION	SD	STORM DRAIN
FL	FLOWLINE	SEC	SECTION
FH	FIRE HYDRANT	SF	SQUARE FEET
FT	FEET	SQ. FT.	SQUARE FEET
GPM	GALLONS PER MINUTE	SS	SANITARY SEWER
GV	GAS VALVE	ST.	STREET
G.V.A.L.C.S.	GRAND VALLEY ALIQUOT LOCAL COORDINATE SYSTEM	STA	STATION
		THRU	THROUGH
HGL	HYDRAULIC GRADE LINE	TYP.	TYPICAL
HI PT	HIGH POINT	TW	TOP OF WALL
HP	HORSE POWER	U.W.C.D.	UTE WATER CONSERVANCY DISTRICT
INV	INVERT	VC	VERTICAL CURVE
LT	LEFT	VCP	VITRIFIED CLAY PIPE
MAX	MAXIMUM	W/	WITH
MIN	MINIMUM	WM	WATER METER
MH	MANHOLE	WV	WATER VALVE

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21. TOWNSHIP 1 SOUTH. RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM. LOTS 1 – 9. BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK 8 AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = RSF-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'
   REAR = 25'
   SIDE = 7'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

UTILITY PROVIDERS INFORMATION

UTILITY	PROVIDER	PHONE NUMBER
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.

Colorado 811
1-800-922-1987
co811.org

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS & COST ESTIMATORS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 8-15-17 PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY
1	8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

Cover
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE:
CAD ID: **0.0cover-f1.dwg**

~SHEET~
C0.0

LOCAL CONTACT INFORMATION
GRAND JUNCTION DEVELOPMENT INSPECTOR: MARK BARSLUND 970-201-1362

GENERAL NOTES:

1. THESE GENERAL NOTES SHALL BE APPLICABLE TO ALL SHEETS WITHIN THIS SET OF DRAWINGS.
2. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE GOVERNING AGENCY. CONTRACTOR MUST CONTACT THE APPROPRIATE AGENCY PRIOR TO CONSTRUCTION IN THE RIGHT-OF-WAY.
3. PLANNING PERMIT APPROVAL MUST BE OBTAINED BY INDIVIDUAL LOT OWNERS PRIOR TO CONSTRUCTION. THE LOT OWNER MUST SUBMIT A PROPOSED DRAINAGE PLAN OF EACH SITE TO THE GOVERNING AGENCY FOR REVIEW.
4. EXISTING WATER, SANITARY, AND STORM SEWER LINES ARE SHOWN BASED ON BEST AVAILABLE INFORMATION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS SPECIFICALLY AT CONNECTION POINTS AND AT POTENTIAL POINTS OF CONFLICT. ALL INFORMATION SHALL BE SUPPLIED TO THE ENGINEER PRIOR TO CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR:
   (A) CONTACTING THE APPROPRIATE AGENCY TO ARRANGE A PRE-CONSTRUCTION MEETING AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
   (B) OBTAINING ALL PERMITS FOR STREET CUTS, UTILITIES CONSTRUCTION AND GRADING. THE COST OF ALL PERMITS SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S BID.
   (C) COORDINATING WITH ALL UTILITY COMPANIES INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. ADVANCE COORDINATION BY THE CONTRACTOR TO ALL UTILITY COMPANIES INVOLVED SHALL BE REQUIRED FOR ANY SERVICE INTERRUPTIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER, PROJECT MANAGER AND THE UTILITY COMPANY 48 HOURS PRIOR TO START OF CONSTRUCTION. NO UTILITY TAPS SHALL BE MADE WITHOUT WRITTEN AUTHORIZATION BY THE UTILITY COMPANY AND THE CITY.
   (D) VERIFICATION OF ALL OTHER UNDERGROUND FACILITIES WHICH MAY BE AFFECTED BY THIS PROJECT AND REPAIR THEREOF IN CASE OF DAMAGE.
   (E) CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO OBTAIN TEMPORARY POWER AND TELEPHONE SERVICE DURING CONSTRUCTION. ALL COST FOR TEMPORARY SERVICES SHALL BE THE CONTRACTORS RESPONSIBILITY.
   (F) RESTORATION OF DISTURBED STREET PAVEMENT AS REQUIRED BY THE CITY AND THE STATE'S DEPARTMENT OF TRANSPORTATION.
   (G) ALL PROJECT SAFETY INCLUDING, BUT NOT LIMITED TO, TRENCH EXCAVATION AND SHORINGS, TRAFFIC CONTROL, AND SECURITY.
   (H) COORDINATING ALL WORK AND INSPECTIONS AS REQUIRED BY THE CITY OR THE STATE.
   (I) OBTAINING NECESSARY PERMITS FROM THE DEPARTMENT OF TRANSPORTATION FOR ALL WORK IN AND ADJACENT TO STATE RIGHT-OF-WAY.
   (J) RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE. AS-BUILTS SHALL INCLUDE UNDERGROUND UTILITIES AS WELL AS ANY FIELD MODIFICATIONS OF THE PLANS.
   (K) KEEPING ADJACENT STREETS FREE AND CLEAN OF ALL DEBRIS AND DIRT FROM THE JOB SITE.
   (L) THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED AT THE JOB SITE AT ALL TIMES. EACH SUBCONTRACTOR (INCLUDING THE SURVEYOR) SHALL HAVE A SIGNED COPY OF THE PLANS AND THE APPROPRIATE STANDARDS AND SPECIFICATIONS IN HIS POSSESSION AT ALL TIMES WHEN IMPROVEMENTS ARE BEING INSTALLED.
   (M) THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR COMPLETION OF INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED BY NOTE TO BE "PROVIDED," "INSTALLED" OR "CONSTRUCTED" UNLESS SPECIFICALLY NOTED OTHERWISE.
   (N) CONTRACTOR WILL HAVE A COPY OF APPROVED SOILS REPORTS FOR PAVEMENT DESIGN AND COMPACTION REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL RECOMMENDATIONS CONTAINED WITHIN THE SOILS REPORT.
   (O) VERIFYING THE ACCURACY OF THE VERTICAL BENCHMARK INFORMATION. CONTRACTOR SHALL USE BENCHMARKS AND DATUMS SHOWN HEREON TO SET PROJECT BENCHMARK(S), BY RUNNING A LEVEL LOOP BETWEEN AT LEAST TWO BENCHMARKS, AND SHALL PROVIDE SURVEY NOTES OF SUCH TO PROJECT ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
6. IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
7. TWO WORKING DAYS BEFORE YOU DIG, GRADE, OR EXCAVATE, CALL THE APPROPRIATE UTILITY NOTIFICATION CENTER FOR THE MARKING OF MEMBER UNDERGROUND UTILITIES. THE UTILITIES SHOWN ON THESE PLANS ARE PLOTTED BASED ON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION, AND REPAIR OF ANY EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. ANY UTILITY DAMAGED BY CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
8. THIS PLAN WAS PREPARED BASED ON SURVEY INFORMATION PROVIDED BY A LICENSED SURVEYOR. VORTEX ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR ERRORS DUE TO INCOMPLETE OR INACCURATE SURVEY INFORMATION.
9. SUBGRADE DENSITY SHALL BE TESTED BY A PRIVATE SOILS TESTING FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING BASE COURSE OR CONCRETE. BASE COURSE DENSITY SHALL ALSO BE TESTED BY THE PRIVATE GEOTECHNICAL FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING PAVEMENT.
10. THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM ALL UTILITY COMPANIES PRIOR TO ANY DEMOLITION WORK OR DISCONNECTION OF ANY SERVICE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANIES.
2. ALL UTILITIES INCLUDING STORM SEWER, SANITARY SEWER AND WATER MAINS SHALL BE COMPLETELY REMOVED FROM THE GROUND UNLESS OTHERWISE SPECIFIED. NO EXISTING UTILITY, STRUCTURE OR UNDERGROUND IMPROVEMENT SHALL BE ABANDONED IN PLACE WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER, OWNER AND GOVERNING AGENCY.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES WHICH ARE TO REMAIN IN SERVICE. INCLUDING BUT NOT LIMITED TO GAS, ELECTRIC, CABLE AND TELEPHONE SERVICES.
4. ALL STRUCTURE INCLUDING BASEMENT WALLS AND FLOOR SLABS SHALL BE COMPLETELY REMOVED FROM THE SITE.
5. ALL DEMOLITION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS INCLUDING BUT NOT LIMITED TO HAZARDOUS MATERIALS, DISPOSAL, HOURS OF OPERATION.
6. ALL EROSION CONTROL MEASURES DESIGNED FOR THE SITE PERIMETER OR TO PROTECT EXISTING IMPROVEMENTS SHALL BE IN PLACE PRIOR TO THE START OF ANY DEMOLITION ACTIVITIES.
7. THE CONTRACTOR SHALL OBTAIN AND REVIEW THE ENVIRONMENTAL STUDIES PROVIDED BY THE OWNER AND TAKE ALL NECESSARY PRECAUTIONS FOR ENVIRONMENTAL SAFETY DURING DEMOLITION ACTIVITIES. IT SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE EXISTING STRUCTURES FOR ANY OTHER CONDITIONS WHICH MAY AFFECT THE DEMOLITION PROCEDURES.
8. ANY CONDITIONS WHICH MAY BE UNCOVERED DURING THE PROCESS OF DEMOLITION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER IMMEDIATELY. ADDITIONAL EXPENSES INCURRED BY UNFORESEEN CONDITIONS SHALL BE APPROVED BY THE OWNER PRIOR TO THE ADDITIONAL WORK.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE PROPERTY FOR THE TYPE AND QUANTITY OF DEMOLITION REQUIRED, PRIOR TO SUBMISSION OF A BID.
10. THE CONTRACTOR SHALL HAVE WATER ON SITE FOR DUST ABATEMENT AT ALL TIMES DURING DEMOLITION ACTIVITIES.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF ALL DEBRIS. BURNING ON SITE SHALL NOT BE PERMITTED. NO DEBRIS INCLUDING CONCRETE OR ASPHALT MAY BE PLACED IN ANY FILL AREA.
12. ANY DAMAGE TO PUBLIC UTILITIES OR ADJACENT PROPERTIES AS A RESULT OF THE DEMOLITION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. REPAIRS SHALL BE MADE IN A TIMELY MANNER TO THE SATISFACTION OF THE DAMAGED PARTY.
13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH DOCUMENTATION OF THE CONDITION OF EXISTING IMPROVEMENTS TO REMAIN IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS NOT DOCUMENTED AS PRE-EXISTING. DOCUMENTATION SHALL BE PROVIDED PRIOR TO COMMENCEMENT OF WORK.
14. ALL EXISTING UTILITY SERVICES SHALL BE COMPLETELY REMOVED FROM THE SITE. SERVICE SHALL BE CUT AND PLUGGED AT THE PROPERTY LINE IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS. THE DEMOLITION CONTRACTOR SHALL CLEARLY MARK ALL STUBS AT THE PROPERTY LINE WITH A 4 X 4 WOOD POST (MINIMUM 4' ABOVE GRADE, 4' BELOW GRADE) MARKED WITH THE SERVICE TYPE.
15. ALL EXISTING WELLS SHALL BE CAPPED AND ABANDONED IN ACCORDANCE WITH ALL STATE REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL REQUIRED PROCEDURES, FILE ALL REQUIRED FORMS, APPLICATIONS AND REPORTS, AND OBTAIN ALL REQUIRED APPROVALS FROM THE STATE ENGINEER'S OFFICE.
16. DURING THE COURSE OF DEMOLITION, CONTRACTOR SHALL PROVIDE SECURITY FENCING AND OTHER PRECAUTIONARY SAFETY MEASURE AS NECESSARY.

EROSION CONTROL NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL FACILITIES SHOWN.
3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORESEEN PROBLEMS OR IF THE PLAN DOES NOT FUNCTION AS INTENDED. A JURISDICTION REPRESENTATIVE MAY REQUIRE ADDITIONAL CONTROL DEVICES UPON INSPECTION OF PROPOSED FACILITIES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED, STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM TRAFFIC FROM THE SITE.
5. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE PAVED, SEEDED WITH NATIVE VEGETATION OR LANDSCAPED. REFER TO LANDSCAPE PLANS FOR SEED MIX AND PLANTING SPECIFICATIONS.
6. EROSION CONTROL STRUCTURES BELOW SODDED AREAS MAY BE REMOVED ONCE SOD AND FINAL LANDSCAPING IS IN PLACE. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION. EROSION CONTROL IN PROPOSED PAVED AREAS SHALL REMAIN IN PLACE UNTIL PAVEMENT IS COMPLETE.
7. THIS PLAN IS ONLY TO BE USED FOR INSTALLATION OF EROSION CONTROL FACILITIES. DO NOT USE THIS PLAN FOR GRADING OR STORM SEWER CONSTRUCTION.
8. CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLE WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES WILL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS, MOVED WHEN NECESSARY AND REMOVED WHEN THE SITE IS PAVED.
9. INLET PROTECTION DEVICES SHALL BE INSTALLED IMMEDIATELY UPON INDIVIDUAL INLET'S BECOMING FUNCTIONAL.
10. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH GRADING AND/OR UTILITY CONSTRUCTION SHALL OBTAIN A COPY OF THE STORM WATER MANAGEMENT PLAN (SWMP) AND ANY OTHER DOCUMENTATION REGARDING "STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY" AND BECOME FAMILIAR WITH THEIR CONTENTS.
11. THE TEMPORARY PARKING AND STORAGE AREA SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AREA, EQUIPMENT CLEANING AREA, EMPLOYEE BREAK AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
12. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, ETC.) SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT WITH STORM WATER DISCHARGES FROM THE SITE.
13. MAINTAIN ON THE SITE OR HAVE READILY AVAILABLE SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
14. FUGITIVE DUST BLOWING FROM THE SITE SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS ABSOLUTELY PROHIBITED.
15. NO RUBBISH, TRASH, GARBAGE, OR OTHER SUCH MATERIALS SHALL BE DISCHARGED INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
16. ALL MEASURES PRESENTED IN THE SWMP SHALL BE INITIATED AS SOON AS PRACTICABLE.
17. IF THE GRAVEL CONSTRUCTION ENTRANCES ARE NOT EFFECTIVE IN REMOVING THE MAJORITY OF DIRT OR MUD FROM THE TIRES OF THE CONSTRUCTION VEHICLES, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP AND THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.
18. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
19. IF SOIL STOCKPILING IS EMPLOYED ON THE SITE, SILT FENCES SHALL BE USED TO HELP CONTAIN THE SEDIMENT.
20. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
21. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN 30 DAYS AFTER FINAL STABILIZATION. FINAL STABILIZATION HAS OCCURRED WHEN ALL SOIL DISTURBING ACTIVITIES ARE COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OF THE COVER FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES HAS BEEN EMPLOYED.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) DUE TO GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT.
23. ALL OFF-SITE CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR STORM DRAIN CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.

EROSION CONTROL MAINTENANCE NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL MEASURES CONTAINED IN THIS PLAN SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT, AND SHOULD BE CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:
3. STRAW BALE INLET PROTECTION DEVICES AND BARRIERS SHALL BE FIXED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR SHALL BE REPLACED IF THEY SHOW SIGNS OF DETERIORATION.
4. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, RE-SEEDED, AND WATERED AS NEEDED.
5. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-THIRD TO ONE-HALF THE HEIGHT OF THE SILT FENCE.
6. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
7. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
8. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES, SEDIMENT IN THE SEDIMENTATION BASINS SHALL NOT EXCEED THE SEDIMENTATION CLEANOUT LEVEL.
9. IF THE STONES IN THE GRAVEL CURB INLET SEDIMENT FILTERS BECOME CLOGGED WITH SEDIMENT, THE STONES MUST BE PULLED AWAY, CLEANED AND REPLACED.
10. THE EMBANKMENT OF THE SEDIMENTATION BASIN SHALL BE CHECKED REGULARLY TO INSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
11. THE TEMPORARY SEDIMENT TRAP AND SEDIMENTATION BASIN STRUCTURES SHALL BE CHECKED REGULARLY TO INSURE THAT THEY ARE STRUCTURALLY SOUND AND HAVE NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. SEDIMENT DEPOSITION SHALL BE REMOVED PERIODICALLY TO ENSURE FULL VOLUME IS AVAILABLE IN THE POND.

GRADING NOTES:

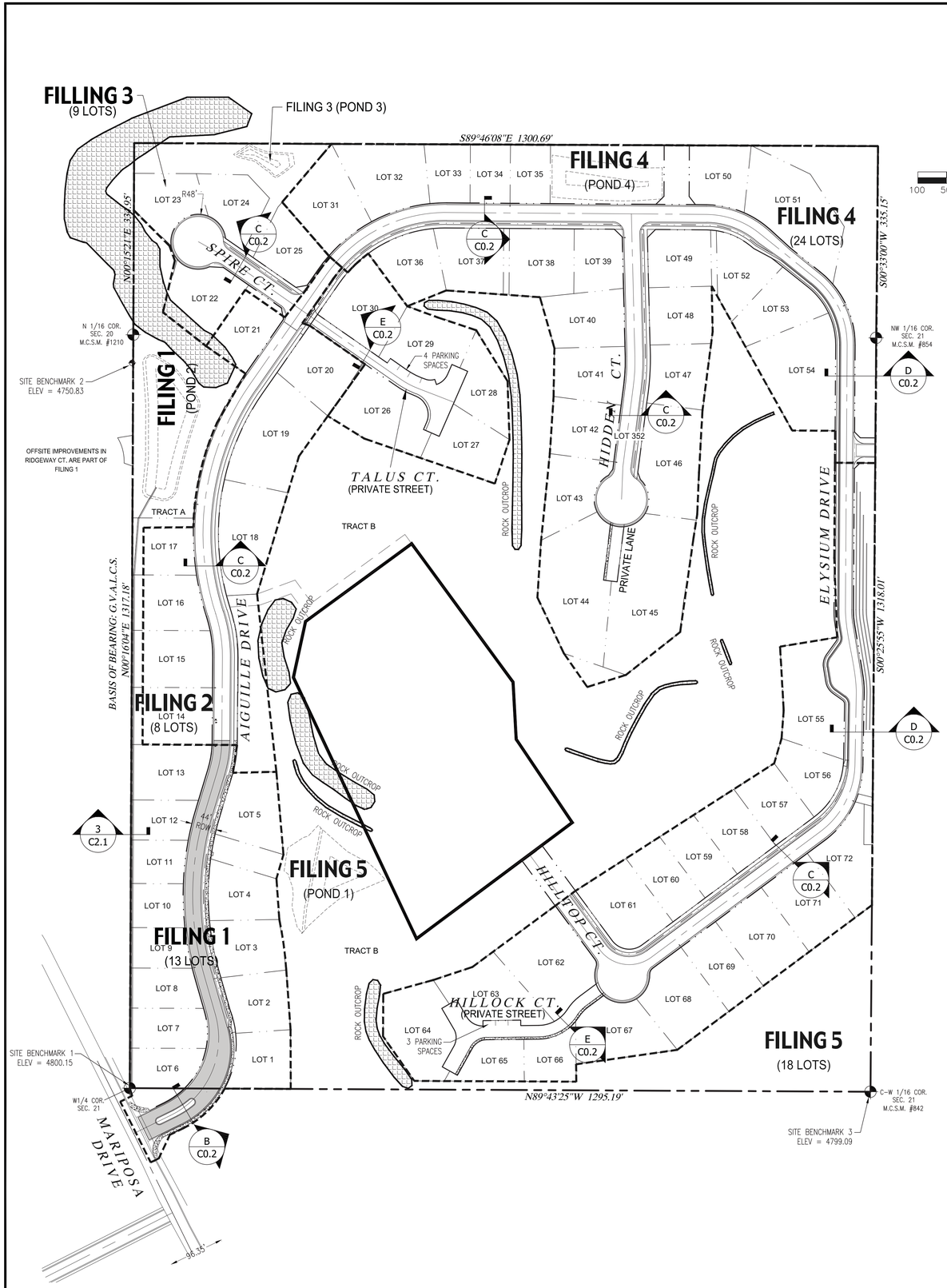
1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. CONTOURS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY. CONTOUR INTERVAL = 1 FOOT UNLESS OTHERWISE NOTED ON PLANS.
3. ALL DISTURBED AREAS THAT ARE UNSURFACED OR ARE NOT DESIGNATED AS LANDSCAPE AREAS ARE TO BE RE-SEEDED WITH DRY NATIVE GRASS SEED MIX.
4. IF DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE SOILS ENGINEER SHALL BE CONTACTED FOR RECOMMENDATIONS.
5. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND STANDARDS OF THE GOVERNING AGENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED AS SPECIFIED BY THE GEOTECH REPORT. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED, LICENSED, SOILS ENGINEER, CERTIFYING THAT THE SUBBASE WITHIN THE AREAS TO BE PAVED HAS BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECS.
6. NO PROPOSED SLOPE SHALL EXCEED TWO (2) HORIZONTAL TO ONE (1) VERTICAL, EXCEPT FOR DIVERSION DITCHES. ALL SLOPED AREAS MUST BE PROTECTED FROM EROSION.
7. IF STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS ARE STOCKPILED ON THE SITE, TOPSOIL MAY BE PLACED TO A HEIGHT OF FIVE FEET. SILT FENCE SHALL BE PLACED AROUND THE BASE OF THE STOCKPILE AND THE STOCKPILE SHALL BE SEEDED WITH NATIVE SEED MIX IMMEDIATELY AFTER STRIPING OPERATIONS ARE COMPLETE.
8. ON-SITE MATERIALS SUITABLE FOR FILL BENEATH DRIVES, AND PARKING AREAS BEYOND 5' OF THE BUILDING SHALL BE COMPACTED IN ACCORDANCE WITH THE GUIDELINES PRESENTED IN THE SOILS REPORT.
9. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHY AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO ENSURE 0.75% MIN. SLOPE AGAINST ALL GUTTERS TO PREVENT PUDDLING. ANY DISCREPANCIES SHALL BE PROVIDED TO THE ENGINEER IN WRITING IMMEDIATELY.
10. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED AS SPECIFIED IN THE GEOTECH REPORT.
11. SPOT ELEVATIONS REPRESENT FLOWLINE OR TOP OF ASPHALT UNLESS OTHERWISE NOTED.
12. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS WHICH DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB AND GUTTER AND UTILITIES.
13. ALL UTILITIES (MANHOLES, VALVE COVERS, CLEANOUTS, VAULTS, BOXES, ETC.) SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
14. ALL EARTH MOVING AND PLACEMENT OPERATIONS SHALL BE IN CONFORMANCE WITH THE RECOMMENDATIONS IDENTIFIED IN THE SOILS REPORT. THE CONTRACTOR SHALL HAVE A SIGNED AND SEALED COPY OF THE SOILS REPORT ON THE SITE AT ALL TIMES.
15. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.
16. WHERE NEW CURB AND GUTTER IS BEING CONSTRUCTED ADJACENT TO EXISTING ASPHALT, THE FOLLOWING SHALL APPLY: PRIOR TO PLACEMENT OF ANY CONCRETE THE CONTRACTOR SHALL HAVE A LICENSED SURVEYOR VERIFY GRADE AND CROSS SLOPE OF THE CURB AND GUTTER FORMS. THE CONTRACTOR SHALL SUBMIT THE SLOPES AND GRADES TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY SECTION WHICH DOES NOT CONFORM TO THE DESIGN OR TYPICAL CROSS SECTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CURB AND GUTTER POURS WITHOUT APPROVAL OF THE ENGINEER.
17. MAINTENANCE OF ANY STORMWATER MANAGEMENT FACILITY SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL GUIDELINES FOR PRIVATE STORMWATER MANAGEMENT FACILITIES AND SHALL BE THE RESPONSIBILITY OF THE OWNER AND THE ASSIGNEES.
18. SURFACE RESTORATION SHALL BE AS FOLLOWS:
   (A) FINE GRADE ALL AREAS DISTURBED BY THE CONSTRUCTION OPERATIONS AFTER COMPLETION OF BACKFILLING AND COMPACTING. AREAS WHICH ARE TO RECEIVE PAVEMENTS, SURFACING, TOPSOIL OR LANDSCAPING SHALL BE GRADED AS REQUIRED TO ALLOW INSTALLATION OF THE SPECIFIC SURFACE TREATMENT. GRADE ALL OTHER AREAS TO MATCH THE EXISTING GROUND LINE.
   (B) REPLACE AND REPAIR ANY SURFACE IMPROVEMENTS DAMAGED OR REMOVED. CONFORM TO CITY STANDARDS & SPECIFICATIONS.
19. BITUMINOUS PAVEMENT
   (A) BITUMINOUS PAVEMENT SHALL BE REMOVED TO CLEAN STRAIGHT LINES AT THE LOCATIONS INDICATED ON PLANS. WIDTH OF REMOVAL FOR PIPELINES SHALL BE KEPT TO A MINIMUM AS DICTATED BY TRENCHING OPERATIONS, BUT SHALL EXTEND AT LEAST 6 INCHES BEYOND THE LIMITS OF TRENCH EXCAVATION.
   (B) THE CUT SHALL BE MADE WITH PAVEMENT CUTTING WHEEL, SAW OR OTHER APPROVED METHOD, SO AS TO PROVIDE A REASONABLY STRAIGHT AND SQUARE EDGE.

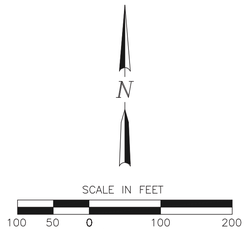
SANITARY SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL GRAVITY SANITARY SEWER LINES SHALL BE POLYVINYL CHLORIDE PIPE (PVC), ASTM D-3034 SDR.35, SEWER LINE MATERIALS AND CONSTRUCTION SHALL CONFORM TO ASTM STANDARDS AND SPECIFICATIONS.
3. DISTANCES FOR SANITARY SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. THEREFORE, DISTANCES SHOWN ON PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT.
4. RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATION. PIPELINE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT AND STEEL SHIMS TO ADJUST THE MANHOLE FRAME TO THE REQUIRED FINAL GRADE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS. ALL FRAMES SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
5. ALL SANITARY SEWER MAINS TESTING SHALL BE IN ACCORDANCE WITH LOCAL SPECIFICATIONS. COPIES OF ALL TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER, THE OWNER AND THE GOVERNING AUTHORITY PRIOR TO THE START OF THE WARRANTY PERIOD.
6. COMPACTION OF ALL TRENCHES WITHIN THE PROJECT SITE MUST BE ATTAINED AND COMPACTION RESULTS SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE. .
7. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING STRUCTURES AND IMPROVEMENTS DURING INSTALLATION OF THE SANITARY SEWER LINE.
8. THE CONTRACTOR SHALL POTHOLE THE EXISTING SEWER MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
9. SANITARY SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.

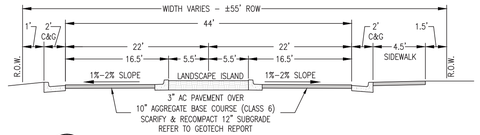
STORM SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING:
   (A) OBTAINING ALL REQUIRED PERMITS FROM THE CITY, THE DOT, OR ANY REGULATORY AUTHORITY AT THE CONTRACTOR'S COST INCLUDING PERMITS REQUIRED FOR WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
   (B) RESTORATION OF ANY EXISTING IMPROVEMENTS INCLUDING (BUT NOT LIMITED TO) FENCES, SOD, LANDSCAPING, PAVEMENT, SPRINKLER SYSTEMS.
   (C) VERIFICATION AND PROTECTION OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF THE PROJECT.
   (D) PROVIDING AS-BUILT DRAWINGS TO THE CITY AND ENGINEER.
   (E) ALL PERMITTING, DEVELOPMENT, CONNECTION, LOCATION INSPECTION AND TESTING FEES REQUIRED FOR STORM SEWER CONSTRUCTION.
   (F) VERIFYING ALL STANDARD DETAILS CONFORM TO CURRENT CITY/COUNTY STANDARDS AND SPECIFICATIONS.
   (G) FOR OBTAINING AND UNDERSTANDING ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THE CONSTRUCTION OF THE STORM SEWER IMPROVEMENTS.
   (H) FOR SCHEDULING ALL REQUIRED INSPECTIONS.
3. THE CONTRACTOR SHALL POTHOLE THE EXISTING STORM MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
4. STORM SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.
5. THE CONTRACTOR SHALL COORDINATE HIS WORK SCHEDULE WITH THE DITCH COMPANY TO ENSURE ALL DITCH FACILITIES ARE CONSTRUCTED WITHOUT DISRUPTION TO DITCH COMPANY OPERATIONS.
6. ALL STORM SEWER CONSTRUCTION SHALL BE IN CONFORMANCE WITH LOCAL STANDARDS AND SPECIFICATIONS.
7. DISTANCES FOR STORM SEWER ARE THE HORIZONTAL DISTANCES FROM CEN

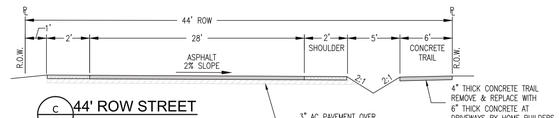




PROPOSED LAND USE TABLE			
SINGLE FAMILY LOTS (72 TOTAL)	934,944 S.F. – 21.46 AC	47.58%	OWNER: PRIVATE
TRACT A:	57,533 S.F. – 1.32 AC	2.93%	OWNER: HOA
TRACT B: OPEN SPACE	658,275 S.F. – 15.11 AC	33.50%	OWNER: HOA
FUTURE TRACTS	122,687 S.F. – 2.82 AC	6.24%	OWNER: HOA
RIGHT-OF-WAY:	191,434 S.F. – 4.39 AC	9.74%	OWNER: PUBLIC
TOTAL SITE AREA:	1,964,873 S.F. – 45.11 AC		

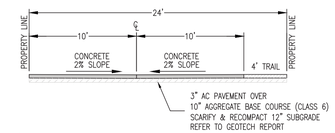


B - MARIPOSA DRIVE ENTRANCE
N.T.S.
STA: 0+24 TO STA: 1+52
(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 3+42)



C - 44' ROW STREET
N.T.S.
STA: 3+42 TO 24+58
STA: 35+79 TO 41+50

D - 34' ROW STREET
N.T.S.
STA: 24+58 TO 35+79



E - PRIVATE STREET & LANE DETAIL
N.T.S.
TRACTS C,F,J

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21. TOWNSHIP 1 SOUTH. RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM: LOTS 1 – 9. BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK B AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = RSF-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'
   REAR = 25'
   SIDE = 7'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

LEGEND

FILING & LIMITS OF DEVELOPMENT DESIGNATION

PROJECT BENCHMARK

PROJECT BENCHMARK #1
LOCATED AT THE SOUTHWEST CORNER OF THE SITE.
MONUMENT ID: PLS 18480, THE W1/4 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31563.18 EASTING: 78944.74 ELEV: 4800.15 (NAVD88)

PROJECT BENCHMARK #2
LOCATED AT THE WEST PROPERTY LINE, NEAR OUTLOOK COURT.
MONUMENT ID: NCSN #1210, THE N1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 32880.35 EASTING: 78949.85 ELEV: 4750.83 (NAVD88)

PROJECT BENCHMARK #3
LOCATED AT THE SOUTHEAST CORNER OF THE SITE.
MONUMENT ID: NCSN #842, THE W1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31558.05 EASTING: 80239.95 ELEV: 4799.09 (NAVD88)

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED 18828 PROFESSIONAL ENGINEER 8-15-17

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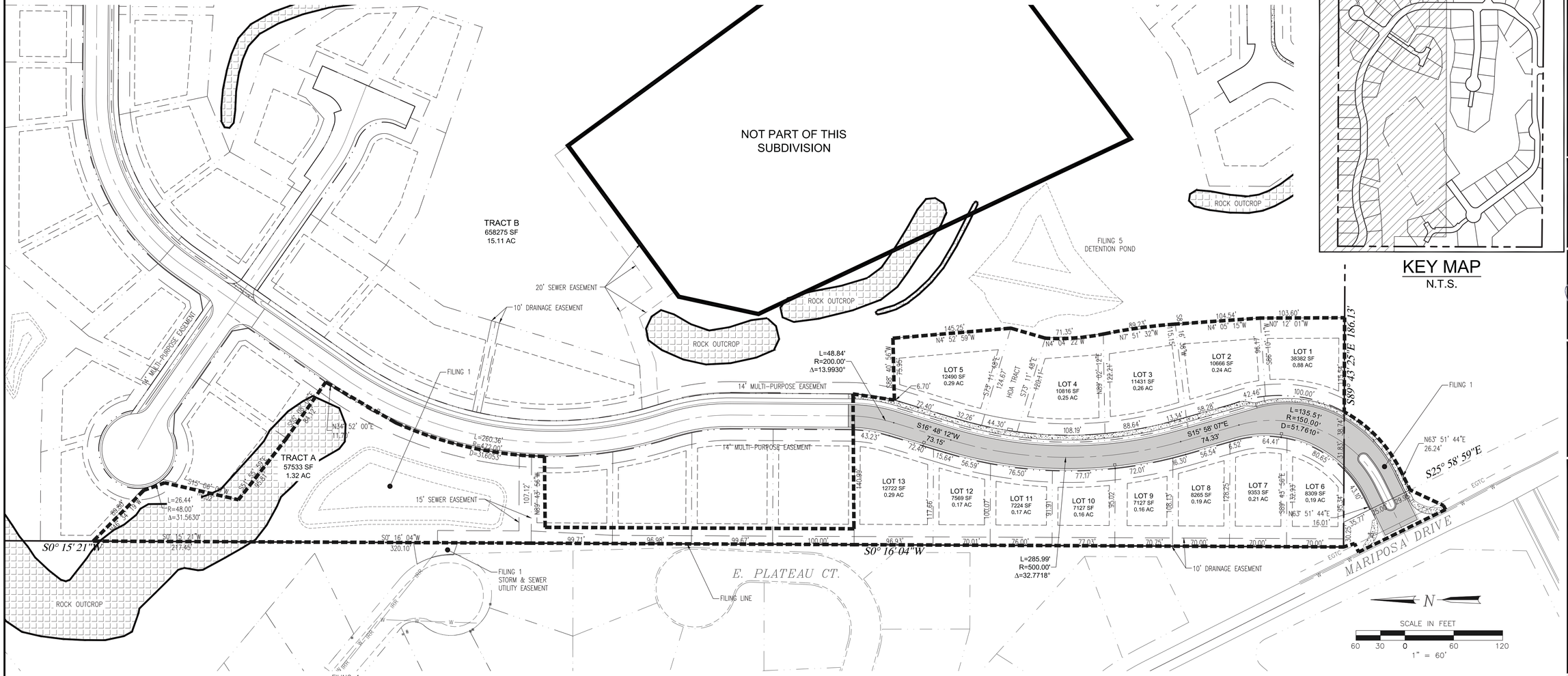
MAJOR SUBDIVISION
FINAL PLAN

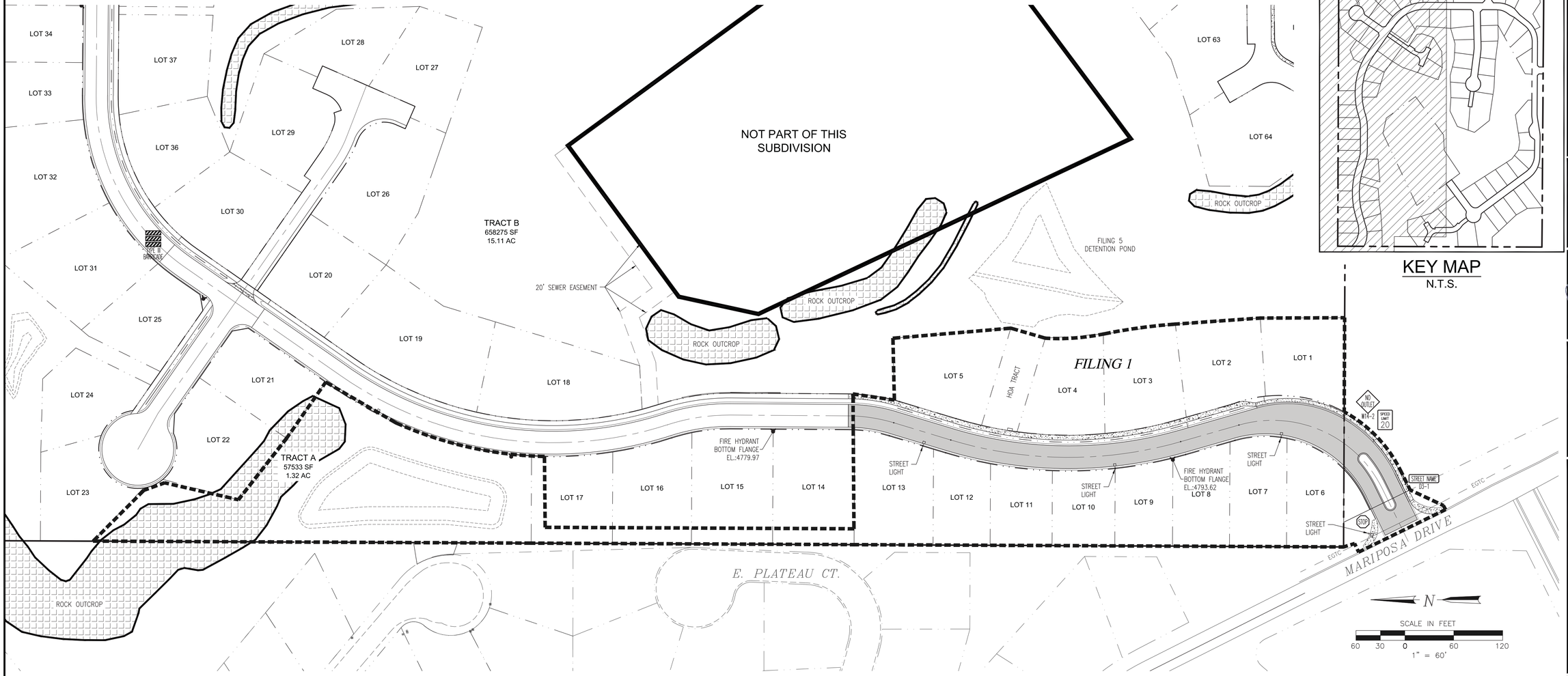
REV.	DATE	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017	BY
1	8/09/17	COMMENT	DLS

Filing Plan
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 100'**
CAD ID: **0.0cover-f1.dwg**

~SHEET~
C0.2


NOT PART OF THIS SUBDIVISION
TRACT B
658275 SF
15.11 AC
TRACT A
57533 SF
1.32 AC
FILING 5
DETENTION POND
ROCK OUTCROP
ROCK OUTCROP
ROCK OUTCROP
20' SEWER EASEMENT
10' DRAINAGE EASEMENT
14' MULTI-PURPOSE EASEMENT
14' MULTI-PURPOSE EASEMENT
14' MULTI-PURPOSE EASEMENT
15' SEWER EASEMENT
FILING 1
FILING 1
FILING 1
L=260.36'
R=272.00'
D=31.6053°
L=48.84'
R=200.00'
Δ=13.9930°
L=26.44'
R=48.00'
Δ=31.5630°
L=285.99'
R=500.00'
Δ=32.7718°
L=135.51'
R=150.00'
D=51.7610°
LOT 1
38382 SF
0.88 AC
LOT 2
10668 SF
0.24 AC
LOT 3
11431 SF
0.26 AC
LOT 4
10816 SF
0.25 AC
LOT 5
12490 SF
0.29 AC
LOT 6
8309 SF
0.19 AC
LOT 7
9353 SF
0.21 AC
LOT 8
8265 SF
0.19 AC
LOT 9
7127 SF
0.16 AC
LOT 10
7127 SF
0.16 AC
LOT 11
7224 SF
0.17 AC
LOT 12
7569 SF
0.17 AC
LOT 13
12722 SF
0.29 AC
S89° 43' 25"E 186.13'
S0° 15' 21"W
S0° 16' 04"W
S0° 16' 04"W
S16° 48' 12"W
S15° 58' 07"E
S25° 58' 59"E
N63° 51' 44"E
N63° 51' 44"E
N34° 52' 00"E
N89° 43' 56"W
MARIPOSA DRIVE
E. PLATEAU CT.
FILING LINE
EGTC
W
W
W



KEY MAP
N.T.S.

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.

Colorado 811
1-800-922-1987
co811.org

SIGN SCHEDULE

- STOP SIGN (30"x30") & D3-1 STREET SIGN COMBINED
- NO OUTLET SIGN W14-2
- FIXED TYPE III CDOT ROAD BARRICADES (3' x 8' SECTIONS, SEE STD. S-630-2)
- NO TRESPASSING SIGN
- STREET NAME SIGN D3-1
- SPEED LIMIT SIGN R2-1

ALL SIGN POST MOUNTING AND PLACEMENT SHALL BE PER MUTCD OR MESA COUNTY SPECIFICATIONS. CONTRACTOR TO CONTACT MESA COUNTY TRAFFIC PRIOR TO INSTALLATION OF SIGNS. (ph. 970-244-1817)

PROPOSED LAND USE TABLE

USE	AREA	AC	% OF TOTAL	OWNER
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. - 45.11 AC			

UTILITY PROVIDERS INFORMATION

UTILITY	PROVIDER	PHONE NUMBER
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET C0.2

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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MAJOR SUBDIVISION
FINAL PLAN

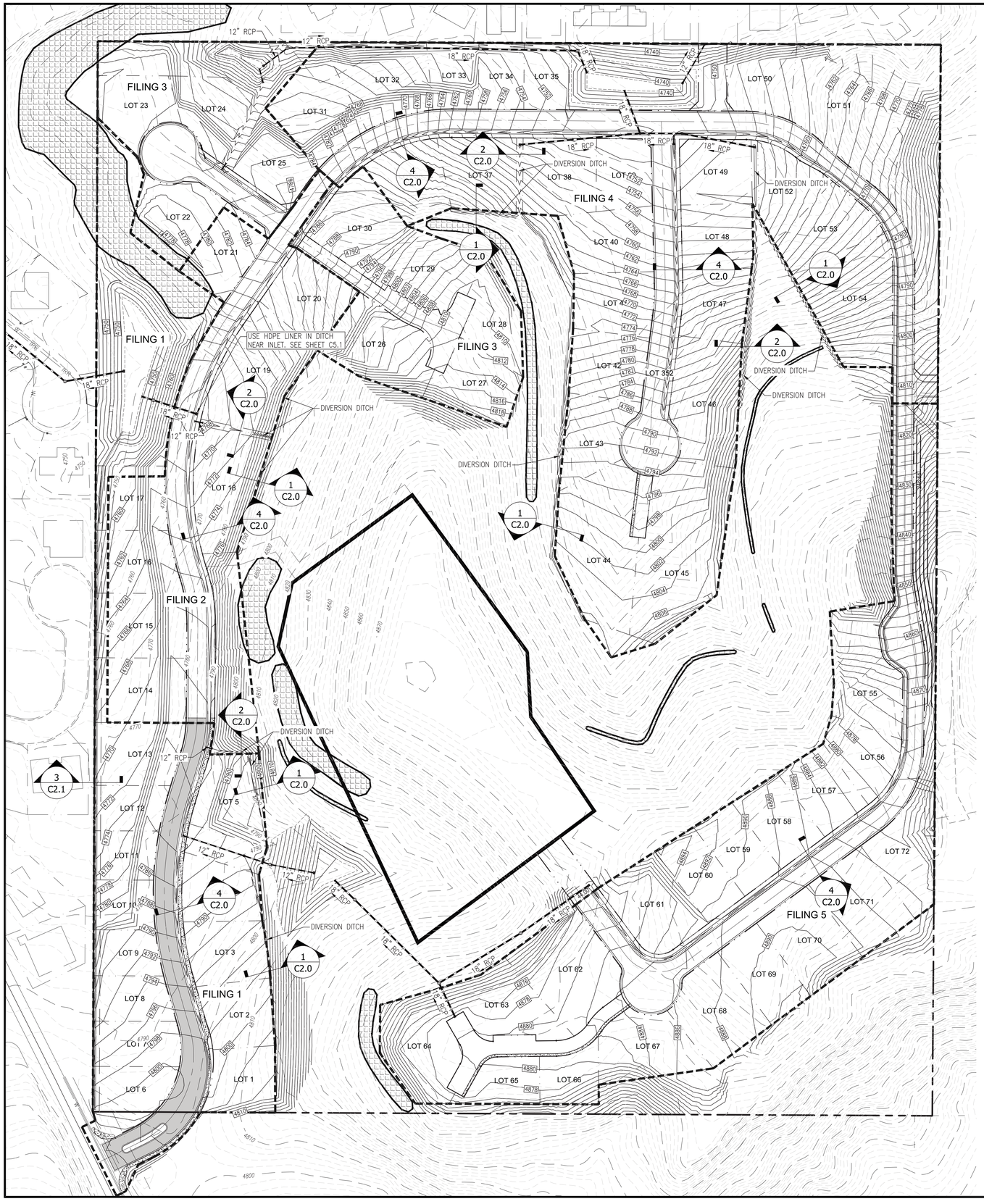
1	8/15/17	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017	DLS
	REV.	DATE	COMMENT	BY

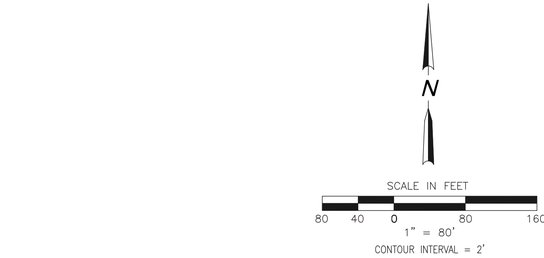
Signage & Lighting Plan

Filing 1
Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 60'**
CAD ID: **1.0layout-f1.dwg**

~SHEET~
C1.1





GRADING NOTE:

FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

GENERAL NOTES

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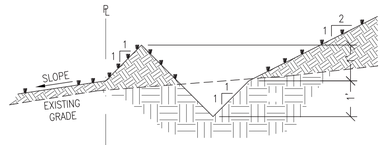
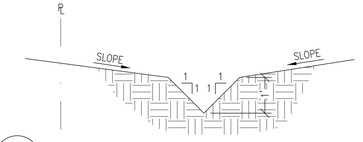
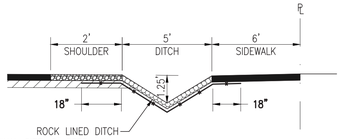
2. CONTRACTOR MUST CONTACT CITY OF GRAND JUNCTION TRAFFIC OPERATIONS SUPERVISOR PRIOR TO CONSTRUCTION OR PLACEMENT OF TRAFFIC CONTROL DEVICES/FEATURES (STRIPING, SIGNALS, MEDIANS, ETC.) FOR CONSTRUCTION IN THE RIGHT-OF-WAY ONLY.
3. REFER TO THE GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE STORM SEWER, SEE SHEET C5.0 & C5.1.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE FILING PLAN.
8. REFER TO SHEETS C0.1, C6.0, THRU C6.2 FOR STORMWATER MANAGEMENT CONTROL PLANS AND EROSION CONTROL NOTES.
9. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
10. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL.



1 C2.0 DIVERSION DITCH SECTION
N.T.S.



2 C2.0 DIVERSION DITCH SECTION
N.T.S.



4 C2.0 ROCK LINED ROADSIDE DITCH
N.T.S.

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Phone: (970) 245-9051
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 8-15-17 PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

	REV. DATE	COMMENT	BY
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

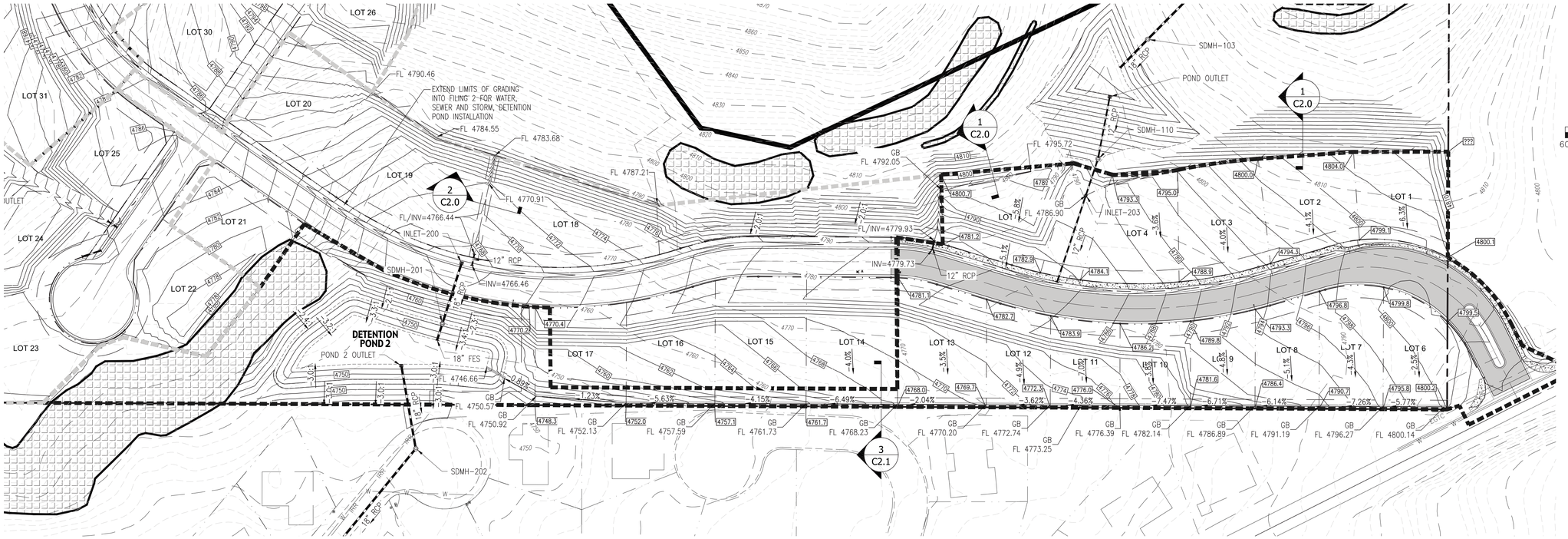
Overall Grading Plan Filings 1 - 5

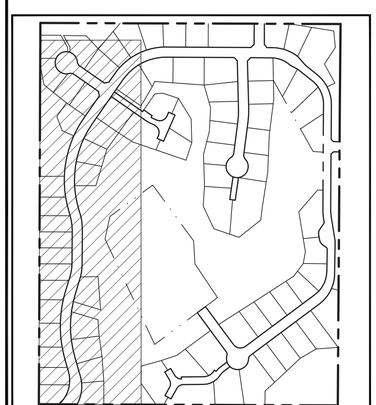
Pinnacle Ridge Subdivision Filing 1

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1"= 80'**
CAD ID: **2.0grad-f1.dwg**

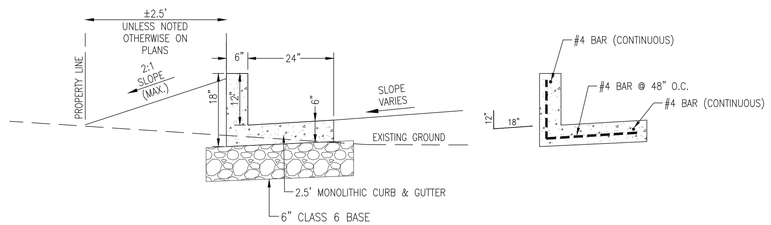
~SHEET~
C2.0





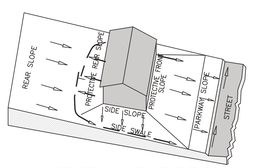
KEY MAP
N.T.S.

FILING 1 TOF TABLE			
Lot	Grading	Min. TOF	Max. TOF
1	Type A	4801.00	4801.50
2	Type A	4798.70	4799.20
3	Type A	4793.30	4793.80
4	Type A	4787.90	4788.40
5	Type A	4783.60	4784.10
6	Type C	4801.60	4802.10
7	Type C	4799.30	4799.80
8	Type C	4796.00	4796.50
9	Type C	4792.50	4793.00
10	Type C	4789.00	4789.50
11	Type C	4786.00	4786.50
12	Type C	4784.30	4784.80
13	Type C	4783.10	4783.60

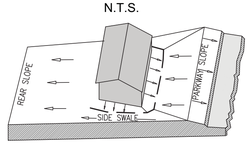


WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

3 C2.1 CONCRETE CURB & GUTTER DETAIL
N.T.S.



LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.



LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.

GRADING NOTE:

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4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE SANITARY SEWER, SEE SANITARY SEWER PLAN & PROFILE.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE FILING PLAN.
8. REFER TO SHEETS C0.1, C6.0, THRU C6.2 FOR STORMWATER MANAGEMENT CONTROL PLANS AND EROSION CONTROL NOTES.
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

N
SCALE IN FEET
60 30 0 60 120
1" = 60'
CONTOUR INTERVAL = 2'

COLORADO LICENSED
JAMES C. ATKINSON
18828
8-15-17
PROFESSIONAL ENGINEER

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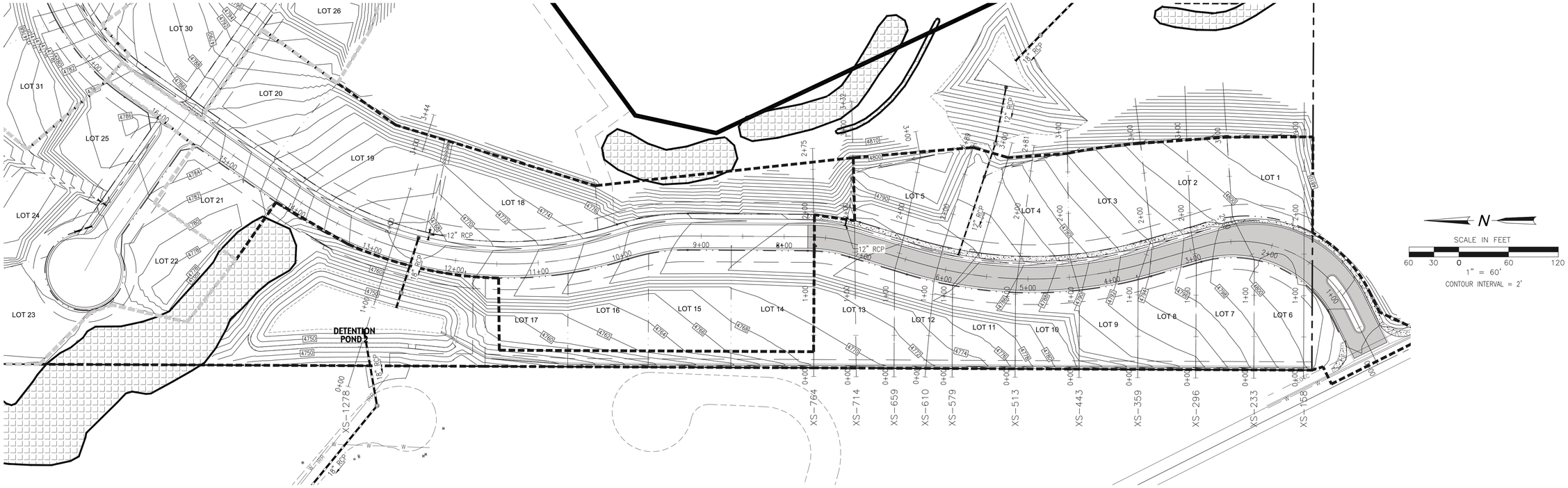
MAJOR SUBDIVISION
FINAL PLAN

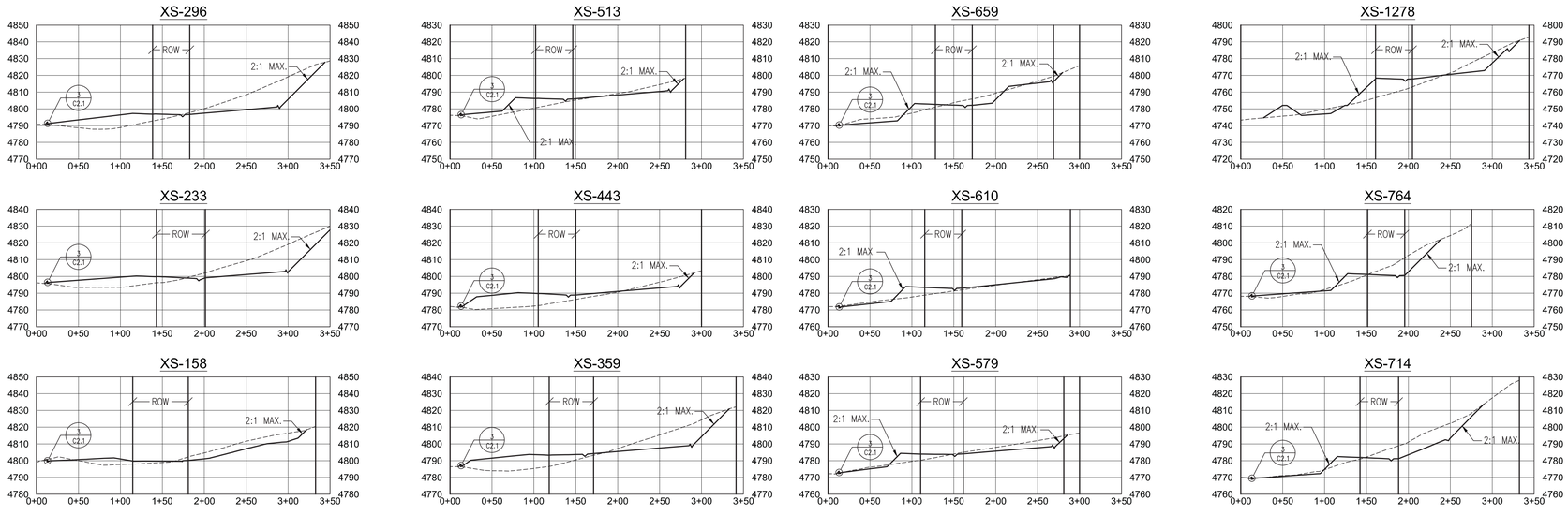
REV.	DATE	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017	BY
1	8/09/17	COMMENT	DLS

Grading Plan Filing 1
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **SEE PLAN**
CAD ID: **2.0grad-f1.dwg**

~SHEET~
C2.1





SECTIONS ALONG LOT LINES

SCALE: 1" = 80' HORIZONTAL
1" = 40' VERTICAL

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED PROFESSIONAL ENGINEER JAMES C. ATKINSON 18828 8-15-17

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MAJOR SUBDIVISION FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

Grading Plan Filing 1 - Road Cross Sections

Pinnacle Ridge Subdivision Filing 1

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **SEE PLAN**
CAD ID: **2.0grad-f1.dwg**

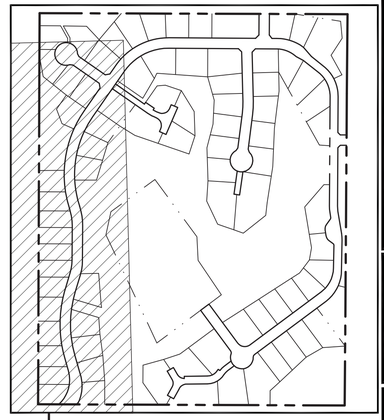
~SHEET~
C2.2

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET 3
6. HOUSES CONSTRUCTED ON LOTS 26-29 AND LOTS 55-72 SHALL HAVE SPRINKLER SYSTEMS INSTALLED. A 1" CUSTOMER WATER SERVICE LINE AND ¾" WATER METER WILL BE UTILIZED IN ACCORDANCE WITH UTE WATER CONSERVANCY DISTRICT STANDARDS & SPECIFICATIONS.
7. ALL WATER SERVICES SHALL HAVE A PRESSURE REGULATED YOKE INSTALLED BASED ON PRESSURE LIMITS AS DETERMINED IN THE HYDRAULIC ANALYSIS.

FILING NOTES

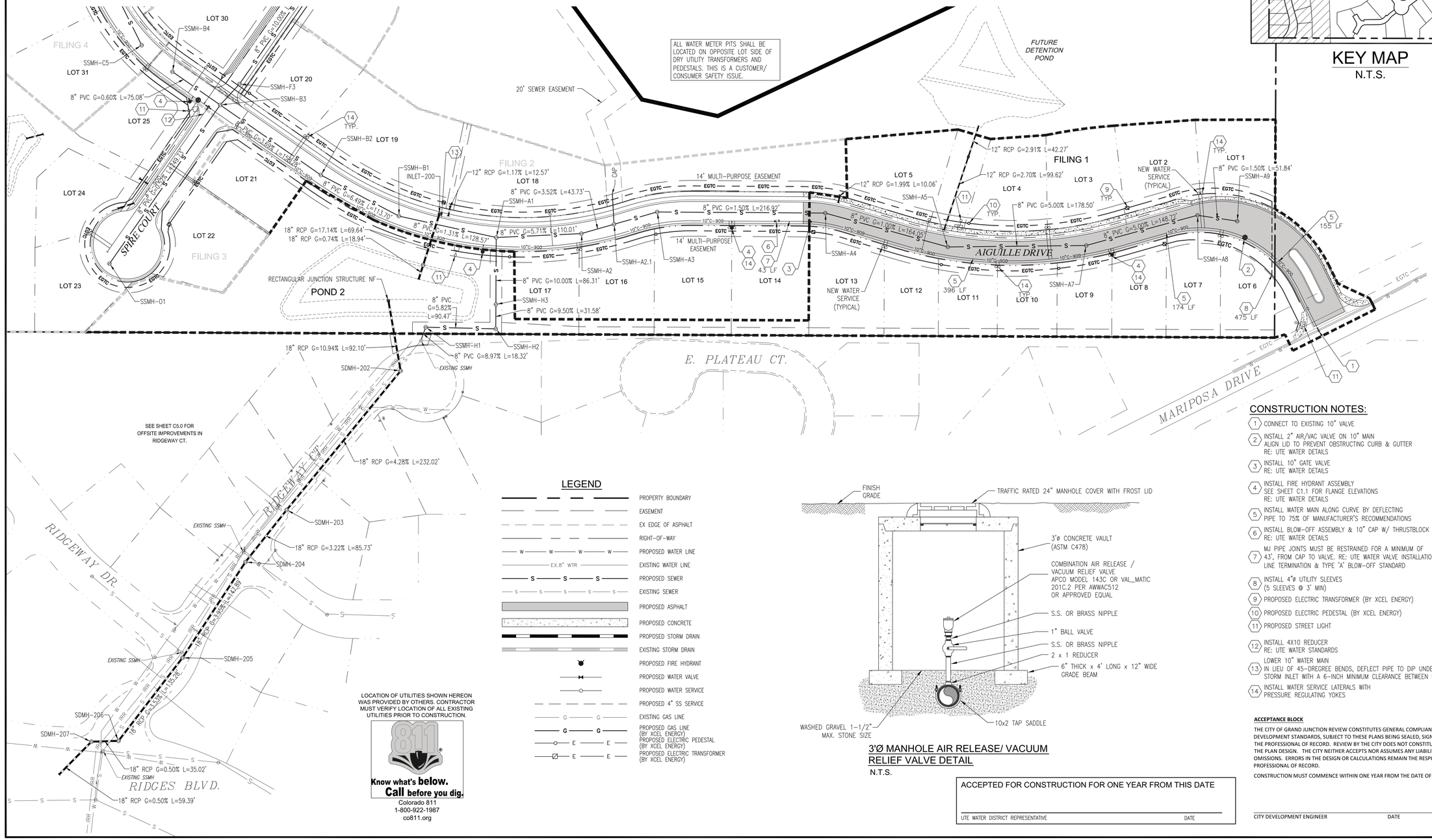
1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
2. INSTALL SANITARY SEWER FROM SSMH-A9 TO EXISTING MAN-HOLE IN RIDGEWAY COURT AS SHOWN INCLUDING LINE TO MAN-HOLE B-1.
3. END WATER LINE CONSTRUCTION AT THE MIDDLE OF LOT 14 AS SHOWN.
4. ASPHALT PAVEMENT TO END AT THE NORTH END OF LOT 13 FOR FILING 1.
5. ROAD ALIGNMENT TO BE GRADED AND BASE COURSE INSTALLED TO THE NORTH END OF LOTS 20 & 21.



KEY MAP
N.T.S.

N

SCALE IN FEET
60 30 0 60 120
1" = 60'



LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.
Colorado 811
1-800-922-1987
co811.org

LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE
- EXISTING WATER LINE
- PROPOSED SEWER
- EXISTING SEWER
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER SERVICE
- PROPOSED 4" SS SERVICE
- EXISTING GAS LINE
- PROPOSED GAS LINE (BY XCEL ENERGY)
- PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
- PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)

3'Ø MANHOLE AIR RELEASE/ VACUUM RELIEF VALVE DETAIL
N.T.S.

CONSTRUCTION NOTES:

1. CONNECT TO EXISTING 10" VALVE
2. INSTALL 2" AIR/VAC VALVE ON 10" MAIN ALIGN LID TO PREVENT OBSTRUCTING CURB & GUTTER RE: UTE WATER DETAILS
3. INSTALL 10" GATE VALVE RE: UTE WATER DETAILS
4. INSTALL FIRE HYDRANT ASSEMBLY SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL WATER MAIN ALONG CURVE BY DEFLECTING PIPE TO 75% OF MANUFACTURER'S RECOMMENDATIONS
6. INSTALL BLOW-OFF ASSEMBLY & 10" CAP W/ THRUSTBLOCK RE: UTE WATER DETAILS
7. MJ PIPE JOINTS MUST BE RESTRAINED FOR A MINIMUM OF 43', FROM CAP TO VALVE. RE: UTE WATER VALVE INSTALLATION, LINE TERMINATION & TYPE 'A' BLOW-OFF STANDARD
8. INSTALL 4"ø UTILITY SLEEVES (5 SLEEVES @ 3' MIN)
9. PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)
10. PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
11. PROPOSED STREET LIGHT
12. INSTALL 4X10 REDUCER RE: UTE WATER STANDARDS
13. LOWER 10" WATER MAIN IN LIEU OF 45-DREGREE BENDS, DEFLECT PIPE TO DIP UNDER STORM INLET WITH A 6-INCH MINIMUM CLEARANCE BETWEEN PIPES.
14. INSTALL WATER SERVICE LATERALS WITH PRESSURE REGULATING YOKES

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

ACCEPTED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE

UTE WATER DISTRICT REPRESENTATIVE DATE

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
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James C. Atkinson
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JAMES C. ATKINSON
18828
8-15-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

BY	REV. DATE	COMMENT
DLS	1 8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017

Composite Site Plan - Utility and Water Plan

Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1"= 60'**
CAD ID: **3.0utility-f1.dwg**

~SHEET~
C3.0

FILING NOTES

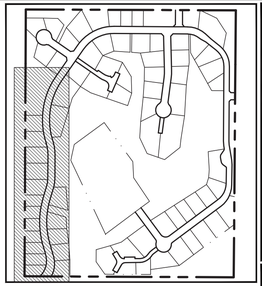
1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
2. INSTALL SANITARY SEWER FROM SSMH-A9 TO EXISTING MAN-HOLE IN RIDGEWAY COURT AS SHOWN INCLUDING LINE TO MAN-HOLE B-1.
3. END WATER LINE CONSTRUCTION AT THE MIDDLE OF LOT 14 AS SHOWN.
4. ASPHALT PAVEMENT TO END AT THE NORTH END OF LOT 13 FOR FILING 1.
5. ROAD ALIGNMENT TO BE GRADED AND BASE COURSE INSTALLED TO THE NORTH END OF LOTS 20 & 21.

CONSTRUCTION NOTES:

1. INSTALL STOP SIGN & STREET SIGN RE: MUTCD
2. CONSTRUCT HANDICAPPED RAMP RE: CITY OF GJ DETAILS
3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL 6" STANDARD CURB & GUTTER W/ATTACHED SIDEWALK – 87 LF
6. INSTALL 6" DRIVE-OVER CURB & GUTTER W/ATTACHED SIDEWALK – 158 LF
7. INSTALL 6" STANDARD CURB & GUTTER 74 LF
8. SAWCUT & REMOVE ±106 LF EXISTING CONCRETE CURB USE CARE TO ENSURE PAVEMENT EDGE PROVIDES A CLEAN JOIN FOR INSTALL OF NEW CONCRETE VALLEY PAN
9. 15' SIDEWALK TRANSITION FROM ATTACHED TO DETACHED

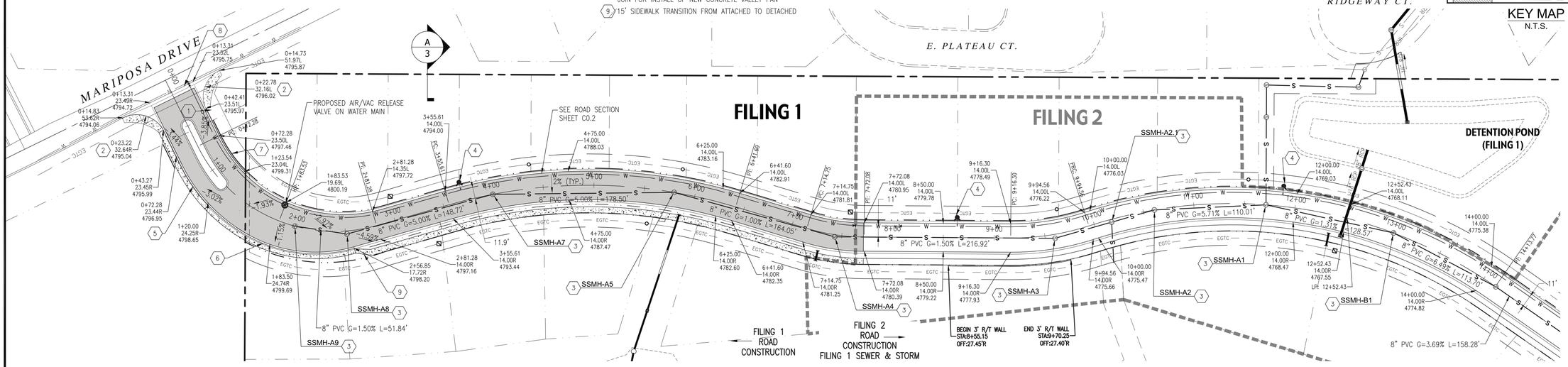
GENERAL NOTES:

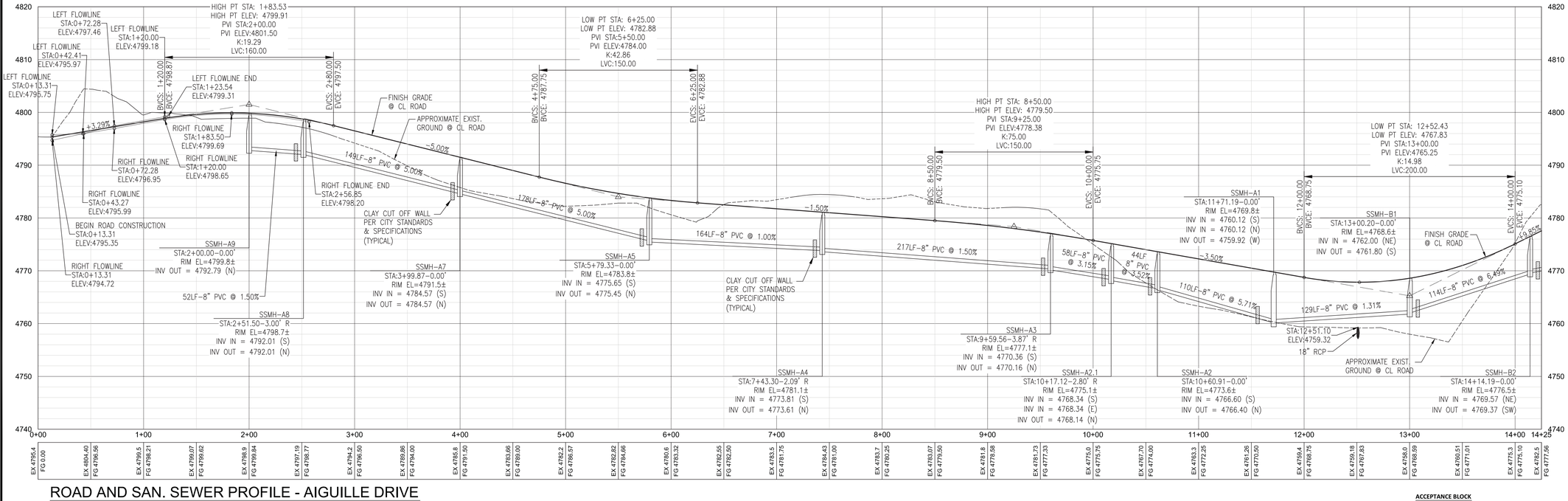
1. REFERENCE SHEET C0.1 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET C0.2 FOR STREET SECTIONS
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION



ROAD AND SAN. SEWER PLAN - AIGUILLE DRIVE

SCALE: 1" = 50'





ROAD AND SAN. SEWER PROFILE - AIGUILLE DRIVE

HORIZONTAL SCALE: 1" = 50'

VERTICAL SCALE: 1" = 5'

ACCEPTANCE BLOCK

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COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 8-15-17 PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/15/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

Road & Sanitary Sewer Plan & Profile

Aiguille Drive

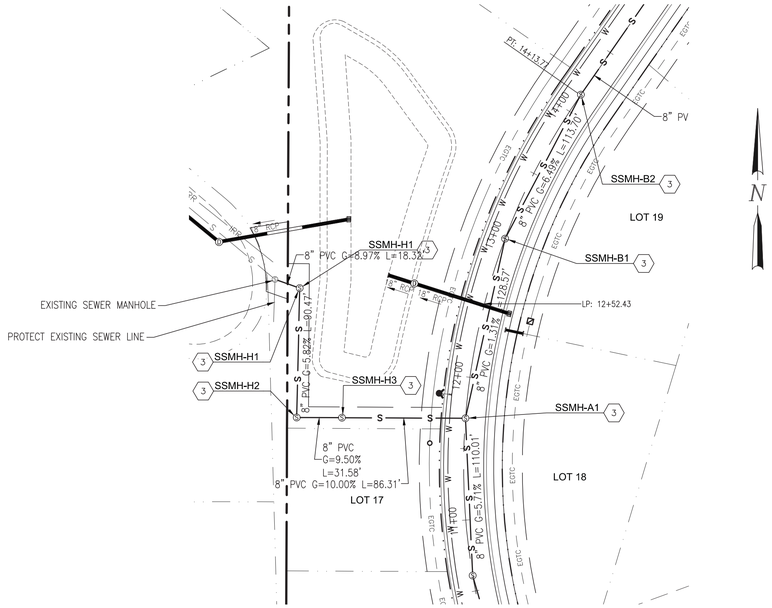
Pinnacle Ridge Subdivision Filing 1

Mariposa Drive

Grand Junction, Colorado 81507

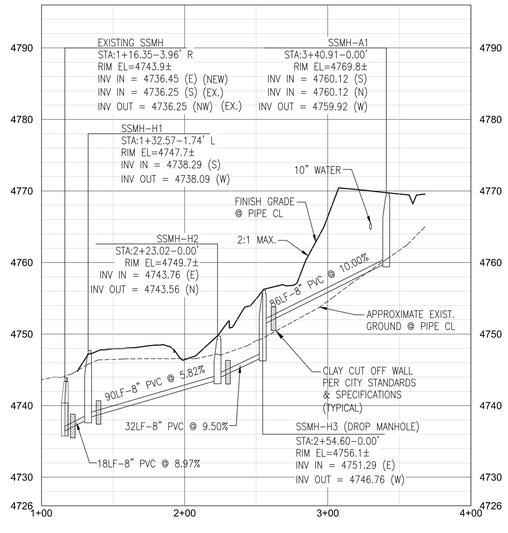
PROJECT NO: **F04-006**
DATE: **06/02/17**
SCALE: **1" = 50'**
CAD ID: **4.0ss-road-f1.dwg**

~SHEET~
C4.0



ROAD AND SAN. SEWER PLAN - RIDGEWAY CT. CONNECTION

SCALE: 1" = 50'



ROAD AND SAN. SEWER PROFILE - RIDGEWAY CT. CONNECTION

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

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6. INSTALL 6" DRIVE-OVER CURB & GUTTER W/ATTACHED SIDEWALK – 158 LF
7. INSTALL 6" STANDARD CURB & GUTTER 74 LF
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GENERAL NOTES:

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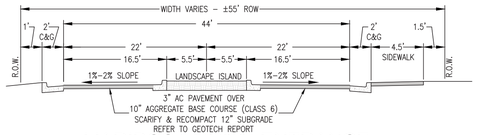
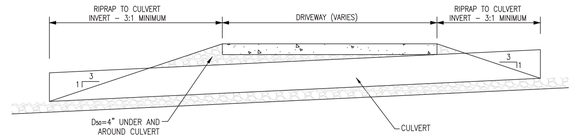
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION

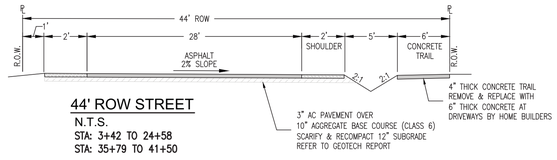


MARIPOSA DRIVE ENTRANCE

N.T.S.
STA: 0+24 TO STA: 1+52
(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 3+42)

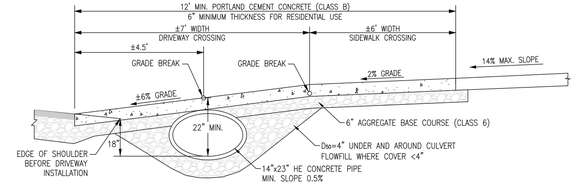


SECTION A-A

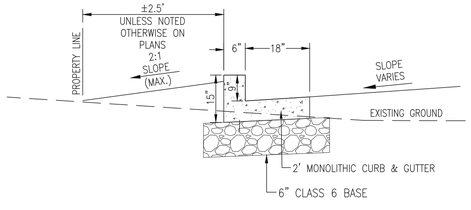


44' ROW STREET

N.T.S.
STA: 3+42 TO 24+58
STA: 35+79 TO 41+50



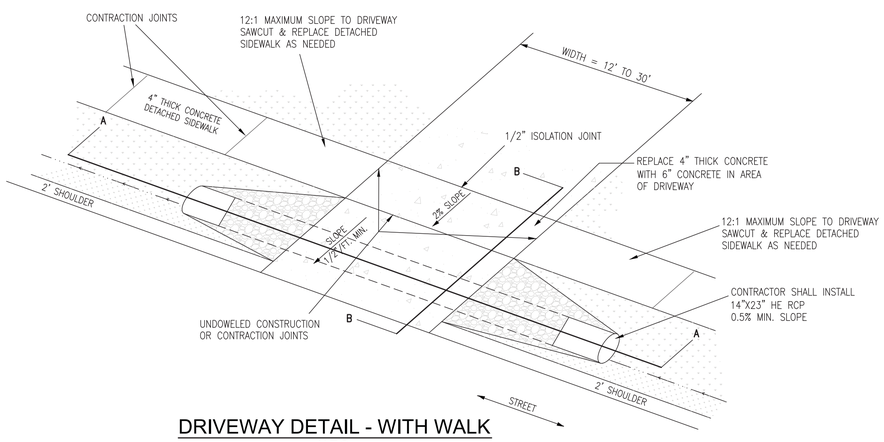
SECTION B-B



WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

CONCRETE CURB DETAIL

N.T.S.



DRIVEWAY DETAIL - WITH WALK

N.T.S.

NOTE:
CARE SHALL BE TAKEN TO REMOVE EXISTING ROCK LINING AND GEOTEXTILE FABRIC PRIOR TO NEW CULVERT INSTALLATION. FABRIC AND ROCK TO BE CAREFULLY REPLACED AROUND NEW CULVERT.

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER _____ DATE _____

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MAJOR SUBDIVISION
FINAL PLAN

NO.	REV. DATE	COMMENT	BY
1	8/15/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

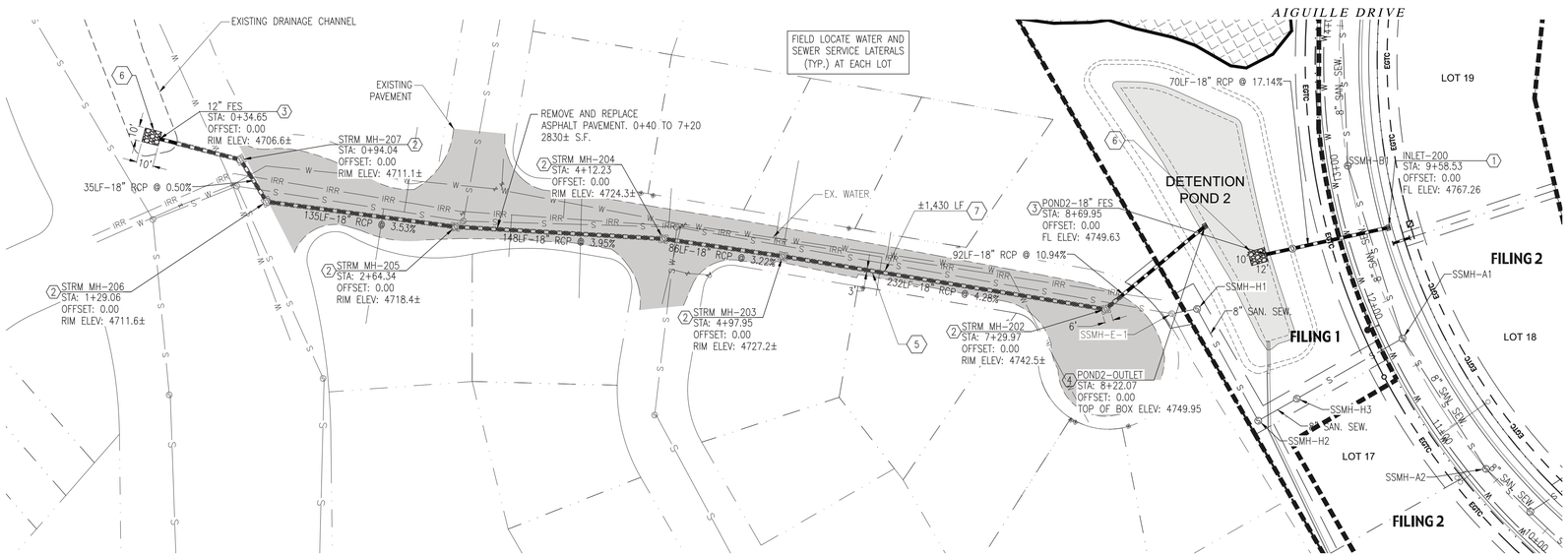
Road & Sanitary Sewer Plan & Profile

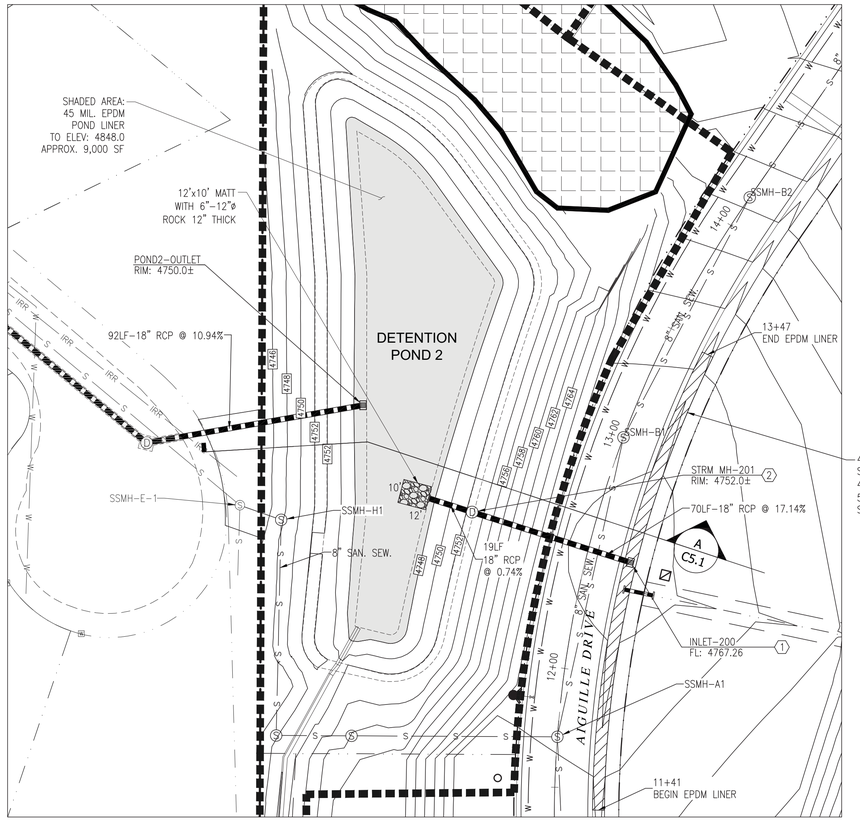
Ridgeway Court Sewer Connection
Pinnacle Ridge Subdivision Filing 1

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/02/17**
SCALE: **1" = 50'**
CAD ID: **4.0ss-road-f1.dwg**

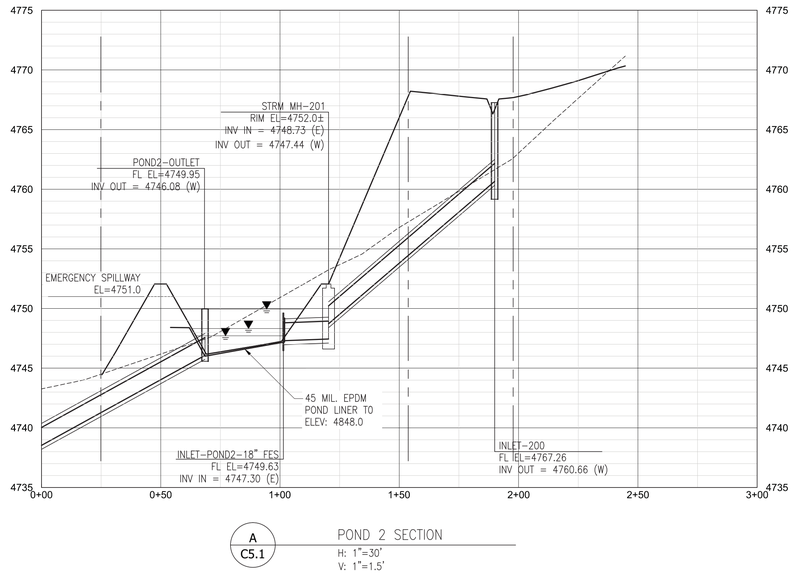
~SHEET~
C4.1


EXISTING DRAINAGE CHANNEL
EXISTING PAVEMENT
FIELD LOCATE WATER AND SEWER SERVICE LATERALS (TYP.) AT EACH LOT
REMOVE AND REPLACE ASPHALT PAVEMENT. 0+40 TO 7+20 2830± S.F.
AIGUILLE DRIVE
12" FES
STA: 0+34.65
OFFSET: 0.00
RIM ELEV: 4706.6±
STRM MH-207
STA: 0+94.04
OFFSET: 0.00
RIM ELEV: 4711.1±
STRM MH-204
STA: 4+12.23
OFFSET: 0.00
RIM ELEV: 4724.3±
STRM MH-206
STA: 1+29.06
OFFSET: 0.00
RIM ELEV: 4711.6±
STRM MH-205
STA: 2+64.34
OFFSET: 0.00
RIM ELEV: 4718.4±
STRM MH-203
STA: 4+97.95
OFFSET: 0.00
RIM ELEV: 4727.2±
STRM MH-202
STA: 7+29.97
OFFSET: 0.00
RIM ELEV: 4742.5±
POND2-OUTLET
STA: 8+22.07
OFFSET: 0.00
TOP OF BOX ELEV: 4749.95
POND2-18" FES
STA: 8+69.95
OFFSET: 0.00
FL ELEV: 4749.63
35LF-18" RCP @ 0.50%
135LF-18" RCP @ 3.53%
148LF-18" RCP @ 3.95%
86LF-18" RCP @ 3.22%
232LF-18" RCP @ 4.28%
92LF-18" RCP @ 10.94%
70LF-18" RCP @ 17.14%
±1,430 LF
EX. WATER
DETENTION POND 2
LOT 19
LOT 18
LOT 17
FILING 1
FILING 2
FILING 2
INLET-200
STA: 9+58.53
OFFSET: 0.00
FL ELEV: 4767.26
SSMH-A1
SSMH-H1
SSMH-H3
SSMH-H2
SSMH-A2
SSMH-E-1
8" SAN. SEW.
8" SAN. SEW.
8" SAN. SEW.
8" SAN. SEW.
8" SAN. SEW.
8" SAN. SEW.
12" IRR.
EGTC
EGTC
EGTC



POND 2 - PLAN

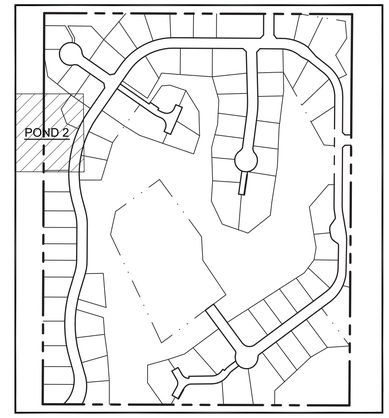
SCALE: 1" = 30'



A
C5.1

POND 2 SECTION

H: 1"=30'
V: 1"=1.5'

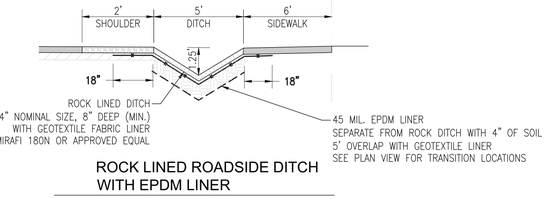


KEY MAP

N.T.S.

CONSTRUCTION NOTES:

1. INSTALL/MODIFIY 3'X4' AREA INLET
   RE: CITY STD. DETAILS, & THIS SHEET
2. INSTALL 48"ø MANHOLE
   RE: CITY STD. DETAILS

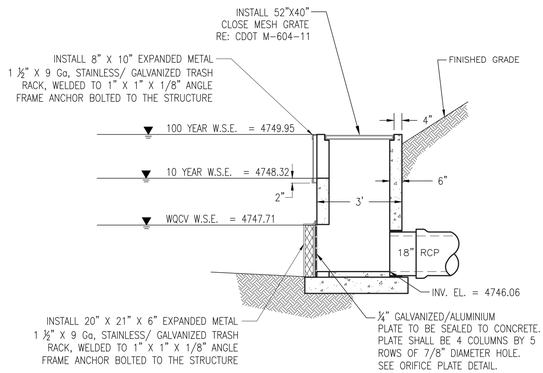


ROCK LINED ROADSIDE DITCH
WITH EPDM LINER

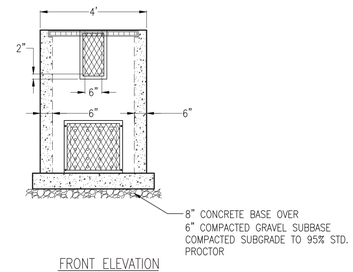
N.T.S.

POND 2 - SUMMARY TABLES

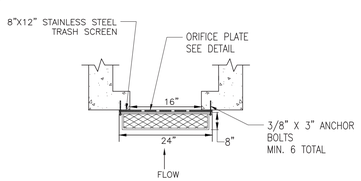
POND 2	VOLUME (CF)	WSEL (FT)	PEAK DISCHARGE FLOW (CFS)	ALLOWABLE PEAK DISCHARGE FLOW (CFS)
WQCV	7,575	4847.71	NA	NA
10 YEAR	13,992	4748.32	0.52	1.87
100 YEAR	31,059	4749.95	4.21	7.79

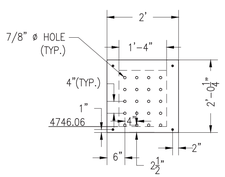


PROFILE



FRONT ELEVATION





POND OUTLET STRUCTURE DETAIL

N.T.S.

GENERAL NOTES:

1. REFERENCE SHEET C0.2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. STATIONS ARE IN REFERENCE TO CENTER LINE OF ROAD, UNLESS OTHERWISE INDICATED.
4. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
5. REFER TO SHEET C5.0 FOR CONSTRUCTION KEY NOTES.

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

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• PROJECT MANAGERS
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2394 Patterson Road, Suite 201
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Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED
JAMES C. ATKINSON
18828
8-15-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

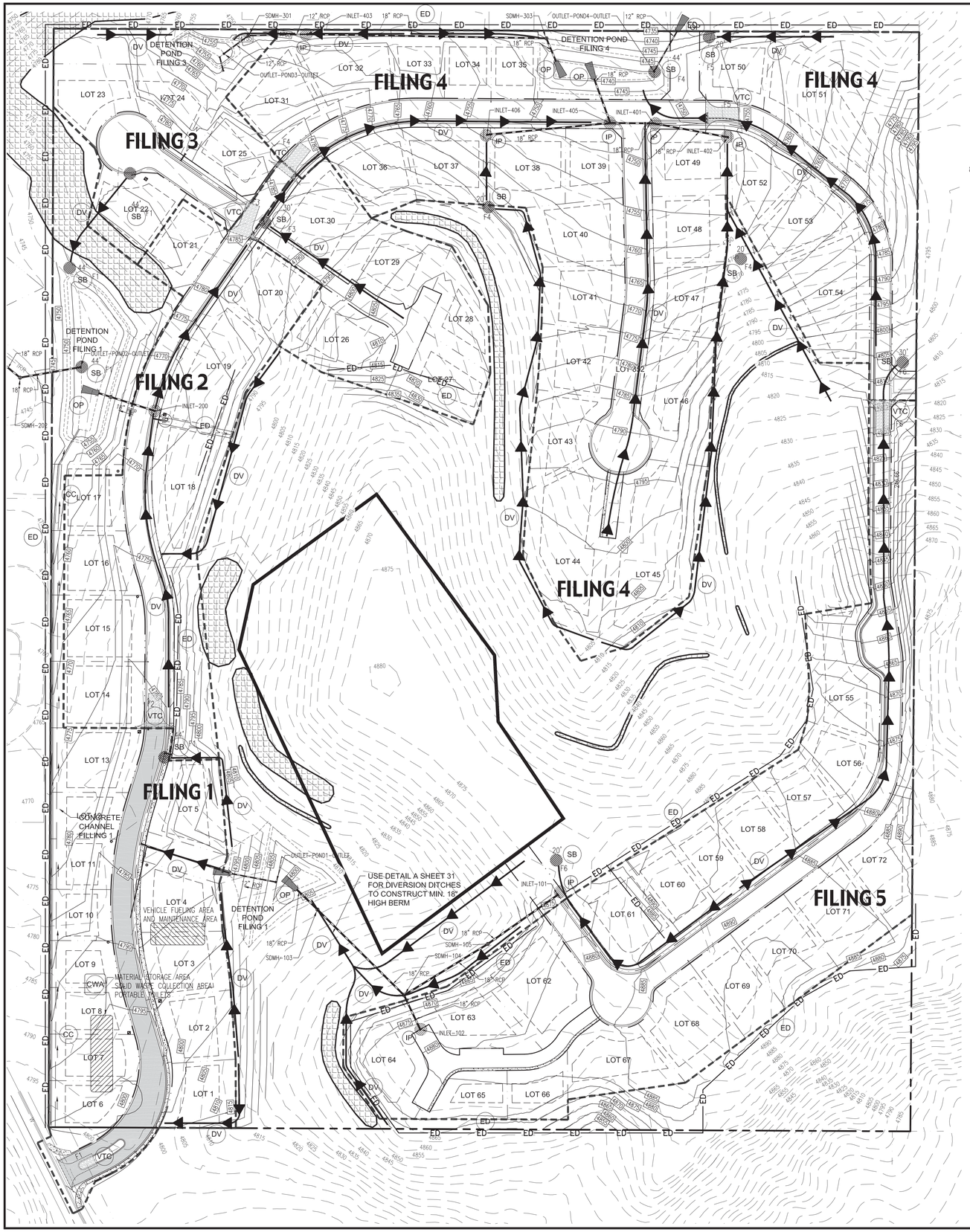
REV.	DATE	COMMENT	BY
1	8/09/17	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017	DLS

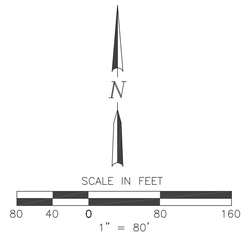
Storm Sewer Plan
Pond 1 and 2 Details

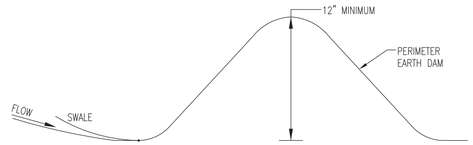
Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 30'**
CAD ID: **5.0storm-f1.dwg**

~SHEET~
C5.1







EARTH DAM SECTION
SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
EARTHEN DAM	ED	ED
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
SEDIMENT BASIN	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

GRADING NOTE:

FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

GENERAL NOTES:

1. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL REQUIRED EASEMENTS, RIGHT AND/OR RIGHTS-OF-WAY PURSUANT TO THE DISCHARGE FROM THE SEDIMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS AND GRADING OR OTHER WORK TO BE PERFORMED ON ADJACENT OR DOWNSTREAM PROPERTIES AFFECTED BY THE PLAN.
2. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1); FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE, THE IN-PLACE SEDIMENT CONTROL MEASURES WILL BE MAINTAINED ON A CONTINUING BASIS UNTIL THE SITE IS PERMANENTLY STABILIZED AND ALL PERMIT REQUIREMENTS ARE MET.
3. REFER TO CITY OF GRAND JUNCTION STANDARD DRAWINGS AND SPECIFICATIONS.
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE 5-2-1 DRAINAGE AUTHORITY. CONTACT MARK BARSLUND 970-201-1362

ACCEPTANCE BLOCK

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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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MAJOR SUBDIVISION
FINAL PLAN

NO.	REV. DATE	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017	BY
		COMMENT	DLS
1	8/15/17		

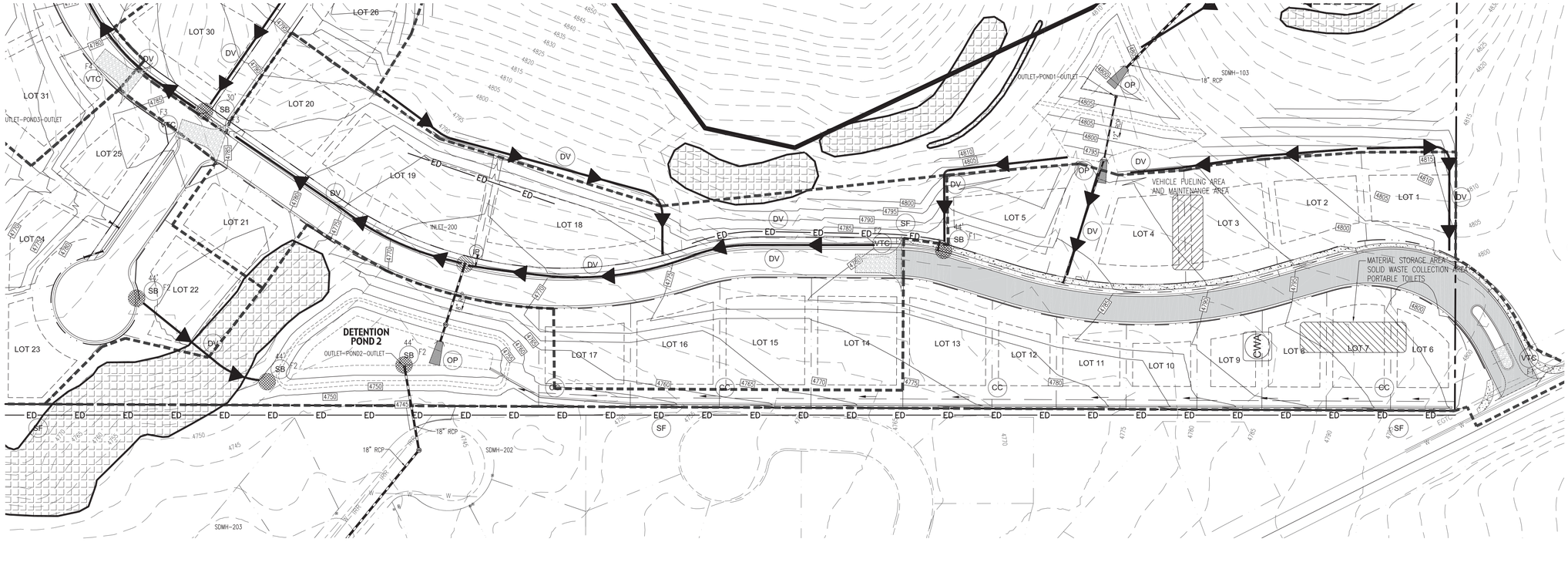
Overall Construction Stormwater Management Plan

Pinnacle Ridge Subdivison Filing 1

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **07/08/15**
SCALE:
CAD ID: **6.0swm-f1.dwg**

~SHEET~
C6.0



N

SCALE IN FEET

60 30 0 60 120

1" = 60'

CONTOUR INTERVAL = 2'

GRADING NOTE:

FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

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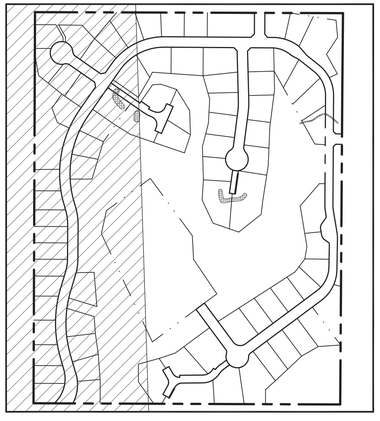
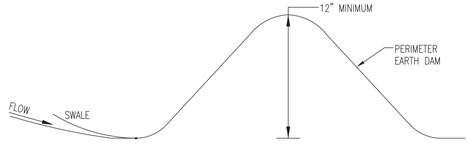


KEY MAP

N.T.S.



EARTH DAM SECTION

SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
EARTHEN DAM	ED	ED
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
SEDIMENT BASIN	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

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18828
8-15-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

NO.	REV. DATE	COMMENT	BY
1	8/15/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

Construction Stormwater Management Plan Filling 1

Pinnacle Ridge Subdivison
Filing 1

Mariposa Drive
Grand Junction, Colorado

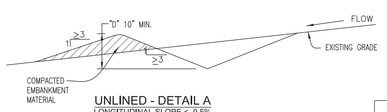
PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **SEE PLAN**
CAD ID: **6.0swm-f1.dwg**

~SHEET~

C6.1

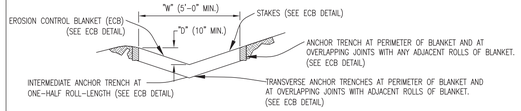
DIVERSION DITCH DETAIL A

DV

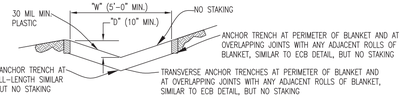


UNLINED - DETAIL A
LONGITUDINAL SLOPE < 0.5%

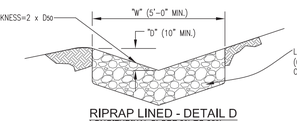




EROSION CONTROL BLANKET (ECB) LINED - DETAIL B
LONGITUDINAL SLOPE 0.5% TO 3 %



PLASTIC LINED - DETAIL C
LONGITUDINAL SLOPE 3% TO 33%



RIPRAP LINED - DETAIL D
LONGITUDINAL SLOPE 3% TO 33%

DIVERSION DITCH INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF DIVERSION DITCH.
   - TYPE OF DITCH (UNLINED, ECB PLASTIC LINED OR RIPRAP LINED).
   - LENGTH OF EACH TYPE OF DITCH.
   - DEPTH, "D", AND WIDTH, "W" DIMENSIONS.
   - FOR ECB LINED DITCH, EROSION CONTROL BLANKET TYPE (SEE ECB DETAIL).
   - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, "D 50 ".
2. SEE DRAINAGE PLANS FOR DETAILS OF ANY PERMANENT CONVEYANCE FACILITIES OR DIVERSION DITCHES EXCEEDING A 2 YEAR FLOOD 10 CFS.
3. DIVERSION DITCHES INDICATED ON INITIAL SWMP PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES..
4. FOR ECB LINED DITCHES, INSTALLATION OF EROSION CONTROL BLANKET SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.
5. IN LOCATIONS WHERE CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION DITCH, THE PERMITTEES SHALL INSTALL A TEMPORARY CULVERT WITH A MINIMUM DIAMETER OF 12-INCHES.

DIVERSION DITCH MAINTENANCE NOTES

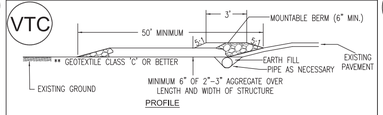
1. THE SWMP MANAGER SHALL INSPECT DIVERSION DITCHES WEEKLY AND DURING AND AFTER ANY STORM. MAKE REPAIRS AS NECESSARY.
2. DIVERSION DITCHES ARE TO REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION, OR IF APPROVED BY LOCAL JURISDICTION MAY BE LEFT IN PLACE.
3. IF DIVERSION DITCHES ARE REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, DRILL SEEDED, HAY CRIMPED MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

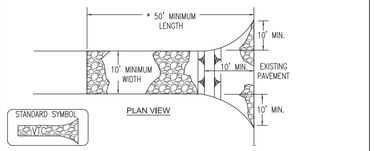
DETAIL BASED ON DETAILS PROVIDED BY DOUGLAS COUNTY

Urban Drainage and Flood Control District Drainage Criteria Manual (V.3)	Figure C5-3 DIVERSION DITCH AND DIKE

STABILIZED CONSTRUCTION ENTRANCE

VTC

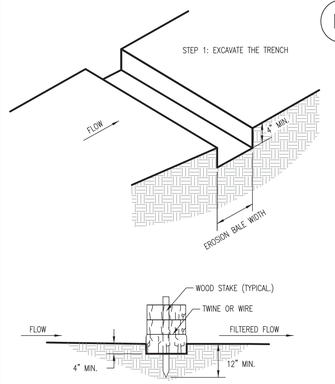




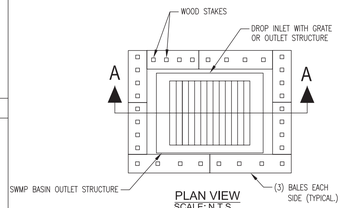
Construction Specification

1. Length – minimum of 50' (*30' for single residence lot).
2. Width – 10' minimum, should be flared at the existing road to provide a tuning radius
3. Geotextile fabric (filter cloth) shall placed over the exiting around prior to placing stone. **This plan approval authority may not require single family residence to use geotextile.
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water – all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location – A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

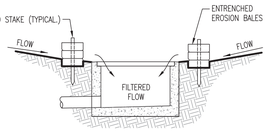
IP



EROSION BALE TRENCHING AND STAKING
SCALE: N.T.S.



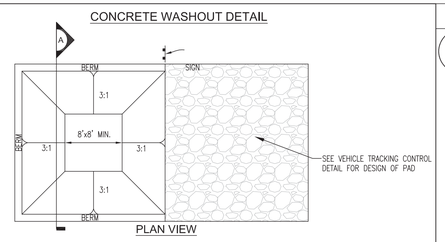
PLAN VIEW
SCALE: N.T.S.



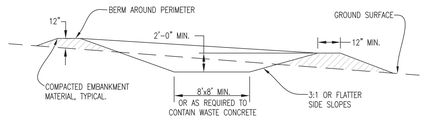
SECTION A-A
EROSION FILTER AT DROP INLET
SCALE: N.T.S.

CONCRETE WASHOUT DETAIL

CWA



PLAN VIEW



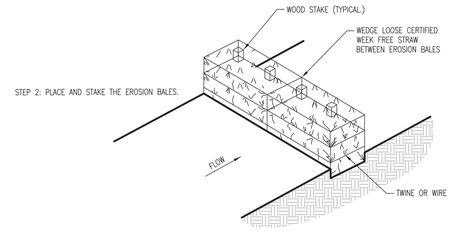
SECTION A

CONCRETE WASHOUT AREA INSTALLATION NOTES

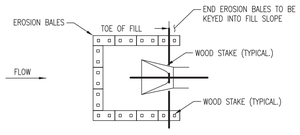
1. SEE PLAN VIEW FOR LOCATIONS OF CONCRETE WASHOUT AREA
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL IS REQUIRED AT THE ACCESS POINT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION

CONCRETE WASHOUT AREA MAINTENANCE NOTES

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, DRILL SEED AND CRIMP MULCH OR OTHERWISE STABILIZE IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
4. INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.



EROSION BALE BMP
SCALE: N.T.S.



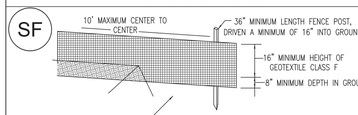
PLAN VIEW
EROSION BALE CULVERT INLET PROTECTION
SCALE: N.T.S.

NOTES

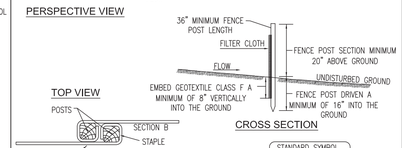
1. STAKES SHALL BE WOOD AND SHALL BE 2" X 2" NOMINAL.
2. EROSION BALES SHALL BE 18" X 18" X 36".
3. EROSION BALES SHALL BE ENTRENCHED 4 IN. MINIMUM INTO THE SOIL TIGHTLY ABUTTED WITH NO GAPS, STAKED, AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERIMETER.

DETAIL 22 - SILT FENCE

SF



PERSPECTIVE VIEW



JOINING TWO ADJACENT SILT FENCE SECTIONS

Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-setion and shall meet the following requirements for Geotextile Class F:

Tensile Strength:	50 lbs./in. (min.)	Test: MSMT 509
Tensile Modulus:	20 lbs./in. (min.)	Test: MSMT 509
Flow Rate	0.3 gal. ft. / minute (max.)	Test MSMT 322
Efficiency	75% (min.)	Test: MSMT 322

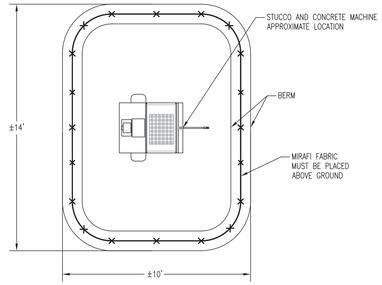
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

SILT FENCE

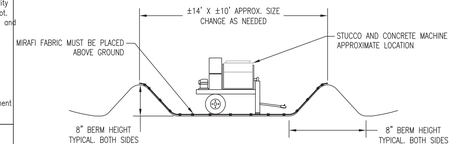
Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

NOTE:
In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.



PLAN VIEW
SCALE: N.T.S.



ELEVATION VIEW
SCALE: N.T.S.

STUCCO & CONCRETE MACHINE BMP
SCALE N.T.S.

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED 18828 PROFESSIONAL ENGINEER 8-16-17

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/15/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

Construction Stormwater Management Plan Details

Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **07/06/15**
SCALE:
CAD ID: **6.0swm-f1.dwg**

~SHEET~
C6.2

EXHIBIT B

IMPROVEMENTS COST ESTIMATE

DATE: August 7, 2017
DEVELOPMENT NAME: **PINNACLE RIDGE FILING 1**
LOCATION: Mariposa Drive, Grand Junction, CO
PERSON PREPARING:

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
A.	**SANITARY SEWER**				
1	8" PVC Sanitary Sewer Main	LF	760	$ 23.00	$ 17,480.00
2	10" PVC Sanitary Sewer Main	LF		$ 30.00	$ -
3	4 " PVC Sanitary Sewer Main	LF		$ 6.00	$ -
4	Sewer services	EA	13	$ 400.00	$ 5,200.00
5	Sanitary Sewer Manhole	EA	6	$ 15.00	$ 90.00
6	Sanitary Sewer Drop Manhole	EA	1	$ 6,000.00	$ 6,000.00
7	Connection to Existing Manhole	EA	1	$ 1,000.00	$ 1,000.00
8	Concrete Encasement	LF		$ 20.00	$ -
	Subtotal Part A Sanitary Sewer				**$ 29,770.00**
B.	**DOMESTIC WATER**				
1	Air Vacuum Release Valve	EA	1	$ 5,000.00	$ 5,000.00
2	8" PVC Water Main	LF		$ 30.00	$ -
3	10" PVC Water Main	LF	776	$ 35.00	$ 27,160.00
4	_4__" Gatevalve	EA			$ -
5	8" Gatevalve	EA		$ 1,200.00	$ -
6	10" Gatevalve	EA	2	$ 2,400.00	$ 4,800.00
7	Water Services (copper)	EA	13	$ 500.00	$ 6,500.00
8	Connect to Existing Water Line	EA	1	$ 1,500.00	$ 1,500.00
9	Fire Hydrant with Valve	EA	2	$ 4,000.00	$ 8,000.00
10	Utility Adjustments	EA			$ -
11	Blowoff	EA	1	$ 500.00	$ 500.00
12	UTE Water Tap Fee	EA			$ -
	Subtotal Part B - Domestic Water				**$ 53,460.00**
C1	**STREETS**				
1	4" PVC Utility sleeves	LF	250	$ 15.00	$ 3,750.00
2	8" & 12" PVC irr. Sleeves	LF		$ 20.00	$ -
3	Xcel (Gas & Electric) Services	EA	13		$ -
4	Qwest and Charter Services	EA	13		$ -
5	Aggregate Base Course (Class 6) (_6" Compacted Thickness)	ton		$ 22.00	$ -
6	Aggregate Base Course (Class 6) (12" Compacted Thickness)	ton	2,216	$ 22.00	$ 48,752.00
7	Hot Bituminous Paving, Grading (3" thick)	TON	409	$ 92.00	$ 37,628.00
8	Hot Bituminous Paving, Grading__ (5" thick)	TON		$ 92.00	$ -
9	Hot Bituminous Paving, Patching (3" Thick)	SY	400	$ 14.00	$ 5,600.00
10	Ditch Liner	SY	242	$ 2.00	$ 484.00
11	spill curb and gutter	LF	320	$ 15.00	$ 4,800.00

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
12	Concrete Curb and Gutter (2' wide)	LF		$ 22.00	$ -
13	Concrete Curb & Gutter (2' wide X 12" high)	LF	1,032	$ 25.00	$ 25,800.00
14	Monolithic, Vertical Curb, Gutter and Sidewalk (6.5' Wide)	LF	196	$ 43.00	$ 8,428.00
15	Drive Over Curb, Gutter, and Sidewalk (6.5' Wide)	LF	158	$ 43.00	$ 6,794.00
16	Detached Concrete Sidewalk (6' Wide)	LF	507	$ 28.00	$ 14,196.00
17	Concrete Gutter and Driveway Section (6" Thick)	SY			
18	Concrete Drainage Pan (6' Wide, 6" Thick)	LF		$ 15.00	$ -
19	Concrete Corner Fillet	EA	2	$ 5,000.00	$ 10,000.00
20	Concrete Curb Ramp	SY			$ -
21	8" Comb. Cross pans, Fillets & ADA Ramps	SF			$ -
22	Concrete Driveway (_6" Thick)	SY			$ -
23	Driveway/Concrete Repair	SY			$ -
24	Retaining Walls	LF	121	$ 20.00	$ 2,420.00
25	Street Signs	EA	5	$ 400.00	$ 2,000.00
26	Striping (New, Remove/Replace)	LF			$ -
27	Street Lights	EA	3	$ 2,500.00	$ 7,500.00
28	Signal Construction or Reconstruction	LS			$ -
29	Flowable Fill	CY			$ -
30	End of the Road Barrier	EA	1	$ 1,000.00	$ 1,000.00
C2	**BRIDGES**				
					$ -
1	Box Culvert Pre-Cast	LS			$ -
2	Box Culvert Cast-in-Place	LS			$ -
3	Wingwalls	LS			$ -
4	Parapet Wall	LS			$ -
5	Railing (handrail, guardrail)	LS			$ -
	Subtotal Part C - Streets and Bridges				**$ 179,152.00**
D1	**EARTHWORK**				
1	Mobilization	LS	1	$ 14,500.00	$ 14,500.00
2	Clearing and Grubbing	AC	7	$ 2.00	$ 14.00
3	Unclassified Excavation	CY	7,500	$ 4.00	$ 30,000.00
4	Unclassified Embankment	CY	22,042	$ 4.00	$ 88,168.00
5	Import Material	CY	1,452	$ 3.00	$ 4,356.00
6	Dry utilities trenching	LF	1,450	$ 4.00	$ 5,800.00
D2	**REMOVALS AND RESETTING**				
1	Removal of Asphalt	SY			$ -
2	Removal of Miscellaneous Concrete	SY			$ -
3	Remove Curb and Gutter	LF	107	$ 5.00	$ 535.00
4	Removal of Culverts	LF			$ -
5	Remove Structures	EA		$ 400.00	$ -
6	Remove Signs	EA			$ -
7	Remove Fence	LF			$ -
8	Adjust Manhole	EA	13	$ 500.00	$ 6,500.00
9	Adjust Valvebox	EA	4	$ 100.00	$ 400.00
10	Relocate or Adjust Utilities	LS		$ 1,000.00	$ -
11	House & Garage Demo	LS			$ -

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
D3	**EROSION CONTROL, SEEDING, AND SOIL RETENTION**				
1	Sod	SY			$ -
2	Seeding (Native)	AC	5	$ 500.00	$ 2,500.00
3	Seeding (Bluegrass/Lawn)	SY or AC			$ -
4	Hydraulic Seed and Mulching	SY or AC			$ -
5	Soil Retention Blanket	SY			$ -
6	Silt Fence	LF			$ -
7	Straw Waddles	LF			$ -
8	Temporary Berms	LF	1,300	$ 1.75	$ 2,275.00
9	Inlet Protection	EA	1	$ 500.00	$ 500.00
10	Sediment Trap/Basin	EA	1	$ 500.00	$ 500.00
11	Monthly Maintenance/Inspection	Month			$ -
12	Watering (Dust Control)	LS	1	$ 2,000.00	$ 2,000.00
13	Temporary Irrigation				$ -
14	Tracking Pad	EA	1	$ 10,000.00	$ 10,000.00
D4	**STORM DRAINAGE FACILITIES**				
1	Finish Grading (incl. Swales, and Ponds)	LS	1	$ 5,000.00	$ 5,000.00
2	18" ADS Storm Drain Pipe	LF		$ 20.00	$ -
3	15" RCP Storm Drain Pipe	LF		$ 35.00	$ -
4	18" RCP Storm Drain Pipe	LF	875	$ 40.00	$ 35,000.00
5	24" RCP Storm Drain Pipe	LF		$ 40.00	$ -
6	30" RCP Storm Drain Pipe	LF		$ 50.00	$ -
7	18" RCP Flared End Section	EA	2	$ 680.00	$ 1,360.00
8	30" Flared End Section	EA		$ 2,000.00	$ -
9	48" Storm Drain Manhole	EA	6	$ 3,000.00	$ 18,000.00
10	60" Storm Drain Manhole	EA		$ 3,500.00	$ -
11	72" Storm Drain Manhole	EA		$ 4,000.00	$ -
12	Manhole with Box Base	EA			$ -
13	Connection to Existing MH	EA			$ -
14	Single Curb Opening Storm Drain Inlet	EA		$ 1,000.00	$ -
15	Double Curb Opening Storm Drain Inlet	EA		$ 2,000.00	$ -
16	Triple Curb Opening Storm Drain Inlet	EA		$ 3,000.00	$ -
17	Area Inlet - large	EA	1	$ 2,000.00	$ 2,000.00
18	Detention Area Outlet structure	EA	1	$ 5,000.00	$ 5,000.00
19	Sidewalk Trough Drain	EA		$ 500.00	$ -
20	Pump Systems including Electrical	LS		$ 2,000.00	$ -
21	Concrete V-pan (2' wide x 6" thick)	LF	23	$ 4.00	$ 92.00
22	seep drains	LF		$ -	$ -
	Subtotal Part D - Grading and Drainage				**$ 234,500.00**
E1	**IRRIGATION**				
1	Connect to Existing Pipe	LS			$ -
2	4" PVC Irrigation Pipe	LF		$ 3.00	$ -
3	8" PVC Irrigation Pipe	LF		$ 4.00	$ -
4	Fittings and Valves	LS			$ -
5	Services	EA		$ 10.00	$ -
6	Pump System and Concrete Vault	LS			$ -
7	Irrigation Structure	EA		$ 1,800.00	$ -
8	Vacuum Relief and/or Air Release Valve	EA			$ -
E2	**LANDSCAPING**				
1	Design/Architecture	LS			$ -
2	Earthwork	CY			$ -
3	Hardscape Features	LS			$ -
4	Plant Material & Planting	LS	1	$ 13,000.00	$ 13,000.00
5	Irrigation System	LS			$ -

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
6	Curbing	LF			$ -
7	Retaining Walls & Structures	LF			$ -
8	1 Year Maintenance Agrmnt.	LS			$ -
9	Topsoil	CY			$ -
	Subtotal Part E - Landscaping and Irrigation				**$ 13,000.00**
	Subtotal Construction Costs				**$ 509,882.00**
F.	**MISCELLANEOUS ITEMS**				
1	Construction staking/surveying	%	2.00%	$ 509,882.00	$ 10,197.64
2	Developer's inspection cost	%		$ 509,882.00	$ -
3	General construction supervsion	%		$ 509,882.00	$ -
4	Quality control testing	%	2.00%	$ 509,882.00	$ 10,197.64
5	Construction traffic control	%	0.00%	$ 509,882.00	$ -
6	City inspection fees	%	0.00%	$ 509,882.00	$ -
7	As-builts	%	2.00%	$ 509,882.00	$ 10,197.64
	Subtotal Part F - Miscellaneous Items				**$ 30,592.92**
% = Percentage of total site construction costs					
G.	**COST SUMMARY**				
1	**Total Improvement Costs**				**$ 540,474.92**
2	**City Security (20%)**				**$ 108,094.98**
3	**Total Guarantee Amount**				**$ 648,569.90**

NOTES
1. All prices shall be for items complete in place and accepted.
2. All pipe prices shall include excavation, pipe, bedding, backfill, and compaction.
3. Water main shall include pipe, excavation, bedding, backfill, bends, and appurtenances not itemized elsewhere.
4. All concrete items shall include Aggregate Base Course where required by the drawings.
5. Fill in the pipe type for irrigation pipe and sleeves.
6. Reconditioning shall be calculated to at least 6" outside of back of walk on both sides.
7. Units can be changed if desired, simply annotate what is used.
8. Additional lines or items may be added as needed.

_____
Signature of Developer Date
(If corporation, to be signed by President and attested to by Secretary together with the corporate seals.)

I have reviewed the estimated costs and time schedule shown above and, based on the construction drawings submitted to date and the current cost of construction, I take no exception to the above.

_____
City Development Engineer Date

_____
Community Development Date

Final Drainage Report
For
Pinnacle Ridge Subdivision
Grand Junction, Colorado

Date: June 9, 2017
Revised: August 10, 2017

Prepared by: Vortex Engineering, Inc.
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
970-245-9051
VEI# F04-006

Submitted to: City of Grand Junction
250 N. 5th Street
Grand Junction, CO 81501

Type of Design: Major Subdivision

Owners: Two R & D LLC
Fruita, Co

Property Address: Mariposa Drive
Grand Junction, CO

Tax Schedule No.: 2945-212-00-011

"I hereby certify that this Final Drainage Report for the design Pinnacle Ridge Subdivision was prepared by me (or under my direct supervision) in accordance with the provisions of the Stormwater Management Manual for the owners thereof. I understand that City of Grand Junction does not and will not assume liability for drainage facilities designed by others.

James C. Atkinson, P.E. Date



As an authorized signing representative of Pinnacle Ridge Subdivision, I hereby certify that the drainage facilities shall be constructed according to the design presented in this report. I understand that City of Grand Junction does not and will not assume liability for the drainage facilities designed and/or certified by my engineer. I understand that City of Grand Junction reviews drainage plan but cannot, on behalf of Pinnacle Ridge Subdivision, guarantee that Final drainage design review will absolve Pinnacle Ridge Subdivision and/or their successors and/or assigns of future liability for improper design. I further understand that approval of the Construction Plans does not imply approval of my engineer's drainage design.

Signature

8-8-17
Date

Table of Contents

1.0 Introduction....4
A. Background....4
B. Project Location....4
C. Property Description....4
2.0 Drainage System Description....5
A. Existing Drainage Conditions....5
B. Master Drainage Plans....5
C. Offsite Tributary Areas....6
D. Proposed Drainage System Description....6
3.0 Drainage Analysis and Drainage Criteria....7
A. Regulations....7
B. Hydrologic Criteria....8
C. Ponds' Summary Tables....8
D. Hydraulic Criteria....8
4.0 Conclusions....9
A. Compliance with Manual....9
5.0 References....9
Appendix A – Location Map....10
Appendix B – NCRS Soils Map....12
Appendix C – FEMA FIRM Maps....13
Appendix D – Basin Runoff, HGL Calcs....14
Appendix E – HYDROCAD Report....15
Appendix F – SWMM Checklis....16
Appendix G – Major Basins Exhibit....17
Appendix H – Variance Request Letter....18
Appendix I – Drainage Maps....19

1.0 Introduction

A. Background

This Final Drainage Report has been prepared by Vortex Engineering, Inc., and is required as part of the Pinnacle Ridge Major Subdivision submittal. This Final Drainage report has been created in accordance with the Mesa County/Grand Junction Stormwater Management Manual.

B. Project Location

The Pinnacle Ridge Subdivision is approximately 45-acres in size, located in the area known as The Ridges/Redlands in the political boundary of The City of Grand Junction, Colorado. It is located about 1/4 mile directly north of the intersection of Mariposa Drive and Monument Rd. Surrounding Pinnacle Ridge Subdivision are existing residential and open space parcels. Legal description of the site is as follows: Township 1 North, Range 1 East, and in Section 21 of the Ute Meridian. A vicinity map is provided in Appendix A for reference.

C. Property Description

The study area for the development of the subject site consists of about 49.2 acres. The development itself site consists of approximately 45 acres which does not include a 4.12-acre-undeveloped parcel located near the middle of the property. The project site is covered with native vegetation consisting of grasses and sparsely located shrubs. The highest point on the site is the ridge in the southeast corner that reaches a height of 4904. Grades on the site vary from 5 to 30 percent.

The Natural Resources Conservation Service (NRCS) classifies the soils within the Pinnacle Ridge Heights site predominantly as Persayo-Blackstone (Soil Symbol 87). These soils are classified as Hydrologic Group “D” which is described as soils having a slow infiltration rate when thoroughly wet. These soils consist mainly of clays that have a high shrink-swell potential, and a slow rate of water transmission. The NRCS Soils report is included in Appendix B.
No jurisdictional FEMA flood plain has been established on the site. See FEMA panel 08077C0815F in Appendix C

2.0 Drainage System Description

A. Existing Drainage Conditions

The existing topography of the site creates outflow conditions only. No offsite runoff enters the project site. The site is also intersected by a major sub-basin boundary placing the majority of the site, about 43 acres (basins EX2 to EX5) in the Major Basin 51 and about 6 acres (basin EX1) in The No Thoroughfare Canyon Basin. Both of these basins discharge into the Colorado River, located about a mile downstream from the site. There are no existing drainage or irrigation facilities present on the site, other than the natural channels and gulleys. The runoff from all of the 5 existing basins identified on the project site, exits the site in a shallow concentrated flow manner. Basin EX1 discharges out of the site along the southeast corner. Basin EX2 discharges west onto Plateau Ct. The runoff from Basin EX3 exits the site at about Ridgeway Ct along the western property boundary. The runoff from Basin EX4, the largest of the set, exits the site at the north onto a vacant lot that is situated between the following addresses 2417 and 2419 Hidden Valley Drive. From the vacant lot, the runoff enters an existing 24" culvert which routes the water to a drainage way in The Hidden Valley Park. Likewise, Basin EX5 runs off into Hidden Valley Court to the north.

Existing Conditions 3 Hour Runoff

Basin	Basin Area	CN	Tc (min.)	Runoff	
				10 yr	100 yr
EX1	5.96	86	7.9	1.62	4.47
EX2	9.4	86	11.3	1.41	6.74
EX3	9.18	86	8.5	1.42	6.8
EX4	21.3	86	21.8	2.91	13.46
EX5	2.77	86	4.6	0.45	2.22
EX6	0.62	86	5	0.11	0.55

B. Master Drainage Plans

As indicated above, the site is intersected by a major sub-basin boundary which places the majority of the site, about 43 acres in the Major Basin 59 and about 6 acres in the No Thoroughfare Canyon Basin. The proposed development diverts approximately 3.5 acres from the No Thoroughfare Canyon Basin to Basin 59. This area is negligible in comparison to the sizes of the above basins, being about 1 and 19 square miles for Basin 51 and No Thoroughfare Canyon Basin, respectively.

C. Offsite Tributary Areas

There are no offsite tributary basins discharging onto the project site.

D. Proposed Drainage System Description

The proposed storm sewer system for this project consists of overland sheets flows, shallow concentrated flows, gutter flows, ditch flows, piped storm sewer and 4 detention ponds in series of 2 each. The ponds are designed to treat and attenuate the Water Quality Capture Volume (WQCV), the 10 year minor storm and the 100 year major storm.

pond 1 outfall is piped now.

Pond 1, located in the southwest quarter of the site, shall intercept the runoff from approximately 6.8 acres. After, the water is released through the pond's outlet structure and discharge pipe to the roadside ditch along Aquille Dr. It then flows via a 1.25-foot-deep v-ditch for about 660 feet until it is intercepted by Inlet 200, and along with the surface runoff from Basin 200 it enters Pond 2. In addition to what is intercepted by Inlet 200, Pond 2 receives the surface runoff and concentrated flow delivered by concrete curb and gutter (12" tall with 24" gutter) located along the western property boundary, Basin 201. Total tributary basin area for Pond 2 is approximately 15.5 acres. This channel shall collect runoff from the lots located on the west side of Aiguille Drive, thus eliminating the potential of flash flooding onto Plateau Ct, and Ridgeway Ct. After the runoff in Pond 2 is treated and attenuated, the water shall exit the pond via an 18" concrete pipe for about 777 feet until it discharges into the ditch in the median located at the intersection of Ridgeway Court and Ridges Boulevard.

Pond 3 is designed to intercept the surface runoff from basin 300 located in the northwest corner of the property. After the runoff is treated and attenuated in Pond 3, it exits via a 12" RCP to the area Inlet 403 from where it travels in an 18" RCP for about 400 feet until it discharges into the Pond 4. In addition to the above, Pond 4 receives runoff from basins 401 and 402 in a concrete pipe, and surface runoff from 2 lots located directly west of Pond 4, Basin 400. The pond's outlet discharges the water onto the vacant lot located between 2417 and 2419 Hidden Valley Drive. From there the water shall exit the lot in the existing 24" culvert under Hidden Valley Drive into a small natural creek taking it to the Colorado River.

The parcels located along the side of the streets with the roadside ditch will require 18" culverts under the drives. These culverts will be installed at the time of the house and drive construction. For the scope of this Final report attached are normal water surface calculations for the 2 and 100 year storms for ditches and gutters in critical locations of the site. The roadside ditches are to be lined with riprap D_{50} = 4".

The roadside ditches are designed to r event's runoff. Refer to Appendix D.

Only saw the one for basin 202 designed. Erosion control

There are also diversion ditches to be constructed in the back of lots in the open space where applicable. The purpose of these ditches is to divert runoff and potential erosion from the open space behind the lots. These ditches were added to the proposed topography on the grading plan. Refer to the Grading Plan of the construction plans and Appendix D of this report.

The proposed grading on the site is designed to eliminate cross lot drainage and to maintain positive runoff out of the site. There are 2 minor basins, DD1 and DD2 whose runoff directly discharges onto the offsite. The areas of basins DD1 and DD2 are 1.93 acres and 0.39 acres, respectively. The runoff from these basins shall present no potential for adverse effects downstream of the site for the Basin DD1 shall remain mostly undisturbed, and Basin DD2 shall have its surface finished with a permanent erosion control and diversion ditches routing the runoff onto the vacant lot at the Pond 4 outfall. No impervious area shall be introduced within the boundary of these basins. **The runoff flows from basins DD1 and DD2 in the proposed conditions in minor storm yield 0.32 and 0.06 cfs, respectively. Whereas the minor storm runoff from basins EX1 and EX6 yield 1.62 and 0.11 cfs, respectively. The decrease in runoff from existing to proposed conditions from DD1 and DD2 is caused by decreasing of the area of the basins in proposed conditions. The runoff from basins DD1 and DD2 is compensated in volumes and discharge rates in ponds 1 and 4, respectively. Nevertheless, the size of either of the basins does not comply with the regulation 1407.3 of the SWMM. Therefore, a variance from compliance with the section 1407.3 of SWMM is hereby requested for Basins DD1 and DD2. A copy of the variance request letter is found in Appendix H of this report.**

3.0 Drainage Analysis and Drainage Criteria

A. Regulations

The supporting drainage design and calculations were performed in accordance with the Mesa County/City of Grand Junction Stormwater Management Manual (SWMM) and the UDFCD "Urban Storm Drainage Criteria Manual, Volume 1.
Variance requests are listed in Section 2.0 D and 4.0 A of this report.

B. Hydrologic Criteria

The hydrologic and hydraulic analysis proposed is to use procedures per the Mesa County Stormwater Management Manual (SWMM) guidelines, dated December 2007.

A Computer Aided Design program (HydroCAD) was used for modeling the hydrology and hydraulics of stormwater runoff. HydroCAD is based largely on hydrology techniques developed by the Soil Conservation Service (now the Natural Resources Conservation Service), combined with other hydrology and hydraulic calculations. The storm selected for analysis is the Mesa County 3 hour storm recommended by the SWMM.

C. Pond Summary Tables

Pond	Pond to be Built in Filing:	Pond Contributing Area (ac)	CN	Storm Events	Volume (cf)	WSEL (ft)	Design Peak Discharge (cfs)	SUM OF DD1 AND POND 1 PEAK FLOWS (CFS)	Allowable Peak Discharge (cfs)
POND 1	5	6.87	89	WQCV	3,296	4801.50	NA	NA	NA
				10 YEAR	6,082	4802.31	0.26	0.58	0.59
				100 YEAR	15,335	4804.31	0.48	2.09	2.47
POND 2	1	15.58	89	WQCV	7,575	4847.71	NA	NA	NA
				10 YEAR	13,992	4748.32	0.52		1.87
				100 YEAR	31,059	4749.95	4.21		7.79
POND 3	3	1.56	88	WQCV	702	4752.64	NA	SUM OF DD2 AND POND 4 PEAK FLOWS (CFS)	NA
				10 YEAR	820	4752.88	0.17		0.19
				100 YEAR	2,077	4754.06	0.55		0.78
POND 4	4	22.94	89	WQCV	11,098	4742.19	NA	NA	NA
				10 YEAR	14,737	4742.73	1.91	1.96	2.71
				100 YEAR	33,969	4745.13	10.21	10.40	11.28

D. Hydraulic Criteria

Storm Drains

Storm Drains are designed to have the 2 year EGL below the rim of the manhole or inlet's grates.

Street Flow and Inlet Capacities

The SWMM criteria were used to check for street flow capacity and inlet capacities. Ditch flows sections have been added to Appendix D.

evaluate driveway culverts.

4.0 Conclusions

This report discusses the information requirements for a Final Drainage Report and Plan as defined by the Grand Valley "Stormwater Management Manual", Section 300. The proposed development of the Pinnacle Ridge property will effectively convey runoff from the site per the SWMM best recommendations.

The proposed drainage facilities are designed to accept the 100-year runoff and continue the conveyance to the ultimate discharge in the Colorado River. Erosion control BMP's will be implemented during construction in an effort to prevent adverse impacts on downstream properties and drainage facilities. The proposed development will not adversely affect the surrounding properties or existing storm drainage systems.

A. Compliance with Manual

This report discusses the information requirements for a Final Drainage Report and Plan per the Mesa County/City of Grand Junction Stormwater Management Manual. The proposed drainage facilities are designed to collect and detain the 10-year and 100-year event runoff rates from the site along with offsite contributory flows and release at/or below the allowed rates. The proposed development will not adversely affect the surrounding properties or existing drainage systems.

The following variance is hereby requested for this project:

A variance from compliance with the section 1407.3 of SWMM is hereby requested for Basins DD1 and DD2, as described in section 2.0 D of this report.

5.0 References

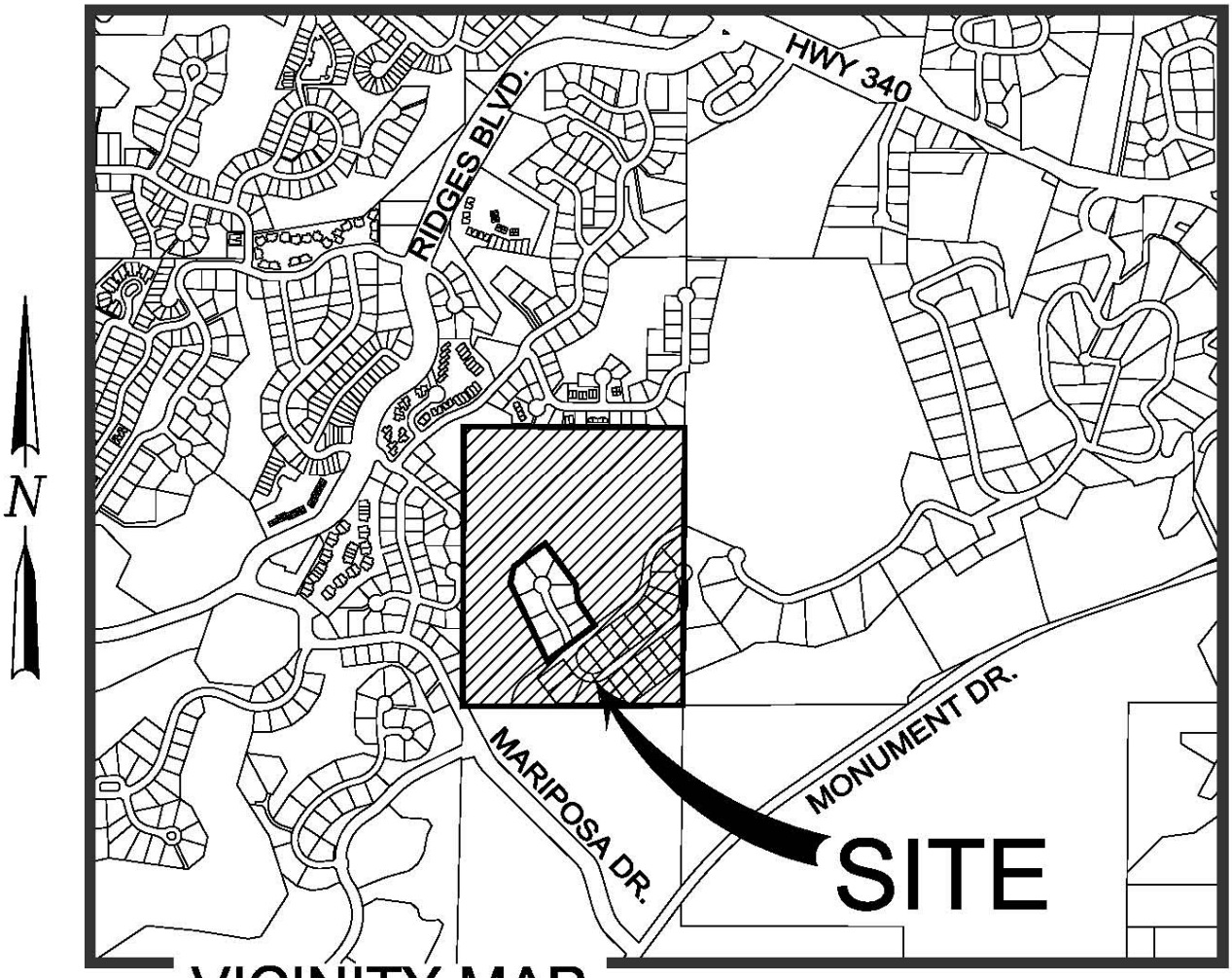
Mesa County/City of Grand Junction Stormwater Management Manual, adopted March 20, 2008.

"Soil Survey of Mesa County Area, Colorado", prepared by United States Department of Agriculture, Soil Conservation Service, issued September 1993.

"Urban Storm Drainage Criteria Manual, Volume 1", prepared by the Urban Drainage and Flood Control District, effective September 1999.

Federal Emergency Management Agency, Flood Insurance Rate Map, Mesa County, Colorado unincorporated Areas, Map No. 08077C0815F.

Appendix A – Location Map



VICINITY MAP

Appendix B – NCRS Soils Map

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Mesa County Area, Colorado



March 19, 2015

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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Contents

Preface.....2
Soil Map.....5
Soil Map.....6
Legend.....7
Map Unit Legend.....8
Map Unit Descriptions.....8
Mesa County Area, Colorado.....10
87—Persayo-Blackston complex, 6 to 45 percent slopes.....10
127—Rock outcrop-Persayo-Hostage complex, 25 to 99 percent slopes, extremely stony.....11

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:3,240 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 45 90 180 270

Feet
0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mesa County Area, Colorado
Survey Area Data: Version 5, Sep 22, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 22, 2010—Sep 2, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Mesa County Area, Colorado (CO680)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
87	Persayo-Blackston complex, 6 to 45 percent slopes	49.7	99.7%
127	Rock outcrop-Persayo-Hostage complex, 25 to 99 percent slopes, extremely stony	0.1	0.3%
Totals for Area of Interest		**49.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If

intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Mesa County Area, Colorado

87—Persayo-Blackston complex, 6 to 45 percent slopes

Map Unit Setting

National map unit symbol: k0bh
Elevation: 4,500 to 6,000 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 100 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

Persayo and similar soils: 65 percent
Blackston and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Persayo

Setting

Landform: Mesas
Landform position (two-dimensional): Backslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Residuum weathered from clayey shale

Typical profile

A - 0 to 4 inches: silty clay loam
C - 4 to 15 inches: silty clay loam
Cr - 15 to 19 inches: weathered bedrock

Properties and qualities

Slope: 6 to 45 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Silty saltdesert (R034XY410CO)

Description of Blackston

Setting

Landform: Mesas
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from sandstone and shale and/or outwash derived from sandstone and shale

Typical profile

A - 0 to 3 inches: very gravelly sandy clay loam
Bk1 - 3 to 7 inches: gravelly clay loam
Bk2 - 7 to 15 inches: very gravelly sandy clay loam
2Bk3 - 15 to 35 inches: extremely gravelly sandy loam
2C - 35 to 60 inches: extremely gravelly sand

Properties and qualities

Slope: 6 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Loamy saltdesert (R034XY401CO)

127—Rock outcrop-Persayo-Hostage complex, 25 to 99 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: k07k
Elevation: 4,700 to 5,400 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 150 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Rock outcrop: 35 percent

Persayo and similar soils: 30 percent
Hostage and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rock Outcrop

Setting
Landform: Ledges, cliffs

Typical profile
H1 - 0 to 60 inches: unweathered bedrock

Properties and qualities
Slope: 50 to 99 percent
Depth to restrictive feature: 0 to 4 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.00 in/hr)
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8

Description of Persayo

Setting
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Residuum weathered from clayey shale

Typical profile
A - 0 to 2 inches: very parachannery clay loam
C - 2 to 11 inches: very parachannery silty clay loam
Cr - 11 to 15 inches: weathered bedrock

Properties and qualities
Slope: 25 to 65 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Saltdesert breaks (R034XY406CO)

Description of Hostage

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium derived from sandstone and shale over residuum weathered from clayey shale

Typical profile

A - 0 to 4 inches: clay loam
B - 4 to 25 inches: clay loam
C1 - 25 to 50 inches: silty clay loam
C2 - 50 to 55 inches: silty clay loam
Cr - 55 to 59 inches: weathered bedrock

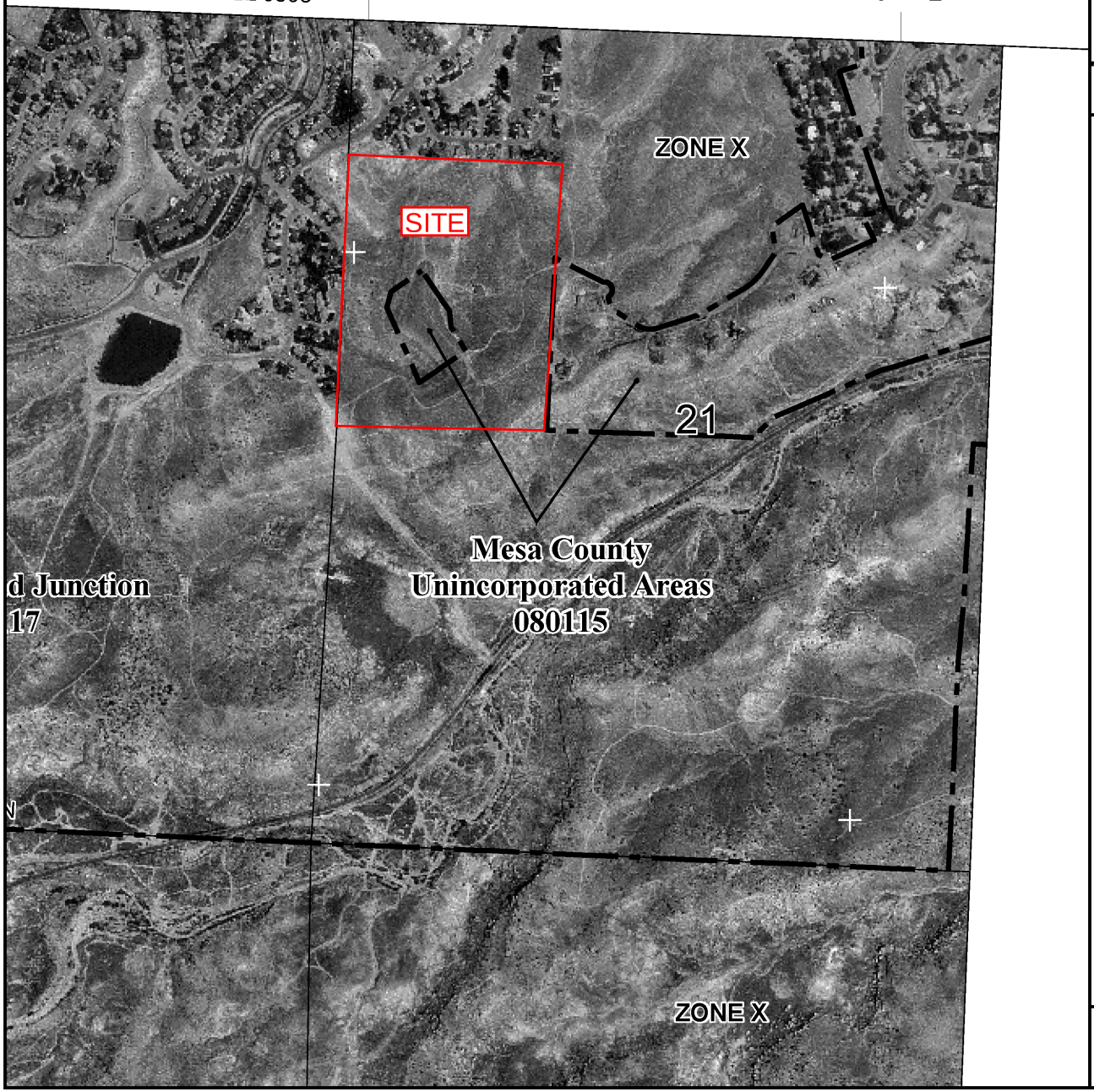
Properties and qualities

Slope: 25 to 50 percent
Percent of area covered with surface fragments: 10.0 percent
Depth to restrictive feature: 39 to 59 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Saltdesert breaks (R034XY406CO)

Appendix C – FEMA FIRM Maps



MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0815F

FIRM

FLOOD INSURANCE RATE MAP
MESA COUNTY, COLORADO
AND INCORPORATED AREAS

PANEL 815 OF 1725

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
GRAND JUNCTION, CITY OF	080117	0815	F
MESA COUNTY	080115	0815	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
08077C0815F

EFFECTIVE DATE
JULY 6, 2010

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Appendix D – Basin Runoff, HGL Calcs

Pinnacle Estates
Existing Basins

Vortex Engineering, Inc.
December 15, 2015

Basin	Basin Area	CN	Tc (min.)	Runoff	
				10 yr	100 yr
EX1	5.96	86	7.9	1.62	4.47
EX2	9.4	86	11.3	1.41	6.74
EX3	9.18	86	8.5	1.42	6.8
EX4	21.3	86	21.8	2.91	13.46
EX5	2.77	86	4.6	0.45	2.22
EX6	0.62	86	5	0.11	0.55

Pinnacle Ridge **Vortex Engineering, Inc.**

Drainage Area C calculations - 2yr and 100yr Events **June 9, 2017**

REVISED 8/8/17

BASIN	TOTAL AREA (ft^2)	BASIN AREA (ac)	LOT/PERV. AREA (ft^2)	LOT AREA $C_{2\ year}$	LOT AREA C $_{100\text{-}year}$	STREET IMP. AREA (ft^2)	IMPREVIOUS AREA (ac)	STREET AREA $C_{2\ year}$	STREET AREA $C_{100\ year}$	2 yr WEIGHTED C VALUE	100 yr WEIGHTED C VALUE
100	164,742	3.78	162,042	0.29	0.40	2,700	0.06	0.89	0.96	0.30	0.41
101	53,987	1.24	42,611	0.29	0.40	11,376	0.26	0.89	0.96	0.42	0.52
102	80,428	1.85	67,828	0.29	0.40	12,600	0.29	0.89	0.96	0.38	0.49
200	324,828	7.46	251,928	0.29	0.40	72,900	1.67	0.89	0.96	0.42	0.53
201	210,613	4.84	210,613	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
202	84,338	1.94	84,338	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
203	58,101	1.33	58,101	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
300	67,941	1.56	67,941	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
400	34,503	0.79	34,503	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
401	312,940	7.18	256,240	0.29	0.40	56,700	1.30	0.89	0.96	0.40	0.50
402	178,940	4.11	178,940	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
403	25,850	0.59	25,850	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
404	95,303	2.19	83,753	0.29	0.40	11,550	0.27	0.89	0.96	0.36	0.47
405	165,832	3.81	154,232	0.29	0.40	11,600	0.27	0.89	0.96	0.33	0.44
406	187,532	4.31	187,532	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
DD1	83,873	1.93	83,873	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
DD2	16,796	0.39	16,796	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
Total On-Site Area =		49.28	45.16				4.12				

Description	Basin area (ac)	Impreviousness (%)
Lots	45.16	50.0%
Streets and Sidewalks	4.12	98.0%
Total Area/Impreviousne	49.28	54%

Pinnacle Ridge **Vortex Engineering, Inc.**
Curve Number Calculations **February 10, 2014**

Pond 1

Assumptions:		Impreviousness
4000 sf homes		
1.75 du/acre density	**From Figure 703 Mesa County**	**SWMM**
Streets Area (ac)	0.61	98%
Lot area (ac)	6.26	44%
Total Basin Area (ac)	6.87	
Impreviousness=	49%	

CN = 98*Imp+X*(1-Imp) Where: X=80 (D Type Soils)

CN= 88.79 **use 89**

Pond 2

Assumptions:		Impreviousness
4000 sf homes		
1.75 du/acre density	**From Figure 703 Mesa County**	**SWMM**
Streets Area (ac)	1.67	98%
Lot area (ac)	13.90	44%
Total Basin Area (ac)	15.58	
Impreviousness=	50%	

CN = 98*Imp+X*(1-Imp) Where: X=80 (D Type Soils)

CN= 88.96 **use 89**

Pond 3

Assumptions:		Impreviousness
4000 sf homes		
1.75 du/acre density	**From Figure 703 Mesa County**	**SWMM**
Streets Area (ac)	0.00	98%
Lot area (ac)	1.56	44%
Total Basin Area (ac)	1.56	
Impreviousness=	44%	

CN = 98*Imp+X*(1-Imp) Where: X=80 (D Type Soils)

CN= 87.92 **use 88**

Pond 4

Assumptions:		Impreviousness
4000 sf homes		
1.75 du/acre density	**From Figure 703 Mesa County**	**SWMM**
Streets Area (ac)	2.31	98%
Lot area (ac)	20.63	44%
Total Basin Area (ac)	22.94	
Impreviousness=	49%	

CN = 98*Imp+X*(1-Imp) Where: X=80 (D Type Soils)

CN= 88.90 **use 89**

Pinnacle Ridge | **Vortex Engineering, Inc.**
Detention Pond's | **February 10, 2014**
WQCV and Detention Volume Calculations | Rev. June 26, 2015
POND 1 | December 16, 2015

Elevation [ft.]	Area [ft²]	Stage Volume [cf]	Change in Elevation [ft]	Cumulative Volume [cf]	Cumulative Volume [acre-ft]
4799.00	0	0.00	0.0	0.0	0.000
4800.00	856	285.33	1.0	285.3	0.007
4802.00	3447	4013.83	2.0	4299.2	0.099
4804.00	5204	8590.90	2.0	12890.1	0.296
4806.00	7321	12464.93	2.0	25355.0	0.582
4808.00	9798	17058.95	2.0	42413.9	0.974

$WQCV=K(a(0.91*I^3-1.19*I^2+0.78*I))$

Where:

K = adjustment to equation for Mesa County = $d_6/0.43$) = 0.65

a = Adjustment for BMP's drain Time (for 40hrs a=1.0) = 1.00

I = watershed Impreviousness in decimal = 0.49

d_6 = Depth of average producing storm d_6 = 0.28

Watershed area (100+101+102) = 6.87

WQCV= 0.132 in

		WSEL (ft)	Pond Design Peak Discharge** (cfs)	Basin DD1 Design Peak Discharge ** (cfs)	Sum of Direct Discharge and Pond Design Discharge (cfs)	Adjusted Allowable Peak Discharge*** (cfs)
Req'd storage WQCV =	3,296 cf	4,801.50*	N/A	N/A	N/A	N/A
10 yr Runoff + WQCV =	6,082 cf	4802.31**	0.26	0.32	0.58	0.59
100 yr Runoff + WQCV =	15,335 cf	4804.31**	0.48	1.61	2.09	2.47

Pond 1 is designed to compensate for direct dicharge from Basin DD1 (SWMM Sec. 1407.3)
Allowable Discharge:

DD1 Q_{10} = 0.23 cfs

DD1 Q_{100}** = 0.96 cfs

* Water surface elevation thru linear interpolation

** By hydrograph routing

*** Mesa Co. SWMM Table 1402.

Pinnacle Ridge
Detention Pond 1
WQ Orifice Plate

Vortex Engineering, Inc.
June 2, 2017

WQCV Orifice Plate Area

Per UDFCD Volume 2, SO-13a, pg SO-12

$$A_o = \frac{88V^{(0.95/H^{0.085})}}{T_D S^{0.09} H^{(2.6S0.8)}}$$

A_o= area per row of orifice spaced on 4" centers (in^2)
V= design volume (WQCV, ac-ft)
T_D= Time to drain the prescribed volume (hrs)
H= Depth of Volume (ft)
S= slope (ft/ft)

V= 0.07567 ac-ft
T_D= 40 hrs
H= 2.50
S= 0.02
A_o= 0.3116
# of columns= 1
area per hole in a row (in^2)= 0.3116
hole diameter (in)= 0.6298

USE 5/8" DIA. HOLES

Pinnacle Ridge **Vortex Engineering, Inc.**
Detention Pond's **May 31, 2017**
WQCV and Detention Volume Calculations
POND 2

Elevation [ft.]	Area [ft²]	Stage Volume [cf]	Change in Elevation [ft]	Cumulative Volume [cf]	Cumulative Volume [acre-ft]
4746.06	0	0.00	0.0	0.0	0.000
4747.00	6765	2119.70	0.9	2119.7	0.049
4748.00	8746	7734.33	1.0	9854.0	0.226
4749.00	10334	9528.97	1.0	19383.0	0.445
4750.00	11994	11153.70	1.0	30536.7	0.701
4751.00	13830	12901.11	1.0	43437.8	0.997
4752.00	15490	14652.16	1.0	58090.0	1.334

$WQCV=K(a(0.91*I^3-1.19*I^2+0.78*I))$

Where:

K = adjustment to equation for Mesa County = $d_6/0.43$)= 0.65
a = Adjustment for BMP's drain Time (for 40hrs a=1.0)= 1.00
I = watershed Impreviousness in decimal = 0.50
d_6 = Depth of average producing storm d_6= 0.28
Watershed area = 15.58

WQCV= 0.134 in

		WSEL (ft)	Design Peak Discharge** (cfs)	Allowable Discharge*** (cfs)
Req'd storage WQCV =	7,575 cf	4,747.71*	N/A	N/A
10 yr Runoff + WQCV =	13,992 cf	4748.32**	0.52	1.87
100 yr Runoff + WQCV =	31,059 cf	4749.95**	4.21	7.79

* Water surface elevation thru linear interpolation
** Water Surface by hydrograph routing
*** Mesa Co. SWMM Table 1402

Pinnacle Ridge
Detention Pond 2
WQ Orifice Plate

Vortex Engineering, Inc.
June 2, 2017

WQCV Orifice Plate Area

Per UDFCD Volume 2, SO-13a, pg SO-12

$$A_o = \frac{88V^{(0.95/H^{0.085})}}{T_D S^{0.09} H^{(2.6S0.8)}}$$

A_o= area per row of orifice spaced on 4" centers (in^2)
V= design volume (WQCV, ac-ft)
T_D= Time to drain the prescribed volume (hrs)
H= Depth of Volume (ft)
S= slope (ft/ft)

V= 0.17389 ac-ft
T_D= 40 hrs
H= 1.65
S= 0.02
A_o= 0.6230
# of columns= 1
area per hole in a row (in^2)= 0.6230
hole diameter (in)= 0.8906

USE 7/8" DIA. HOLES

Pinnacle Ridge | **Vortex Engineering, Inc.**
Detention Pond's | **February 10, 2014**
WQCV and Detention Volume Calculations | Rev. June 26, 2015
POND 3 | December 16, 2015

Elevation [ft.]	Area [ft²]	Stage Volume [cf]	Change in Elevation [ft]	Cumulative Volume [cf]	Cumulative Volume [acre-ft]
4751.00	0	0.00	0.0	0.0	0.000
4752.00	483	161.00	1.0	161.0	0.004
4754.00	1277	1696.91	2.0	1857.9	0.043
4756.00	2080	3324.52	2.0	5182.4	0.119

$WQCV=K(a(0.91*I^3-1.19*I^2+0.78*I))$

Where:

K = adjustment to equation for Mesa County = $d_6/0.43$)= 0.65
a = Adjustment for BMP's drain Time (for 40hrs a=1.0)= 1.00
I = watershed Impreviousness in decimal = 0.44
d_6 = Depth of average producing storm d_6= 0.28
Watershed area = 1.56

WQCV= 0.124 in

		WSEL (ft)	Design Peak Discharge** (cfs)	Allowable Discharge*** (cfs)
Req'd storage WQCV =	702 cf	4,752.64*	N/A	N/A
10 yr Runoff + WQCV =	820 cf	4752.88**	0.17	0.19
100 yr Runoff + WQCV =	2,077 cf	4754.06**	0.55	0.78

* Water surface elevation thru linear interpolation
** By hydrograph routing
*** Mesa Co. SWMM Table 1402

Pinnacle Ridge
Detention Pond 3
WQ Orifice Plate

Vortex Engineering, Inc.
June 2, 2017

WQCV Orifice Plate Area

Per UDFCD Volume 2, SO-13a, pg SO-12

$$A_o = \frac{88V^{(0.95/H^{0.085})}}{T_D S^{0.09} H^{(2.6S0.8)}}$$

A_o= area per row of orifice spaced on 4" centers (in^2)
V= design volume (WQCV, ac-ft)
T_D= Time to drain the prescribed volume (hrs)
H= Depth of Volume (ft)
S= slope (ft/ft)

V= 0.01611 ac-ft
T_D= 40 hrs
H= 1.64
S= 0.02
A_o= 0.0713
# of columns= 1
area per hole in a row (in^2)= 0.0713
hole diameter (in)= 0.3013

USE 5/16" DIA. HOLES

Pinnacle Ridge | **Vortex Engineering, Inc.**
Detention Pond's | **February 10, 2014**
WQCV and Detention Volume Calculations | Rev. June 26, 2015
POND 4 | December 16, 2015

Elevation [ft.]	Area [ft²]	Stage Volume [cf]	Change in Elevation [ft]	Cumulative Volume [cf]	Cumulative Volume [acre-ft]
4739.00	0	0.00	0.0	0.0	0.000
4740.00	3373	1124.33	1.0	1124.3	0.026
4742.00	5394	8688.29	2.0	9812.6	0.225
4744.00	8104	13406.39	2.0	23219.0	0.533
4746.00	10902	18936.97	2.0	42156.0	0.968

$WQCV=K(a(0.91*I^3-1.19*I^2+0.78*I))$

Where:

K = adjustment to equation for Mesa County = $d_6/0.43$)= 0.65
a = Adjustment for BMP's drain Time (for 40hrs a=1.0)= 1.00
I = watershed Impreviousness in decimal = 0.49
d_6 = Depth of average producing storm d_6= 0.28
Watershed area (400 thru 403) = 22.94

WQCV= 0.133 in

		WSEL (ft)	Design Peak Discharge** (cfs)	Basin DD2 Design Peak Discharge (cfs)	Sum of Direct Discharge and Pond Design Discharge (cfs)	Adjusted Allowable Peak Discharge*** (cfs)
Req'd storage WQCV =	11,098 cf	4,742.19*	N/A	N/A	N/A	N/A
10 yr Runoff + WQCV =	14,737 cf	4742.73**	1.91	0.05	1.96	2.71
100 yr Runoff + WQCV =	36,969 cf	4745.13**	10.21	0.19	10.40	11.28

Pond 1 is designed to compensate for direct dicharge from Basin DD1 (SWMM Sec. 1407.3)
Allowable Discharge:

DD2 Q_{10}= 0.05 cfs
DD2 Q_{100}= 0.19 cfs

* Water surface elevation thru linear interpolation
** By hydrograph routing
*** Mesa Co. SWMM Table 1402.

Pinnacle Ridge
Detention Pond 4
WQ Orifice Plate

Vortex Engineering, Inc.
June 2, 2017

WQCV Orifice Plate Area

Per UDFCD Volume 2, SO-13a, pg SO-12

$$A_o = \frac{88V^{(0.95/H^{0.085})}}{T_D S^{0.09} H^{(2.6S0.8)}}$$

A_o= area per row of orifice spaced on 4" centers (in^2)
V= design volume (WQCV, ac-ft)
T_D= Time to drain the prescribed volume (hrs)
H= Depth of Volume (ft)
S= slope (ft/ft)

V= 0.14103 ac-ft
T_D= 40 hrs
H= 2.45
S= 0.02
A_o= 0.5374
# of columns= 1
area per hole in a row (in^2)= 0.5374
hole diameter (in)= 0.8272

USE 13/16" DIA. HOLES

Pinnacle Ridge
Basin Runoff Calculation

Vortex Engineering, Inc.
August 2, 2017
REVISED 8/8/17

DRAINAGE AREA	INLET #	Area (ac)	'C_2' Weighted	'C_{100}' Weighted	T_c (min)	2-Yr. Storm Intensity (in/hr)	100-Yr. Storm Intensity (in/hr)	2-Yr. Q (cfs) Basin Runoff	100-Yr. Q (cfs) Basin Runoff	Inlet Type for Minor Storm
100	POND 1	3.78	0.30	0.41	5	1.2	4.68	1.36	7.24	
101	101	1.85	0.38	0.49	5	1.2	4.68	0.85	4.21	
102	102	1.24	0.42	0.52	5	1.2	4.68	0.62	3.00	
200	200	7.46	0.42	0.53	5	1.2	4.68	3.80	18.35	
201	POND 2	4.84	0.29	0.40	5	1.2	4.68	1.68	9.05	
202	202	1.94	0.29	0.40	5	1.2	4.68	0.67	3.62	
203	203	1.33	0.29	0.40	5	1.2	4.68	0.46	2.50	
300	POND 3	1.56	0.29	0.40	5	1.2	4.68	0.54	2.92	
400	POND 4	0.79	0.29	0.40	5	1.2	4.68	0.28	1.48	
401	401	7.18	0.40	0.50	5	1.2	4.68	3.44	16.86	
402	402	4.11	0.29	0.40	5	1.2	4.68	1.43	7.69	
403	403	0.59	0.29	0.40	5	1.2	4.68	0.21	1.11	
404	404	2.19	0.36	0.47	5	1.2	4.68	0.95	4.79	
405	405	3.81	0.33	0.44	5	1.2	4.68	1.52	7.82	
406	406	4.31	0.29	0.40	5	1.2	4.68	1.50	8.06	
DD1	offsite	1.93	0.29	0.40	5	1.2	4.68	0.67	3.60	
DD2	offsite	0.39	0.29	0.40	5	1.2	4.68	0.13	0.72	

Total on site basins = 36.67

Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

CONCRETE C&G ALONG WESTERN BOUNDRY - Steep - 2yr storm SECTION A

User-defined

Invert Elev (ft)	= 99.00
Slope (%)	= 4.00
N-Value	= 0.014

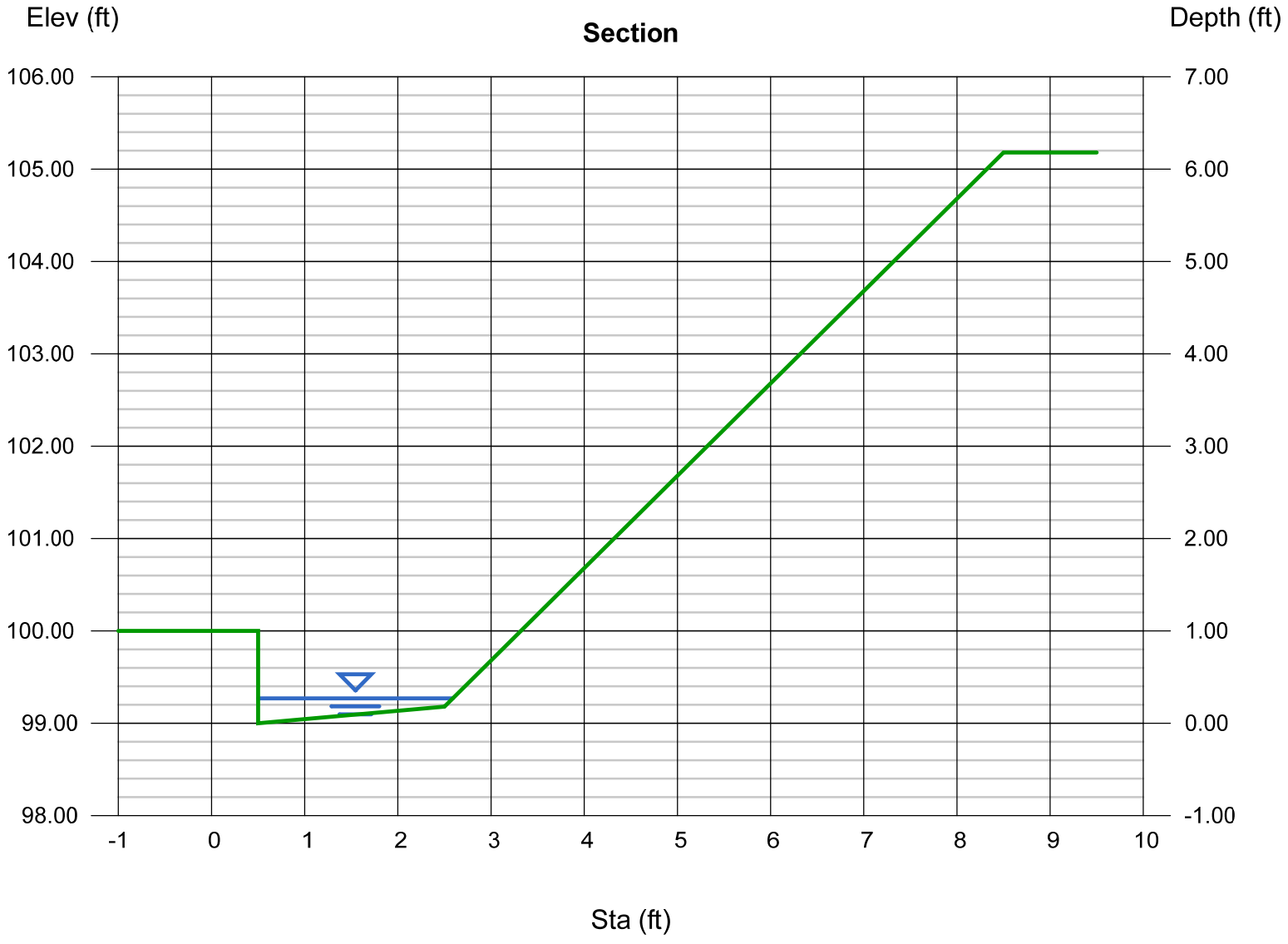
Calculations

Compute by:	Known Q
Known Q (cfs)	= 2.00

Highlighted

Depth (ft)	= 0.27
Q (cfs)	= 2.000
Area (sqft)	= 0.36
Velocity (ft/s)	= 5.49
Wetted Perim (ft)	= 2.41
Crit Depth, Yc (ft)	= 0.41
Top Width (ft)	= 2.09
EGL (ft)	= 0.74

(Sta, El, n)-(Sta, El, n)... (-0.00, 100.00)-(0.50, 100.00, 0.013)-(0.50, 99.00, 0.013)-(2.50, 99.18, 0.013)-(8.50, 105.18, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

CONCRETE C&G ALONG WESTERN BOUNDRY - Steep - 100yr storm SECTION A

User-defined

Invert Elev (ft)	= 99.00
Slope (%)	= 4.00
N-Value	= 0.018

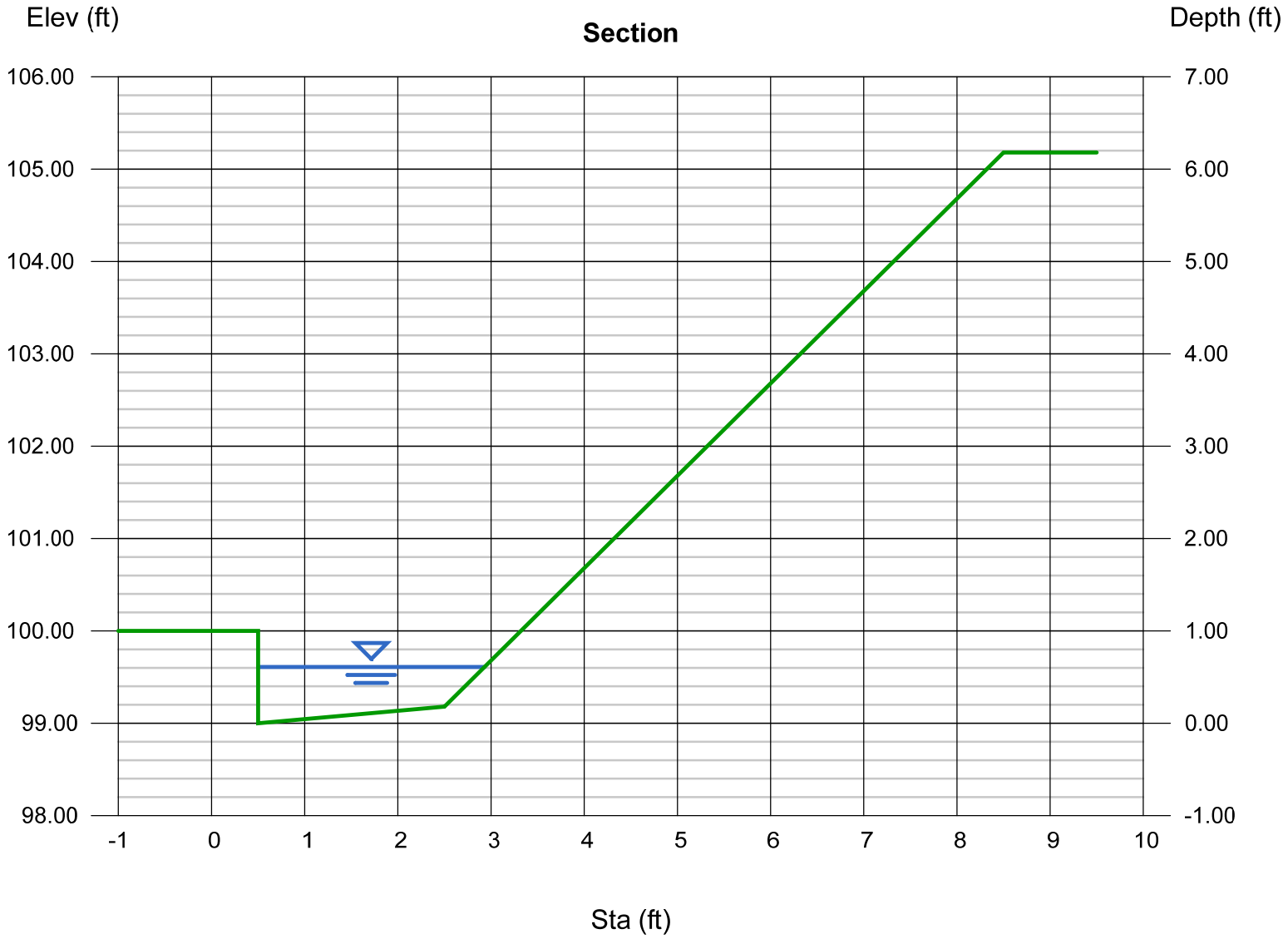
Calculations

Compute by:	Known Q
Known Q (cfs)	= 9.05

Highlighted

Depth (ft)	= 0.61
Q (cfs)	= 9.050
Area (sqft)	= 1.13
Velocity (ft/s)	= 7.99
Wetted Perim (ft)	= 3.23
Crit Depth, Yc (ft)	= 0.92
Top Width (ft)	= 2.43
EGL (ft)	= 1.60

(Sta, El, n)-(Sta, El, n)... (-0.00, 100.00)-(0.50, 100.00, 0.013)-(0.50, 99.00, 0.013)-(2.50, 99.18, 0.013)-(8.50, 105.18, 0.035)



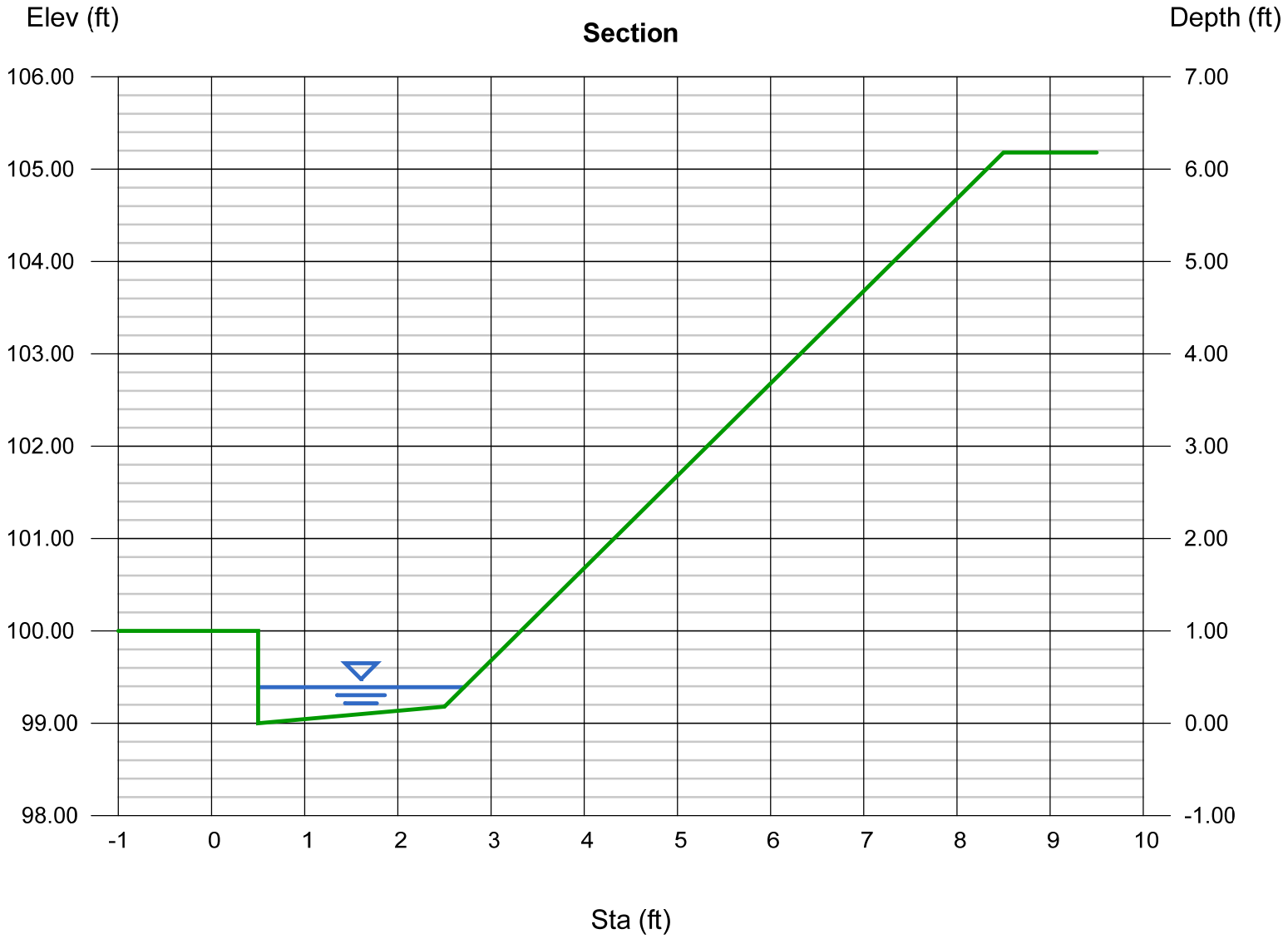
Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

CONCRETE C&G ALONG WESTERN BOUNDRY - FLAT - 2yr storm SECTION B

User-defined		Highlighted	
Invert Elev (ft)	= 99.00	Depth (ft)	= 0.39
Slope (%)	= 0.90	Q (cfs)	= 2.000
N-Value	= 0.016	Area (sqft)	= 0.62
		Velocity (ft/s)	= 3.22
Calculations		Wetted Perim (ft)	= 2.70
Compute by:	Known Q	Crit Depth, Yc (ft)	= 0.41
Known Q (cfs)	= 2.00	Top Width (ft)	= 2.21
		EGL (ft)	= 0.55

(Sta, El, n)-(Sta, El, n)... (-0.00, 100.00)-(0.50, 100.00, 0.013)-(0.50, 99.00, 0.013)-(2.50, 99.18, 0.013)-(8.50, 105.18, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

CONCRETE C&G ALONG WESTERN BOUNDRY - FLAT - 100yr storm SECTION B

User-defined

Invert Elev (ft)	= 99.00
Slope (%)	= 0.90
N-Value	= 0.020

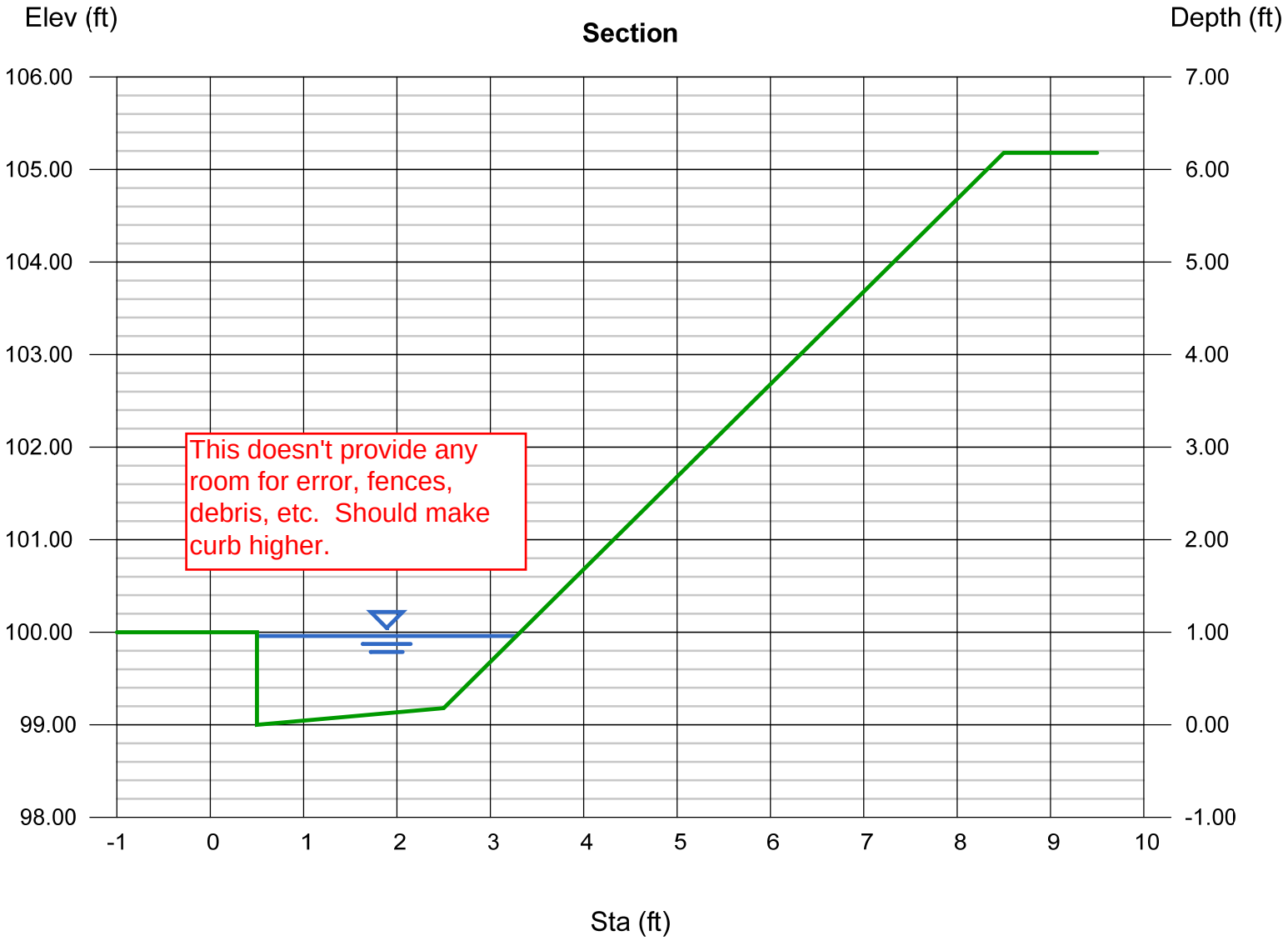
Calculations

Compute by:	Known Q
Known Q (cfs)	= 9.05

Highlighted

Depth (ft)	= 0.96
Q (cfs)	= 9.050
Area (sqft)	= 2.04
Velocity (ft/s)	= 4.43
Wetted Perim (ft)	= 4.07
Crit Depth, Yc (ft)	= 0.92
Top Width (ft)	= 2.78
EGL (ft)	= 1.26

(Sta, El, n)-(Sta, El, n)... (-1.00, 100.00)-(0.50, 100.00, 0.013)-(0.50, 99.00, 0.013)-(2.50, 99.18, 0.013)-(8.50, 105.18, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

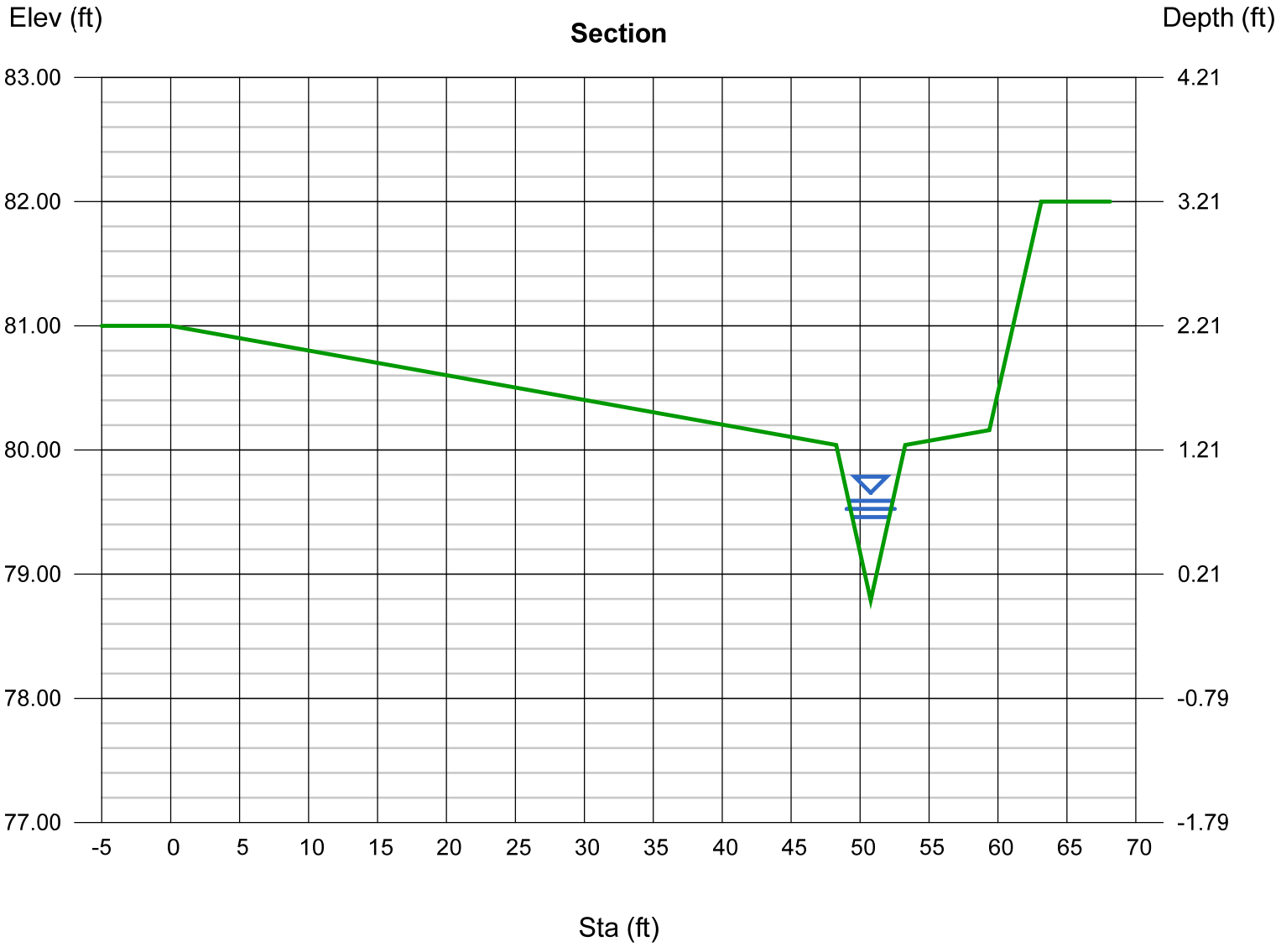
44' ROW Aiguille Drive - FLAT - 2yr storm SECTION C

User-defined	
Invert Elev (ft)	= 78.79
Slope (%)	= 3.50
N-Value	= 0.035

Calculations	
Compute by:	Known Q
Known Q (cfs)	= 5.00

Highlighted	
Depth (ft)	= 0.80
Q (cfs)	= 5.000
Area (sqft)	= 1.28
Velocity (ft/s)	= 3.91
Wetted Perim (ft)	= 3.58
Crit Depth, Yc (ft)	= 0.83
Top Width (ft)	= 3.20
EGL (ft)	= 1.04

(Sta, El, n)-(Sta, El, n)... (-5.00, 81.00)-(48.27, 80.04, 0.014)-(50.77, 78.79, 0.035)-(53.27, 80.04, 0.035)-(59.37, 80.16, 0.014)-(63.14, 82.00, 0.035)



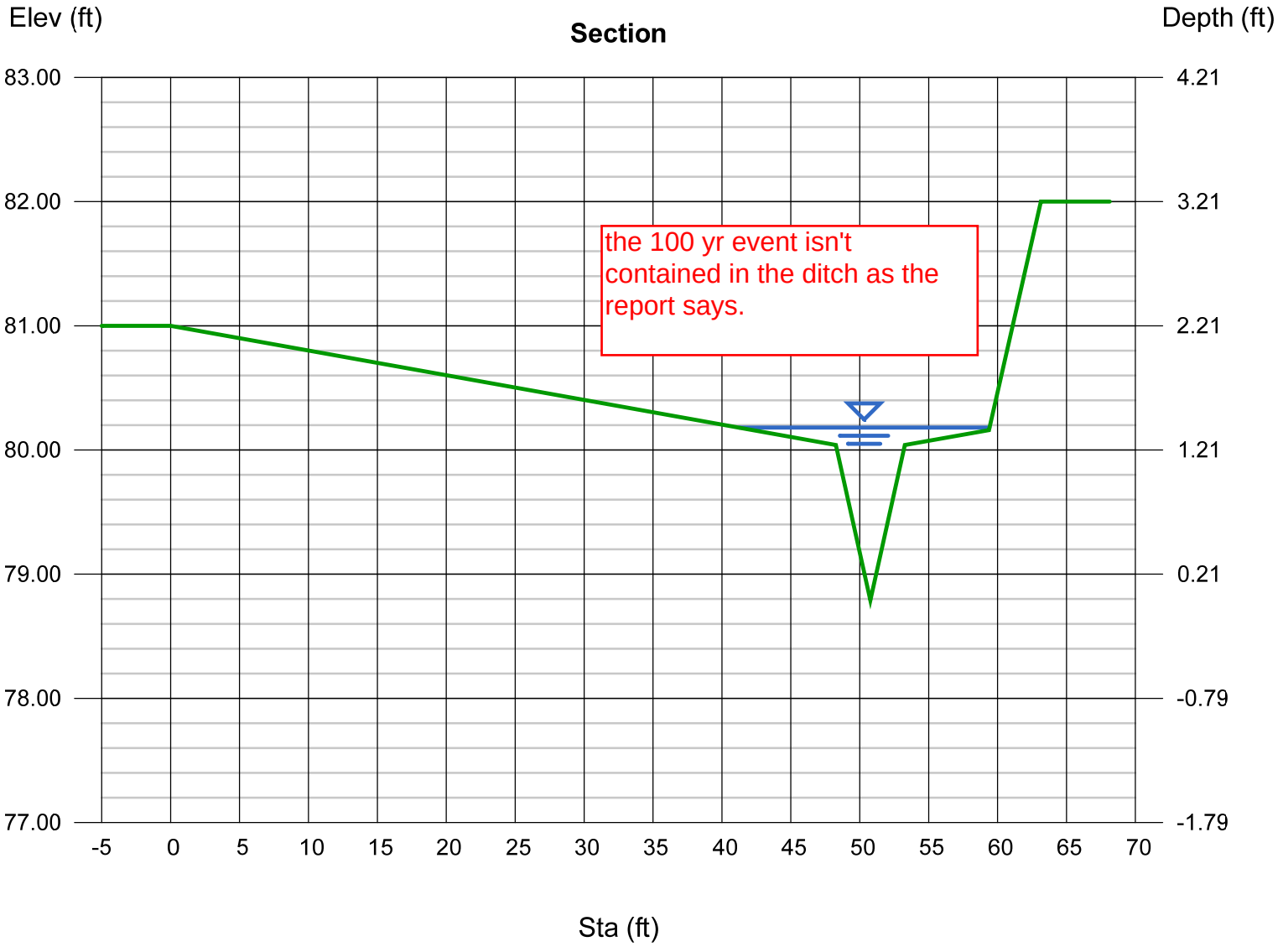
Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

44' ROW Aiguille Drive - FLAT - 100yr storm SECTION C

User-defined		Highlighted	
Invert Elev (ft)	= 78.79	Depth (ft)	= 1.39
Slope (%)	= 3.50	Q (cfs)	= 24.50
N-Value	= 0.021	Area (sqft)	= 4.81
		Velocity (ft/s)	= 5.10
Calculations		Wetted Perim (ft)	= 18.78
Compute by:	Known Q	Crit Depth, Yc (ft)	= 1.53
Known Q (cfs)	= 24.50	Top Width (ft)	= 18.18
		EGL (ft)	= 1.79

(Sta, El, n)-(Sta, El, n)... (0.00, 81.00)-(48.27, 80.04, 0.014)-(50.77, 78.79, 0.035)-(53.27, 80.04, 0.035)-(59.37, 80.16, 0.014)-(63.14, 82.00, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

44' ROW Aiguille Drive - STEEP - 2yr storm SECTION D

User-defined

Invert Elev (ft)	= 72.87
Slope (%)	= 9.60
N-Value	= 0.026

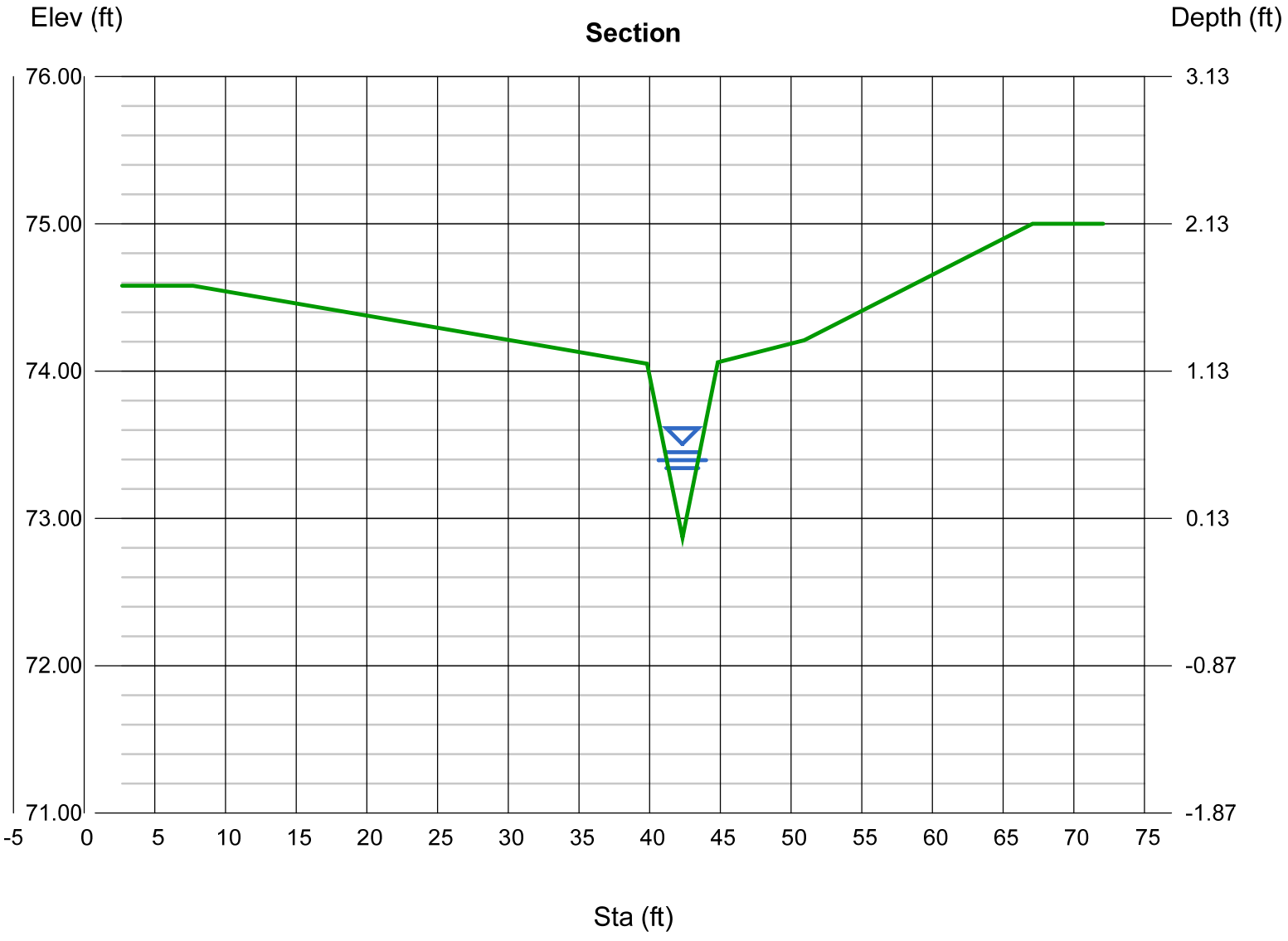
Calculations

Compute by:	Known Q
Known Q (cfs)	= 5.00

Highlighted

Depth (ft)	= 0.58
Q (cfs)	= 5.000
Area (sqft)	= 0.71
Velocity (ft/s)	= 7.05
Wetted Perim (ft)	= 2.71
Crit Depth, Yc (ft)	= 0.82
Top Width (ft)	= 2.45
EGL (ft)	= 1.35

(Sta, El, n)-(Sta, El, n)... (7.69, 75.58, 0.035)-(39.82, 74.05, 0.014)-(42.32, 72.87, 0.035)-(44.82, 74.06, 0.014)-(50.93, 74.21, 0.035)-(67.08, 75.00, 0.035)



Channel Report

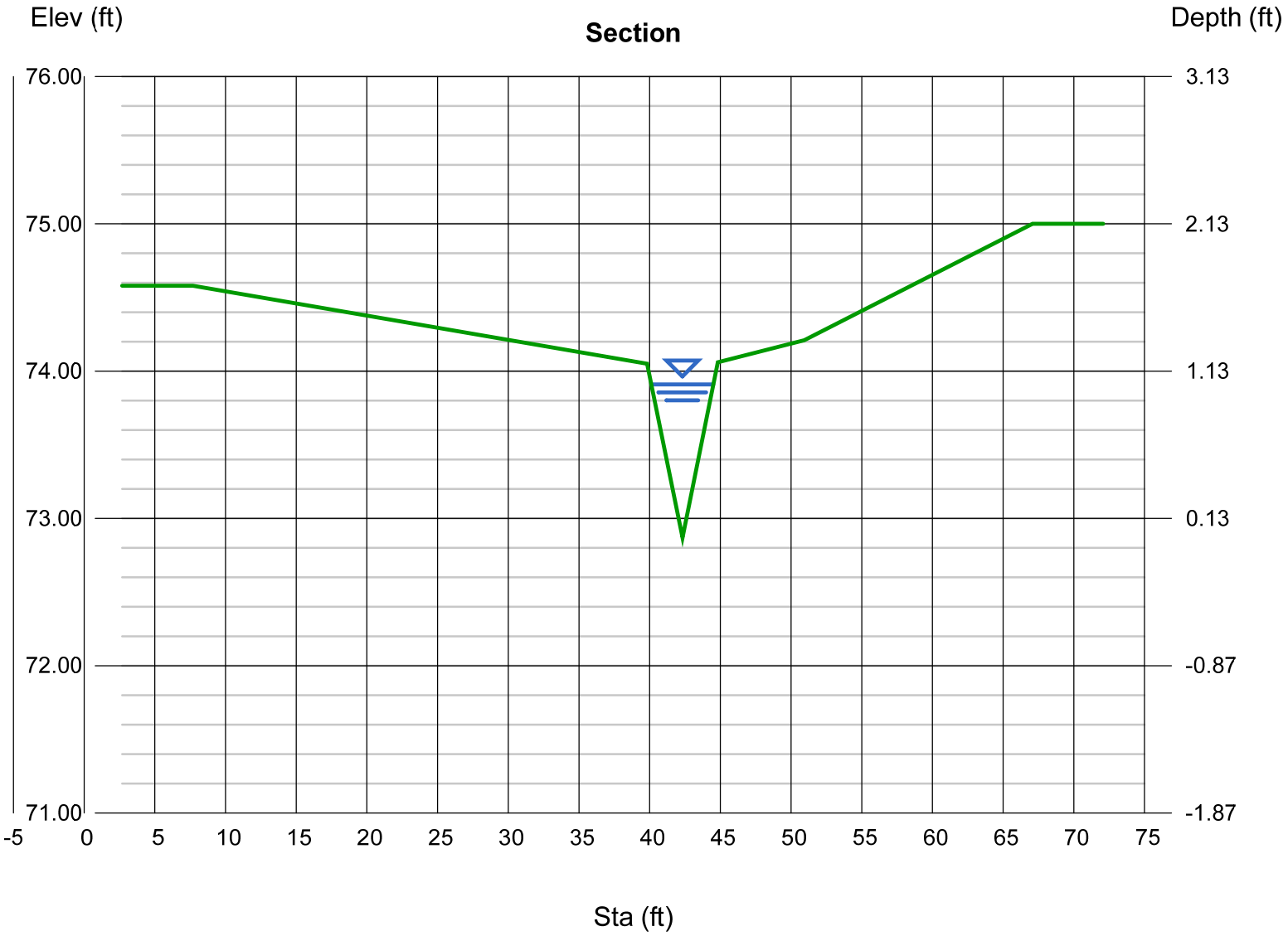
Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

44' ROW Aiguille Drive - STEEP - 100yr storm SECTION D

User-defined		**Highlighted**	
Invert Elev (ft)	= 72.87	Depth (ft)	= 1.04
Slope (%)	= 9.60	Q (cfs)	= 24.50
N-Value	= 0.026	Area (sqft)	= 2.28
		Velocity (ft/s)	= 10.74
Calculations		Wetted Perim (ft)	= 4.86
Compute by:	Known Q	Crit Depth, Yc (ft)	= 1.48
Known Q (cfs)	= 24.50	Top Width (ft)	= 4.39
		EGL (ft)	= 2.83

(Sta, El, n)-(Sta, El, n)...

(7.69, 71.58)-(39.82, 74.05, 0.014)-(42.32, 72.87, 0.035)-(44.82, 74.06, 0.014)-(50.93, 74.21, 0.035)-(67.08, 75.00, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

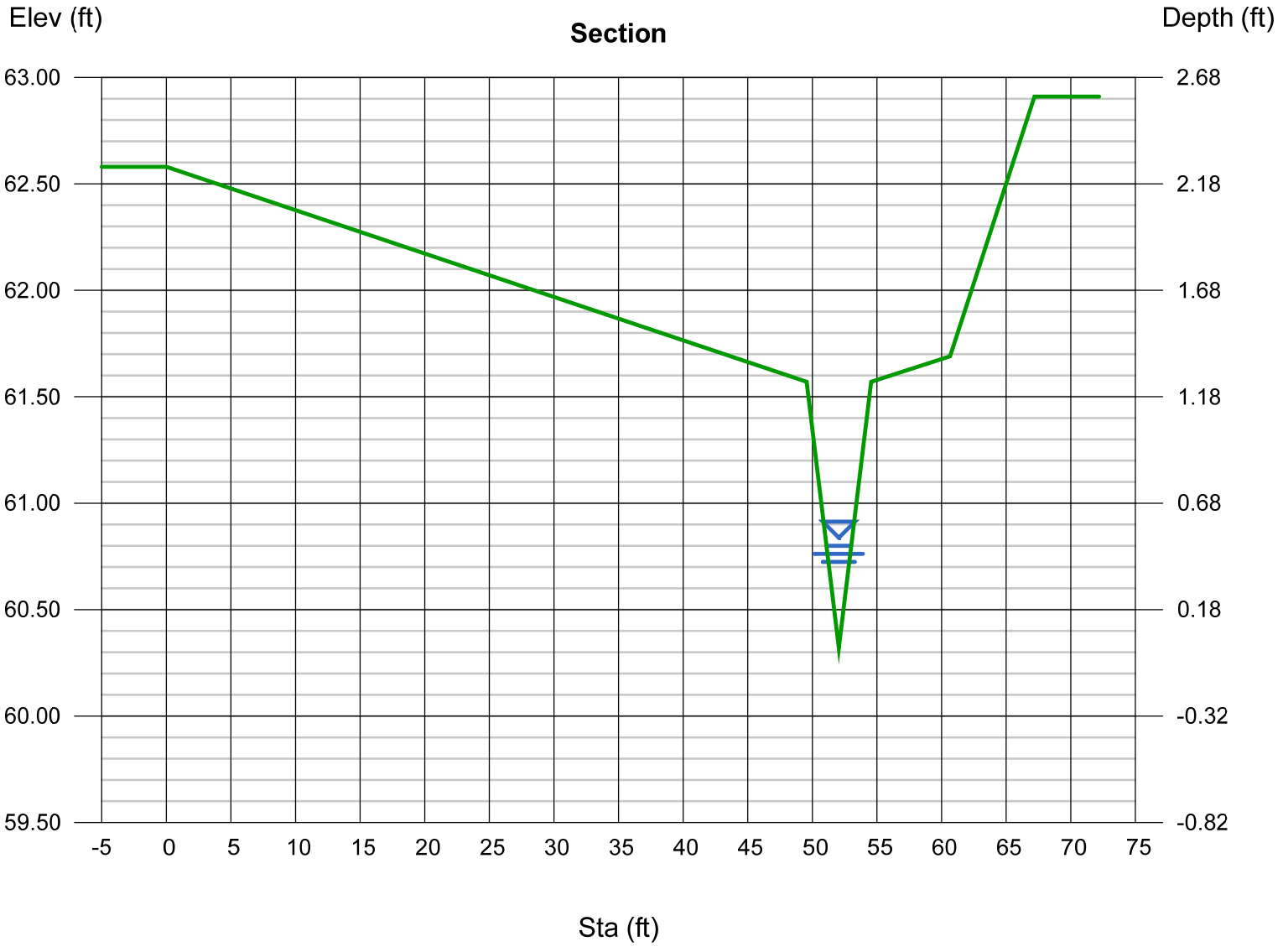
44' ROW - VERY STEEP HIDDEN COURT - 2yr storm SECTION E

User-defined	
Invert Elev (ft)	= 60.32
Slope (%)	= 13.00
N-Value	= 0.035

Calculations	
Compute by:	Known Q
Known Q (cfs)	= 2.50

Highlighted	
Depth (ft)	= 0.48
Q (cfs)	= 2.500
Area (sqft)	= 0.46
Velocity (ft/s)	= 5.43
Wetted Perim (ft)	= 2.15
Crit Depth, Yc (ft)	= 0.63
Top Width (ft)	= 1.92
EGL (ft)	= 0.94

(Sta, El, n)-(Sta, El, n)... (-5.00, 63.18, 0.035)-(49.55, 61.57, 0.014)-(52.05, 60.32, 0.035)-(54.55, 61.57, 0.035)-(60.65, 61.69, 0.014)-(67.19, 62.91, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

44' ROW - VERY STEEP HIDDEN COURT - 100yr storm SECTION E

User-defined

Invert Elev (ft)	= 60.32
Slope (%)	= 13.00
N-Value	= 0.035

Calculations

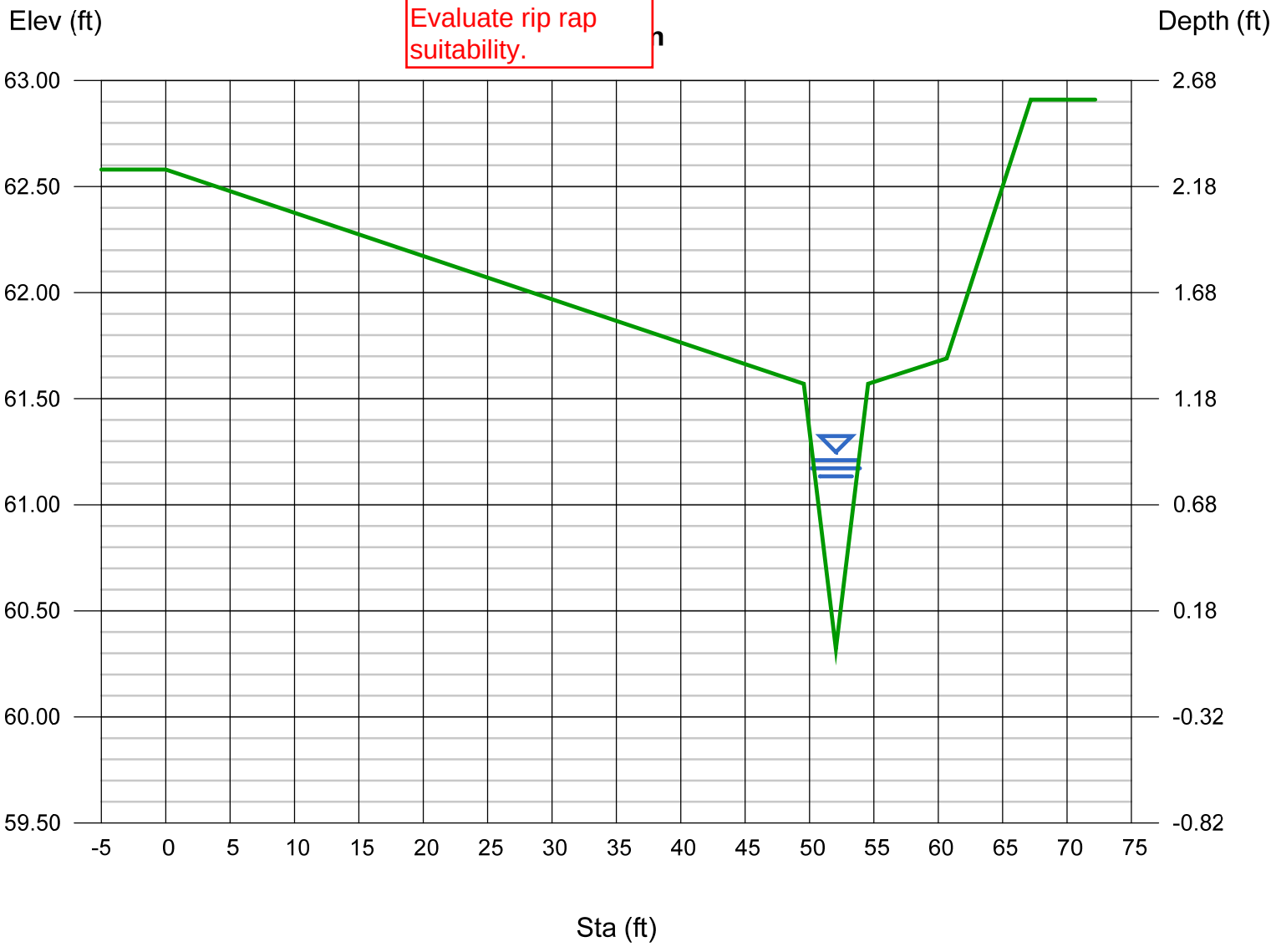
Compute by:	Known Q
Known Q (cfs)	= 12.79

Highlighted

Depth (ft)	= 0.89
Q (cfs)	= 12.79
Area (sqft)	= 1.58
Velocity (ft/s)	= 8.07
Wetted Perim (ft)	= 3.98
Crit Depth, Yc (ft)	= 1.21
Top Width (ft)	= 3.56
EGL (ft)	= 1.90

(Sta, El, n)-(Sta, El, n)... (-5.00, 62.58, 0.035)-(49.55, 61.57, 0.014)-(52.05, 60.32, 0.035)-(54.55, 61.57, 0.035)-(60.65, 61.69, 0.014)-(67.19, 62.91, 0.035)

erosive, I assume this will be rock lined. Plans call for D50 of 4" in filing 1. Evaluate rip rap suitability.



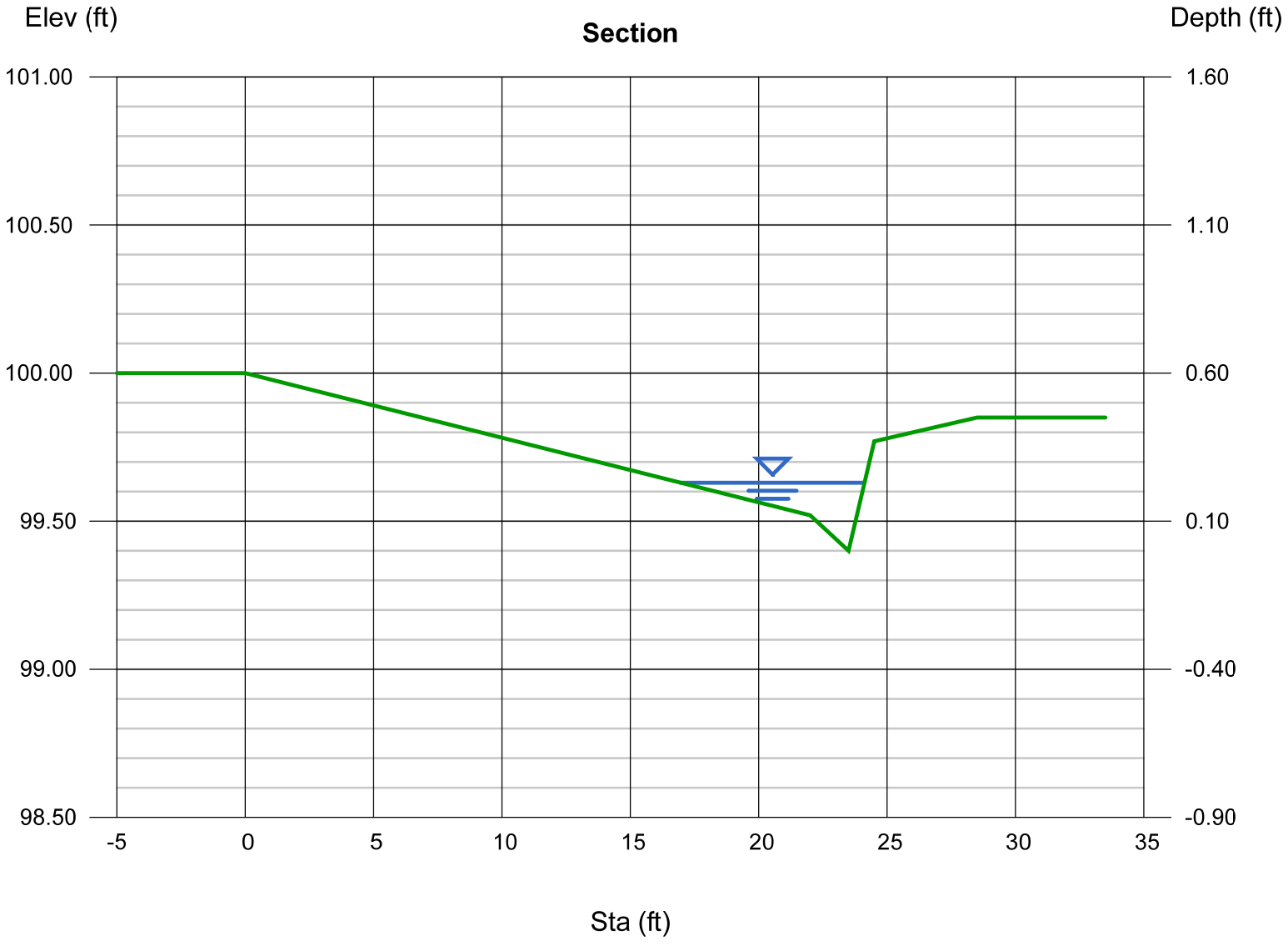
Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

44' ROW Elysium Drive - VERY STEEP - 2yr storm SECTION F

User-defined		Highlighted	
Invert Elev (ft)	= 99.40	Depth (ft)	= 0.23
Slope (%)	= 13.00	Q (cfs)	= 4.000
N-Value	= 0.014	Area (sqft)	= 0.60
		Velocity (ft/s)	= 6.62
Calculations		Wetted Perim (ft)	= 7.21
Compute by:	Known Q	Crit Depth, Yc (ft)	= 0.36
Known Q (cfs)	= 4.00	Top Width (ft)	= 7.16
		EGL (ft)	= 0.91

(Sta, El, n)-(Sta, El, n)... (-5.00, 100.00)-(22.50, 99.54, 0.014)-(23.50, 99.40, 0.014)-(24.50, 99.77, 0.014)-(28.50, 99.85, 0.014)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

44' ROW Elysium Drive - VERY STEEP - 100yr storm SECTION F

User-defined

Invert Elev (ft)	= 99.40
Slope (%)	= 13.00
N-Value	= 0.014

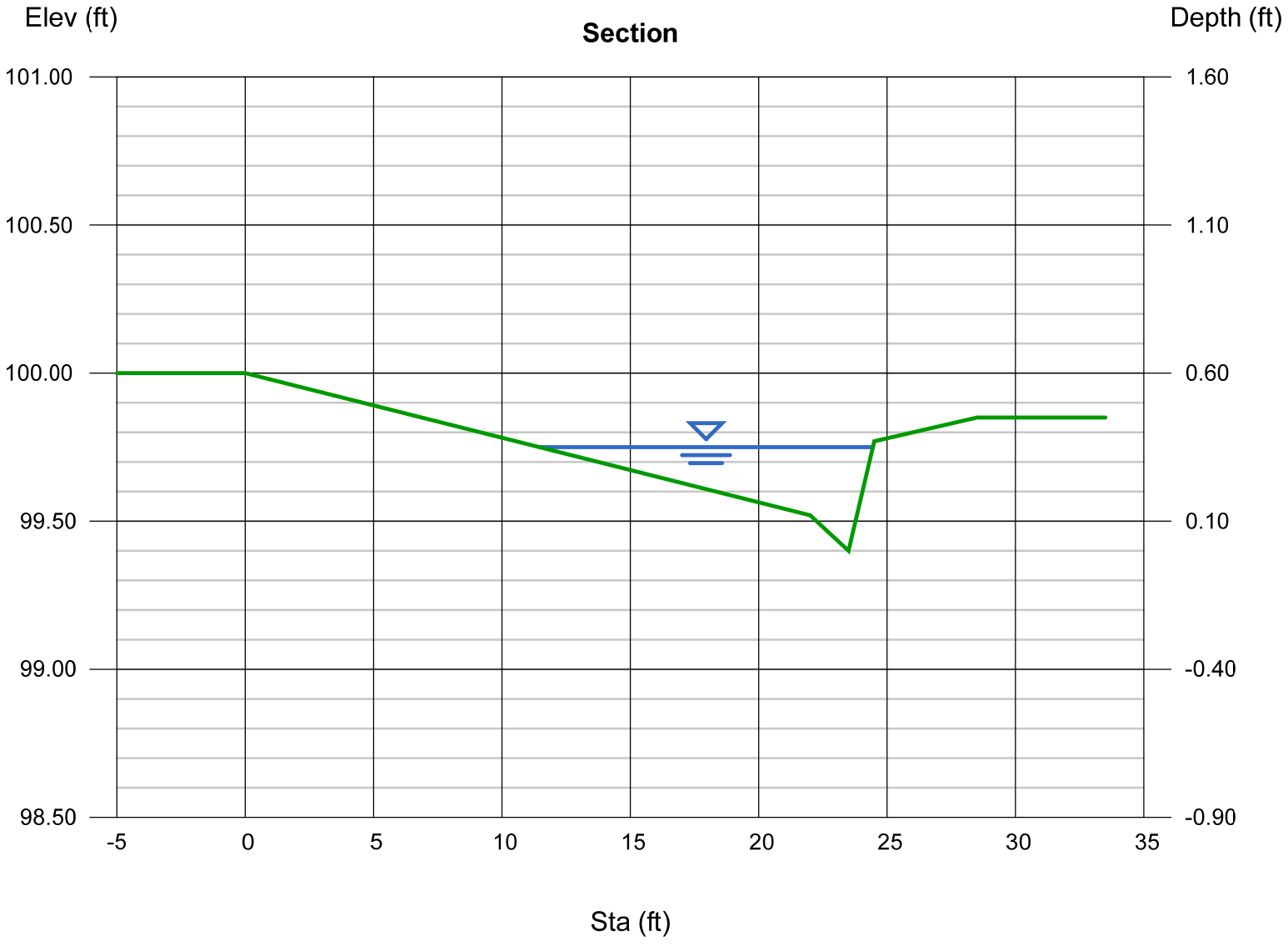
Calculations

Compute by:	Known Q
Known Q (cfs)	= 17.00

Highlighted

Depth (ft)	= 0.35
Q (cfs)	= 17.00
Area (sqft)	= 1.81
Velocity (ft/s)	= 9.38
Wetted Perim (ft)	= 13.06
Crit Depth, Yc (ft)	= 0.57
Top Width (ft)	= 12.99
EGL (ft)	= 1.72

(Sta, El, n)-(Sta, El, n)... (-5.00, 101.00)-(22.50, 99.54, 0.014)-(23.50, 99.40, 0.014)-(24.50, 99.77, 0.014)-(28.50, 99.85, 0.014)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

Diversion ditch - Basin 202 runoff 2 yr storm

SECTION G

Triangular

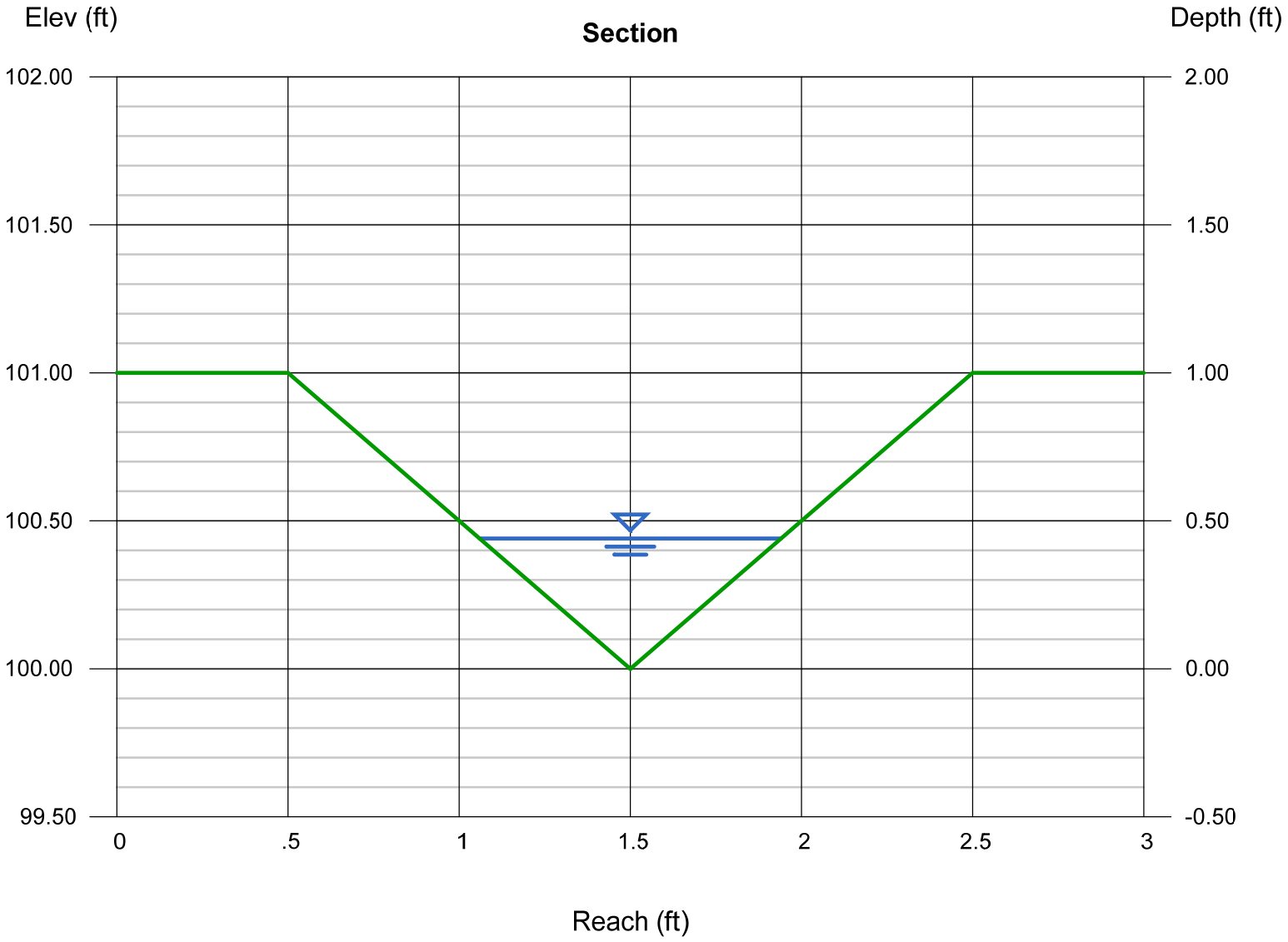
Side Slopes (z:1)	= 1.00, 1.00
Total Depth (ft)	= 1.00
Invert Elev (ft)	= 100.00
Slope (%)	= 3.78
N-Value	= 0.035

Calculations

Compute by:	Known Q
Known Q (cfs)	= 0.46

Highlighted

Depth (ft)	= 0.44
Q (cfs)	= 0.460
Area (sqft)	= 0.19
Velocity (ft/s)	= 2.38
Wetted Perim (ft)	= 1.24
Crit Depth, Yc (ft)	= 0.43
Top Width (ft)	= 0.88
EGL (ft)	= 0.53



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

Diversion ditch - Basin 202 runoff 100 yr storm SECTION G

Triangular

Side Slopes (z:1)	= 1.00, 1.00
Total Depth (ft)	= 1.00
Invert Elev (ft)	= 100.00
Slope (%)	= 5.88
N-Value	= 0.035

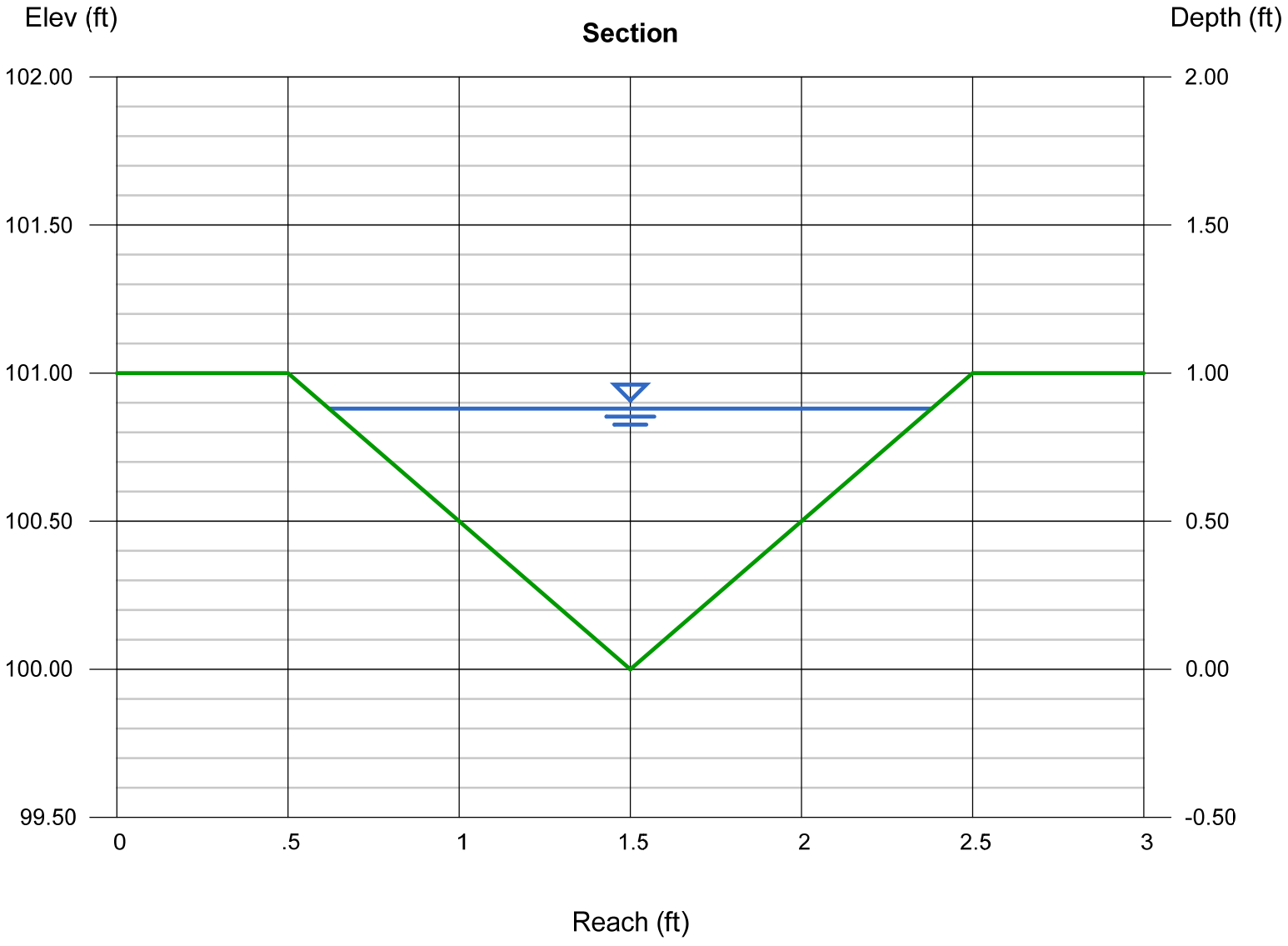
Calculations

Compute by:	Known Q
Known Q (cfs)	= 3.62

Highlighted

Depth (ft)	= 0.88
Q (cfs)	= 3.620
Area (sqft)	= 0.77
Velocity (ft/s)	= 4.67
Wetted Perim (ft)	= 2.49
Crit Depth, Yc (ft)	= 0.96
Top Width (ft)	= 1.76
EGL (ft)	= 1.22

this will be erosive. Ditches need to have erosion control.



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

44' ROW - VERY STEEP - 2yr storm SECTION H

User-defined

Invert Elev (ft)	= 60.32
Slope (%)	= 13.00
N-Value	= 0.035

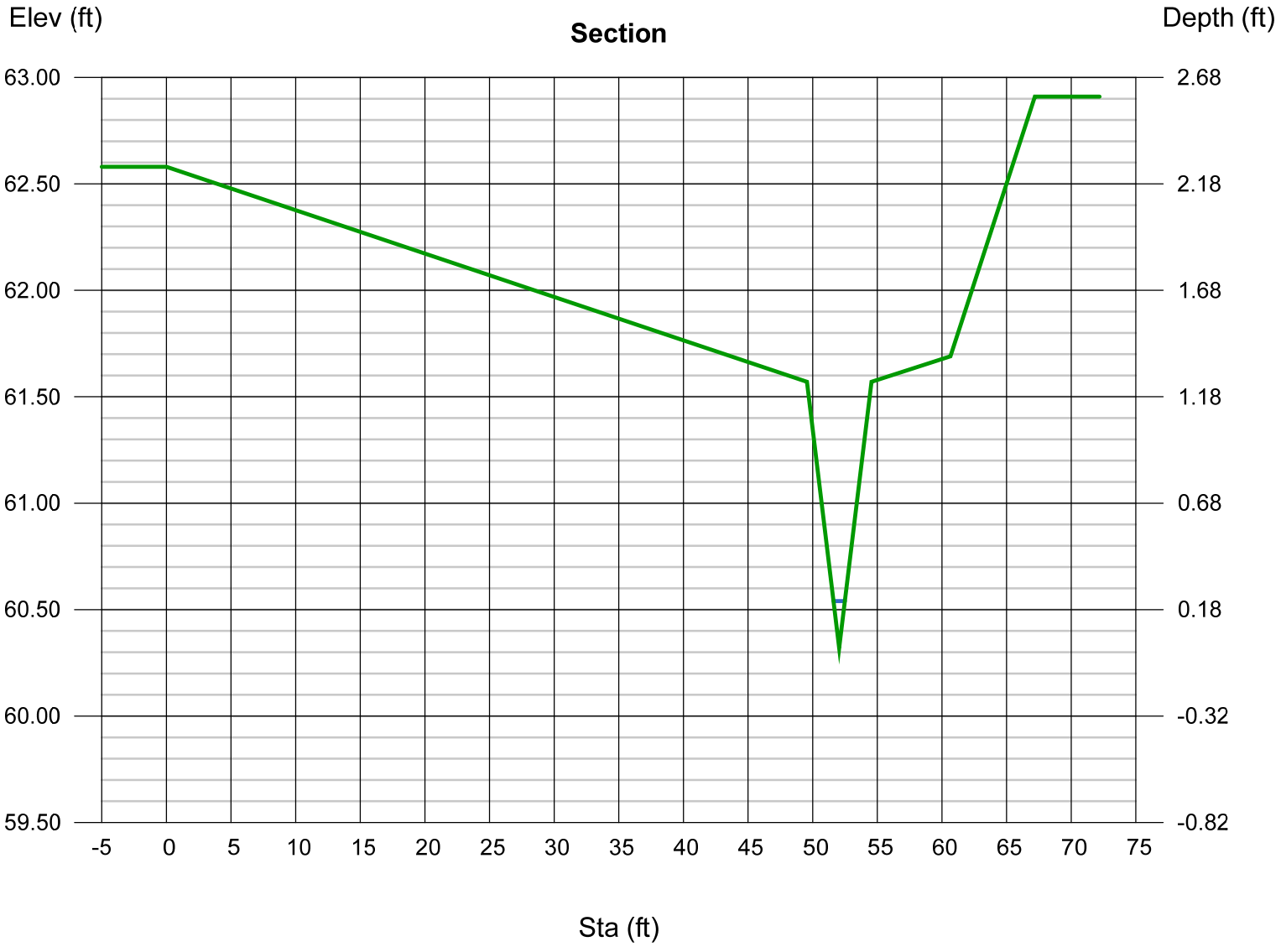
Calculations

Compute by:	Known Q
Known Q (cfs)	= 0.30

Highlighted

Depth (ft)	= 0.22
Q (cfs)	= 0.300
Area (sqft)	= 0.10
Velocity (ft/s)	= 3.10
Wetted Perim (ft)	= 0.98
Crit Depth, Yc (ft)	= 0.27
Top Width (ft)	= 0.88
EGL (ft)	= 0.37

(Sta, El, n)-(Sta, El, n)... (-5.00, 62.58, 0.035)-(49.55, 61.57, 0.014)-(52.05, 60.32, 0.035)-(54.55, 61.57, 0.035)-(60.65, 61.69, 0.014)-(67.19, 62.91, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

44' ROW - VERY STEEP - 100yr storm SECTION H

User-defined

Invert Elev (ft)	= 60.32
Slope (%)	= 13.00
N-Value	= 0.035

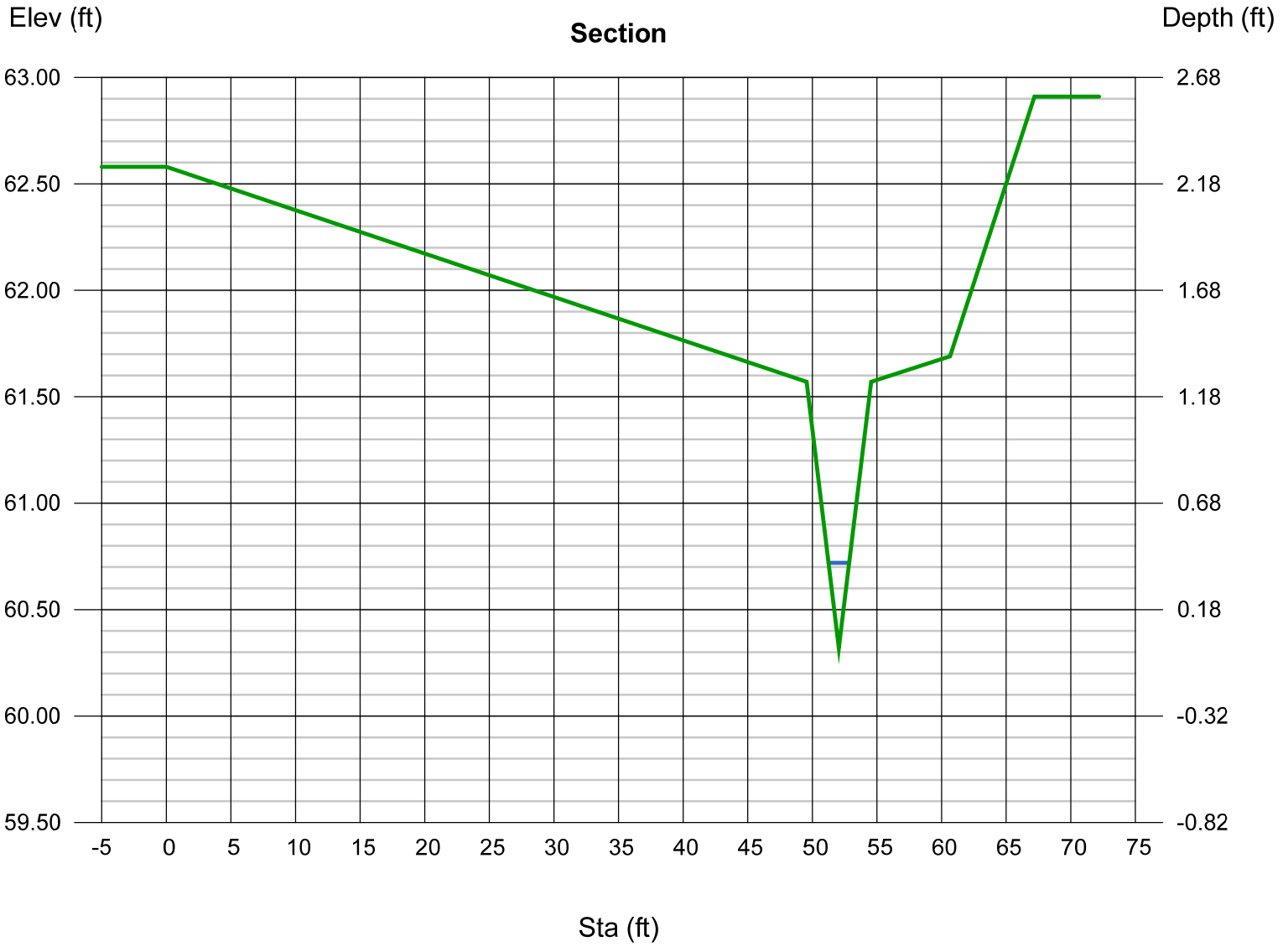
Calculations

Compute by:	Known Q
Known Q (cfs)	= 1.50

Highlighted

Depth (ft)	= 0.40
Q (cfs)	= 1.500
Area (sqft)	= 0.32
Velocity (ft/s)	= 4.69
Wetted Perim (ft)	= 1.79
Crit Depth, Yc (ft)	= 0.52
Top Width (ft)	= 1.60
EGL (ft)	= 0.74

(Sta, El, n)-(Sta, El, n)... (-5.00, 62.58, 0.035)-(49.55, 61.57, 0.014)-(52.05, 60.32, 0.035)-(54.55, 61.57, 0.035)-(60.65, 61.69, 0.014)-(67.19, 62.91, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

CONCRETE C&G ALONG WESTERN BOUNDRY - Steep - 2yr storm

User-defined

Invert Elev (ft)	= 99.00
Slope (%)	= 8.00
N-Value	= 0.014

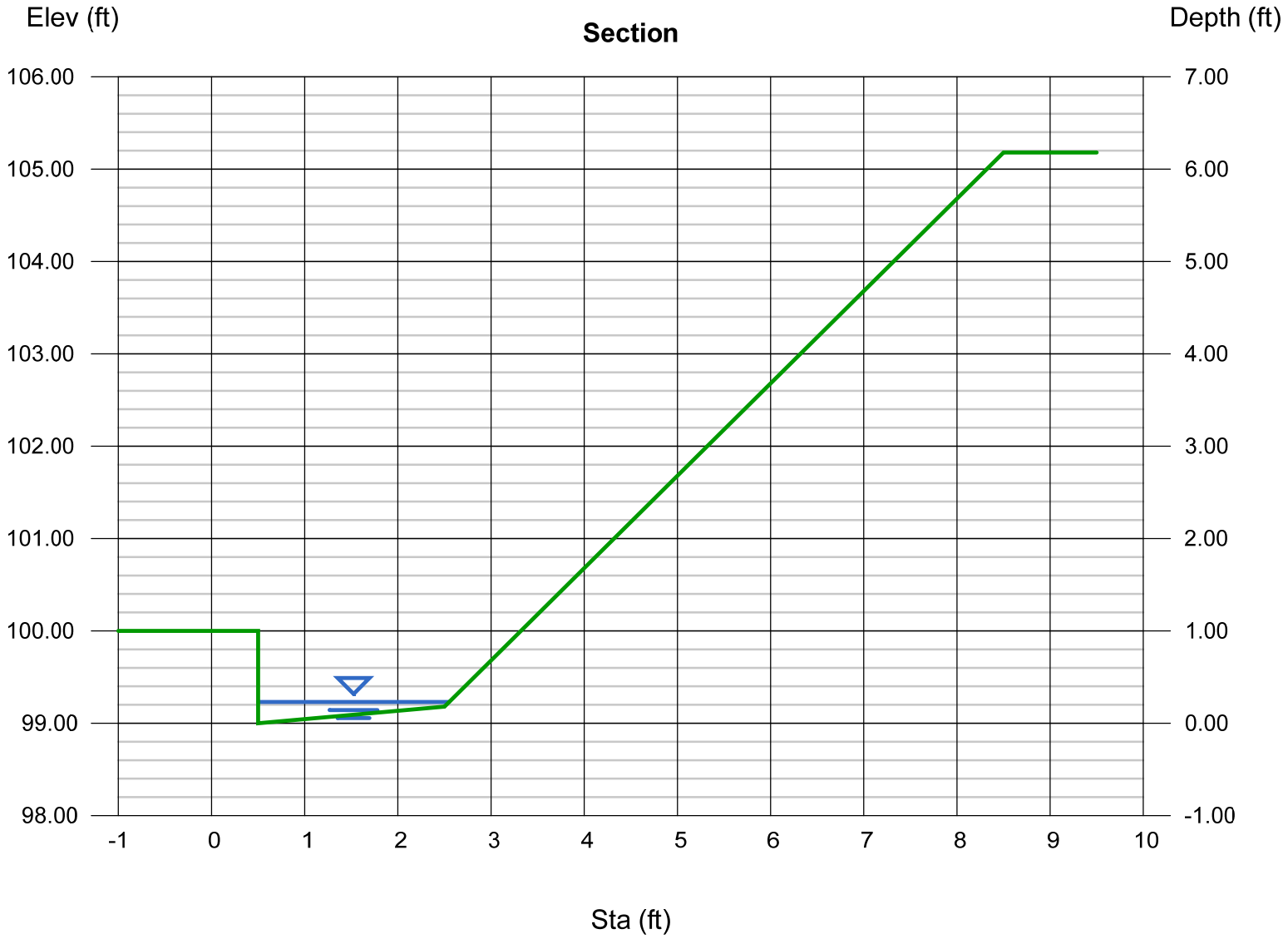
Calculations

Compute by:	Known Q
Known Q (cfs)	= 2.00

Highlighted

Depth (ft)	= 0.23
Q (cfs)	= 2.000
Area (sqft)	= 0.28
Velocity (ft/s)	= 7.11
Wetted Perim (ft)	= 2.31
Crit Depth, Yc (ft)	= 0.41
Top Width (ft)	= 2.05
EGL (ft)	= 1.02

(Sta, El, n)-(Sta, El, n)... (-0.00, 100.00)-(0.50, 100.00, 0.013)-(0.50, 99.00, 0.013)-(2.50, 99.18, 0.013)-(8.50, 105.18, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

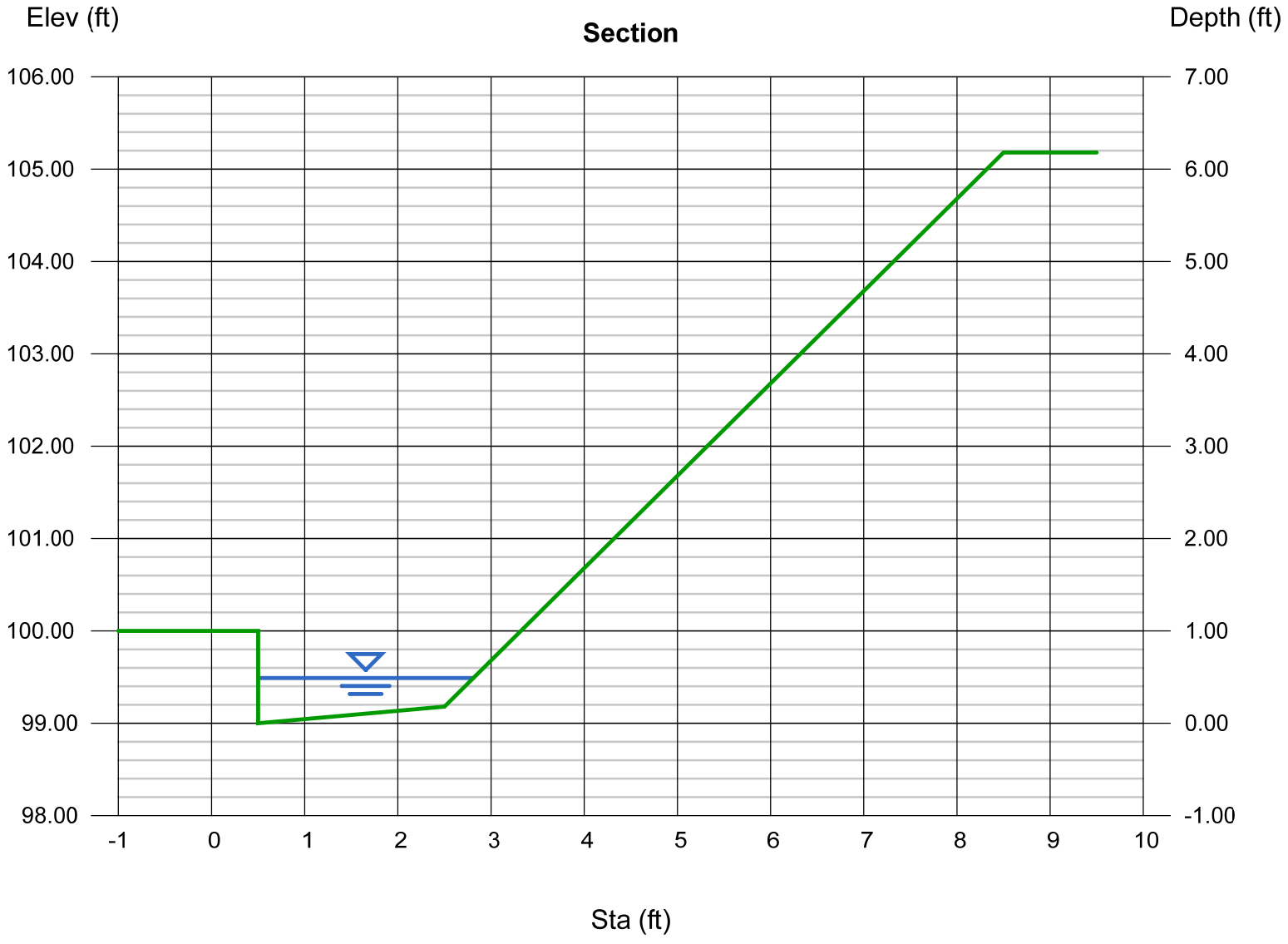
CONCRETE C&G ALONG WESTERN BOUNDRY - Steep - 100yr storm

User-defined	
Invert Elev (ft)	= 99.00
Slope (%)	= 8.00
N-Value	= 0.017

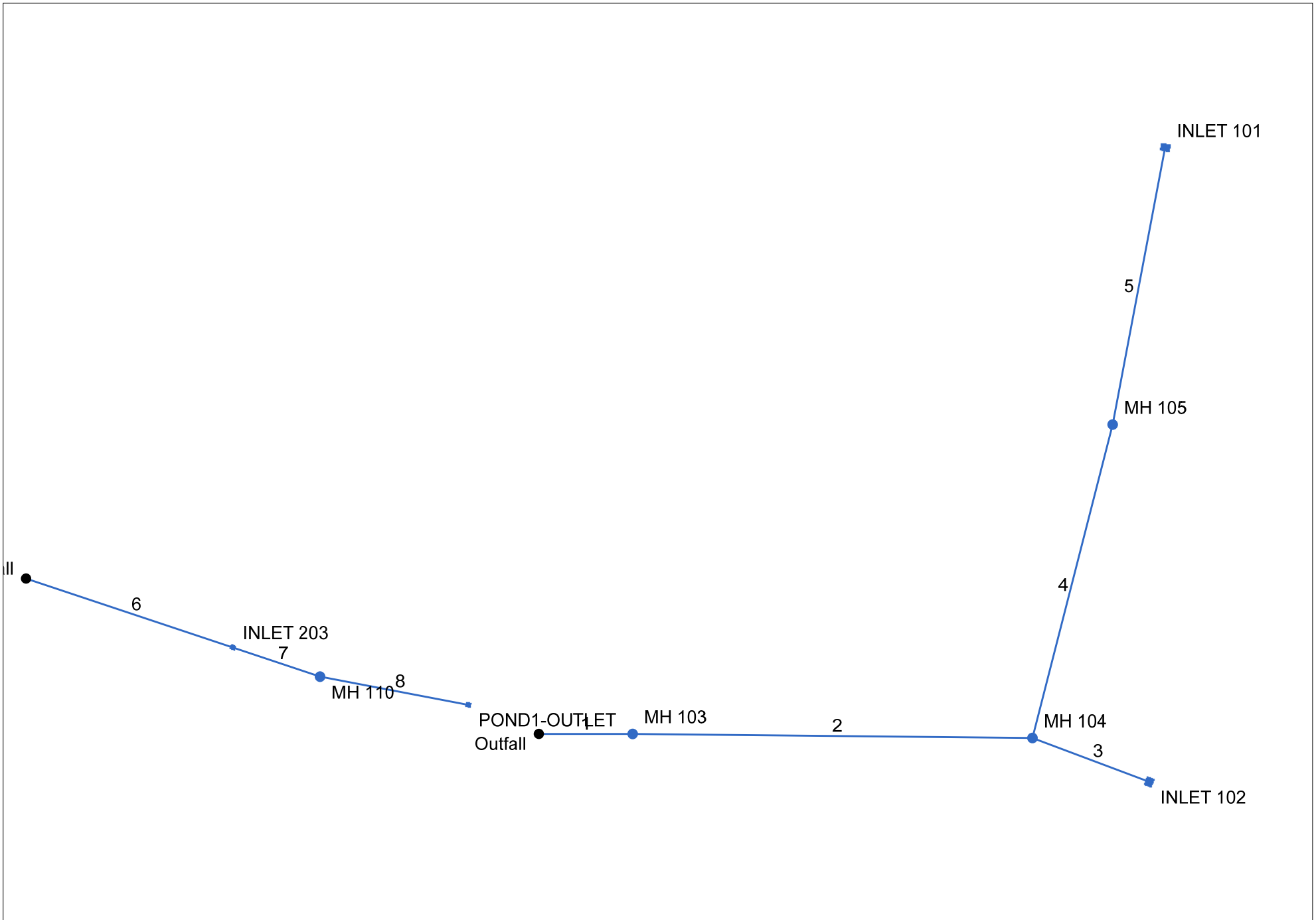
Calculations	
Compute by:	Known Q
Known Q (cfs)	= 9.05

Highlighted	
Depth (ft)	= 0.49
Q (cfs)	= 9.050
Area (sqft)	= 0.85
Velocity (ft/s)	= 10.67
Wetted Perim (ft)	= 2.94
Crit Depth, Yc (ft)	= 0.92
Top Width (ft)	= 2.31
EGL (ft)	= 2.26

(Sta, El, n)-(Sta, El, n)... (-1.00, 100.00)-(0.50, 100.00, 0.013)-(0.50, 99.00, 0.013)-(2.50, 99.18, 0.013)-(8.50, 105.18, 0.035)

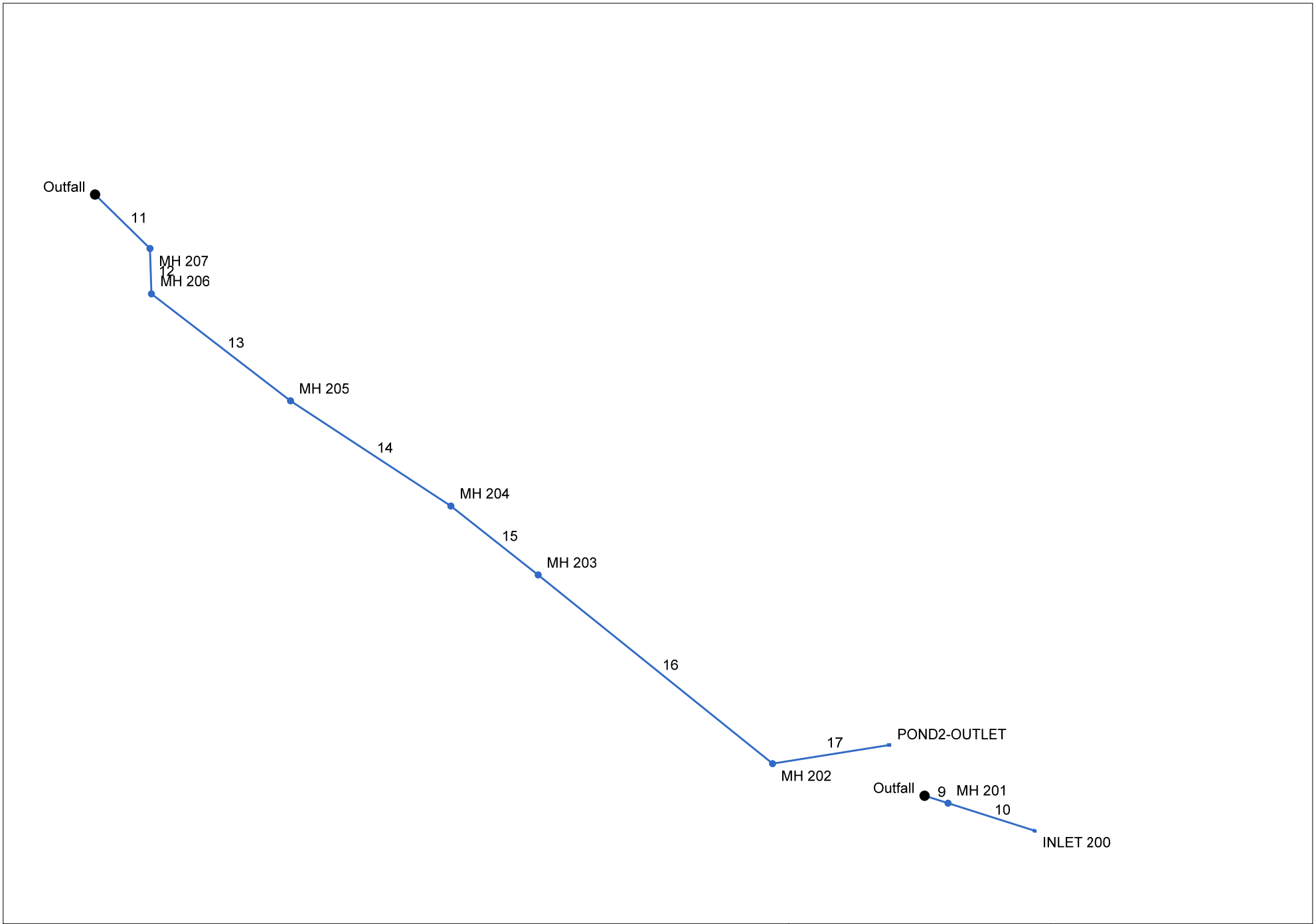


Hydraflow Storm Sewers Extension for AutoCAD® Civil 3D® 2010 Plan



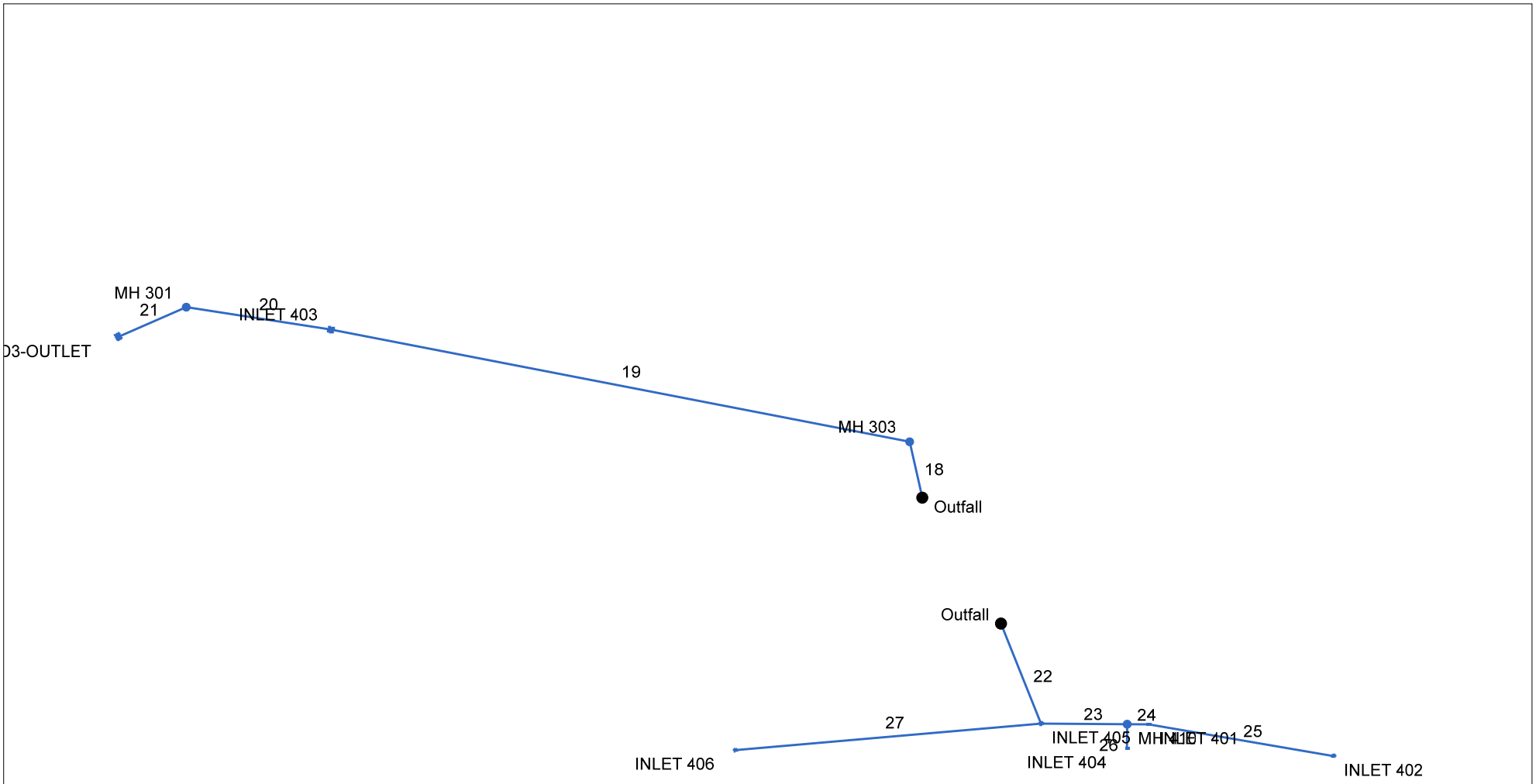
Project File: Pinnacle-AllFilings-2yr.stm	Number of lines: 27	Date: 8/1/2017

Hydraflow Storm Sewers Extension for AutoCAD® Civil 3D® 2010 Plan



Project File: Pinnacle-AllFilings-2yr.stm	Number of lines: 9	Date: 8/7/2017

Hydraflow Storm Sewers Extension for AutoCAD® Civil 3D® 2010 Plan



Project File: Pinnacle-AllFilings-2yr.stm	Number of lines: 10	Date: 8/7/2017

Hydraulic Grade Line Computations 2 YR STORM EVENT

Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
			Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf		Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf	Ave Sf	Enrgy loss		
	(in)	(cfs)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(ft)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(%)	(ft)	(K)	(ft)
1	18	1.47	4800.17	4800.63	0.46	0.46	3.17	0.16	4800.79	0.458	42.946	4801.04	4801.50	0.46**	0.46	3.17	0.16	4801.66	0.459	0.459	n/a	0.15	0.02
2	18	1.47	4808.50	4808.96	0.46*	0.46	3.17	0.16	4809.12	0.458	183.084	4848.05	4848.51	0.46**	0.46	3.17	0.16	4848.67	0.459	0.459	n/a	0.98	0.15
3	18	0.62	4856.50	4856.80	0.30*	0.25	2.46	0.09	4856.90	0.450	57.005	4870.50	4870.80	0.30**	0.25	2.46	0.09	4870.90	0.451	0.451	n/a	1.00	0.09
4	18	0.85	4848.05	4848.51	0.46	0.46	1.83	0.05	4848.57	0.153	147.712	4848.50	4848.87	0.36	0.33	2.56	0.10	4848.97	0.390	0.272	0.401	0.15	0.02
5	18	0.85	4848.50	4848.88	0.38	0.35	2.42	0.09	4848.97	0.332	128.557	4868.50	4868.85 j	0.35**	0.32	2.69	0.11	4868.97	0.450	0.391	n/a	1.00	0.11
6	12	0.98	4782.00	4782.42	0.42*	0.31	3.13	0.15	4782.57	0.559	99.621	4784.70	4785.12	0.42**	0.31	3.13	0.15	4785.27	0.559	0.559	n/a	0.50	0.08
7	12	0.52	4784.90	4785.21	0.31*	0.20	2.56	0.10	4785.31	0.517	42.274	4786.13	4786.44	0.31**	0.20	2.55	0.10	4786.54	0.516	0.517	n/a	0.16	n/a
8	12	0.52	4790.00	4790.31	0.31*	0.20	2.56	0.10	4790.41	0.517	69.031	4799.00	4799.31	0.31**	0.20	2.55	0.10	4799.41	0.516	0.517	n/a	1.00	n/a
9	18	4.93	4747.30	4748.15	0.85	1.03	4.77	0.35	4748.50	0.584	18.945	4747.44	4748.29	0.85**	1.03	4.76	0.35	4748.64	0.581	0.582	0.110	0.15	0.05
10	18	4.93	4748.73	4749.58	0.85*	1.03	4.79	0.36	4749.93	0.589	69.639	4761.66	4762.51	0.85**	1.03	4.79	0.36	4762.86	0.589	0.589	n/a	1.00	0.36
11	18	0.52	4704.25	4704.53	0.28	0.23	2.28	0.08	4704.61	0.425	59.389	4704.55	4704.83	0.28**	0.23	2.30	0.08	4704.91	0.435	0.430	0.255	0.74	0.06
12	18	0.52	4704.55	4704.89	0.34	0.30	1.73	0.05	4704.94	0.195	35.020	4704.72	4705.00	0.28**	0.23	2.30	0.08	4705.08	0.435	0.315	0.110	0.81	0.07
13	18	0.52	4704.72	4705.07	0.35	0.31	1.69	0.04	4705.11	0.182	135.283	4709.50	4709.78 j	0.28**	0.22	2.34	0.09	4709.86	0.454	0.318	n/a	0.15	0.01
14	18	0.52	4714.64	4714.92	0.28*	0.22	2.34	0.08	4715.00	0.453	147.888	4720.48	4720.76	0.28**	0.22	2.34	0.09	4720.84	0.454	0.454	n/a	0.15	0.01
15	18	0.52	4720.63	4720.91	0.28*	0.22	2.34	0.08	4720.99	0.453	85.726	4723.39	4723.67	0.28**	0.22	2.34	0.09	4723.75	0.454	0.454	n/a	0.15	0.01
16	18	0.52	4723.52	4723.80	0.28*	0.22	2.34	0.08	4723.88	0.453	232.048	4736.80	4737.08	0.28**	0.22	2.34	0.09	4737.16	0.454	0.454	n/a	0.78	0.07
17	18	0.52	4737.00	4737.28	0.28*	0.22	2.34	0.08	4737.36	0.453	90.649	4746.08	4746.36	0.28**	0.22	2.34	0.09	4746.44	0.454	0.454	n/a	1.00	0.09
18	18	0.38	4739.00	4739.24	0.24	0.18	2.08	0.07	4739.31	0.423	37.119	4739.63	4739.87 j	0.24**	0.18	2.14	0.07	4739.94	0.461	0.442	n/a	0.93	0.07
19	18	0.38	4739.63	4739.87	0.24*	0.18	2.14	0.07	4739.94	0.461	359.380	4742.28	4742.52	0.24**	0.18	2.14	0.07	4742.59	0.461	0.461	n/a	0.50	0.04
20	12	0.17	4742.28	4742.52	0.24	0.14	1.21	0.02	4742.54	0.154	88.573	4746.71	4746.89 j	0.17**	0.09	1.84	0.05	4746.94	0.514	0.334	n/a	0.63	n/a
21	12	0.17	4747.21	4747.39	0.17*	0.09	1.84	0.05	4747.44	0.514	45.886	4751.00	4751.18	0.17**	0.09	1.84	0.05	4751.23	0.514	0.514	n/a	1.00	n/a
22	18	8.84	4739.00	4740.14	1.14	1.44	6.13	0.58	4740.73	0.826	70.493	4741.90	4743.04 j	1.13**	1.43	6.16	0.59	4743.63	0.835	0.831	n/a	1.50	n/a

Project File: Pinnacle-AllFilings-2yr.stm | Number of lines: 27 | Run Date: 8/1/2017

Notes: * depth assumed.; ** Critical depth.; j-Line contains hyd. jump. ; c = cir e = ellip b = box

Hydraulic Grade Line Computations 2 YR STORM EVENT

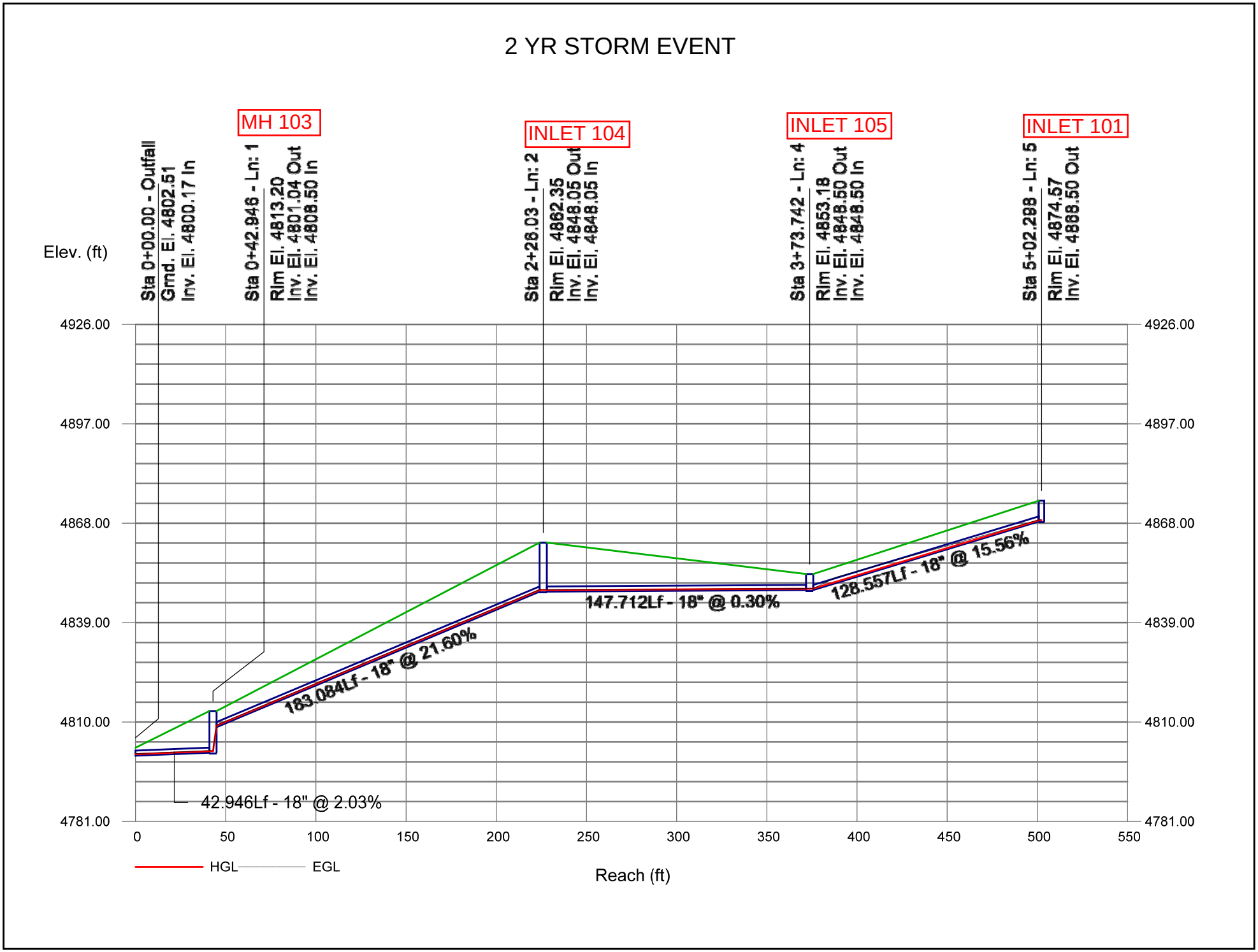
Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
			Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf		Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf	Ave Sf	Enrgy loss		
	(in)	(cfs)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(ft)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(%)	(ft)	(K)	(ft)
23	18	5.82	4741.90	4743.04	1.13	1.43	4.06	0.26	4743.29	0.362	52.274	4742.96	4743.88 j	0.92**	1.14	5.12	0.41	4744.29	0.635	0.498	n/a	1.00	0.41
24	18	4.87	4742.96	4743.88	0.92	1.14	4.28	0.28	4744.17	0.444	12.942	4743.22	4744.06 j	0.84**	1.02	4.77	0.35	4744.42	0.586	0.515	n/a	0.50	n/a
25	18	1.43	4743.22	4744.06	0.84	1.02	1.40	0.03	4744.09	0.051	113.583	4747.00	4747.46 j	0.46**	0.45	3.14	0.15	4747.61	0.458	0.254	n/a	1.00	0.15
26	12	0.95	4742.96	4743.88	0.92	0.76	1.26	0.02	4743.91	0.062	15.997	4744.56	4744.97 j	0.41**	0.31	3.10	0.15	4745.12	0.556	0.309	n/a	1.00	0.15
27	18	1.50	4741.90	4743.04	1.13	1.43	1.05	0.02	4743.05	0.024	186.210	4748.41	4748.88 j	0.47**	0.47	3.19	0.16	4749.04	0.459	0.242	n/a	1.00	n/a

Project File: Pinnacle-AllFilings-2yr.stm | Number of lines: 27 | Run Date: 8/1/2017

Notes: * depth assumed.; ** Critical depth.; j-Line contains hyd. jump. ; c = cir e = ellip b = box

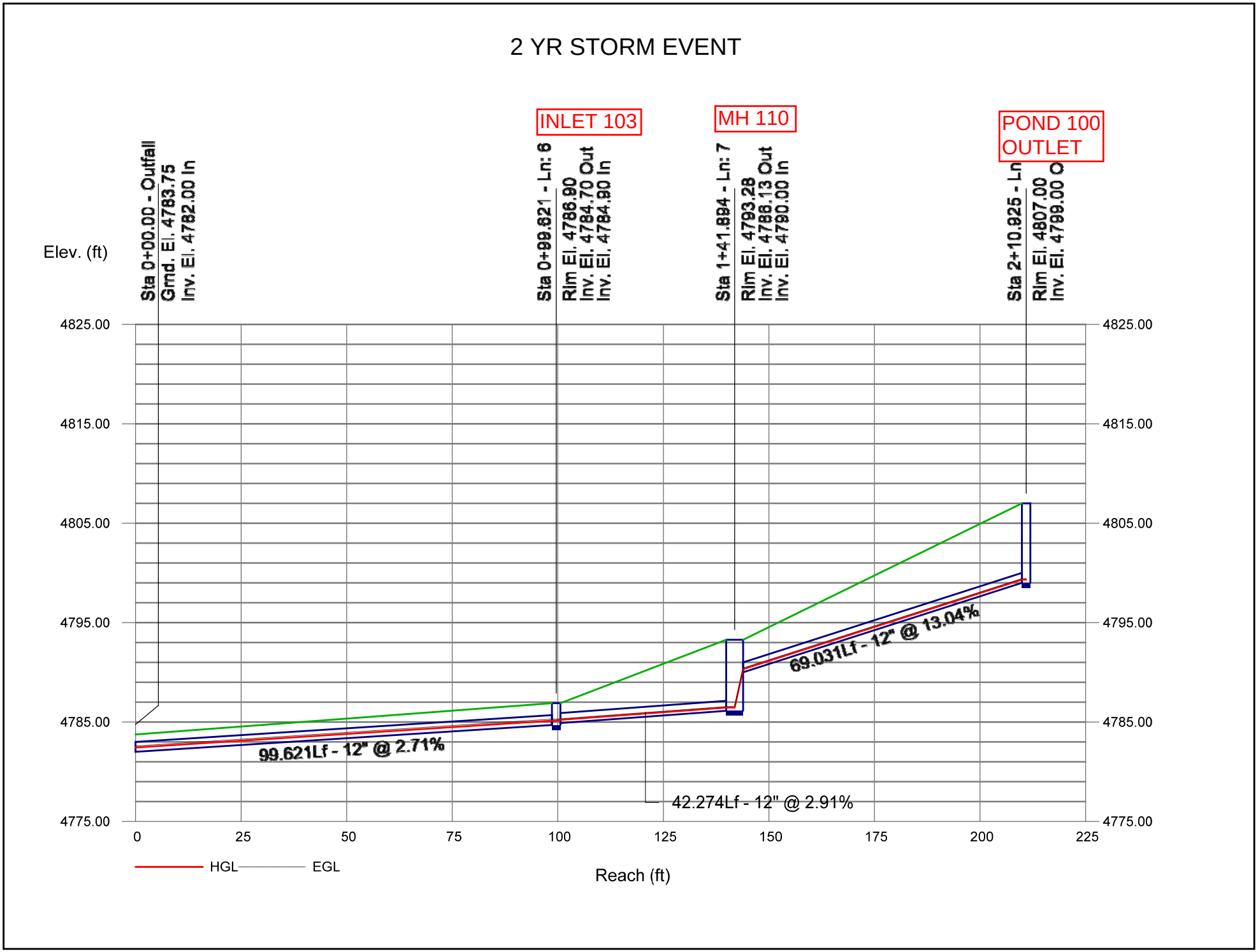
Storm Sewer Profile

Proj. file: Pinnacle-AllFilings-2yr.stm



Storm Sewer Profile

Proj. file: Pinnacle-AllFilings-2yr.stm



Storm Sewer Profile

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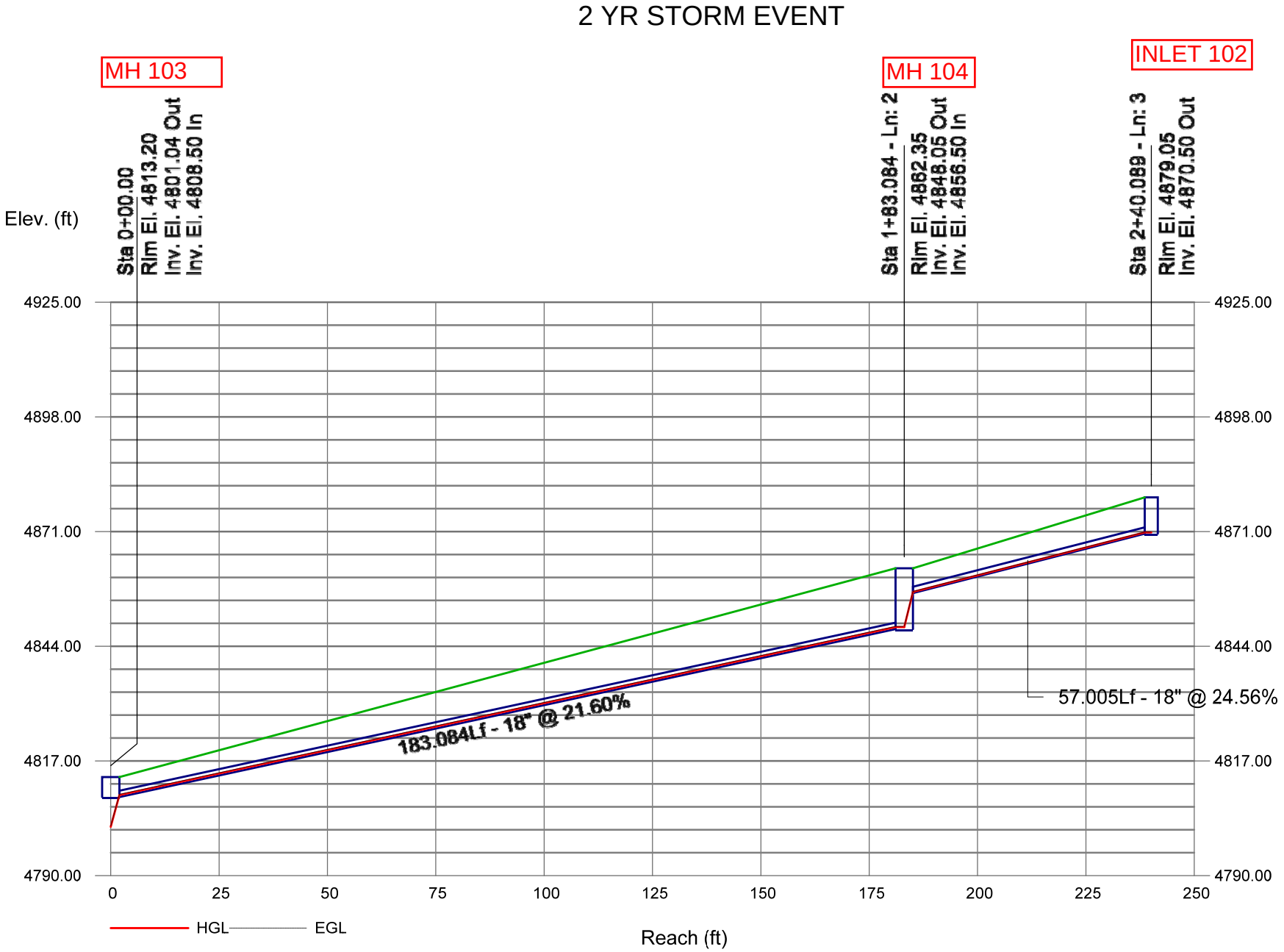

Storm Sewer Profile

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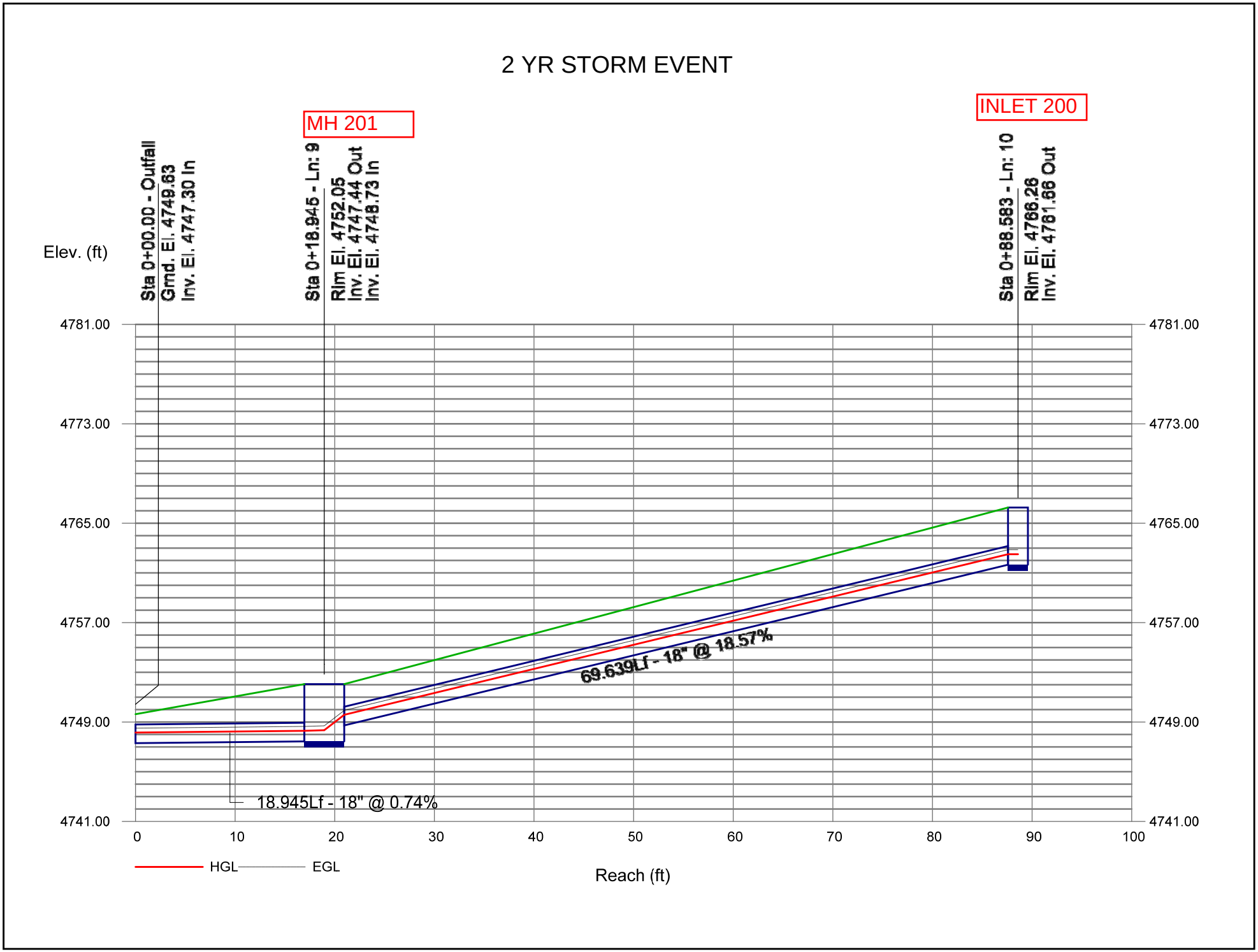

Storm Sewer Profile

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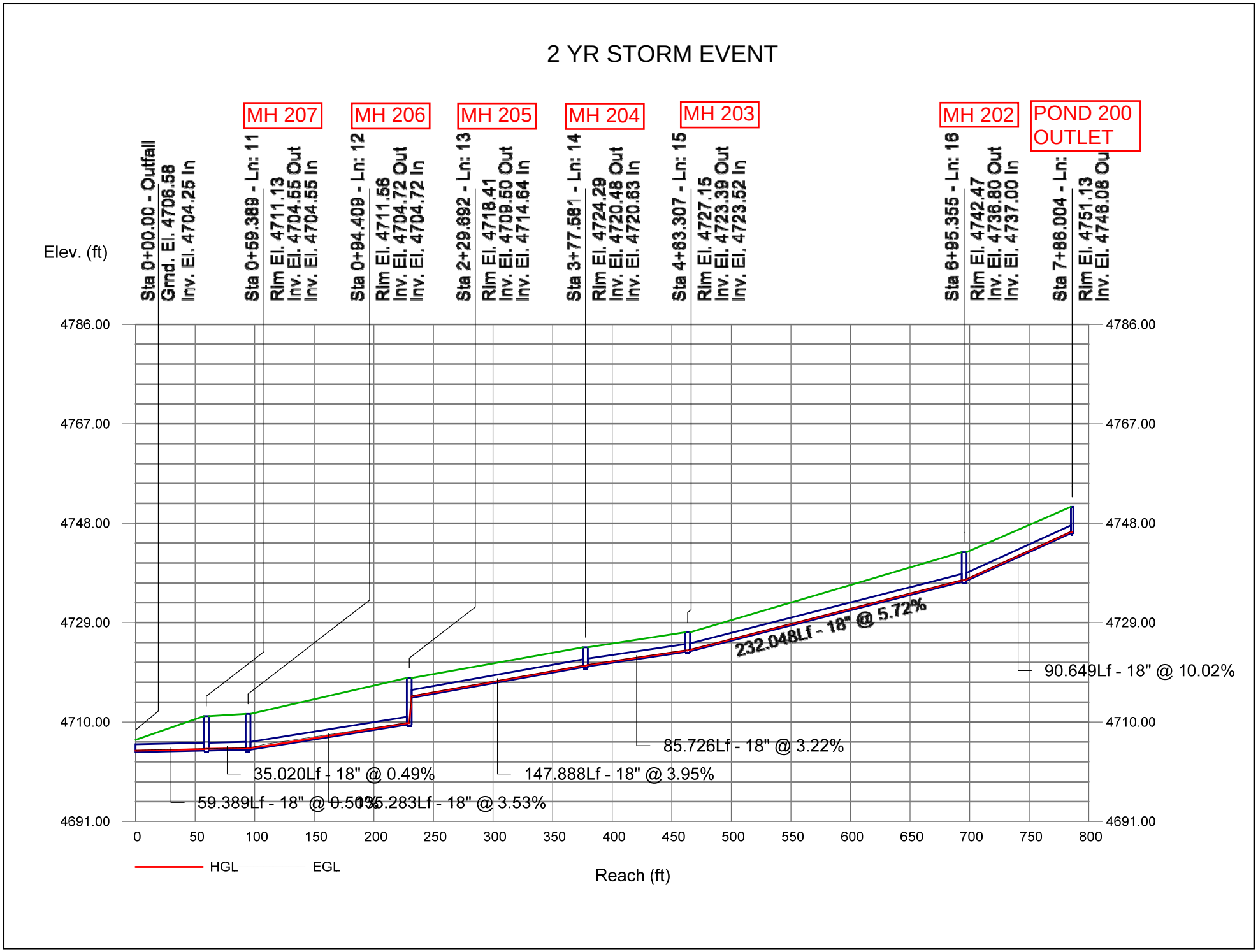

Storm Sewer Profile

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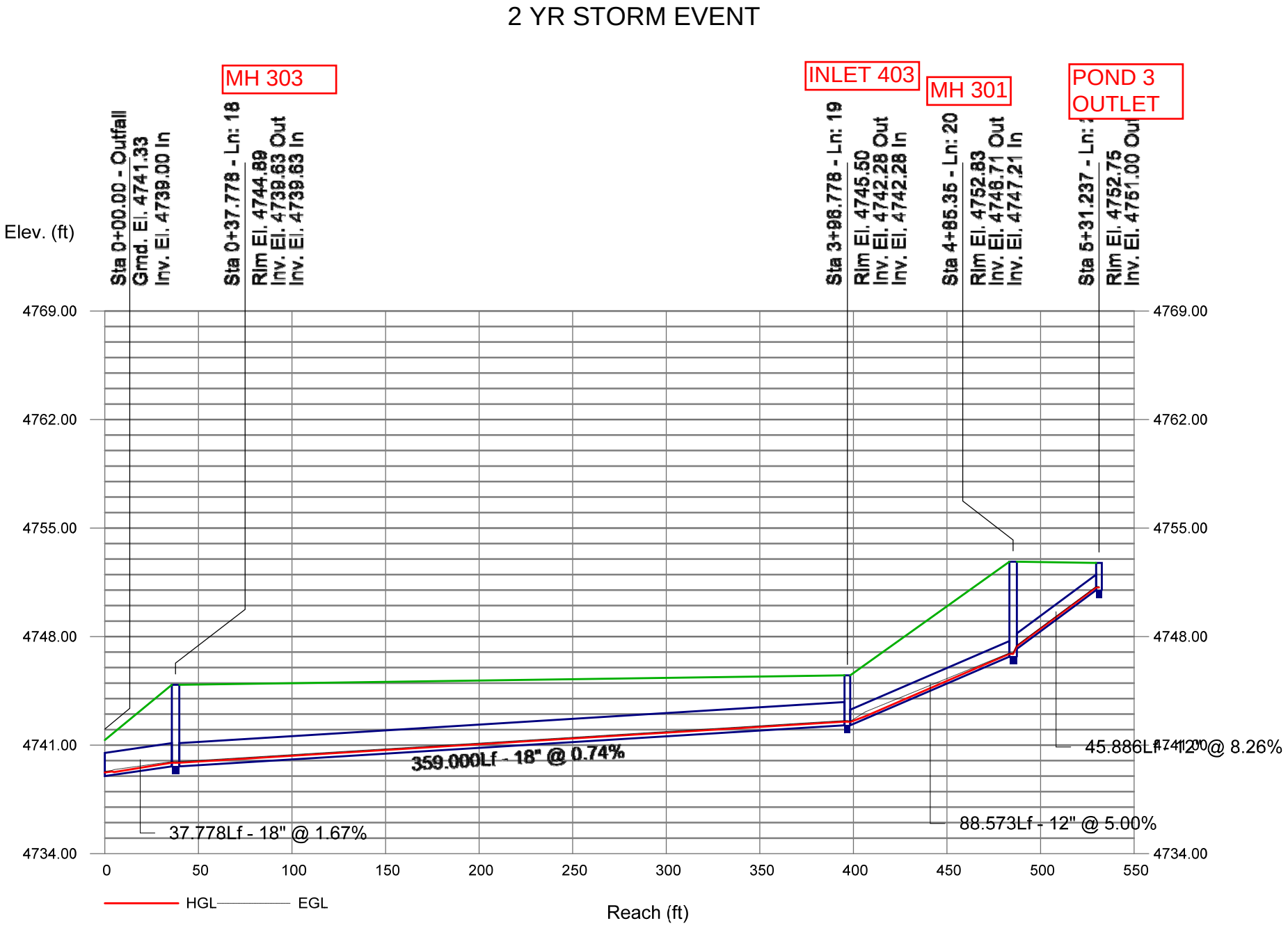

Storm Sewer Profile

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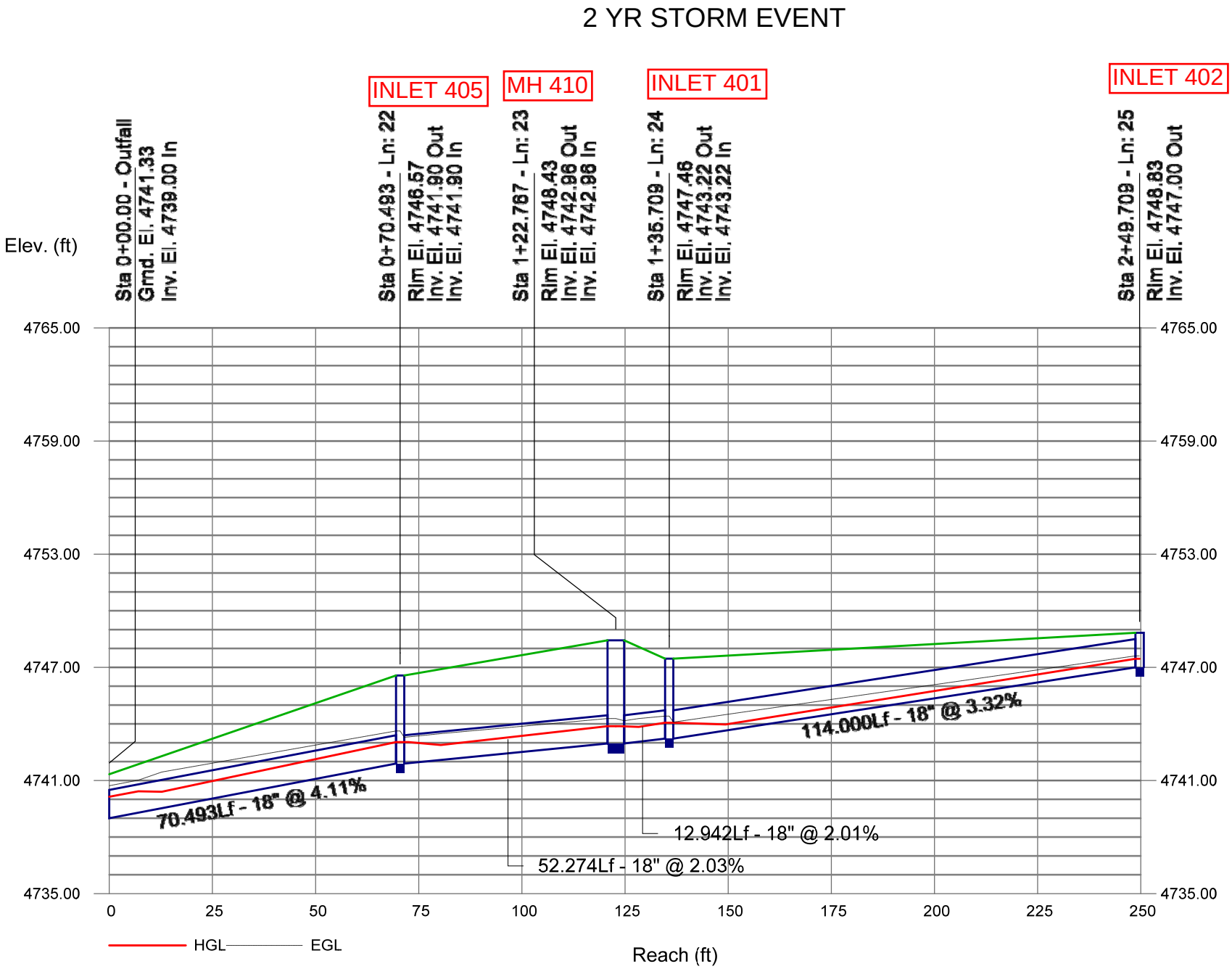

Storm Sewer Profile

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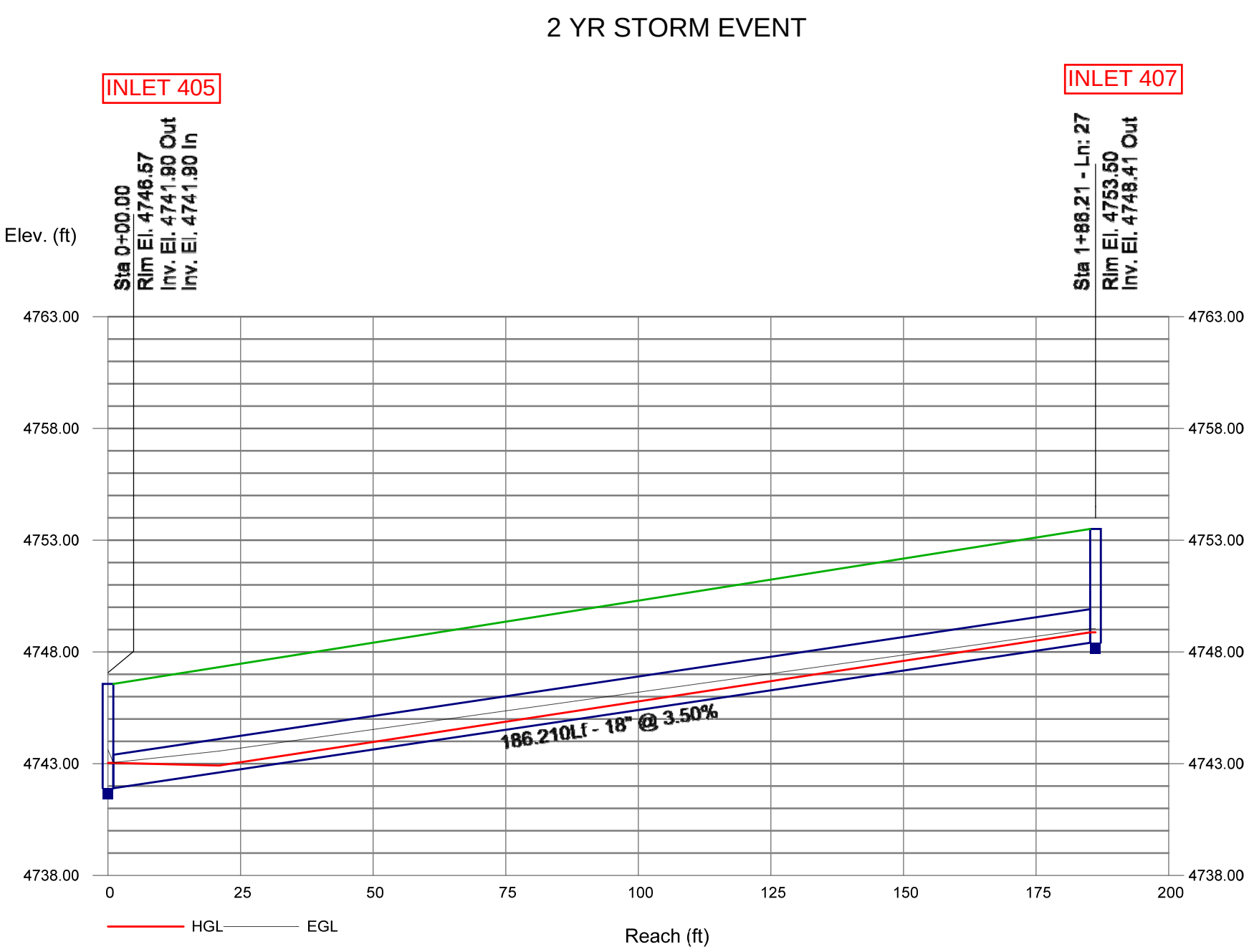

Storm Sewer Profile

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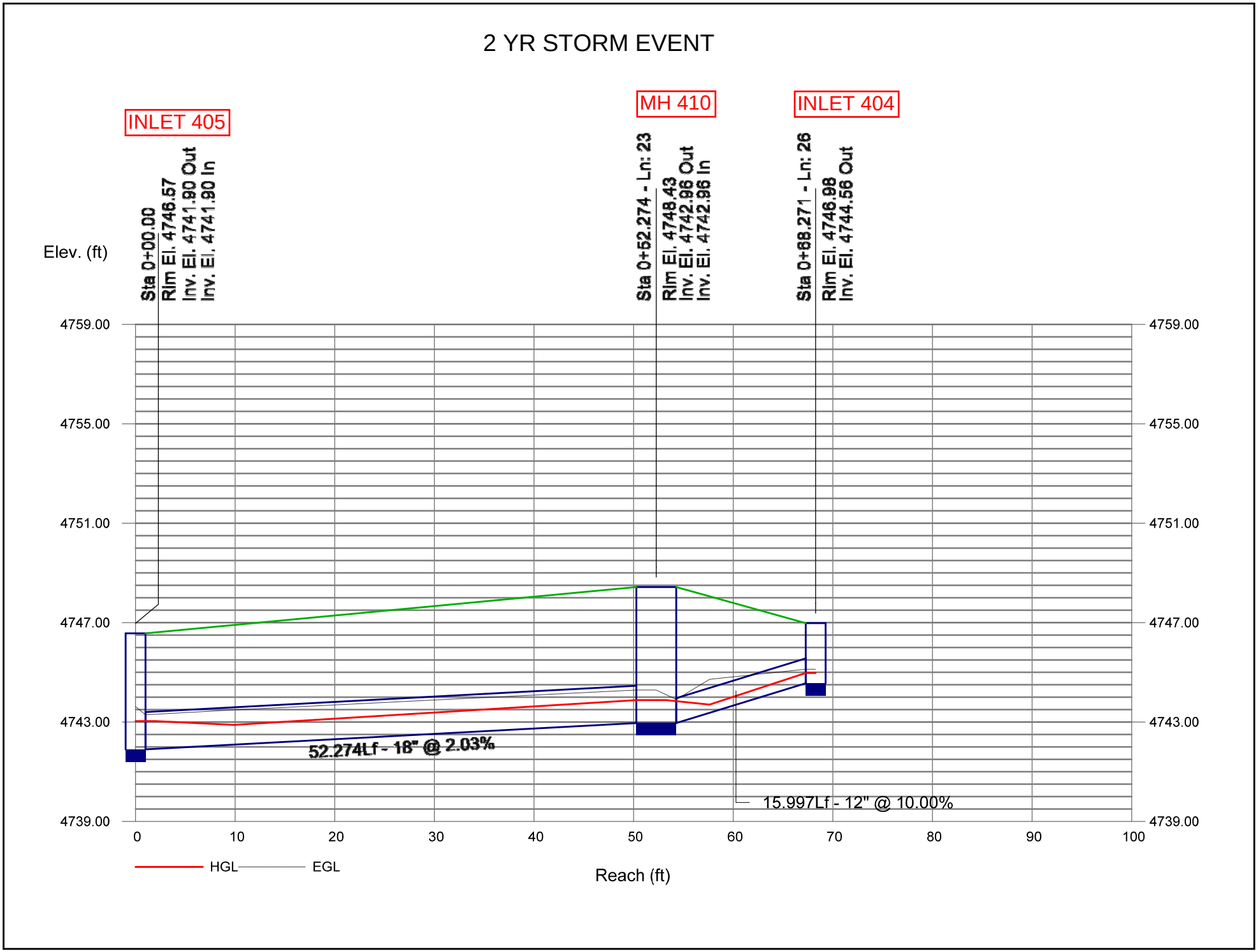
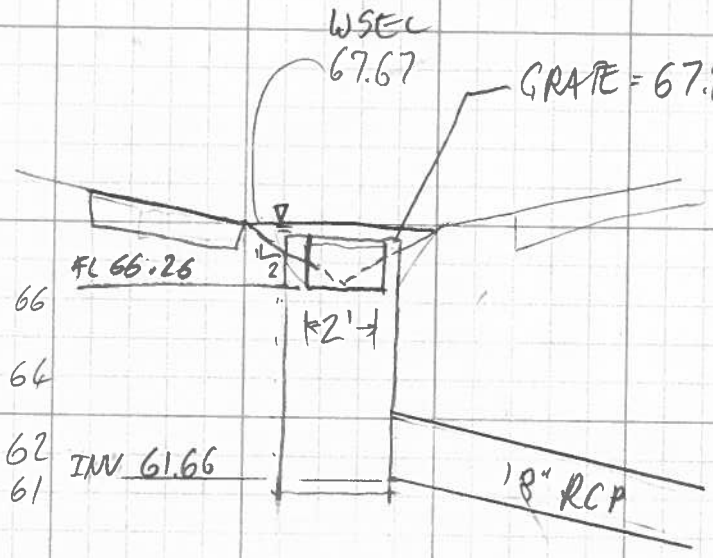


Title PINNACLE INLET 200 CAPACITY
Date 8/1/17 Job No. F04-006
By

SCALE
1' □ 1'



4' WEIR w/ 1.5' of HEAD

$Q = 3.33(4)(1.5)^{3/2}$

$Q = 24.47$ cfs

18" ORIFICE w/ 7' of HEAD

$Q = 0.67A(2gH)^{1/2}$

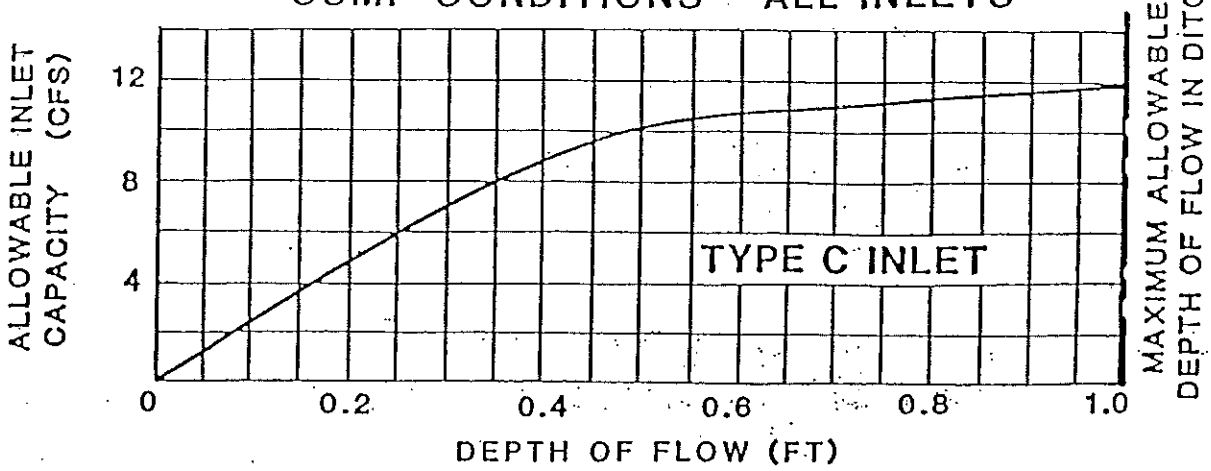
$Q = 0.67\left(\frac{\pi 1.5^2}{4}\right)(2(32.2)7)^{1/2} =$

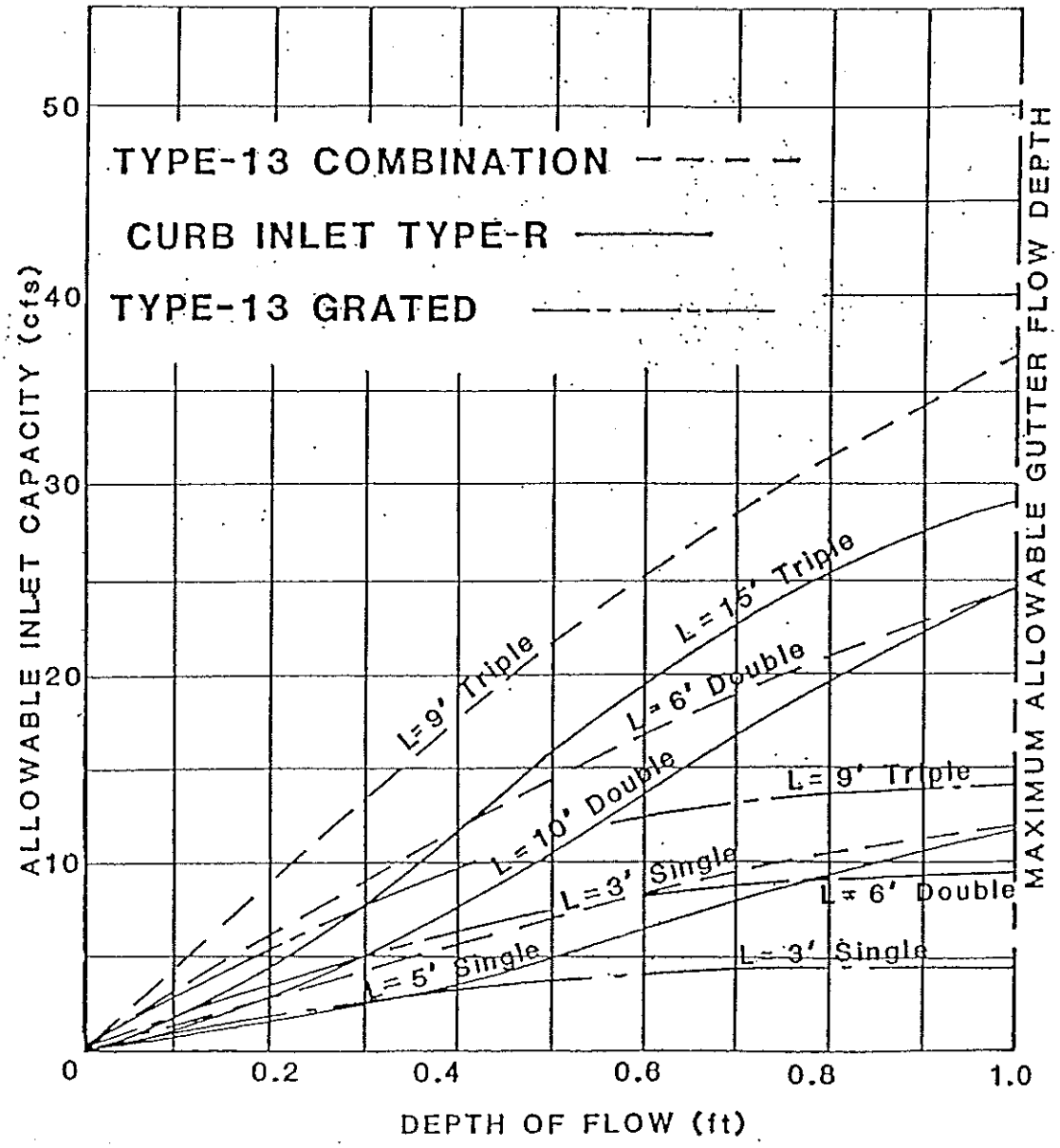
$Q = 25.13$ cfs

INLET CAPACITY Q = 24.5 CFS

ALLOWABLE INLET CAPACITY

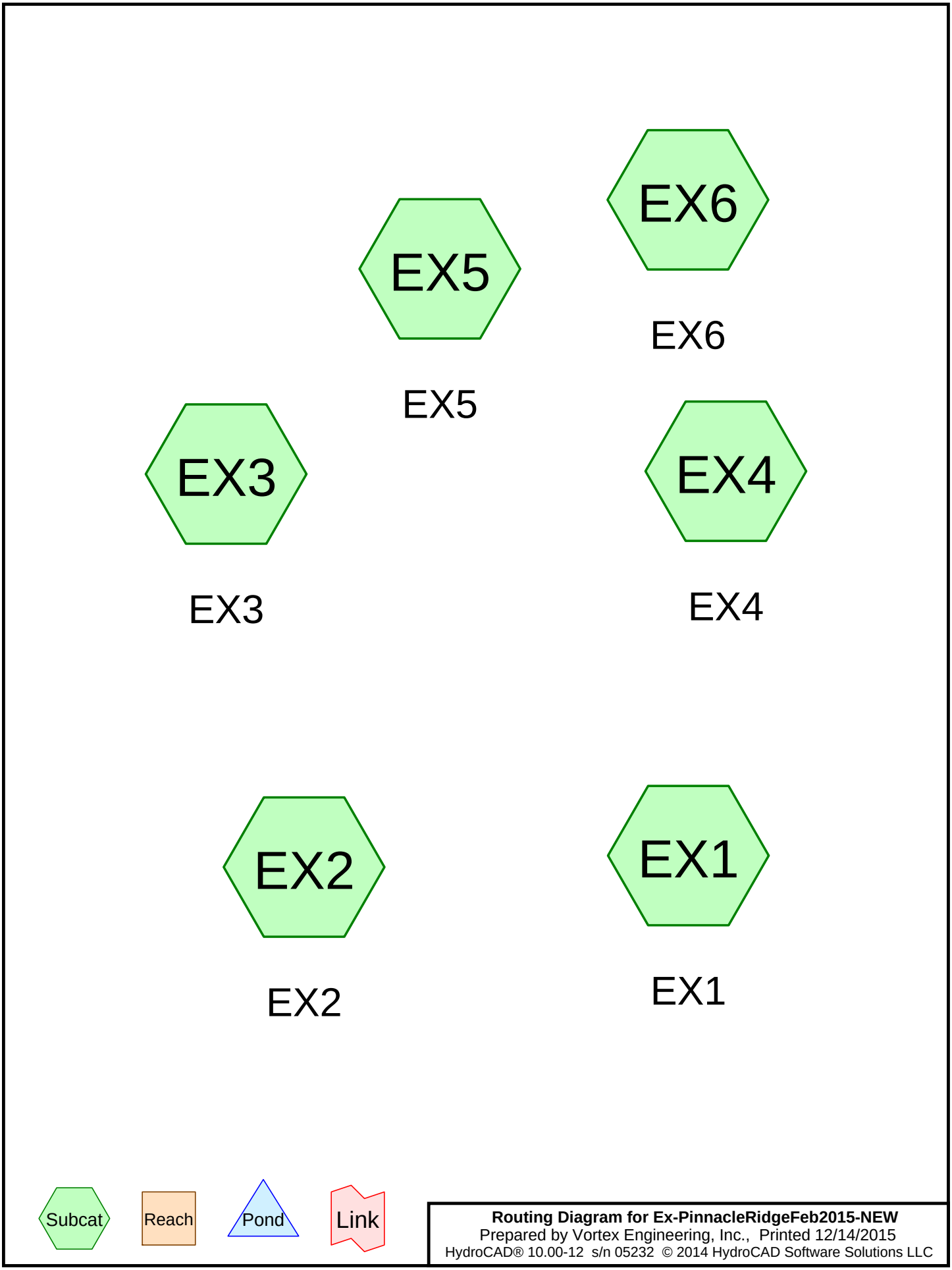
SUMP CONDITIONS - ALL INLETS





Date: Rev:	REFERENCE:

Appendix E – HYDROCAD Report



Routing Diagram for Ex-PinnacleRidgeFeb2015-NEW
Prepared by Vortex Engineering, Inc., Printed 12/14/2015
HydroCAD® 10.00-12 s/n 05232 © 2014 HydroCAD Software Solutions LLC

Summary for Subcatchment EX1: EX1

Runoff = 0.14 cfs @ 1.85 hrs, Volume= 0.006 af, Depth= 0.01"

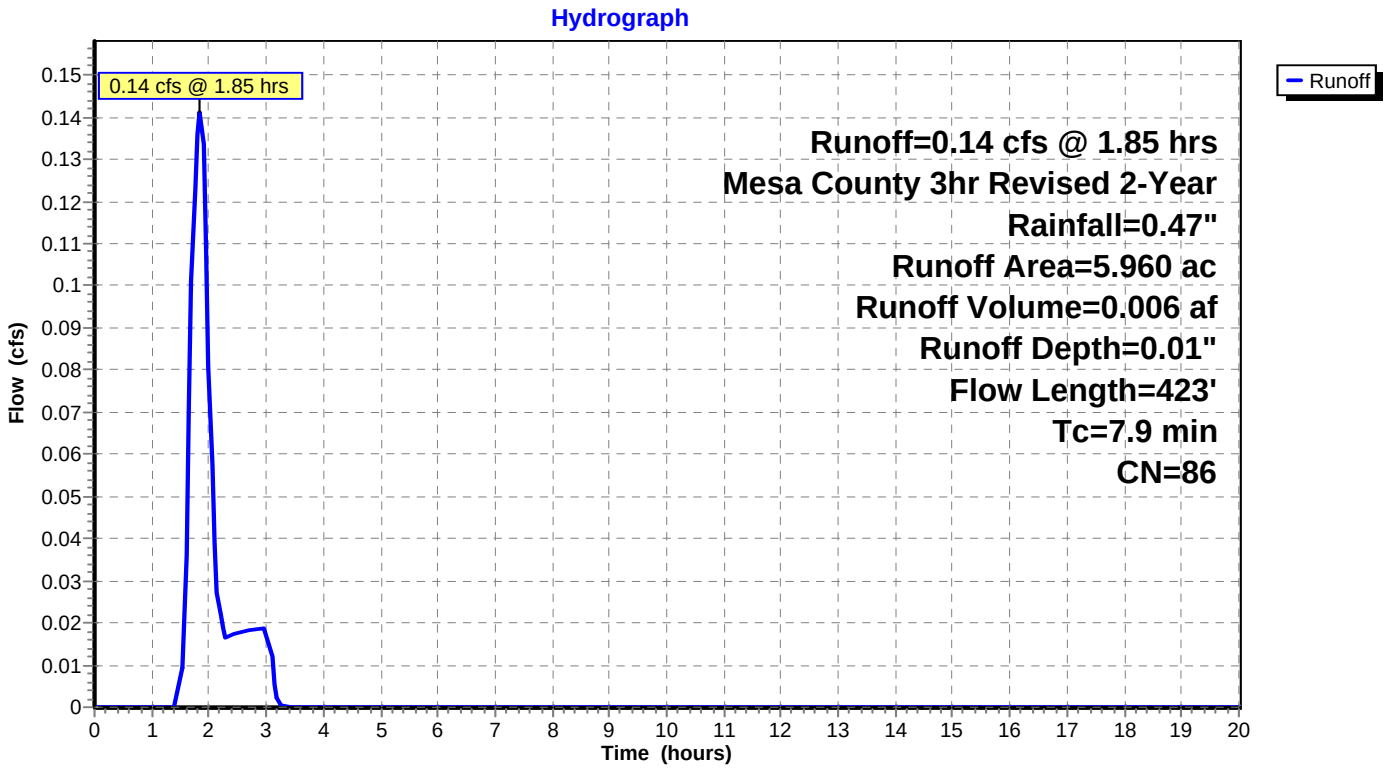
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
5.960	86	Desert shrub range, Fair, HSG D
5.960		100.00% Pervious Area

can't tell what these subcatchments area. Please explain.

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0200	0.26		**Sheet Flow,** n= 0.026 P2= 0.40
1.5	323	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
7.9	423	Total			

Subcatchment EX1: EX1



Summary for Subcatchment EX2: EX2

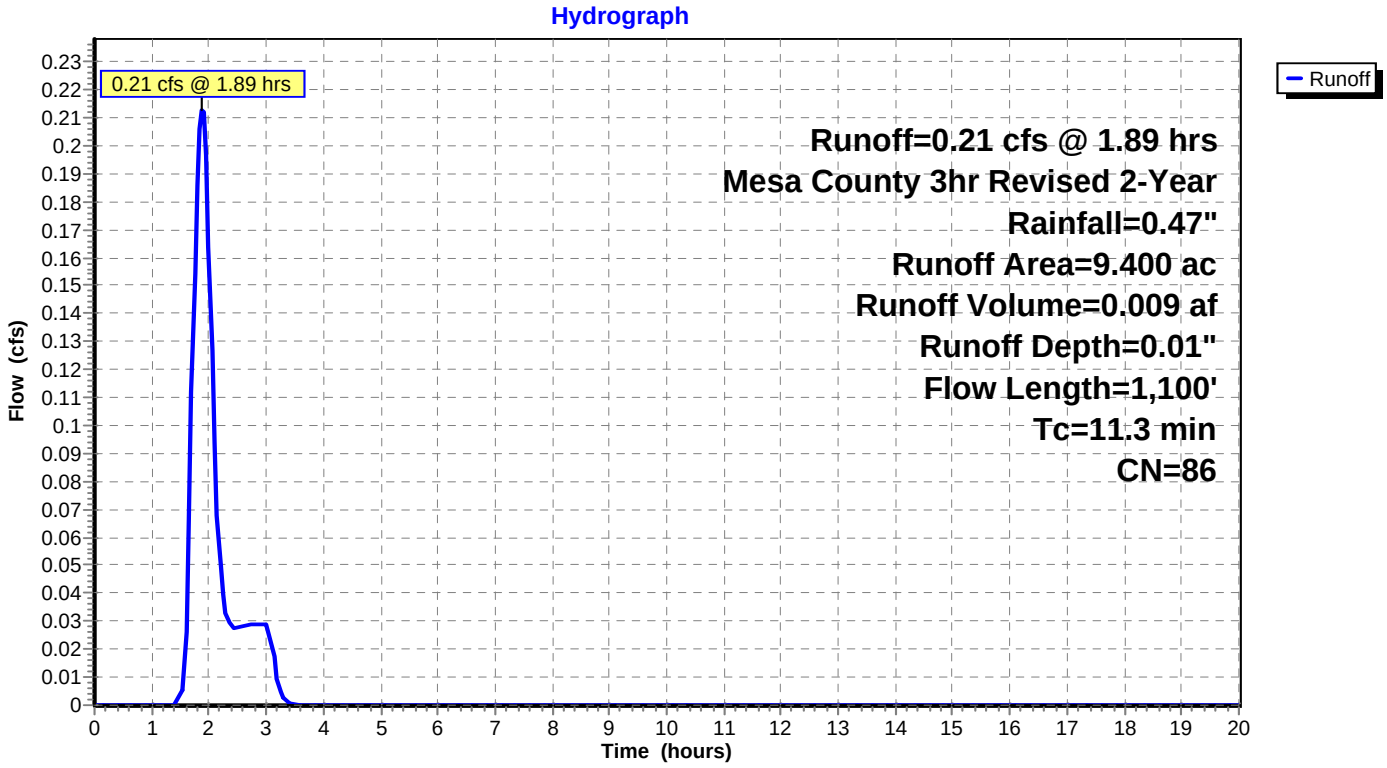
Runoff = 0.21 cfs @ 1.89 hrs, Volume= 0.009 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
9.400	86	Desert shrub range, Fair, HSG D
9.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	100	0.0200	0.25		**Sheet Flow,** n= 0.028 P2= 0.46"
4.6	1,000	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
11.3	1,100	Total			

Subcatchment EX2: EX2



Summary for Subcatchment EX3: EX3

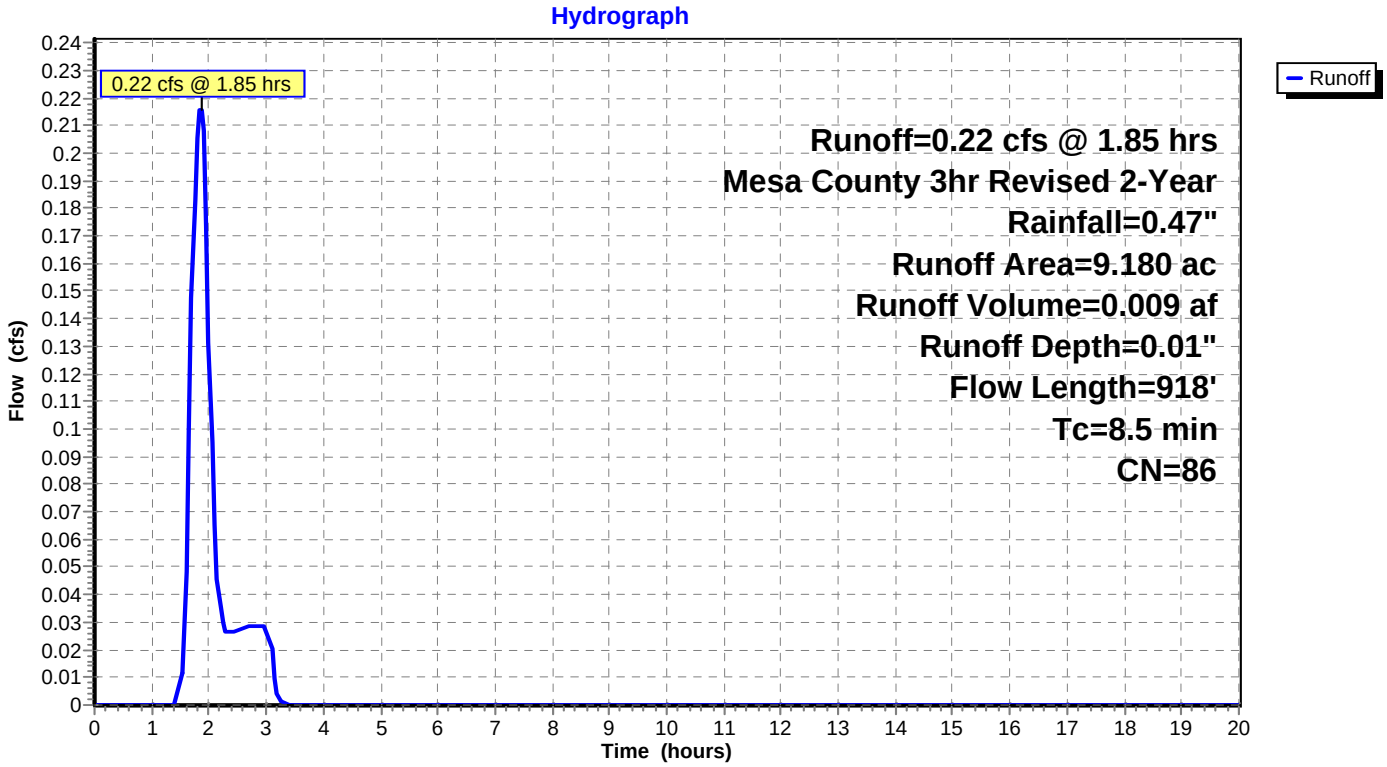
Runoff = 0.22 cfs @ 1.85 hrs, Volume= 0.009 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
9.180	86	Desert shrub range, Fair, HSG D
9.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	100	0.1600	0.57		**Sheet Flow,** n= 0.028 P2= 0.46"
2.6	466	0.1800	2.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.0	352	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	918	Total			

Subcatchment EX3: EX3



Summary for Subcatchment EX4: EX4

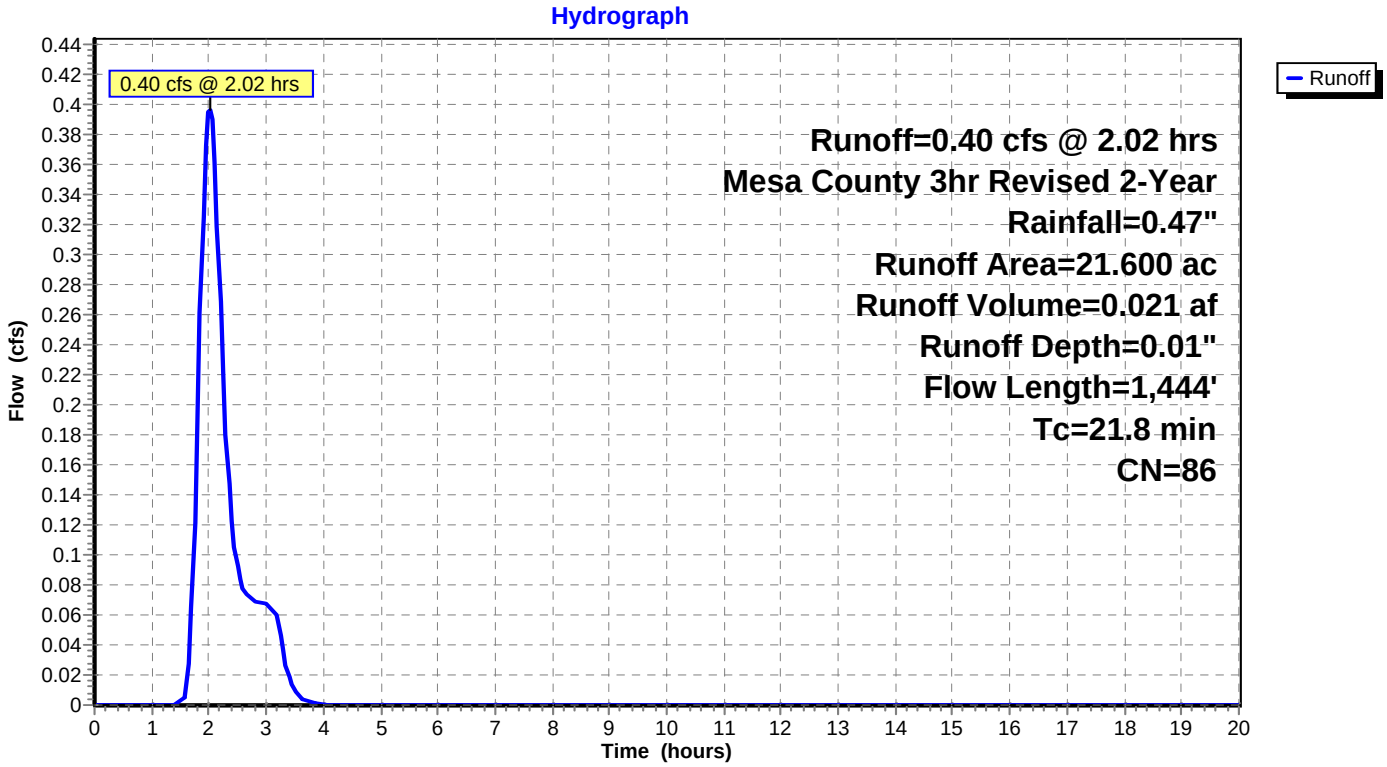
Runoff = 0.40 cfs @ 2.02 hrs, Volume= 0.021 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
21.600	86	Desert shrub range, Fair, HSG D
21.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0	192	0.0100	0.21		**Sheet Flow,** n= 0.028 P2= 0.46"
0.7	360	0.2900	8.67		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.1	892	0.0600	2.45		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
21.8	1,444	Total			

Subcatchment EX4: EX4



Summary for Subcatchment EX5: EX5

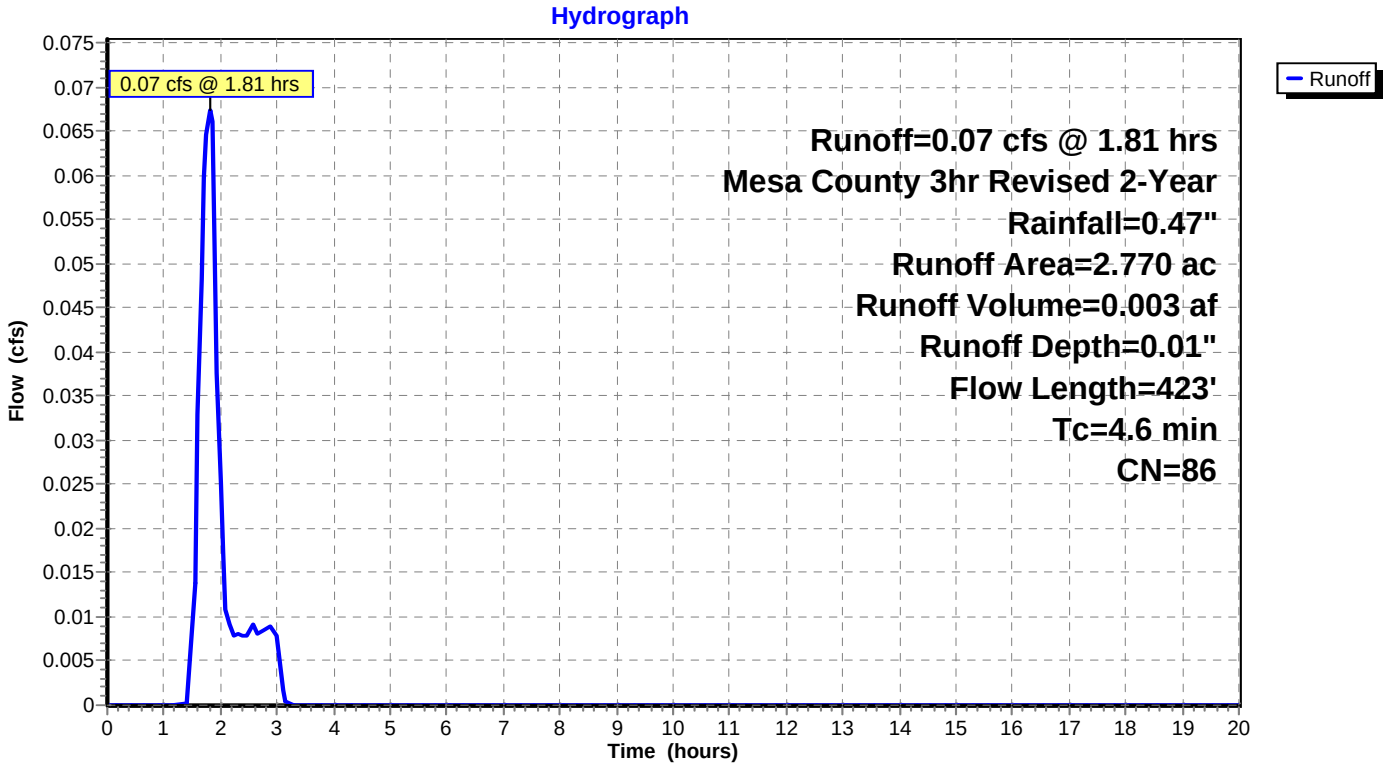
Runoff = 0.07 cfs @ 1.81 hrs, Volume= 0.003 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
2.770	86	Desert shrub range, Fair, HSG D
2.770		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.2500	0.68		**Sheet Flow,** n= 0.028 P2= 0.46"
2.1	323	0.1300	2.52		**Shallow Concentrated Flow,** Kv= 7.0 fps
4.6	423	Total			

Subcatchment EX5: EX5



Summary for Subcatchment EX6: EX6

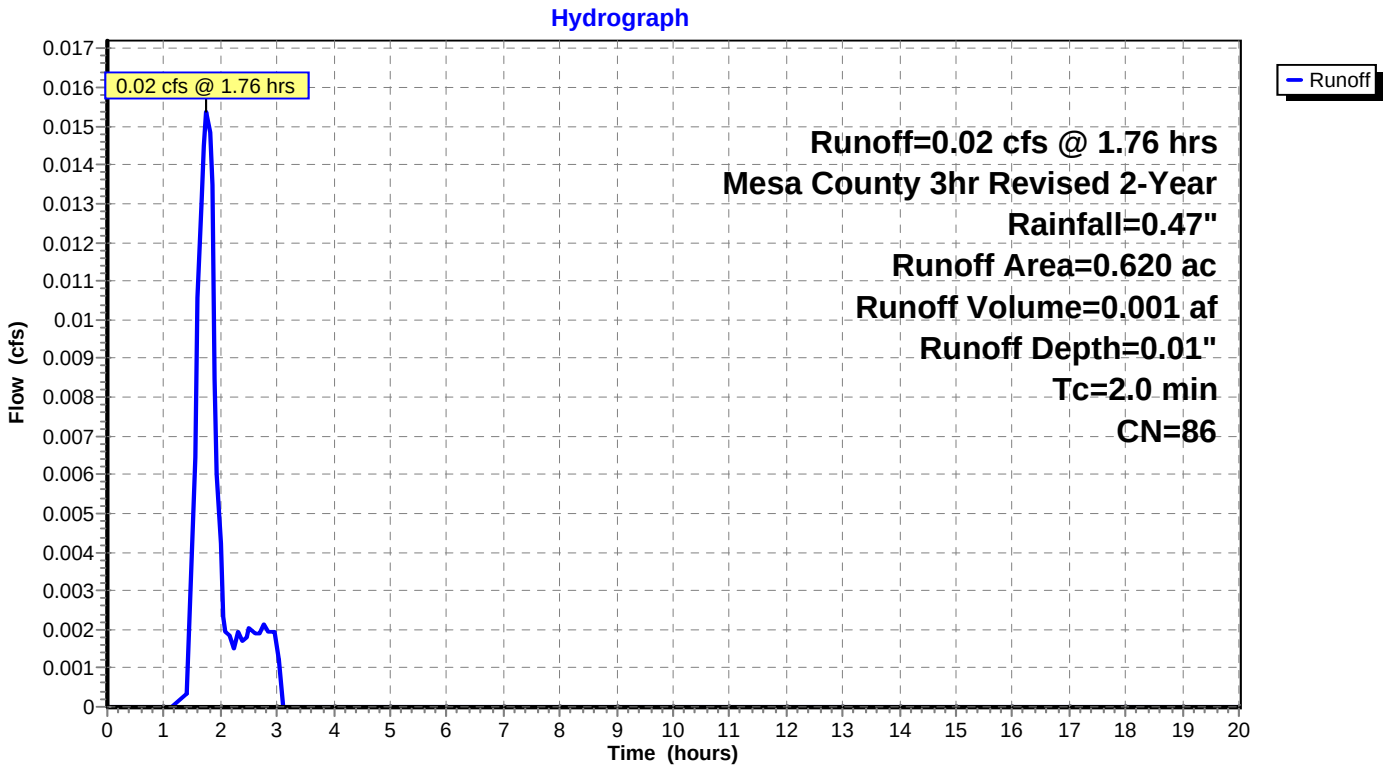
Runoff = 0.02 cfs @ 1.76 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
0.620	86	Desert shrub range, Fair, HSG D
0.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment EX6: EX6



Summary for Subcatchment EX1: EX1

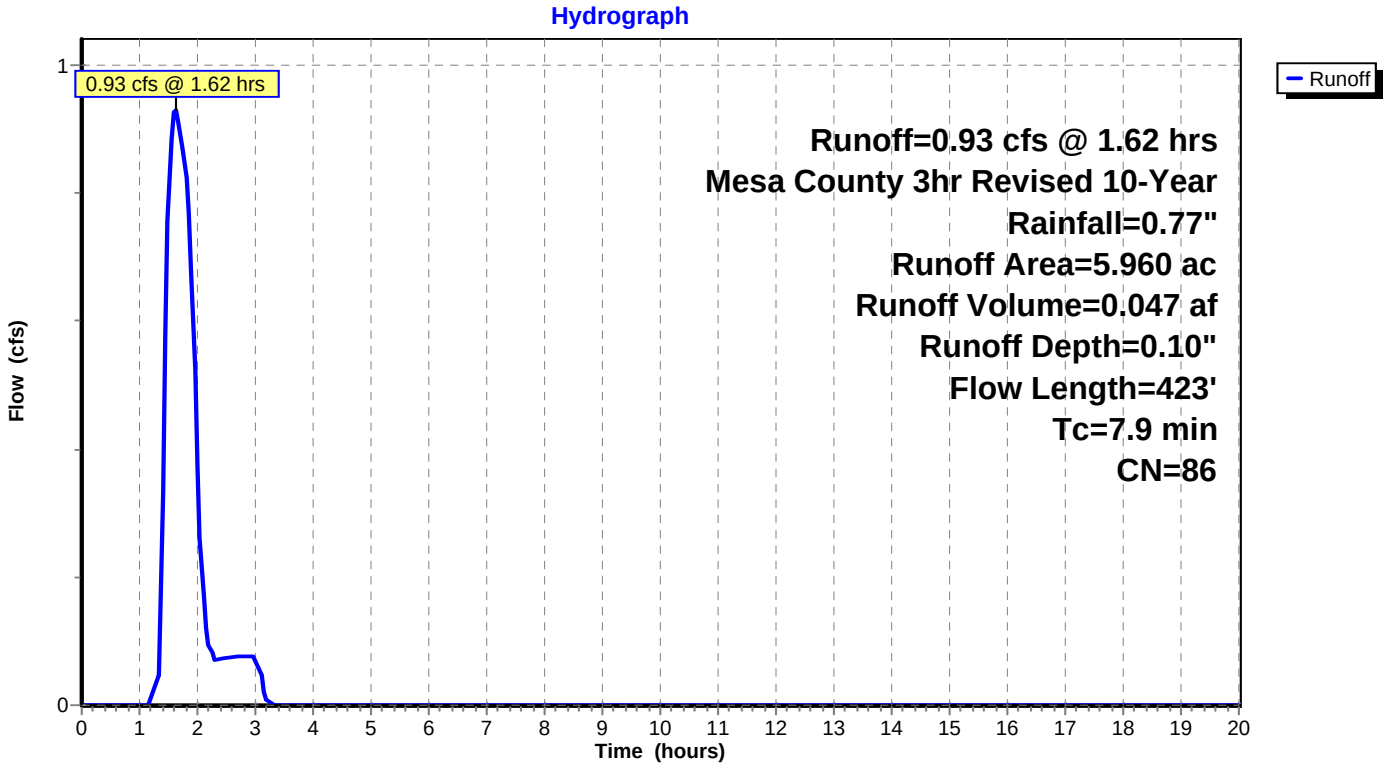
Runoff = 0.93 cfs @ 1.62 hrs, Volume= 0.047 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
5.960	86	Desert shrub range, Fair, HSG D
5.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0200	0.26		**Sheet Flow,** n= 0.026 P2= 0.46"
1.5	323	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
7.9	423	Total			

Subcatchment EX1: EX1



Summary for Subcatchment EX2: EX2

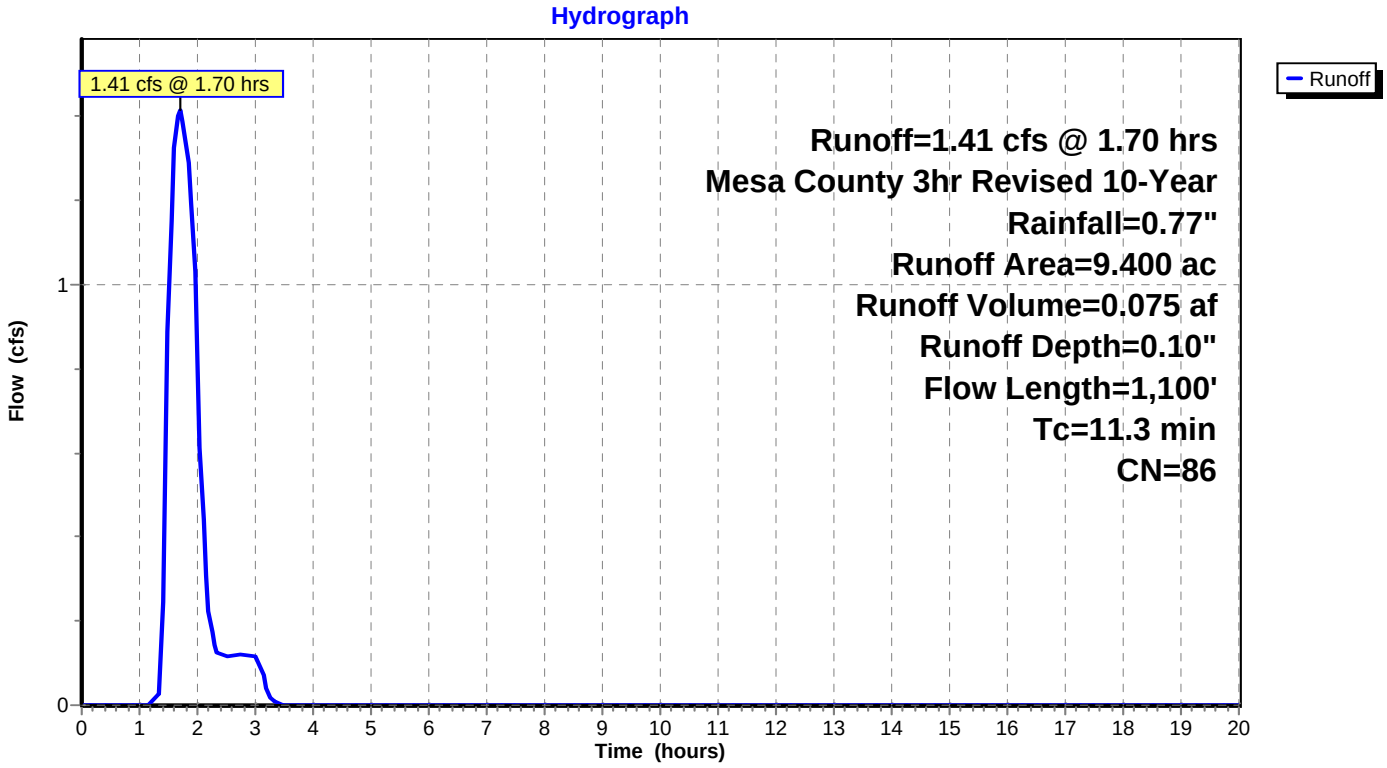
Runoff = 1.41 cfs @ 1.70 hrs, Volume= 0.075 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
9.400	86	Desert shrub range, Fair, HSG D
9.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	100	0.0200	0.25		**Sheet Flow,** n= 0.028 P2= 0.46"
4.6	1,000	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
11.3	1,100	Total			

Subcatchment EX2: EX2



Summary for Subcatchment EX3: EX3

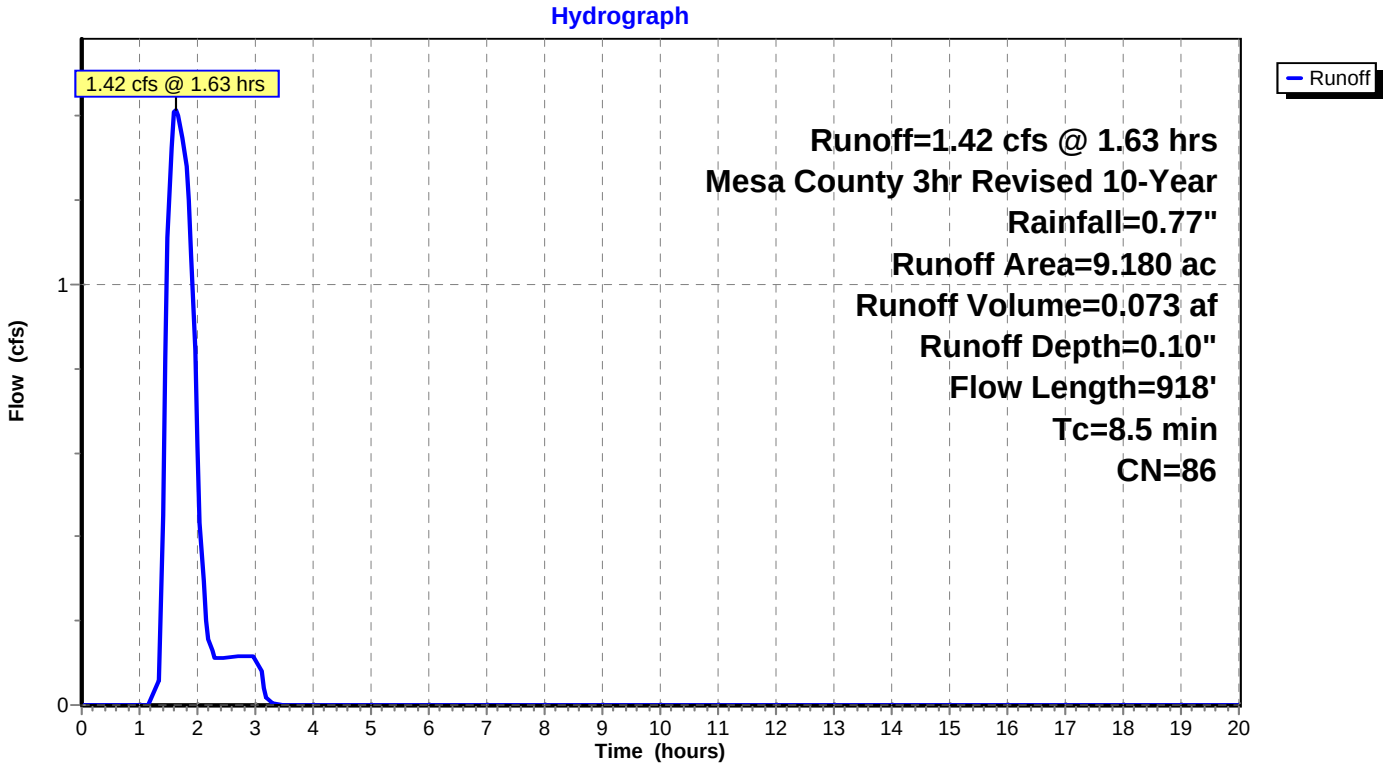
Runoff = 1.42 cfs @ 1.63 hrs, Volume= 0.073 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
9.180	86	Desert shrub range, Fair, HSG D
9.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	100	0.1600	0.57		**Sheet Flow,** n= 0.028 P2= 0.46"
2.6	466	0.1800	2.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.0	352	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	918	Total			

Subcatchment EX3: EX3



Summary for Subcatchment EX4: EX4

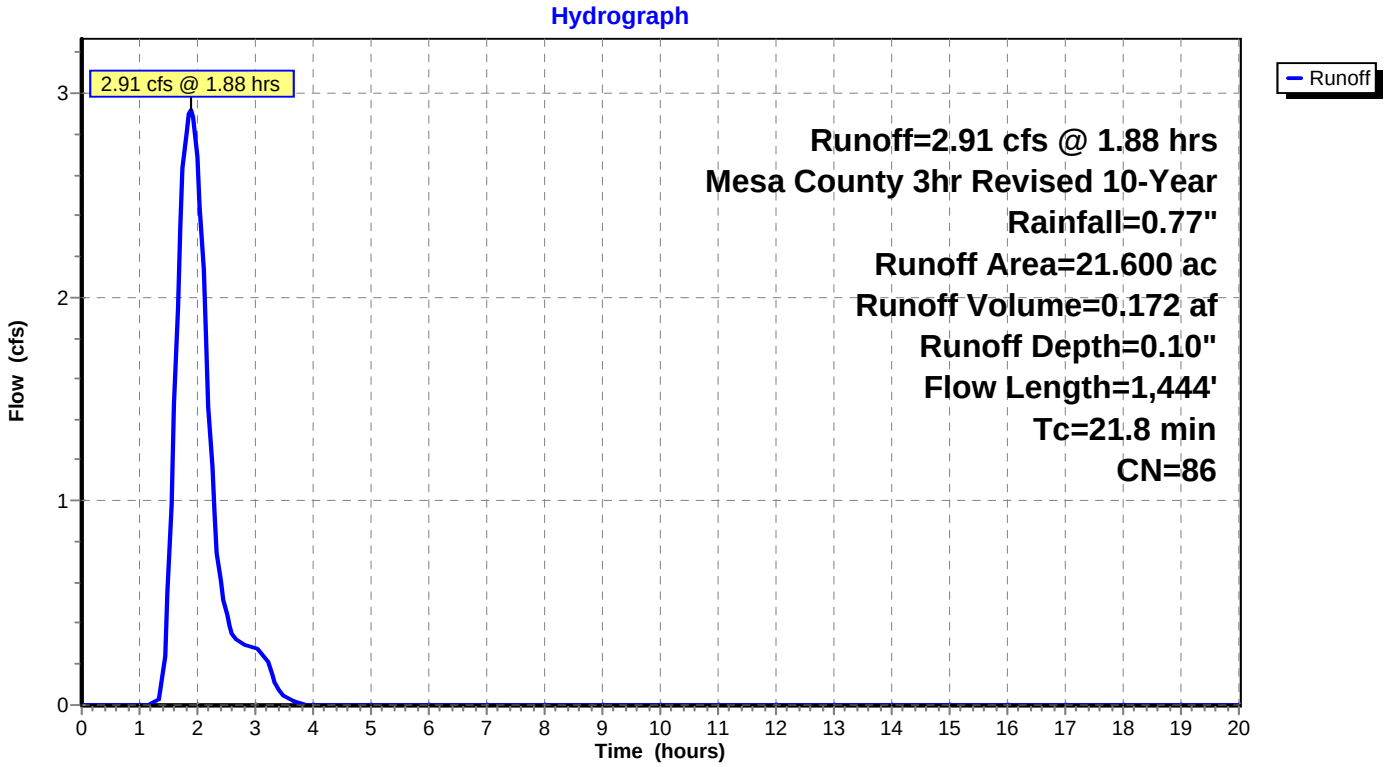
Runoff = 2.91 cfs @ 1.88 hrs, Volume= 0.172 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
21.600	86	Desert shrub range, Fair, HSG D
21.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0	192	0.0100	0.21		**Sheet Flow,** n= 0.028 P2= 0.46"
0.7	360	0.2900	8.67		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.1	892	0.0600	2.45		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
21.8	1,444	Total			

Subcatchment EX4: EX4



Summary for Subcatchment EX5: EX5

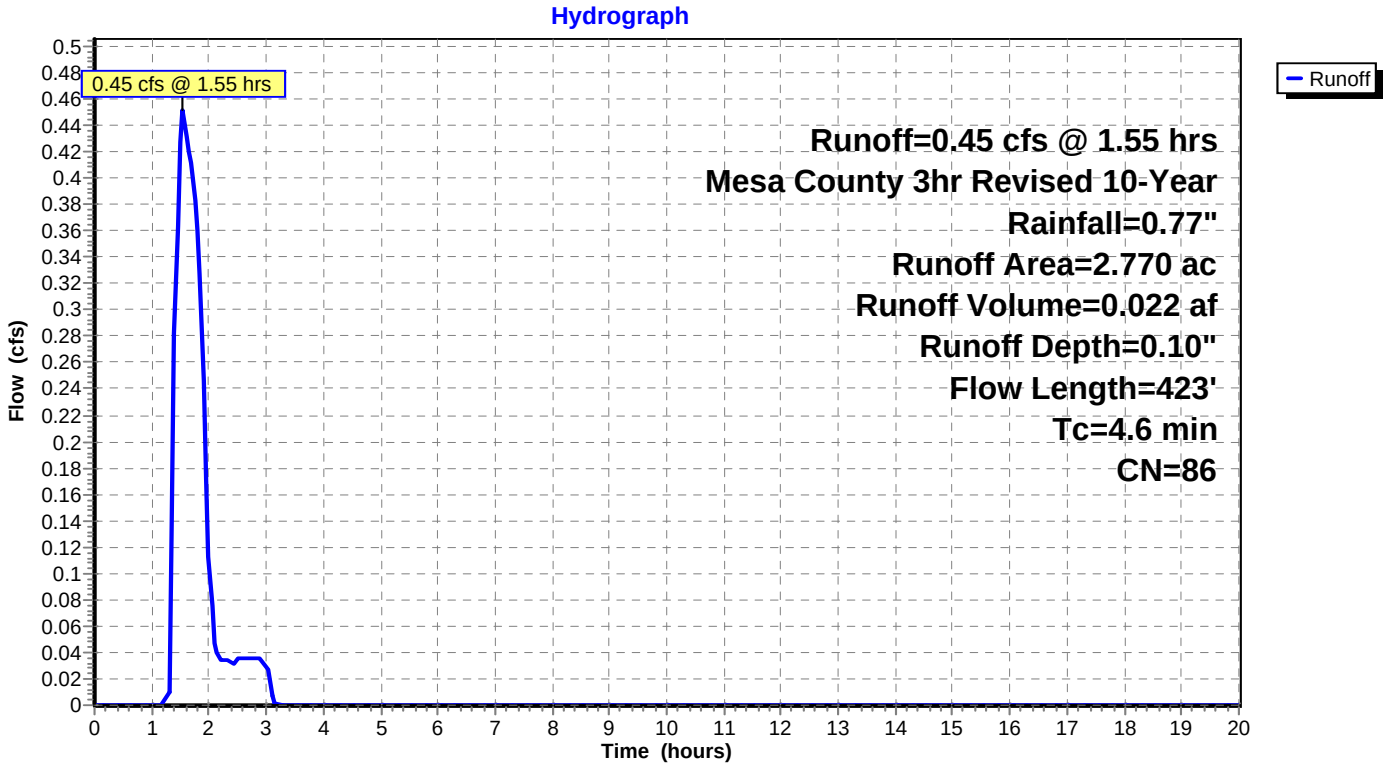
Runoff = 0.45 cfs @ 1.55 hrs, Volume= 0.022 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
2.770	86	Desert shrub range, Fair, HSG D
2.770		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.2500	0.68		**Sheet Flow,** n= 0.028 P2= 0.46"
2.1	323	0.1300	2.52		**Shallow Concentrated Flow,** Kv= 7.0 fps
4.6	423	Total			

Subcatchment EX5: EX5



Summary for Subcatchment EX6: EX6

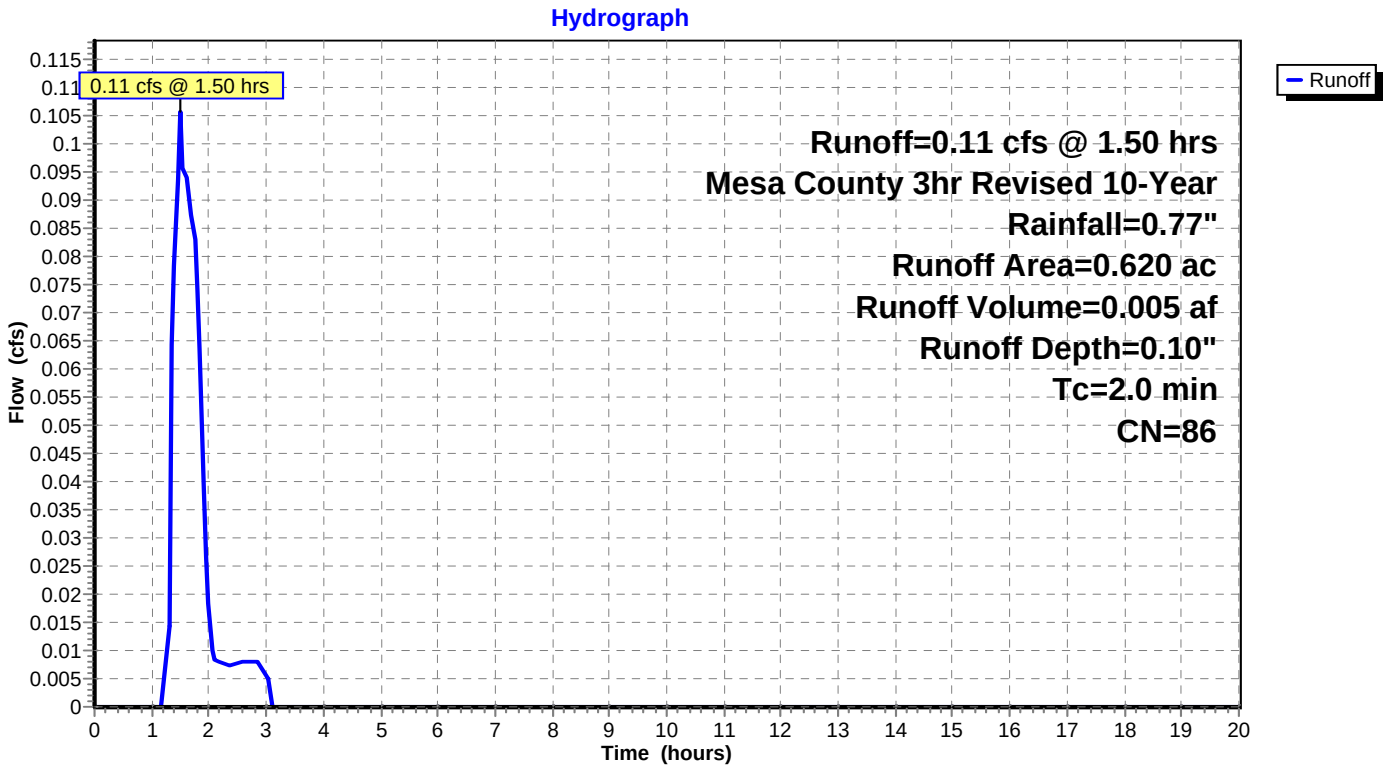
Runoff = 0.11 cfs @ 1.50 hrs, Volume= 0.005 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
0.620	86	Desert shrub range, Fair, HSG D
0.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment EX6: EX6



Summary for Subcatchment EX1: EX1

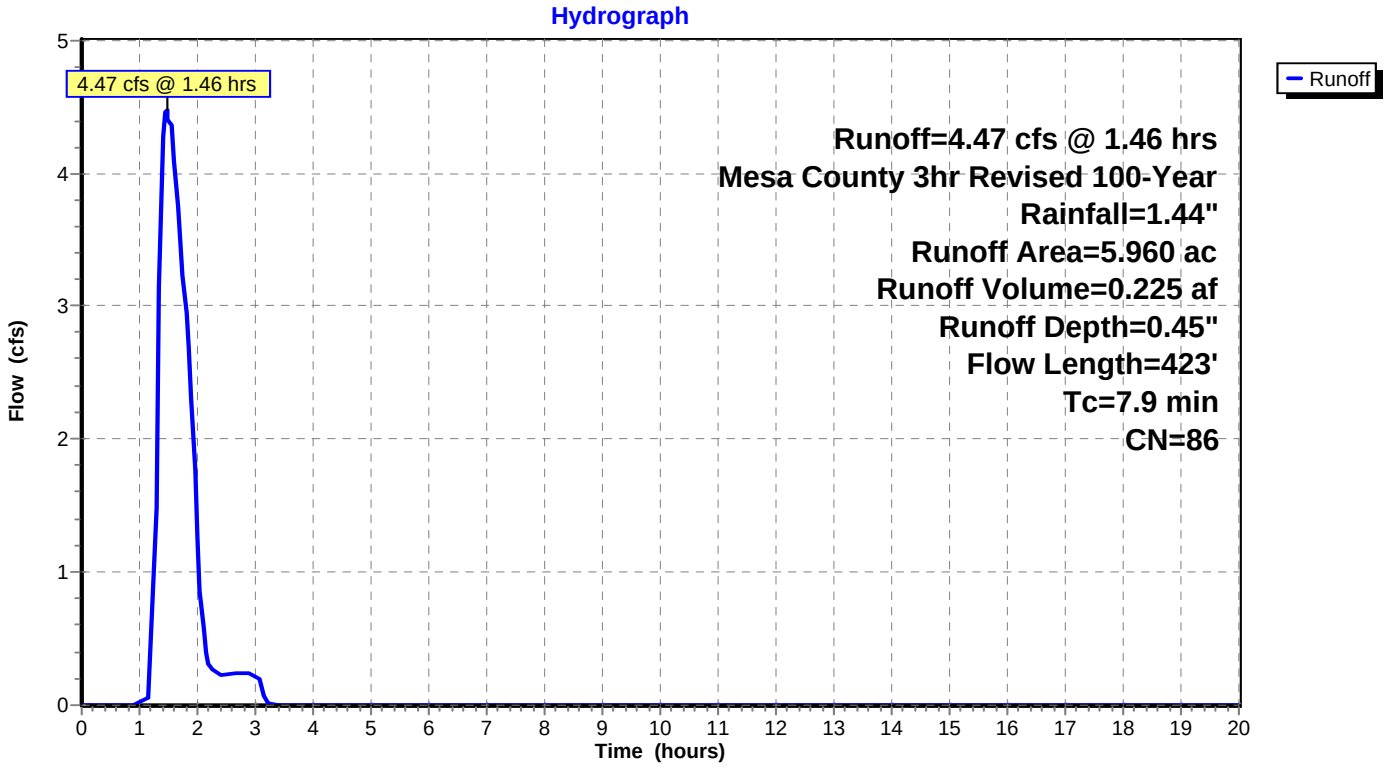
Runoff = 4.47 cfs @ 1.46 hrs, Volume= 0.225 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
5.960	86	Desert shrub range, Fair, HSG D
5.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0200	0.26		**Sheet Flow,** n= 0.026 P2= 0.46"
1.5	323	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
7.9	423	Total			

Subcatchment EX1: EX1



Summary for Subcatchment EX2: EX2

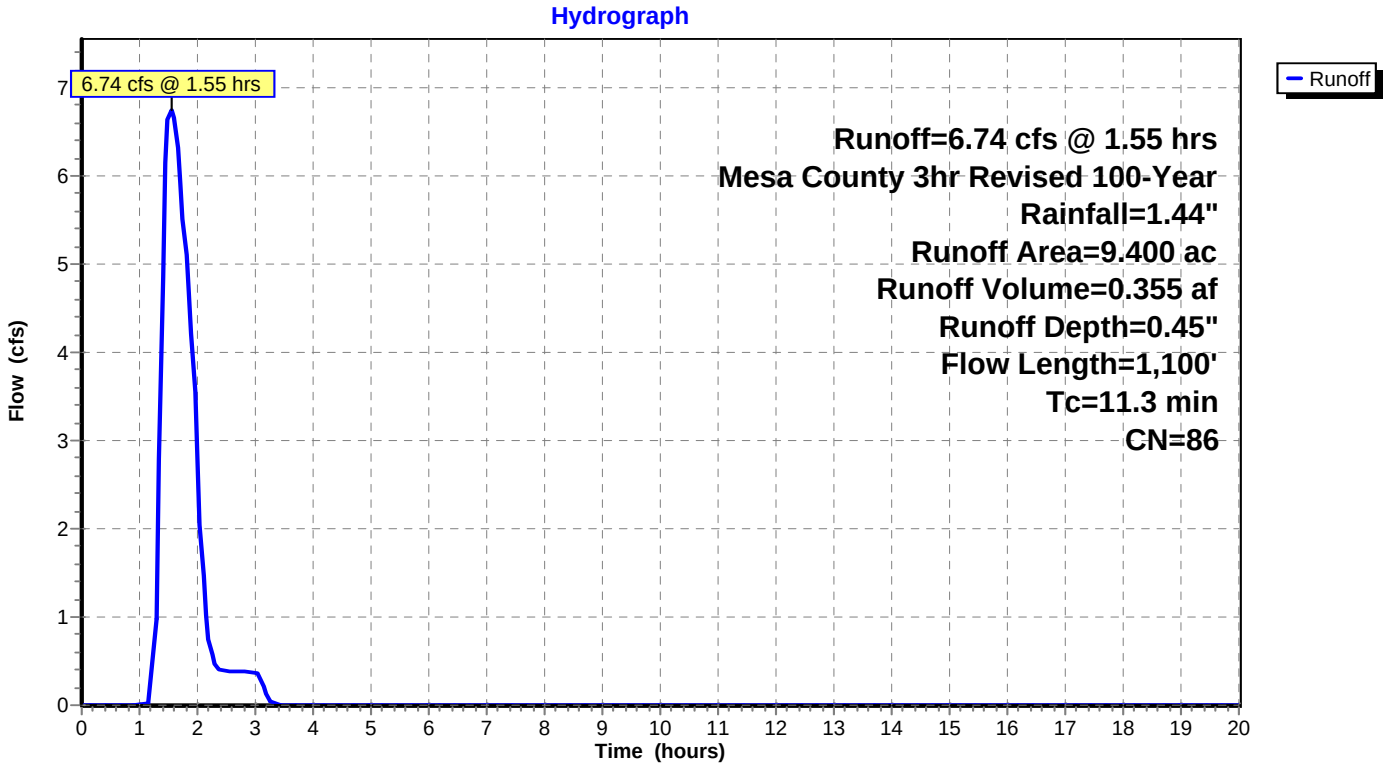
Runoff = 6.74 cfs @ 1.55 hrs, Volume= 0.355 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
9.400	86	Desert shrub range, Fair, HSG D
9.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	100	0.0200	0.25		**Sheet Flow,** n= 0.028 P2= 0.46"
4.6	1,000	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
11.3	1,100	Total			

Subcatchment EX2: EX2



Summary for Subcatchment EX3: EX3

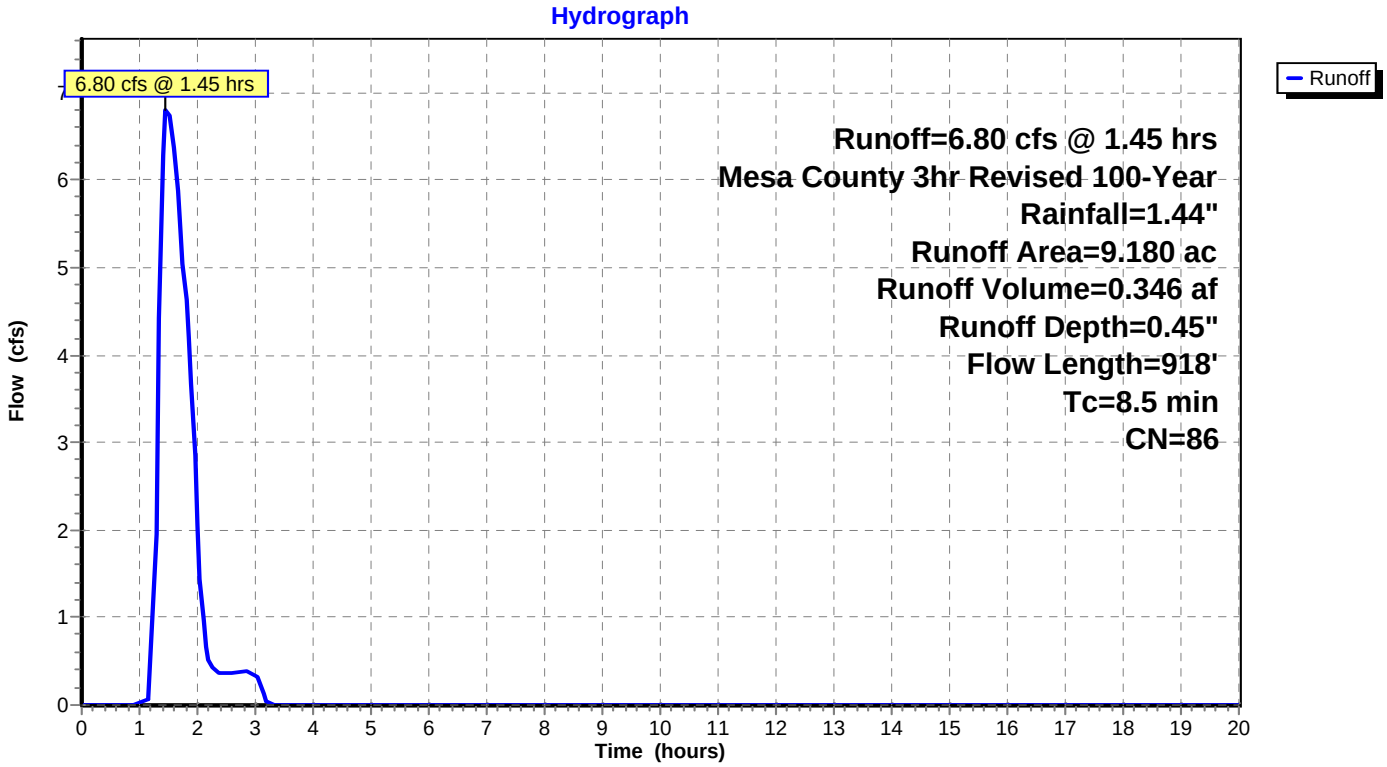
Runoff = 6.80 cfs @ 1.45 hrs, Volume= 0.346 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
9.180	86	Desert shrub range, Fair, HSG D
9.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	100	0.1600	0.57		**Sheet Flow,** n= 0.028 P2= 0.46"
2.6	466	0.1800	2.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.0	352	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	918	Total			

Subcatchment EX3: EX3



Summary for Subcatchment EX4: EX4

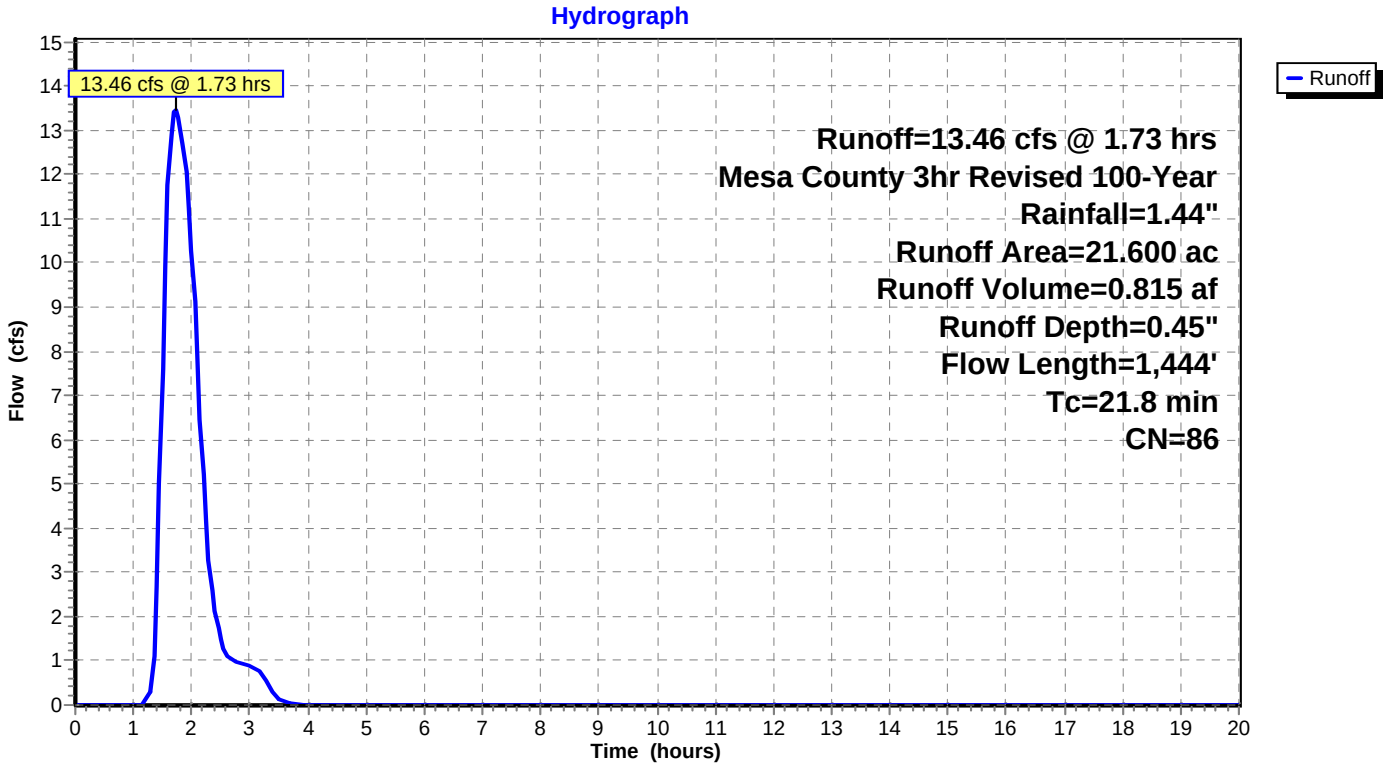
Runoff = 13.46 cfs @ 1.73 hrs, Volume= 0.815 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
21.600	86	Desert shrub range, Fair, HSG D
21.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0	192	0.0100	0.21		**Sheet Flow,** n= 0.028 P2= 0.46"
0.7	360	0.2900	8.67		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.1	892	0.0600	2.45		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
21.8	1,444	Total			

Subcatchment EX4: EX4



Summary for Subcatchment EX5: EX5

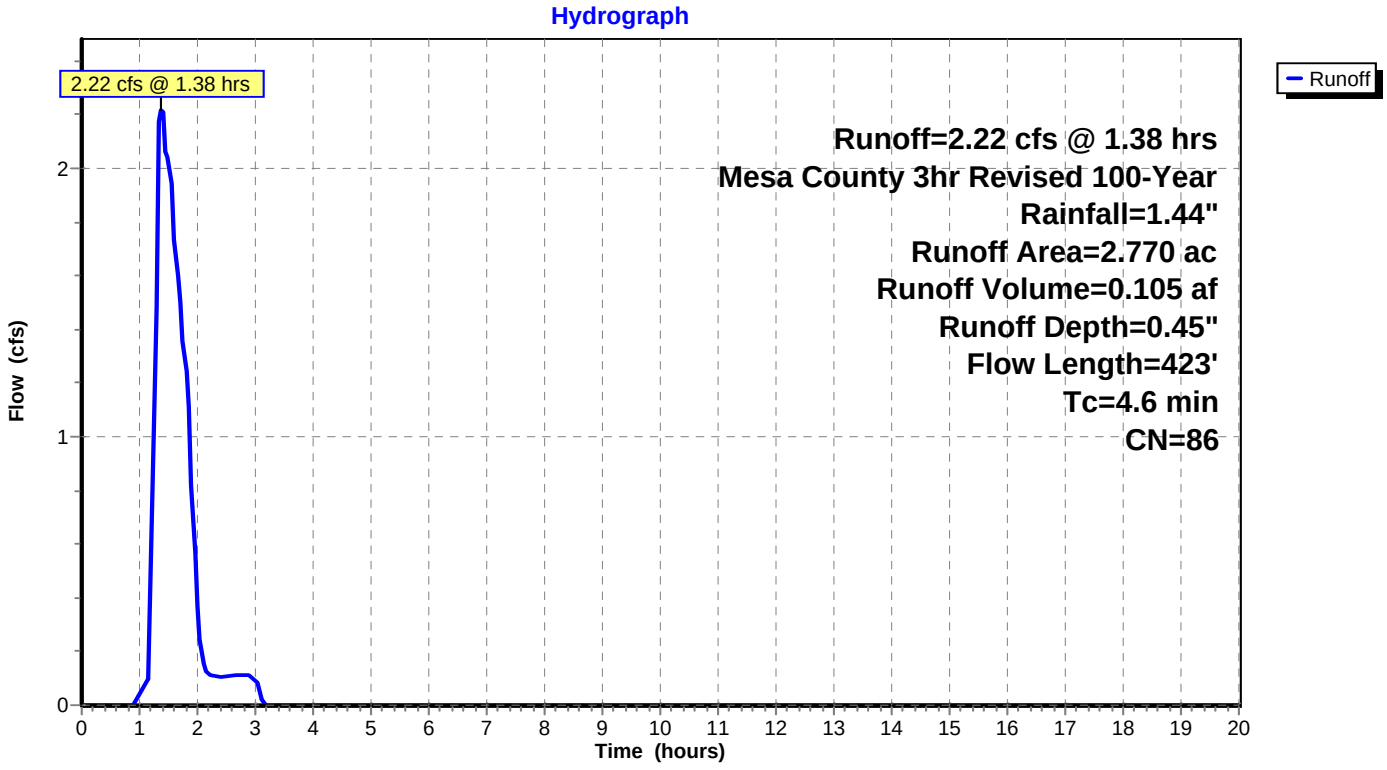
Runoff = 2.22 cfs @ 1.38 hrs, Volume= 0.105 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
2.770	86	Desert shrub range, Fair, HSG D
2.770		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.2500	0.68		**Sheet Flow,** n= 0.028 P2= 0.46"
2.1	323	0.1300	2.52		**Shallow Concentrated Flow,** Kv= 7.0 fps
4.6	423	Total			

Subcatchment EX5: EX5



Summary for Subcatchment EX6: EX6

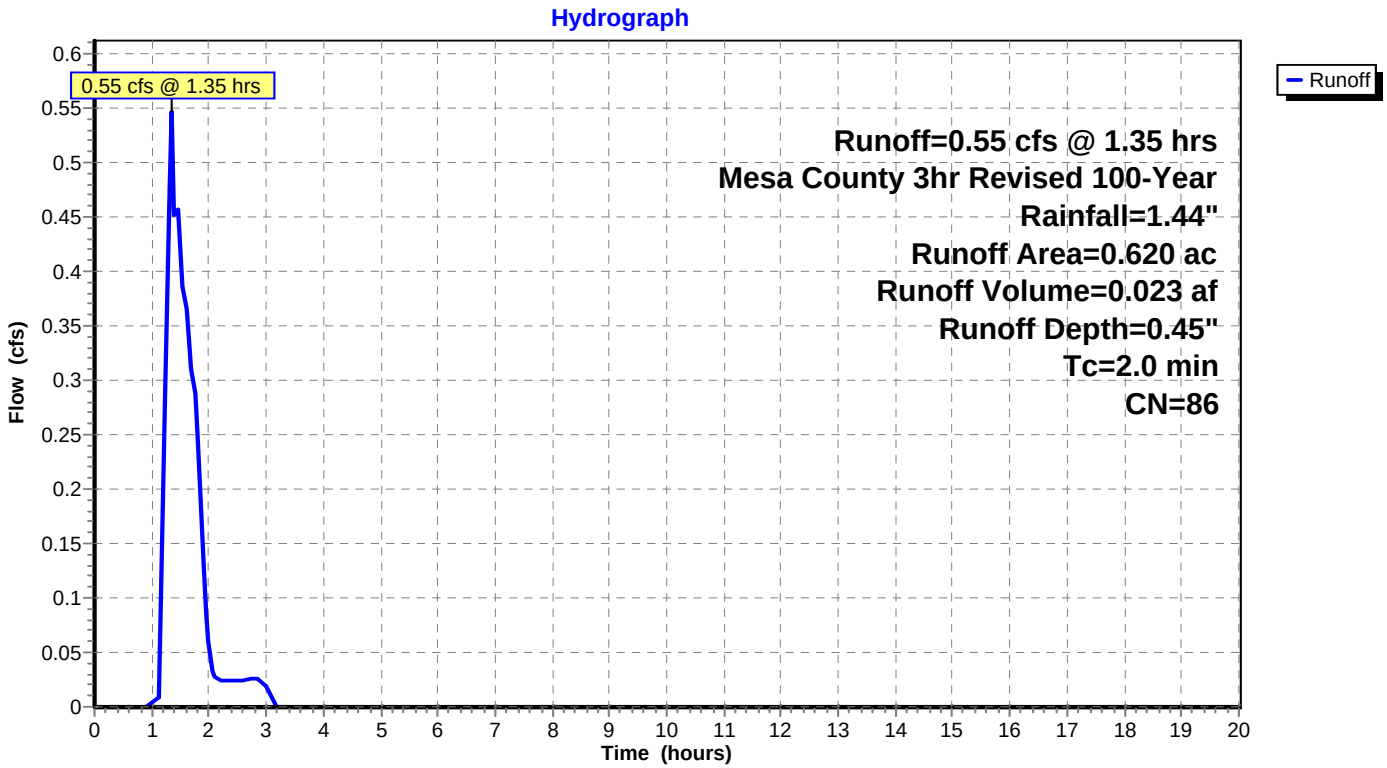
Runoff = 0.55 cfs @ 1.35 hrs, Volume= 0.023 af, Depth= 0.45"

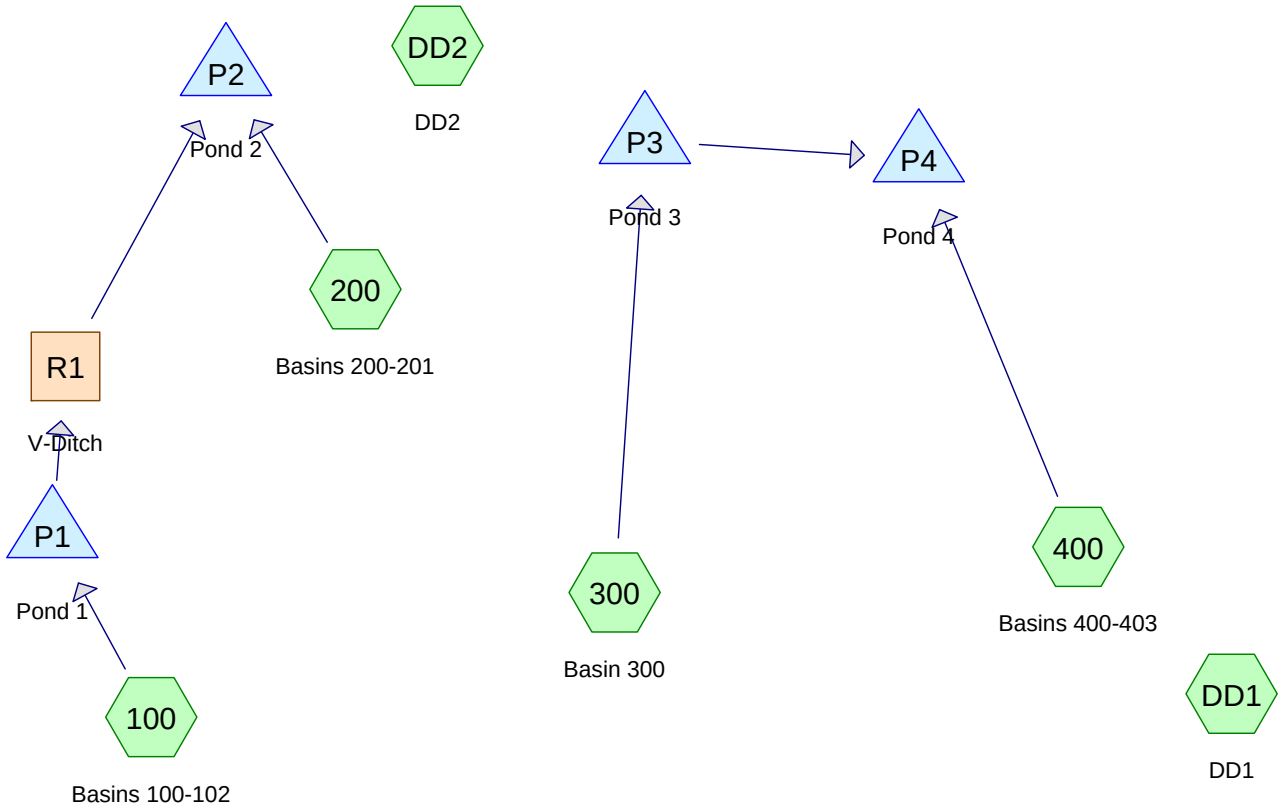
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
0.620	86	Desert shrub range, Fair, HSG D
0.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment EX6: EX6





Subcat Reach Pond Link

Routing Diagram for PinnacleRidgeFeb2015
Prepared by Vortex Engineering, Inc., Printed 6/2/2017
HydroCAD® 10.00-19 s/n 05232 © 2016 HydroCAD Software Solutions LLC

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 100: Basins 100-102 Runoff Area=6.870 ac Runoff Depth=0.16"
Flow Length=991' Tc=25.6 min CN=89 Runoff=1.41 cfs 0.089 af

Subcatchment 200: Basins 200-201 Runoff Area=15.580 ac Runoff Depth=0.16"
Tc=9.1 min CN=89 Runoff=3.93 cfs 0.202 af

Subcatchment 300: Basin 300 Runoff Area=1.560 ac Runoff Depth=0.13"
Tc=5.0 min CN=88 Runoff=0.36 cfs 0.017 af

Subcatchment 400: Basins 400-403 Runoff Area=22.940 ac Runoff Depth=0.16"
Flow Length=1,690' Tc=12.5 min CN=89 Runoff=5.52 cfs 0.297 af

Subcatchment DD1: DD1 Runoff Area=1.930 ac Runoff Depth=0.10"
Tc=5.0 min CN=86 Runoff=0.32 cfs 0.015 af

Subcatchment DD2: DD2 Runoff Area=0.390 ac Runoff Depth=0.10"
Tc=5.0 min CN=86 Runoff=0.06 cfs 0.003 af

Reach R1: V-Ditch Avg. Flow Depth=0.23' Max Vel=2.50 fps Inflow=0.26 cfs 0.170 af
n=0.025 L=815.0' S=0.0368 '/' Capacity=24.18 cfs Outflow=0.26 cfs 0.170 af

Pond P1: Pond 1 Peak Elev=4,802.31' Storage=6,082 cf Inflow=1.41 cfs 0.089 af
Outflow=0.26 cfs 0.170 af

Pond P2: Pond 2 Peak Elev=4,748.32' Storage=13,992 cf Inflow=3.98 cfs 0.372 af
Outflow=0.52 cfs 0.569 af

Pond P3: Pond 3 Peak Elev=4,752.88' Storage=820 cf Inflow=0.36 cfs 0.017 af
Outflow=0.17 cfs 0.032 af

Pond P4: Pond 4 Peak Elev=4,742.73' Storage=14,737 cf Inflow=5.59 cfs 0.329 af
Outflow=1.91 cfs 0.593 af

Total Runoff Area = 49.270 ac Runoff Volume = 0.624 af Average Runoff Depth = 0.15"

Summary for Subcatchment 100: Basins 100-102

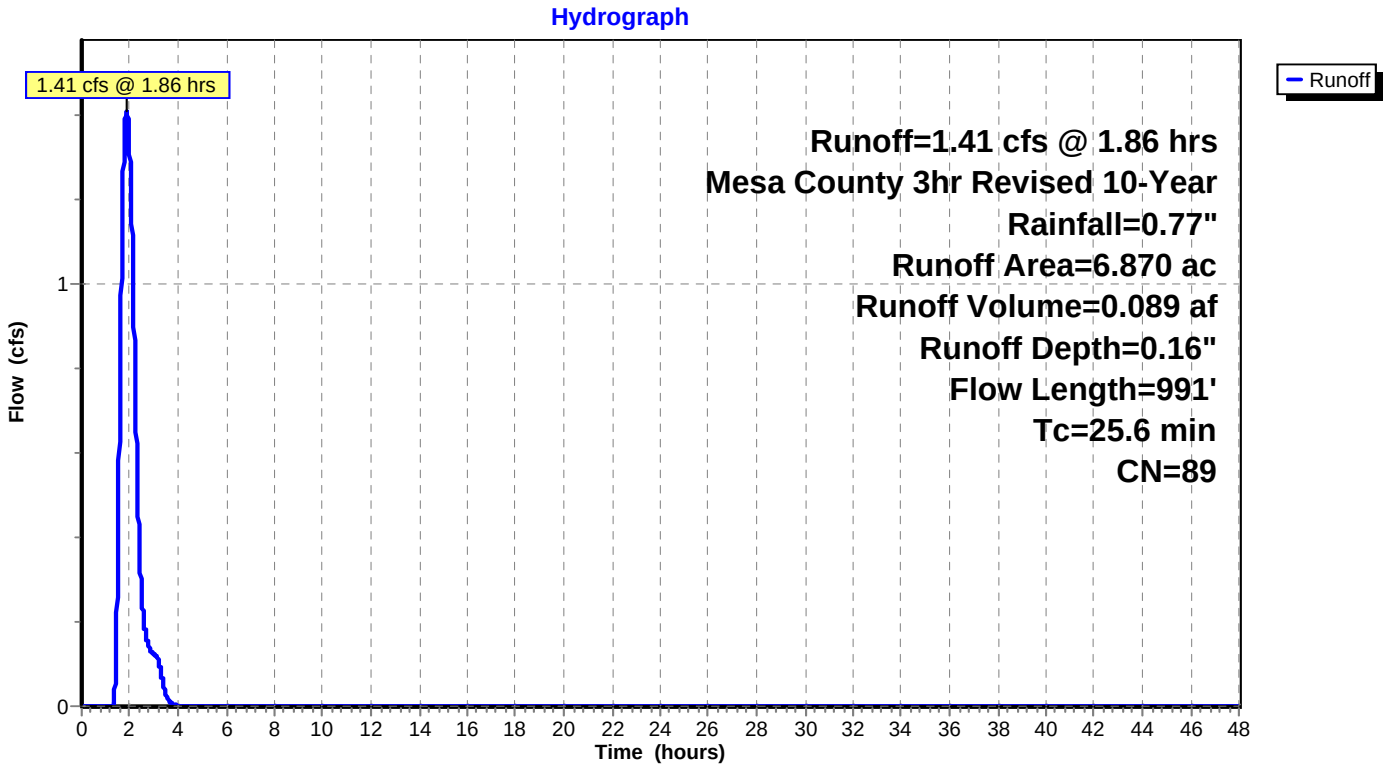
Runoff = 1.41 cfs @ 1.86 hrs, Volume= 0.089 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	6.870	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.9	136	0.0500	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 0.46"
2.7	855	0.1100	5.34		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
25.6	991	Total			

Subcatchment 100: Basins 100-102



Summary for Subcatchment 200: Basins 200-201

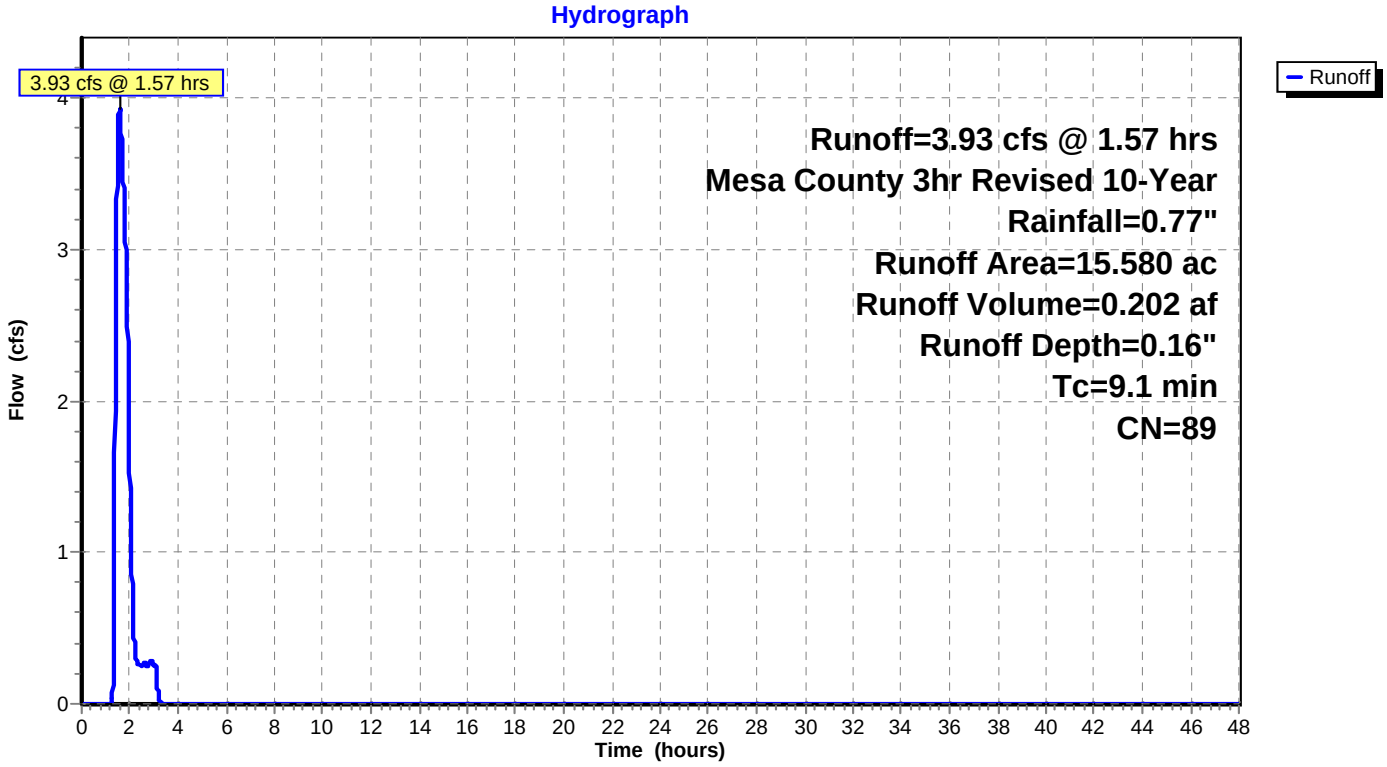
Runoff = 3.93 cfs @ 1.57 hrs, Volume= 0.202 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	15.580	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1					**Direct Entry, Tc to Pond #2**

Subcatchment 200: Basins 200-201



Summary for Subcatchment 300: Basin 300

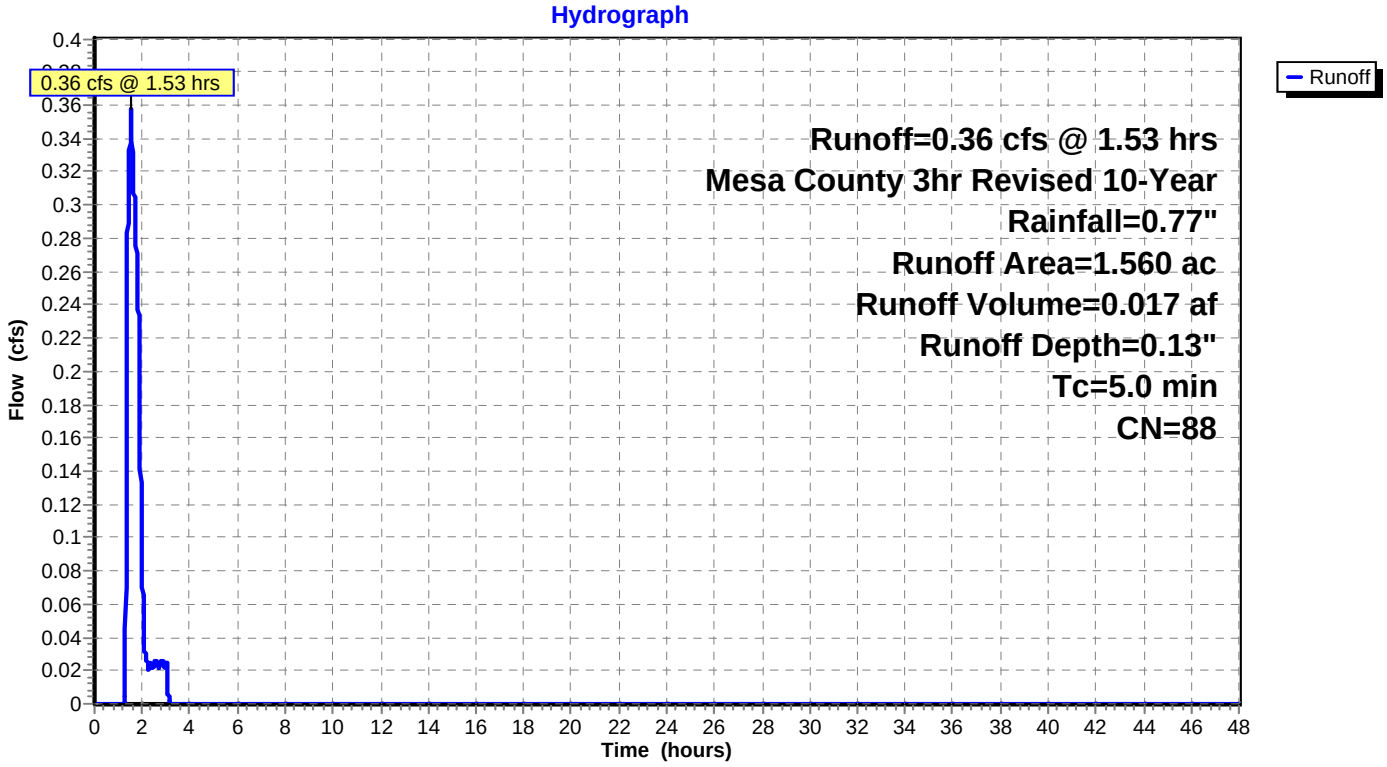
Runoff = 0.36 cfs @ 1.53 hrs, Volume= 0.017 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	1.560	88	LOTS W/ HOUSES 4000 SF

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 300: Basin 300



Summary for Subcatchment 400: Basins 400-403

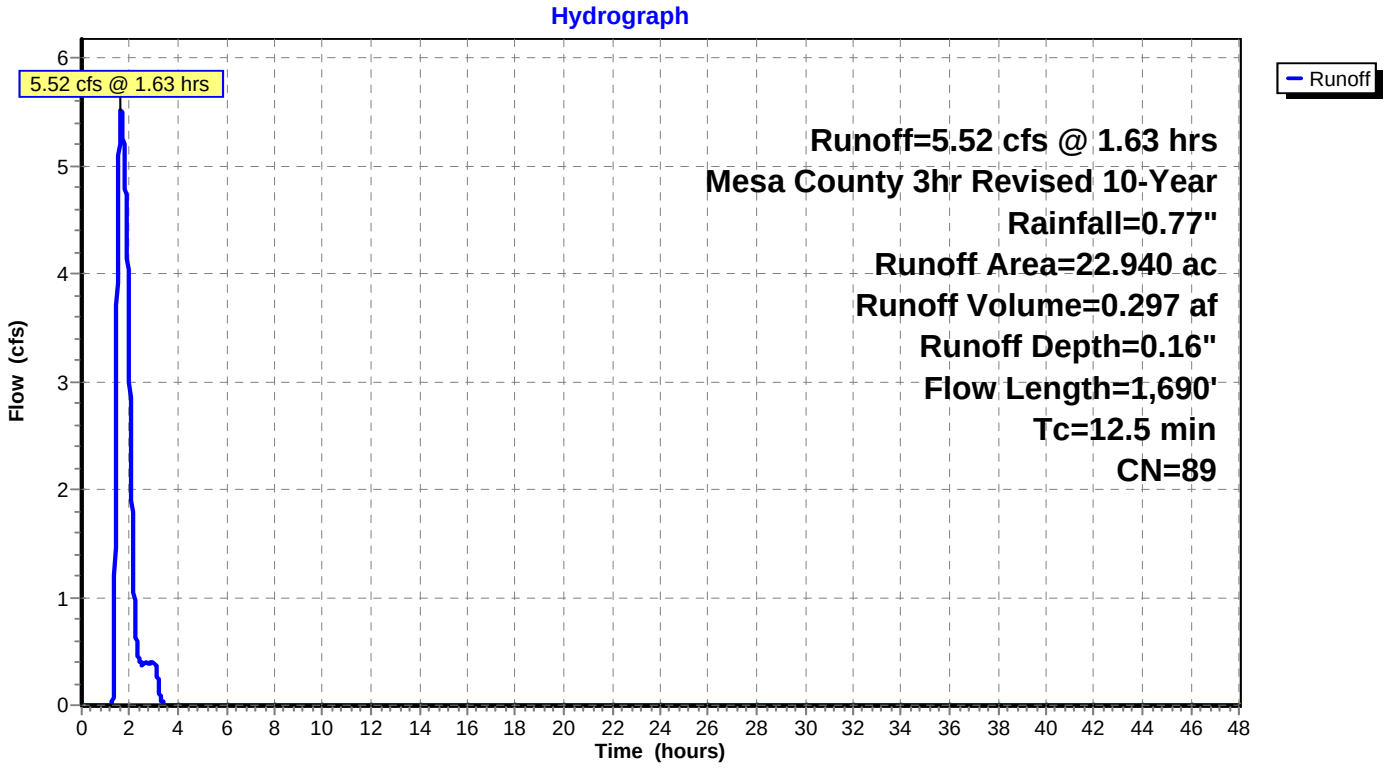
Runoff = 5.52 cfs @ 1.63 hrs, Volume= 0.297 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	22.940	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	190	0.0300	0.31		**Sheet Flow,** n= 0.030 P2= 0.46"
2.4	1,500	0.0933	10.27	32.09	**Trap/Vee/Rect Channel Flow,** Bot.W=0.00' D=1.25' Z= 2.0 '/' Top.W=5.00' n= 0.030
12.5	1,690	Total			

Subcatchment 400: Basins 400-403



Summary for Subcatchment DD1: DD1

Direct Discharge basin compensated in Pond 1

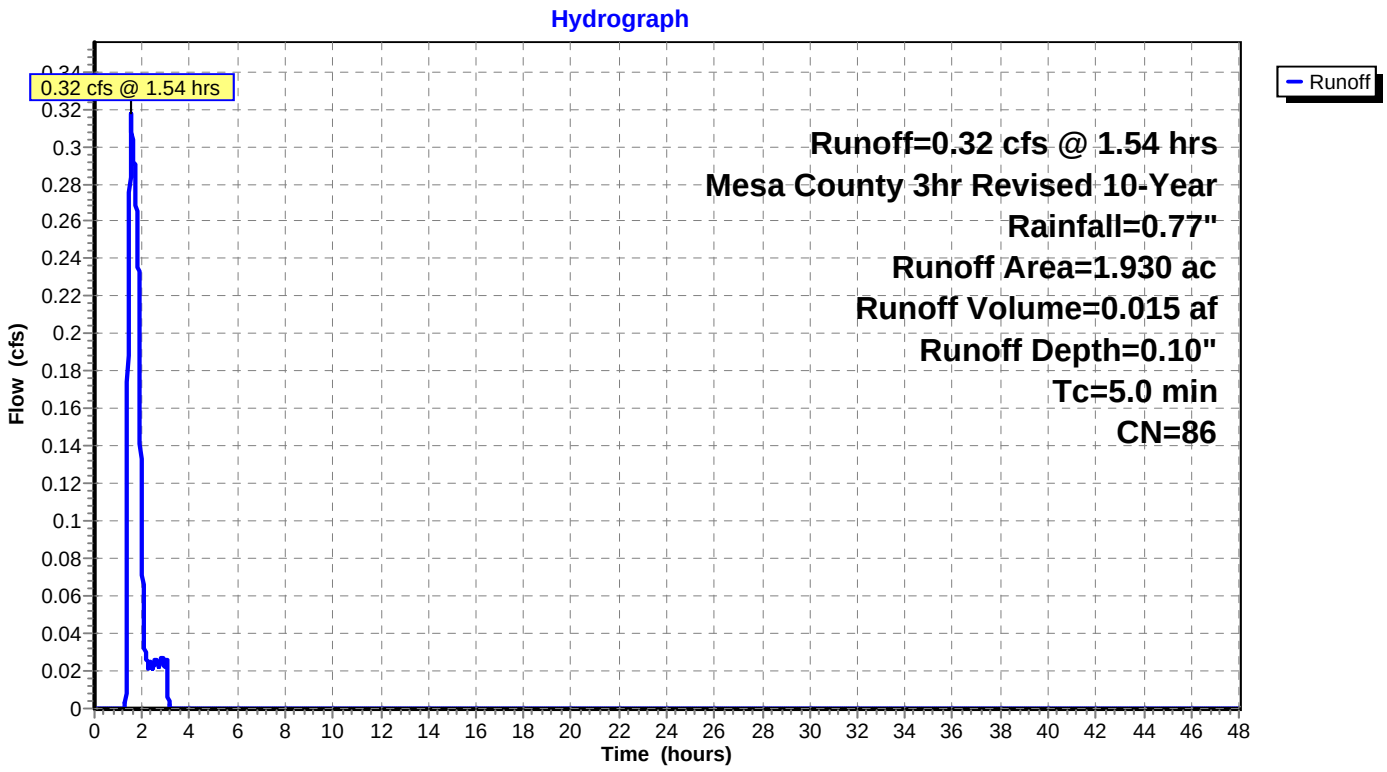
Runoff = 0.32 cfs @ 1.54 hrs, Volume= 0.015 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	1.930	86	Natural western desert, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DD1: DD1



Summary for Subcatchment DD2: DD2

Disrect discharge basin, compensated in Pond 4

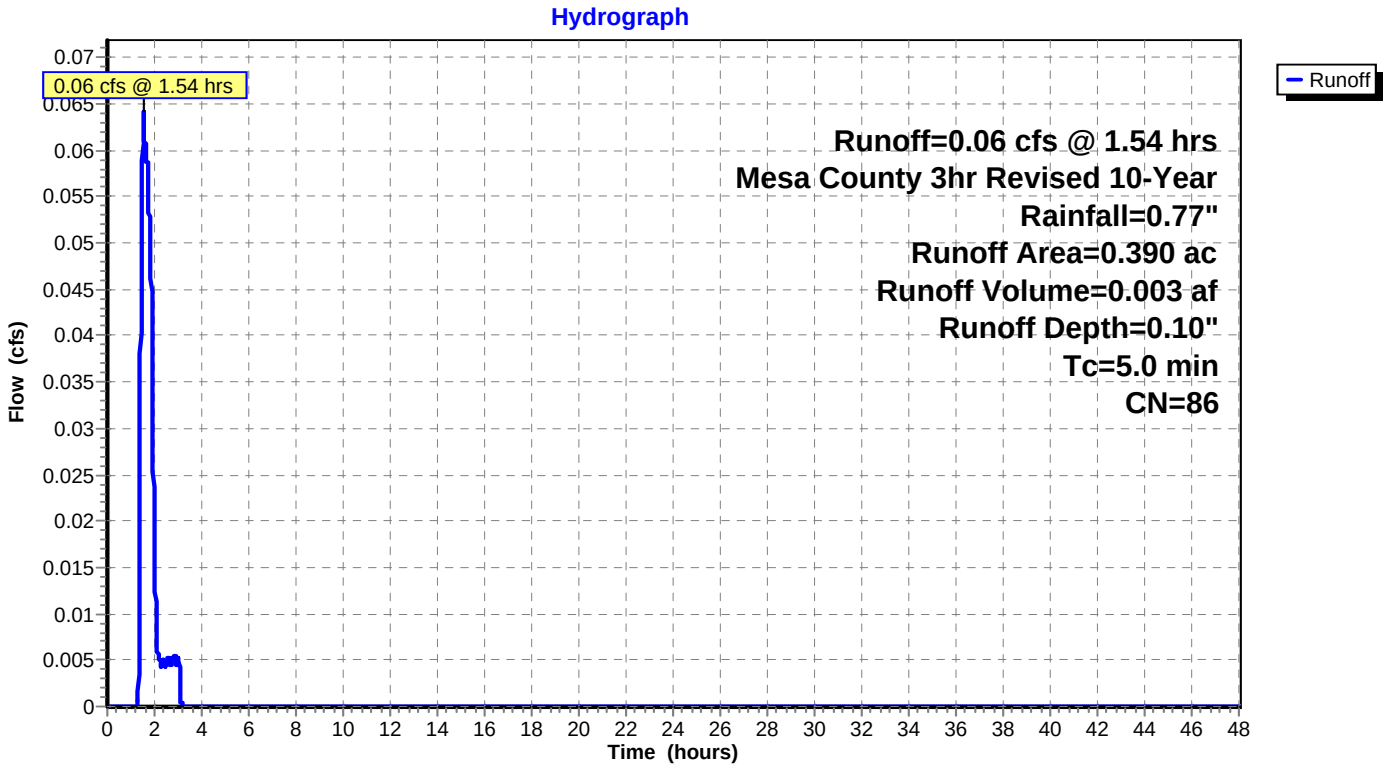
Runoff = 0.06 cfs @ 1.54 hrs, Volume= 0.003 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	0.390	86	Natural western desert, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DD2: DD2



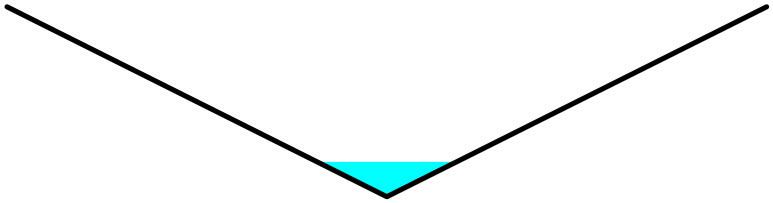
Summary for Reach R1: V-Ditch

Inflow Area = 6.870 ac, Inflow Depth > 0.30" for 10-Year event
Inflow = 0.26 cfs @ 2.49 hrs, Volume= 0.170 af
Outflow = 0.26 cfs @ 2.57 hrs, Volume= 0.170 af, Atten= 0%, Lag= 5.0 min

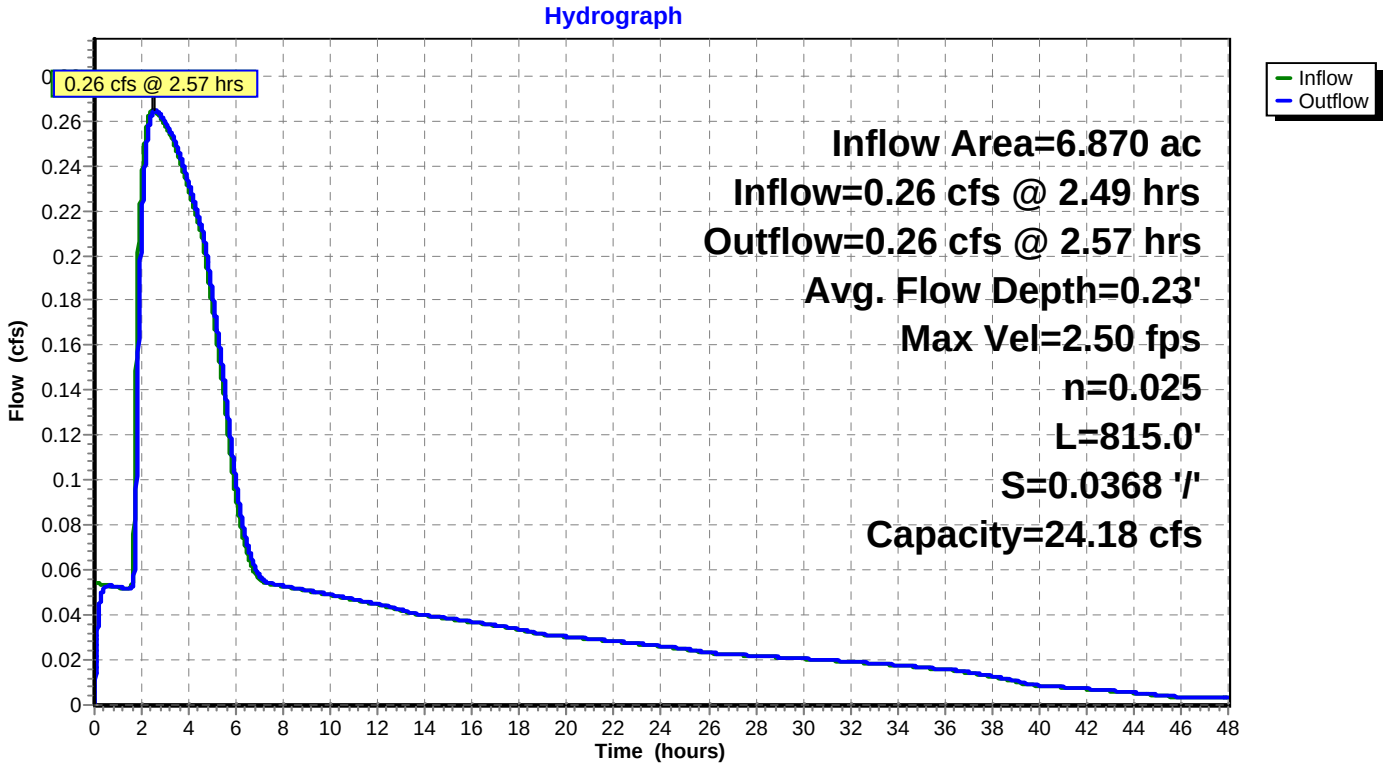
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.50 fps, Min. Travel Time= 5.4 min
Avg. Velocity = 1.44 fps, Avg. Travel Time= 9.4 min

Peak Storage= 86 cf @ 2.57 hrs
Average Depth at Peak Storage= 0.23'
Bank-Full Depth= 1.25' Flow Area= 3.1 sf, Capacity= 24.18 cfs

0.00' x 1.25' deep channel, n= 0.025
Side Slope Z-value= 2.0 '/' Top Width= 5.00'
Length= 815.0' Slope= 0.0368 '/'
Inlet Invert= 4,796.00', Outlet Invert= 4,766.00'



Reach R1: V-Ditch



Summary for Pond P1: Pond 1

Inflow Area = 6.870 ac, Inflow Depth = 0.16" for 10-Year event
Inflow = 1.41 cfs @ 1.86 hrs, Volume= 0.089 af
Outflow = 0.26 cfs @ 2.49 hrs, Volume= 0.170 af, Atten= 81%, Lag= 37.5 min
Primary = 0.26 cfs @ 2.49 hrs, Volume= 0.170 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,801.50' Surf.Area= 2,799 sf Storage= 3,655 cf
Peak Elev= 4,802.31' @ 2.49 hrs Surf.Area= 3,721 sf Storage= 6,082 cf (2,426 cf above start)

Plug-Flow detention time= 1,075.9 min calculated for 0.086 af (97% of inflow)
Center-of-Mass det. time= 585.6 min (708.3 - 122.7)

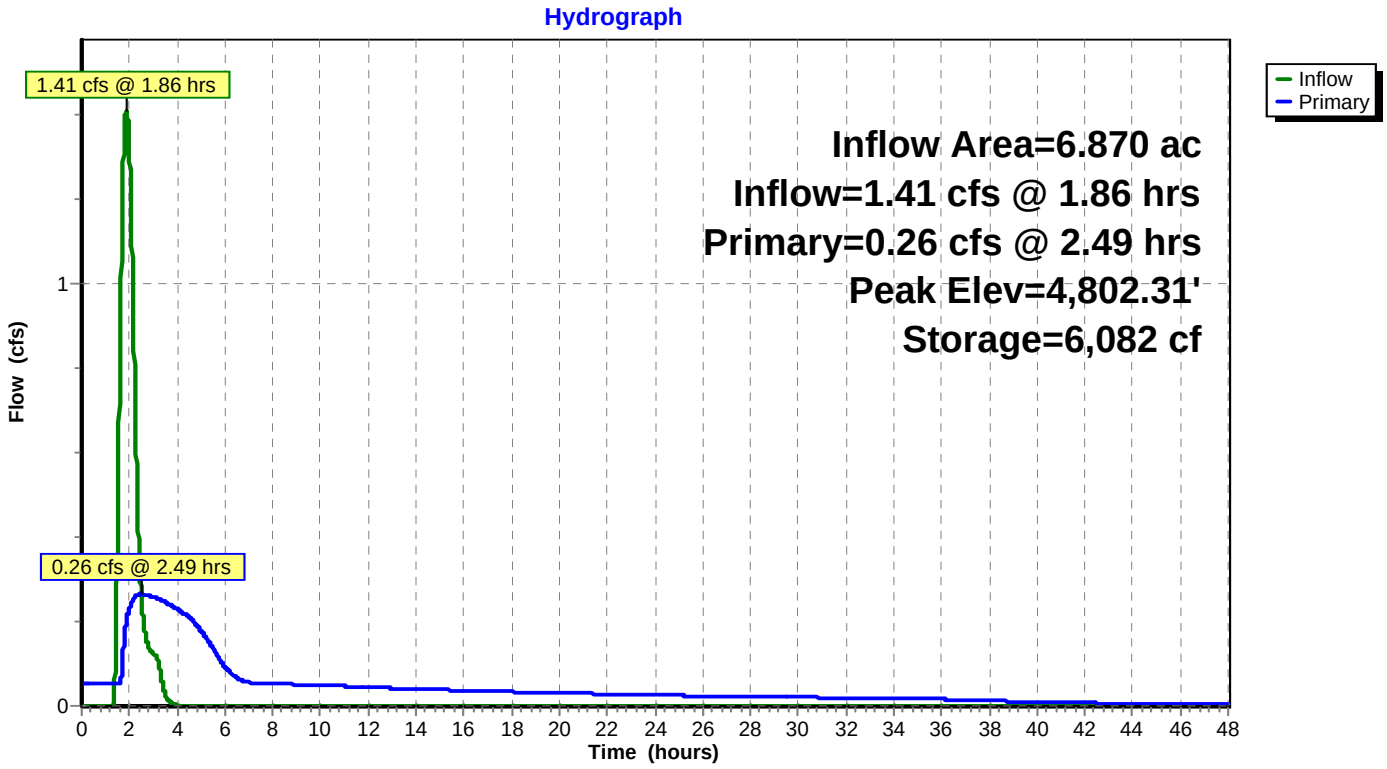
Volume	Invert	Avail.Storage	Storage Description
#1	4,799.00'	43,026 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,799.00	0	0	0
4,800.00	856	428	428
4,802.00	3,447	4,303	4,731
4,804.00	5,204	8,651	13,382
4,806.00	7,321	12,525	25,907
4,808.00	9,798	17,119	43,026

Device	Routing	Invert	Outlet Devices
#1	Primary	4,799.00'	**0.5" Vert. Orifice/Grate** X 7 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,801.50'	**3.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	4,804.50'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.26 cfs @ 2.49 hrs HW=4,802.31' TW=4,796.23' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.07 cfs @ 7.21 fps)
- **2=Orifice/Grate** (Orifice Controls 0.20 cfs @ 3.99 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P1: Pond 1



Summary for Pond P2: Pond 2

Inflow Area = 22.450 ac, Inflow Depth > 0.20" for 10-Year event
Inflow = 3.98 cfs @ 1.57 hrs, Volume= 0.372 af
Outflow = 0.52 cfs @ 2.94 hrs, Volume= 0.569 af, Atten= 87%, Lag= 82.0 min
Primary = 0.52 cfs @ 2.94 hrs, Volume= 0.569 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,747.71' Surf.Area= 8,172 sf Storage= 8,686 cf
Peak Elev= 4,748.32' @ 2.94 hrs Surf.Area= 9,255 sf Storage= 13,992 cf (5,306 cf above start)

Plug-Flow detention time= 475.5 min calculated for 0.369 af (99% of inflow)
Center-of-Mass det. time= 220.2 min (605.7 - 385.5)

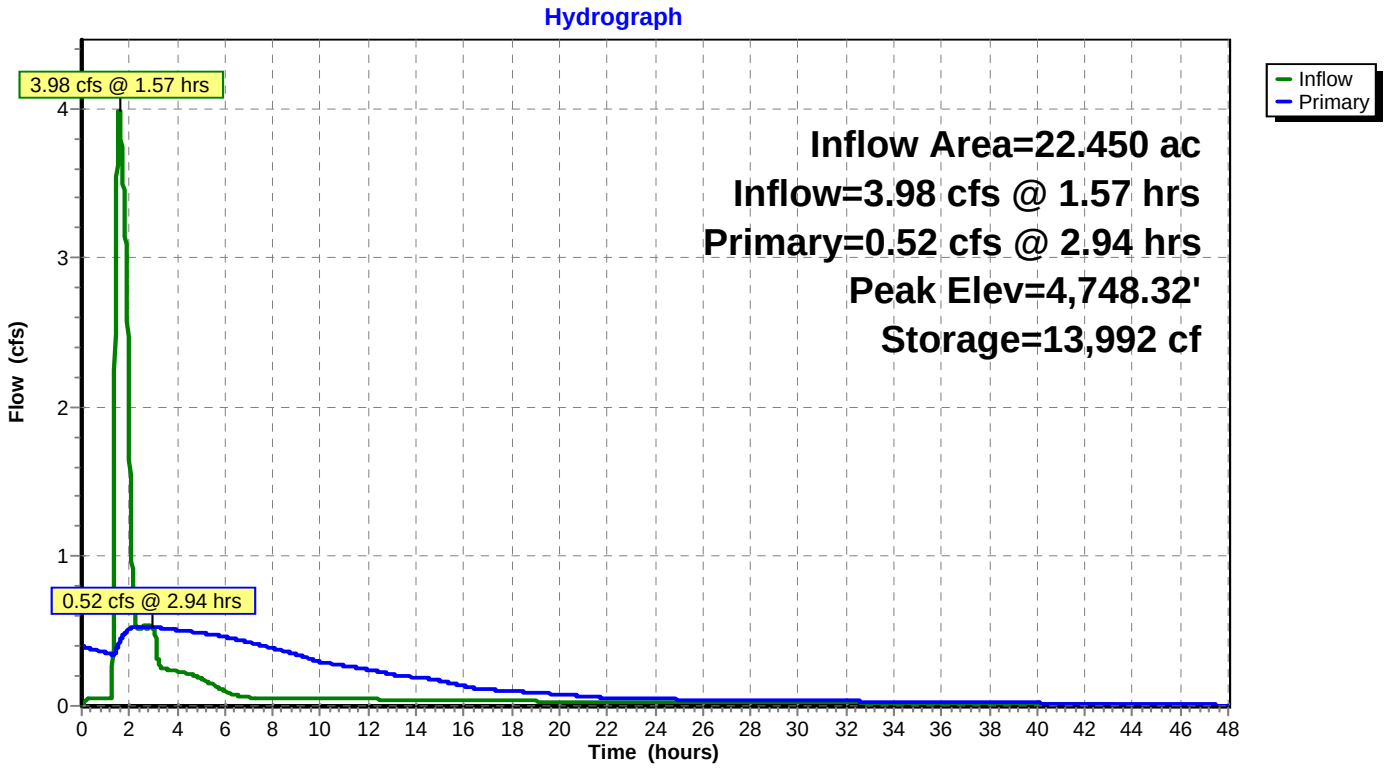
Volume	Invert	Avail.Storage	Storage Description
#1	4,746.06'	59,211 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,746.06	0	0	0
4,747.00	6,765	3,180	3,180
4,748.00	8,746	7,756	10,935
4,749.00	10,334	9,540	20,475
4,750.00	11,994	11,164	31,639
4,751.00	13,830	12,912	44,551
4,752.00	15,490	14,660	59,211

Device	Routing	Invert	Outlet Devices
#1	Primary	4,746.06'	**0.9" Vert. Orifice/Grate X 4.00 columns** X 5 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,748.32'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	4,751.00'	**14.0' long x 0.5' breadth emergency spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.52 cfs @ 2.94 hrs HW=4,748.32' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.52 cfs @ 5.93 fps)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.06 fps)
- **3=emergency spillway** (Controls 0.00 cfs)

Pond P2: Pond 2



Summary for Pond P3: Pond 3

Inflow Area = 1.560 ac, Inflow Depth = 0.13" for 10-Year event
Inflow = 0.36 cfs @ 1.53 hrs, Volume= 0.017 af
Outflow = 0.17 cfs @ 1.90 hrs, Volume= 0.032 af, Atten= 52%, Lag= 22.2 min
Primary = 0.17 cfs @ 1.90 hrs, Volume= 0.032 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,752.64' Surf.Area= 737 sf Storage= 632 cf
Peak Elev= 4,752.88' @ 1.90 hrs Surf.Area= 832 sf Storage= 820 cf (188 cf above start)

Plug-Flow detention time= 184.7 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 92.6 min (197.3 - 104.8)

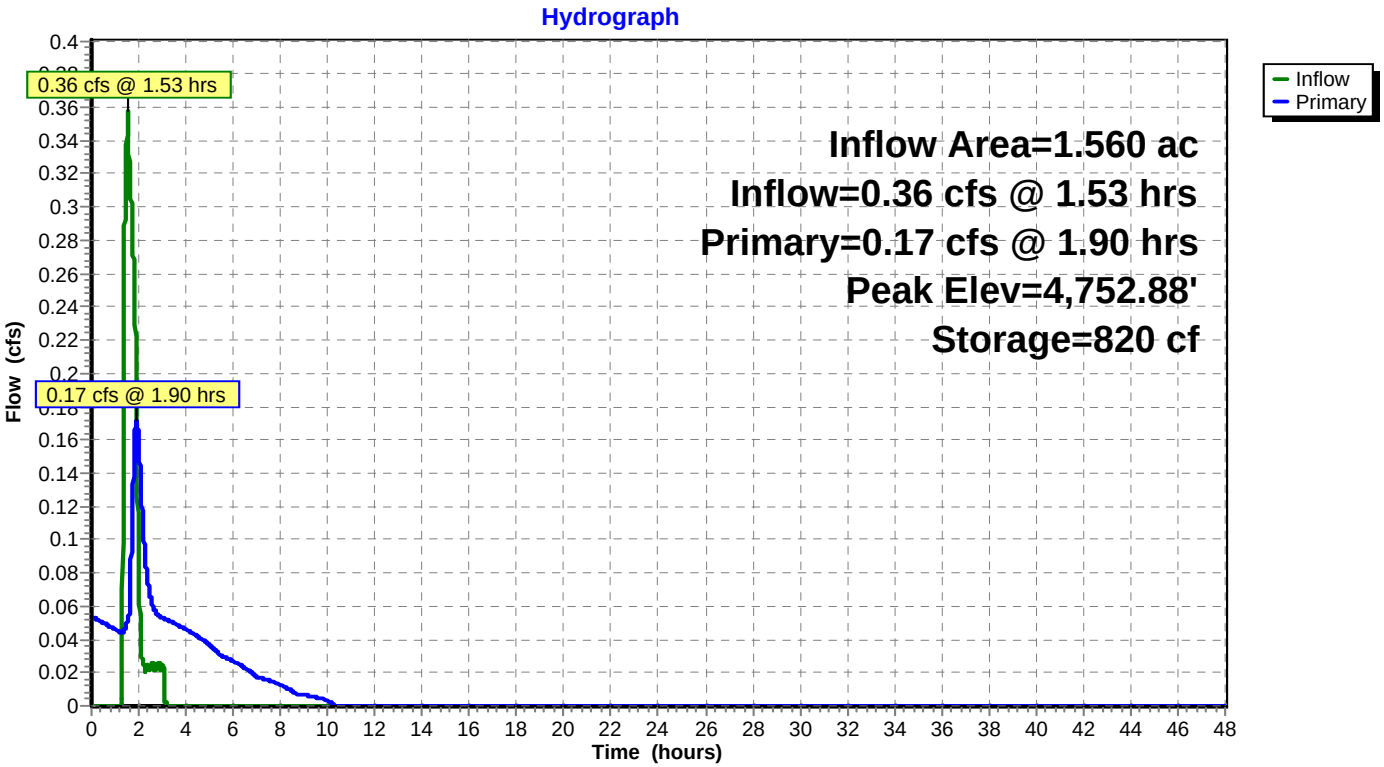
Volume	Invert	Avail.Storage	Storage Description
#1	4,751.00'	5,359 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,751.00	0	0	0
4,752.00	483	242	242
4,754.00	1,277	1,760	2,002
4,756.00	2,080	3,357	5,359

Device	Routing	Invert	Outlet Devices
#1	Primary	4,751.00'	**0.7" Vert. Orifice/Grate** X 4 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,752.64'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	4,754.06'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.17 cfs @ 1.90 hrs HW=4,752.88' TW=4,742.58' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.06 cfs @ 5.54 fps)
- **2=Orifice/Grate** (Orifice Controls 0.11 cfs @ 1.67 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P3: Pond 3



Summary for Pond P4: Pond 4

Inflow Area = 24.500 ac, Inflow Depth = 0.16" for 10-Year event
Inflow = 5.59 cfs @ 1.63 hrs, Volume= 0.329 af
Outflow = 1.91 cfs @ 2.09 hrs, Volume= 0.593 af, Atten= 66%, Lag= 27.4 min
Primary = 1.91 cfs @ 2.09 hrs, Volume= 0.593 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,742.19' Surf.Area= 5,651 sf Storage= 11,503 cf
Peak Elev= 4,742.73' @ 2.09 hrs Surf.Area= 6,380 sf Storage= 14,737 cf (3,234 cf above start)

Plug-Flow detention time= 185.7 min calculated for 0.329 af (100% of inflow)
Center-of-Mass det. time= 89.4 min (208.4 - 118.9)

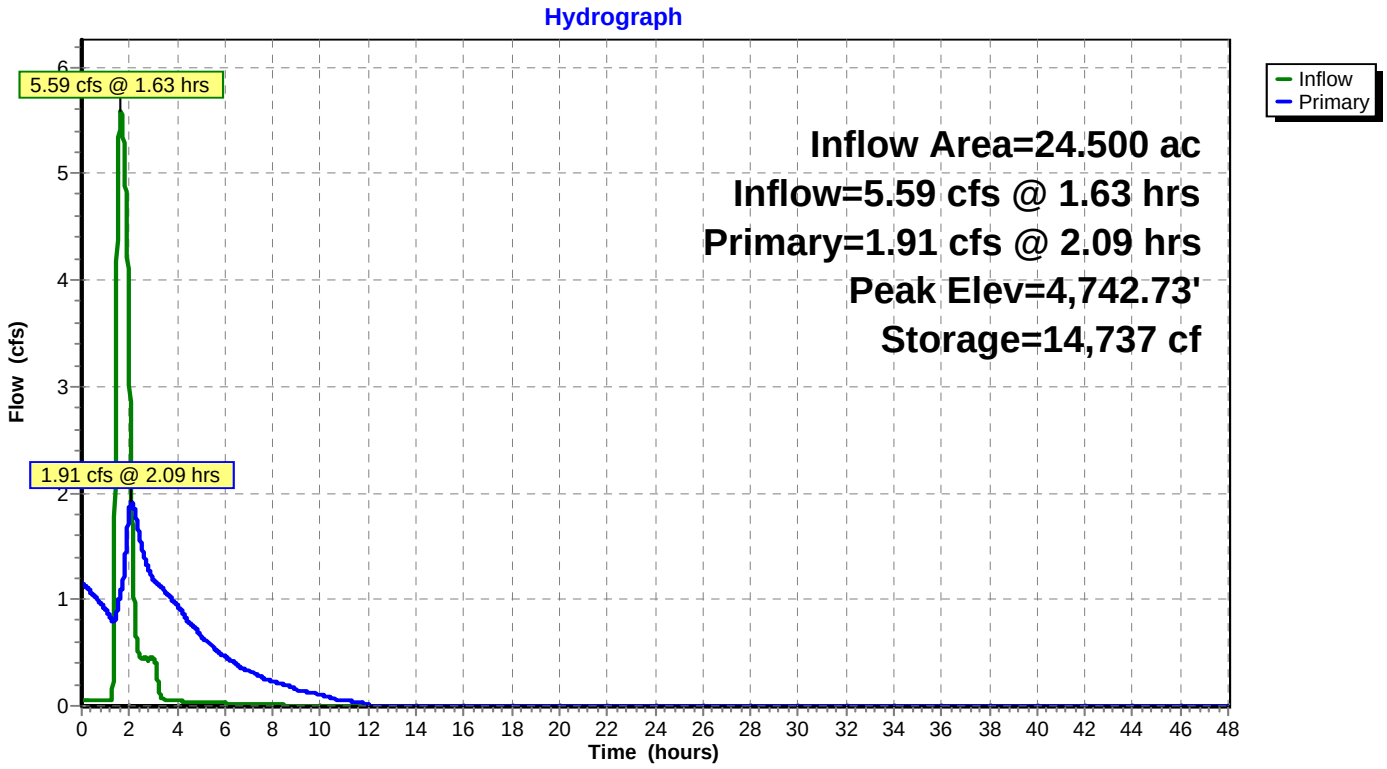
Volume	Invert	Avail.Storage	Storage Description
#1	4,739.00'	42,958 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,739.00	0	0	0
4,740.00	3,373	1,687	1,687
4,742.00	5,394	8,767	10,454
4,744.00	8,104	13,498	23,952
4,746.00	10,902	19,006	42,958

Device	Routing	Invert	Outlet Devices
#1	Primary	4,739.00'	**1.0" Vert. Orifice/Grate X 4.00 columns** X 8 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,742.19'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	4,745.13'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.91 cfs @ 2.09 hrs HW=4,742.73' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 1.32 cfs @ 7.55 fps)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 0.60 cfs @ 2.22 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P4: Pond 4



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 100: Basins 100-102 Runoff Area=6.870 ac Runoff Depth=0.59"
Flow Length=991' Tc=25.6 min CN=89 Runoff=5.32 cfs 0.335 af

Subcatchment 200: Basins 200-201 Runoff Area=15.580 ac Runoff Depth=0.59"
Tc=9.1 min CN=89 Runoff=15.76 cfs 0.761 af

Subcatchment 300: Basin 300 Runoff Area=1.560 ac Runoff Depth=0.54"
Tc=5.0 min CN=88 Runoff=1.63 cfs 0.070 af

Subcatchment 400: Basins 400-403 Runoff Area=22.940 ac Runoff Depth=0.59"
Flow Length=1,690' Tc=12.5 min CN=89 Runoff=21.55 cfs 1.120 af

Subcatchment DD1: DD1 Runoff Area=1.930 ac Runoff Depth=0.45"
Tc=5.0 min CN=86 Runoff=1.61 cfs 0.073 af

Subcatchment DD2: DD2 Runoff Area=0.390 ac Runoff Depth=0.45"
Tc=5.0 min CN=86 Runoff=0.33 cfs 0.015 af

Reach R1: V-Ditch Avg. Flow Depth=0.29' Max Vel=2.91 fps Inflow=0.48 cfs 0.414 af
n=0.025 L=815.0' S=0.0368 '/' Capacity=24.18 cfs Outflow=0.48 cfs 0.414 af

Pond P1: Pond 1 Peak Elev=4,804.31' Storage=15,335 cf Inflow=5.32 cfs 0.335 af
Outflow=0.48 cfs 0.414 af

Pond P2: Pond 2 Peak Elev=4,749.95' Storage=31,059 cf Inflow=15.82 cfs 1.174 af
Outflow=4.21 cfs 1.368 af

Pond P3: Pond 3 Peak Elev=4,754.06' Storage=2,077 cf Inflow=1.63 cfs 0.070 af
Outflow=0.55 cfs 0.085 af

Pond P4: Pond 4 Peak Elev=4,745.13' Storage=33,969 cf Inflow=21.99 cfs 1.204 af
Outflow=10.21 cfs 1.469 af

Total Runoff Area = 49.270 ac Runoff Volume = 2.373 af Average Runoff Depth = 0.58"

Summary for Subcatchment 100: Basins 100-102

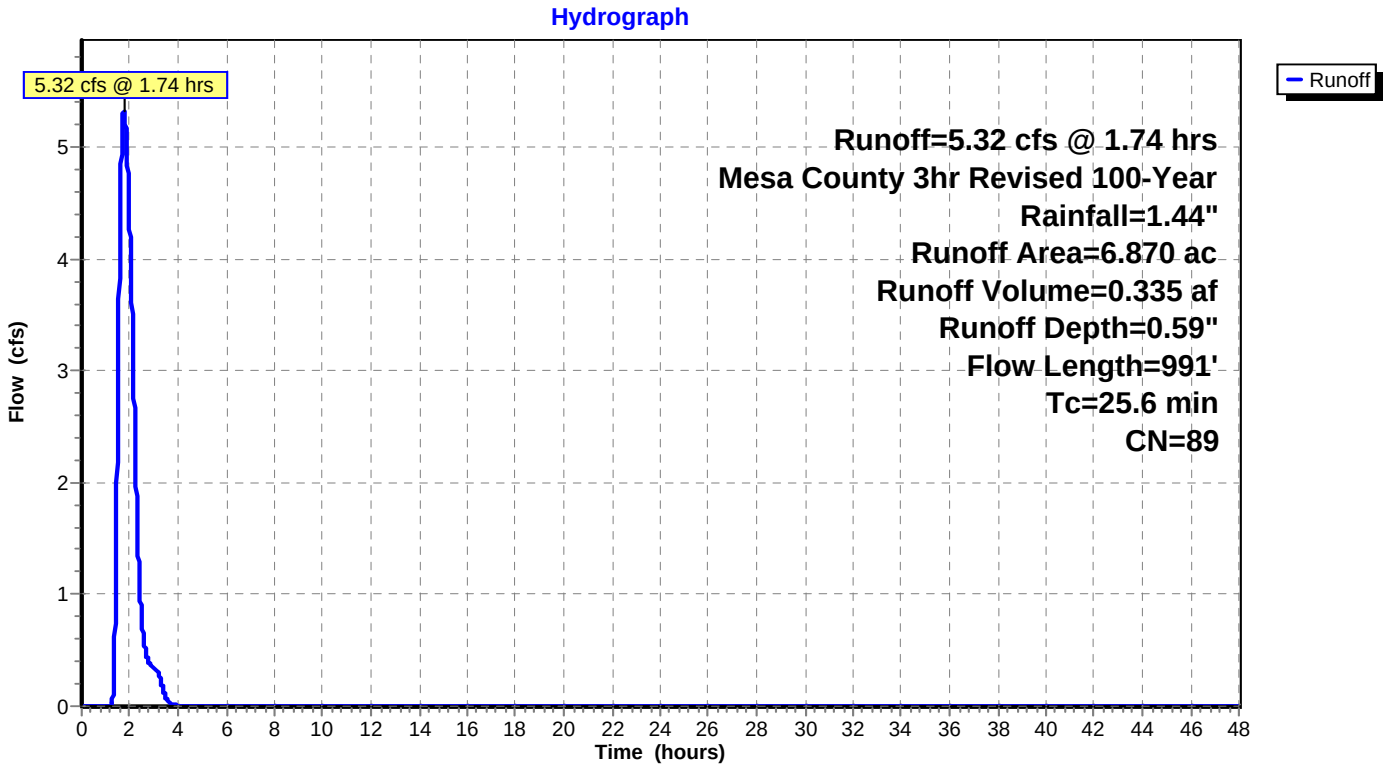
Runoff = 5.32 cfs @ 1.74 hrs, Volume= 0.335 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	6.870	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.9	136	0.0500	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 0.46"
2.7	855	0.1100	5.34		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
25.6	991	Total			

Subcatchment 100: Basins 100-102



Summary for Subcatchment 200: Basins 200-201

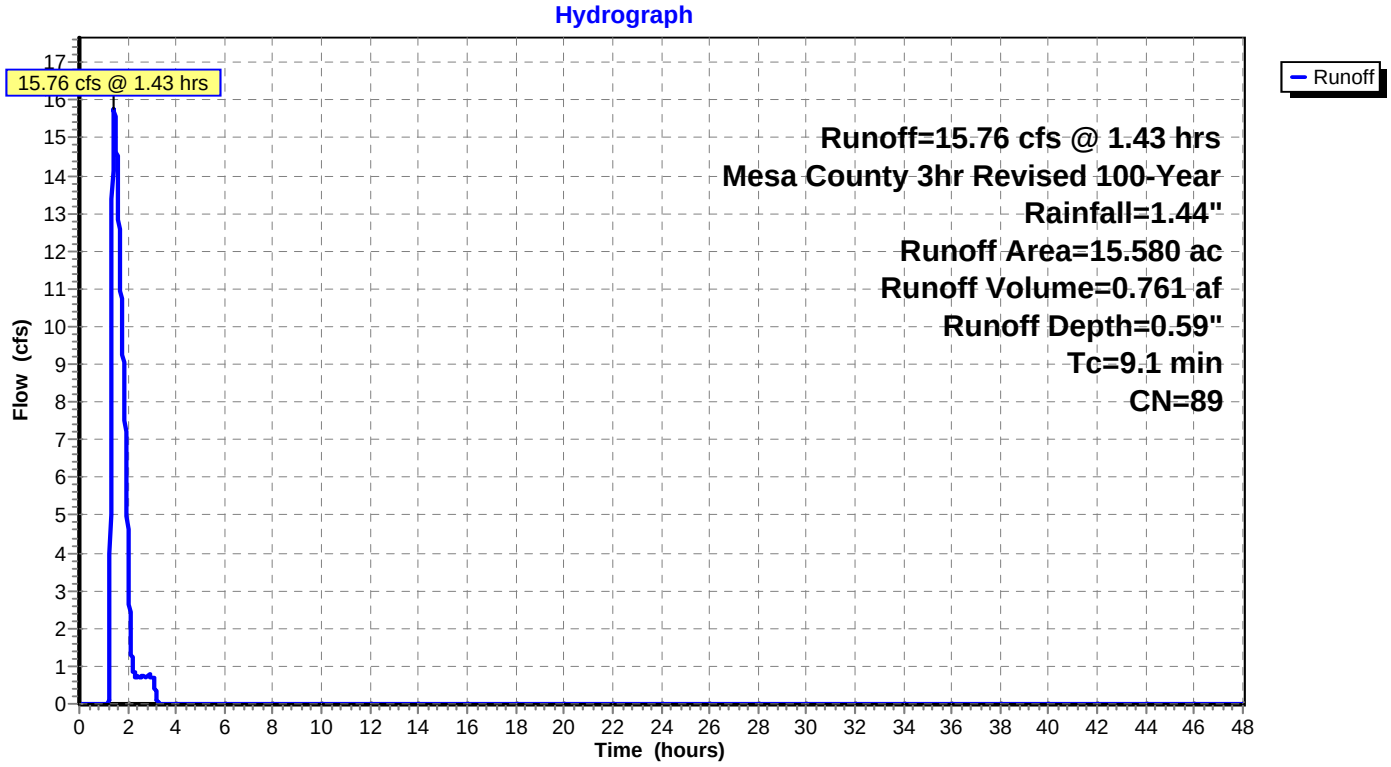
Runoff = 15.76 cfs @ 1.43 hrs, Volume= 0.761 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	15.580	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1					**Direct Entry, Tc to Pond #2**

Subcatchment 200: Basins 200-201



Summary for Subcatchment 300: Basin 300

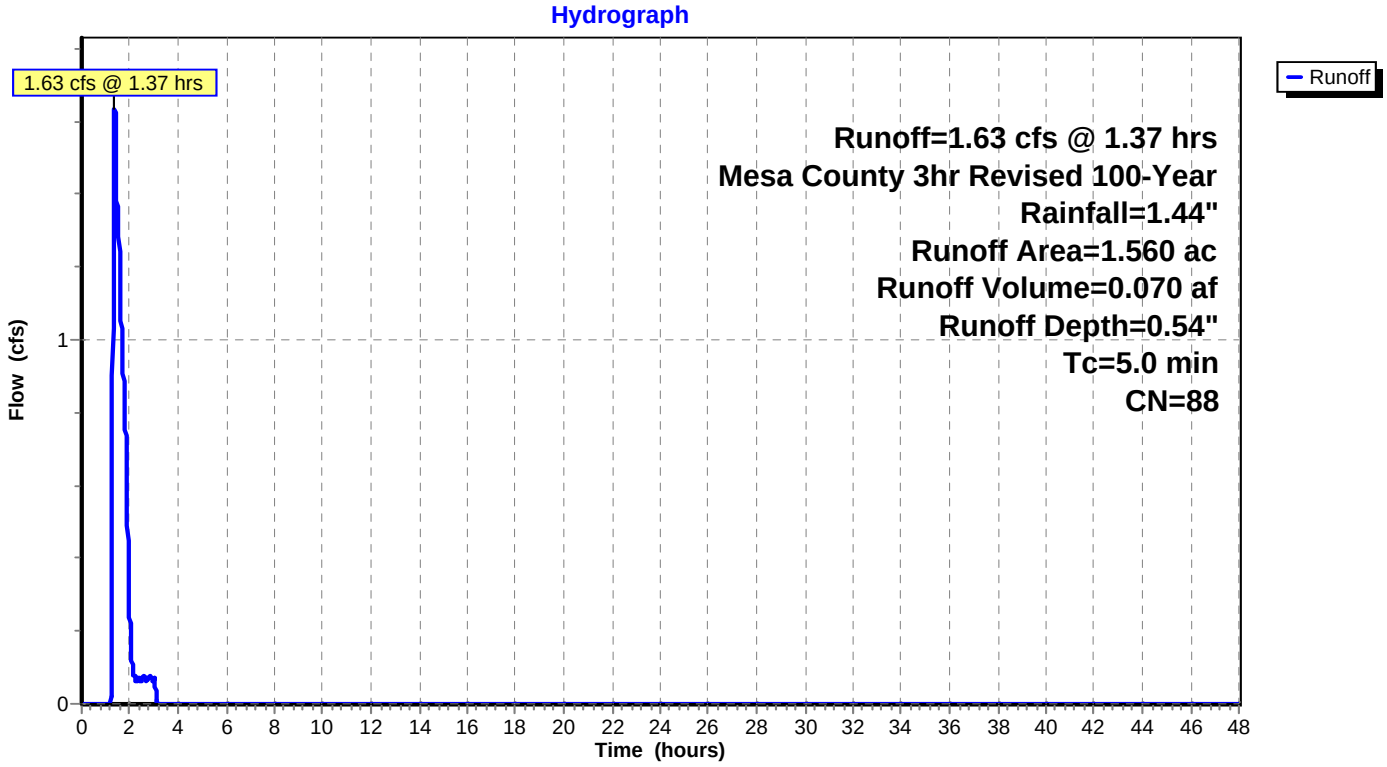
Runoff = 1.63 cfs @ 1.37 hrs, Volume= 0.070 af, Depth= 0.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	1.560	88	LOTS W/ HOUSES 4000 SF

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 300: Basin 300



Summary for Subcatchment 400: Basins 400-403

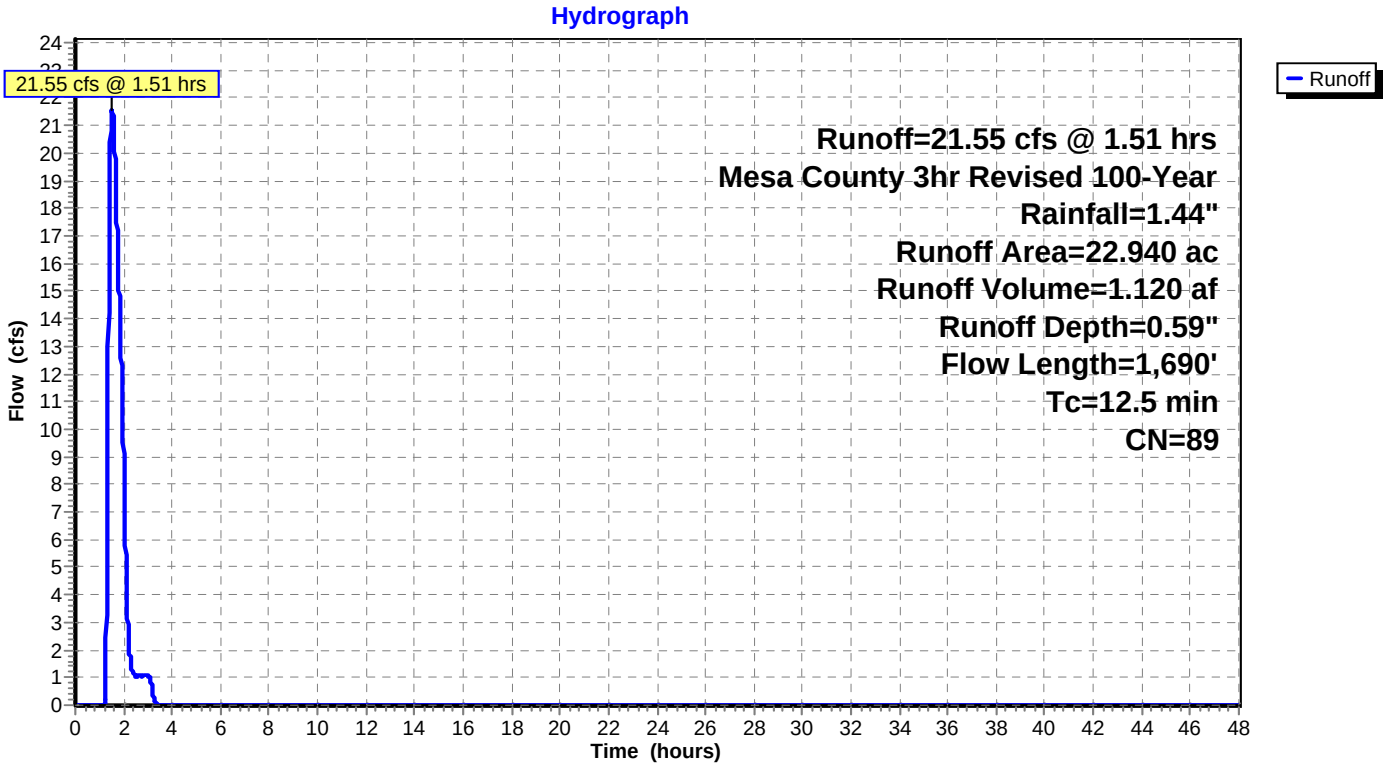
Runoff = 21.55 cfs @ 1.51 hrs, Volume= 1.120 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	22.940	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	190	0.0300	0.31		**Sheet Flow,** n= 0.030 P2= 0.46"
2.4	1,500	0.0933	10.27	32.09	**Trap/Vee/Rect Channel Flow,** Bot.W=0.00' D=1.25' Z= 2.0 '/' Top.W=5.00' n= 0.030
12.5	1,690	Total			

Subcatchment 400: Basins 400-403



Summary for Subcatchment DD1: DD1

Direct Discharge basin compensated in Pond 1

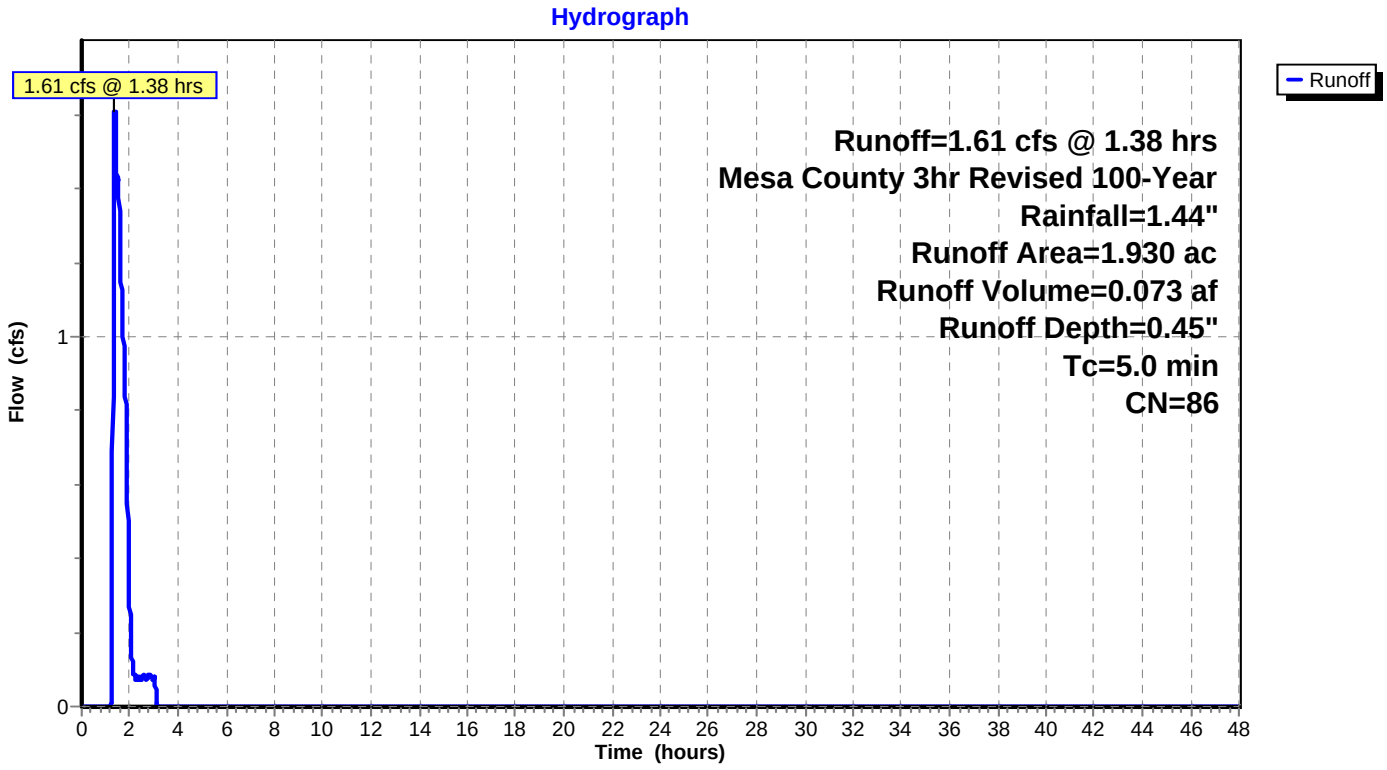
Runoff = 1.61 cfs @ 1.38 hrs, Volume= 0.073 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	1.930	86	Natural western desert, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DD1: DD1



Summary for Subcatchment DD2: DD2

Disrect discharge basin, compensated in Pond 4

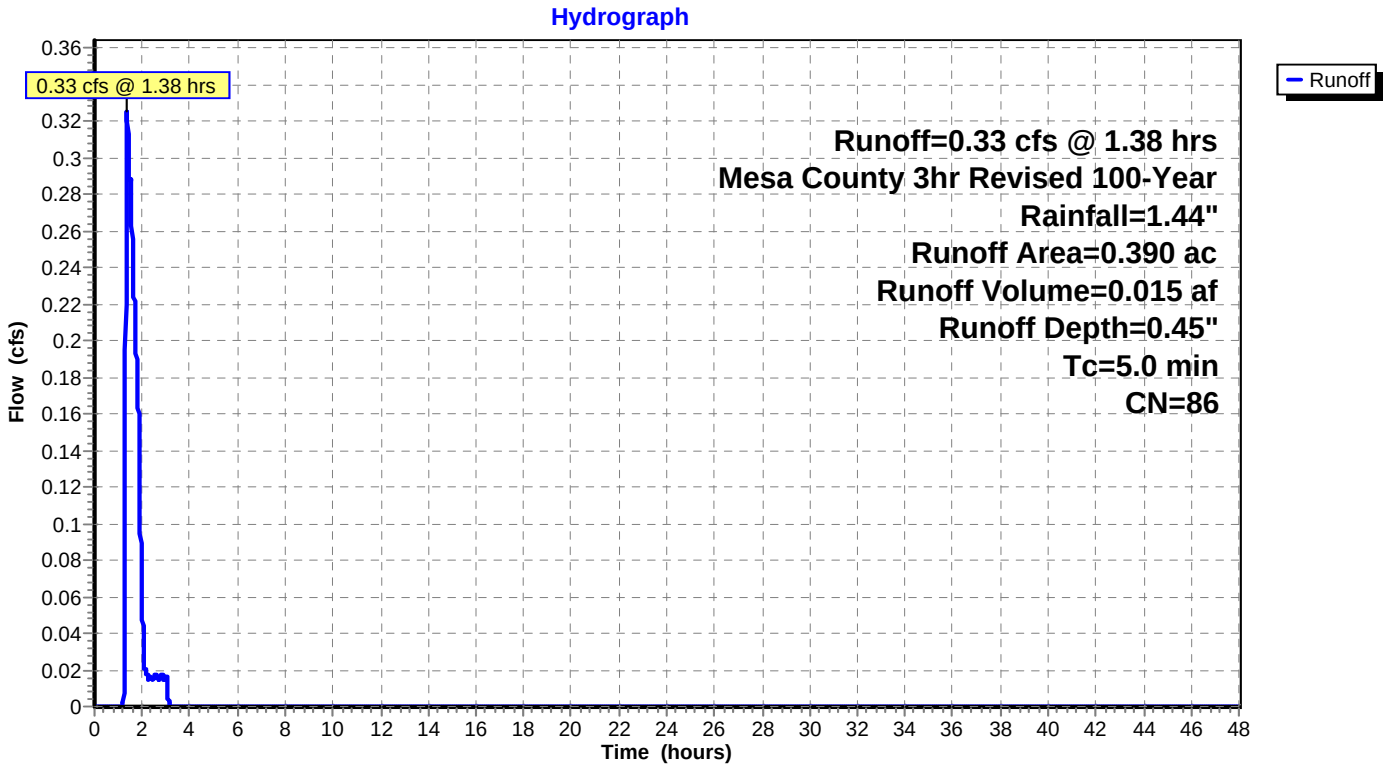
Runoff = 0.33 cfs @ 1.38 hrs, Volume= 0.015 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	0.390	86	Natural western desert, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DD2: DD2



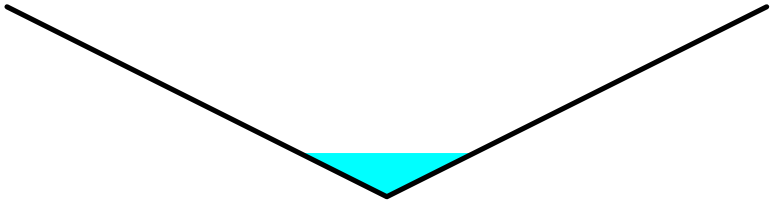
Summary for Reach R1: V-Ditch

Inflow Area = 6.870 ac, Inflow Depth > 0.72" for 100-Year event
Inflow = 0.48 cfs @ 2.66 hrs, Volume= 0.414 af
Outflow = 0.48 cfs @ 2.74 hrs, Volume= 0.414 af, Atten= 0%, Lag= 4.3 min

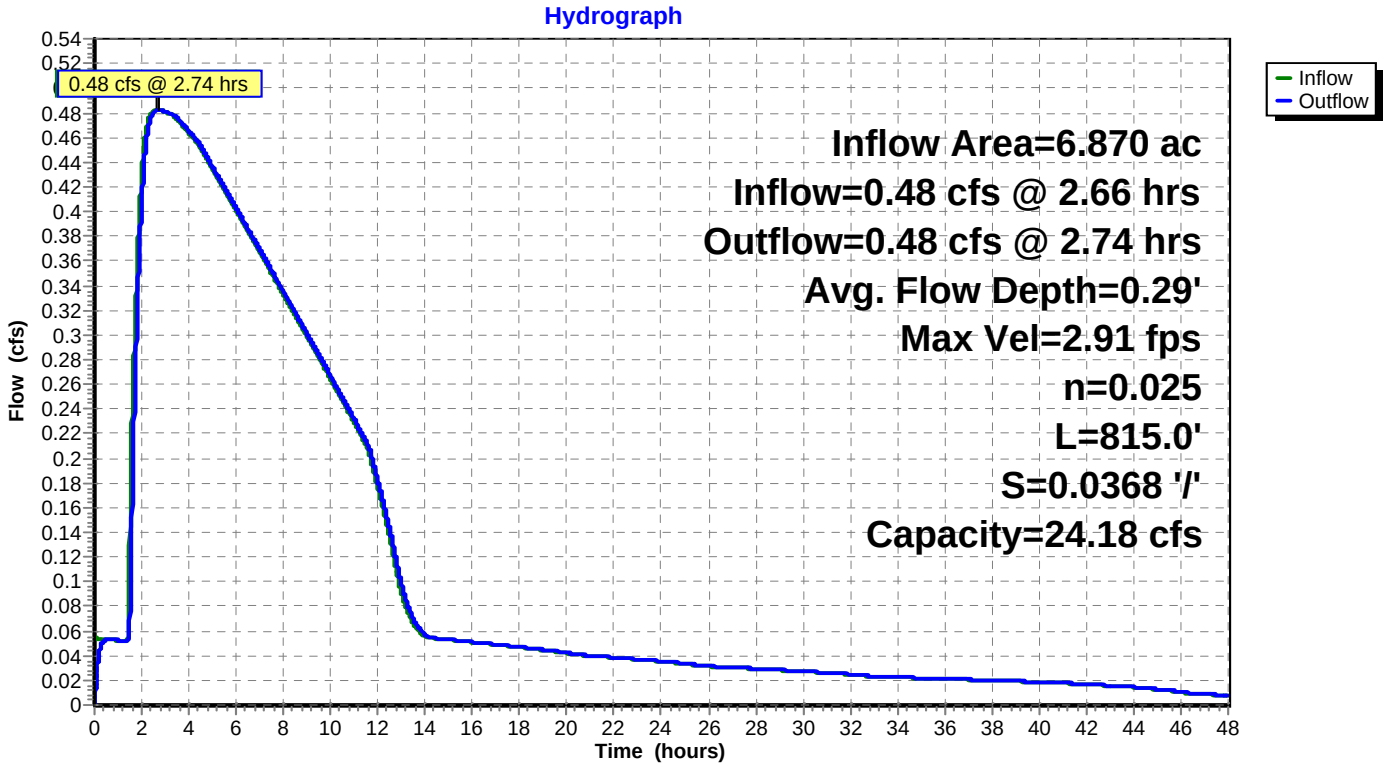
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.91 fps, Min. Travel Time= 4.7 min
Avg. Velocity = 1.72 fps, Avg. Travel Time= 7.9 min

Peak Storage= 135 cf @ 2.74 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 1.25' Flow Area= 3.1 sf, Capacity= 24.18 cfs

0.00' x 1.25' deep channel, n= 0.025
Side Slope Z-value= 2.0 '/' Top Width= 5.00'
Length= 815.0' Slope= 0.0368 '/'
Inlet Invert= 4,796.00', Outlet Invert= 4,766.00'



Reach R1: V-Ditch



Summary for Pond P1: Pond 1

Inflow Area = 6.870 ac, Inflow Depth = 0.59" for 100-Year event
Inflow = 5.32 cfs @ 1.74 hrs, Volume= 0.335 af
Outflow = 0.48 cfs @ 2.66 hrs, Volume= 0.414 af, Atten= 91%, Lag= 55.3 min
Primary = 0.48 cfs @ 2.66 hrs, Volume= 0.414 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,801.50' Surf.Area= 2,799 sf Storage= 3,655 cf
Peak Elev= 4,804.31' @ 2.66 hrs Surf.Area= 5,534 sf Storage= 15,335 cf (11,680 cf above start)

Plug-Flow detention time= 616.1 min calculated for 0.330 af (98% of inflow)
Center-of-Mass det. time= 496.5 min (613.9 - 117.5)

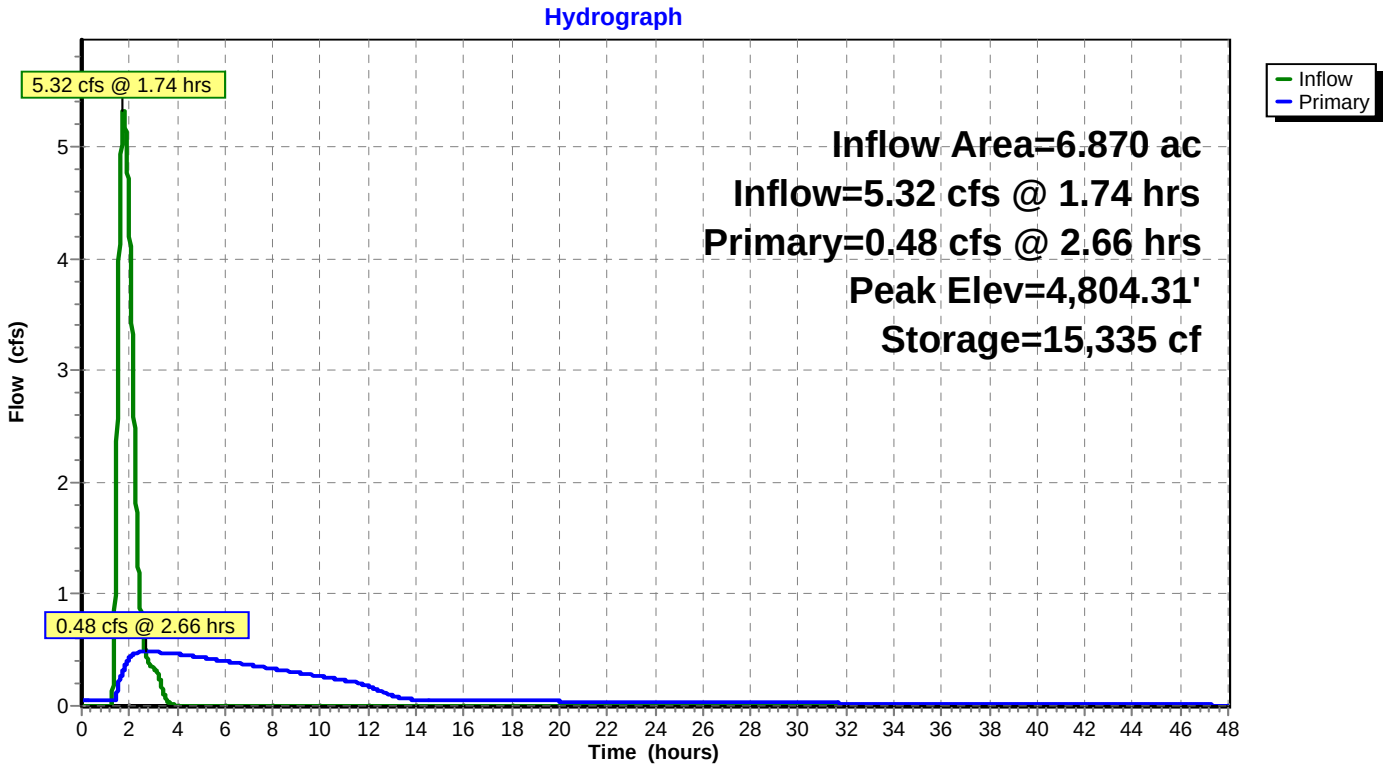
Volume	Invert	Avail.Storage	Storage Description
#1	4,799.00'	43,026 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,799.00	0	0	0
4,800.00	856	428	428
4,802.00	3,447	4,303	4,731
4,804.00	5,204	8,651	13,382
4,806.00	7,321	12,525	25,907
4,808.00	9,798	17,119	43,026

Device	Routing	Invert	Outlet Devices
#1	Primary	4,799.00'	**0.5" Vert. Orifice/Grate** X 7 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,801.50'	**3.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	4,804.50'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.48 cfs @ 2.66 hrs HW=4,804.31' TW=4,796.29' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.09 cfs @ 9.94 fps)
- **2=Orifice/Grate** (Orifice Controls 0.39 cfs @ 7.89 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P1: Pond 1



Summary for Pond P2: Pond 2

Inflow Area = 22.450 ac, Inflow Depth > 0.63" for 100-Year event
Inflow = 15.82 cfs @ 1.43 hrs, Volume= 1.174 af
Outflow = 4.21 cfs @ 2.02 hrs, Volume= 1.368 af, Atten= 73%, Lag= 35.1 min
Primary = 4.21 cfs @ 2.02 hrs, Volume= 1.368 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,747.71' Surf.Area= 8,172 sf Storage= 8,686 cf
Peak Elev= 4,749.95' @ 2.02 hrs Surf.Area= 11,908 sf Storage= 31,059 cf (22,373 cf above start)

Plug-Flow detention time= 309.8 min calculated for 1.168 af (100% of inflow)
Center-of-Mass det. time= 226.9 min (511.1 - 284.3)

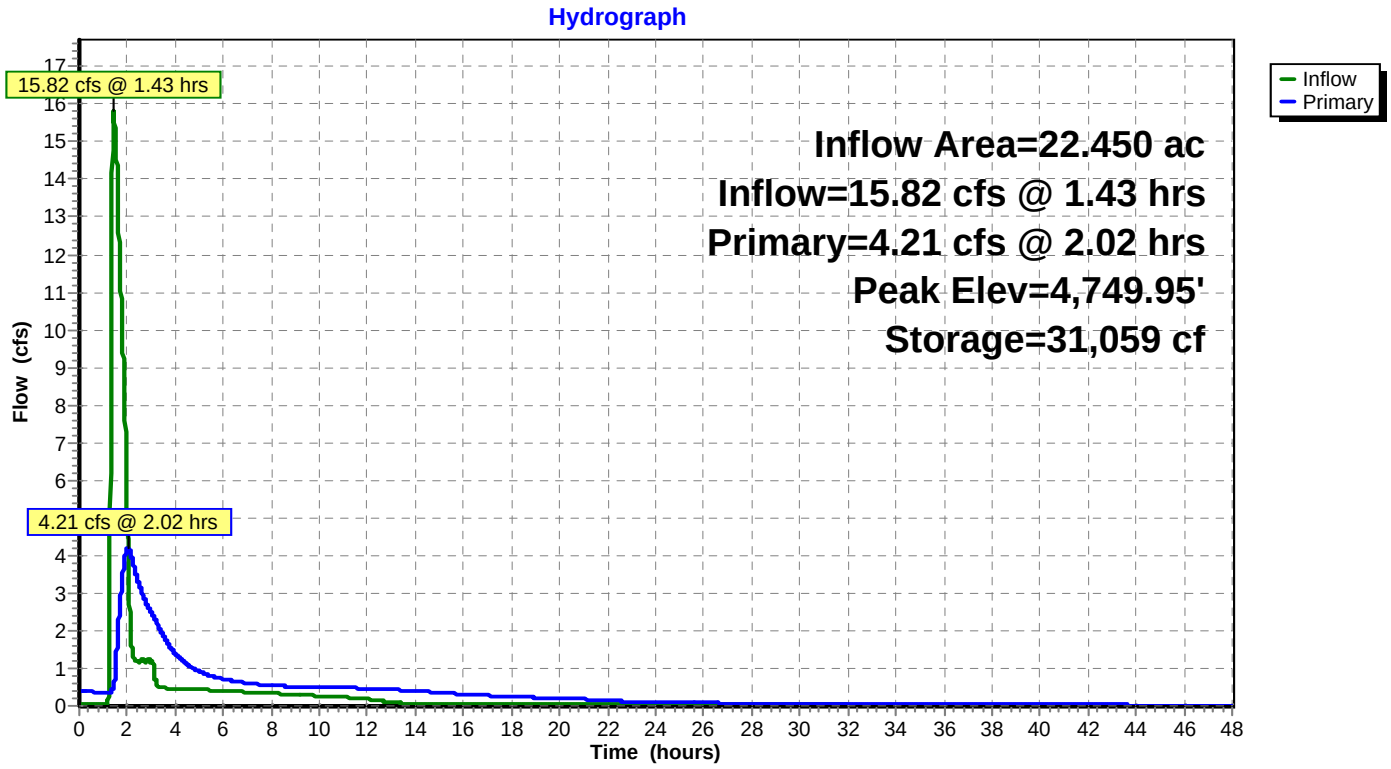
Volume	Invert	Avail.Storage	Storage Description
#1	4,746.06'	59,211 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,746.06	0	0	0
4,747.00	6,765	3,180	3,180
4,748.00	8,746	7,756	10,935
4,749.00	10,334	9,540	20,475
4,750.00	11,994	11,164	31,639
4,751.00	13,830	12,912	44,551
4,752.00	15,490	14,660	59,211

Device	Routing	Invert	Outlet Devices
#1	Primary	4,746.06'	**0.9" Vert. Orifice/Grate X 4.00 columns** X 5 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,748.32'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	4,751.00'	**14.0' long x 0.5' breadth emergency spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=4.21 cfs @ 2.02 hrs HW=4,749.95' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.76 cfs @ 8.57 fps)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 3.45 cfs @ 4.24 fps)
- **3=emergency spillway** (Controls 0.00 cfs)

Pond P2: Pond 2



Summary for Pond P3: Pond 3

Inflow Area = 1.560 ac, Inflow Depth = 0.54" for 100-Year event
Inflow = 1.63 cfs @ 1.37 hrs, Volume= 0.070 af
Outflow = 0.55 cfs @ 1.90 hrs, Volume= 0.085 af, Atten= 66%, Lag= 31.4 min
Primary = 0.55 cfs @ 1.90 hrs, Volume= 0.085 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,752.64' Surf.Area= 737 sf Storage= 632 cf
Peak Elev= 4,754.06' @ 1.90 hrs Surf.Area= 1,301 sf Storage= 2,077 cf (1,445 cf above start)

Plug-Flow detention time= 86.5 min calculated for 0.070 af (100% of inflow)
Center-of-Mass det. time= 67.0 min (166.0 - 99.0)

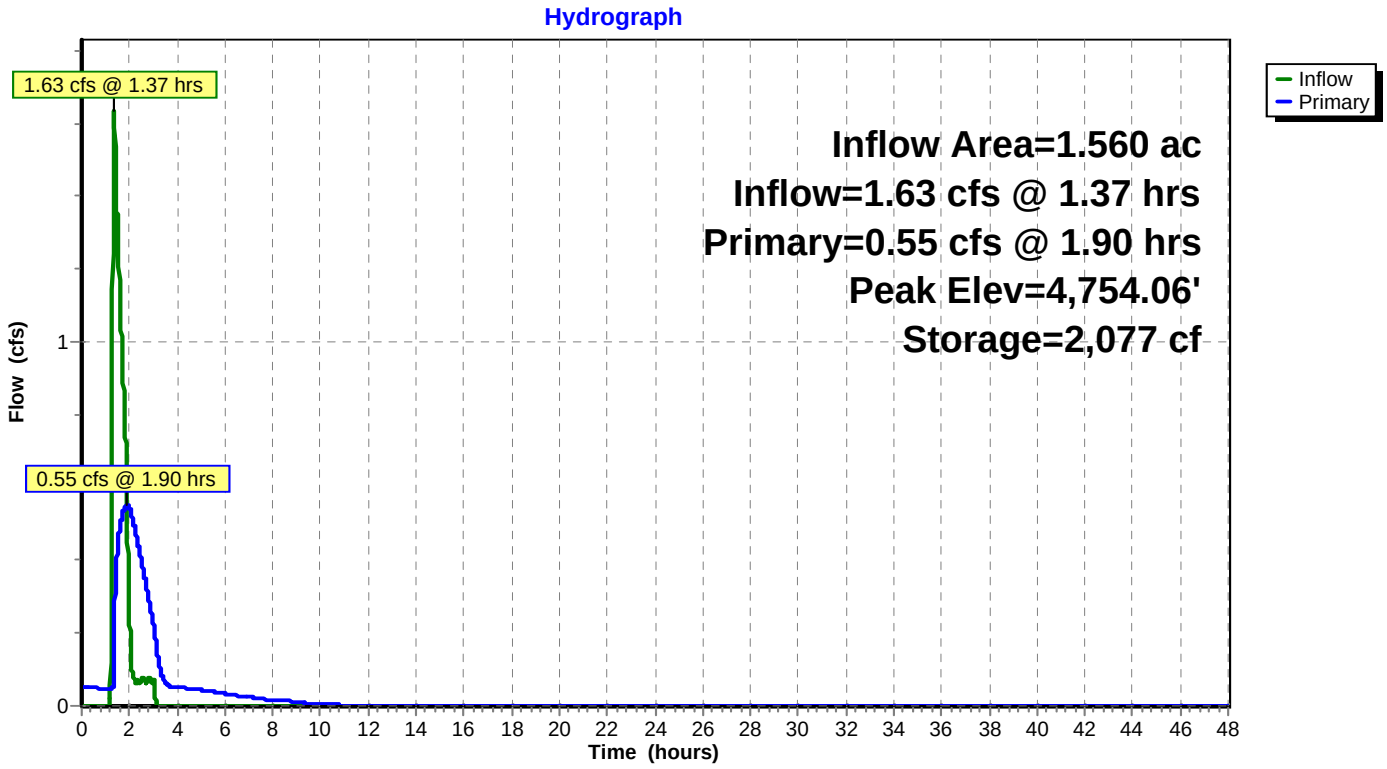
Volume	Invert	Avail.Storage	Storage Description
#1	4,751.00'	5,359 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,751.00	0	0	0
4,752.00	483	242	242
4,754.00	1,277	1,760	2,002
4,756.00	2,080	3,357	5,359

Device	Routing	Invert	Outlet Devices
#1	Primary	4,751.00'	**0.7" Vert. Orifice/Grate** X 4 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,752.64'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	4,754.06'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.55 cfs @ 1.90 hrs HW=4,754.06' TW=4,745.08' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.08 cfs @ 7.64 fps)
- **2=Orifice/Grate** (Orifice Controls 0.47 cfs @ 5.39 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P3: Pond 3



Summary for Pond P4: Pond 4

Inflow Area = 24.500 ac, Inflow Depth = 0.59" for 100-Year event
Inflow = 21.99 cfs @ 1.52 hrs, Volume= 1.204 af
Outflow = 10.21 cfs @ 1.98 hrs, Volume= 1.469 af, Atten= 54%, Lag= 27.6 min
Primary = 10.21 cfs @ 1.98 hrs, Volume= 1.469 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,742.19' Surf.Area= 5,651 sf Storage= 11,503 cf
Peak Elev= 4,745.13' @ 1.98 hrs Surf.Area= 9,680 sf Storage= 33,969 cf (22,467 cf above start)

Plug-Flow detention time= 97.0 min calculated for 1.204 af (100% of inflow)
Center-of-Mass det. time= 73.1 min (182.6 - 109.6)

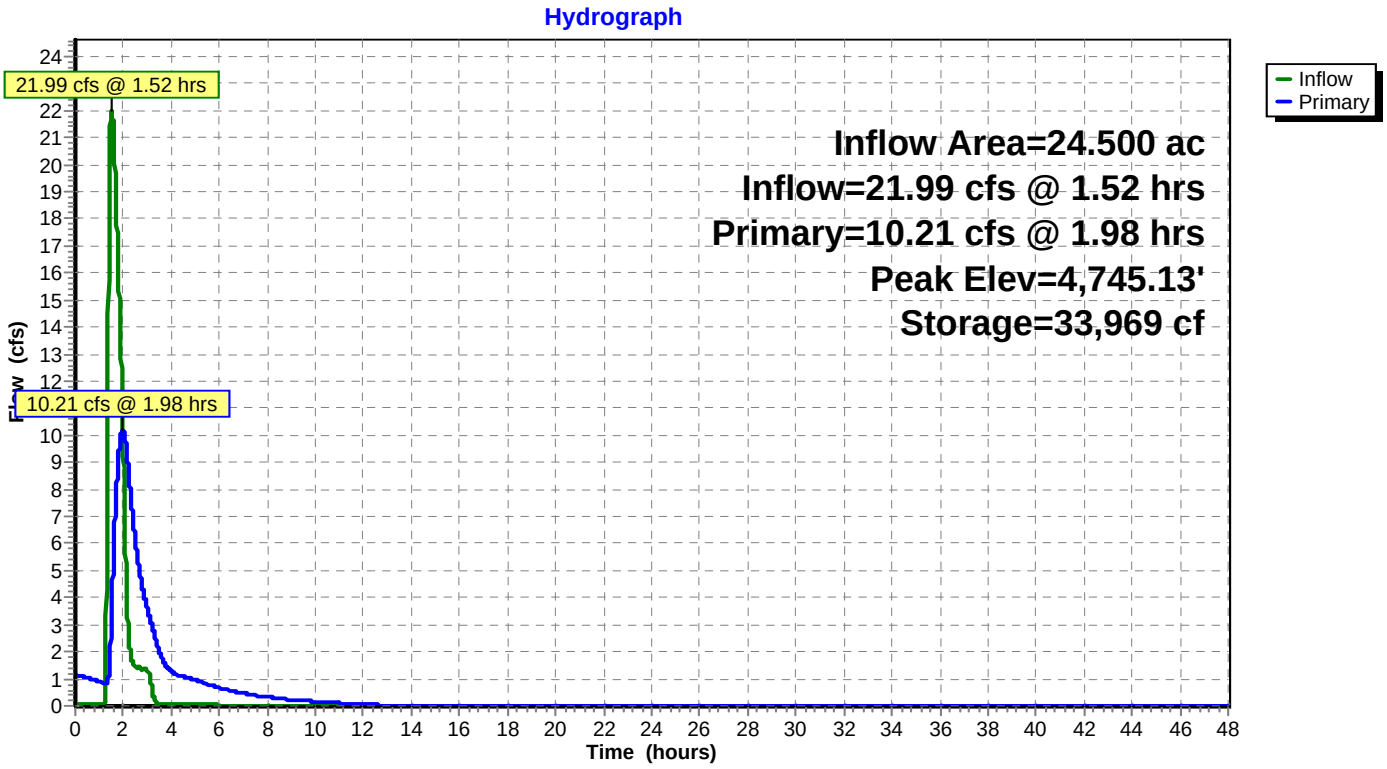
Volume	Invert	Avail.Storage	Storage Description
#1	4,739.00'	42,958 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,739.00	0	0	0
4,740.00	3,373	1,687	1,687
4,742.00	5,394	8,767	10,454
4,744.00	8,104	13,498	23,952
4,746.00	10,902	19,006	42,958

Device	Routing	Invert	Outlet Devices
#1	Primary	4,739.00'	**1.0" Vert. Orifice/Grate X 4.00 columns** X 8 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,742.19'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	4,745.13'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=10.21 cfs @ 1.98 hrs HW=4,745.13' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 1.86 cfs @ 10.65 fps)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 8.35 cfs @ 5.69 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P4: Pond 4



Appendix F – SWMM Checklist

Table 302
Stormwater Management Manual
Drainage Report Checklist

Instructions:
1. Applicant to identify with a "check-mark" if information is provided with report. If applicant believes information is not required, indicate with "n/a" and attach separate sheet with explanation
2. The reviewer will determine if information labeled "n/a" is required and whether information must be submitted.
3. Those items noted with an "asterisk" are not typically required for conceptual/ preliminary report. Applicant shall confirm this with local jurisdiction.
4. Submit three (3) copies of report and include copy of check list bound with report.

TITLE PAGE

A. Type of report (Conceptual/Preliminary or Final Drainage Report).
B. Project Name.
C. Preparer name, firm, address, number, and date.
D. Professional Engineer's seal of preparer.
E. Certifications (see SWMM Section 303.1)

I. INTRODUCTION

A. Background
- X 1. Identify report preparer and purpose.
- NA 2. Identify date of letter with previous County comments.

B. Project Location
- X 1. Identify Township, Range, and Section.
- X 2. Identify adjacent street and subdivision names.
- X 3. Reference to General Location Map.

C. Property Description
- X 1. Identify area in acres of entire contiguous ownership.
- X 2. Describe existing ground cover, vegetation, soils, topography and slopes.
- X 3. Describe existing drainage facilities, such as channels, detention areas, or structures.
- NA 4. Describe existing irrigation facilities, such as ditches, head-gates, or diversions.
- X 5. Identify proposed types of land use and encumbrances.

D. Previous Investigations
- X 1. Identify drainage master plans that include the project area, including floodplain studies.
- X 2. Identify drainage reports for adjacent development.

II. DRAINAGE SYSTEM DESCRIPTION

A. Existing Drainage Conditions
- X 1. Describe existing topography and provide map with contours extending a minimum of 100 feet beyond property limits.
- X 2. Identify major drainageway or outfall drainageway and describe map showing location of proposed development within the drainageways.
- X 3. Identify pre-developed drainage patterns and describe map showing pre-developed sub-basins and concentrated discharge locations. Provide calculations of pre-developed peak flows entering and leaving the site.

B. Master Drainage Plan
- X 1. Describe location of the project relative to a previously prepared master drainage plan, including drainage plans prepared for adjacent development.

C. Offsite Tributary Area

X 1. Identify all offsite drainage basins that are tributary to the project.
X 2. Identify assumptions regarding existing and future land use and effects of offsite detention on peak flows.

D. Proposed Drainage System Description

NA 1. Identify how offisite stormwater is collected and conveyed through the site and ultimately to the receiving water(s).
X 2. Identify sub-basins and describe, in general terms, how onsite stormwater is collected and conveyed through the site for each location where stormwater is discharged from the site.
X * 3. Describe detention volumes, release rates and pool elevations.
X * 4. Identify the difference in elevation between pond invert and the groundwater table.
X 5. Describe how stormwater is discharged from the site, including both concentrated and dispersed discharges and rates.
X 6. Describe stormwater quality facilities.
X * 7. Describe maintenance access aspects of design.
X * 8. Describe easements and tracts for drainage purposes, including limitation on use.

E. Drainage Facility Maintenance

NA * 1. Identify responsible parties for maintenance of each drainage and water quality facility.
NA * 2. Identify general maintenance activities and schedules.

III. DRAINAGE ANALYSIS AND DESIGN CRITERIA

A. Regulations

X 1. Identify that analysis and design was prepared in accordance with the provisions of the Manual.
X 2. Identify other regulations or criteria which have been used to prepare analysis and design.

B. Development Criteria

X 1. Identify drainage constraints placed on the project, such as by a major drainage study, floodplain study or other drainage reports relevant to the project.
X 2. Identify drainage constraints placed on the project, such as from major street alignments, utilities, existing structures, and other developments.

C. Hydrologic Criteria

(If Manual was followed without deviation, then a statement to that effect is all that is required. Otherwise provide the following information where the criteria used deviates from the Manual.)

X 1. Identify developed storm runoff peak flows and volumes and how they were determined, including rainfall intensity or design storm.
X 2. Identify which storm events were used for minor and major flood analysis and design.
X 3. Identify how and why any other deviations from the Manual occurred.

D. Hydraulic Criteria

(If Manual was followed without deviation, then a statement to that effect is all that is required. Otherwise provide the following information where the criteria used deviates from the Manual.)

NA * 1. Identify type(s) of streets within and adjacent to development and source for allowable street capacity.
NA * 2. Identify which type(s) of storm inlets were analyzed or designed and source for allowable capacity.
3. Identify which type of storm sewers which were analyzed or designed and

Manning's n-values used.

4. Identify which method was used to determine detention volume requirements and how allowable release rates were determined.
5. Identify how the capacity of open channels and culverts were determined.
6. Identify any special analysis or design requirements not contained with the Manual.
7. Identify how and why any other deviations from the Manual occurred.

E. Variance from Criteria

1. Identify any provisions of the Manual for which a variance is requested.
2. Identify pre-existing conditions which cause the variance request.

***IV. POST CONSTRUCTION STORMWATER MANAGEMENT. See Manual Section 1600 for requirements.**

Note: This section of the Final Drainage Report identifies additional information required by Mesa County's, City of Grand Junction's, and Town of Palisade's, Permit for Stormwater Discharges Associated with Municipal Separate Storm Sewer Systems (MS4s), permit No. COR-090000. The Final Drainage Plan and the Construction SWMP (see SWMM Section 1500) meets the requirements of the MS4s Permit. In general, this section identifies permanent BMP practices to control the discharge of pollutants after construction is complete.

*A. Stormwater Quality Control Measures

1. Describe the post-construction BMPs to control discharge of pollutants from the project site.
2. If compensating detention is provided, discuss practices to address water quality from area not tributary to detention area.
3. If underground detention is proposed, discuss how water quality facilities will be provided on the surface.
4. If proprietary BMPs are proposed, provide the justification and sizing requirements (see SWMM Section 1603.3).

*B. Calculations

1. Provide methods and calculations for WQCV, sediment storage, and water quality outlet structure.

V. CONCLUSIONS

A. Compliance with Manual

Compliance with Manual and other approved documents, such as drainage plans and floodplain studies.

B. Design Effectiveness

Effectiveness of drainage design to control impacts of storm runoff.

C. Areas in Flood Hazard Zone

Meet requirements of Floodplain Regulations: Mesa County Land Development Code, Section 7.13; City of Grand Junction Zoning and Development Code, Section 7.1.

D. Variances from Manual

Applicant shall identify any requested variances and provide basis for approving variance. If no variances are requested, applicant shall state that none are requested.

VII. REFERENCES

Provide a reference list of all criteria, master plans, drainage reports, and technical information used.

TABLES

Include copy of all tables prepared for report.

FIGURES

A. General Location Map (See Section 303.2a)

X B. Flood Plain Information
X C. Drainage Plan (See Section 303.2b)
X D. Other pertinent figures.

APPENDICIES

A. DESIGN CHARTS

X 1. Provide copy of all design charts (i.e.: tables, figures, charts from other criteria) used for the report.

B. HYDROLOGIC CALCULATIONS (see Manual Sections 600 and 700)

X 1. Land use assumptions for off-site runoff calculations.
X 2. Time of concentration and runoff coefficients for pre-existing and post development conditions.
X 3. Pre-developed hydrologic computations.
X 4. Developed conditions hydrologic computations.

C. HYDRAULIC CALCULATIONS

NA 1. Capacity of existing channels, streets, storm sewers, inlets, culverts and other facilities.
NA 2. Calculations for existing storm sewer and open channel.
NA 3. Irrigation ditch flows and ditch system capacity.
X * 4. Detention pond design (see Manual, Section 1400 for requirements).
X * a. Storage volume, release rates, and pool elevations for 10-year and 100-year storm.
X * b. Outlet structure dimensions, orifice diameter, weir lengths, pipe headwater and other data.
X * c. Outlet velocity and energy dissipation requirements.
X * d. Routing of outlet flows and emergency spillway flows.
X * 5. Street capacity calculations, if data in Manual not used (see Section 1100).
NA * 6. Storm inlet capacity calculations, if data in Manual not used (see Section 1100).
NA * 7. Storm sewer capacity calculations, if data in Manual not used (see Section 1000).
NA * 8. Channel capacity calculations, if data in Manual not used (see Section 800).
NA * 9. Culvert capacity calculations (see Manual, Section 1200).
NA * 10. Other hydraulic structure calculations (see Manual, Section 900).

D. STORMWATER QUALITY CALCULATIONS

X 1. Water Quality Capture Volume (WQCV).
X * 2. Storage volume for sediment volume and pool elevations for WQCV.
X * 3. Outlet calculations for required area per row, diameter of individual holes, number of holes per row, and number of holes per column.

X

CERTIFICATION – PROFESSIONAL ENGINEER'S SEAL AND SIGNATURE

ACKNOWLEDGEMENTS

Drainage Report checklist was prepared by: SSM

Table 303
Stormwater Management Manual

Drainage Plan Checklist

Instructions:
1. Applicant to identify with a "check-mark" if information is provided. If applicant believes information is not required, indicate with "n/a".
2. County will determine if information labeled "n/a" is required and whether information must be submitted.

I. EXISTING FACILITIES

- X A. Contours at two foot intervals, based on USGS datum. Contours to extend at least 50 feet past property line.
- X B. Location and elevation of USGS benchmarks or benchmarks referenced to USGS.
- X C. Property lines.
- X D. Drainage easements.
- X E. Street names.
- X F. Major and minor channels and floodplains.
- X G. A historic drainage plan including historic basin boundaries and flow paths.

II. PROPOSED FACILITIES

- X A. Contours at two-foot intervals, based on USGS datum.
- X B. Property lines.
- X C. Drainage easements.
- X D. Street names and grades.
- X E. Right of way and easement.
- X F. Finished floor elevations for protection from major storm run-off.
- X G. Detention pond information:
  1. X Location of each detention pond with site at 1"=50' scale or larger with 2-foot contour intervals.
  2. X Inlet and outlet structure, and trickle channel design details.
  3. X Details of emergency spillway and channel.
  4. X Landscape information, including side slopes, vegetation and planting requirements.
  5. X Details of water quality outlet structure.
- X H. Channel Information:
  1. X Profiles with existing and proposed grades.
  2. X Cross sections on 100-foot stations showing existing and proposed topography and required rights of way.
  3. X Locations and size of all existing and proposed structures.
  4. X Locations and profiles of adjacent utilities.
  5. X Typical channel section and lining details.
- X I. Storm sewer information:
  1. X Alignment and location of manholes, inlets, and outlet structures.
  2. X Profile of invert and pipe crown.
  3. X Invert elevations at manholes and inlets.
  4. X Lengths and grades between manholes and inlets.
  5. X Locations and elevations of utilities adjacent to and crossing storm sewer.
  6. X Easement and other O&M access geometry.
  7. X Outlet details, such as end sections, headwall and wingwalls, erosion control, and vegetation.
- N/A J. Street cross sections with design 100-year flood depth.
- N/A K. Other drainage related structures and facilities, including underdrains and sump pump discharge lines.
- N/A L. Other permanent BMP measures to control pollutant discharges to the County's MS4 system.

III. HYDRAULIC AND HYDROLOGIC INFORMATION

X A. Routing and accumulative runoff peaks at upstream and downstream ends of the site and at various critical points onsite for initial and major storms. Inflow and outflow from each subbasin shall be shown for both initial and major storms.

NA B. Street cross sections showing 100-year flood levels.

NA C. Major and minor channels and floodplains.

X D. Detention pond data:

X 1. Release rates for 10- and 100-year storm events.

X 2. Required and provided volumes for 10- and 100-year storm events.

X 3. Design depths for 10- and 100-year storm events.

X 4. Water quality capture volume and pool elevation.

NA E. Channel data:

NA 1. Water surface profiles.

NA 2. Representative 100-year flow velocity and Froude number.

NA F. Storm sewer data:

NA 1. Profile of water surface for design flow rate.

NA 2. Peak flows for design flow, 2-year and 100-year storm events.

IV. STANDARD NOTES

X A. No building, structure, or fill will be placed in the detention areas and no changes or alterations affecting the hydraulic characteristics of the detention areas will be made without the approval of the County.

X B. Maintenance and operation of the detention and water quality areas is the responsibility of property owner. If owner fails in this responsibility, the County has the right to enter the property, maintain the detention areas, and be reimbursed for costs incurred.

X C. Detention pond volumes, all drainage appurtenances, and basin boundaries shall be verified. As-built drawings shall be prepared by a registered professional engineer prior to issuance of certificate of occupancy for any structure within the development.

X D. Permission to reproduce these plans is hereby given to Mesa County for County purposes associated with plan review, approval, permitting, inspection and construction of work.

X **V. PROFESSIONAL ENGINEER'S SEAL AND SIGNATURE**

Y **VI. OTHER**

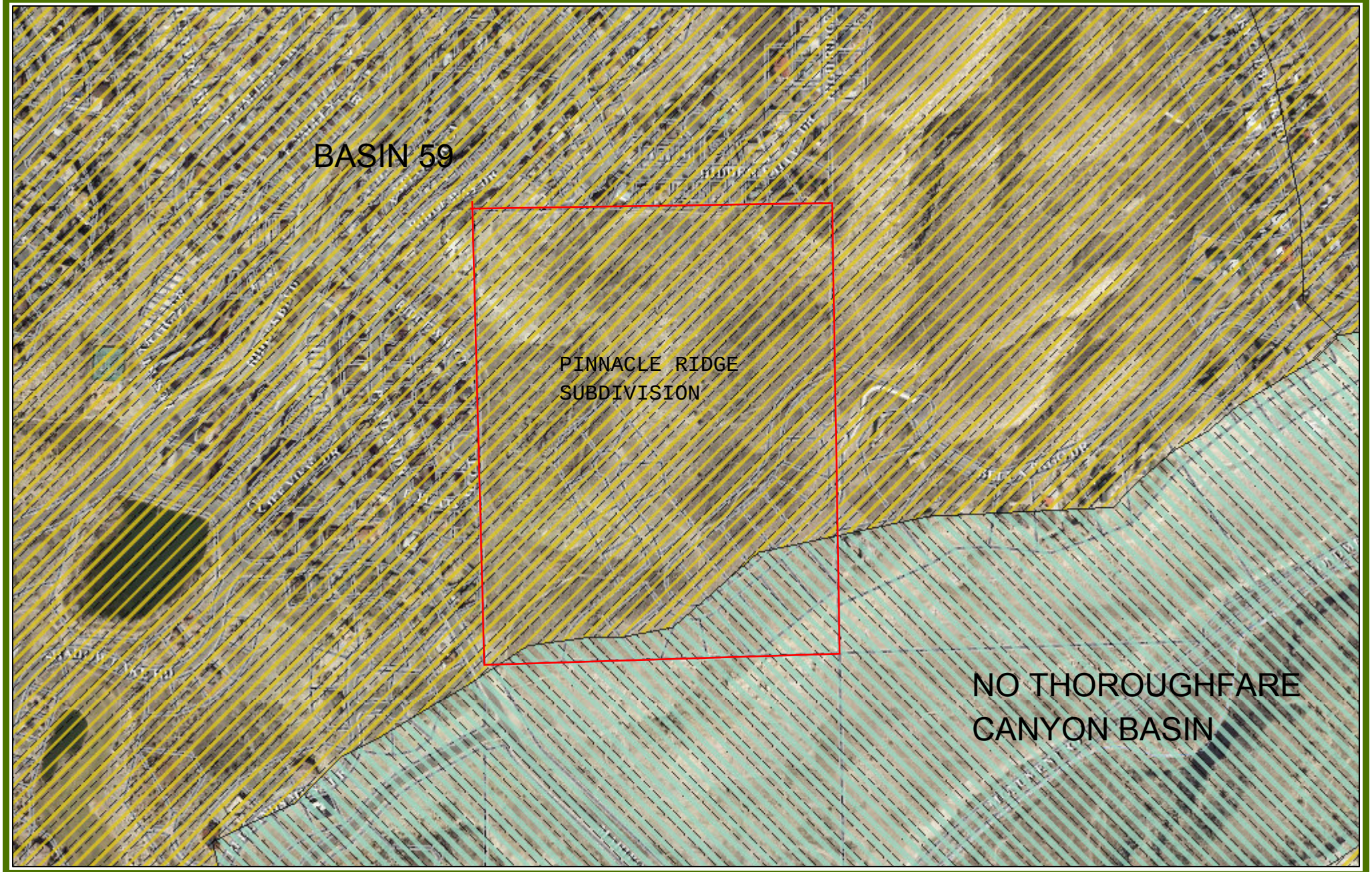
A. Horizontal and vertical control information and ties to existing and proposed features.

ACKNOWLEDGEMENTS

Drainage Plan checklist was prepared by: CSM

Appendix G – Major Basins Exhibit

City of Grand Junction



N

0 0.125 0.25 Miles

Printed: 6/23/2015

1 inch = 468 feet

CITY OF Grand Junction COLORADO GEOGRAPHIC INFORMATION SYSTEM

Appendix H – Variance Request Letter

VORTEX
ENGINEERING, INC.

December 22, 2015

City of Grand Junction
Attn: Rick Dorris, P.E.
250 N 5th Street
Grand Junction, CO 81501

RE: Pinnacle Ridge Subdivision
Drainage Variance Request
East of Mariposa Drive
Grand Junction, CO

VEI #: F04-006
PROJECT #: SUB-2015-120

Dear Mr. Dorris,

This letter is to request a variance from compliance with section 1407.3 of The Grand Junction Storm Water Management Manual, hereinafter SWMM, which requires that "The total of un-detained area shall not exceed 5% or 5000 square feet of total area whichever is less." This request shall be taken into consideration in conjunction with the data and narrative contained in the approved "Preliminary Drainage Report for Pinnacle Ridge Subdivision". The copy of this letter is found in Appendix H of the above mentioned report. The subject project has two (2) basins that do not meet the above requirement, and are the cause for this request; Basins DD1 and DD2.

The proposed basin DD1 is about 1.93 acres in size, located in the south east corner of the project site. In proposed conditions this basin shall remain mostly undisturbed. Historically, the runoff from this area is generated by the existing basin EX1, with an area of 5.96 acres and discharges 1.62 and 4.47 cfs runoff for the minor (10 year storm) and the major (100 year storm), respectively. The runoff during the proposed conditions from DD1 is estimated to be 0.32 cfs and 1.61 cfs for minor and major storm event, respectively. The reduction of the runoff in the proposed conditions is created by reducing the existing basin area, due to the onsite grading.

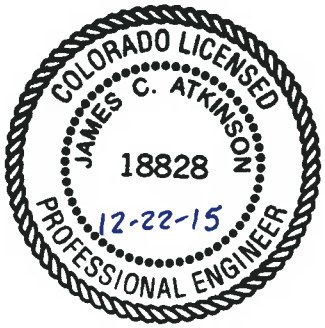
Basin DD2 is located in the north east corner of the site with an area of 0.39 acres. The proposed runoffs from this basin are 0.06 cfs and 0.33 cfs for minor and major storm, respectively. The existing runoff flows in this area are generated by the existing basin EX6 and are estimated to be 0.11 cfs and 0.55 cfs for minor and major storm, respectively. The area of the basin in proposed conditions is decreased by almost a half. The runoff from this basin is impossible to route via gravity through Pond 4 due to the basin elevations at low end are below the inverts of the designated ponds. The runoff from DD2 shall be concentrated in swales along the northern property boundary and diverted into the adjacent vacant lot owned by Genie Inc., and located between 2417 and 2419 Hidden Valley Drive, at the same point of discharge as the outfall from Pond 4. The sum of the flows into the vacant lot from Pond 4 outfall and DD2 runoff, in proposed conditions, is estimated to be 1.96 cfs and 10.40 cfs, for minor and major storm respectively, which is less than the adjusted allowable 2.71 cfs and 11.28 and also less than the historic runoff from basin EX4 = 2.91 cfs and 13.46 during the minor and major storm events, respectively.

In both cases of the direct discharge from basins DD1 and DD2, in the proposed conditions is less than in the existing conditions. In case of DD2 the runoff onto the north property shall be controlled with diversion ditches running along the boundary in the direction of the above mentioned vacant lot, thus reducing the cross lot drainage onto the developed lots located directly north of the basin.

In both cases the low points of DD1 and DD2 basins are well below inverts of their respective detention ponds, thus the hydraulic conditions in these basins cannot be adequately addressed to comply with the SWMM. Nevertheless, both basins DD1 and DD2 are over detained in Pond 1 and Pond 4, respectively.

Vortex Engineering, Inc. looks forward to successfully working with the City of Grand Junction to permit this project. Upon your review of this information, should you have any questions or require additional information, please do not hesitate to contact me at 970-245-9051. Thank you.

Sincerely,
Vortex Engineering, Inc



James C. Atkinson, P.E.

Cc: Two R&D
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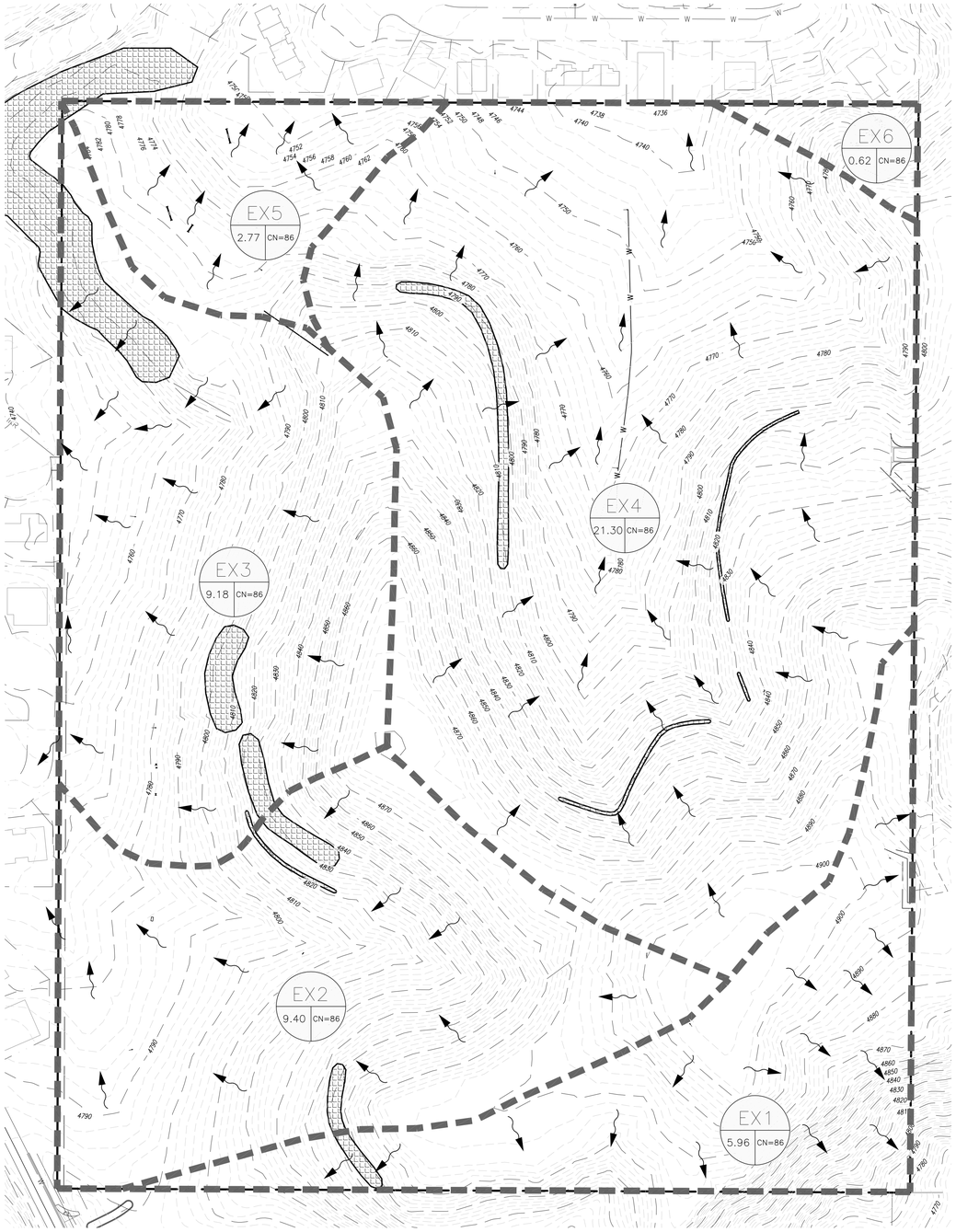
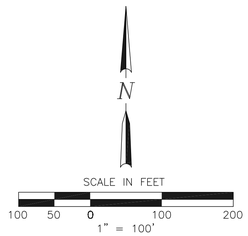
Appendix I – Drainage Maps





RUNOFF TABLE

BASIN	10 YEAR RUNOFF (CFS)	100 YEAR RUNOFF (CFS)
EX1	1.62	4.47
EX2	1.41	6.74
EX3	1.42	6.80
EX4	2.91	13.46
EX5	0.45	2.22
EX6	0.11	0.55

PROJECT BENCHMARK

PROJECT BENCHMARK #1 IS A SURVEY MONUMENT LOCATED AT THE SE1/16 CORNER OF SECTION 4, T1S, R1W, ON F 1/4 ROAD. ELEVATION IS BASED ON THE MESA COUNTY SURVEY INFORMATION MANAGEMENT SYSTEM.
ELEVATION=4571.298
PROJECT BENCHMARK #2 IS A SURVEY MONUMENT LOCATED AT THE C-E1/16 CORNER OF SECTION 4, T1S, R1W. ELEVATION IS BASED ON THE MESA COUNTY SURVEY INFORMATION MANAGEMENT SYSTEM.
ELEVATION=4580.794

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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FOR REVIEW

MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	08/08/17	REVISED PRE CITY COMMENTS DATED JULY 18, 2017	SSM

Drainage Map - Existing Conditions

-

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/07/17**
SCALE: **SEE PLAN**
CAD: **pinnacledrainagemap.dwg**

~SHEET~
1/2

PONDS' SUMMARY TABLES

POND 1	VOLUME (CF)	WSEL (FT)	DESIGN PEAK DISCHRGE FLOW (CFS)	SUM OF DD1 AND POND 1 PEAK FLOWS (CFS)	ADJUSTED ALLOWABLE PEAK DISCHARGE FLOW (CFS)
WQCV	3,296	4801.50	NA	NA	NA
10 YEAR	6,082	4802.31	0.26	.58	0.59
100 YEAR	15,335	4804.31	0.48	2.09	2.47

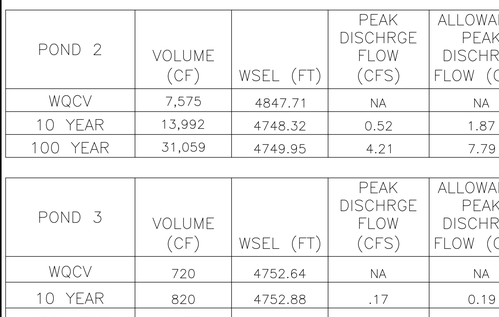
POND 2	VOLUME (CF)	WSEL (FT)	PEAK DISCHRGE FLOW (CFS)	ALLOWABLE PEAK DISCHRGE FLOW (CFS)
WQCV	7,575	4847.71	NA	NA
10 YEAR	13,992	4748.32	0.52	1.87
100 YEAR	31,059	4749.95	4.21	7.79

POND 3	VOLUME (CF)	WSEL (FT)	PEAK DISCHRGE FLOW (CFS)	ALLOWABLE PEAK DISCHRGE FLOW (CFS)
WQCV	720	4752.64	NA	NA
10 YEAR	820	4752.88	.17	0.19
100 YEAR	2,077	4754.06	.55	0.78

POND 4	VOLUME (CF)	WSEL (FT)	PEAK DISCHRGE FLOW (CFS)	SUM OF DD2 AND POND 4 PEAK FLOWS (CFS)	ADJUSTED ALLOWABLE PEAK DISCHARGE FLOW (CFS)
WQCV	11,098	4742.19	NA	NA	NA
10 YEAR	14,737	4742.73	1.91	1.96	2.71
100 YEAR	33,969	4745.13	10.21	10.40	11.28

OUTLET STRUCTURE TABLES

POND	A	B	C	D	E	F	G	H	I
POND 1	4799.00	4801.50	4802.31	4804.31	6"	32"	1	7	5/8"
POND 2	4746.06	4747.71	4748.32	4749.95	20"	21"	4	5	7/8"
POND 3	4751.00	4752.64	4752.88	4754.06	6"	21"	1	4	5/16"
POND 4	4739.00	4742.19	4742.73	4745.13	20"	35"	1	8	13/16"

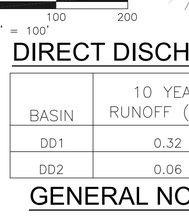


PROFILE

POND 1 ONLY
3" DIA ORIFICE
W/ 8"X8" TRASH RACK

POND 3 ONLY
4" DIA. ORIFICE
W/ 6"X6" TRASH RACK

These don't show up below in the detail.

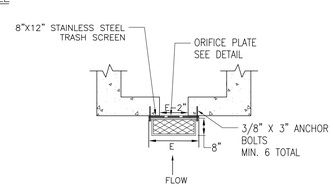


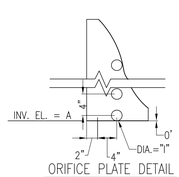
8" CONCRETE BASE OVER 6" COMPACTED GRAVEL SUBBASE COMPACTED SUBGRADE TO 95% STD. PROCTOR

FRONT ELEVATION



TYPICAL DIVERSION DITCH SCTION
H:1"=2'
V:1"=2'





ORIFICE PLATE DETAIL
NTS

POND OUTLET STRUCTURE DETAIL

N.T.S.

DIRECT DISCHARGE BASINS:

BASIN	10 YEAR RUNOFF (CFS)	100 YEAR RUNOFF (CFS)
DD1	0.32	1.61
DD2	0.06	0.33

GENERAL NOTES:

1. NO BUILDING, STRUCTURE, OR FILL WILL BE PLACED IN THE DETENTION AREAS AND NO CHANGES OR ALTERATIONS AFFECTING THE HYDRAULIC CHARACTERISTICS OF THE DETENTION AREAS WILL BE MADE WITHOUT THE APPROVAL OF THE CITY.
2. MAINTENANCE AND OPERATION OF THE DETENTION AND WATER QUALITY AREAS IS THE RESPONSIBILITY OF PROPERTY OWNER. IF OWNER FAILS IN THIS RESPONSIBILITY, THE CITY HAS THE RIGHT TO ENTER THE PROPERTY, MAINTAIN THE DETENTION AREAS, AND BE REIMBURSED FOR COSTS INCURRED.
3. DETENTION POND VOLUMES, ALL DRAINAGE APPURTENANCES, AND BASIN BOUNDARIES SHALL BE VERIFIED. AS-BUILT DRAWINGS SHALL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY FOR ANY STRUCTURE WITHIN THE DEVELOPMENT.
4. PERMISSION TO REPRODUCE THESE PLANS IS HEREBY GIVEN TO THE CITY OF GRAND JUNCTION FOR CITY'S PURPOSES ASSOCIATED WITH PLAN REVIEW, APPROVAL, PERMITTING, INSPECTION AND CONSTRUCTION OF WORK.

LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- BASIN INFO BLOCK (BASIN DESIGNATION, AREA (AC), RATIONAL COEFFICIENTS)
- DESIGN POINT
- DIVERSION DITCH

BASIN RUNOFF

DRAINAGE AREA	Area (ac)	2-Yr. Q (cfs) Basin Runoff	100-Yr. Q (cfs) Basin Runoff
100	3.78	1.36	7.24
101	1.85	0.85	4.21
102	1.24	0.62	3.00
200	7.46	3.80	18.35
201	4.84	1.68	9.05
202	1.94	0.67	3.62
203	1.33	0.46	2.50
300	1.56	0.54	2.92
400	0.79	0.28	1.48
401	7.18	3.44	16.86
402	4.11	1.43	7.69
403	0.59	0.21	1.11
404	2.19	0.95	4.79
405	3.81	1.52	7.82
406	4.31	1.50	8.06
DD1	1.93	0.67	3.60
DD2	0.39	0.13	0.72



SECTION - A
H:1"=20'
V:1"=2'
Q_{100} = 9.05 CFS
V = 7.99 FPS
DEPTH = 0.61 FT
GRADE = 4%



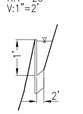
SECTION - C
H:1"=20'
V:1"=2'
Q_{100} = 24.5 CFS
V = 5.10 FPS
DEPTH = 1.39 FT
GRADE = 3.5%



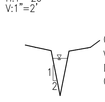
SECTION - E
H:1"=20'
V:1"=2'
Q_{100} = 12.79 CFS
V = 8.07 FPS
DEPTH = 0.89 FT
GRADE = 13.0%



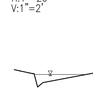
SECTION - G
H:1"=20'
V:1"=2'
Q_2 = 3.62 CFS
V = 4.67 FPS
DEPTH = 0.88 FT
GRADE = 5.88%



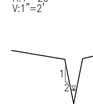
SECTION - B
H:1"=20'
V:1"=2'
Q_{100} = 9.05 CFS
V = 4.43 FPS
DEPTH = 0.96 FT
GRADE = 0.9%



SECTION - D
H:1"=20'
V:1"=2'
Q_{100} = 24.5 CFS
V = 10.74 FPS
DEPTH = 1.04 FT
GRADE = 9.60%



SECTION - F
H:1"=20'
V:1"=2'
Q_{100} = 17 CFS
V = 9.38 FPS
DEPTH = 0.35 FT
GRADE = 13%



SECTION - H
H:1"=20'
V:1"=2'
Q_{100} = 1.5 CFS
V = 4.69 FPS
DEPTH = 0.40 FT
GRADE = 13%

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18928

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	08/08/17	REVISED PRE CITY COMMENTS DATED JULY 18, 2017	SSM

Drainage Map - Proposed Conditions

-

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/07/17
SCALE: SEE PLAN
CAD: pinnacledrainagemap.dwg

~SHEET~
2/2

Final Drainage Report
For
Pinnacle Ridge Subdivision
Grand Junction, Colorado

Date: June 9, 2017
Revised: August 10, 2017

Prepared by: Vortex Engineering, Inc.
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
970-245-9051
VEI# F04-006

Submitted to: City of Grand Junction
250 N. 5th Street
Grand Junction, CO 81501

Type of Design: Major Subdivision

Owners: Two R & D LLC
Fruita, Co

Property Address: Mariposa Drive
Grand Junction, CO

Tax Schedule No.: 2945-212-00-011

"I hereby certify that this Final Drainage Report for the design Pinnacle Ridge Subdivision was prepared by me (or under my direct supervision) in accordance with the provisions of the Stormwater Management Manual for the owners thereof. I understand that City of Grand Junction does not and will not assume liability for drainage facilities designed by others.

James C. Atkinson, P.E. Date



As an authorized signing representative of Pinnacle Ridge Subdivision, I hereby certify that the drainage facilities shall be constructed according to the design presented in this report. I understand that City of Grand Junction does not and will not assume liability for the drainage facilities designed and/or certified by my engineer. I understand that City of Grand Junction reviews drainage plan but cannot, on behalf of Pinnacle Ridge Subdivision, guarantee that Final drainage design review will absolve Pinnacle Ridge Subdivision and/or their successors and/or assigns of future liability for improper design. I further understand that approval of the Construction Plans does not imply approval of my engineer's drainage design.

Signature

8-8-17
Date

Table of Contents

1.0 Introduction....4
A. Background....4
B. Project Location....4
C. Property Description....4
2.0 Drainage System Description....5
A. Existing Drainage Conditions....5
B. Master Drainage Plans....5
C. Offsite Tributary Areas....6
D. Proposed Drainage System Description....6
3.0 Drainage Analysis and Drainage Criteria....7
A. Regulations....7
B. Hydrologic Criteria....8
C. Ponds' Summary Tables....8
D. Hydraulic Criteria....8
4.0 Conclusions....9
A. Compliance with Manual....9
5.0 References....9
Appendix A – Location Map....10
Appendix B – NCRS Soils Map....12
Appendix C – FEMA FIRM Maps....13
Appendix D – Basin Runoff, HGL Calcs....14
Appendix E – HYDROCAD Report....15
Appendix F – SWMM Checklis....16
Appendix G – Major Basins Exhibit....17
Appendix H – Variance Request Letter....18
Appendix I – Drainage Maps....19

1.0 Introduction

A. Background

This Final Drainage Report has been prepared by Vortex Engineering, Inc., and is required as part of the Pinnacle Ridge Major Subdivision submittal. This Final Drainage report has been created in accordance with the Mesa County/Grand Junction Stormwater Management Manual.

B. Project Location

The Pinnacle Ridge Subdivision is approximately 45-acres in size, located in the area known as The Ridges/Redlands in the political boundary of The City of Grand Junction, Colorado. It is located about 1/4 mile directly north of the intersection of Mariposa Drive and Monument Rd. Surrounding Pinnacle Ridge Subdivision are existing residential and open space parcels. Legal description of the site is as follows: Township 1 North, Range 1 East, and in Section 21 of the Ute Meridian. A vicinity map is provided in Appendix A for reference.

C. Property Description

The study area for the development of the subject site consists of about 49.2 acres. The development itself site consists of approximately 45 acres which does not include a 4.12-acre-undeveloped parcel located near the middle of the property. The project site is covered with native vegetation consisting of grasses and sparsely located shrubs. The highest point on the site is the ridge in the southeast corner that reaches a height of 4904. Grades on the site vary from 5 to 30 percent.

The Natural Resources Conservation Service (NRCS) classifies the soils within the Pinnacle Ridge Heights site predominantly as Persayo-Blackstone (Soil Symbol 87). These soils are classified as Hydrologic Group “D” which is described as soils having a slow infiltration rate when thoroughly wet. These soils consist mainly of clays that have a high shrink-swell potential, and a slow rate of water transmission. The NRCS Soils report is included in Appendix B.
No jurisdictional FEMA flood plain has been established on the site. See FEMA panel 08077C0815F in Appendix C

2.0 Drainage System Description

A. Existing Drainage Conditions

The existing topography of the site creates outflow conditions only. No offsite runoff enters the project site. The site is also intersected by a major sub-basin boundary placing the majority of the site, about 43 acres (basins EX2 to EX5) in the Major Basin 51 and about 6 acres (basin EX1) in The No Thoroughfare Canyon Basin. Both of these basins discharge into the Colorado River, located about a mile downstream from the site. There are no existing drainage or irrigation facilities present on the site, other than the natural channels and gulleys. The runoff from all of the 5 existing basins identified on the project site, exits the site in a shallow concentrated flow manner. Basin EX1 discharges out of the site along the southeast corner. Basin EX2 discharges west onto Plateau Ct. The runoff from Basin EX3 exits the site at about Ridgeway Ct along the western property boundary. The runoff from Basin EX4, the largest of the set, exits the site at the north onto a vacant lot that is situated between the following addresses 2417 and 2419 Hidden Valley Drive. From the vacant lot, the runoff enters an existing 24" culvert which routes the water to a drainage way in The Hidden Valley Park. Likewise, Basin EX5 runs off into Hidden Valley Court to the north.

Existing Conditions 3 Hour Runoff

Basin	Basin Area	CN	Tc (min.)	Runoff	
				10 yr	100 yr
EX1	5.96	86	7.9	1.62	4.47
EX2	9.4	86	11.3	1.41	6.74
EX3	9.18	86	8.5	1.42	6.8
EX4	21.3	86	21.8	2.91	13.46
EX5	2.77	86	4.6	0.45	2.22
EX6	0.62	86	5	0.11	0.55

B. Master Drainage Plans

As indicated above, the site is intersected by a major sub-basin boundary which places the majority of the site, about 43 acres in the Major Basin 59 and about 6 acres in the No Thoroughfare Canyon Basin. The proposed development diverts approximately 3.5 acres from the No Thoroughfare Canyon Basin to Basin 59. This area is negligible in comparison to the sizes of the above basins, being about 1 and 19 square miles for Basin 51 and No Thoroughfare Canyon Basin, respectively.

C. Offsite Tributary Areas

There are no offsite tributary basins discharging onto the project site.

D. Proposed Drainage System Description

The proposed storm sewer system for this project consists of overland sheets flows, shallow concentrated flows, gutter flows, ditch flows, piped storm sewer and 4 detention ponds in series of 2 each. The ponds are designed to treat and attenuate the Water Quality Capture Volume (WQCV), the 10 year minor storm and the 100 year major storm.

Pond 1, located in the southwest quarter of the site, shall intercept the runoff from approximately 6.8 acres. After, the water is released through the pond's outlet structure and discharge pipe to the roadside ditch along Aquille Dr. It then flows via a 1.25-foot-deep v-ditch for about 660 feet until it is intercepted by Inlet 200, and along with the surface runoff from Basin 200 it enters Pond 2. In addition to what is intercepted by Inlet 200, Pond 2 receives the surface runoff and concentrated flow delivered by concrete curb and gutter (12" tall with 24" gutter) located along the western property boundary, Basin 201. Total tributary basin area for Pond 2 is approximately 15.5 acres. This channel shall collect runoff from the lots located on the west side of Aiguille Drive, thus eliminating the potential of flash flooding onto Plateau Ct, and Ridgeway Ct. After the runoff in Pond 2 is treated and attenuated, the water shall exit the pond via an 18" concrete pipe for about 777 feet until it discharges into the ditch in the median located at the intersection of Ridgeway Court and Ridges Boulevard.

Pond 3 is designed to intercept the surface runoff from basin 300 located in the northwest corner of the property. After the runoff is treated and attenuated in Pond 3, it exits via a 12" RCP to the area Inlet 403 from where it travels in an 18" RCP for about 400 feet until it discharges into the Pond 4. In addition to the above, Pond 4 receives runoff from basins 401 and 402 in a concrete pipe, and surface runoff from 2 lots located directly west of Pond 4, Basin 400. The pond's outlet discharges the water onto the vacant lot located between 2417 and 2419 Hidden Valley Drive. From there the water shall exit the lot in the existing 24" culvert under Hidden Valley Drive into a small natural creek taking it to the Colorado River.

The parcels located along the side of the streets with the roadside ditch will require 18" culverts under the drives. These culverts will be installed at the time of the house and drive construction. For the scope of this Final report attached are normal water surface calculations for the 2 and 100 year storms for ditches and gutters in critical locations of the site. The roadside ditches are to be lined with riprap D_{50} = 4".

The roadside ditches are designed to convey the 100 year event's runoff. Refer to Appendix D.

There are also diversion ditches to be constructed in the back of lots in the open space where applicable. The purpose of these ditches is to divert runoff and potential erosion from the open space behind the lots. These ditches were added to the proposed topography on the grading plan. Refer to the Grading Plan of the construction plans and Appendix D of this report.

The proposed grading on the site is designed to eliminate cross lot drainage and to maintain positive runoff out of the site. There are 2 minor basins, DD1 and DD2 whose runoff directly discharges onto the offsite. The areas of basins DD1 and DD2 are 1.93 acres and 0.39 acres, respectively. The runoff from these basins shall present no potential for adverse effects downstream of the site for the Basin DD1 shall remain mostly undisturbed, and Basin DD2 shall have its surface finished with a permanent erosion control and diversion ditches routing the runoff onto the vacant lot at the Pond 4 outfall. No impervious area shall be introduced within the boundary of these basins. **The runoff flows from basins DD1 and DD2 in the proposed conditions in minor storm yield 0.32 and 0.06 cfs, respectively. Whereas the minor storm runoff from basins EX1 and EX6 yield 1.62 and 0.11 cfs, respectively. The decrease in runoff from existing to proposed conditions from DD1 and DD2 is caused by decreasing of the area of the basins in proposed conditions. The runoff from basins DD1 and DD2 is compensated in volumes and discharge rates in ponds 1 and 4, respectively. Nevertheless, the size of either of the basins does not comply with the regulation 1407.3 of the SWMM. Therefore, a variance from compliance with the section 1407.3 of SWMM is hereby requested for Basins DD1 and DD2. A copy of the variance request letter is found in Appendix H of this report.**

3.0 Drainage Analysis and Drainage Criteria

A. Regulations

The supporting drainage design and calculations were performed in accordance with the Mesa County/City of Grand Junction Stormwater Management Manual (SWMM) and the UDFCD "Urban Storm Drainage Criteria Manual, Volume 1.
Variance requests are listed in Section 2.0 D and 4.0 A of this report.

B. Hydrologic Criteria

The hydrologic and hydraulic analysis proposed is to use procedures per the Mesa County Stormwater Management Manual (SWMM) guidelines, dated December 2007.

A Computer Aided Design program (HydroCAD) was used for modeling the hydrology and hydraulics of stormwater runoff. HydroCAD is based largely on hydrology techniques developed by the Soil Conservation Service (now the Natural Resources Conservation Service), combined with other hydrology and hydraulic calculations. The storm selected for analysis is the Mesa County 3 hour storm recommended by the SWMM.

C. Pond Summary Tables

Pond	Pond to be Built in Filing:	Pond Contributing Area (ac)	CN	Storm Events	Volume (cf)	WSEL (ft)	Design Peak Discharge (cfs)	SUM OF DD1 AND POND 1 PEAK FLOWS (CFS)	Allowable Peak Discharge (cfs)
POND 1	5	6.87	89	WQCV	3,296	4801.50	NA	NA	NA
				10 YEAR	6,082	4802.31	0.26	0.58	0.59
				100 YEAR	15,335	4804.31	0.48	2.09	2.47
POND 2	1	15.58	89	WQCV	7,575	4847.71	NA	NA	NA
				10 YEAR	13,992	4748.32	0.52		1.87
				100 YEAR	31,059	4749.95	4.21		7.79
POND 3	3	1.56	88	WQCV	702	4752.64	NA	SUM OF DD2 AND POND 4 PEAK FLOWS (CFS)	NA
				10 YEAR	820	4752.88	0.17		0.19
				100 YEAR	2,077	4754.06	0.55		0.78
POND 4	4	22.94	89	WQCV	11,098	4742.19	NA	NA	NA
				10 YEAR	14,737	4742.73	1.91	1.96	2.71
				100 YEAR	33,969	4745.13	10.21	10.40	11.28

D. Hydraulic Criteria

Storm Drains

Storm Drains are designed to have the 2 year EGL below the rim of the manhole or inlet's grates.

Street Flow and Inlet Capacities

The SWMM criteria were used to check for street flow capacity and inlet capacities. Ditch flows sections have been added to Appendix D.

4.0 Conclusions

This report discusses the information requirements for a Final Drainage Report and Plan as defined by the Grand Valley "Stormwater Management Manual", Section 300. The proposed development of the Pinnacle Ridge property will effectively convey runoff from the site per the SWMM best recommendations.

The proposed drainage facilities are designed to accept the 100-year runoff and continue the conveyance to the ultimate discharge in the Colorado River. Erosion control BMP's will be implemented during construction in an effort to prevent adverse impacts on downstream properties and drainage facilities. The proposed development will not adversely affect the surrounding properties or existing storm drainage systems.

A. Compliance with Manual

This report discusses the information requirements for a Final Drainage Report and Plan per the Mesa County/City of Grand Junction Stormwater Management Manual. The proposed drainage facilities are designed to collect and detain the 10-year and 100-year event runoff rates from the site along with offsite contributory flows and release at/or below the allowed rates. The proposed development will not adversely affect the surrounding properties or existing drainage systems.

The following variance is hereby requested for this project:

A variance from compliance with the section 1407.3 of SWMM is hereby requested for Basins DD1 and DD2, as described in section 2.0 D of this report.

5.0 References

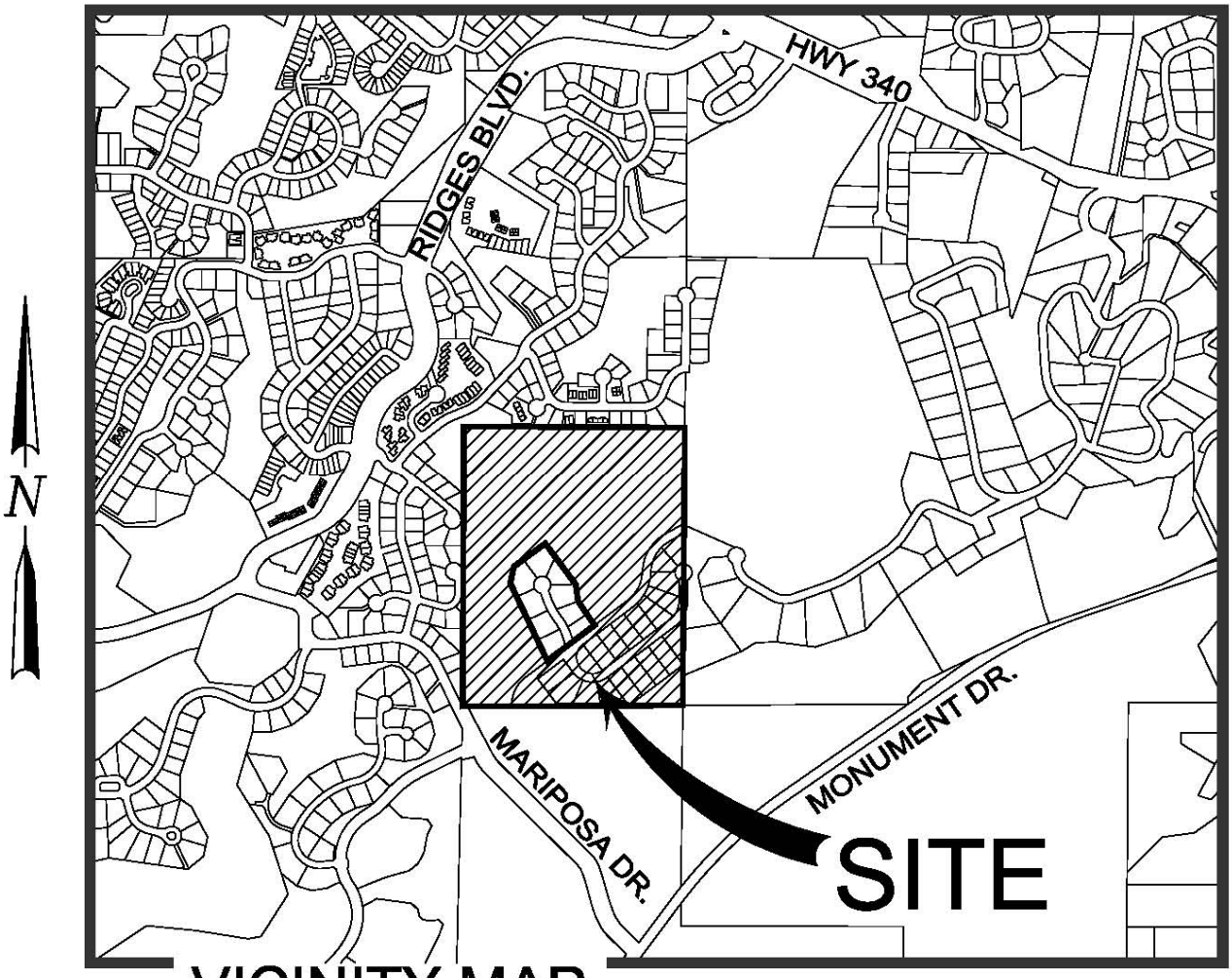
Mesa County/City of Grand Junction Stormwater Management Manual, adopted March 20, 2008.

"Soil Survey of Mesa County Area, Colorado", prepared by United States Department of Agriculture, Soil Conservation Service, issued September 1993.

"Urban Storm Drainage Criteria Manual, Volume 1", prepared by the Urban Drainage and Flood Control District, effective September 1999.

Federal Emergency Management Agency, Flood Insurance Rate Map, Mesa County, Colorado unincorporated Areas, Map No. 08077C0815F.

Appendix A – Location Map



VICINITY MAP

Appendix B – NCRS Soils Map

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Mesa County Area, Colorado



March 19, 2015

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

Preface.....2
Soil Map.....5
Soil Map.....6
Legend.....7
Map Unit Legend.....8
Map Unit Descriptions.....8
Mesa County Area, Colorado.....10
87—Persayo-Blackston complex, 6 to 45 percent slopes.....10
127—Rock outcrop-Persayo-Hostage complex, 25 to 99 percent slopes, extremely stony.....11

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:3,240 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 45 90 180 270

Feet
0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mesa County Area, Colorado
Survey Area Data: Version 5, Sep 22, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 22, 2010—Sep 2, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Mesa County Area, Colorado (CO680)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
87	Persayo-Blackston complex, 6 to 45 percent slopes	49.7	99.7%
127	Rock outcrop-Persayo-Hostage complex, 25 to 99 percent slopes, extremely stony	0.1	0.3%
Totals for Area of Interest		**49.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If

intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Mesa County Area, Colorado

87—Persayo-Blackston complex, 6 to 45 percent slopes

Map Unit Setting

National map unit symbol: k0bh
Elevation: 4,500 to 6,000 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 100 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

Persayo and similar soils: 65 percent
Blackston and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Persayo

Setting

Landform: Mesas
Landform position (two-dimensional): Backslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Residuum weathered from clayey shale

Typical profile

A - 0 to 4 inches: silty clay loam
C - 4 to 15 inches: silty clay loam
Cr - 15 to 19 inches: weathered bedrock

Properties and qualities

Slope: 6 to 45 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Silty saltdesert (R034XY410CO)

Description of Blackston

Setting

Landform: Mesas
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from sandstone and shale and/or outwash derived from sandstone and shale

Typical profile

A - 0 to 3 inches: very gravelly sandy clay loam
Bk1 - 3 to 7 inches: gravelly clay loam
Bk2 - 7 to 15 inches: very gravelly sandy clay loam
2Bk3 - 15 to 35 inches: extremely gravelly sandy loam
2C - 35 to 60 inches: extremely gravelly sand

Properties and qualities

Slope: 6 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Loamy saltdesert (R034XY401CO)

127—Rock outcrop-Persayo-Hostage complex, 25 to 99 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: k07k
Elevation: 4,700 to 5,400 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 150 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Rock outcrop: 35 percent

Persayo and similar soils: 30 percent
Hostage and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rock Outcrop

Setting
Landform: Ledges, cliffs

Typical profile
H1 - 0 to 60 inches: unweathered bedrock

Properties and qualities
Slope: 50 to 99 percent
Depth to restrictive feature: 0 to 4 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.00 in/hr)
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8

Description of Persayo

Setting
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Residuum weathered from clayey shale

Typical profile
A - 0 to 2 inches: very parachannery clay loam
C - 2 to 11 inches: very parachannery silty clay loam
Cr - 11 to 15 inches: weathered bedrock

Properties and qualities
Slope: 25 to 65 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Saltdesert breaks (R034XY406CO)

Description of Hostage

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium derived from sandstone and shale over residuum weathered from clayey shale

Typical profile

A - 0 to 4 inches: clay loam
B - 4 to 25 inches: clay loam
C1 - 25 to 50 inches: silty clay loam
C2 - 50 to 55 inches: silty clay loam
Cr - 55 to 59 inches: weathered bedrock

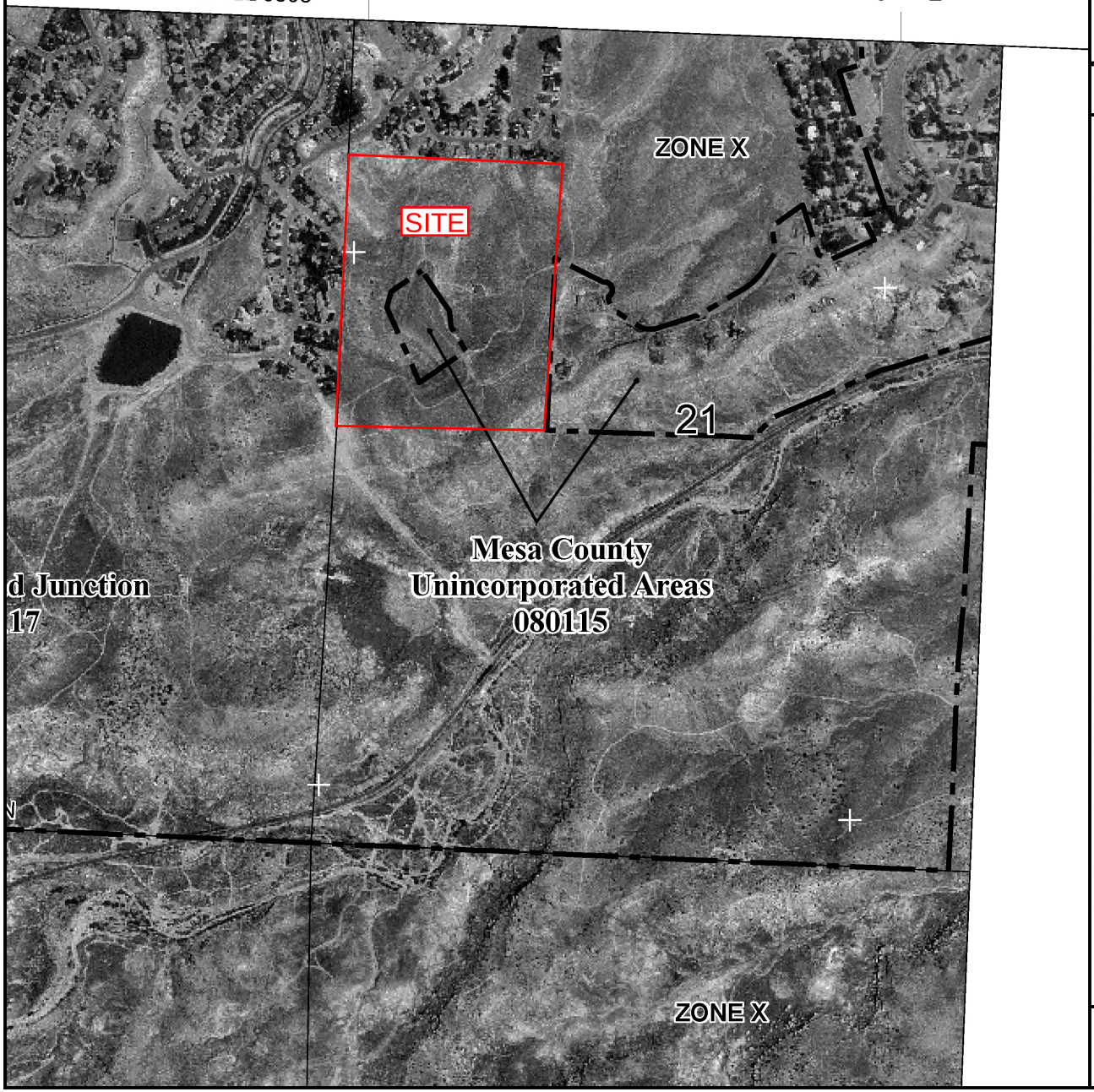
Properties and qualities

Slope: 25 to 50 percent
Percent of area covered with surface fragments: 10.0 percent
Depth to restrictive feature: 39 to 59 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Saltdesert breaks (R034XY406CO)

Appendix C – FEMA FIRM Maps



MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0815F

FIRM

FLOOD INSURANCE RATE MAP
MESA COUNTY, COLORADO
AND INCORPORATED AREAS

PANEL 815 OF 1725

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
GRAND JUNCTION, CITY OF	080117	0815	F
MESA COUNTY	080115	0815	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
08077C0815F

EFFECTIVE DATE
JULY 6, 2010

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Appendix D – Basin Runoff, HGL Calcs

Pinnacle Estates
Existing Basins

Vortex Engineering, Inc.
December 15, 2015

Basin	Basin Area	CN	Tc (min.)	Runoff	
				10 yr	100 yr
EX1	5.96	86	7.9	1.62	4.47
EX2	9.4	86	11.3	1.41	6.74
EX3	9.18	86	8.5	1.42	6.8
EX4	21.3	86	21.8	2.91	13.46
EX5	2.77	86	4.6	0.45	2.22
EX6	0.62	86	5	0.11	0.55

Pinnacle Ridge **Vortex Engineering, Inc.**

Drainage Area C calculations - 2yr and 100yr Events **June 9, 2017**

REVISED 8/8/17

BASIN	TOTAL AREA (ft^2)	BASIN AREA (ac)	LOT/PERV. AREA (ft^2)	LOT AREA $C_{2\ year}$	LOT AREA C $_{100\text{-}year}$	STREET IMP. AREA (ft^2)	IMPREVIOUS AREA (ac)	STREET AREA $C_{2\ year}$	STREET AREA $C_{100\ year}$	2 yr WEIGHTED C VALUE	100 yr WEIGHTED C VALUE
100	164,742	3.78	162,042	0.29	0.40	2,700	0.06	0.89	0.96	0.30	0.41
101	53,987	1.24	42,611	0.29	0.40	11,376	0.26	0.89	0.96	0.42	0.52
102	80,428	1.85	67,828	0.29	0.40	12,600	0.29	0.89	0.96	0.38	0.49
200	324,828	7.46	251,928	0.29	0.40	72,900	1.67	0.89	0.96	0.42	0.53
201	210,613	4.84	210,613	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
202	84,338	1.94	84,338	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
203	58,101	1.33	58,101	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
300	67,941	1.56	67,941	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
400	34,503	0.79	34,503	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
401	312,940	7.18	256,240	0.29	0.40	56,700	1.30	0.89	0.96	0.40	0.50
402	178,940	4.11	178,940	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
403	25,850	0.59	25,850	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
404	95,303	2.19	83,753	0.29	0.40	11,550	0.27	0.89	0.96	0.36	0.47
405	165,832	3.81	154,232	0.29	0.40	11,600	0.27	0.89	0.96	0.33	0.44
406	187,532	4.31	187,532	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
DD1	83,873	1.93	83,873	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
DD2	16,796	0.39	16,796	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
Total On-Site Area =		49.28	45.16				4.12				

Description	Basin area (ac)	Impreviousness (%)
Lots	45.16	50.0%
Streets and Sidewalks	4.12	98.0%
Total Area/Impreviousne	49.28	54%

Pinnacle Ridge **Vortex Engineering, Inc.**
Curve Number Calculations **February 10, 2014**

Pond 1

Assumptions:		Impreviousness
4000 sf homes		
1.75 du/acre density	**From Figure 703 Mesa County**	**SWMM**
Streets Area (ac)	0.61	98%
Lot area (ac)	6.26	44%
Total Basin Area (ac)	6.87	
Impreviousness=	49%	

CN = 98*Imp+X*(1-Imp) Where: X=80 (D Type Soils)

CN= 88.79 **use 89**

Pond 2

Assumptions:		Impreviousness
4000 sf homes		
1.75 du/acre density	**From Figure 703 Mesa County**	**SWMM**
Streets Area (ac)	1.67	98%
Lot area (ac)	13.90	44%
Total Basin Area (ac)	15.58	
Impreviousness=	50%	

CN = 98*Imp+X*(1-Imp) Where: X=80 (D Type Soils)

CN= 88.96 **use 89**

Pond 3

Assumptions:		Impreviousness
4000 sf homes		
1.75 du/acre density	**From Figure 703 Mesa County**	**SWMM**
Streets Area (ac)	0.00	98%
Lot area (ac)	1.56	44%
Total Basin Area (ac)	1.56	
Impreviousness=	44%	

CN = 98*Imp+X*(1-Imp) Where: X=80 (D Type Soils)

CN= 87.92 **use 88**

Pond 4

Assumptions:		Impreviousness
4000 sf homes		
1.75 du/acre density	**From Figure 703 Mesa County**	**SWMM**
Streets Area (ac)	2.31	98%
Lot area (ac)	20.63	44%
Total Basin Area (ac)	22.94	
Impreviousness=	49%	

CN = 98*Imp+X*(1-Imp) Where: X=80 (D Type Soils)

CN= 88.90 **use 89**

Pinnacle Ridge | **Vortex Engineering, Inc.**
Detention Pond's | **February 10, 2014**
WQCV and Detention Volume Calculations | Rev. June 26, 2015
POND 1 | December 16, 2015

Elevation [ft.]	Area [ft²]	Stage Volume [cf]	Change in Elevation [ft]	Cumulative Volume [cf]	Cumulative Volume [acre-ft]
4799.00	0	0.00	0.0	0.0	0.000
4800.00	856	285.33	1.0	285.3	0.007
4802.00	3447	4013.83	2.0	4299.2	0.099
4804.00	5204	8590.90	2.0	12890.1	0.296
4806.00	7321	12464.93	2.0	25355.0	0.582
4808.00	9798	17058.95	2.0	42413.9	0.974

$WQCV=K(a(0.91*I^3-1.19*I^2+0.78*I))$

Where:

K = adjustment to equation for Mesa County = $d_6/0.43$) = 0.65

a = Adjustment for BMP's drain Time (for 40hrs a=1.0) = 1.00

I = watershed Impreviousness in decimal = 0.49

d_6 = Depth of average producing storm d_6 = 0.28

Watershed area (100+101+102) = 6.87

WQCV= 0.132 in

		WSEL (ft)	Pond Design Peak Discharge** (cfs)	Basin DD1 Design Peak Discharge ** (cfs)	Sum of Direct Discharge and Pond Design Discharge (cfs)	Adjusted Allowable Peak Discharge*** (cfs)
Req'd storage WQCV =	3,296 cf	4,801.50*	N/A	N/A	N/A	N/A
10 yr Runoff + WQCV =	6,082 cf	4802.31**	0.26	0.32	0.58	0.59
100 yr Runoff + WQCV =	15,335 cf	4804.31**	0.48	1.61	2.09	2.47

Pond 1 is designed to compensate for direct dicharge from Basin DD1 (SWMM Sec. 1407.3)
Allowable Discharge:

DD1 Q_{10} = 0.23 cfs

DD1 Q_{100}** = 0.96 cfs

* Water surface elevation thru linear interpolation

** By hydrograph routing

*** Mesa Co. SWMM Table 1402.

Pinnacle Ridge
Detention Pond 1
WQ Orifice Plate

Vortex Engineering, Inc.
June 2, 2017

WQCV Orifice Plate Area

Per UDFCD Volume 2, SO-13a, pg SO-12

$$A_o = \frac{88V^{(0.95/H^{0.085})}}{T_D S^{0.09} H^{(2.6S0.8)}}$$

A_o= area per row of orifice spaced on 4" centers (in^2)
V= design volume (WQCV, ac-ft)
T_D= Time to drain the prescribed volume (hrs)
H= Depth of Volume (ft)
S= slope (ft/ft)

V= 0.07567 ac-ft
T_D= 40 hrs
H= 2.50
S= 0.02
A_o= 0.3116
# of columns= 1
area per hole in a row (in^2)= 0.3116
hole diameter (in)= 0.6298

USE 5/8" DIA. HOLES

Pinnacle Ridge **Vortex Engineering, Inc.**
Detention Pond's **May 31, 2017**
WQCV and Detention Volume Calculations
POND 2

Elevation [ft.]	Area [ft²]	Stage Volume [cf]	Change in Elevation [ft]	Cumulative Volume [cf]	Cumulative Volume [acre-ft]
4746.06	0	0.00	0.0	0.0	0.000
4747.00	6765	2119.70	0.9	2119.7	0.049
4748.00	8746	7734.33	1.0	9854.0	0.226
4749.00	10334	9528.97	1.0	19383.0	0.445
4750.00	11994	11153.70	1.0	30536.7	0.701
4751.00	13830	12901.11	1.0	43437.8	0.997
4752.00	15490	14652.16	1.0	58090.0	1.334

$WQCV=K(a(0.91*I^3-1.19*I^2+0.78*I))$

Where:

K = adjustment to equation for Mesa County = $d_6/0.43$)= 0.65
a = Adjustment for BMP's drain Time (for 40hrs a=1.0)= 1.00
I = watershed Impreviousness in decimal = 0.50
d_6 = Depth of average producing storm d_6= 0.28
Watershed area = 15.58

WQCV= 0.134 in

		WSEL (ft)	Design Peak Discharge** (cfs)	Allowable Discharge*** (cfs)
Req'd storage WQCV =	7,575 cf	4,747.71*	N/A	N/A
10 yr Runoff + WQCV =	13,992 cf	4748.32**	0.52	1.87
100 yr Runoff + WQCV =	31,059 cf	4749.95**	4.21	7.79

* Water surface elevation thru linear interpolation
** Water Surface by hydrograph routing
*** Mesa Co. SWMM Table 1402

Pinnacle Ridge
Detention Pond 2
WQ Orifice Plate

Vortex Engineering, Inc.
June 2, 2017

WQCV Orifice Plate Area

Per UDFCD Volume 2, SO-13a, pg SO-12

$$A_o = \frac{88V^{(0.95/H^{0.085})}}{T_D S^{0.09} H^{(2.6S0.8)}}$$

A_o= area per row of orifice spaced on 4" centers (in^2)
V= design volume (WQCV, ac-ft)
T_D= Time to drain the prescribed volume (hrs)
H= Depth of Volume (ft)
S= slope (ft/ft)

V= 0.17389 ac-ft
T_D= 40 hrs
H= 1.65
S= 0.02
A_o= 0.6230
# of columns= 1
area per hole in a row (in^2)= 0.6230
hole diameter (in)= 0.8906

USE 7/8" DIA. HOLES

Pinnacle Ridge | **Vortex Engineering, Inc.**
Detention Pond's | **February 10, 2014**
WQCV and Detention Volume Calculations | Rev. June 26, 2015
POND 3 | December 16, 2015

Elevation [ft.]	Area [ft²]	Stage Volume [cf]	Change in Elevation [ft]	Cumulative Volume [cf]	Cumulative Volume [acre-ft]
4751.00	0	0.00	0.0	0.0	0.000
4752.00	483	161.00	1.0	161.0	0.004
4754.00	1277	1696.91	2.0	1857.9	0.043
4756.00	2080	3324.52	2.0	5182.4	0.119

$WQCV=K(a(0.91*I^3-1.19*I^2+0.78*I))$

Where:

K = adjustment to equation for Mesa County = $d_6/0.43$)= 0.65
a = Adjustment for BMP's drain Time (for 40hrs a=1.0)= 1.00
I = watershed Impreviousness in decimal = 0.44
d_6 = Depth of average producing storm d_6= 0.28
Watershed area = 1.56

WQCV= 0.124 in

		WSEL (ft)	Design Peak Discharge** (cfs)	Allowable Discharge*** (cfs)
Req'd storage WQCV =	702 cf	4,752.64*	N/A	N/A
10 yr Runoff + WQCV =	820 cf	4752.88**	0.17	0.19
100 yr Runoff + WQCV =	2,077 cf	4754.06**	0.55	0.78

* Water surface elevation thru linear interpolation
** By hydrograph routing
*** Mesa Co. SWMM Table 1402

Pinnacle Ridge
Detention Pond 3
WQ Orifice Plate

Vortex Engineering, Inc.
June 2, 2017

WQCV Orifice Plate Area

Per UDFCD Volume 2, SO-13a, pg SO-12

$$A_o = \frac{88V^{(0.95/H^{0.085})}}{T_D S^{0.09} H^{(2.6S0.8)}}$$

A_o= area per row of orifice spaced on 4" centers (in^2)
V= design volume (WQCV, ac-ft)
T_D= Time to drain the prescribed volume (hrs)
H= Depth of Volume (ft)
S= slope (ft/ft)

V= 0.01611 ac-ft
T_D= 40 hrs
H= 1.64
S= 0.02
A_o= 0.0713
# of columns= 1
area per hole in a row (in^2)= 0.0713
hole diameter (in)= 0.3013

USE 5/16" DIA. HOLES

Pinnacle Ridge | **Vortex Engineering, Inc.**
Detention Pond's | **February 10, 2014**
WQCV and Detention Volume Calculations | Rev. June 26, 2015
POND 4 | December 16, 2015

Elevation [ft.]	Area [ft²]	Stage Volume [cf]	Change in Elevation [ft]	Cumulative Volume [cf]	Cumulative Volume [acre-ft]
4739.00	0	0.00	0.0	0.0	0.000
4740.00	3373	1124.33	1.0	1124.3	0.026
4742.00	5394	8688.29	2.0	9812.6	0.225
4744.00	8104	13406.39	2.0	23219.0	0.533
4746.00	10902	18936.97	2.0	42156.0	0.968

$WQCV=K(a(0.91*I^3-1.19*I^2+0.78*I))$

Where:

K = adjustment to equation for Mesa County = $d_6/0.43$)= 0.65
a = Adjustment for BMP's drain Time (for 40hrs a=1.0)= 1.00
I = watershed Impreviousness in decimal = 0.49
d_6 = Depth of average producing storm d_6= 0.28
Watershed area (400 thru 403) = 22.94

WQCV= 0.133 in

		WSEL (ft)	Design Peak Discharge** (cfs)	Basin DD2 Design Peak Discharge (cfs)	Sum of Direct Discharge and Pond Design Discharge (cfs)	Adjusted Allowable Peak Discharge*** (cfs)
Req'd storage WQCV =	11,098 cf	4,742.19*	N/A	N/A	N/A	N/A
10 yr Runoff + WQCV =	14,737 cf	4742.73**	1.91	0.05	1.96	2.71
100 yr Runoff + WQCV =	36,969 cf	4745.13**	10.21	0.19	10.40	11.28

Pond 1 is designed to compensate for direct dicharge from Basin DD1 (SWMM Sec. 1407.3)
Allowable Discharge:

DD2 Q_{10}= 0.05 cfs
DD2 Q_{100}= 0.19 cfs

* Water surface elevation thru linear interpolation
** By hydrograph routing
*** Mesa Co. SWMM Table 1402.

Pinnacle Ridge
Detention Pond 4
WQ Orifice Plate

Vortex Engineering, Inc.
June 2, 2017

WQCV Orifice Plate Area

Per UDFCD Volume 2, SO-13a, pg SO-12

$$A_o = \frac{88V^{(0.95/H^{0.085})}}{T_D S^{0.09} H^{(2.6S0.8)}}$$

A_o= area per row of orifice spaced on 4" centers (in^2)
V= design volume (WQCV, ac-ft)
T_D= Time to drain the prescribed volume (hrs)
H= Depth of Volume (ft)
S= slope (ft/ft)

V= 0.14103 ac-ft
T_D= 40 hrs
H= 2.45
S= 0.02
A_o= 0.5374
# of columns= 1
area per hole in a row (in^2)= 0.5374
hole diameter (in)= 0.8272

USE 13/16" DIA. HOLES

Pinnacle Ridge
Basin Runoff Calculation

Vortex Engineering, Inc.
August 2, 2017
REVISED 8/8/17

DRAINAGE AREA	INLET #	Area (ac)	'C_2' Weighted	'C_{100}' Weighted	T_c (min)	2-Yr. Storm Intensity (in/hr)	100-Yr. Storm Intensity (in/hr)	2-Yr. Q (cfs) Basin Runoff	100-Yr. Q (cfs) Basin Runoff	Inlet Type for Minor Storm
100	POND 1	3.78	0.30	0.41	5	1.2	4.68	1.36	7.24	
101	101	1.85	0.38	0.49	5	1.2	4.68	0.85	4.21	
102	102	1.24	0.42	0.52	5	1.2	4.68	0.62	3.00	
200	200	7.46	0.42	0.53	5	1.2	4.68	3.80	18.35	
201	POND 2	4.84	0.29	0.40	5	1.2	4.68	1.68	9.05	
202	202	1.94	0.29	0.40	5	1.2	4.68	0.67	3.62	
203	203	1.33	0.29	0.40	5	1.2	4.68	0.46	2.50	
300	POND 3	1.56	0.29	0.40	5	1.2	4.68	0.54	2.92	
400	POND 4	0.79	0.29	0.40	5	1.2	4.68	0.28	1.48	
401	401	7.18	0.40	0.50	5	1.2	4.68	3.44	16.86	
402	402	4.11	0.29	0.40	5	1.2	4.68	1.43	7.69	
403	403	0.59	0.29	0.40	5	1.2	4.68	0.21	1.11	
404	404	2.19	0.36	0.47	5	1.2	4.68	0.95	4.79	
405	405	3.81	0.33	0.44	5	1.2	4.68	1.52	7.82	
406	406	4.31	0.29	0.40	5	1.2	4.68	1.50	8.06	
DD1	offsite	1.93	0.29	0.40	5	1.2	4.68	0.67	3.60	
DD2	offsite	0.39	0.29	0.40	5	1.2	4.68	0.13	0.72	

Total on site basins = 36.67

Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

CONCRETE C&G ALONG WESTERN BOUNDRY - Steep - 2yr storm SECTION A

User-defined

Invert Elev (ft)	= 99.00
Slope (%)	= 4.00
N-Value	= 0.014

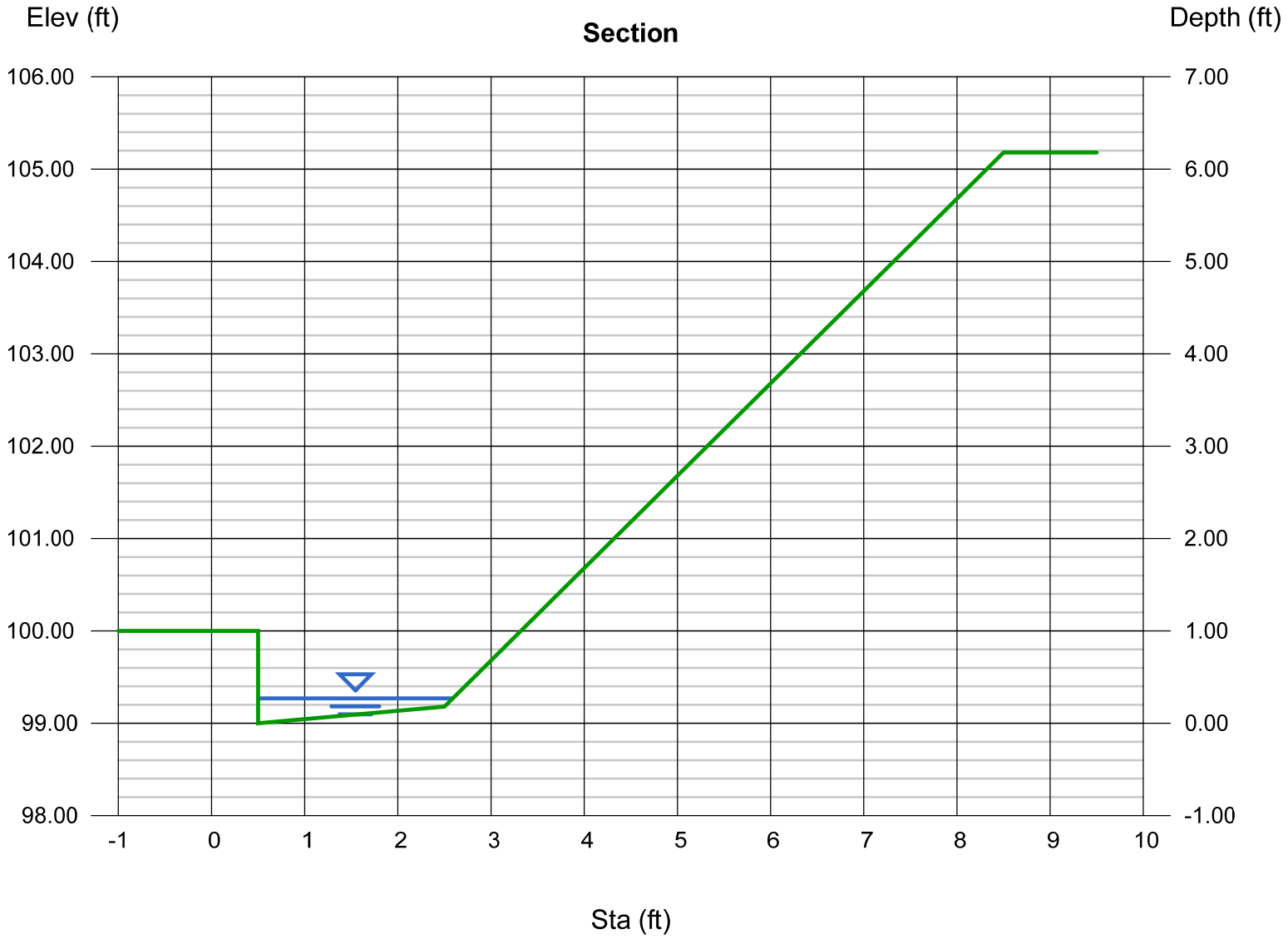
Calculations

Compute by:	Known Q
Known Q (cfs)	= 2.00

Highlighted

Depth (ft)	= 0.27
Q (cfs)	= 2.000
Area (sqft)	= 0.36
Velocity (ft/s)	= 5.49
Wetted Perim (ft)	= 2.41
Crit Depth, Yc (ft)	= 0.41
Top Width (ft)	= 2.09
EGL (ft)	= 0.74

(Sta, El, n)-(Sta, El, n)... (-0.00, 100.00)-(0.50, 100.00, 0.013)-(0.50, 99.00, 0.013)-(2.50, 99.18, 0.013)-(8.50, 105.18, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

CONCRETE C&G ALONG WESTERN BOUNDRY - Steep - 100yr storm SECTION A

User-defined

Invert Elev (ft)	= 99.00
Slope (%)	= 4.00
N-Value	= 0.018

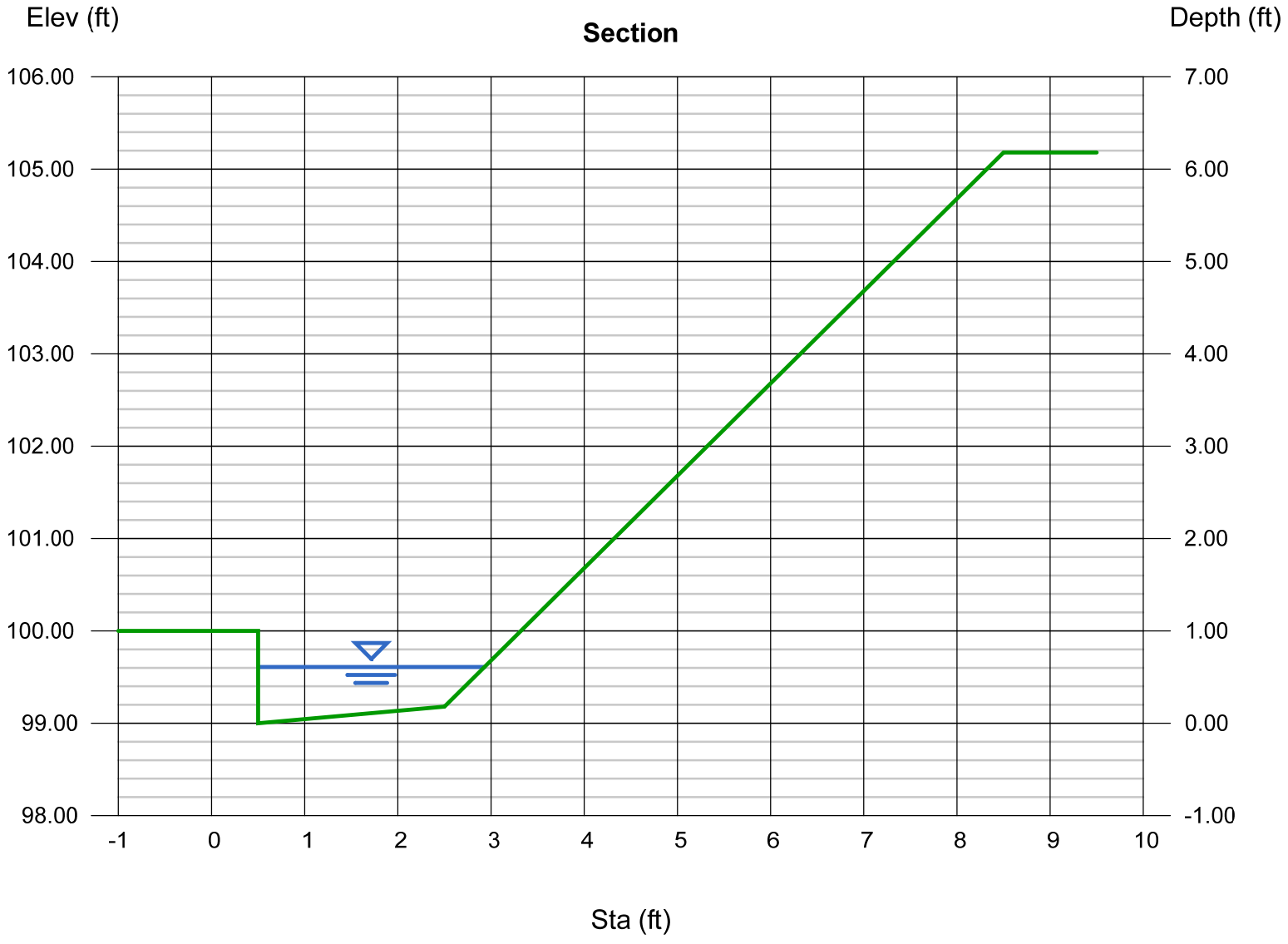
Calculations

Compute by:	Known Q
Known Q (cfs)	= 9.05

Highlighted

Depth (ft)	= 0.61
Q (cfs)	= 9.050
Area (sqft)	= 1.13
Velocity (ft/s)	= 7.99
Wetted Perim (ft)	= 3.23
Crit Depth, Yc (ft)	= 0.92
Top Width (ft)	= 2.43
EGL (ft)	= 1.60

(Sta, El, n)-(Sta, El, n)... (-0.00, 100.00)-(0.50, 100.00, 0.013)-(0.50, 99.00, 0.013)-(2.50, 99.18, 0.013)-(8.50, 105.18, 0.035)



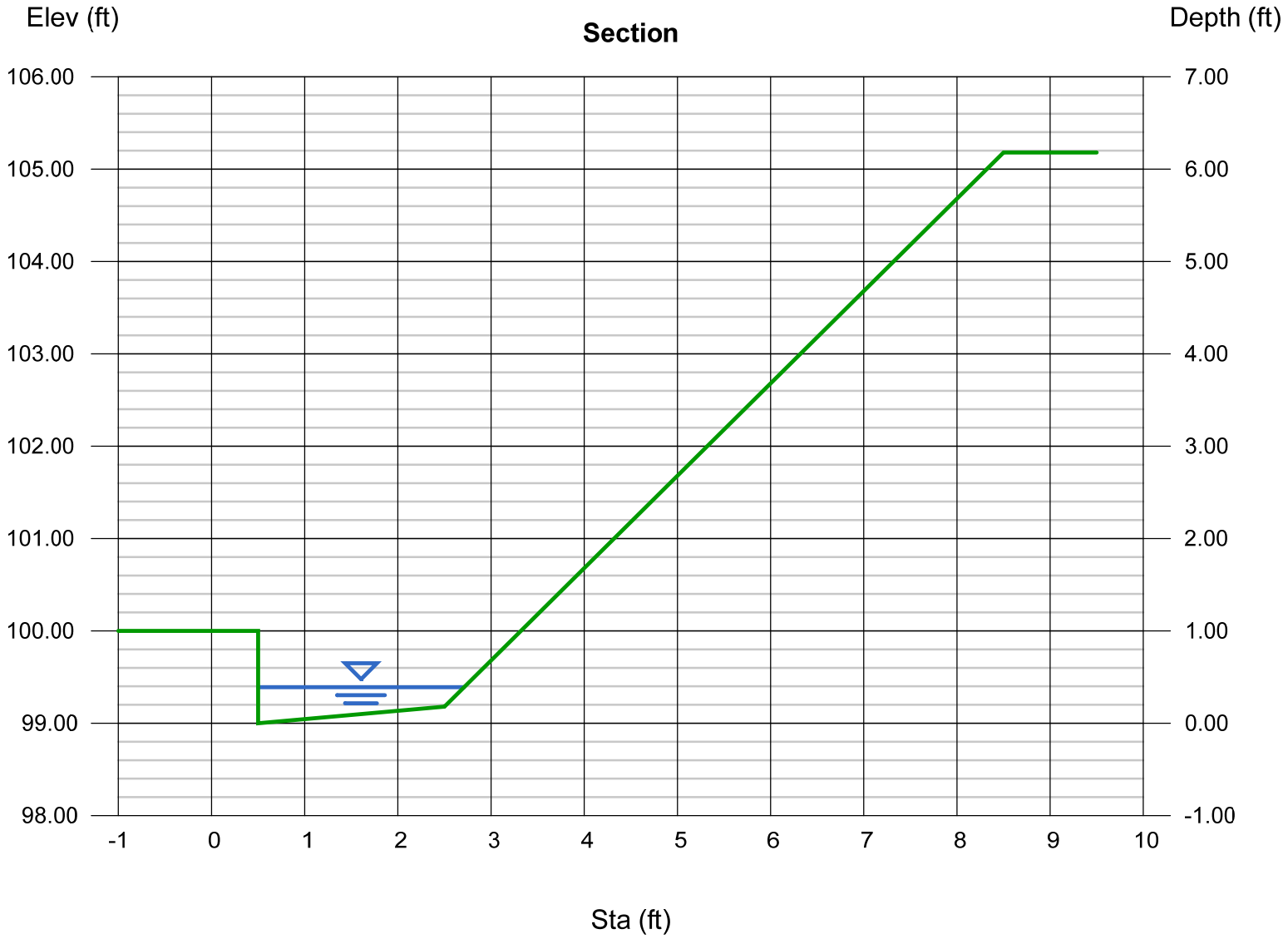
Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

CONCRETE C&G ALONG WESTERN BOUNDRY - FLAT - 2yr storm SECTION B

User-defined		Highlighted	
Invert Elev (ft)	= 99.00	Depth (ft)	= 0.39
Slope (%)	= 0.90	Q (cfs)	= 2.000
N-Value	= 0.016	Area (sqft)	= 0.62
		Velocity (ft/s)	= 3.22
Calculations		Wetted Perim (ft)	= 2.70
Compute by:	Known Q	Crit Depth, Yc (ft)	= 0.41
Known Q (cfs)	= 2.00	Top Width (ft)	= 2.21
		EGL (ft)	= 0.55

(Sta, El, n)-(Sta, El, n)... (-0.00, 100.00)-(0.50, 100.00, 0.013)-(0.50, 99.00, 0.013)-(2.50, 99.18, 0.013)-(8.50, 105.18, 0.035)



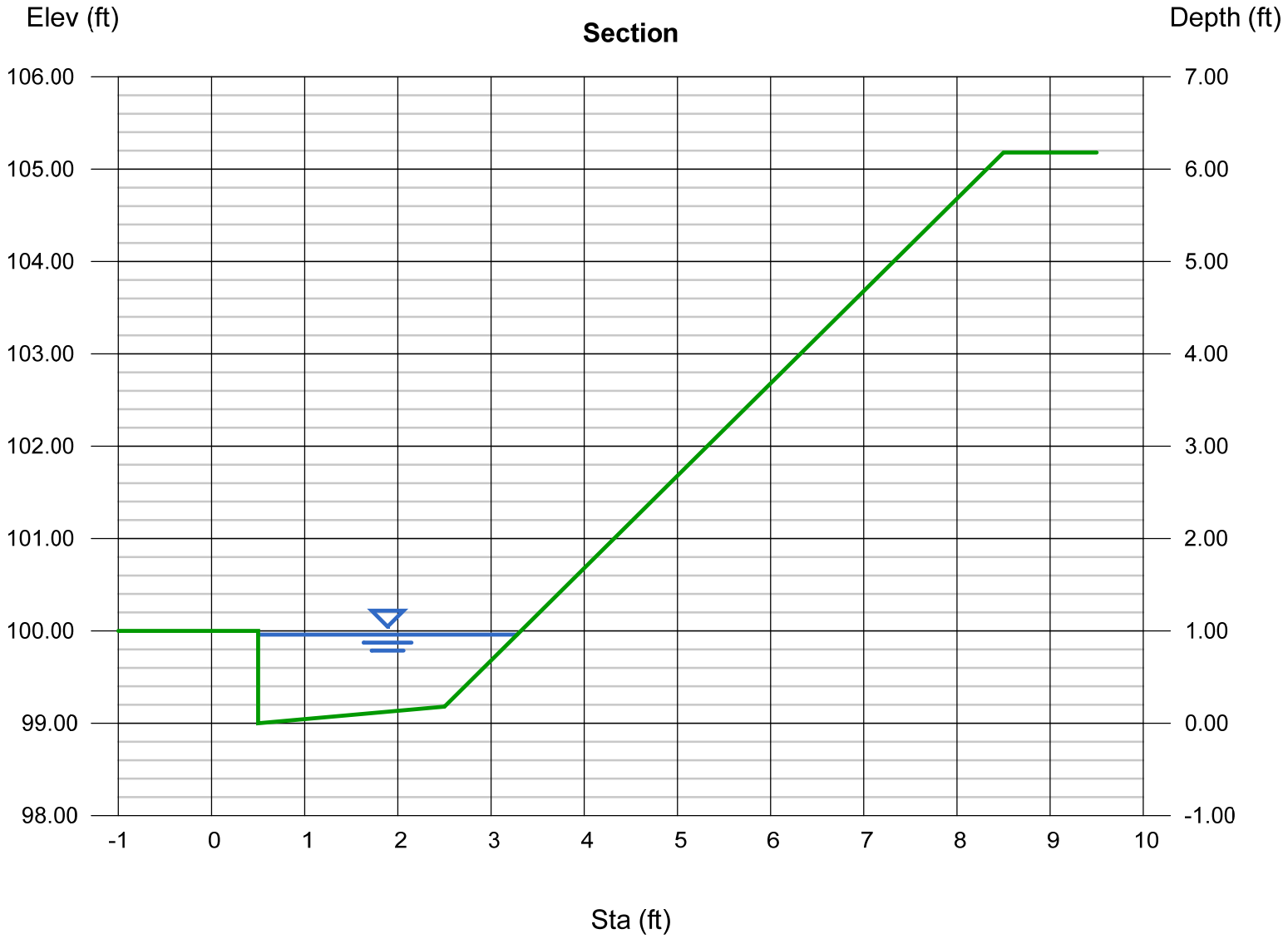
Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

CONCRETE C&G ALONG WESTERN BOUNDRY - FLAT - 100yr storm SECTION B

User-defined		Highlighted	
Invert Elev (ft)	= 99.00	Depth (ft)	= 0.96
Slope (%)	= 0.90	Q (cfs)	= 9.050
N-Value	= 0.020	Area (sqft)	= 2.04
		Velocity (ft/s)	= 4.43
Calculations		Wetted Perim (ft)	= 4.07
Compute by:	Known Q	Crit Depth, Yc (ft)	= 0.92
Known Q (cfs)	= 9.05	Top Width (ft)	= 2.78
		EGL (ft)	= 1.26

(Sta, El, n)-(Sta, El, n)... (-0.00, 100.00)-(0.50, 100.00, 0.013)-(0.50, 99.00, 0.013)-(2.50, 99.18, 0.013)-(8.50, 105.18, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

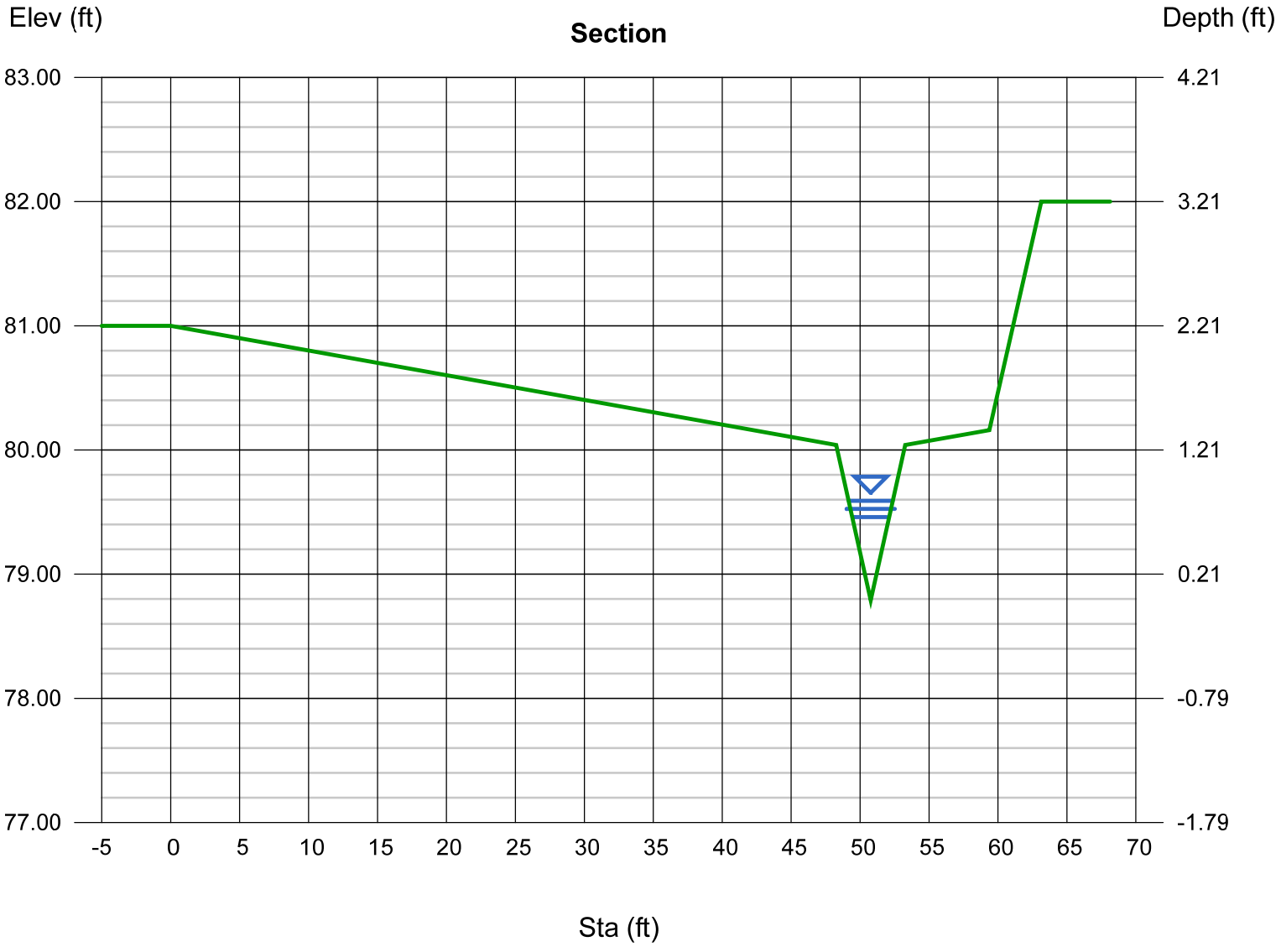
44' ROW Aiguille Drive - FLAT - 2yr storm SECTION C

User-defined	
Invert Elev (ft)	= 78.79
Slope (%)	= 3.50
N-Value	= 0.035

Calculations	
Compute by:	Known Q
Known Q (cfs)	= 5.00

Highlighted	
Depth (ft)	= 0.80
Q (cfs)	= 5.000
Area (sqft)	= 1.28
Velocity (ft/s)	= 3.91
Wetted Perim (ft)	= 3.58
Crit Depth, Yc (ft)	= 0.83
Top Width (ft)	= 3.20
EGL (ft)	= 1.04

(Sta, El, n)-(Sta, El, n)... (-5.00, 81.00)-(48.27, 80.04, 0.014)-(50.77, 78.79, 0.035)-(53.27, 80.04, 0.035)-(59.37, 80.16, 0.014)-(63.14, 82.00, 0.035)



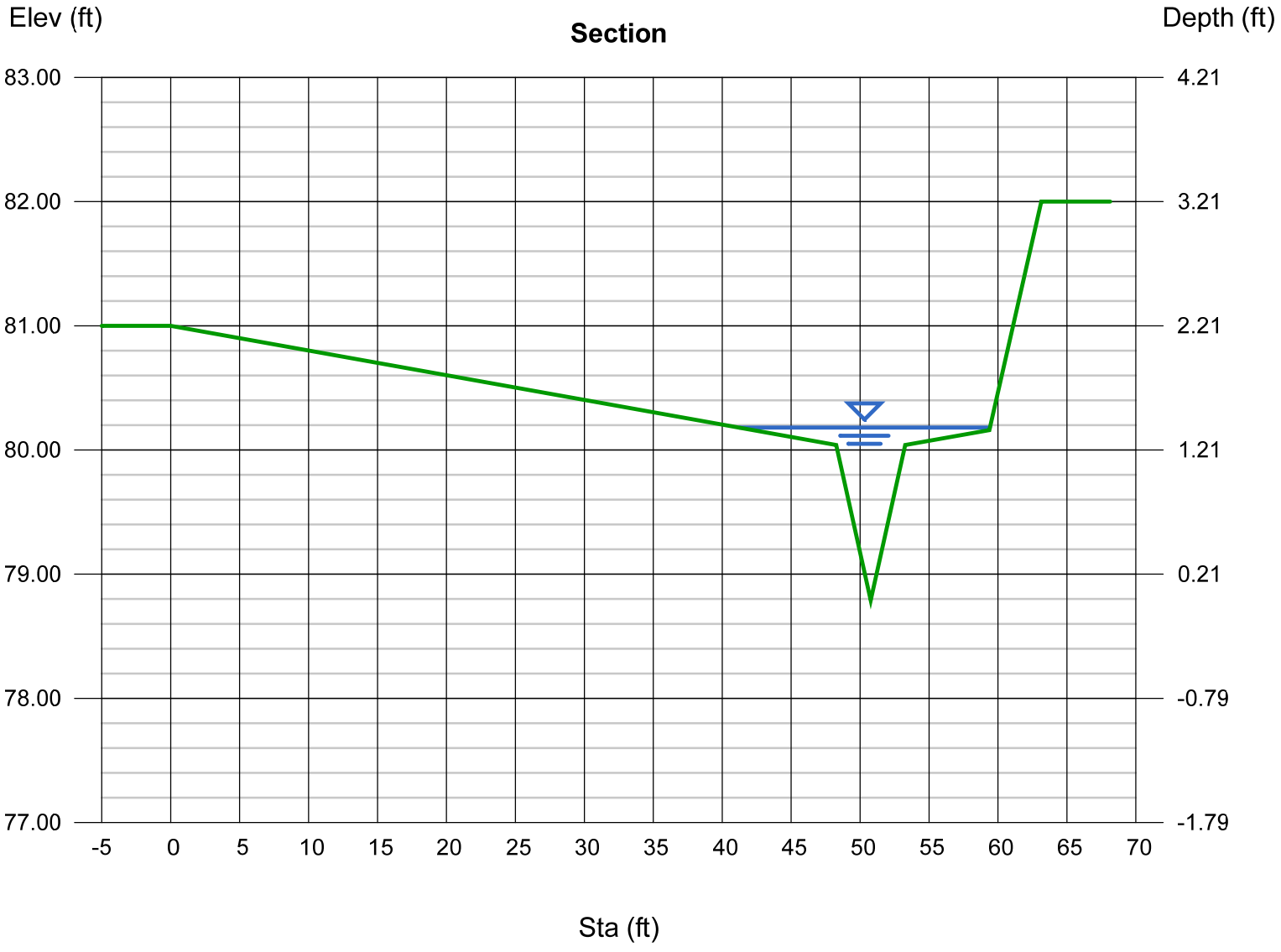
Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

44' ROW Aiguille Drive - FLAT - 100yr storm SECTION C

User-defined		Highlighted	
Invert Elev (ft)	= 78.79	Depth (ft)	= 1.39
Slope (%)	= 3.50	Q (cfs)	= 24.50
N-Value	= 0.021	Area (sqft)	= 4.81
		Velocity (ft/s)	= 5.10
Calculations		Wetted Perim (ft)	= 18.78
Compute by:	Known Q	Crit Depth, Yc (ft)	= 1.53
Known Q (cfs)	= 24.50	Top Width (ft)	= 18.18
		EGL (ft)	= 1.79

(Sta, El, n)-(Sta, El, n)... (-5.00, 81.00)-(48.27, 80.04, 0.014)-(50.77, 78.79, 0.035)-(53.27, 80.04, 0.035)-(59.37, 80.16, 0.014)-(63.14, 82.00, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

44' ROW Aiguille Drive - STEEP - 2yr storm SECTION D

User-defined

Invert Elev (ft)	= 72.87
Slope (%)	= 9.60
N-Value	= 0.026

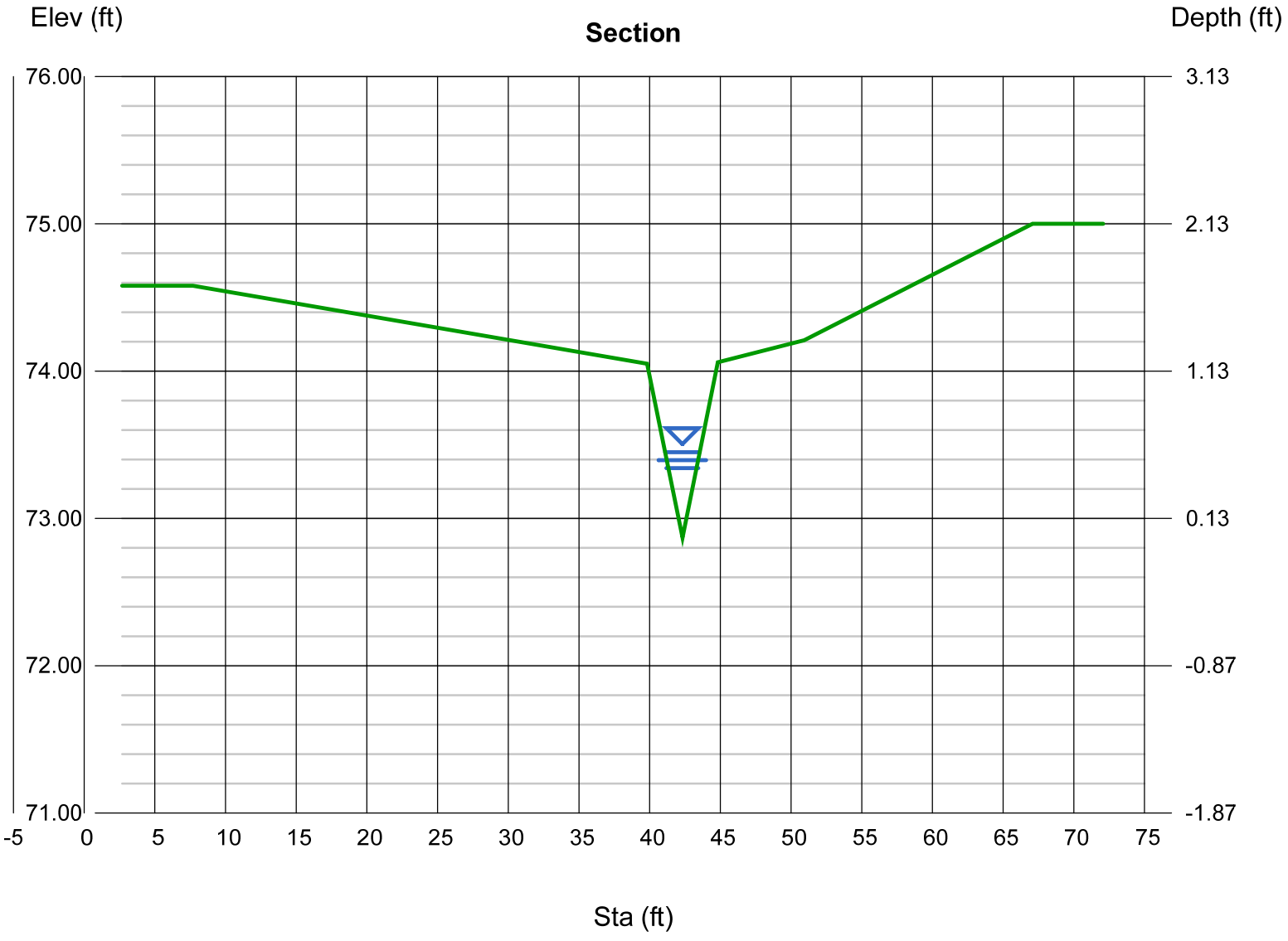
Calculations

Compute by:	Known Q
Known Q (cfs)	= 5.00

Highlighted

Depth (ft)	= 0.58
Q (cfs)	= 5.000
Area (sqft)	= 0.71
Velocity (ft/s)	= 7.05
Wetted Perim (ft)	= 2.71
Crit Depth, Yc (ft)	= 0.82
Top Width (ft)	= 2.45
EGL (ft)	= 1.35

(Sta, El, n)-(Sta, El, n)... (7.69, 75.58, 0.035)-(39.82, 74.05, 0.014)-(42.32, 72.87, 0.035)-(44.82, 74.06, 0.014)-(50.93, 74.21, 0.035)-(67.08, 75.00, 0.035)



Channel Report

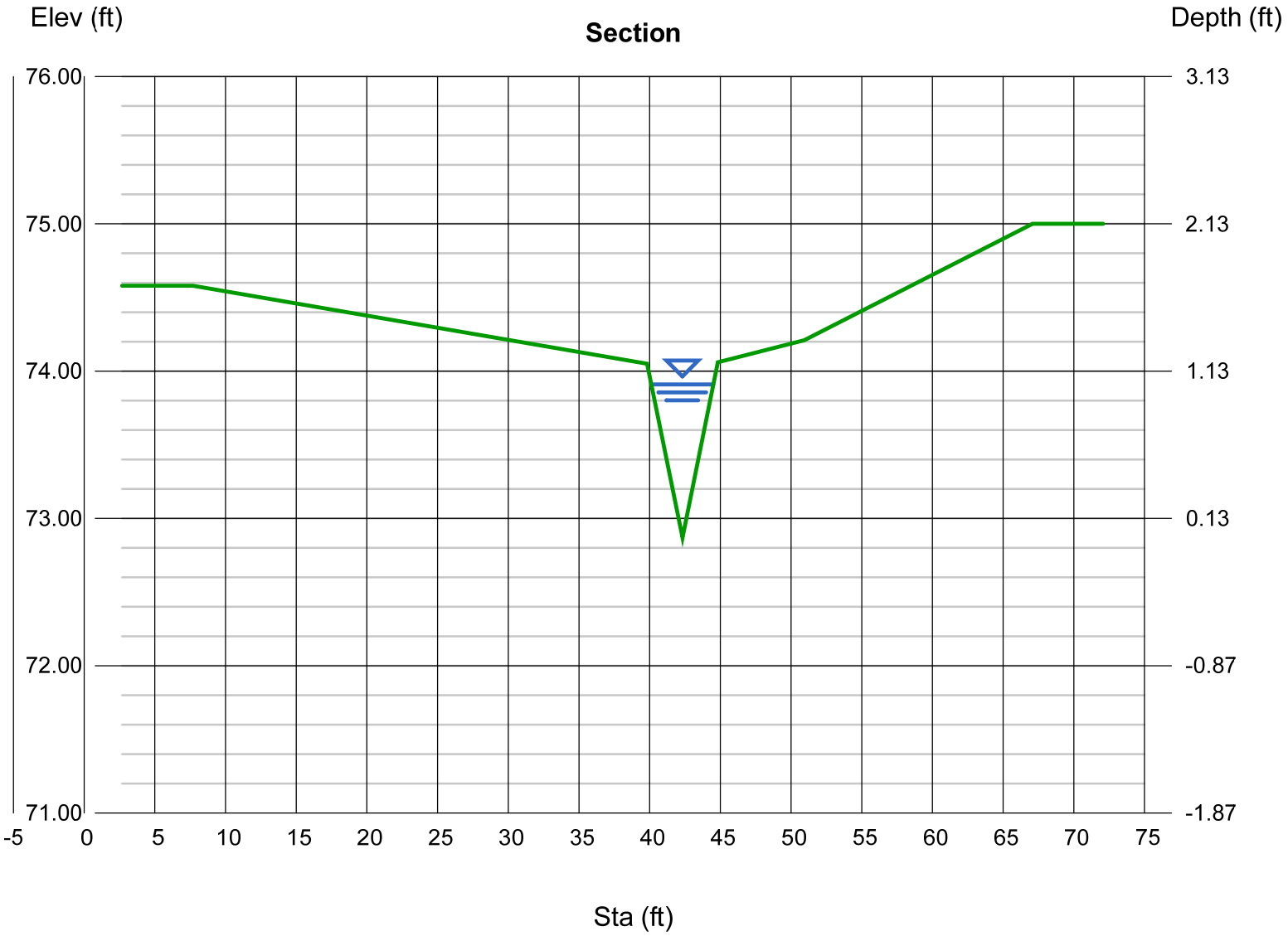
Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

44' ROW Aiguille Drive - STEEP - 100yr storm SECTION D

User-defined		**Highlighted**	
Invert Elev (ft)	= 72.87	Depth (ft)	= 1.04
Slope (%)	= 9.60	Q (cfs)	= 24.50
N-Value	= 0.026	Area (sqft)	= 2.28
		Velocity (ft/s)	= 10.74
Calculations		Wetted Perim (ft)	= 4.86
Compute by:	Known Q	Crit Depth, Yc (ft)	= 1.48
Known Q (cfs)	= 24.50	Top Width (ft)	= 4.39
		EGL (ft)	= 2.83

(Sta, El, n)-(Sta, El, n)...

(7.69, 71.58)-(39.82, 74.05, 0.014)-(42.32, 72.87, 0.035)-(44.82, 74.06, 0.014)-(50.93, 74.21, 0.035)-(67.08, 75.00, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

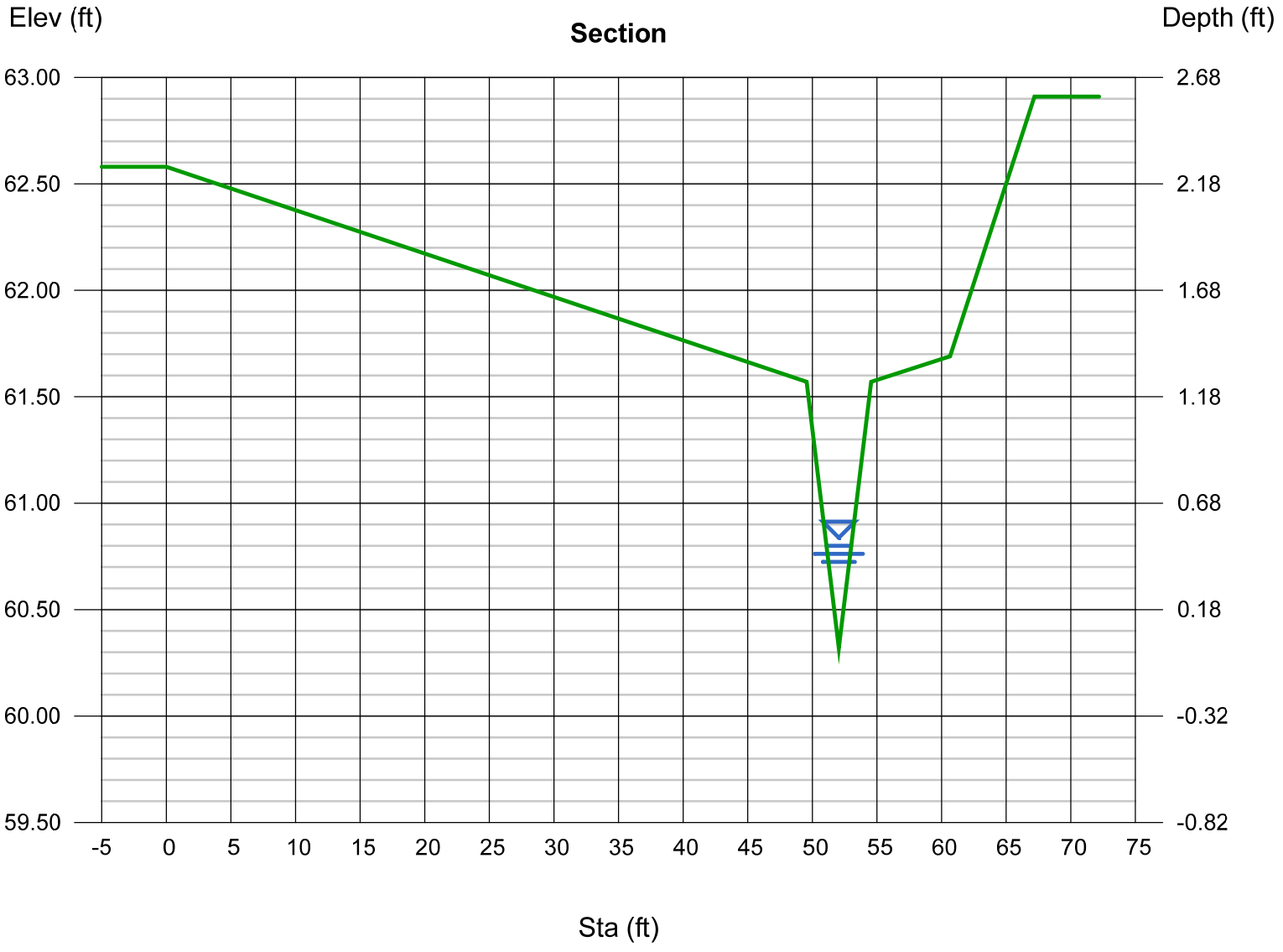
44' ROW - VERY STEEP HIDDEN COURT - 2yr storm SECTION E

User-defined	
Invert Elev (ft)	= 60.32
Slope (%)	= 13.00
N-Value	= 0.035

Calculations	
Compute by:	Known Q
Known Q (cfs)	= 2.50

Highlighted	
Depth (ft)	= 0.48
Q (cfs)	= 2.500
Area (sqft)	= 0.46
Velocity (ft/s)	= 5.43
Wetted Perim (ft)	= 2.15
Crit Depth, Yc (ft)	= 0.63
Top Width (ft)	= 1.92
EGL (ft)	= 0.94

(Sta, El, n)-(Sta, El, n)... (-5.00, 63.18, 0.035)-(49.55, 61.57, 0.014)-(52.05, 60.32, 0.035)-(54.55, 61.57, 0.035)-(60.65, 61.69, 0.014)-(67.19, 62.91, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

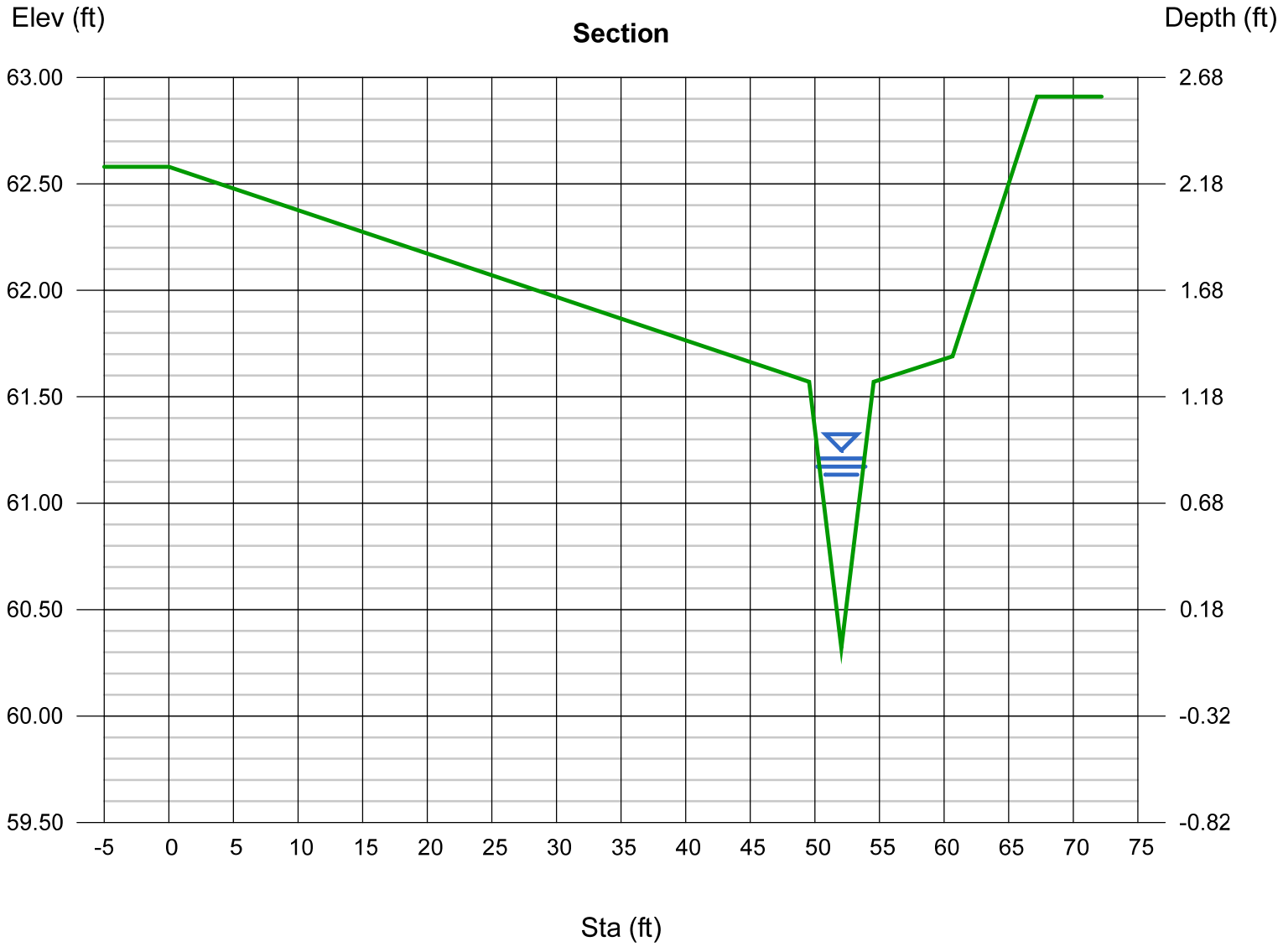
44' ROW - VERY STEEP HIDDEN COURT - 100yr storm SECTION E

User-defined	
Invert Elev (ft)	= 60.32
Slope (%)	= 13.00
N-Value	= 0.035

Calculations	
Compute by:	Known Q
Known Q (cfs)	= 12.79

Highlighted	
Depth (ft)	= 0.89
Q (cfs)	= 12.79
Area (sqft)	= 1.58
Velocity (ft/s)	= 8.07
Wetted Perim (ft)	= 3.98
Crit Depth, Yc (ft)	= 1.21
Top Width (ft)	= 3.56
EGL (ft)	= 1.90

(Sta, El, n)-(Sta, El, n)... (-5.00, 62.58, 0.035)-(49.55, 61.57, 0.014)-(52.05, 60.32, 0.035)-(54.55, 61.57, 0.035)-(60.65, 61.69, 0.014)-(67.19, 62.91, 0.035)



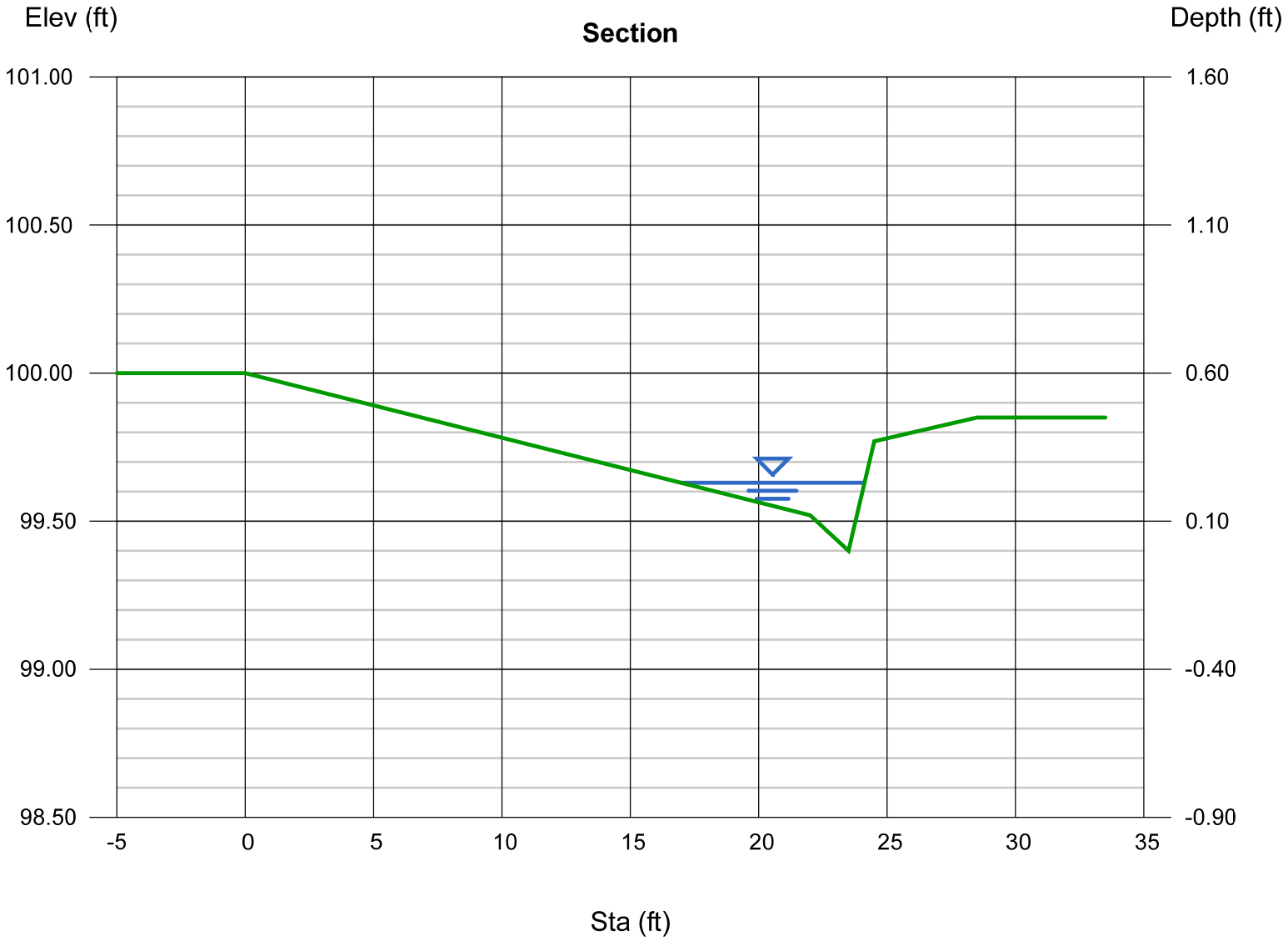
Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

44' ROW Elysium Drive - VERY STEEP - 2yr storm SECTION F

User-defined		Highlighted	
Invert Elev (ft)	= 99.40	Depth (ft)	= 0.23
Slope (%)	= 13.00	Q (cfs)	= 4.000
N-Value	= 0.014	Area (sqft)	= 0.60
		Velocity (ft/s)	= 6.62
Calculations		Wetted Perim (ft)	= 7.21
Compute by:	Known Q	Crit Depth, Yc (ft)	= 0.36
Known Q (cfs)	= 4.00	Top Width (ft)	= 7.16
		EGL (ft)	= 0.91

(Sta, El, n)-(Sta, El, n)... (-5.00, 100.00)-(22.50, 99.54, 0.014)-(23.50, 99.40, 0.014)-(24.50, 99.77, 0.014)-(28.50, 99.85, 0.014)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

44' ROW Elysium Drive - VERY STEEP - 100yr storm SECTION F

User-defined

Invert Elev (ft)	= 99.40
Slope (%)	= 13.00
N-Value	= 0.014

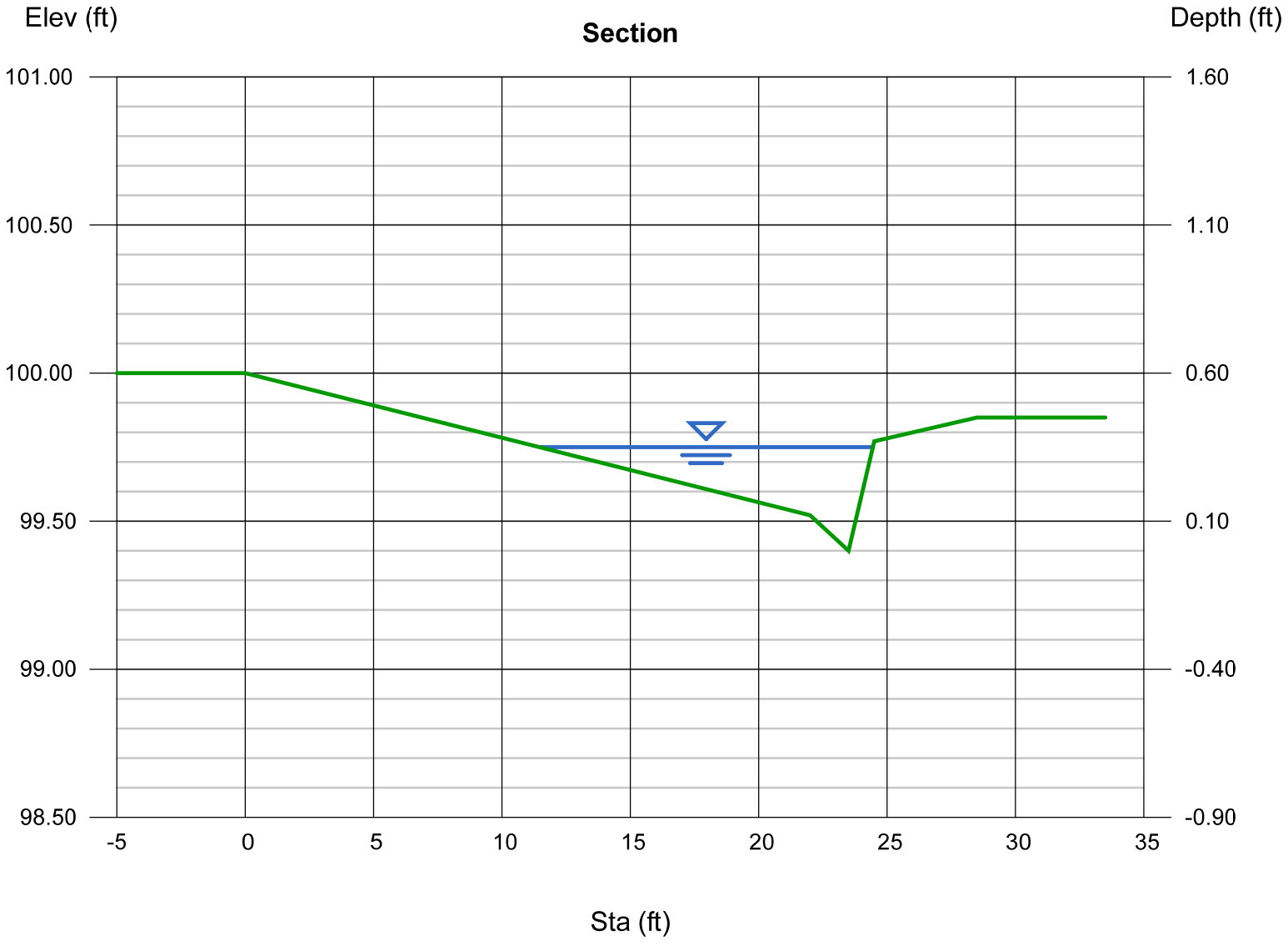
Calculations

Compute by:	Known Q
Known Q (cfs)	= 17.00

Highlighted

Depth (ft)	= 0.35
Q (cfs)	= 17.00
Area (sqft)	= 1.81
Velocity (ft/s)	= 9.38
Wetted Perim (ft)	= 13.06
Crit Depth, Yc (ft)	= 0.57
Top Width (ft)	= 12.99
EGL (ft)	= 1.72

(Sta, El, n)-(Sta, El, n)... (-5.00, 101.00)-(22.50, 99.54, 0.014)-(23.50, 99.40, 0.014)-(24.50, 99.77, 0.014)-(28.50, 99.85, 0.014)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

Diversion ditch - Basin 202 runoff 2 yr storm

SECTION G

Triangular

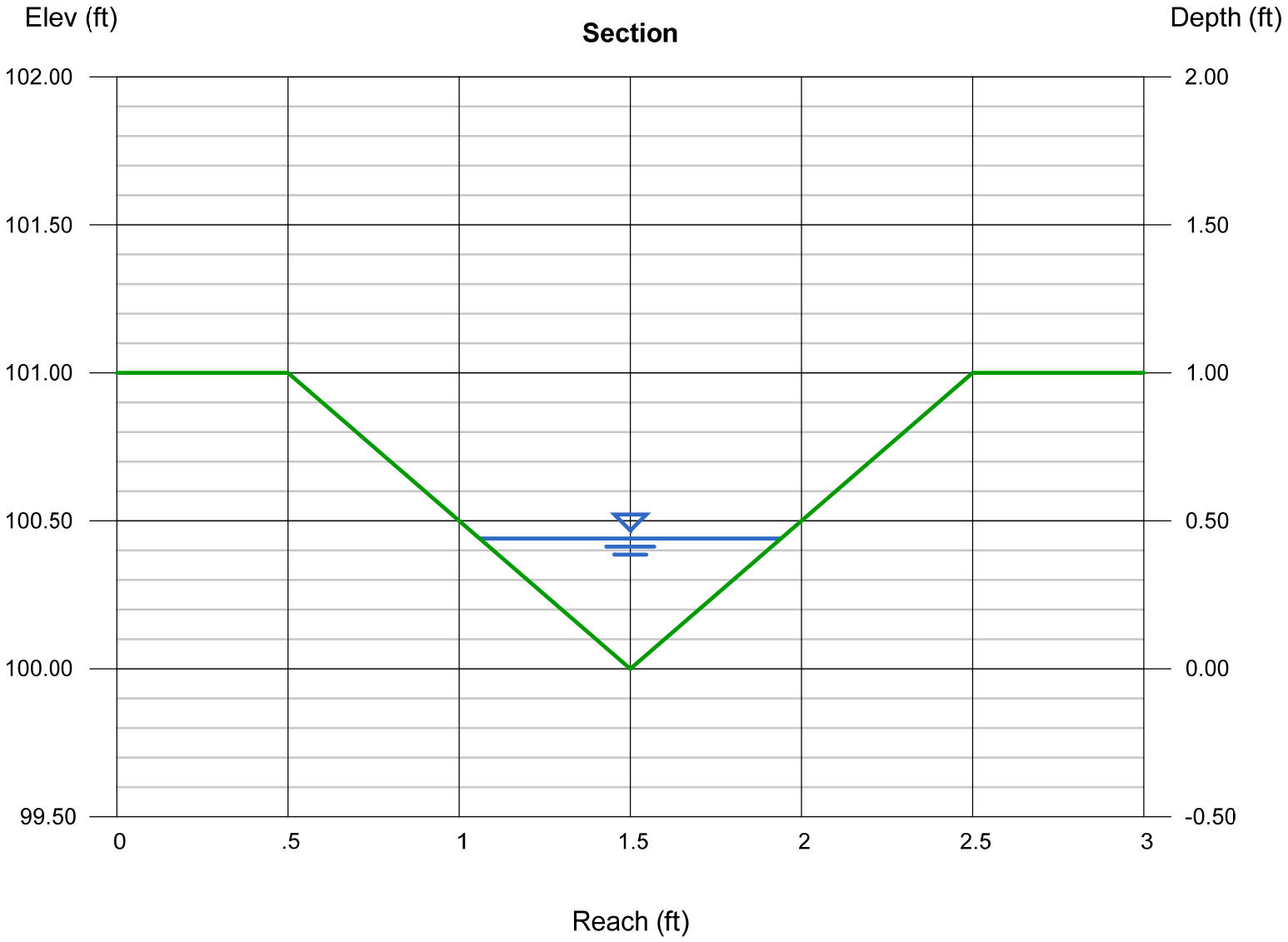
Side Slopes (z:1)	= 1.00, 1.00
Total Depth (ft)	= 1.00
Invert Elev (ft)	= 100.00
Slope (%)	= 3.78
N-Value	= 0.035

Calculations

Compute by:	Known Q
Known Q (cfs)	= 0.46

Highlighted

Depth (ft)	= 0.44
Q (cfs)	= 0.460
Area (sqft)	= 0.19
Velocity (ft/s)	= 2.38
Wetted Perim (ft)	= 1.24
Crit Depth, Yc (ft)	= 0.43
Top Width (ft)	= 0.88
EGL (ft)	= 0.53



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

Diversion ditch - Basin 202 runoff 100 yr storm SECTION G

Triangular

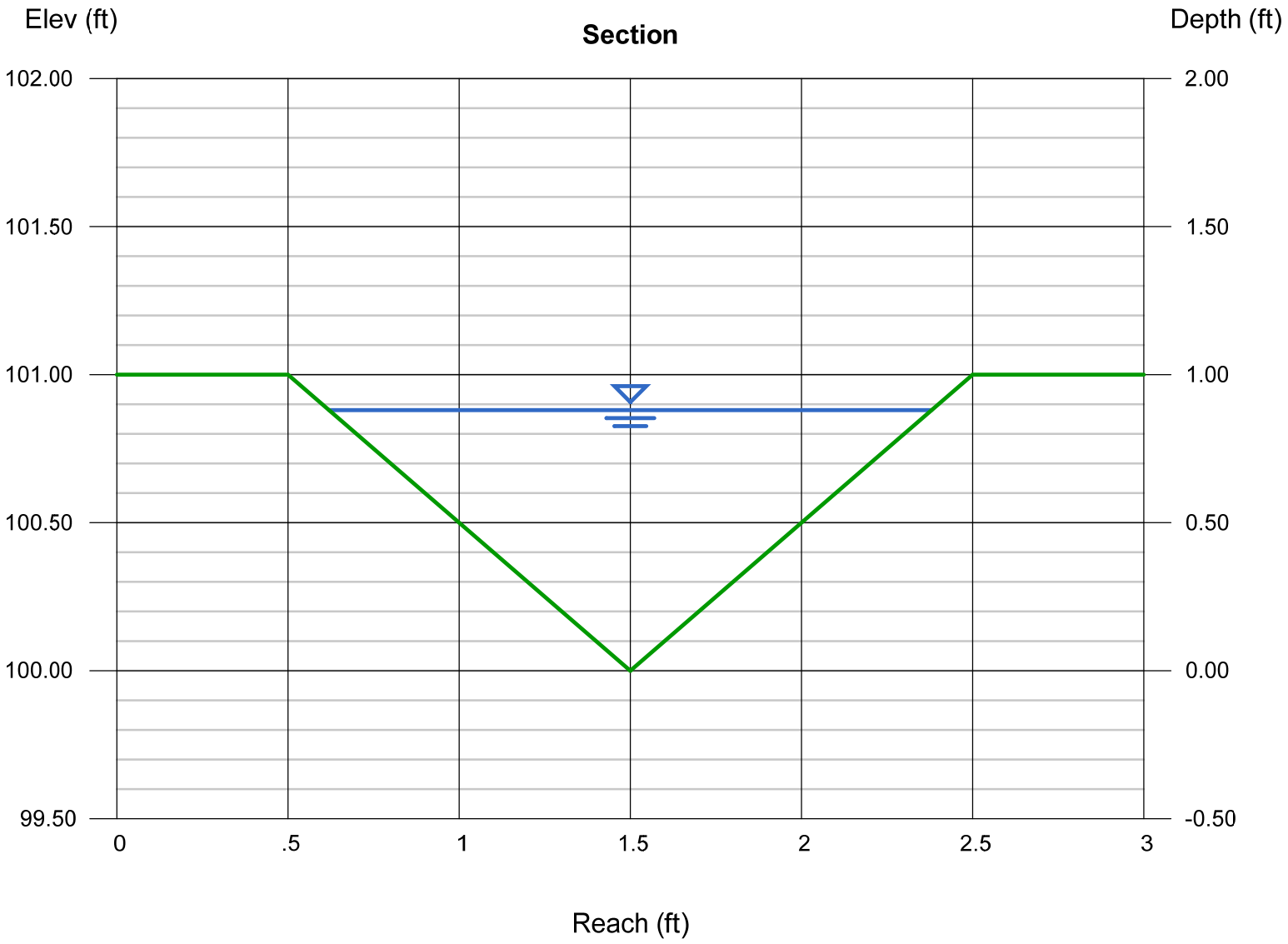
Side Slopes (z:1)	= 1.00, 1.00
Total Depth (ft)	= 1.00
Invert Elev (ft)	= 100.00
Slope (%)	= 5.88
N-Value	= 0.035

Calculations

Compute by:	Known Q
Known Q (cfs)	= 3.62

Highlighted

Depth (ft)	= 0.88
Q (cfs)	= 3.620
Area (sqft)	= 0.77
Velocity (ft/s)	= 4.67
Wetted Perim (ft)	= 2.49
Crit Depth, Yc (ft)	= 0.96
Top Width (ft)	= 1.76
EGL (ft)	= 1.22



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

44' ROW - VERY STEEP - 2yr storm SECTION H

User-defined

Invert Elev (ft)	= 60.32
Slope (%)	= 13.00
N-Value	= 0.035

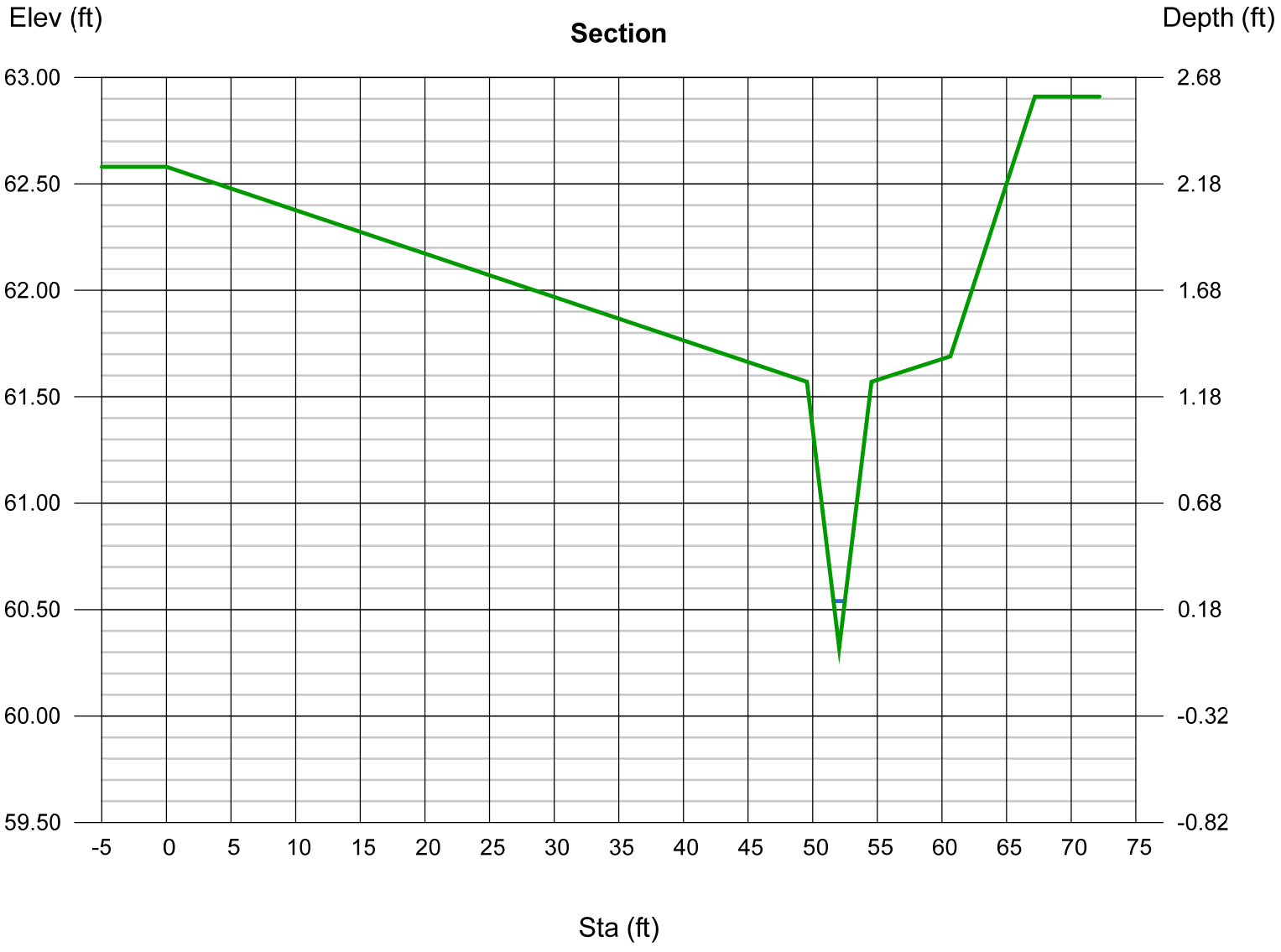
Calculations

Compute by:	Known Q
Known Q (cfs)	= 0.30

Highlighted

Depth (ft)	= 0.22
Q (cfs)	= 0.300
Area (sqft)	= 0.10
Velocity (ft/s)	= 3.10
Wetted Perim (ft)	= 0.98
Crit Depth, Yc (ft)	= 0.27
Top Width (ft)	= 0.88
EGL (ft)	= 0.37

(Sta, El, n)-(Sta, El, n)... (-5.00, 62.58, 0.035)-(49.55, 61.57, 0.014)-(52.05, 60.32, 0.035)-(54.55, 61.57, 0.035)-(60.65, 61.69, 0.014)-(67.19, 62.91, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

44' ROW - VERY STEEP - 100yr storm SECTION H

User-defined

Invert Elev (ft)	= 60.32
Slope (%)	= 13.00
N-Value	= 0.035

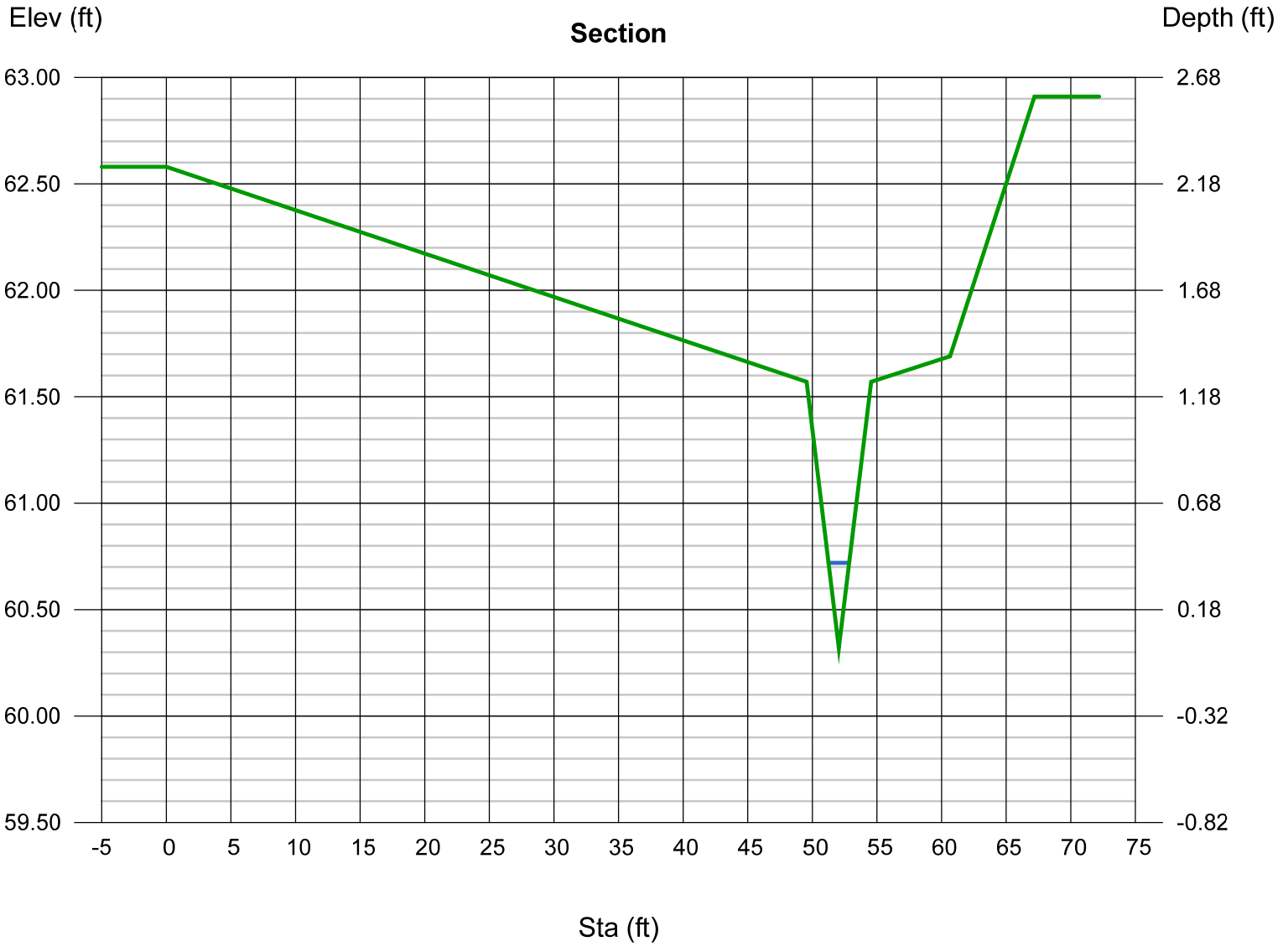
Calculations

Compute by:	Known Q
Known Q (cfs)	= 1.50

Highlighted

Depth (ft)	= 0.40
Q (cfs)	= 1.500
Area (sqft)	= 0.32
Velocity (ft/s)	= 4.69
Wetted Perim (ft)	= 1.79
Crit Depth, Yc (ft)	= 0.52
Top Width (ft)	= 1.60
EGL (ft)	= 0.74

(Sta, El, n)-(Sta, El, n)... (-5.00, 62.58, 0.035)-(49.55, 61.57, 0.014)-(52.05, 60.32, 0.035)-(54.55, 61.57, 0.035)-(60.65, 61.69, 0.014)-(67.19, 62.91, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

CONCRETE C&G ALONG WESTERN BOUNDRY - Steep - 2yr storm

User-defined

Invert Elev (ft)	= 99.00
Slope (%)	= 8.00
N-Value	= 0.014

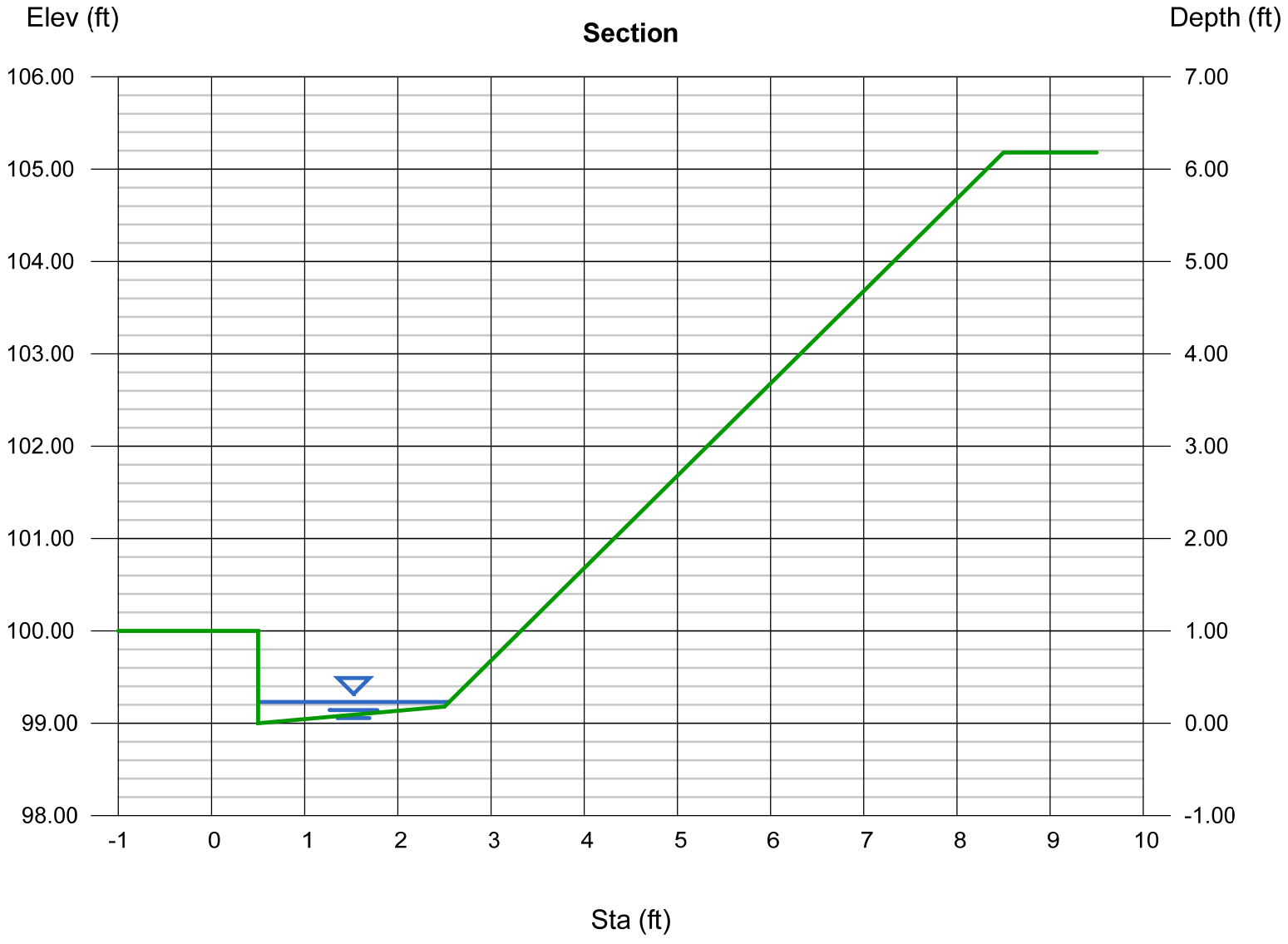
Calculations

Compute by:	Known Q
Known Q (cfs)	= 2.00

Highlighted

Depth (ft)	= 0.23
Q (cfs)	= 2.000
Area (sqft)	= 0.28
Velocity (ft/s)	= 7.11
Wetted Perim (ft)	= 2.31
Crit Depth, Yc (ft)	= 0.41
Top Width (ft)	= 2.05
EGL (ft)	= 1.02

(Sta, El, n)-(Sta, El, n)... (-0.00, 100.00)-(0.50, 100.00, 0.013)-(0.50, 99.00, 0.013)-(2.50, 99.18, 0.013)-(8.50, 105.18, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

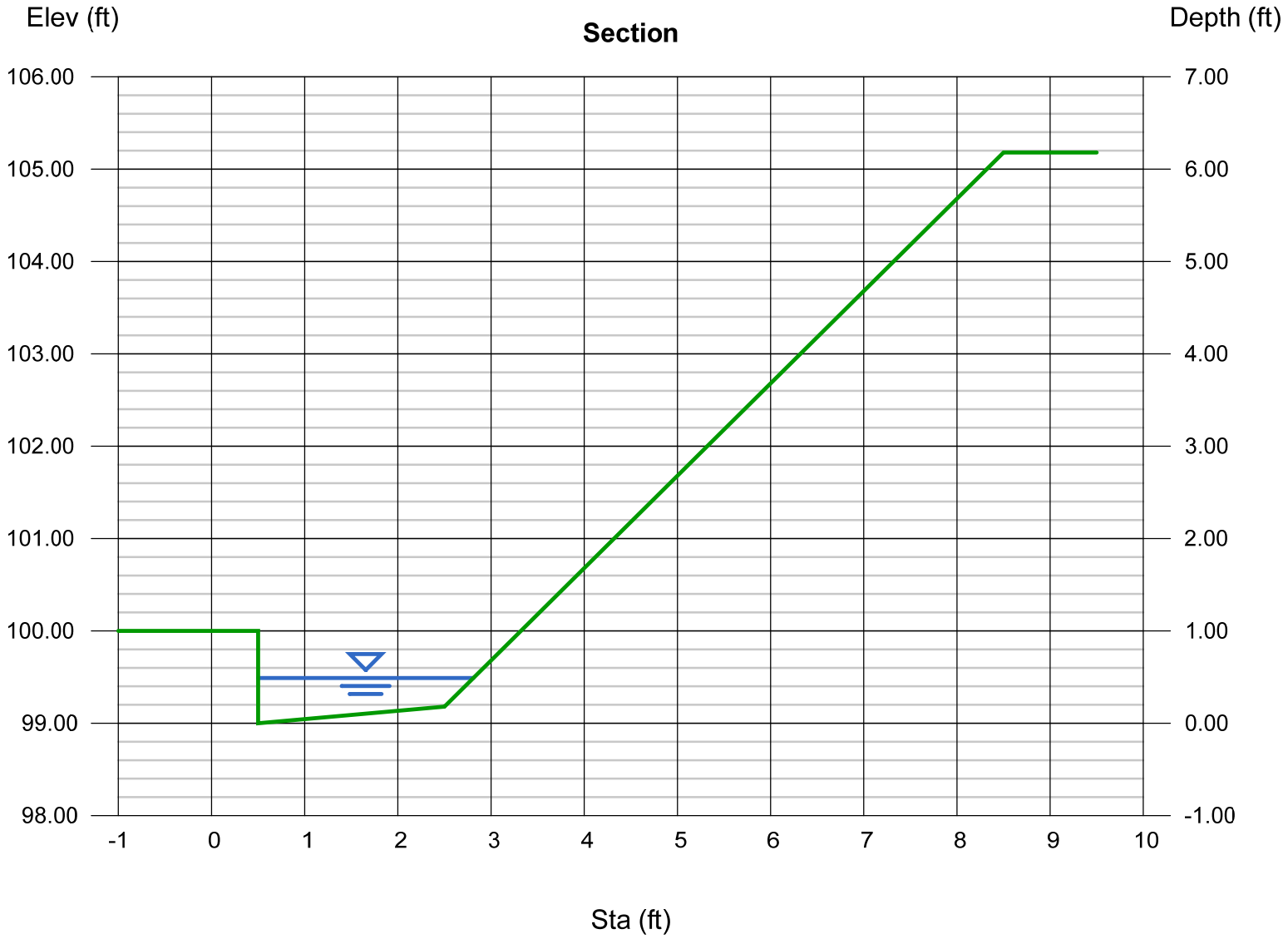
CONCRETE C&G ALONG WESTERN BOUNDRY - Steep - 100yr storm

User-defined	
Invert Elev (ft)	= 99.00
Slope (%)	= 8.00
N-Value	= 0.017

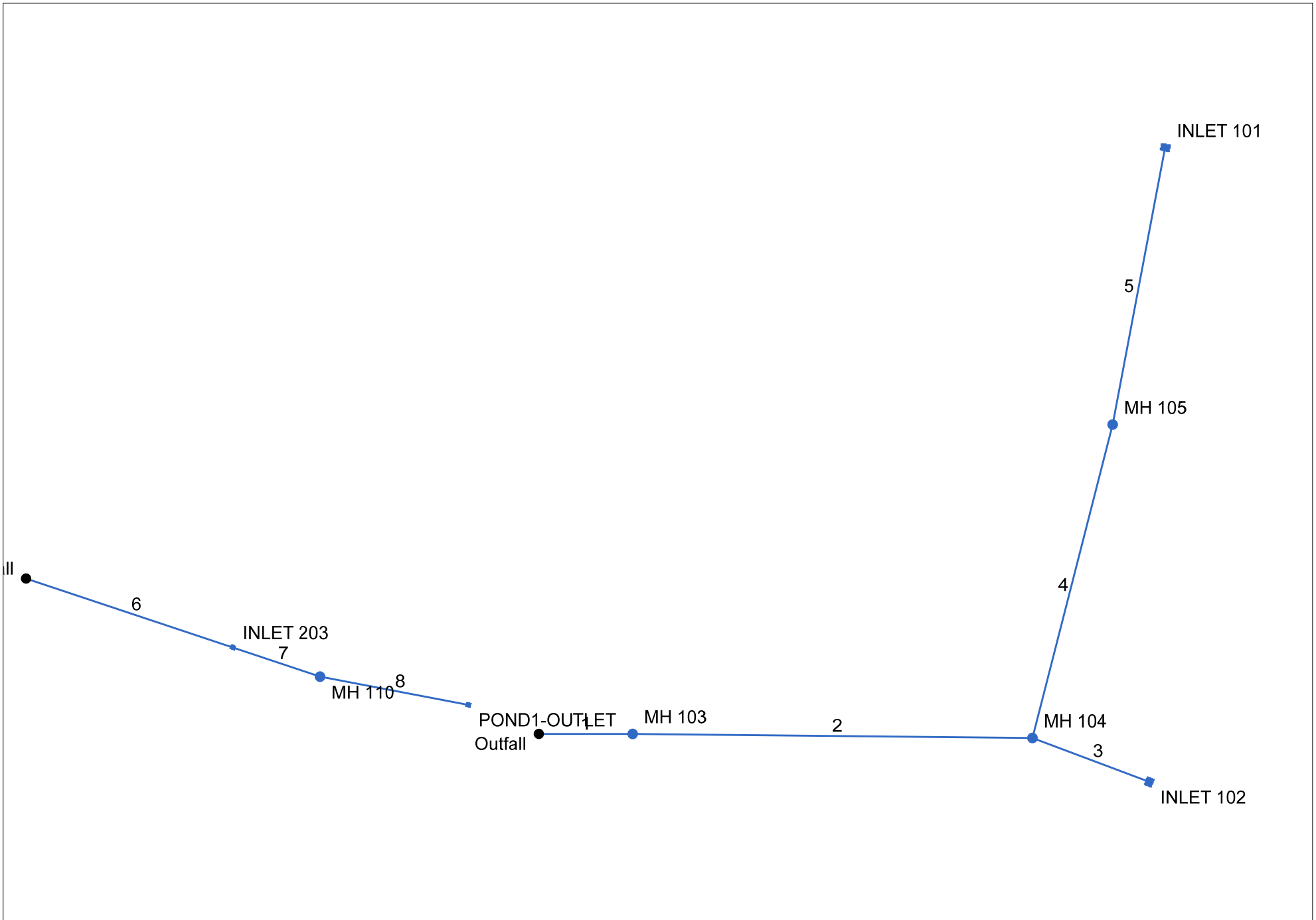
Calculations	
Compute by:	Known Q
Known Q (cfs)	= 9.05

Highlighted	
Depth (ft)	= 0.49
Q (cfs)	= 9.050
Area (sqft)	= 0.85
Velocity (ft/s)	= 10.67
Wetted Perim (ft)	= 2.94
Crit Depth, Yc (ft)	= 0.92
Top Width (ft)	= 2.31
EGL (ft)	= 2.26

(Sta, El, n)-(Sta, El, n)... (-1.00, 100.00)-(0.50, 100.00, 0.013)-(0.50, 99.00, 0.013)-(2.50, 99.18, 0.013)-(8.50, 105.18, 0.035)

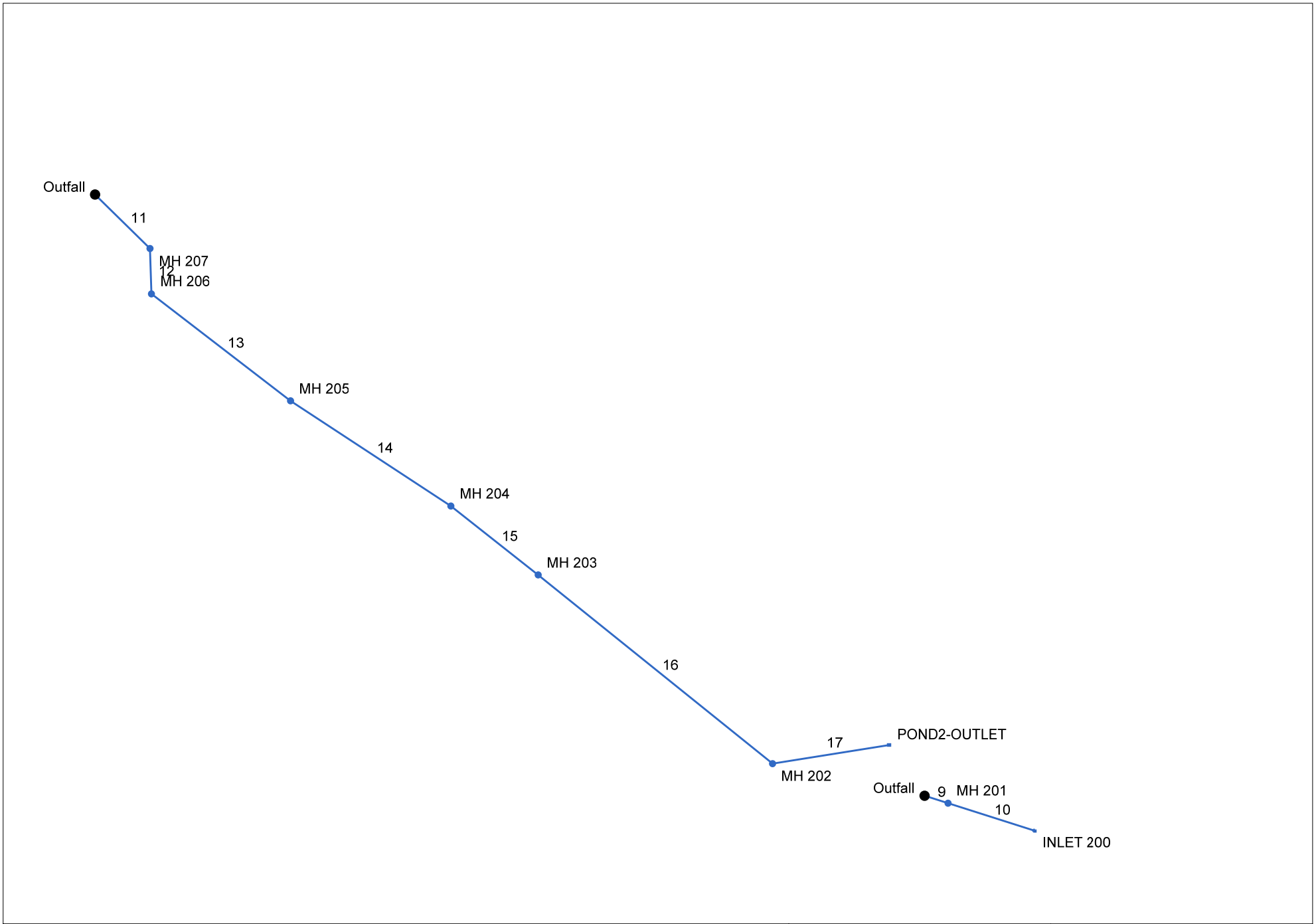


Hydraflow Storm Sewers Extension for AutoCAD® Civil 3D® 2010 Plan



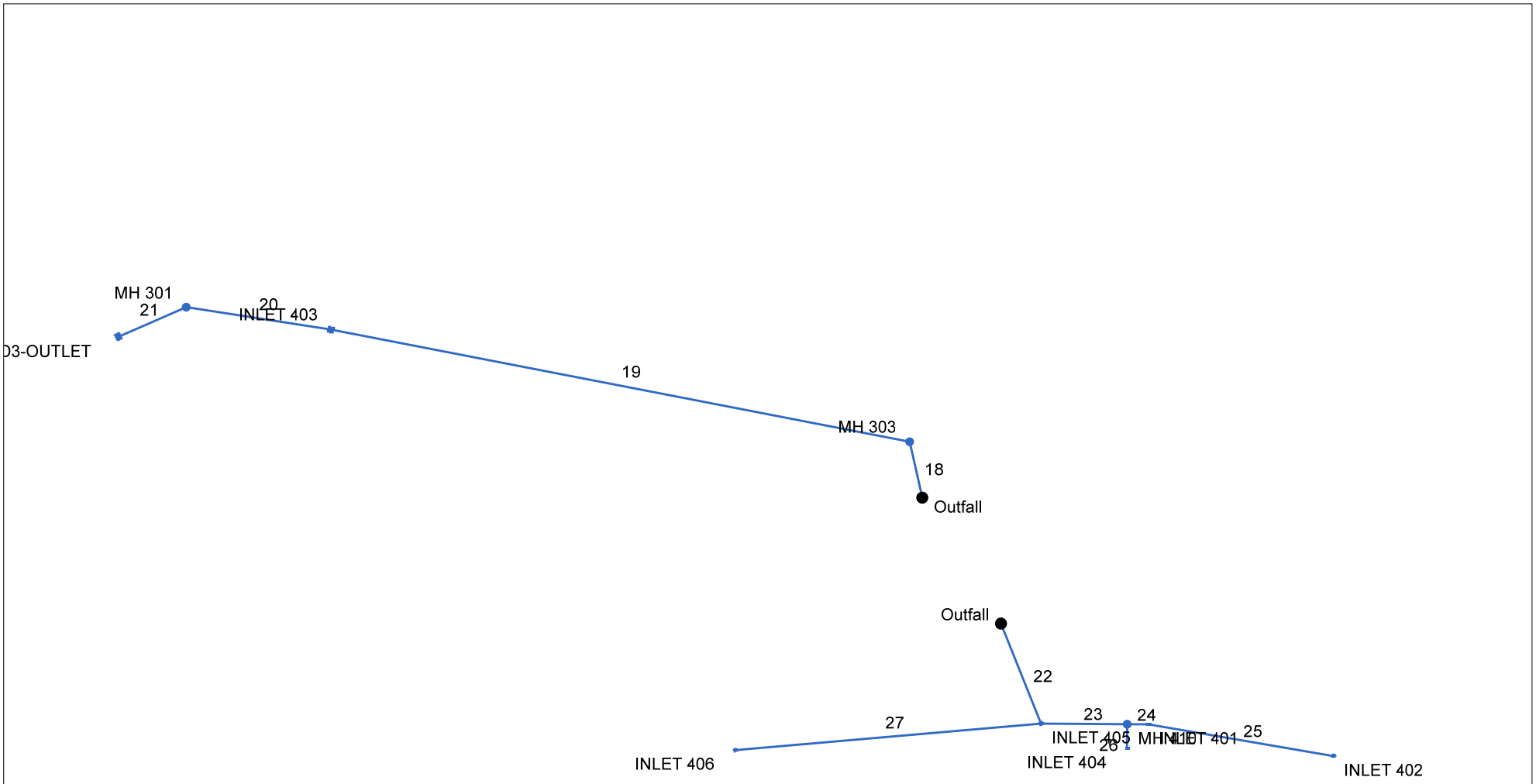
Project File: Pinnacle-AllFilings-2yr.stm	Number of lines: 27	Date: 8/1/2017

Hydraflow Storm Sewers Extension for AutoCAD® Civil 3D® 2010 Plan



Project File: Pinnacle-AllFilings-2yr.stm	Number of lines: 9	Date: 8/7/2017

Hydraflow Storm Sewers Extension for AutoCAD® Civil 3D® 2010 Plan



Project File: Pinnacle-AllFilings-2yr.stm	Number of lines: 10	Date: 8/7/2017

Hydraulic Grade Line Computations 2 YR STORM EVENT

Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
			Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf		Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf	Ave Sf	Enrgy loss		
	(in)	(cfs)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(ft)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(%)	(ft)	(K)	(ft)
1	18	1.47	4800.17	4800.63	0.46	0.46	3.17	0.16	4800.79	0.458	42.946	4801.04	4801.50	0.46**	0.46	3.17	0.16	4801.66	0.459	0.459	n/a	0.15	0.02
2	18	1.47	4808.50	4808.96	0.46*	0.46	3.17	0.16	4809.12	0.458	183.084	4848.05	4848.51	0.46**	0.46	3.17	0.16	4848.67	0.459	0.459	n/a	0.98	0.15
3	18	0.62	4856.50	4856.80	0.30*	0.25	2.46	0.09	4856.90	0.450	57.005	4870.50	4870.80	0.30**	0.25	2.46	0.09	4870.90	0.451	0.451	n/a	1.00	0.09
4	18	0.85	4848.05	4848.51	0.46	0.46	1.83	0.05	4848.57	0.153	147.712	4848.50	4848.87	0.36	0.33	2.56	0.10	4848.97	0.390	0.272	0.401	0.15	0.02
5	18	0.85	4848.50	4848.88	0.38	0.35	2.42	0.09	4848.97	0.332	128.557	4868.50	4868.85 j	0.35**	0.32	2.69	0.11	4868.97	0.450	0.391	n/a	1.00	0.11
6	12	0.98	4782.00	4782.42	0.42*	0.31	3.13	0.15	4782.57	0.559	99.621	4784.70	4785.12	0.42**	0.31	3.13	0.15	4785.27	0.559	0.559	n/a	0.50	0.08
7	12	0.52	4784.90	4785.21	0.31*	0.20	2.56	0.10	4785.31	0.517	42.274	4786.13	4786.44	0.31**	0.20	2.55	0.10	4786.54	0.516	0.517	n/a	0.16	n/a
8	12	0.52	4790.00	4790.31	0.31*	0.20	2.56	0.10	4790.41	0.517	69.031	4799.00	4799.31	0.31**	0.20	2.55	0.10	4799.41	0.516	0.517	n/a	1.00	n/a
9	18	4.93	4747.30	4748.15	0.85	1.03	4.77	0.35	4748.50	0.584	18.945	4747.44	4748.29	0.85**	1.03	4.76	0.35	4748.64	0.581	0.582	0.110	0.15	0.05
10	18	4.93	4748.73	4749.58	0.85*	1.03	4.79	0.36	4749.93	0.589	69.639	4761.66	4762.51	0.85**	1.03	4.79	0.36	4762.86	0.589	0.589	n/a	1.00	0.36
11	18	0.52	4704.25	4704.53	0.28	0.23	2.28	0.08	4704.61	0.425	59.389	4704.55	4704.83	0.28**	0.23	2.30	0.08	4704.91	0.435	0.430	0.255	0.74	0.06
12	18	0.52	4704.55	4704.89	0.34	0.30	1.73	0.05	4704.94	0.195	35.020	4704.72	4705.00	0.28**	0.23	2.30	0.08	4705.08	0.435	0.315	0.110	0.81	0.07
13	18	0.52	4704.72	4705.07	0.35	0.31	1.69	0.04	4705.11	0.182	135.283	4709.50	4709.78 j	0.28**	0.22	2.34	0.09	4709.86	0.454	0.318	n/a	0.15	0.01
14	18	0.52	4714.64	4714.92	0.28*	0.22	2.34	0.08	4715.00	0.453	147.888	4720.48	4720.76	0.28**	0.22	2.34	0.09	4720.84	0.454	0.454	n/a	0.15	0.01
15	18	0.52	4720.63	4720.91	0.28*	0.22	2.34	0.08	4720.99	0.453	85.726	4723.39	4723.67	0.28**	0.22	2.34	0.09	4723.75	0.454	0.454	n/a	0.15	0.01
16	18	0.52	4723.52	4723.80	0.28*	0.22	2.34	0.08	4723.88	0.453	232.048	4736.80	4737.08	0.28**	0.22	2.34	0.09	4737.16	0.454	0.454	n/a	0.78	0.07
17	18	0.52	4737.00	4737.28	0.28*	0.22	2.34	0.08	4737.36	0.453	90.649	4746.08	4746.36	0.28**	0.22	2.34	0.09	4746.44	0.454	0.454	n/a	1.00	0.09
18	18	0.38	4739.00	4739.24	0.24	0.18	2.08	0.07	4739.31	0.423	37.119	4739.63	4739.87 j	0.24**	0.18	2.14	0.07	4739.94	0.461	0.442	n/a	0.93	0.07
19	18	0.38	4739.63	4739.87	0.24*	0.18	2.14	0.07	4739.94	0.461	359.380	4742.28	4742.52	0.24**	0.18	2.14	0.07	4742.59	0.461	0.461	n/a	0.50	0.04
20	12	0.17	4742.28	4742.52	0.24	0.14	1.21	0.02	4742.54	0.154	88.573	4746.71	4746.89 j	0.17**	0.09	1.84	0.05	4746.94	0.514	0.334	n/a	0.63	n/a
21	12	0.17	4747.21	4747.39	0.17*	0.09	1.84	0.05	4747.44	0.514	45.886	4751.00	4751.18	0.17**	0.09	1.84	0.05	4751.23	0.514	0.514	n/a	1.00	n/a
22	18	8.84	4739.00	4740.14	1.14	1.44	6.13	0.58	4740.73	0.826	70.493	4741.90	4743.04 j	1.13**	1.43	6.16	0.59	4743.63	0.835	0.831	n/a	1.50	n/a

Project File: Pinnacle-AllFilings-2yr.stm | Number of lines: 27 | Run Date: 8/1/2017

Notes: * depth assumed.; ** Critical depth.; j-Line contains hyd. jump. ; c = cir e = ellip b = box

Hydraulic Grade Line Computations 2 YR STORM EVENT

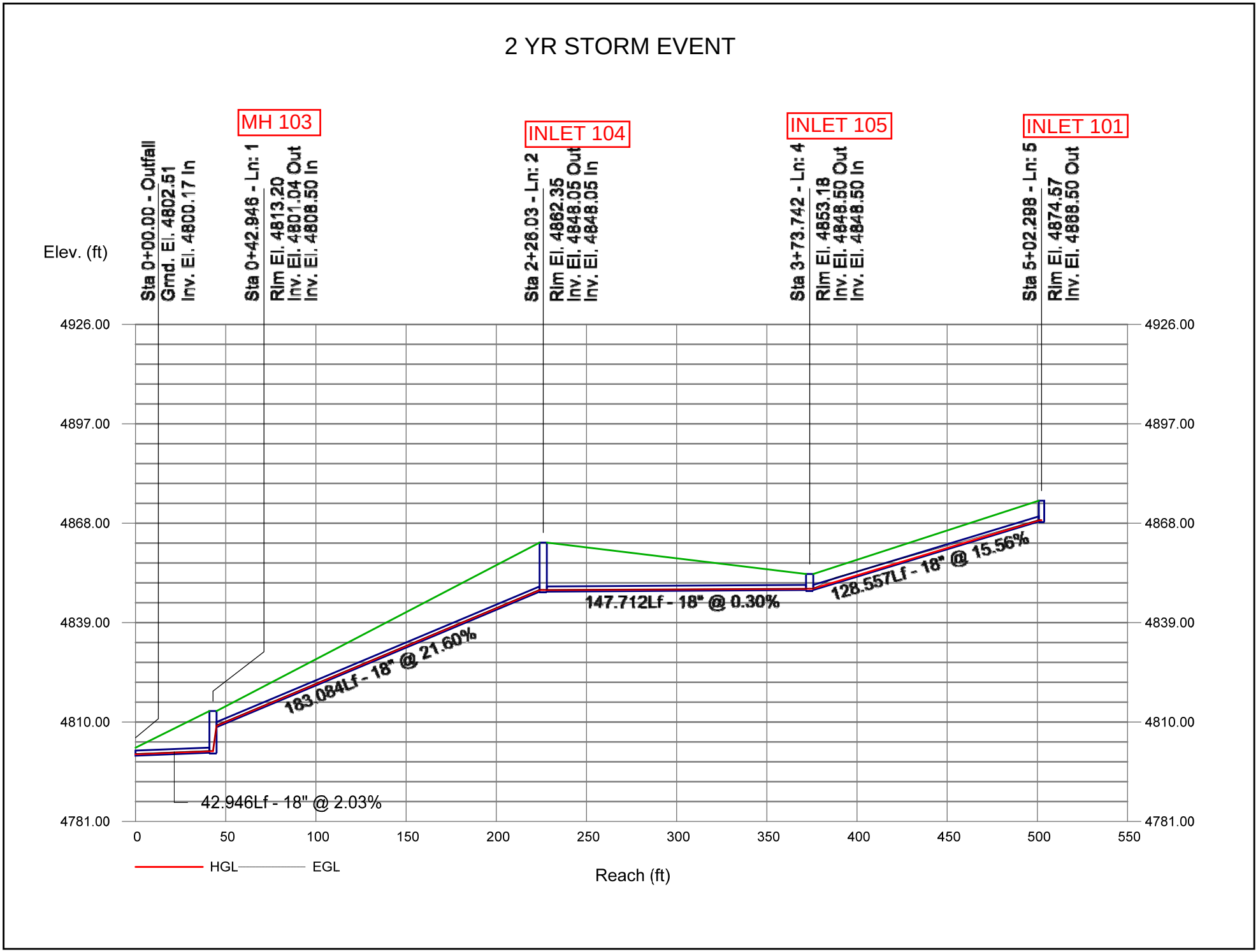
Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
			Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf		Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf	Ave Sf	Enrgy loss		
	(in)	(cfs)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(ft)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(%)	(ft)	(K)	(ft)
23	18	5.82	4741.90	4743.04	1.13	1.43	4.06	0.26	4743.29	0.362	52.274	4742.96	4743.88 j	0.92**	1.14	5.12	0.41	4744.29	0.635	0.498	n/a	1.00	0.41
24	18	4.87	4742.96	4743.88	0.92	1.14	4.28	0.28	4744.17	0.444	12.942	4743.22	4744.06 j	0.84**	1.02	4.77	0.35	4744.42	0.586	0.515	n/a	0.50	n/a
25	18	1.43	4743.22	4744.06	0.84	1.02	1.40	0.03	4744.09	0.051	113.583	4747.00	4747.46 j	0.46**	0.45	3.14	0.15	4747.61	0.458	0.254	n/a	1.00	0.15
26	12	0.95	4742.96	4743.88	0.92	0.76	1.26	0.02	4743.91	0.062	15.997	4744.56	4744.97 j	0.41**	0.31	3.10	0.15	4745.12	0.556	0.309	n/a	1.00	0.15
27	18	1.50	4741.90	4743.04	1.13	1.43	1.05	0.02	4743.05	0.024	186.210	4748.41	4748.88 j	0.47**	0.47	3.19	0.16	4749.04	0.459	0.242	n/a	1.00	n/a

Project File: Pinnacle-AllFilings-2yr.stm | Number of lines: 27 | Run Date: 8/1/2017

Notes: * depth assumed.; ** Critical depth.; j-Line contains hyd. jump. ; c = cir e = ellip b = box

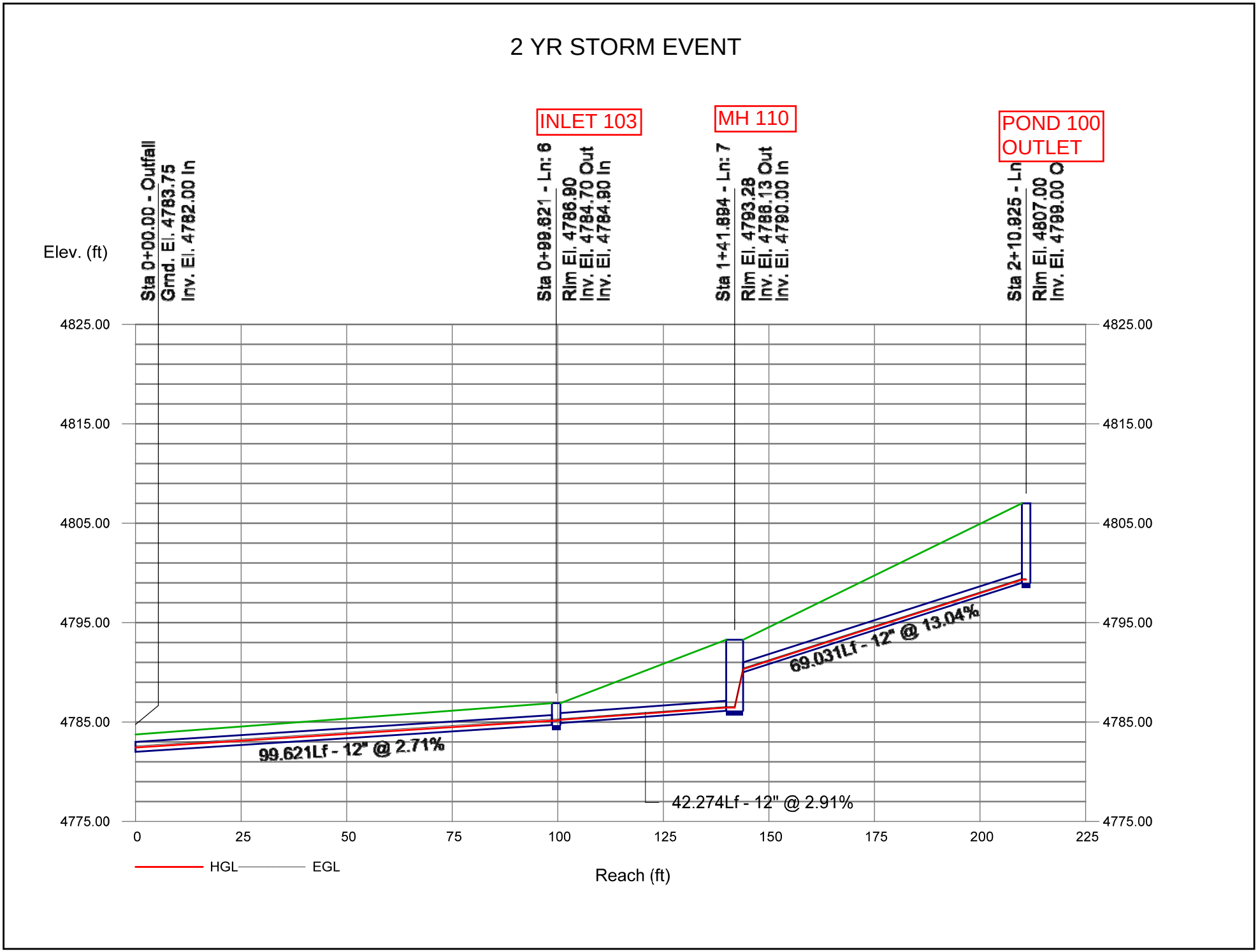
Storm Sewer Profile

Proj. file: Pinnacle-AllFilings-2yr.stm



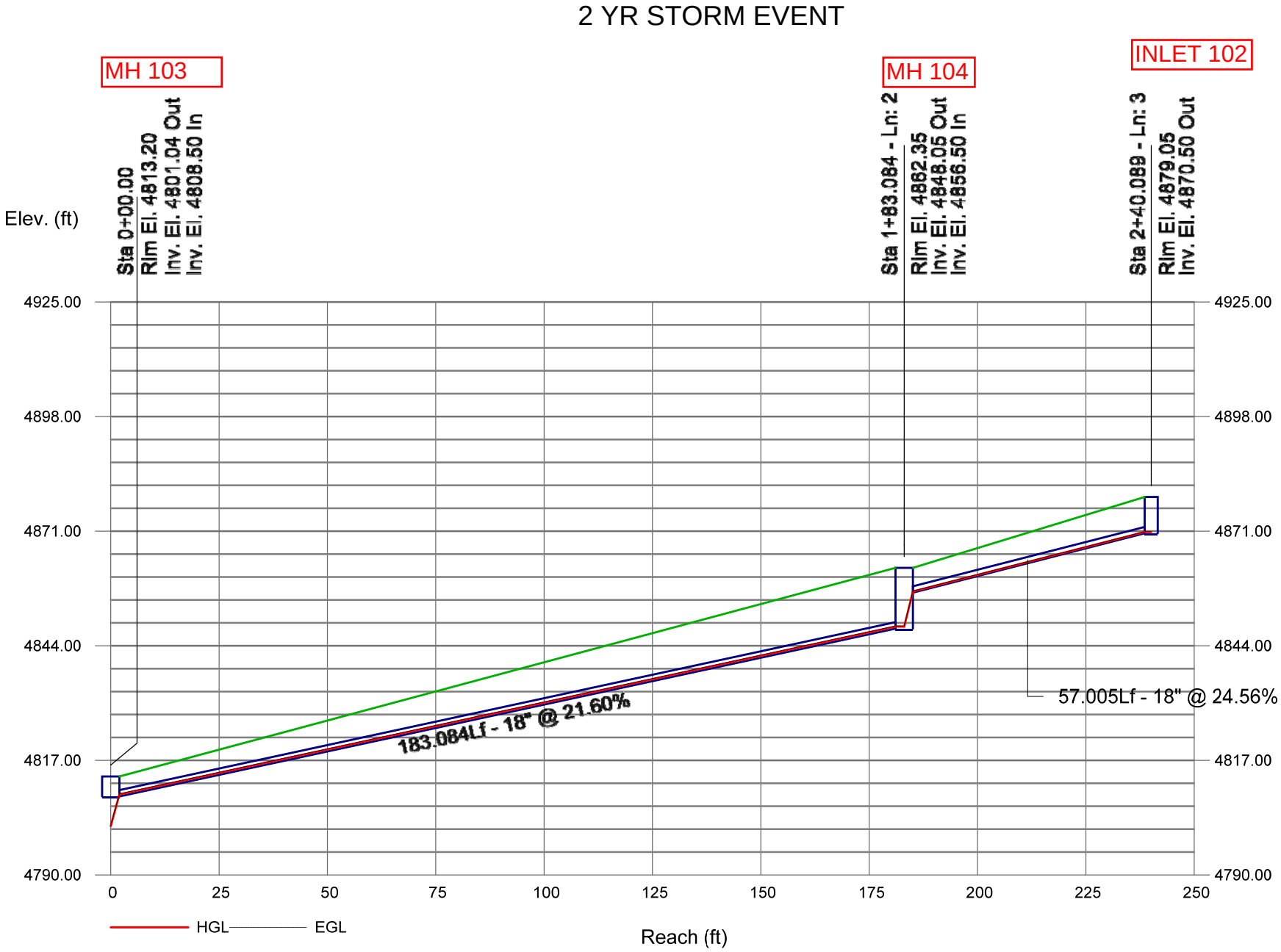
Storm Sewer Profile

Proj. file: Pinnacle-AllFilings-2yr.stm



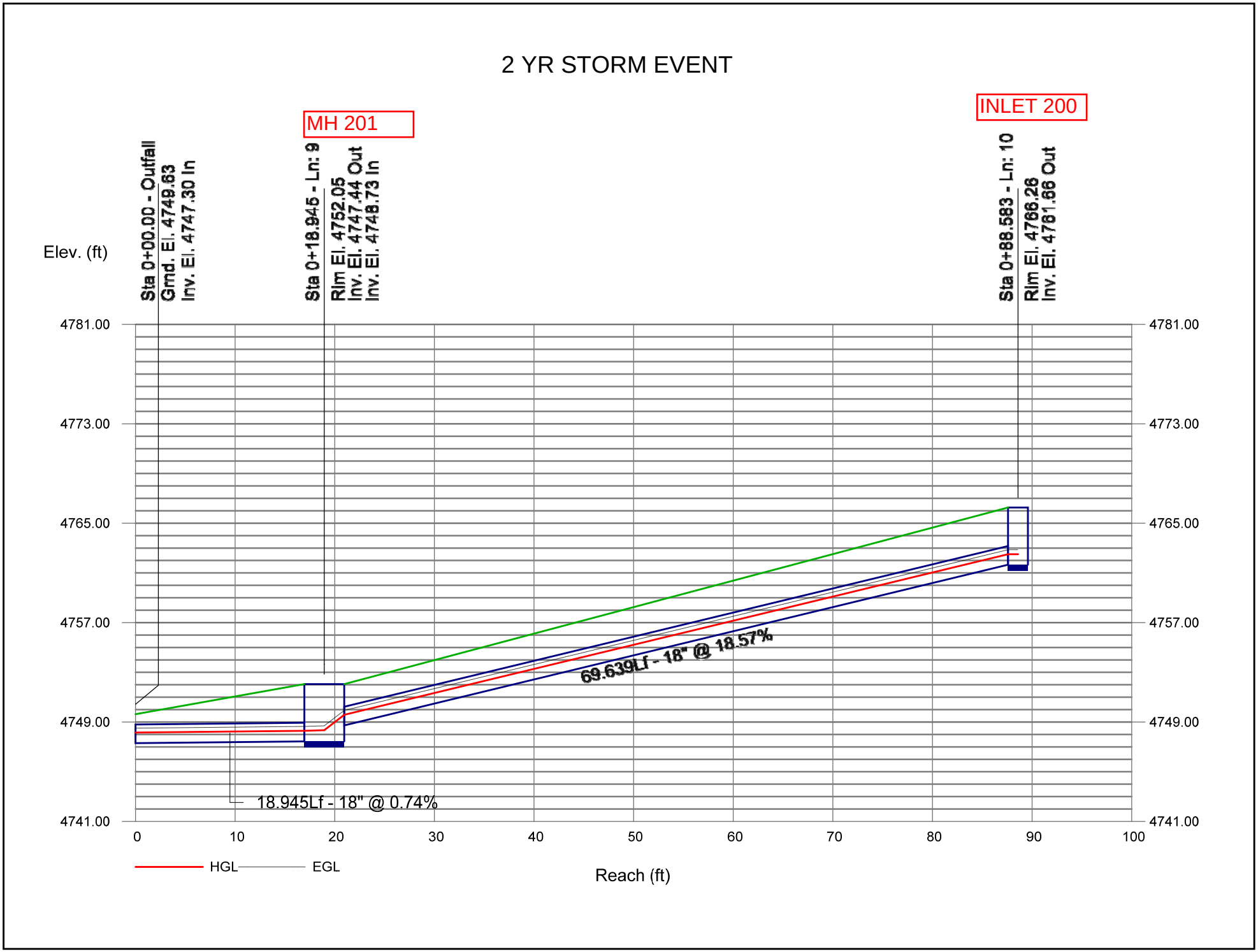
Storm Sewer Profile

Proj. file: Pinnacle-AllFilings-2yr.stm



Storm Sewer Profile

Proj. file: Pinnacle-AllFilings-2yr.stm



Storm Sewer Profile

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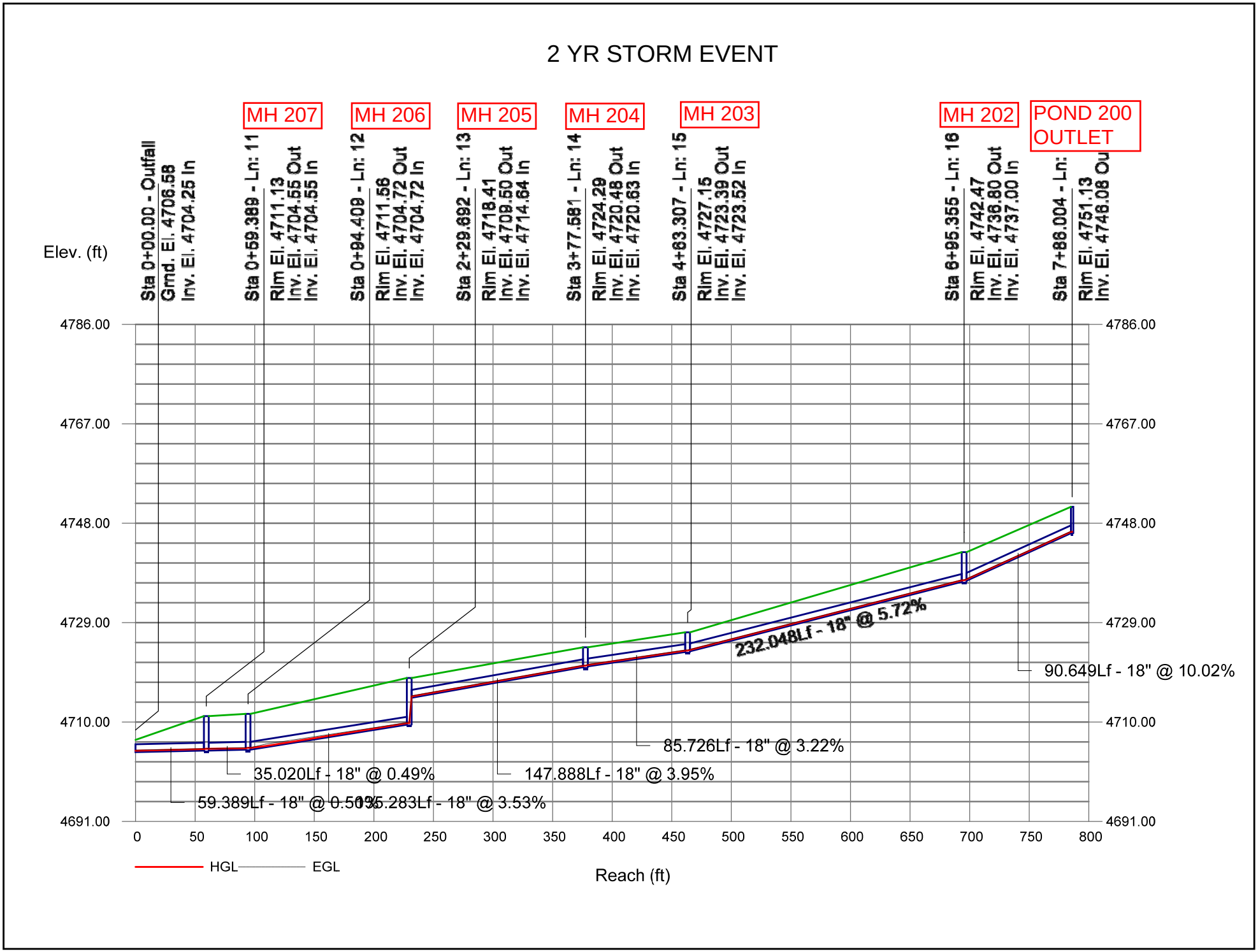
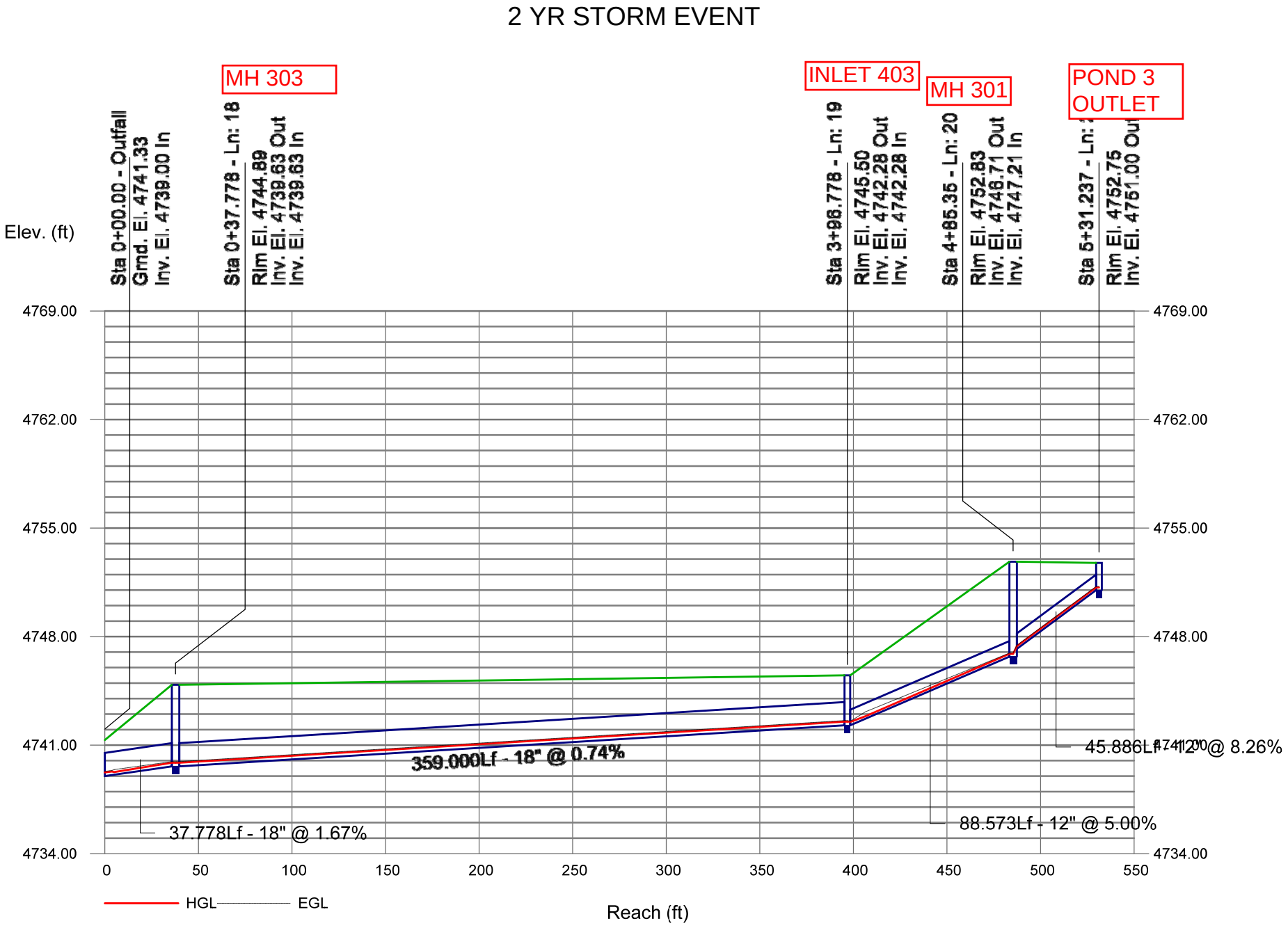


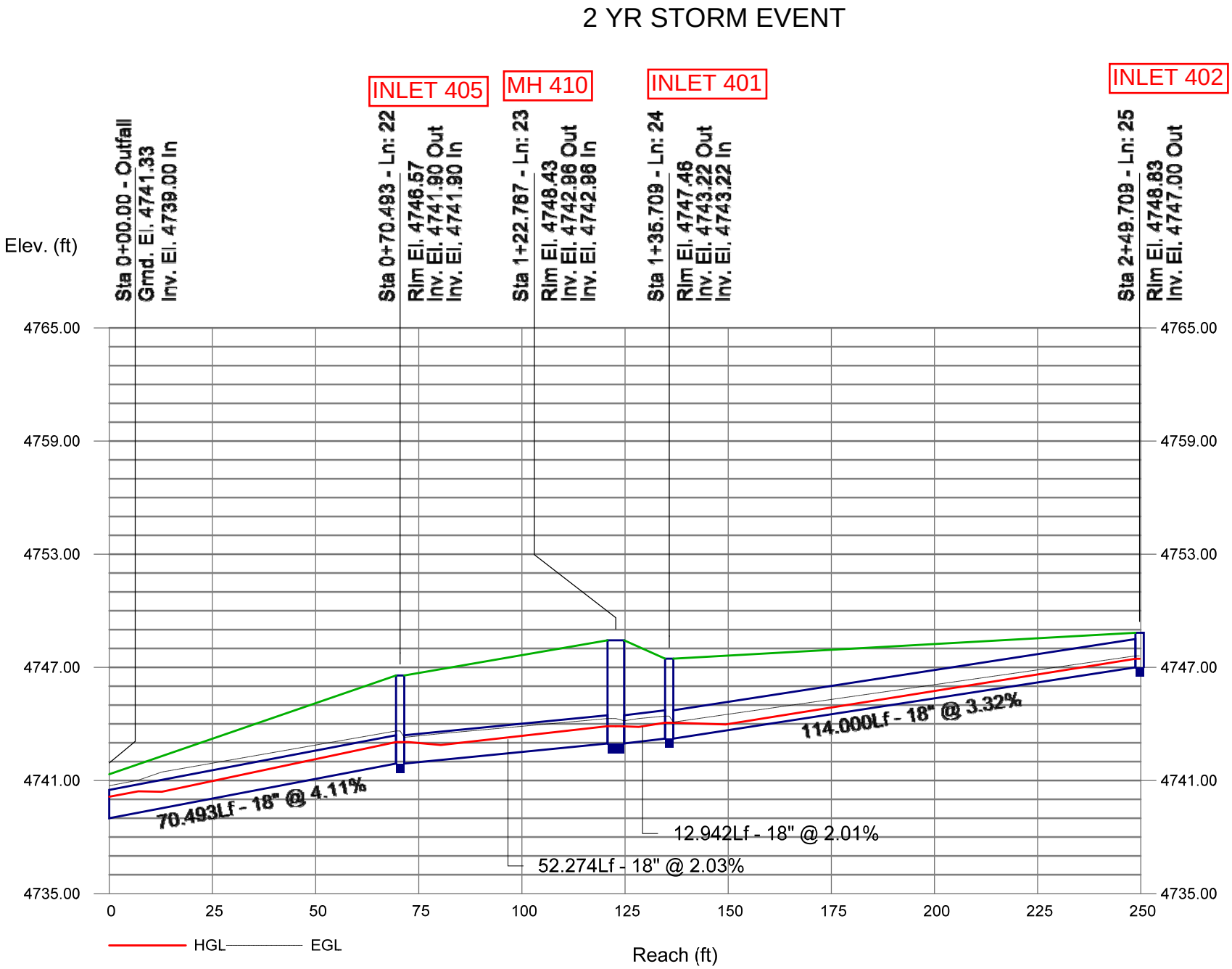
Storm Sewer Profile

Proj. file: Pinnacle-AllFilings-2yr.stm



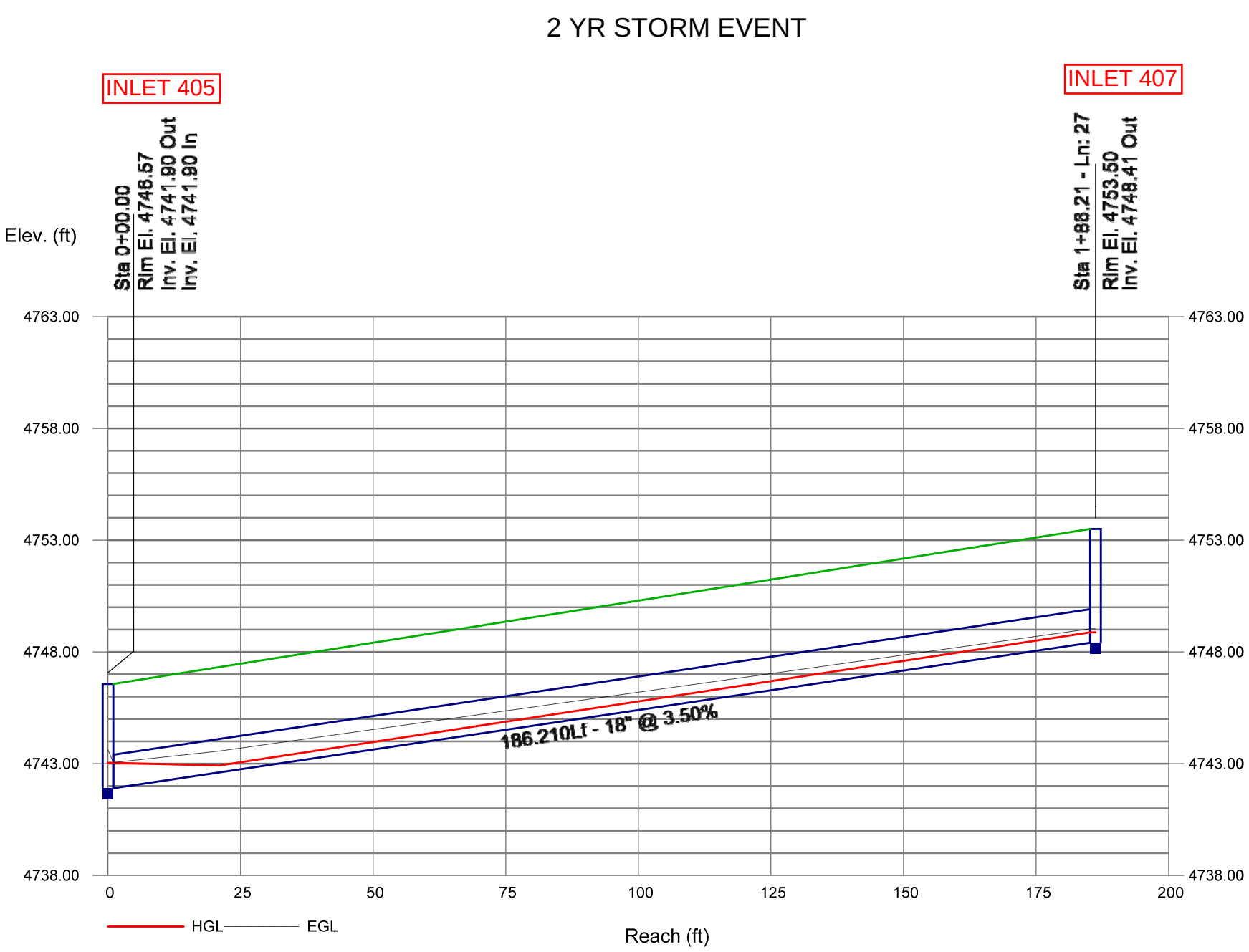
Storm Sewer Profile

Proj. file: Pinnacle-AllFilings-2yr.stm



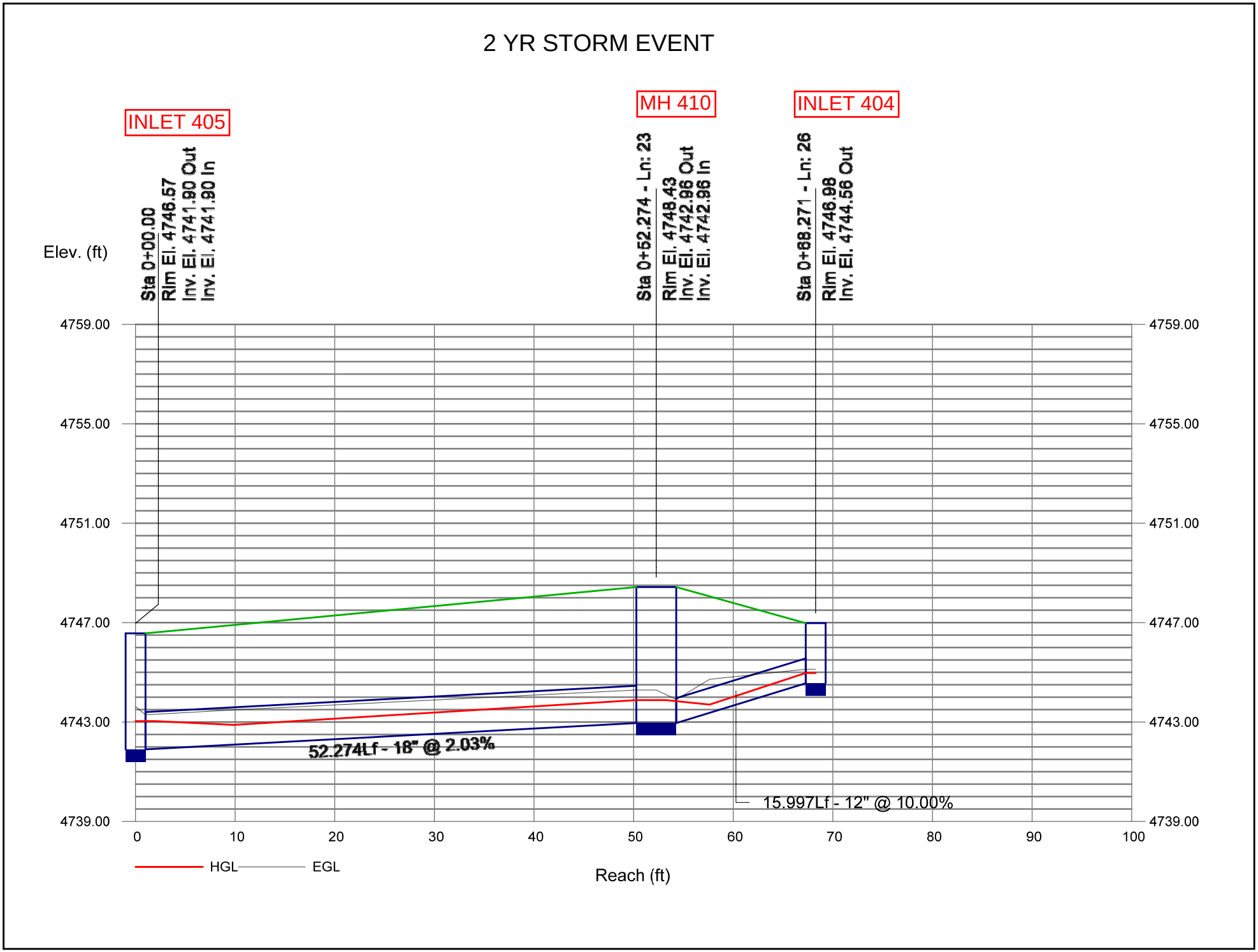
Storm Sewer Profile

Proj. file: Pinnacle-AllFilings-2yr.stm



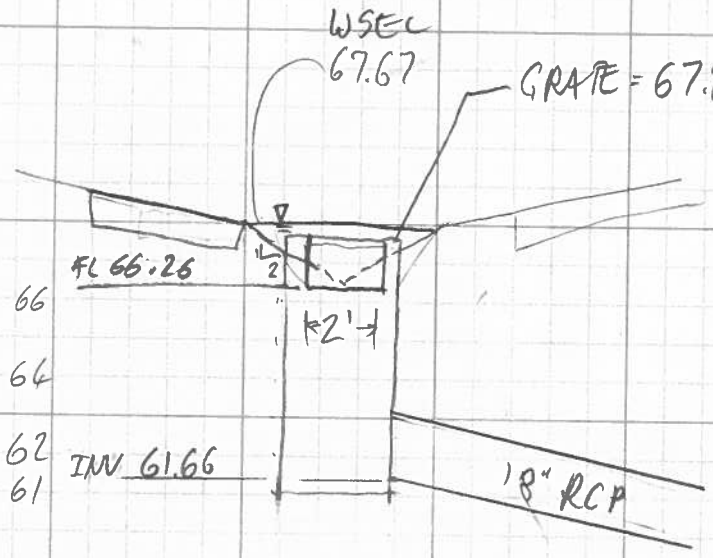
Storm Sewer Profile

Proj. file: Pinnacle-AllFilings-2yr.stm



Title PINNACLE INLET 200 CAPACITY
Date 8/1/17 Job No. F04-006
By

SCALE
1' □ 1'



4' WEIR w/ 1.5' of HEAD

$Q = 3.33(4)(1.5)^{3/2}$

$Q = 24.47$ cfs

18" ORIFICE w/ 7' of HEAD

$Q = 0.67A(2gH)^{1/2}$

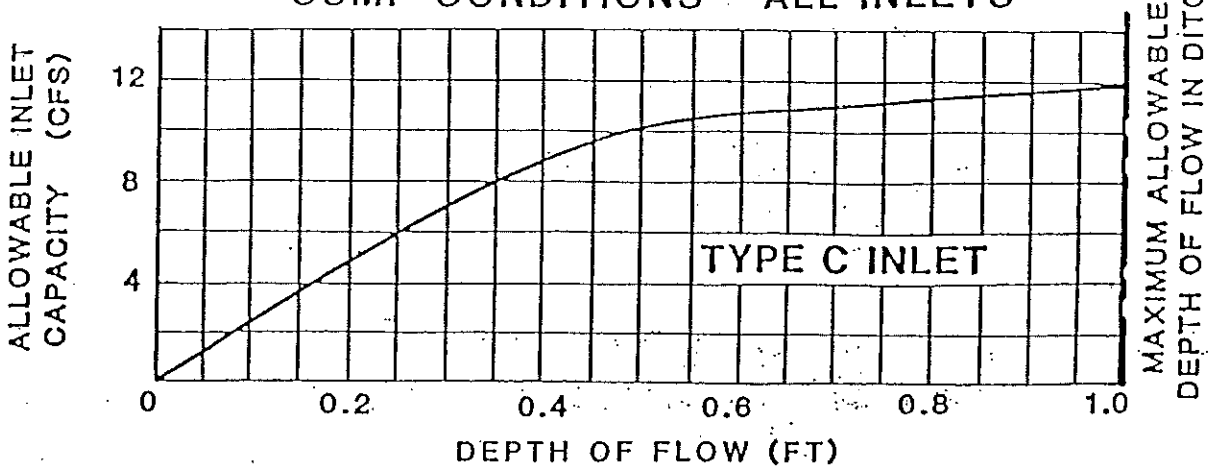
$Q = 0.67\left(\frac{\pi 1.5^2}{4}\right)(2(32.2)7)^{1/2} =$

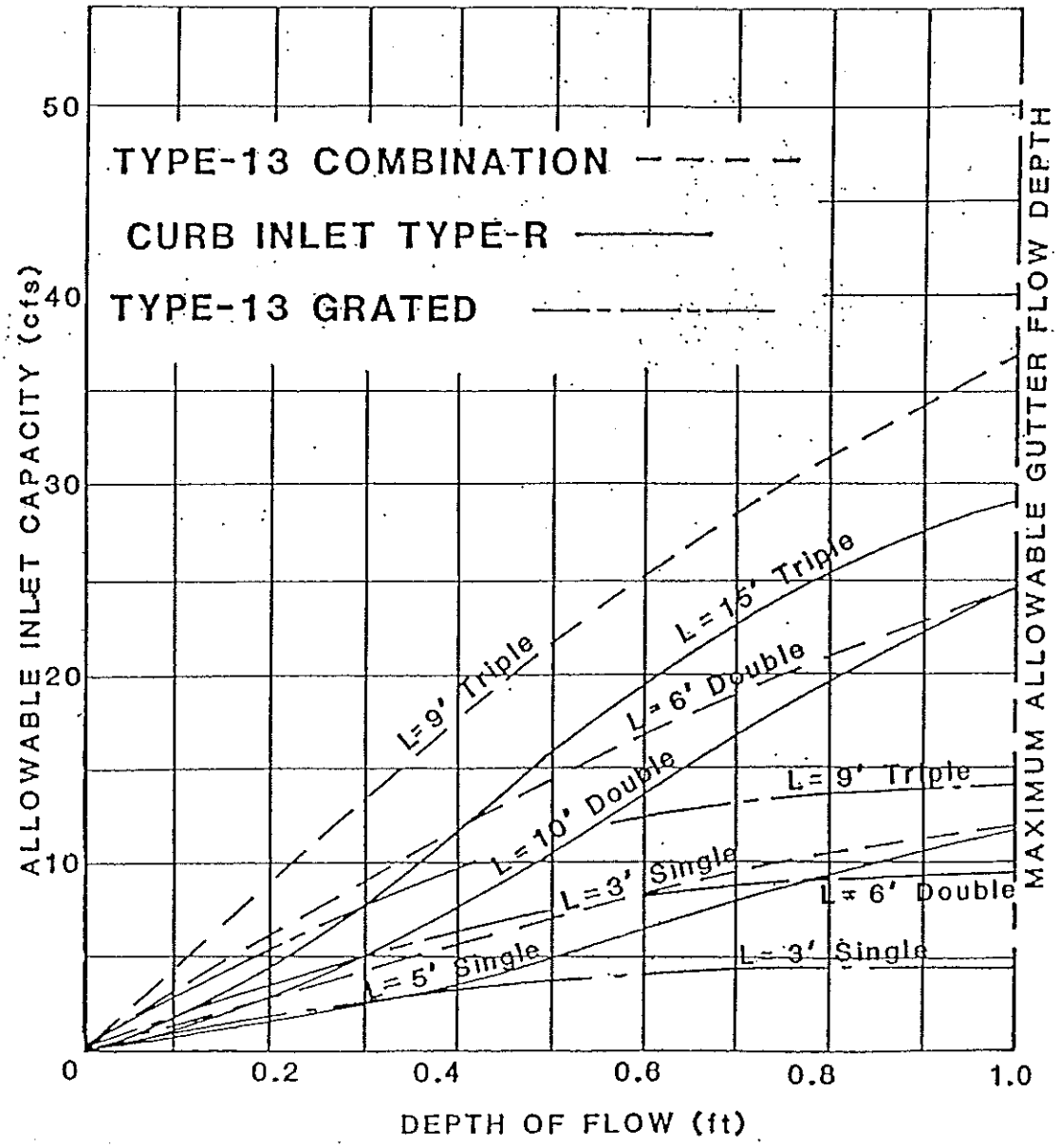
$Q = 25.13$ cfs

INLET CAPACITY Q = 24.5 CFS

ALLOWABLE INLET CAPACITY

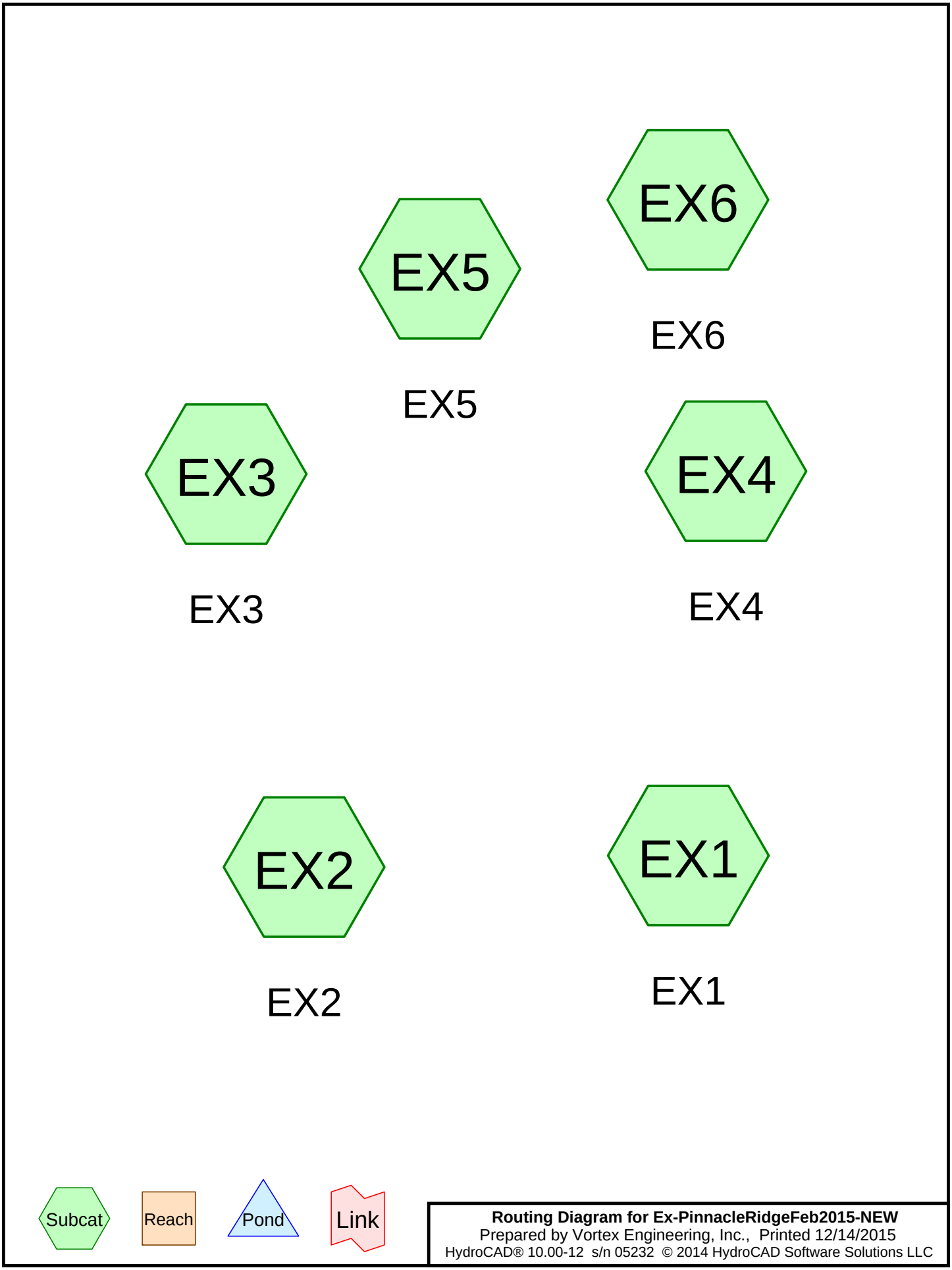
SUMP CONDITIONS - ALL INLETS





Date: Rev:	REFERENCE:

Appendix E – HYDROCAD Report



Routing Diagram for Ex-PinnacleRidgeFeb2015-NEW
Prepared by Vortex Engineering, Inc., Printed 12/14/2015
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Summary for Subcatchment EX1: EX1

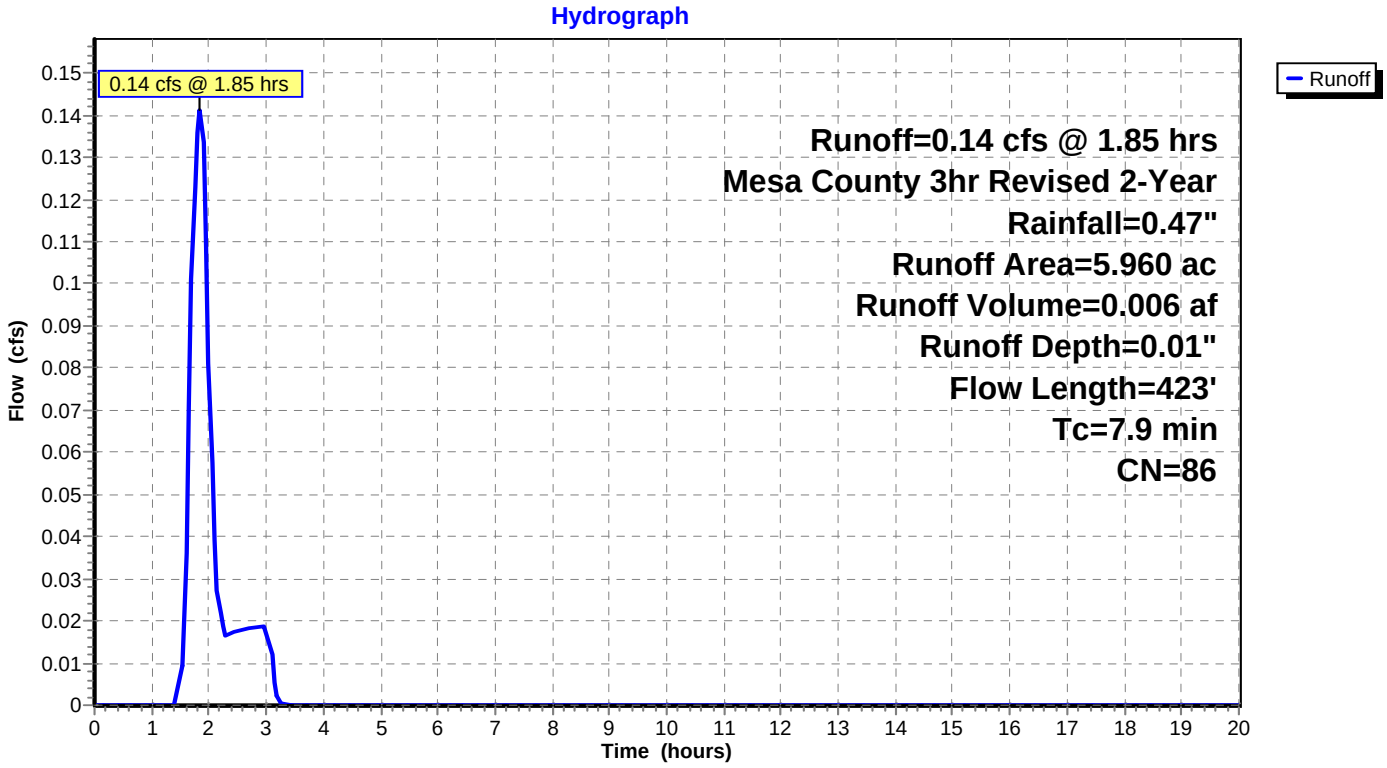
Runoff = 0.14 cfs @ 1.85 hrs, Volume= 0.006 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
5.960	86	Desert shrub range, Fair, HSG D
5.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0200	0.26		**Sheet Flow,** n= 0.026 P2= 0.46"
1.5	323	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
7.9	423	Total			

Subcatchment EX1: EX1



Summary for Subcatchment EX2: EX2

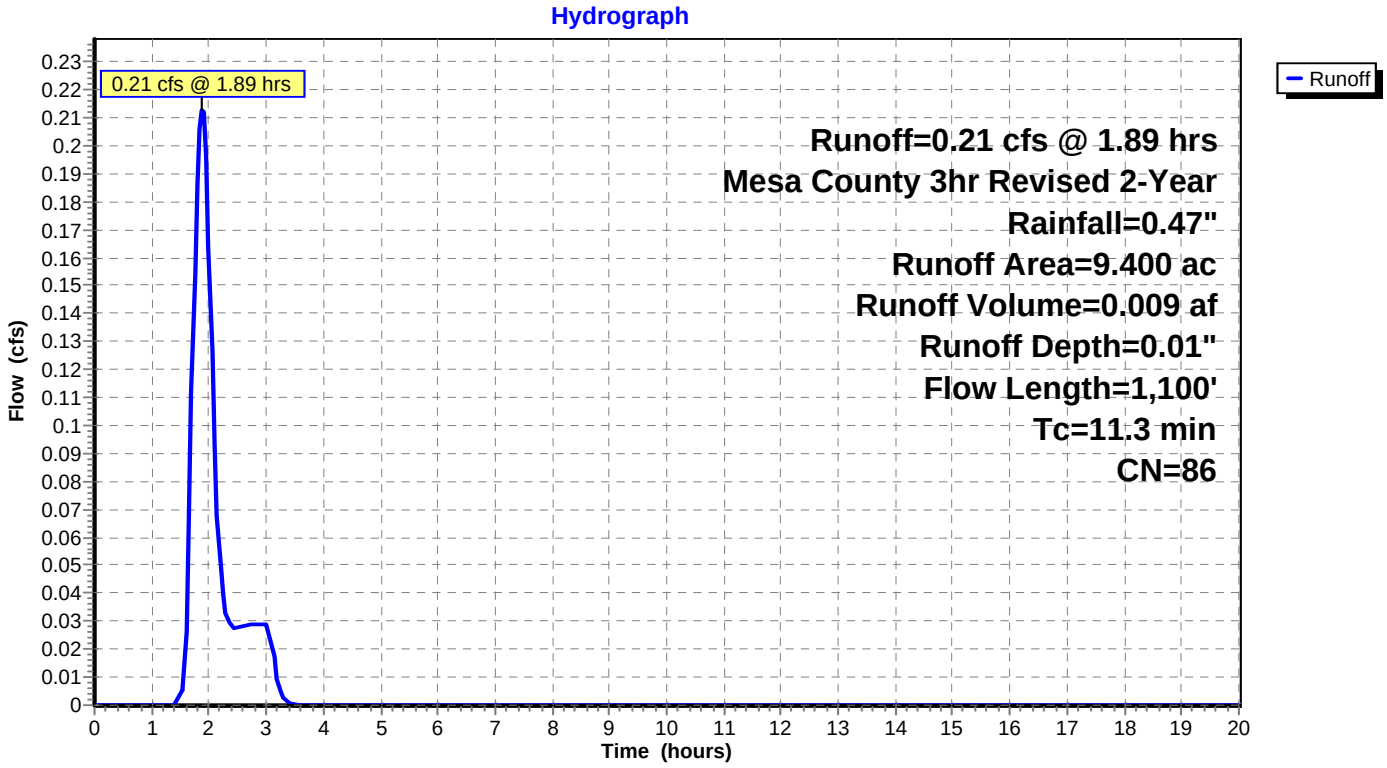
Runoff = 0.21 cfs @ 1.89 hrs, Volume= 0.009 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
9.400	86	Desert shrub range, Fair, HSG D
9.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	100	0.0200	0.25		**Sheet Flow,** n= 0.028 P2= 0.46"
4.6	1,000	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
11.3	1,100	Total			

Subcatchment EX2: EX2



Summary for Subcatchment EX3: EX3

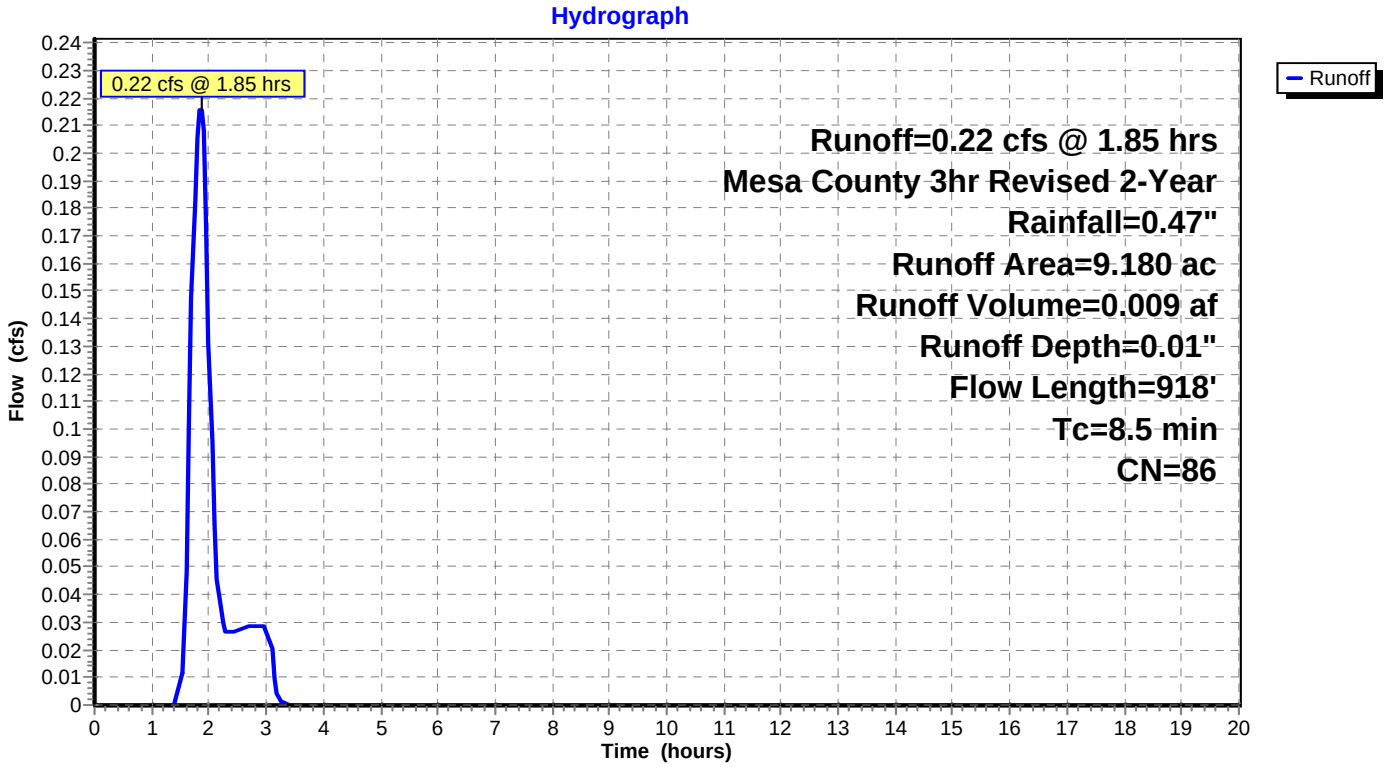
Runoff = 0.22 cfs @ 1.85 hrs, Volume= 0.009 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
9.180	86	Desert shrub range, Fair, HSG D
9.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	100	0.1600	0.57		**Sheet Flow,** n= 0.028 P2= 0.46"
2.6	466	0.1800	2.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.0	352	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	918	Total			

Subcatchment EX3: EX3



Summary for Subcatchment EX4: EX4

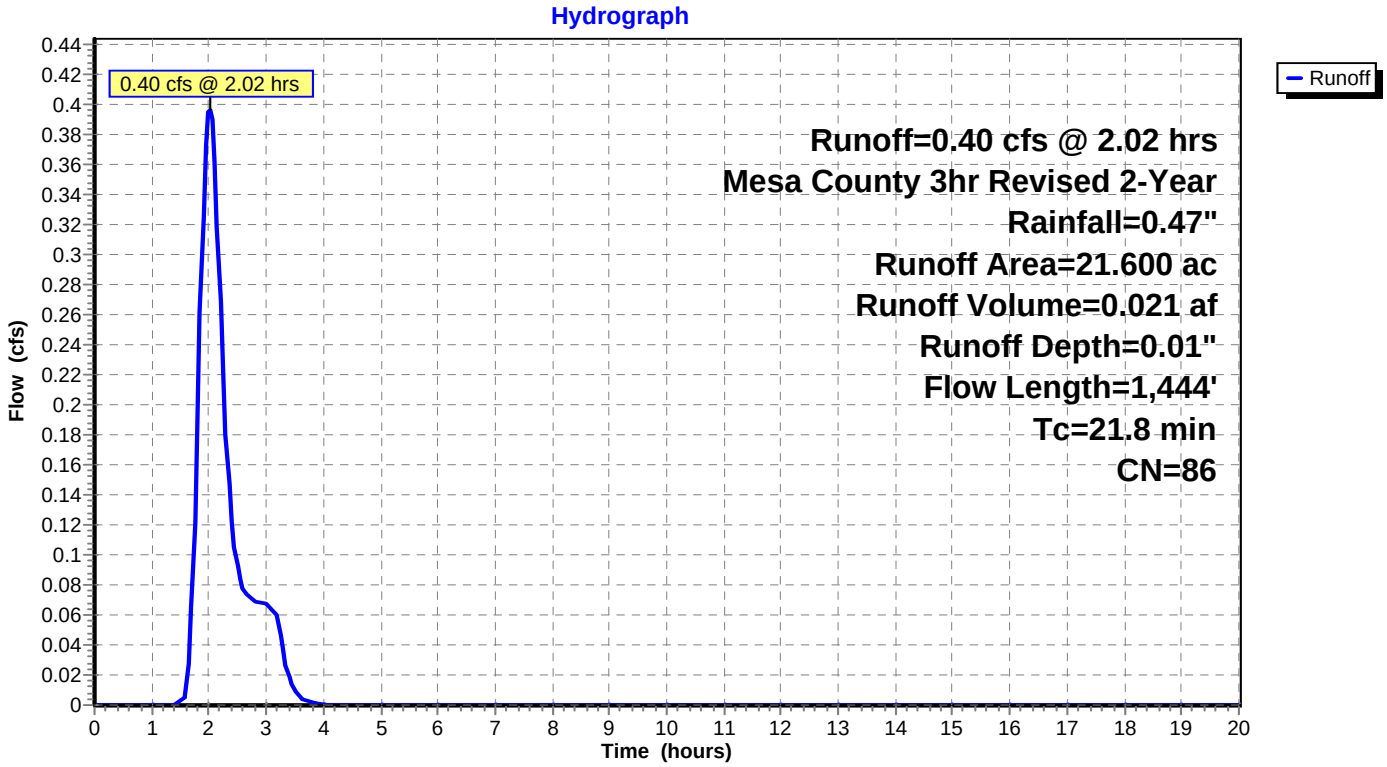
Runoff = 0.40 cfs @ 2.02 hrs, Volume= 0.021 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
21.600	86	Desert shrub range, Fair, HSG D
21.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0	192	0.0100	0.21		**Sheet Flow,** n= 0.028 P2= 0.46"
0.7	360	0.2900	8.67		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.1	892	0.0600	2.45		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
21.8	1,444	Total			

Subcatchment EX4: EX4



Summary for Subcatchment EX5: EX5

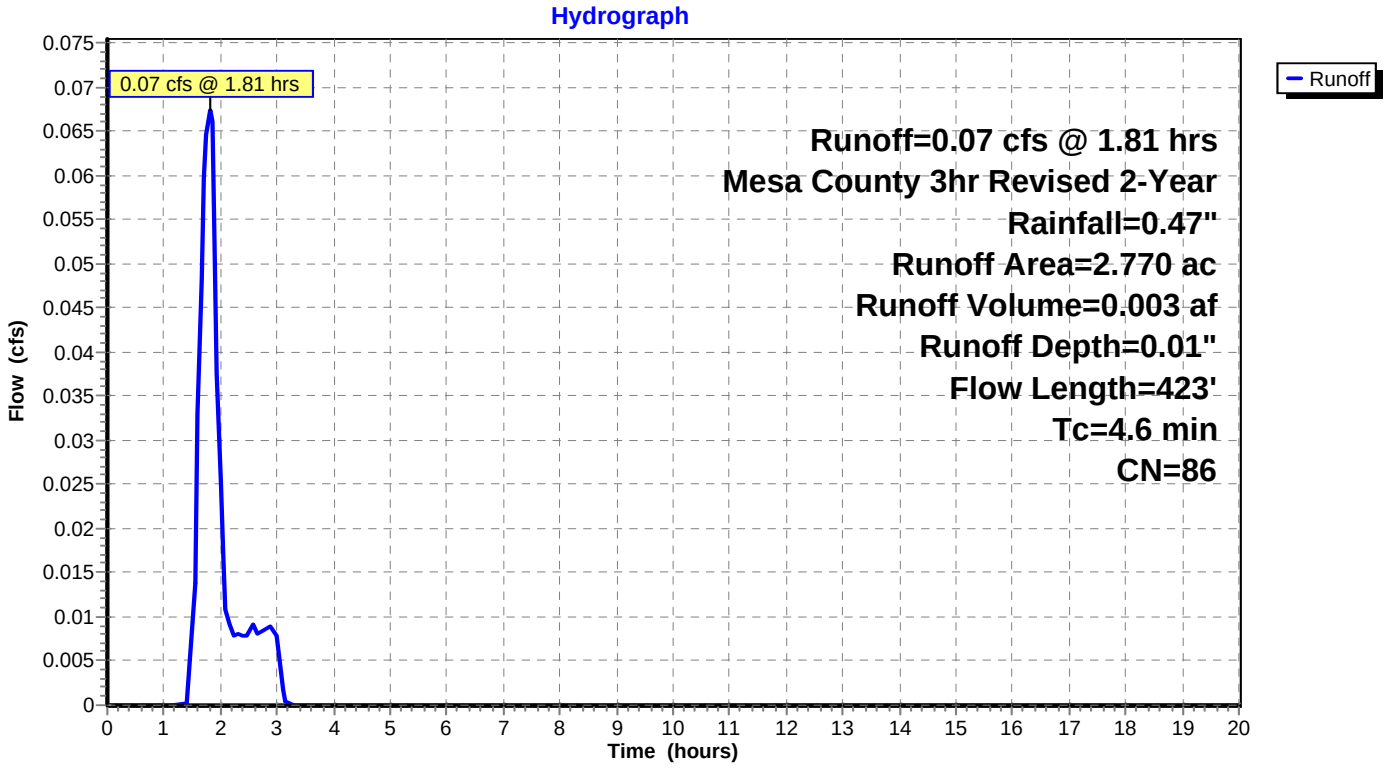
Runoff = 0.07 cfs @ 1.81 hrs, Volume= 0.003 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
2.770	86	Desert shrub range, Fair, HSG D
2.770		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.2500	0.68		**Sheet Flow,** n= 0.028 P2= 0.46"
2.1	323	0.1300	2.52		**Shallow Concentrated Flow,** Kv= 7.0 fps
4.6	423	Total			

Subcatchment EX5: EX5



Summary for Subcatchment EX6: EX6

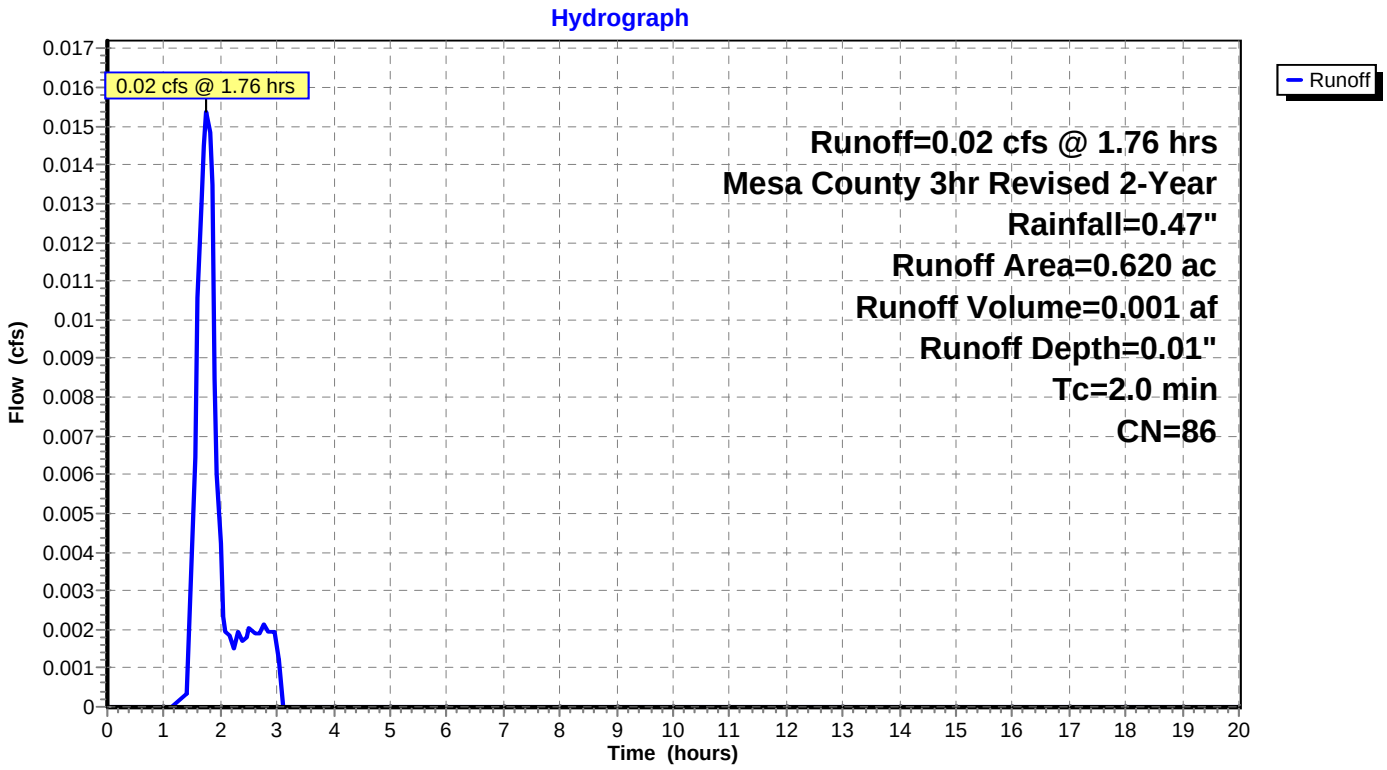
Runoff = 0.02 cfs @ 1.76 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
0.620	86	Desert shrub range, Fair, HSG D
0.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment EX6: EX6



Summary for Subcatchment EX1: EX1

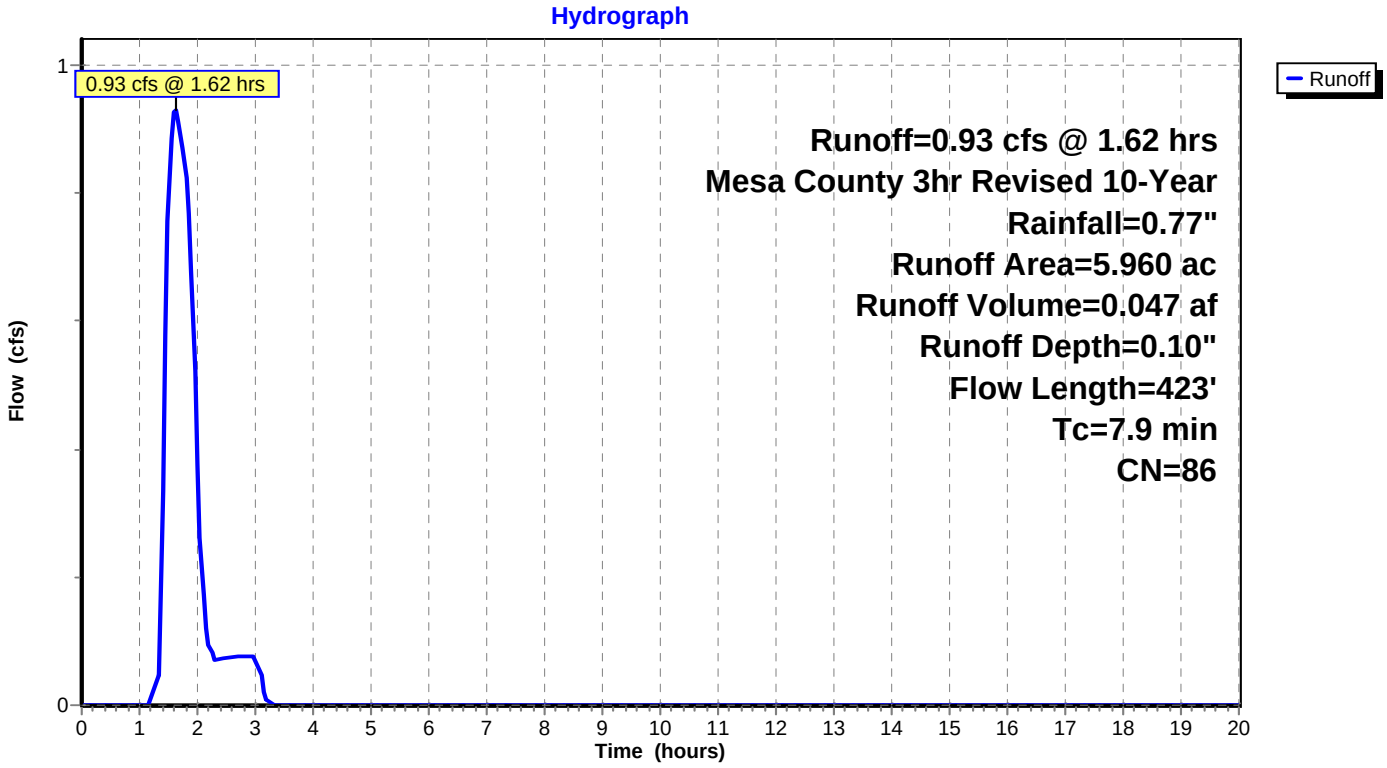
Runoff = 0.93 cfs @ 1.62 hrs, Volume= 0.047 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
5.960	86	Desert shrub range, Fair, HSG D
5.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0200	0.26		**Sheet Flow,** n= 0.026 P2= 0.46"
1.5	323	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
7.9	423	Total			

Subcatchment EX1: EX1



Summary for Subcatchment EX2: EX2

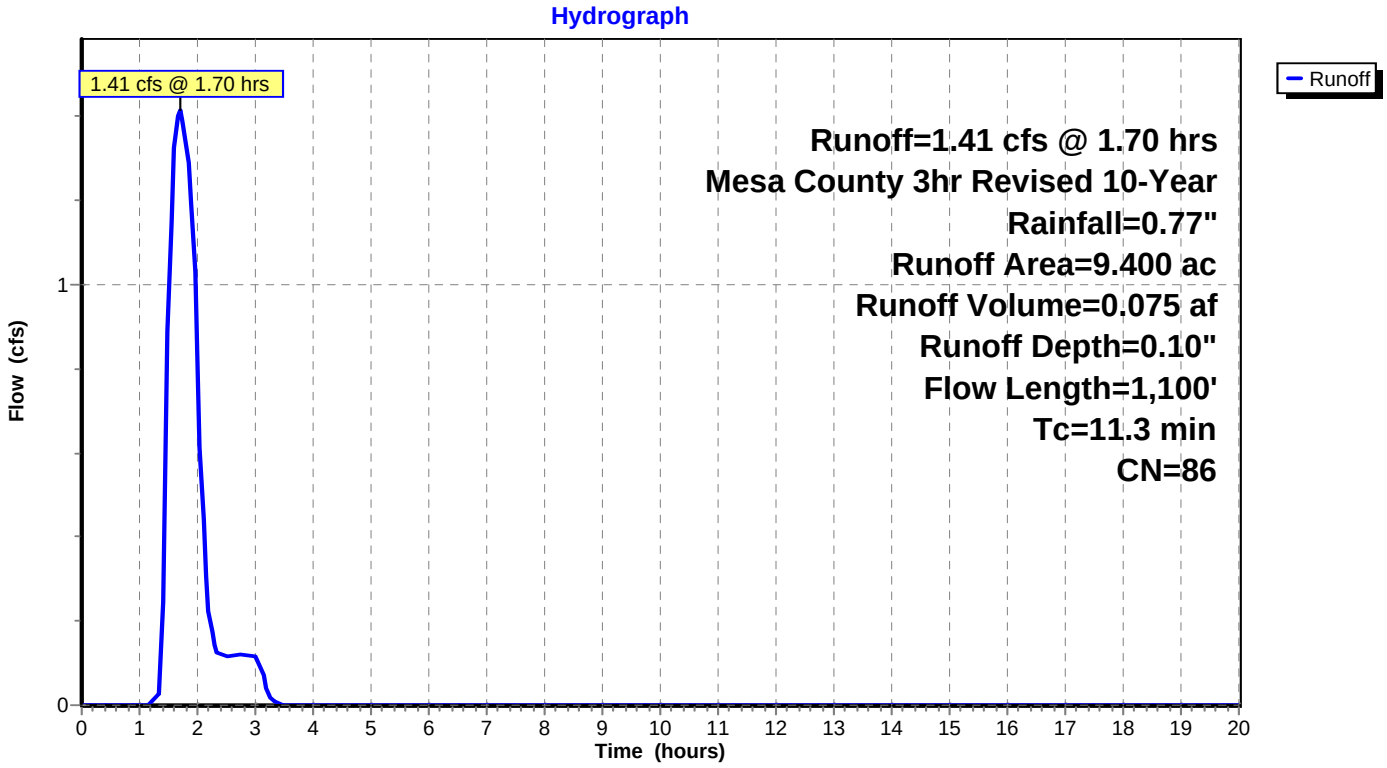
Runoff = 1.41 cfs @ 1.70 hrs, Volume= 0.075 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
9.400	86	Desert shrub range, Fair, HSG D
9.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	100	0.0200	0.25		**Sheet Flow,** n= 0.028 P2= 0.46"
4.6	1,000	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
11.3	1,100	Total			

Subcatchment EX2: EX2



Summary for Subcatchment EX3: EX3

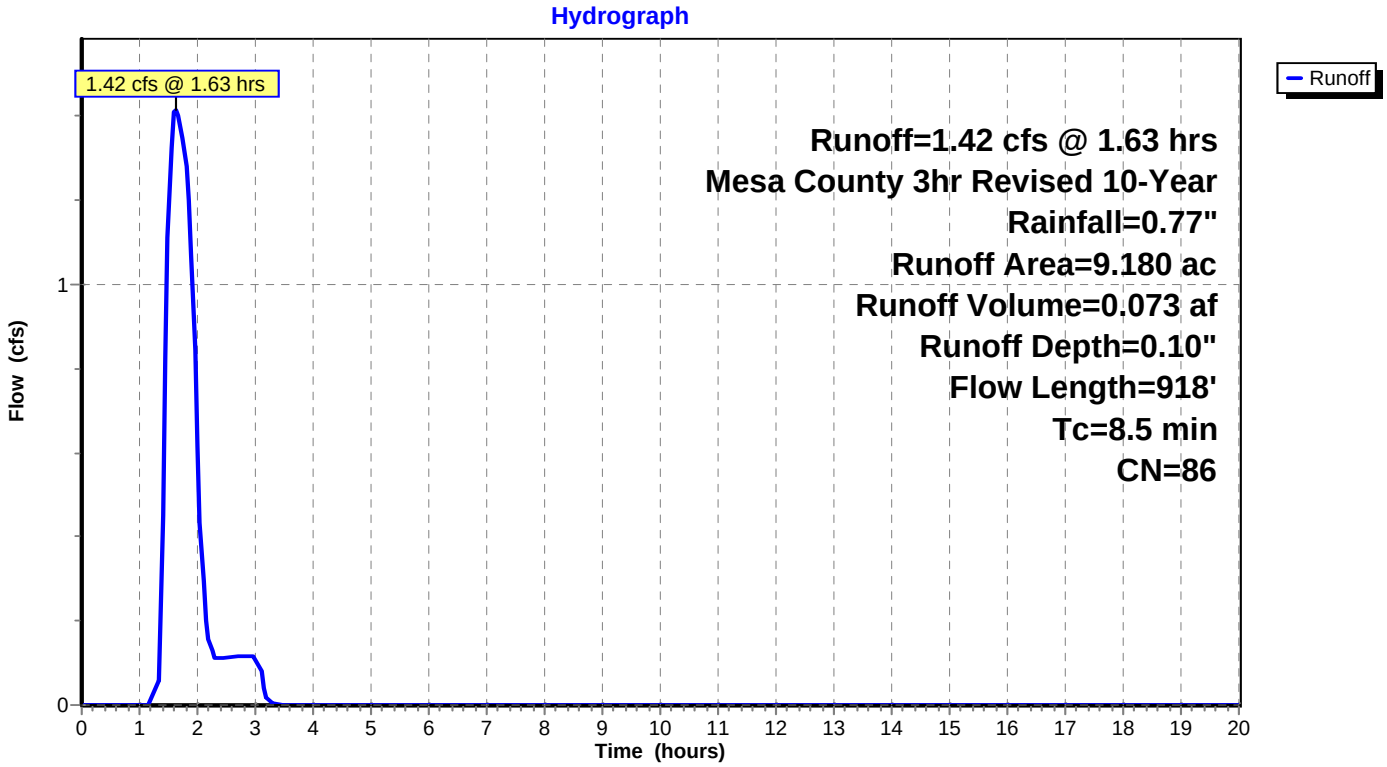
Runoff = 1.42 cfs @ 1.63 hrs, Volume= 0.073 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
9.180	86	Desert shrub range, Fair, HSG D
9.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	100	0.1600	0.57		**Sheet Flow,** n= 0.028 P2= 0.46"
2.6	466	0.1800	2.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.0	352	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	918	Total			

Subcatchment EX3: EX3



Summary for Subcatchment EX4: EX4

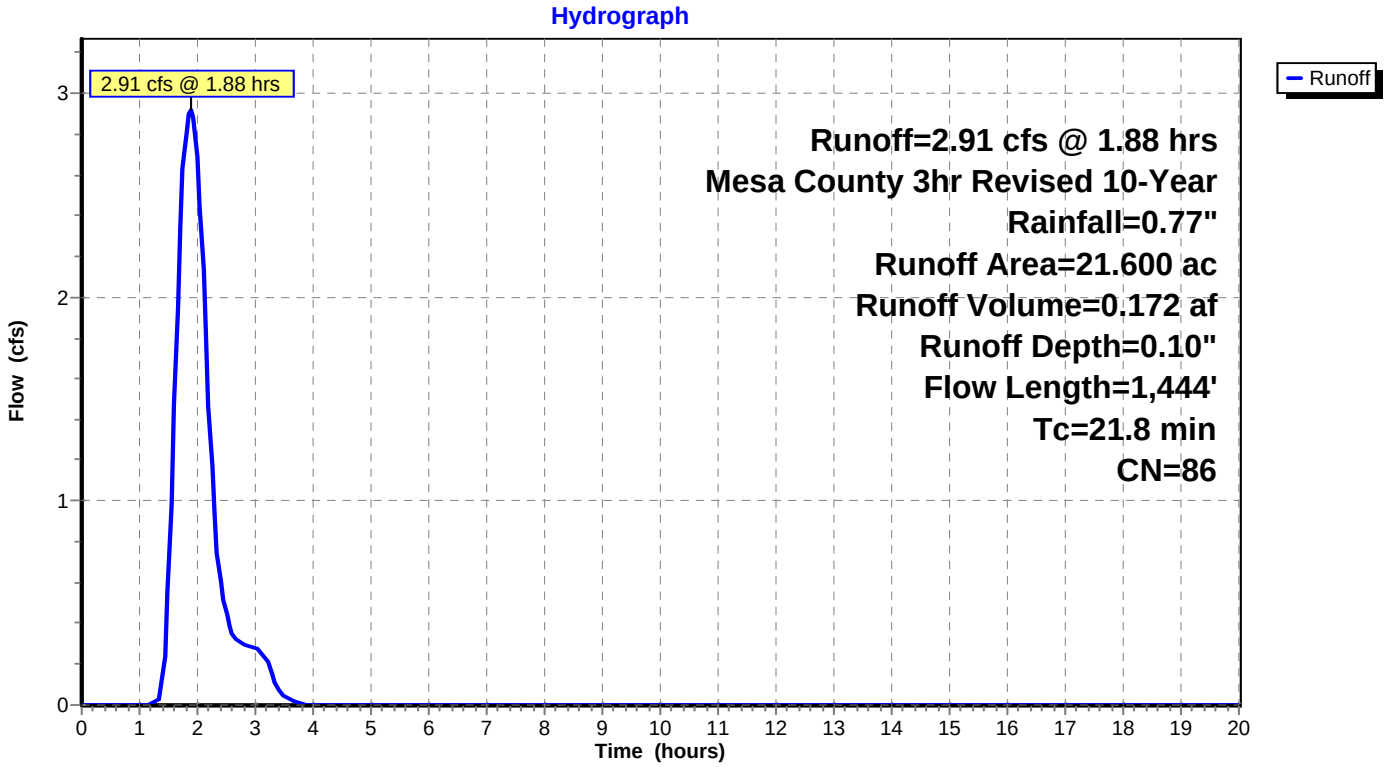
Runoff = 2.91 cfs @ 1.88 hrs, Volume= 0.172 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
21.600	86	Desert shrub range, Fair, HSG D
21.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0	192	0.0100	0.21		**Sheet Flow,** n= 0.028 P2= 0.46"
0.7	360	0.2900	8.67		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.1	892	0.0600	2.45		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
21.8	1,444	Total			

Subcatchment EX4: EX4



Summary for Subcatchment EX5: EX5

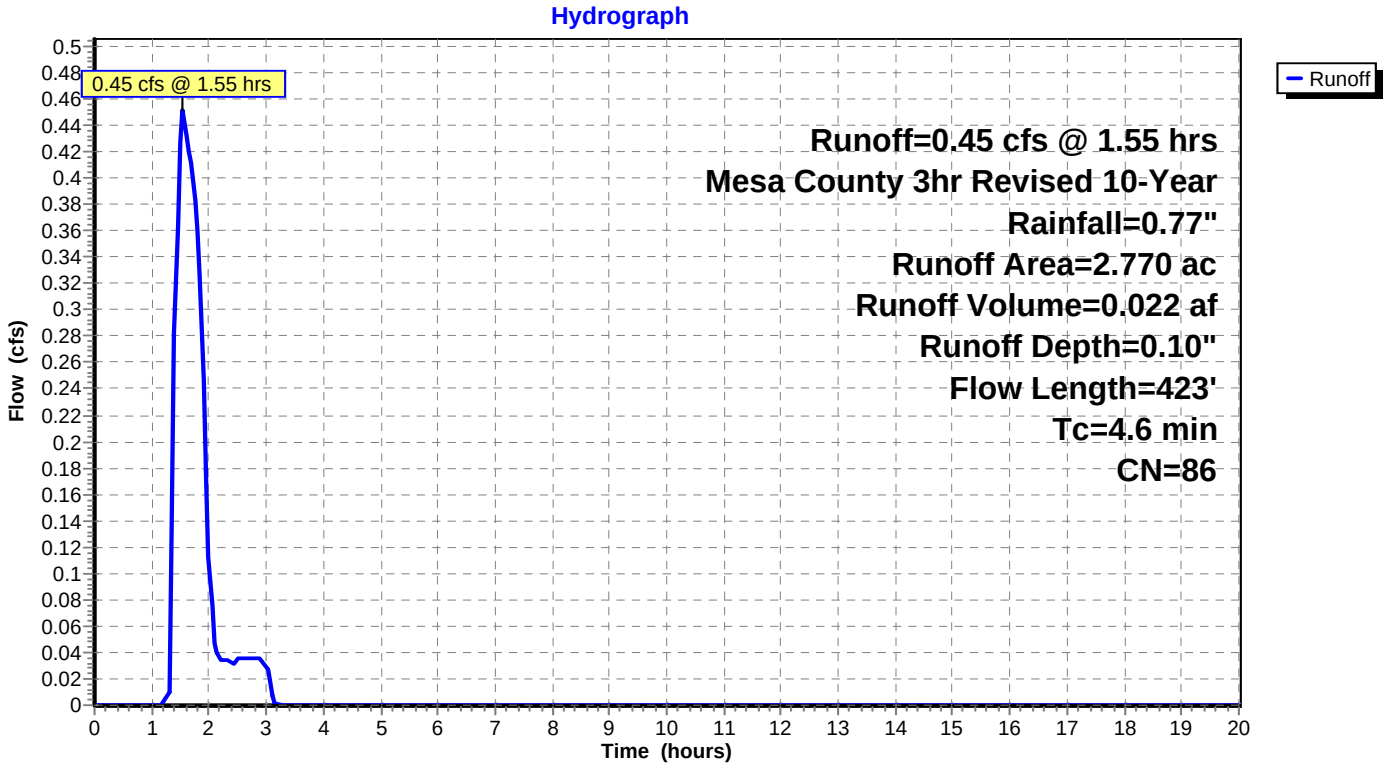
Runoff = 0.45 cfs @ 1.55 hrs, Volume= 0.022 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
2.770	86	Desert shrub range, Fair, HSG D
2.770		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.2500	0.68		**Sheet Flow,** n= 0.028 P2= 0.46"
2.1	323	0.1300	2.52		**Shallow Concentrated Flow,** Kv= 7.0 fps
4.6	423	Total			

Subcatchment EX5: EX5



Summary for Subcatchment EX6: EX6

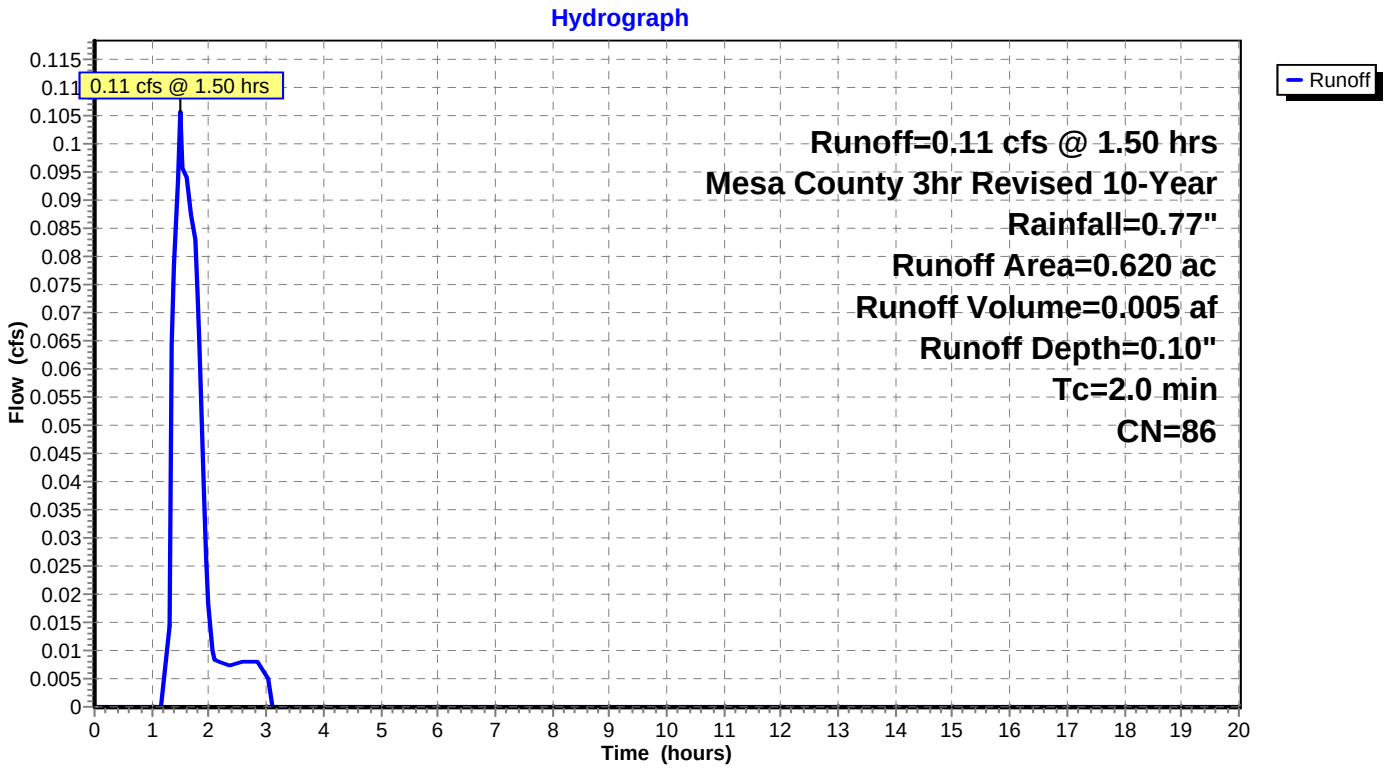
Runoff = 0.11 cfs @ 1.50 hrs, Volume= 0.005 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
0.620	86	Desert shrub range, Fair, HSG D
0.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment EX6: EX6



Summary for Subcatchment EX1: EX1

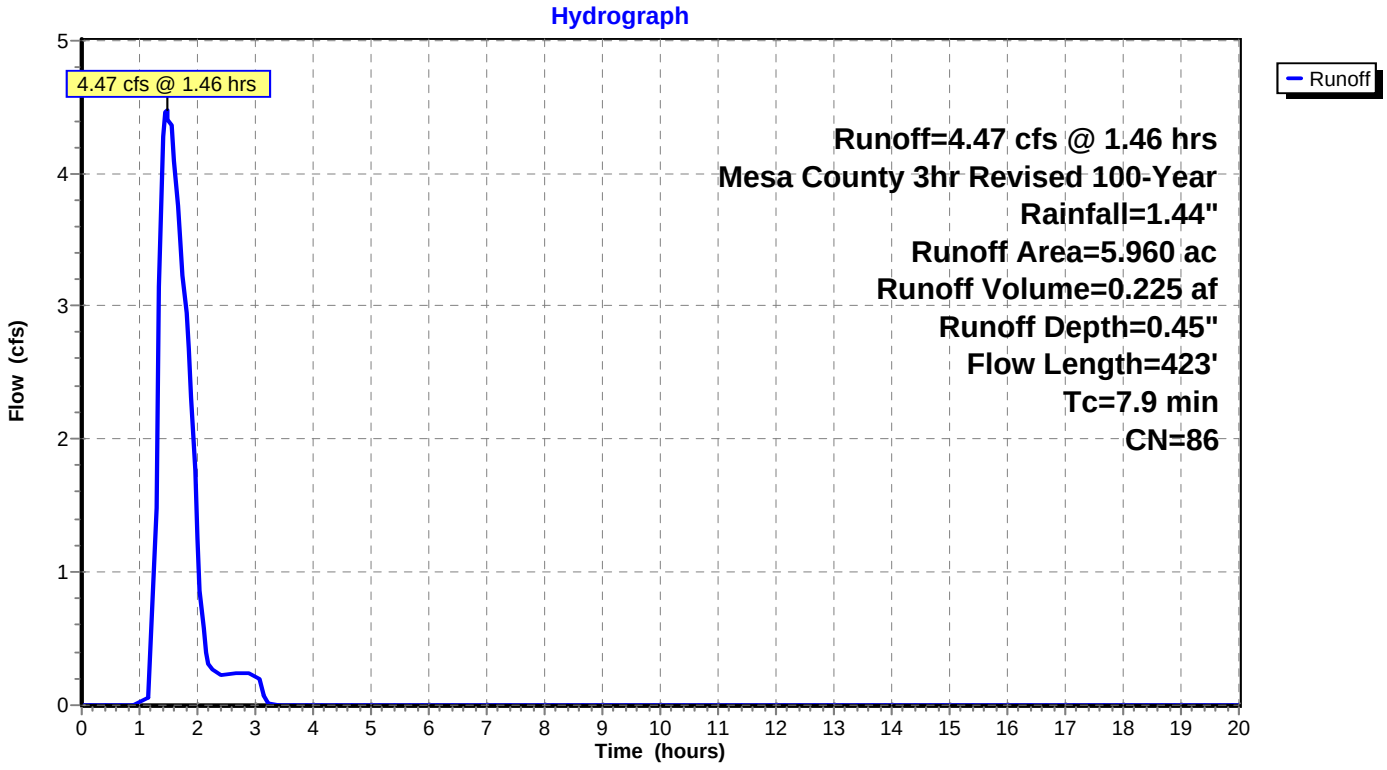
Runoff = 4.47 cfs @ 1.46 hrs, Volume= 0.225 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
5.960	86	Desert shrub range, Fair, HSG D
5.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0200	0.26		**Sheet Flow,** n= 0.026 P2= 0.46"
1.5	323	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
7.9	423	Total			

Subcatchment EX1: EX1



Summary for Subcatchment EX2: EX2

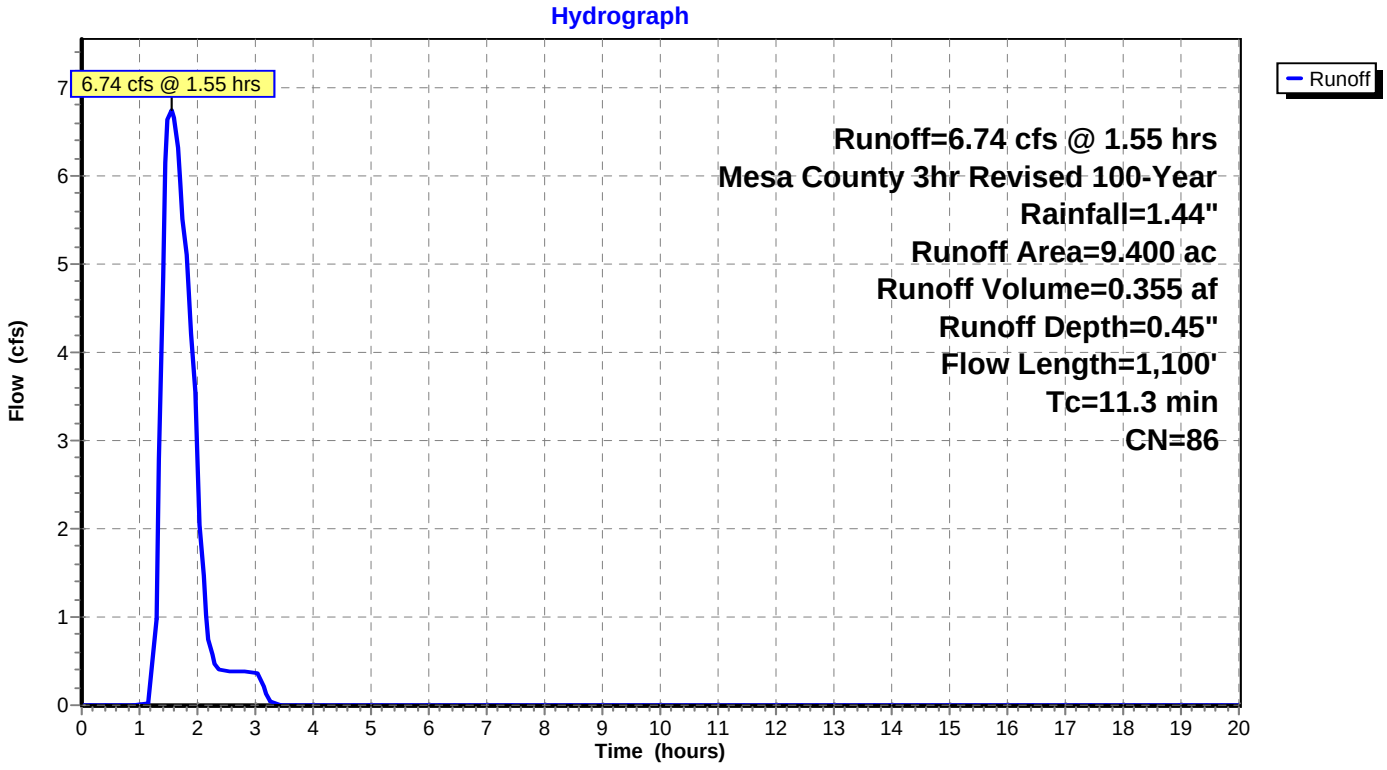
Runoff = 6.74 cfs @ 1.55 hrs, Volume= 0.355 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
9.400	86	Desert shrub range, Fair, HSG D
9.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	100	0.0200	0.25		**Sheet Flow,** n= 0.028 P2= 0.46"
4.6	1,000	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
11.3	1,100	Total			

Subcatchment EX2: EX2



Summary for Subcatchment EX3: EX3

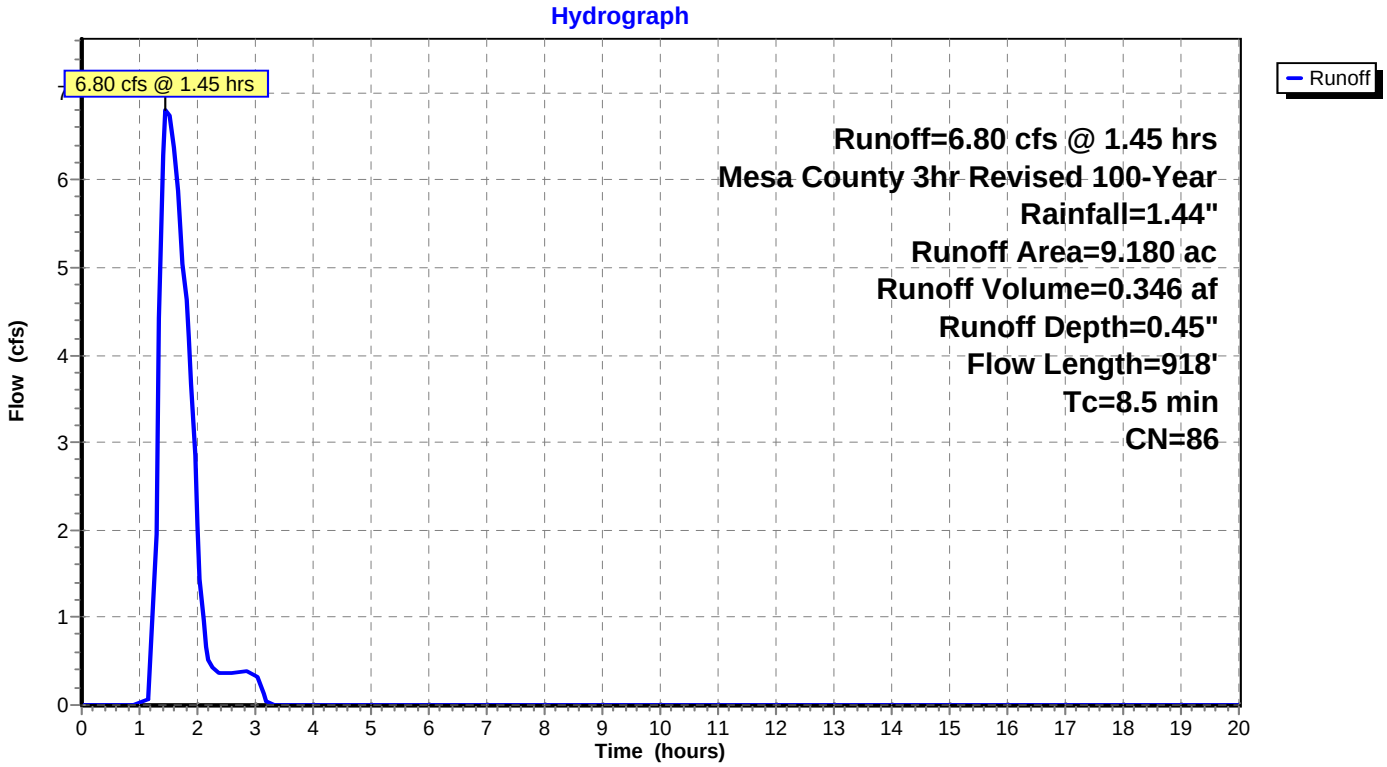
Runoff = 6.80 cfs @ 1.45 hrs, Volume= 0.346 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
9.180	86	Desert shrub range, Fair, HSG D
9.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	100	0.1600	0.57		**Sheet Flow,** n= 0.028 P2= 0.46"
2.6	466	0.1800	2.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.0	352	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	918	Total			

Subcatchment EX3: EX3



Summary for Subcatchment EX4: EX4

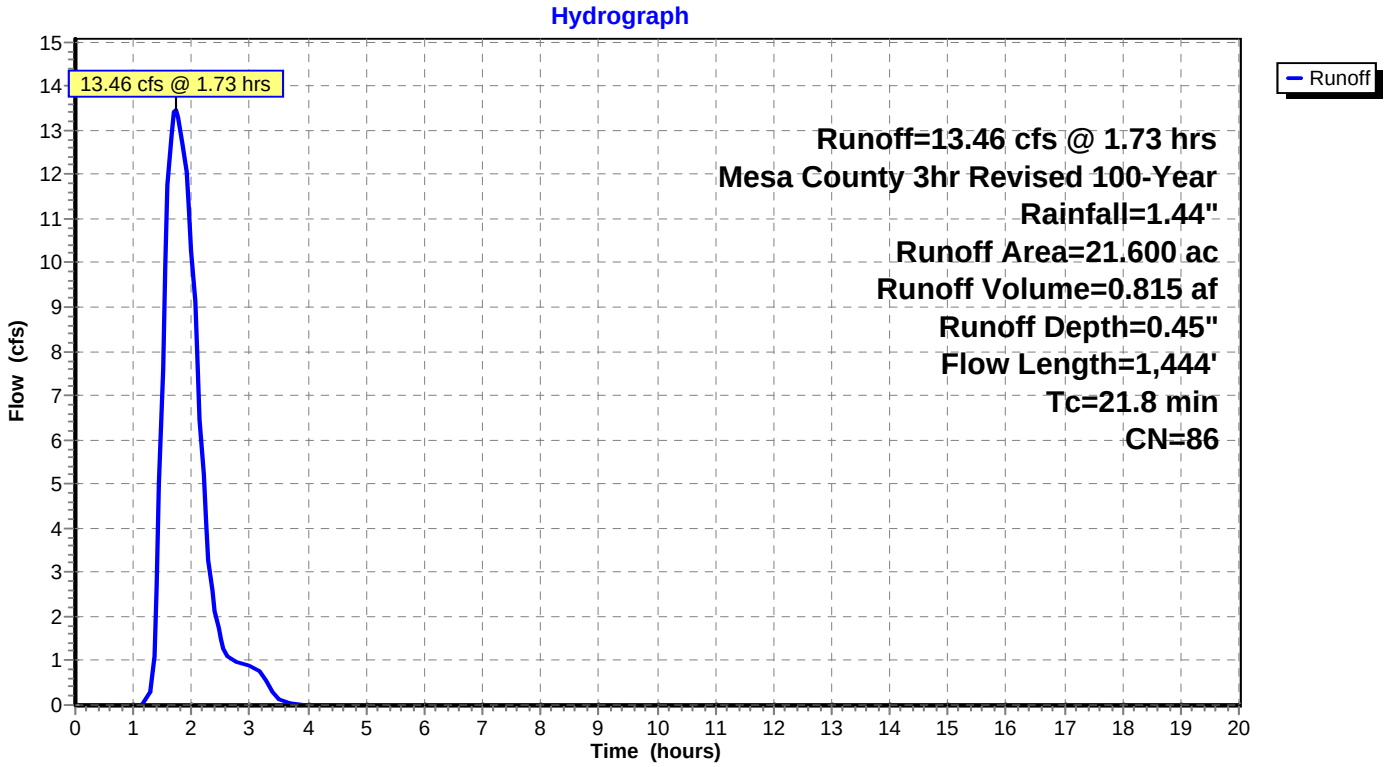
Runoff = 13.46 cfs @ 1.73 hrs, Volume= 0.815 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
21.600	86	Desert shrub range, Fair, HSG D
21.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0	192	0.0100	0.21		**Sheet Flow,** n= 0.028 P2= 0.46"
0.7	360	0.2900	8.67		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.1	892	0.0600	2.45		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
21.8	1,444	Total			

Subcatchment EX4: EX4



Summary for Subcatchment EX5: EX5

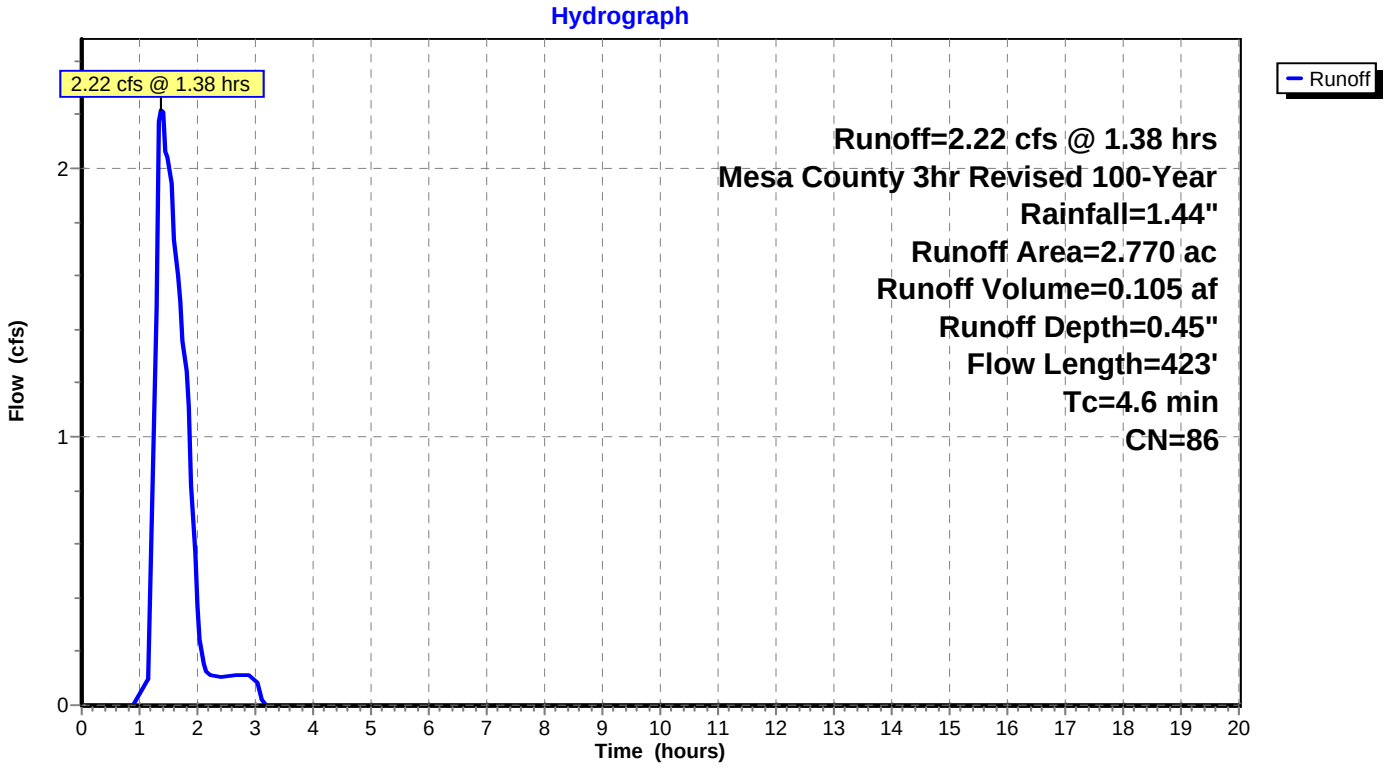
Runoff = 2.22 cfs @ 1.38 hrs, Volume= 0.105 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
2.770	86	Desert shrub range, Fair, HSG D
2.770		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.2500	0.68		**Sheet Flow,** n= 0.028 P2= 0.46"
2.1	323	0.1300	2.52		**Shallow Concentrated Flow,** Kv= 7.0 fps
4.6	423	Total			

Subcatchment EX5: EX5



Summary for Subcatchment EX6: EX6

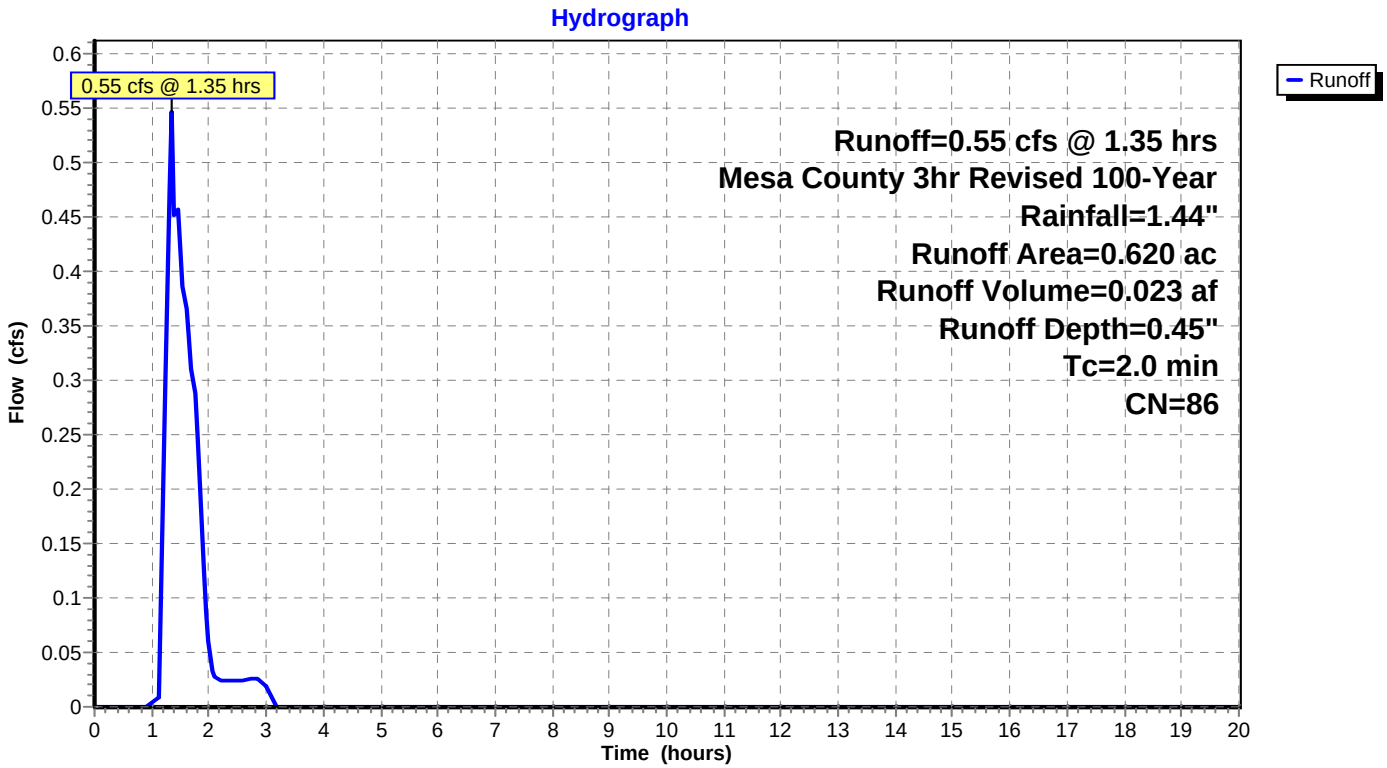
Runoff = 0.55 cfs @ 1.35 hrs, Volume= 0.023 af, Depth= 0.45"

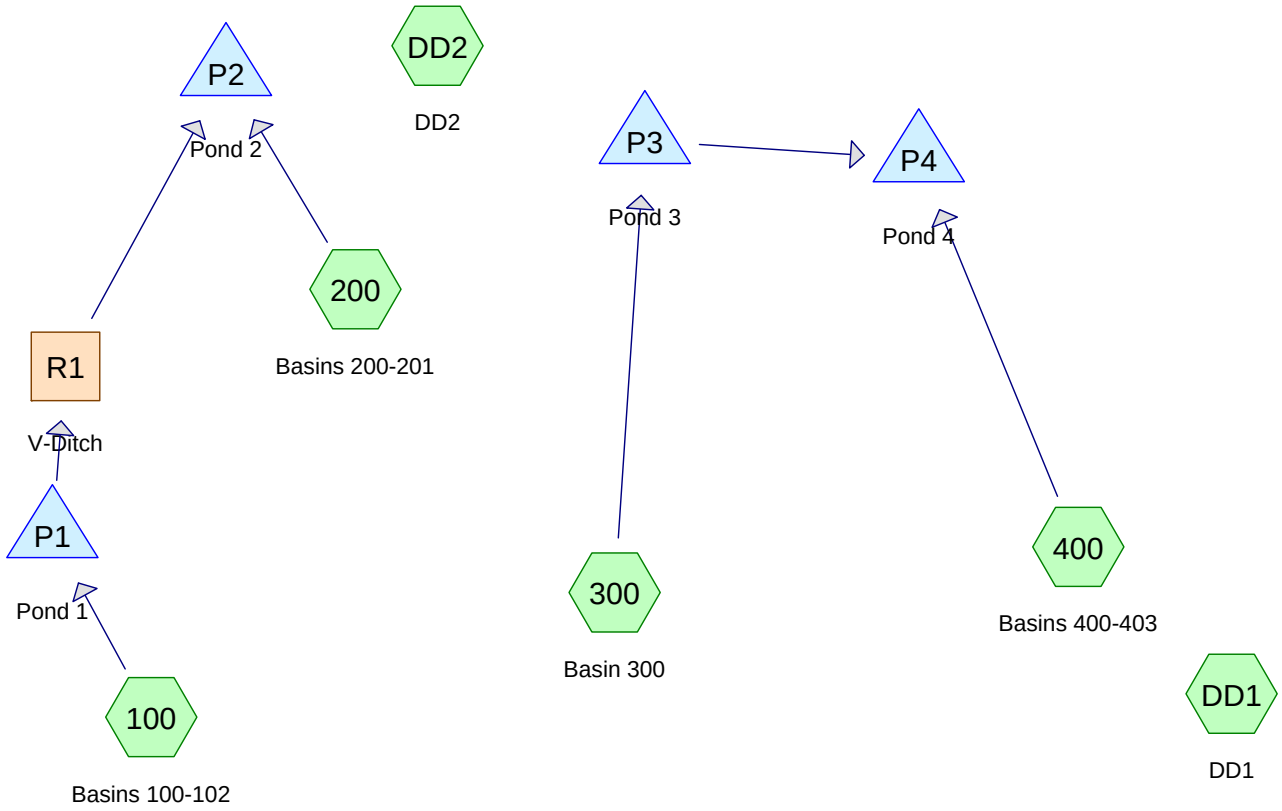
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
0.620	86	Desert shrub range, Fair, HSG D
0.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment EX6: EX6





Subcat Reach Pond Link

Routing Diagram for PinnacleRidgeFeb2015
Prepared by Vortex Engineering, Inc., Printed 6/2/2017
HydroCAD® 10.00-19 s/n 05232 © 2016 HydroCAD Software Solutions LLC

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 100: Basins 100-102 Runoff Area=6.870 ac Runoff Depth=0.16"
Flow Length=991' Tc=25.6 min CN=89 Runoff=1.41 cfs 0.089 af

Subcatchment 200: Basins 200-201 Runoff Area=15.580 ac Runoff Depth=0.16"
Tc=9.1 min CN=89 Runoff=3.93 cfs 0.202 af

Subcatchment 300: Basin 300 Runoff Area=1.560 ac Runoff Depth=0.13"
Tc=5.0 min CN=88 Runoff=0.36 cfs 0.017 af

Subcatchment 400: Basins 400-403 Runoff Area=22.940 ac Runoff Depth=0.16"
Flow Length=1,690' Tc=12.5 min CN=89 Runoff=5.52 cfs 0.297 af

Subcatchment DD1: DD1 Runoff Area=1.930 ac Runoff Depth=0.10"
Tc=5.0 min CN=86 Runoff=0.32 cfs 0.015 af

Subcatchment DD2: DD2 Runoff Area=0.390 ac Runoff Depth=0.10"
Tc=5.0 min CN=86 Runoff=0.06 cfs 0.003 af

Reach R1: V-Ditch Avg. Flow Depth=0.23' Max Vel=2.50 fps Inflow=0.26 cfs 0.170 af
n=0.025 L=815.0' S=0.0368 '/' Capacity=24.18 cfs Outflow=0.26 cfs 0.170 af

Pond P1: Pond 1 Peak Elev=4,802.31' Storage=6,082 cf Inflow=1.41 cfs 0.089 af
Outflow=0.26 cfs 0.170 af

Pond P2: Pond 2 Peak Elev=4,748.32' Storage=13,992 cf Inflow=3.98 cfs 0.372 af
Outflow=0.52 cfs 0.569 af

Pond P3: Pond 3 Peak Elev=4,752.88' Storage=820 cf Inflow=0.36 cfs 0.017 af
Outflow=0.17 cfs 0.032 af

Pond P4: Pond 4 Peak Elev=4,742.73' Storage=14,737 cf Inflow=5.59 cfs 0.329 af
Outflow=1.91 cfs 0.593 af

Total Runoff Area = 49.270 ac Runoff Volume = 0.624 af Average Runoff Depth = 0.15"

Summary for Subcatchment 100: Basins 100-102

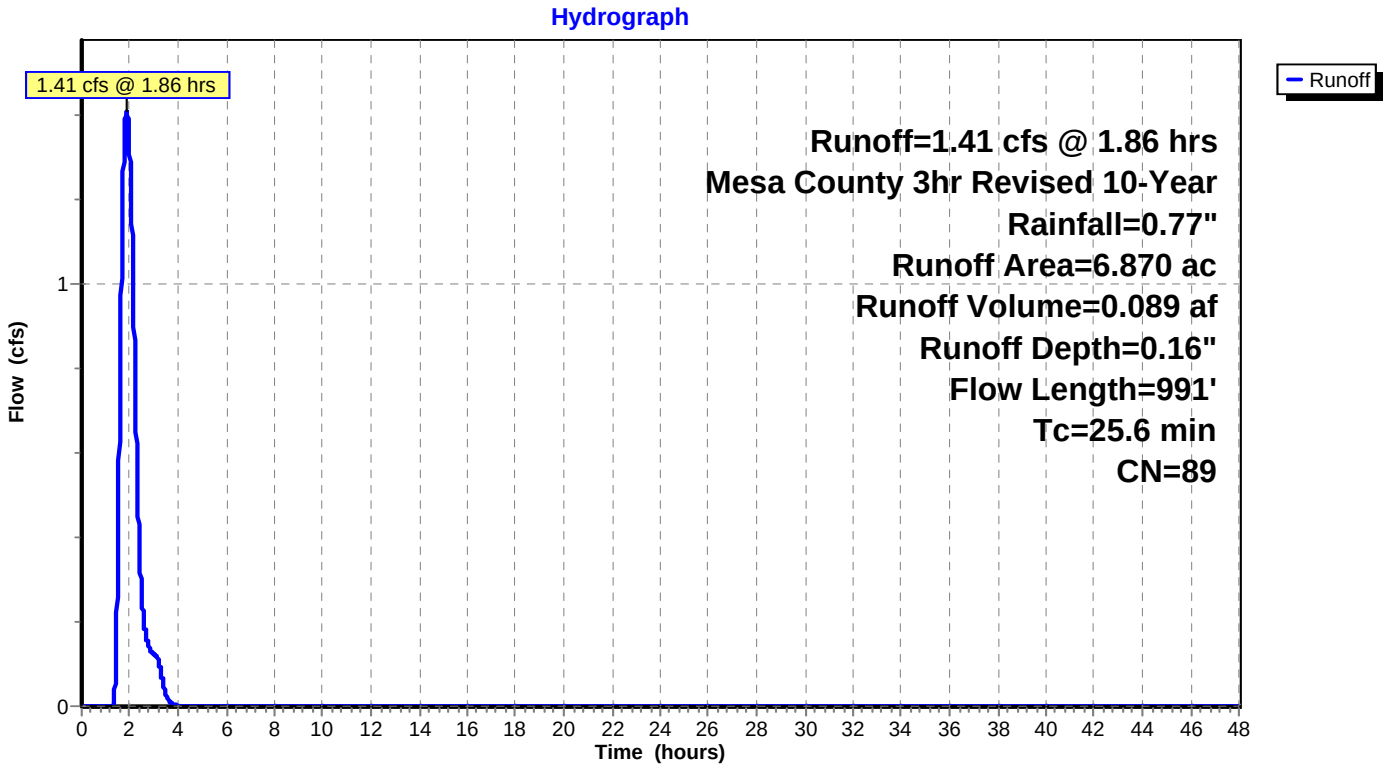
Runoff = 1.41 cfs @ 1.86 hrs, Volume= 0.089 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	6.870	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.9	136	0.0500	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 0.46"
2.7	855	0.1100	5.34		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
25.6	991	Total			

Subcatchment 100: Basins 100-102



Summary for Subcatchment 200: Basins 200-201

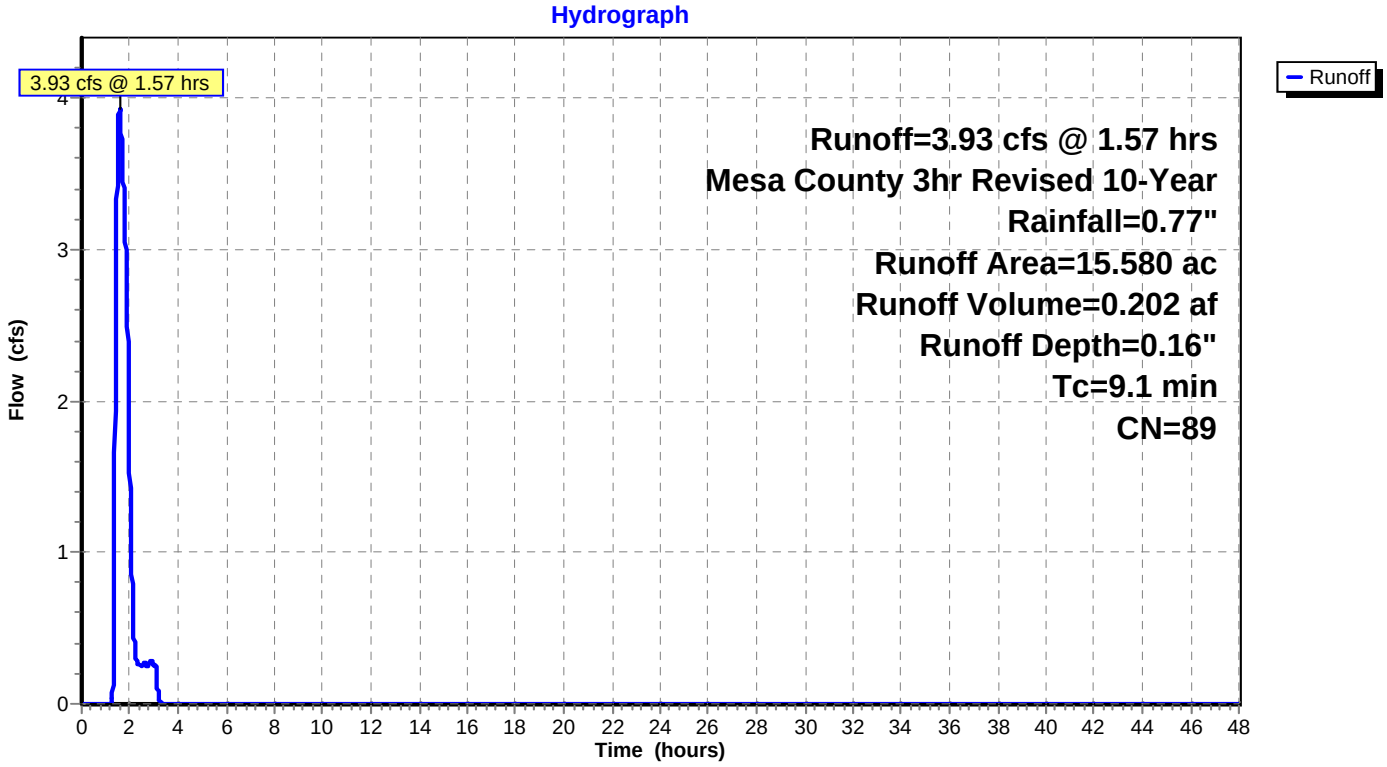
Runoff = 3.93 cfs @ 1.57 hrs, Volume= 0.202 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	15.580	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1					**Direct Entry, Tc to Pond #2**

Subcatchment 200: Basins 200-201



Summary for Subcatchment 300: Basin 300

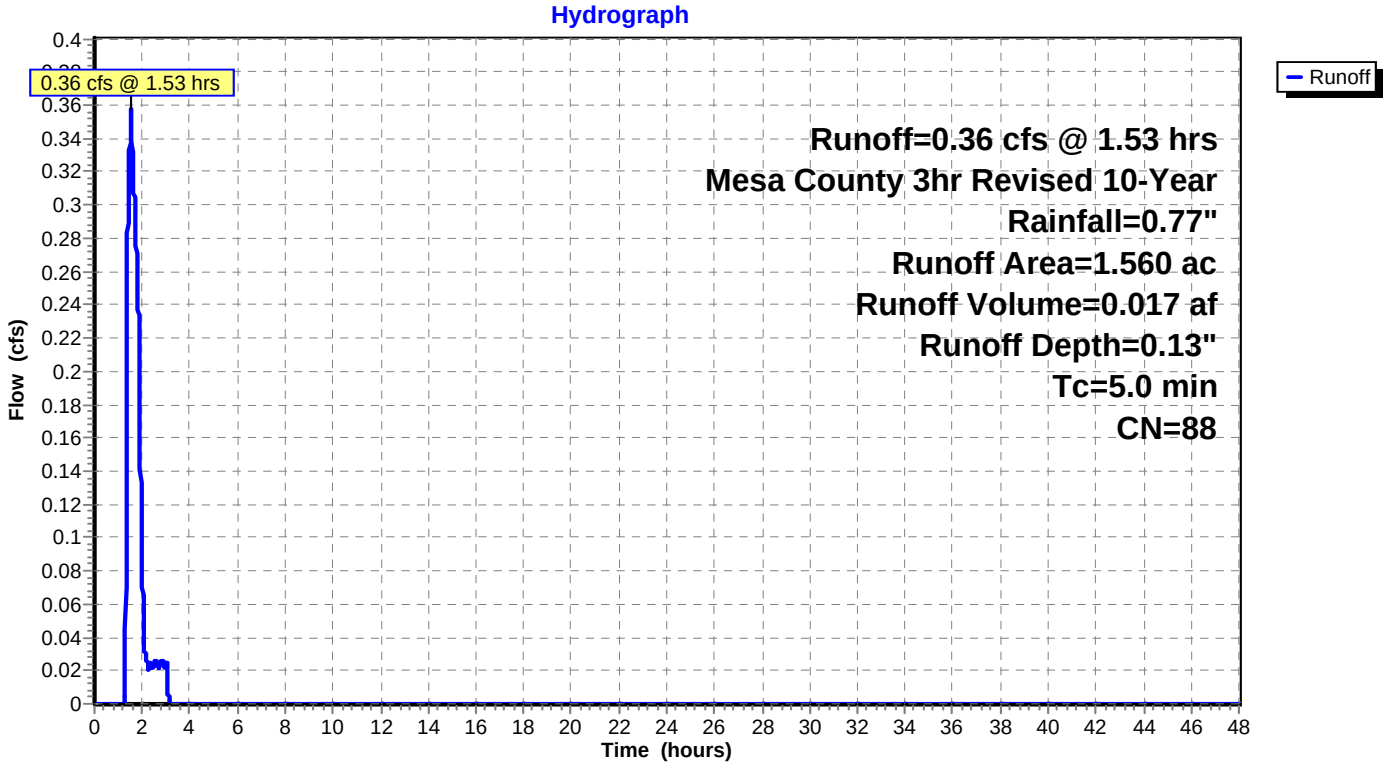
Runoff = 0.36 cfs @ 1.53 hrs, Volume= 0.017 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	1.560	88	LOTS W/ HOUSES 4000 SF

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 300: Basin 300



Summary for Subcatchment 400: Basins 400-403

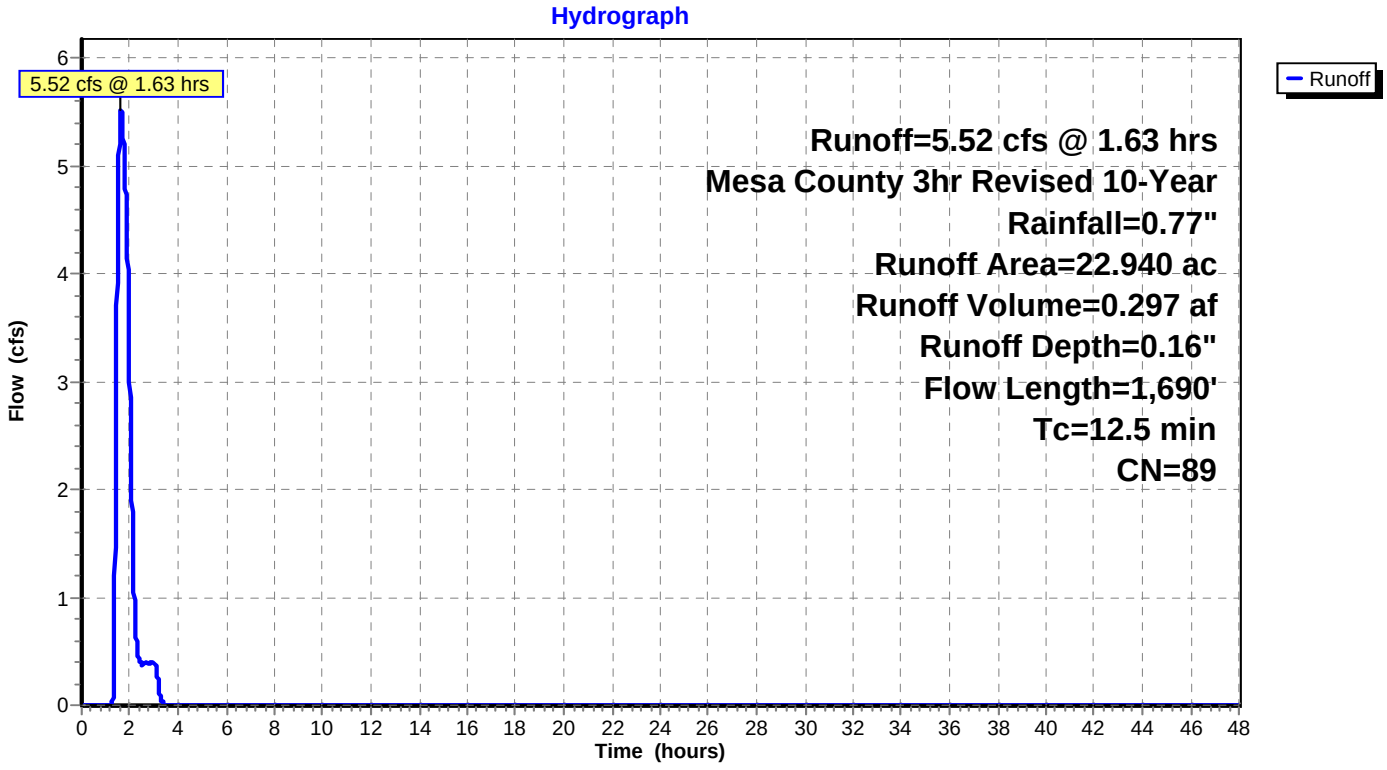
Runoff = 5.52 cfs @ 1.63 hrs, Volume= 0.297 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	22.940	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	190	0.0300	0.31		**Sheet Flow,** n= 0.030 P2= 0.46"
2.4	1,500	0.0933	10.27	32.09	**Trap/Vee/Rect Channel Flow,** Bot.W=0.00' D=1.25' Z= 2.0 '/' Top.W=5.00' n= 0.030
12.5	1,690	Total			

Subcatchment 400: Basins 400-403



Summary for Subcatchment DD1: DD1

Direct Discharge basin compensated in Pond 1

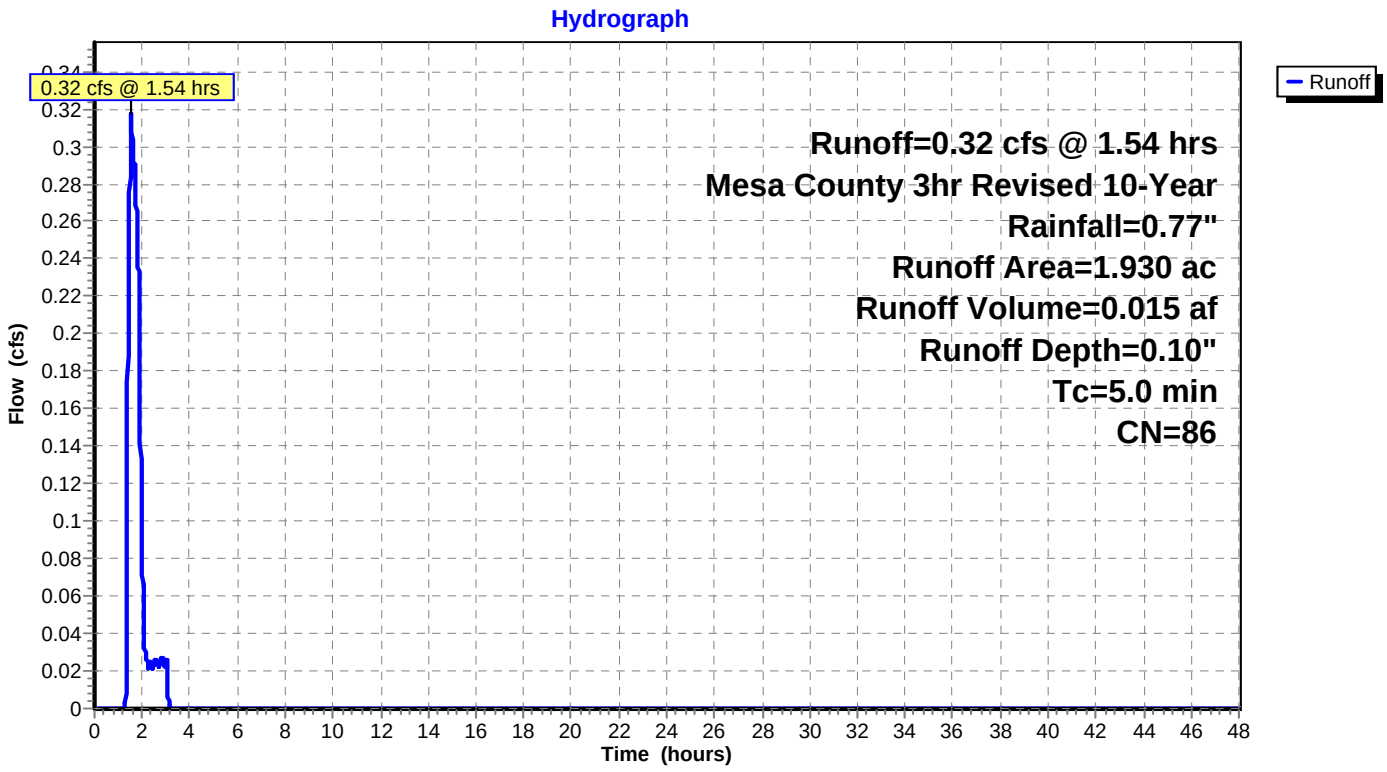
Runoff = 0.32 cfs @ 1.54 hrs, Volume= 0.015 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	1.930	86	Natural western desert, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DD1: DD1



Summary for Subcatchment DD2: DD2

Disrect discharge basin, compensated in Pond 4

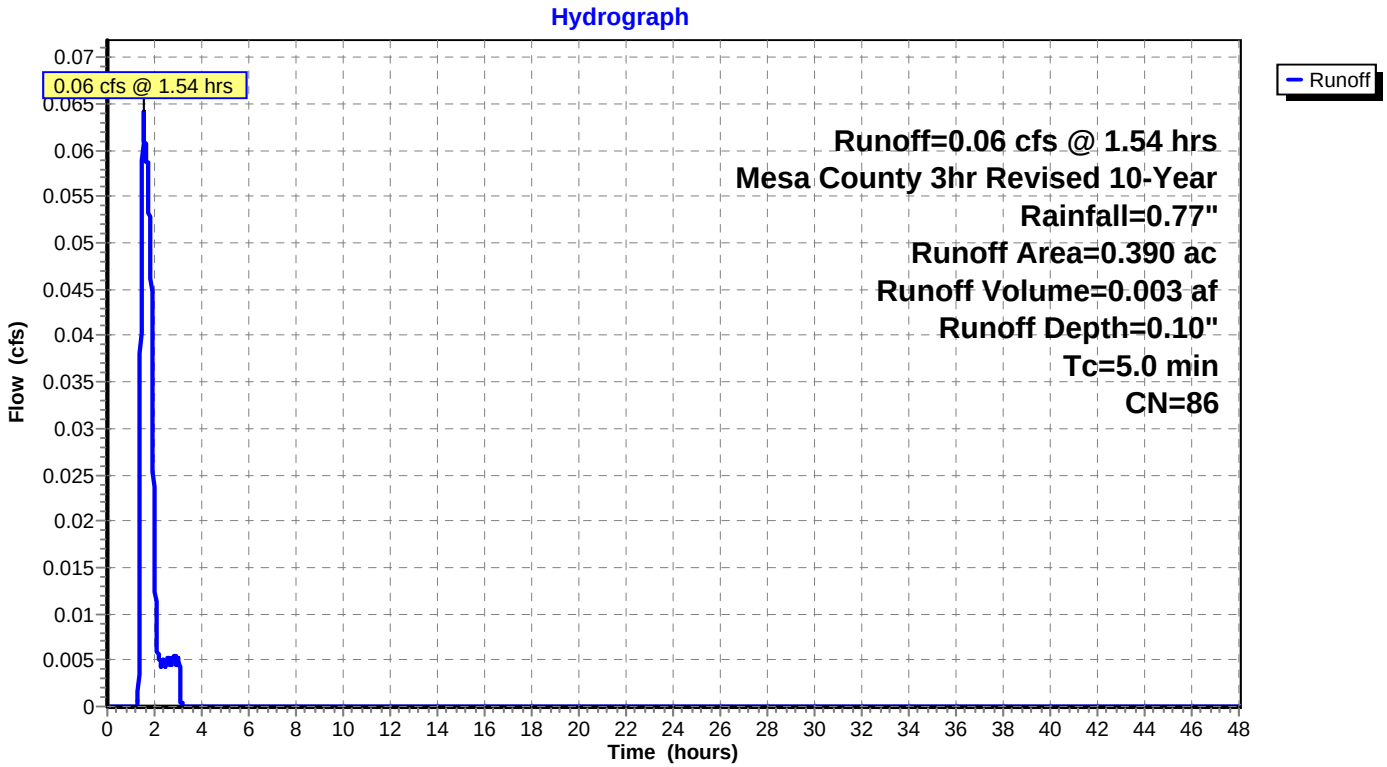
Runoff = 0.06 cfs @ 1.54 hrs, Volume= 0.003 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	0.390	86	Natural western desert, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DD2: DD2



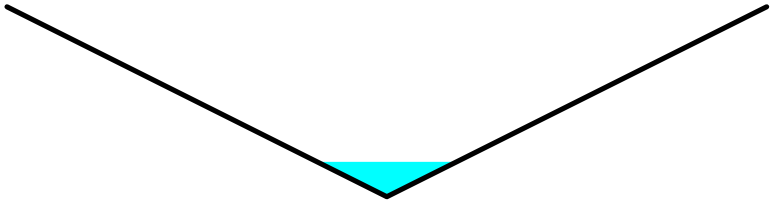
Summary for Reach R1: V-Ditch

Inflow Area = 6.870 ac, Inflow Depth > 0.30" for 10-Year event
Inflow = 0.26 cfs @ 2.49 hrs, Volume= 0.170 af
Outflow = 0.26 cfs @ 2.57 hrs, Volume= 0.170 af, Atten= 0%, Lag= 5.0 min

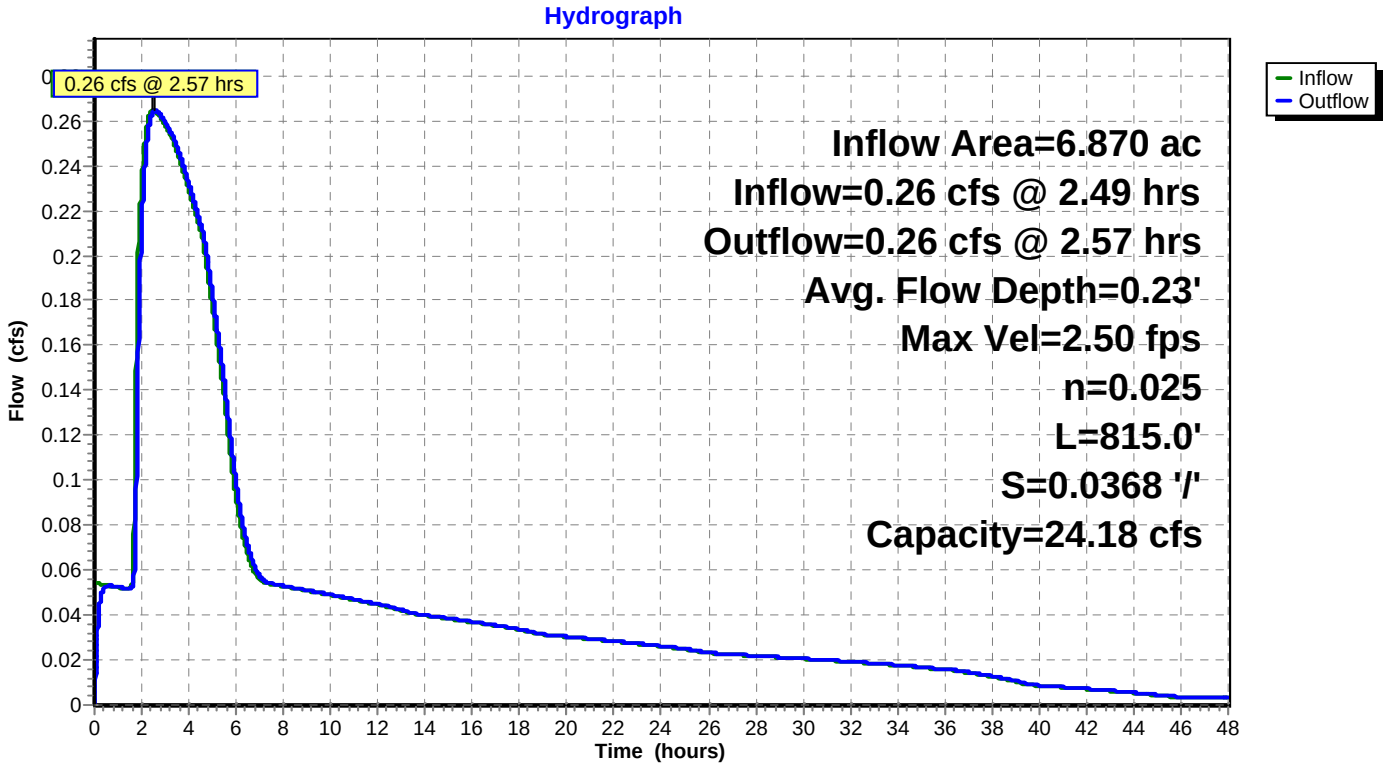
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.50 fps, Min. Travel Time= 5.4 min
Avg. Velocity = 1.44 fps, Avg. Travel Time= 9.4 min

Peak Storage= 86 cf @ 2.57 hrs
Average Depth at Peak Storage= 0.23'
Bank-Full Depth= 1.25' Flow Area= 3.1 sf, Capacity= 24.18 cfs

0.00' x 1.25' deep channel, n= 0.025
Side Slope Z-value= 2.0 '/' Top Width= 5.00'
Length= 815.0' Slope= 0.0368 '/'
Inlet Invert= 4,796.00', Outlet Invert= 4,766.00'



Reach R1: V-Ditch



Summary for Pond P1: Pond 1

Inflow Area = 6.870 ac, Inflow Depth = 0.16" for 10-Year event
Inflow = 1.41 cfs @ 1.86 hrs, Volume= 0.089 af
Outflow = 0.26 cfs @ 2.49 hrs, Volume= 0.170 af, Atten= 81%, Lag= 37.5 min
Primary = 0.26 cfs @ 2.49 hrs, Volume= 0.170 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,801.50' Surf.Area= 2,799 sf Storage= 3,655 cf
Peak Elev= 4,802.31' @ 2.49 hrs Surf.Area= 3,721 sf Storage= 6,082 cf (2,426 cf above start)

Plug-Flow detention time= 1,075.9 min calculated for 0.086 af (97% of inflow)
Center-of-Mass det. time= 585.6 min (708.3 - 122.7)

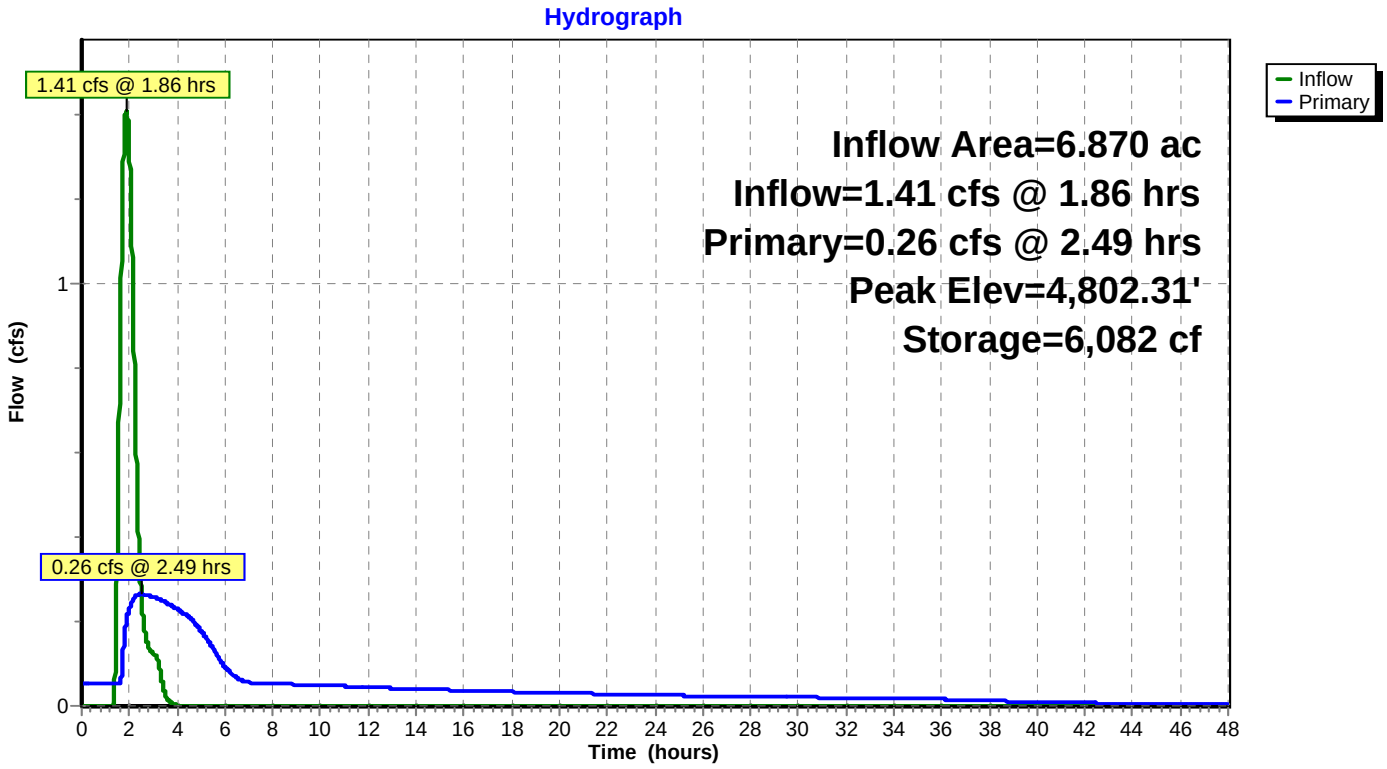
Volume	Invert	Avail.Storage	Storage Description
#1	4,799.00'	43,026 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,799.00	0	0	0
4,800.00	856	428	428
4,802.00	3,447	4,303	4,731
4,804.00	5,204	8,651	13,382
4,806.00	7,321	12,525	25,907
4,808.00	9,798	17,119	43,026

Device	Routing	Invert	Outlet Devices
#1	Primary	4,799.00'	**0.5" Vert. Orifice/Grate** X 7 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,801.50'	**3.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	4,804.50'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.26 cfs @ 2.49 hrs HW=4,802.31' TW=4,796.23' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.07 cfs @ 7.21 fps)
- **2=Orifice/Grate** (Orifice Controls 0.20 cfs @ 3.99 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P1: Pond 1



Summary for Pond P2: Pond 2

Inflow Area = 22.450 ac, Inflow Depth > 0.20" for 10-Year event
Inflow = 3.98 cfs @ 1.57 hrs, Volume= 0.372 af
Outflow = 0.52 cfs @ 2.94 hrs, Volume= 0.569 af, Atten= 87%, Lag= 82.0 min
Primary = 0.52 cfs @ 2.94 hrs, Volume= 0.569 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,747.71' Surf.Area= 8,172 sf Storage= 8,686 cf
Peak Elev= 4,748.32' @ 2.94 hrs Surf.Area= 9,255 sf Storage= 13,992 cf (5,306 cf above start)

Plug-Flow detention time= 475.5 min calculated for 0.369 af (99% of inflow)
Center-of-Mass det. time= 220.2 min (605.7 - 385.5)

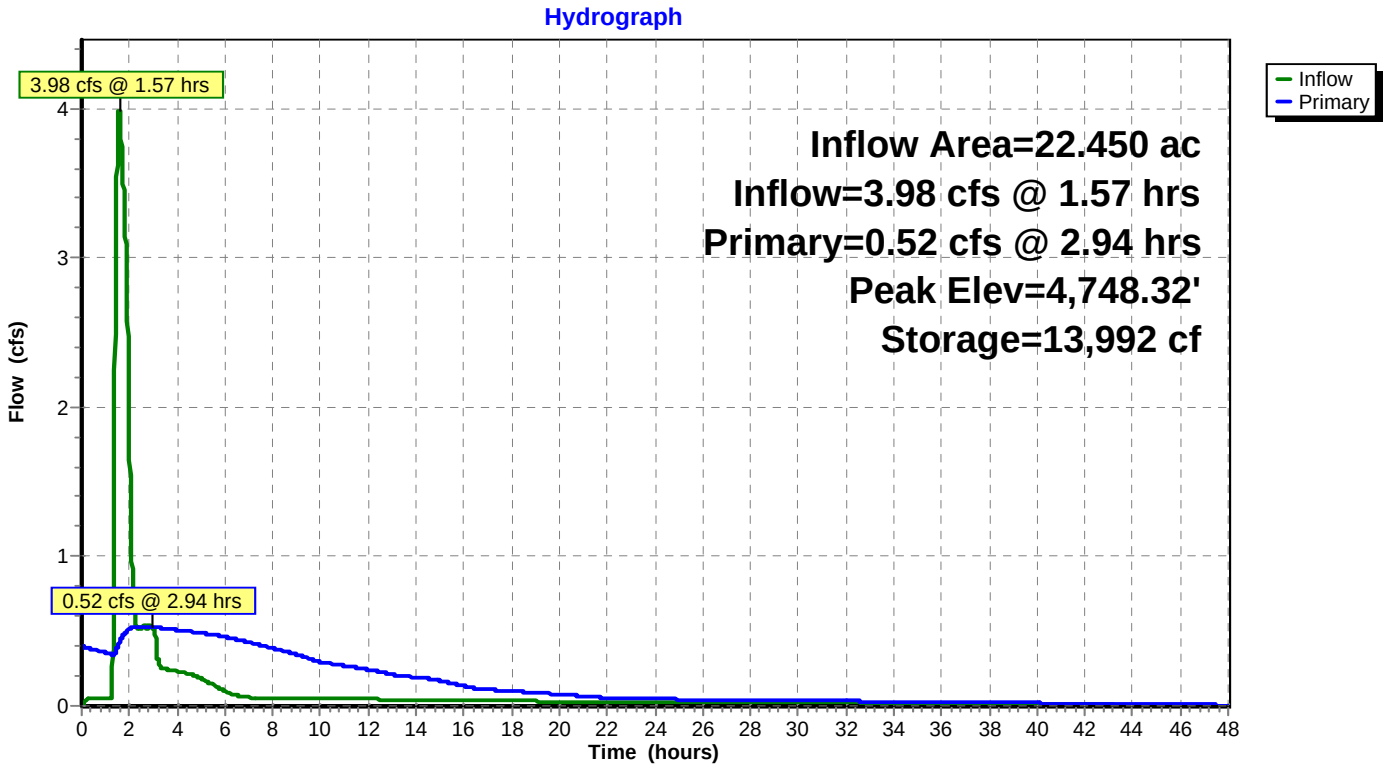
Volume	Invert	Avail.Storage	Storage Description
#1	4,746.06'	59,211 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,746.06	0	0	0
4,747.00	6,765	3,180	3,180
4,748.00	8,746	7,756	10,935
4,749.00	10,334	9,540	20,475
4,750.00	11,994	11,164	31,639
4,751.00	13,830	12,912	44,551
4,752.00	15,490	14,660	59,211

Device	Routing	Invert	Outlet Devices
#1	Primary	4,746.06'	**0.9" Vert. Orifice/Grate X 4.00 columns** X 5 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,748.32'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	4,751.00'	**14.0' long x 0.5' breadth emergency spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.52 cfs @ 2.94 hrs HW=4,748.32' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.52 cfs @ 5.93 fps)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.06 fps)
- **3=emergency spillway** (Controls 0.00 cfs)

Pond P2: Pond 2



Summary for Pond P3: Pond 3

Inflow Area = 1.560 ac, Inflow Depth = 0.13" for 10-Year event
Inflow = 0.36 cfs @ 1.53 hrs, Volume= 0.017 af
Outflow = 0.17 cfs @ 1.90 hrs, Volume= 0.032 af, Atten= 52%, Lag= 22.2 min
Primary = 0.17 cfs @ 1.90 hrs, Volume= 0.032 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,752.64' Surf.Area= 737 sf Storage= 632 cf
Peak Elev= 4,752.88' @ 1.90 hrs Surf.Area= 832 sf Storage= 820 cf (188 cf above start)

Plug-Flow detention time= 184.7 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 92.6 min (197.3 - 104.8)

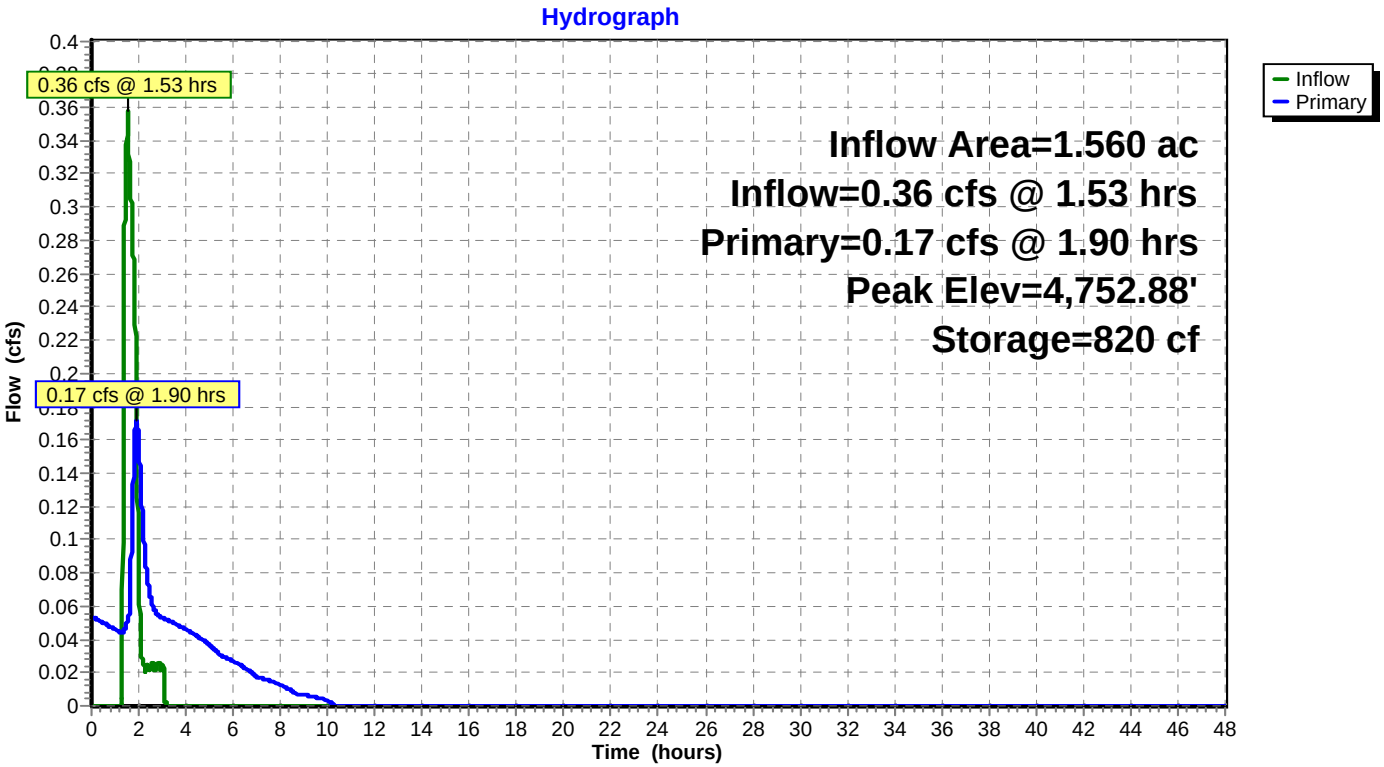
Volume	Invert	Avail.Storage	Storage Description
#1	4,751.00'	5,359 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,751.00	0	0	0
4,752.00	483	242	242
4,754.00	1,277	1,760	2,002
4,756.00	2,080	3,357	5,359

Device	Routing	Invert	Outlet Devices
#1	Primary	4,751.00'	**0.7" Vert. Orifice/Grate** X 4 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,752.64'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	4,754.06'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.17 cfs @ 1.90 hrs HW=4,752.88' TW=4,742.58' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.06 cfs @ 5.54 fps)
- **2=Orifice/Grate** (Orifice Controls 0.11 cfs @ 1.67 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P3: Pond 3



Summary for Pond P4: Pond 4

Inflow Area = 24.500 ac, Inflow Depth = 0.16" for 10-Year event
Inflow = 5.59 cfs @ 1.63 hrs, Volume= 0.329 af
Outflow = 1.91 cfs @ 2.09 hrs, Volume= 0.593 af, Atten= 66%, Lag= 27.4 min
Primary = 1.91 cfs @ 2.09 hrs, Volume= 0.593 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,742.19' Surf.Area= 5,651 sf Storage= 11,503 cf
Peak Elev= 4,742.73' @ 2.09 hrs Surf.Area= 6,380 sf Storage= 14,737 cf (3,234 cf above start)

Plug-Flow detention time= 185.7 min calculated for 0.329 af (100% of inflow)
Center-of-Mass det. time= 89.4 min (208.4 - 118.9)

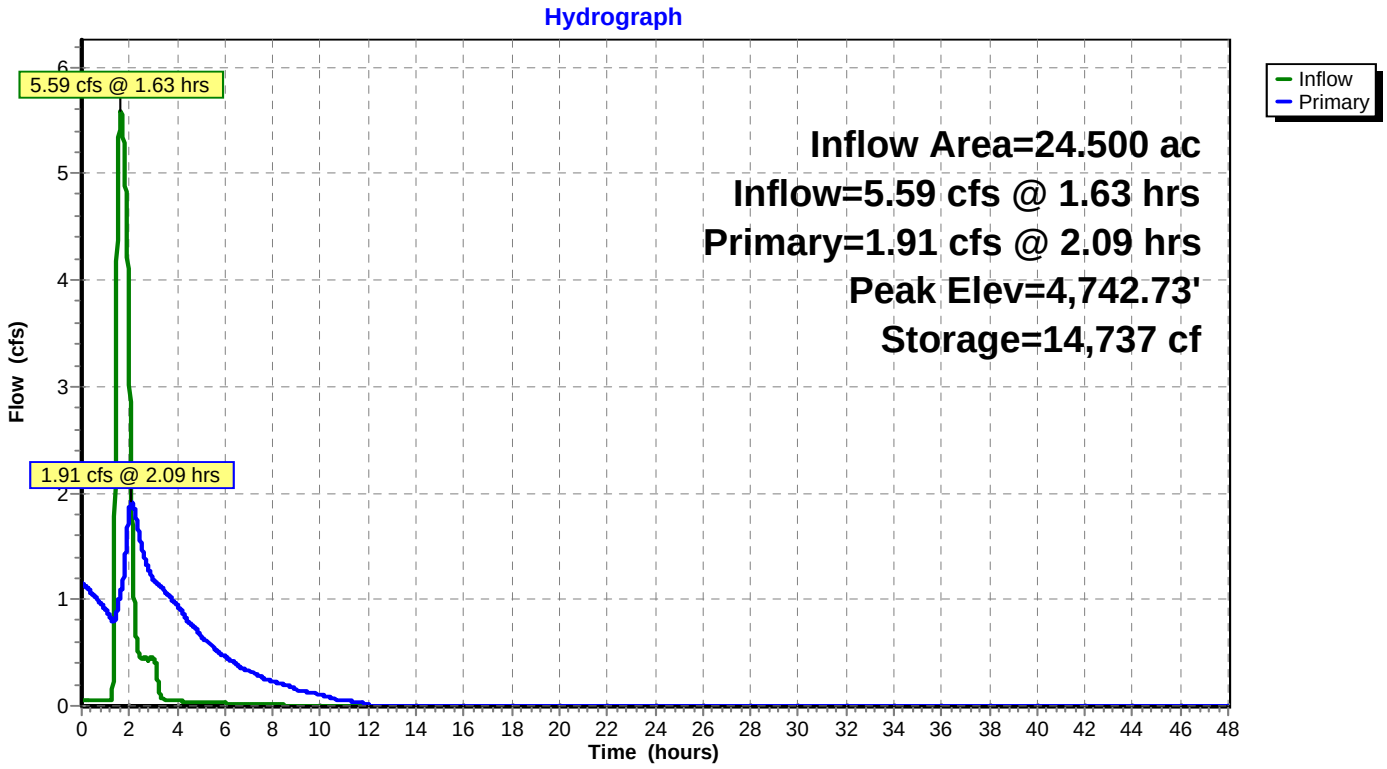
Volume	Invert	Avail.Storage	Storage Description
#1	4,739.00'	42,958 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,739.00	0	0	0
4,740.00	3,373	1,687	1,687
4,742.00	5,394	8,767	10,454
4,744.00	8,104	13,498	23,952
4,746.00	10,902	19,006	42,958

Device	Routing	Invert	Outlet Devices
#1	Primary	4,739.00'	**1.0" Vert. Orifice/Grate X 4.00 columns** X 8 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,742.19'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	4,745.13'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.91 cfs @ 2.09 hrs HW=4,742.73' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 1.32 cfs @ 7.55 fps)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 0.60 cfs @ 2.22 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P4: Pond 4



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 100: Basins 100-102 Runoff Area=6.870 ac Runoff Depth=0.59"
Flow Length=991' Tc=25.6 min CN=89 Runoff=5.32 cfs 0.335 af

Subcatchment 200: Basins 200-201 Runoff Area=15.580 ac Runoff Depth=0.59"
Tc=9.1 min CN=89 Runoff=15.76 cfs 0.761 af

Subcatchment 300: Basin 300 Runoff Area=1.560 ac Runoff Depth=0.54"
Tc=5.0 min CN=88 Runoff=1.63 cfs 0.070 af

Subcatchment 400: Basins 400-403 Runoff Area=22.940 ac Runoff Depth=0.59"
Flow Length=1,690' Tc=12.5 min CN=89 Runoff=21.55 cfs 1.120 af

Subcatchment DD1: DD1 Runoff Area=1.930 ac Runoff Depth=0.45"
Tc=5.0 min CN=86 Runoff=1.61 cfs 0.073 af

Subcatchment DD2: DD2 Runoff Area=0.390 ac Runoff Depth=0.45"
Tc=5.0 min CN=86 Runoff=0.33 cfs 0.015 af

Reach R1: V-Ditch Avg. Flow Depth=0.29' Max Vel=2.91 fps Inflow=0.48 cfs 0.414 af
n=0.025 L=815.0' S=0.0368 '/' Capacity=24.18 cfs Outflow=0.48 cfs 0.414 af

Pond P1: Pond 1 Peak Elev=4,804.31' Storage=15,335 cf Inflow=5.32 cfs 0.335 af
Outflow=0.48 cfs 0.414 af

Pond P2: Pond 2 Peak Elev=4,749.95' Storage=31,059 cf Inflow=15.82 cfs 1.174 af
Outflow=4.21 cfs 1.368 af

Pond P3: Pond 3 Peak Elev=4,754.06' Storage=2,077 cf Inflow=1.63 cfs 0.070 af
Outflow=0.55 cfs 0.085 af

Pond P4: Pond 4 Peak Elev=4,745.13' Storage=33,969 cf Inflow=21.99 cfs 1.204 af
Outflow=10.21 cfs 1.469 af

Total Runoff Area = 49.270 ac Runoff Volume = 2.373 af Average Runoff Depth = 0.58"

Summary for Subcatchment 100: Basins 100-102

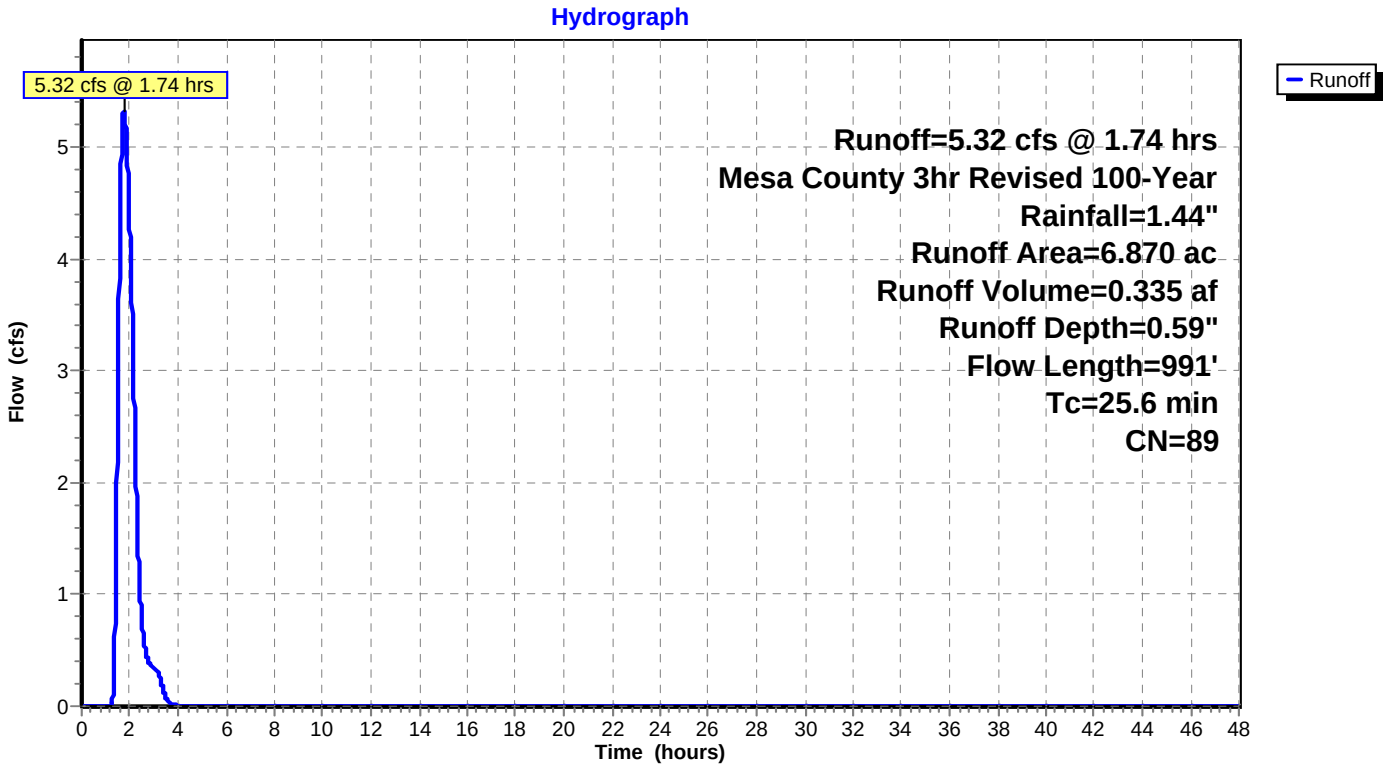
Runoff = 5.32 cfs @ 1.74 hrs, Volume= 0.335 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	6.870	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.9	136	0.0500	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 0.46"
2.7	855	0.1100	5.34		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
25.6	991	Total			

Subcatchment 100: Basins 100-102



Summary for Subcatchment 200: Basins 200-201

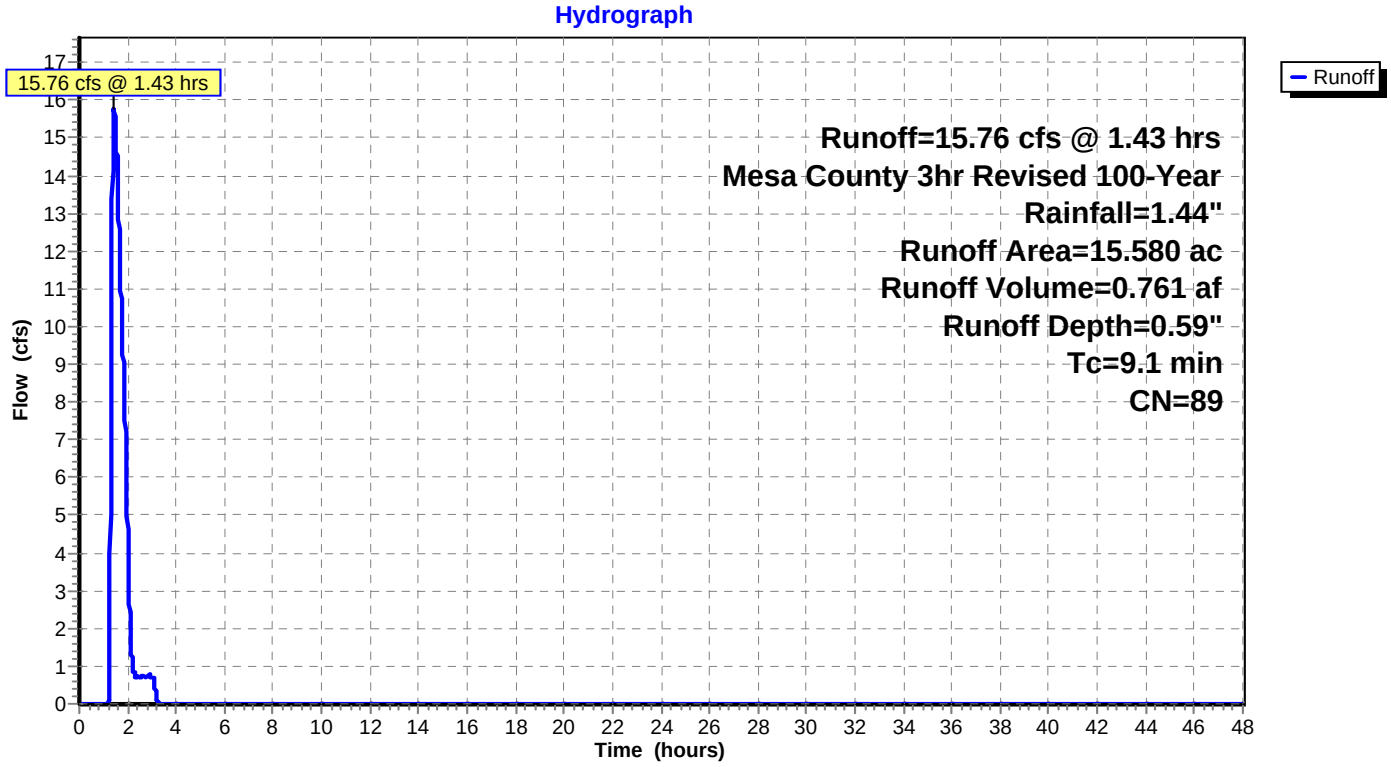
Runoff = 15.76 cfs @ 1.43 hrs, Volume= 0.761 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	15.580	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1					**Direct Entry, Tc to Pond #2**

Subcatchment 200: Basins 200-201



Summary for Subcatchment 300: Basin 300

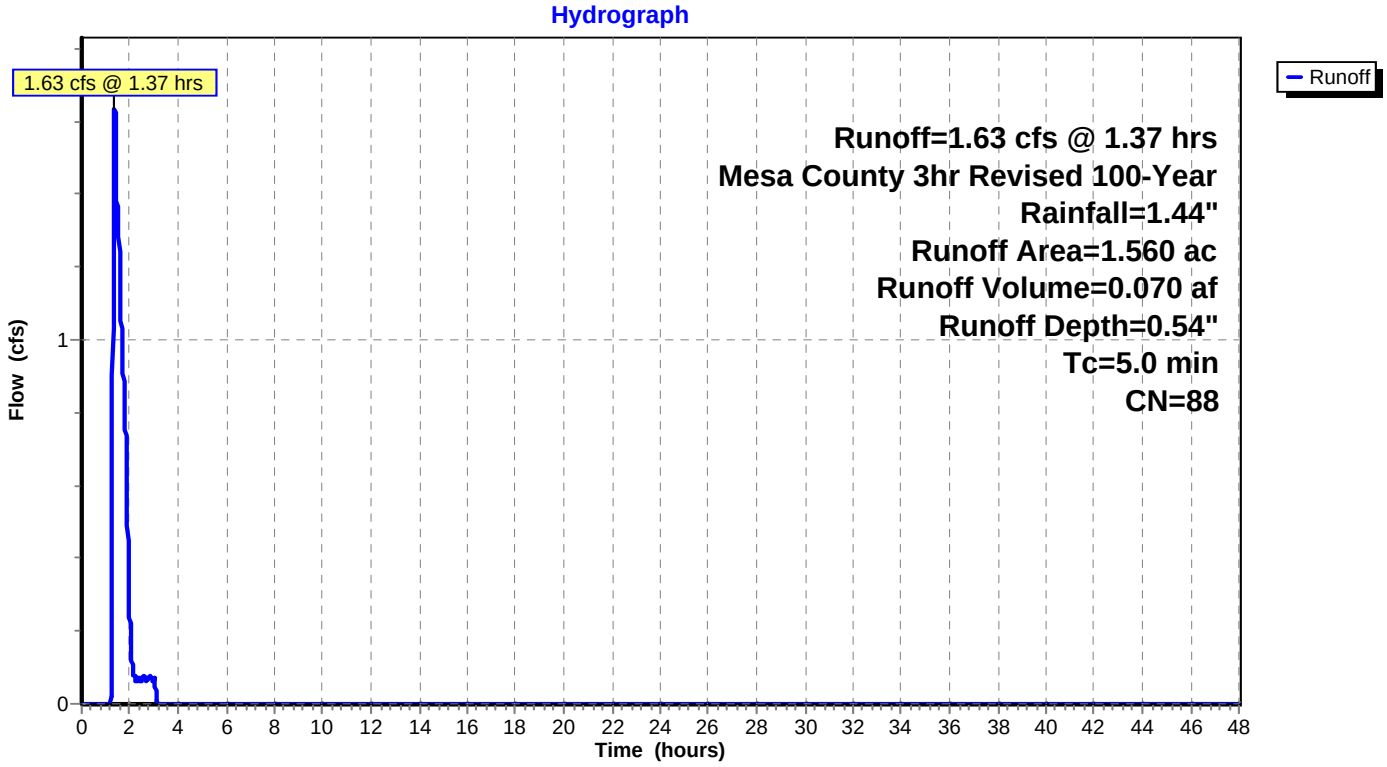
Runoff = 1.63 cfs @ 1.37 hrs, Volume= 0.070 af, Depth= 0.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	1.560	88	LOTS W/ HOUSES 4000 SF

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 300: Basin 300



Summary for Subcatchment 400: Basins 400-403

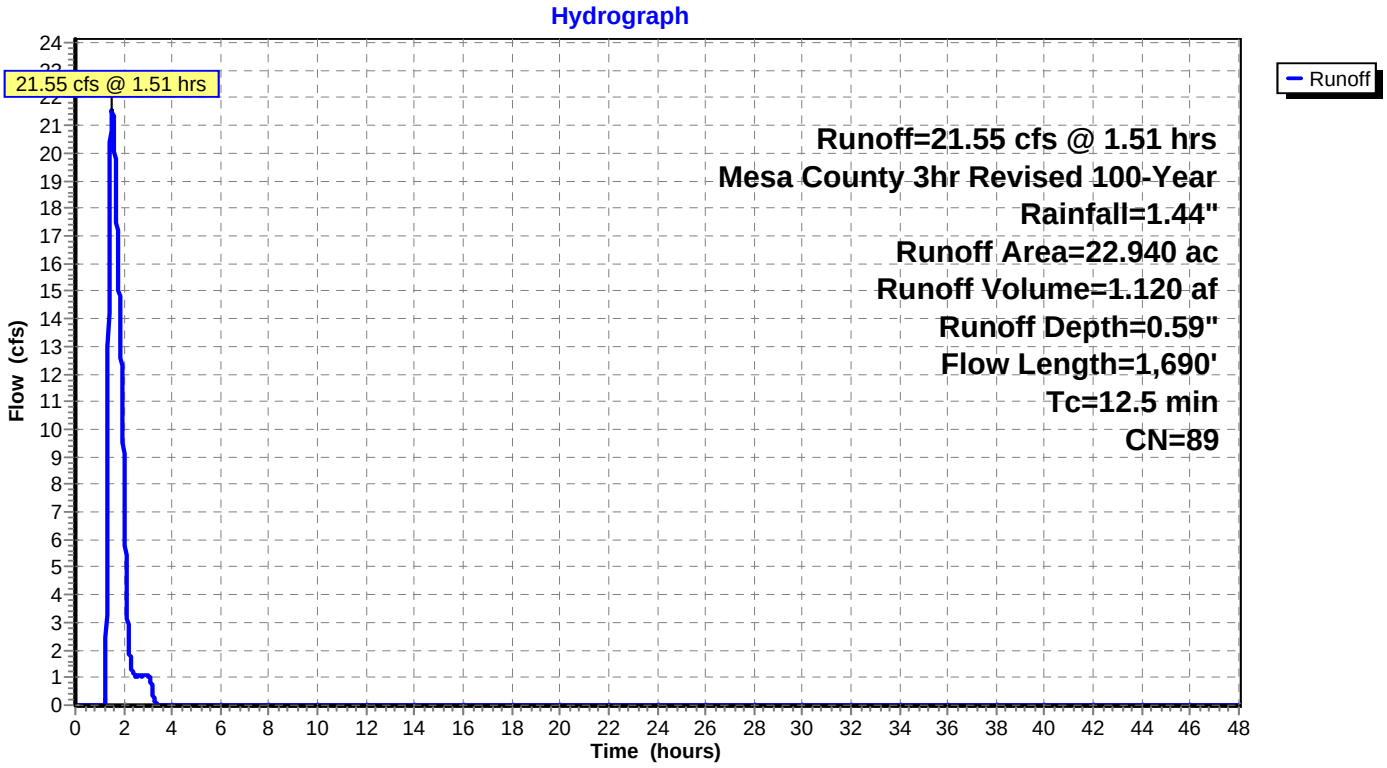
Runoff = 21.55 cfs @ 1.51 hrs, Volume= 1.120 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	22.940	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	190	0.0300	0.31		**Sheet Flow,** n= 0.030 P2= 0.46"
2.4	1,500	0.0933	10.27	32.09	**Trap/Vee/Rect Channel Flow,** Bot.W=0.00' D=1.25' Z= 2.0 '/' Top.W=5.00' n= 0.030
12.5	1,690	Total			

Subcatchment 400: Basins 400-403



Summary for Subcatchment DD1: DD1

Direct Discharge basin compensated in Pond 1

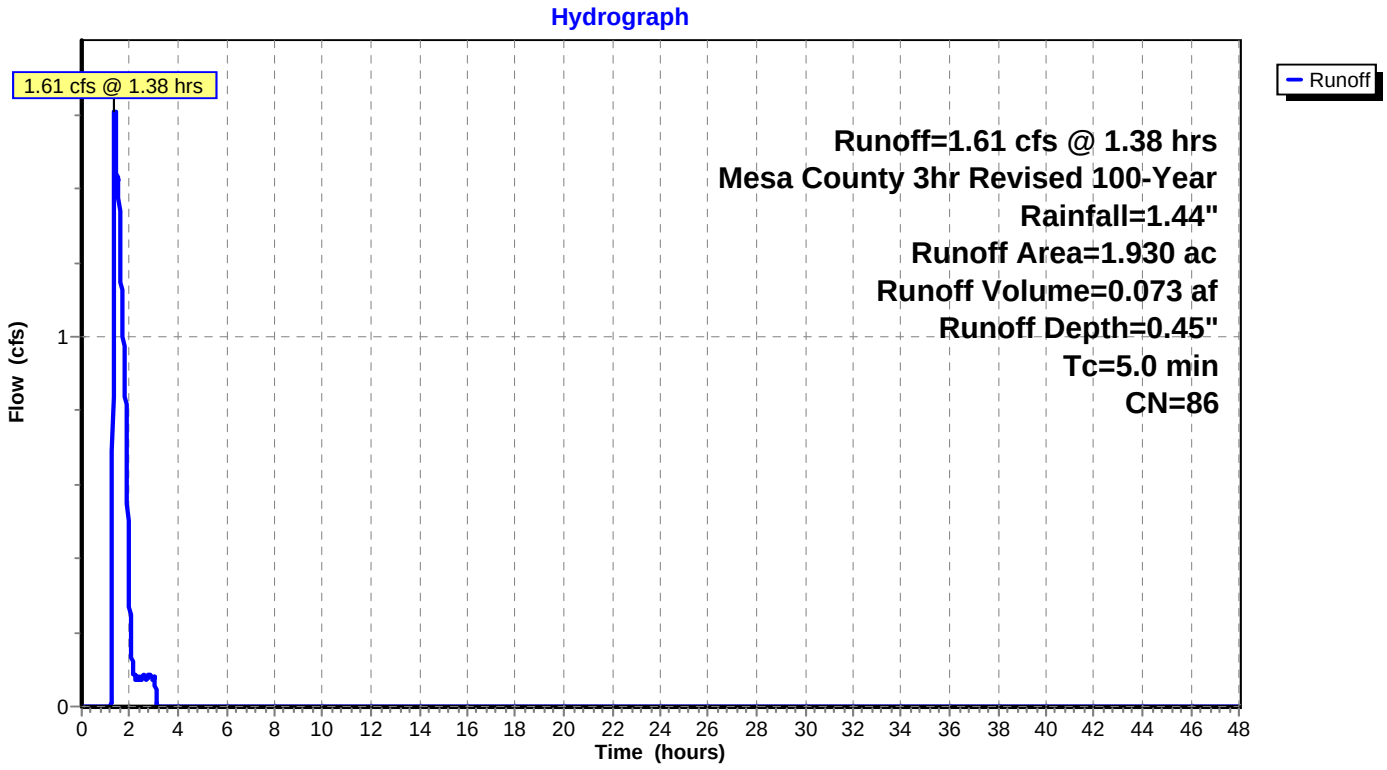
Runoff = 1.61 cfs @ 1.38 hrs, Volume= 0.073 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	1.930	86	Natural western desert, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DD1: DD1



Summary for Subcatchment DD2: DD2

Disrect discharge basin, compensated in Pond 4

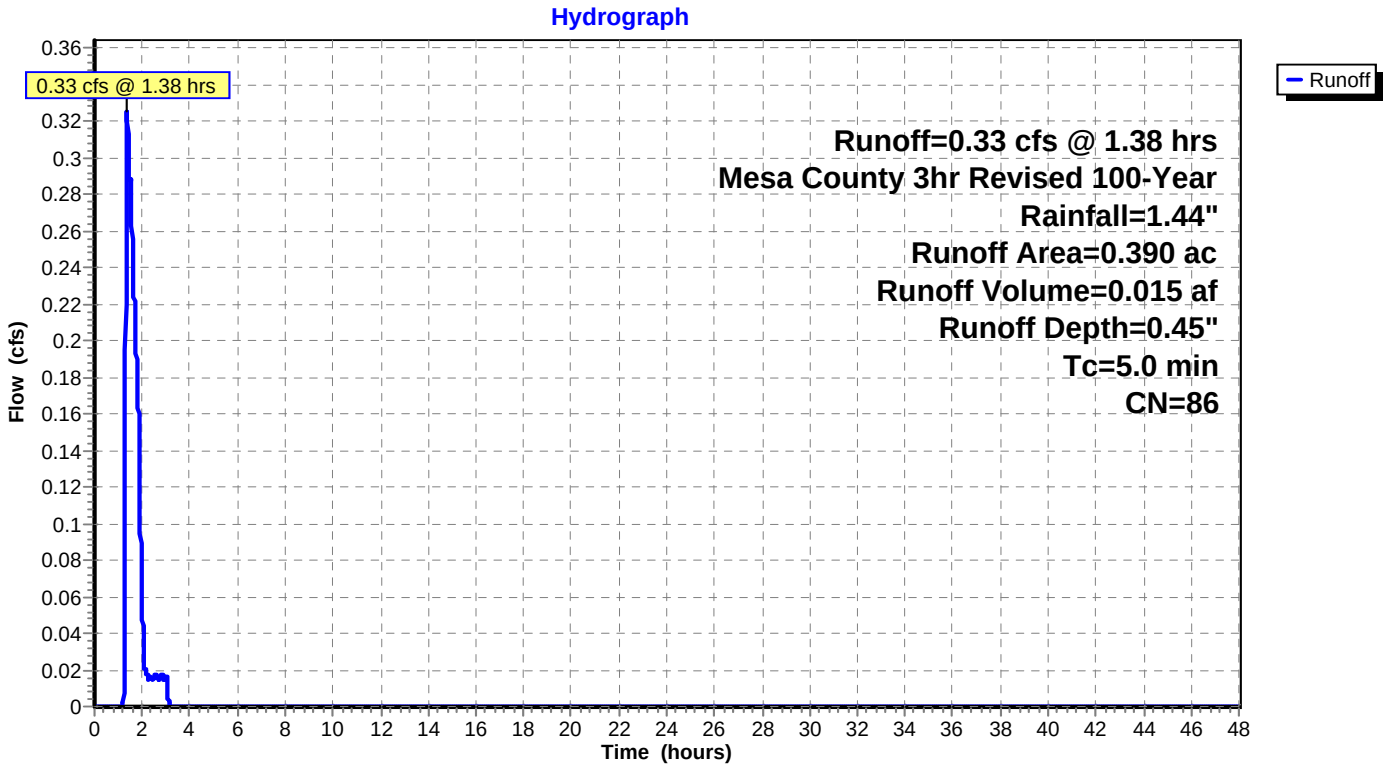
Runoff = 0.33 cfs @ 1.38 hrs, Volume= 0.015 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	0.390	86	Natural western desert, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DD2: DD2



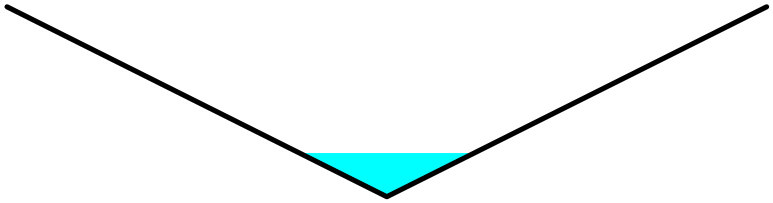
Summary for Reach R1: V-Ditch

Inflow Area = 6.870 ac, Inflow Depth > 0.72" for 100-Year event
Inflow = 0.48 cfs @ 2.66 hrs, Volume= 0.414 af
Outflow = 0.48 cfs @ 2.74 hrs, Volume= 0.414 af, Atten= 0%, Lag= 4.3 min

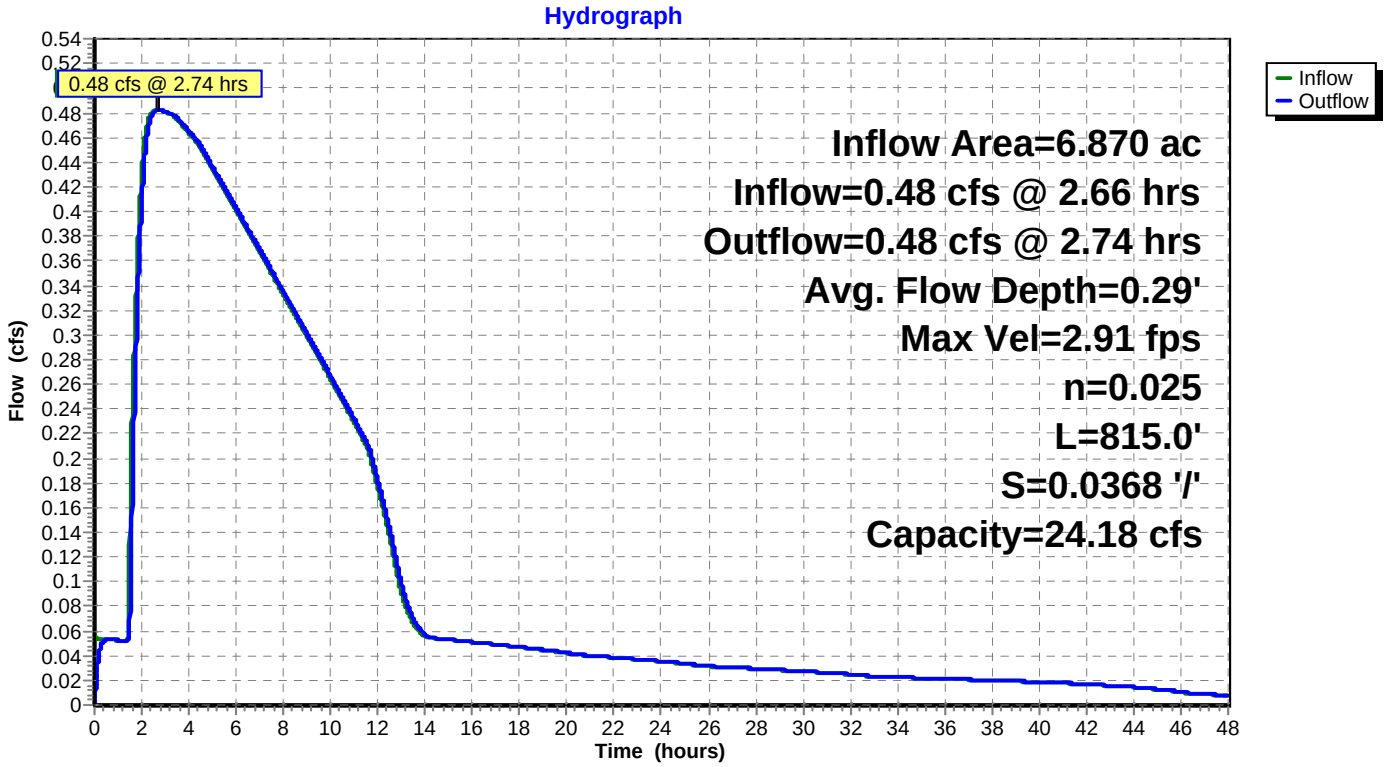
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.91 fps, Min. Travel Time= 4.7 min
Avg. Velocity = 1.72 fps, Avg. Travel Time= 7.9 min

Peak Storage= 135 cf @ 2.74 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 1.25' Flow Area= 3.1 sf, Capacity= 24.18 cfs

0.00' x 1.25' deep channel, n= 0.025
Side Slope Z-value= 2.0 '/' Top Width= 5.00'
Length= 815.0' Slope= 0.0368 '/'
Inlet Invert= 4,796.00', Outlet Invert= 4,766.00'



Reach R1: V-Ditch



Summary for Pond P1: Pond 1

Inflow Area = 6.870 ac, Inflow Depth = 0.59" for 100-Year event
Inflow = 5.32 cfs @ 1.74 hrs, Volume= 0.335 af
Outflow = 0.48 cfs @ 2.66 hrs, Volume= 0.414 af, Atten= 91%, Lag= 55.3 min
Primary = 0.48 cfs @ 2.66 hrs, Volume= 0.414 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,801.50' Surf.Area= 2,799 sf Storage= 3,655 cf
Peak Elev= 4,804.31' @ 2.66 hrs Surf.Area= 5,534 sf Storage= 15,335 cf (11,680 cf above start)

Plug-Flow detention time= 616.1 min calculated for 0.330 af (98% of inflow)
Center-of-Mass det. time= 496.5 min (613.9 - 117.5)

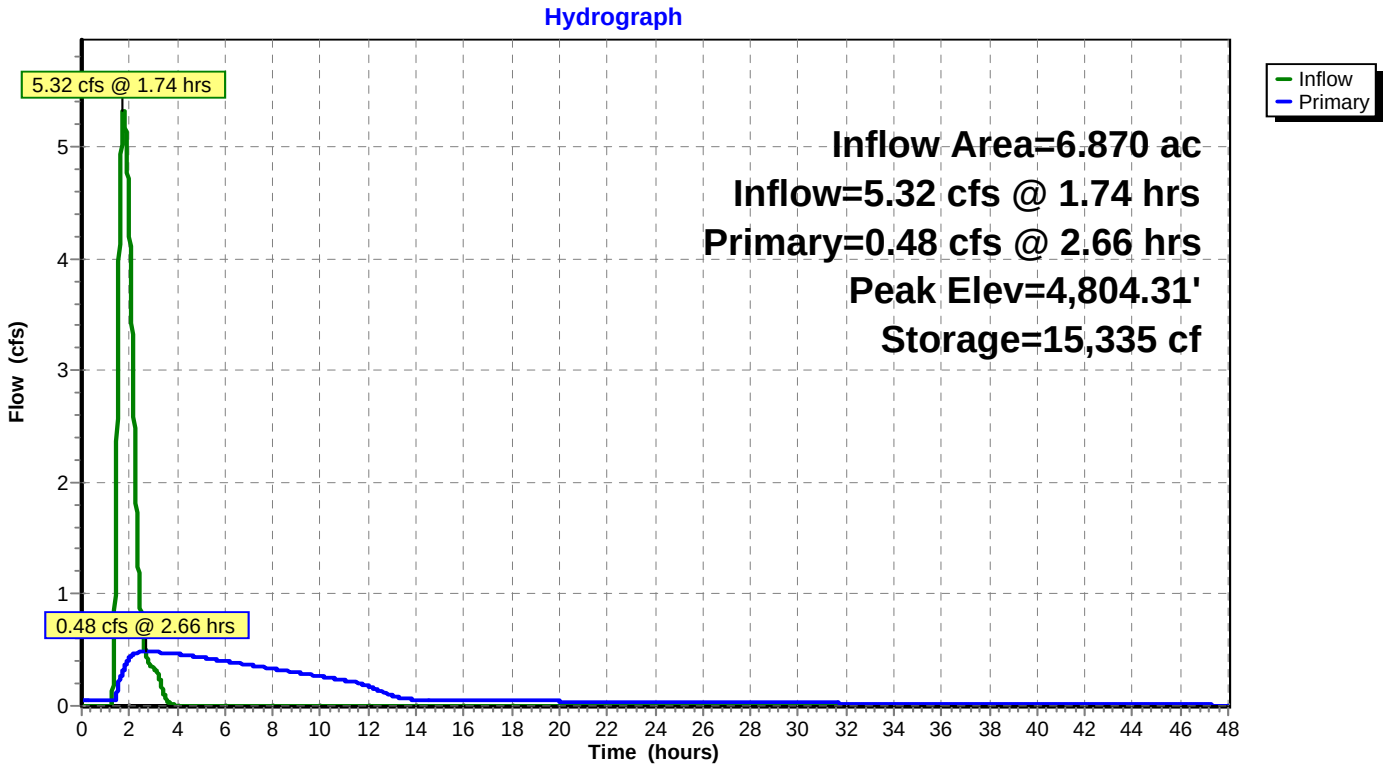
Volume	Invert	Avail.Storage	Storage Description
#1	4,799.00'	43,026 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,799.00	0	0	0
4,800.00	856	428	428
4,802.00	3,447	4,303	4,731
4,804.00	5,204	8,651	13,382
4,806.00	7,321	12,525	25,907
4,808.00	9,798	17,119	43,026

Device	Routing	Invert	Outlet Devices
#1	Primary	4,799.00'	**0.5" Vert. Orifice/Grate** X 7 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,801.50'	**3.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	4,804.50'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.48 cfs @ 2.66 hrs HW=4,804.31' TW=4,796.29' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.09 cfs @ 9.94 fps)
- **2=Orifice/Grate** (Orifice Controls 0.39 cfs @ 7.89 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P1: Pond 1



Summary for Pond P2: Pond 2

Inflow Area = 22.450 ac, Inflow Depth > 0.63" for 100-Year event
Inflow = 15.82 cfs @ 1.43 hrs, Volume= 1.174 af
Outflow = 4.21 cfs @ 2.02 hrs, Volume= 1.368 af, Atten= 73%, Lag= 35.1 min
Primary = 4.21 cfs @ 2.02 hrs, Volume= 1.368 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,747.71' Surf.Area= 8,172 sf Storage= 8,686 cf
Peak Elev= 4,749.95' @ 2.02 hrs Surf.Area= 11,908 sf Storage= 31,059 cf (22,373 cf above start)

Plug-Flow detention time= 309.8 min calculated for 1.168 af (100% of inflow)
Center-of-Mass det. time= 226.9 min (511.1 - 284.3)

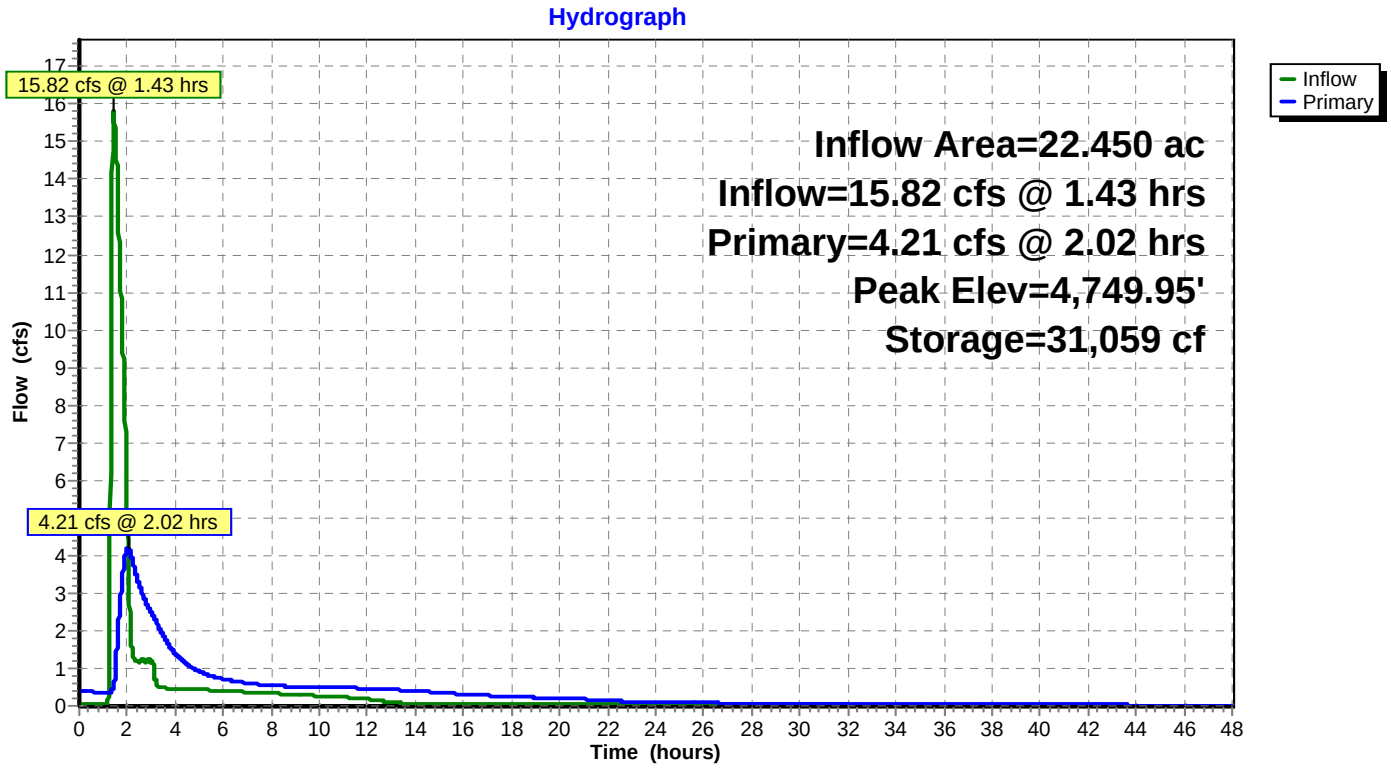
Volume	Invert	Avail.Storage	Storage Description
#1	4,746.06'	59,211 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,746.06	0	0	0
4,747.00	6,765	3,180	3,180
4,748.00	8,746	7,756	10,935
4,749.00	10,334	9,540	20,475
4,750.00	11,994	11,164	31,639
4,751.00	13,830	12,912	44,551
4,752.00	15,490	14,660	59,211

Device	Routing	Invert	Outlet Devices
#1	Primary	4,746.06'	**0.9" Vert. Orifice/Grate X 4.00 columns** X 5 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,748.32'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	4,751.00'	**14.0' long x 0.5' breadth emergency spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=4.21 cfs @ 2.02 hrs HW=4,749.95' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.76 cfs @ 8.57 fps)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 3.45 cfs @ 4.24 fps)
- **3=emergency spillway** (Controls 0.00 cfs)

Pond P2: Pond 2



Summary for Pond P3: Pond 3

Inflow Area = 1.560 ac, Inflow Depth = 0.54" for 100-Year event
Inflow = 1.63 cfs @ 1.37 hrs, Volume= 0.070 af
Outflow = 0.55 cfs @ 1.90 hrs, Volume= 0.085 af, Atten= 66%, Lag= 31.4 min
Primary = 0.55 cfs @ 1.90 hrs, Volume= 0.085 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,752.64' Surf.Area= 737 sf Storage= 632 cf
Peak Elev= 4,754.06' @ 1.90 hrs Surf.Area= 1,301 sf Storage= 2,077 cf (1,445 cf above start)

Plug-Flow detention time= 86.5 min calculated for 0.070 af (100% of inflow)
Center-of-Mass det. time= 67.0 min (166.0 - 99.0)

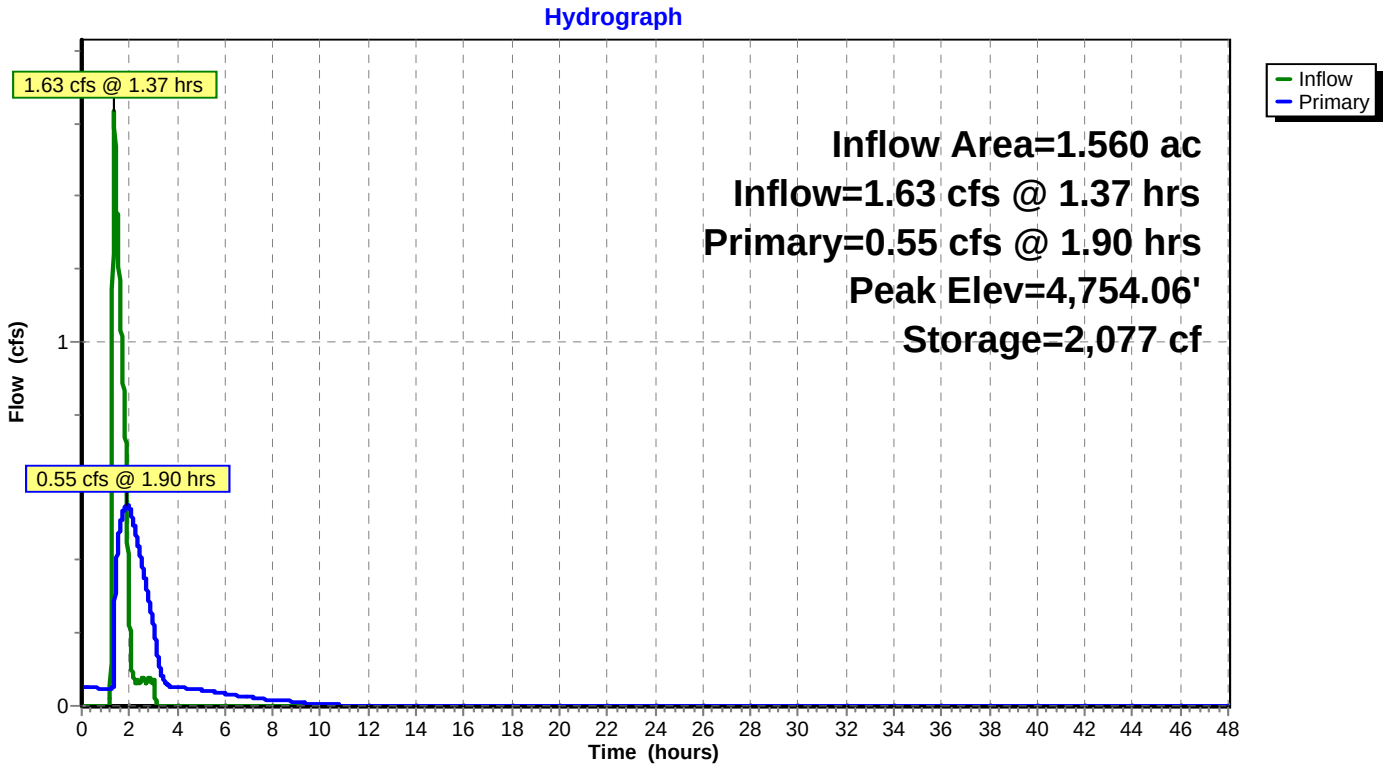
Volume	Invert	Avail.Storage	Storage Description
#1	4,751.00'	5,359 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,751.00	0	0	0
4,752.00	483	242	242
4,754.00	1,277	1,760	2,002
4,756.00	2,080	3,357	5,359

Device	Routing	Invert	Outlet Devices
#1	Primary	4,751.00'	**0.7" Vert. Orifice/Grate** X 4 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,752.64'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	4,754.06'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.55 cfs @ 1.90 hrs HW=4,754.06' TW=4,745.08' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.08 cfs @ 7.64 fps)
- **2=Orifice/Grate** (Orifice Controls 0.47 cfs @ 5.39 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P3: Pond 3



Summary for Pond P4: Pond 4

Inflow Area = 24.500 ac, Inflow Depth = 0.59" for 100-Year event
Inflow = 21.99 cfs @ 1.52 hrs, Volume= 1.204 af
Outflow = 10.21 cfs @ 1.98 hrs, Volume= 1.469 af, Atten= 54%, Lag= 27.6 min
Primary = 10.21 cfs @ 1.98 hrs, Volume= 1.469 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,742.19' Surf.Area= 5,651 sf Storage= 11,503 cf
Peak Elev= 4,745.13' @ 1.98 hrs Surf.Area= 9,680 sf Storage= 33,969 cf (22,467 cf above start)

Plug-Flow detention time= 97.0 min calculated for 1.204 af (100% of inflow)
Center-of-Mass det. time= 73.1 min (182.6 - 109.6)

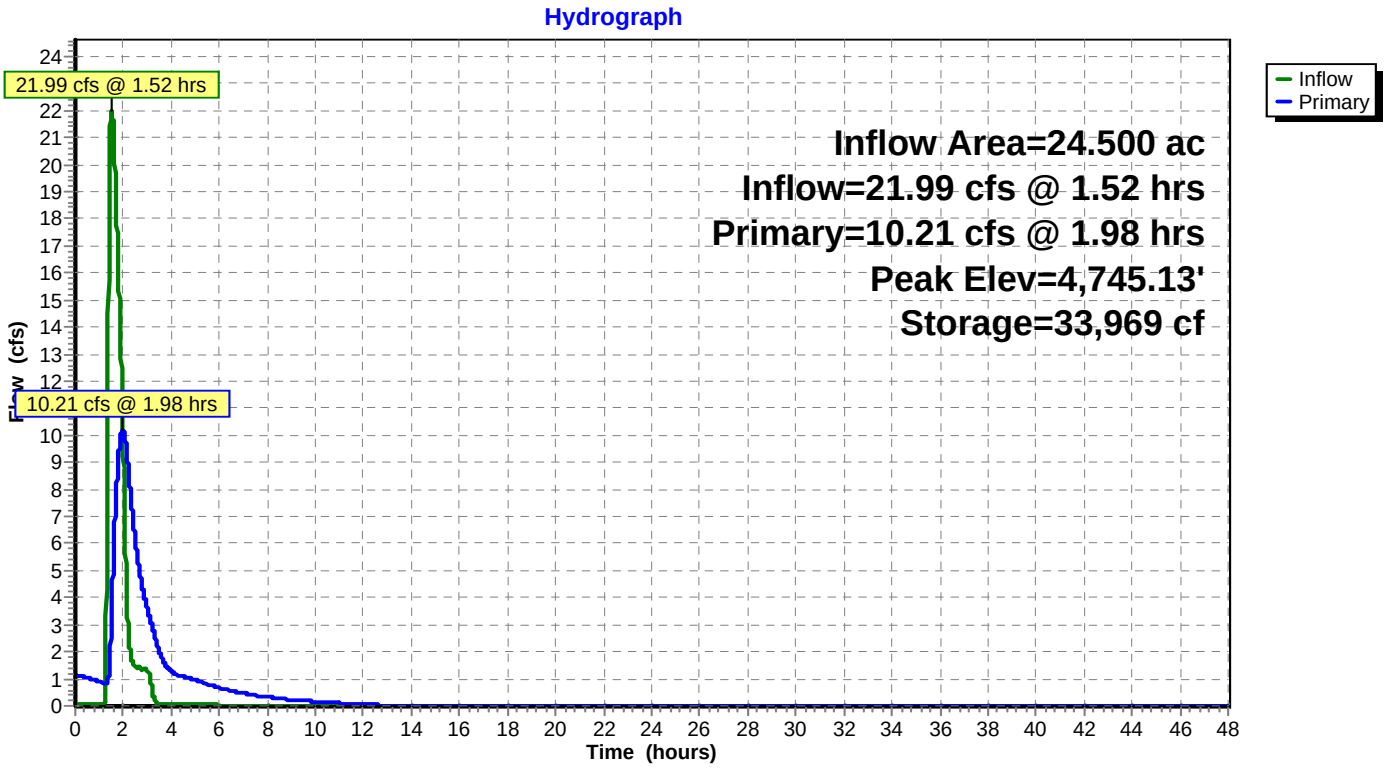
Volume	Invert	Avail.Storage	Storage Description
#1	4,739.00'	42,958 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,739.00	0	0	0
4,740.00	3,373	1,687	1,687
4,742.00	5,394	8,767	10,454
4,744.00	8,104	13,498	23,952
4,746.00	10,902	19,006	42,958

Device	Routing	Invert	Outlet Devices
#1	Primary	4,739.00'	**1.0" Vert. Orifice/Grate X 4.00 columns** X 8 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,742.19'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	4,745.13'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=10.21 cfs @ 1.98 hrs HW=4,745.13' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 1.86 cfs @ 10.65 fps)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 8.35 cfs @ 5.69 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P4: Pond 4



Appendix F – SWMM Checklist

Table 302
Stormwater Management Manual
Drainage Report Checklist

Instructions:
1. Applicant to identify with a "check-mark" if information is provided with report. If applicant believes information is not required, indicate with "n/a" and attach separate sheet with explanation
2. The reviewer will determine if information labeled "n/a" is required and whether information must be submitted.
3. Those items noted with an "asterisk" are not typically required for conceptual/ preliminary report. Applicant shall confirm this with local jurisdiction.
4. Submit three (3) copies of report and include copy of check list bound with report.

TITLE PAGE

A. Type of report (Conceptual/Preliminary or Final Drainage Report).
B. Project Name.
C. Preparer name, firm, address, number, and date.
D. Professional Engineer's seal of preparer.
E. Certifications (see SWMM Section 303.1)

I. INTRODUCTION

A. Background
- X 1. Identify report preparer and purpose.
- NA 2. Identify date of letter with previous County comments.

B. Project Location
- X 1. Identify Township, Range, and Section.
- X 2. Identify adjacent street and subdivision names.
- X 3. Reference to General Location Map.

C. Property Description
- X 1. Identify area in acres of entire contiguous ownership.
- X 2. Describe existing ground cover, vegetation, soils, topography and slopes.
- X 3. Describe existing drainage facilities, such as channels, detention areas, or structures.
- NA 4. Describe existing irrigation facilities, such as ditches, head-gates, or diversions.
- X 5. Identify proposed types of land use and encumbrances.

D. Previous Investigations
- X 1. Identify drainage master plans that include the project area, including floodplain studies.
- X 2. Identify drainage reports for adjacent development.

II. DRAINAGE SYSTEM DESCRIPTION

A. Existing Drainage Conditions
- X 1. Describe existing topography and provide map with contours extending a minimum of 100 feet beyond property limits.
- X 2. Identify major drainageway or outfall drainageway and describe map showing location of proposed development within the drainageways.
- X 3. Identify pre-developed drainage patterns and describe map showing pre-developed sub-basins and concentrated discharge locations. Provide calculations of pre-developed peak flows entering and leaving the site.

B. Master Drainage Plan
- X 1. Describe location of the project relative to a previously prepared master drainage plan, including drainage plans prepared for adjacent development.

C. Offsite Tributary Area

X 1. Identify all offsite drainage basins that are tributary to the project.
X 2. Identify assumptions regarding existing and future land use and effects of offsite detention on peak flows.

D. Proposed Drainage System Description

NA 1. Identify how offisite stormwater is collected and conveyed through the site and ultimately to the receiving water(s).
X 2. Identify sub-basins and describe, in general terms, how onsite stormwater is collected and conveyed through the site for each location where stormwater is discharged from the site.
X * 3. Describe detention volumes, release rates and pool elevations.
X * 4. Identify the difference in elevation between pond invert and the groundwater table.
X 5. Describe how stormwater is discharged from the site, including both concentrated and dispersed discharges and rates.
X 6. Describe stormwater quality facilities.
X * 7. Describe maintenance access aspects of design.
X * 8. Describe easements and tracts for drainage purposes, including limitation on use.

E. Drainage Facility Maintenance

NA * 1. Identify responsible parties for maintenance of each drainage and water quality facility.
NA * 2. Identify general maintenance activities and schedules.

III. DRAINAGE ANALYSIS AND DESIGN CRITERIA

A. Regulations

X 1. Identify that analysis and design was prepared in accordance with the provisions of the Manual.
X 2. Identify other regulations or criteria which have been used to prepare analysis and design.

B. Development Criteria

X 1. Identify drainage constraints placed on the project, such as by a major drainage study, floodplain study or other drainage reports relevant to the project.
X 2. Identify drainage constraints placed on the project, such as from major street alignments, utilities, existing structures, and other developments.

C. Hydrologic Criteria

(If Manual was followed without deviation, then a statement to that effect is all that is required. Otherwise provide the following information where the criteria used deviates from the Manual.)

X 1. Identify developed storm runoff peak flows and volumes and how they were determined, including rainfall intensity or design storm.
X 2. Identify which storm events were used for minor and major flood analysis and design.
X 3. Identify how and why any other deviations from the Manual occurred.

D. Hydraulic Criteria

(If Manual was followed without deviation, then a statement to that effect is all that is required. Otherwise provide the following information where the criteria used deviates from the Manual.)

NA * 1. Identify type(s) of streets within and adjacent to development and source for allowable street capacity.
NA * 2. Identify which type(s) of storm inlets were analyzed or designed and source for allowable capacity.
3. Identify which type of storm sewers which were analyzed or designed and

Manning's n-values used.

4. Identify which method was used to determine detention volume requirements and how allowable release rates were determined.
5. Identify how the capacity of open channels and culverts were determined.
6. Identify any special analysis or design requirements not contained with the Manual.
7. Identify how and why any other deviations from the Manual occurred.

E. Variance from Criteria

1. Identify any provisions of the Manual for which a variance is requested.
2. Identify pre-existing conditions which cause the variance request.

***IV. POST CONSTRUCTION STORMWATER MANAGEMENT. See Manual Section 1600 for requirements.**

Note: This section of the Final Drainage Report identifies additional information required by Mesa County's, City of Grand Junction's, and Town of Palisade's, Permit for Stormwater Discharges Associated with Municipal Separate Storm Sewer Systems (MS4s), permit No. COR-090000. The Final Drainage Plan and the Construction SWMP (see SWMM Section 1500) meets the requirements of the MS4s Permit. In general, this section identifies permanent BMP practices to control the discharge of pollutants after construction is complete.

*A. Stormwater Quality Control Measures

1. Describe the post-construction BMPs to control discharge of pollutants from the project site.
2. If compensating detention is provided, discuss practices to address water quality from area not tributary to detention area.
3. If underground detention is proposed, discuss how water quality facilities will be provided on the surface.
4. If proprietary BMPs are proposed, provide the justification and sizing requirements (see SWMM Section 1603.3).

*B. Calculations

1. Provide methods and calculations for WQCV, sediment storage, and water quality outlet structure.

V. CONCLUSIONS

A. Compliance with Manual

Compliance with Manual and other approved documents, such as drainage plans and floodplain studies.

B. Design Effectiveness

Effectiveness of drainage design to control impacts of storm runoff.

C. Areas in Flood Hazard Zone

Meet requirements of Floodplain Regulations: Mesa County Land Development Code, Section 7.13; City of Grand Junction Zoning and Development Code, Section 7.1.

D. Variances from Manual

Applicant shall identify any requested variances and provide basis for approving variance. If no variances are requested, applicant shall state that none are requested.

VII. REFERENCES

Provide a reference list of all criteria, master plans, drainage reports, and technical information used.

TABLES

Include copy of all tables prepared for report.

FIGURES

A. General Location Map (See Section 303.2a)

X B. Flood Plain Information
X C. Drainage Plan (See Section 303.2b)
X D. Other pertinent figures.

APPENDICIES

A. DESIGN CHARTS

X 1. Provide copy of all design charts (i.e.: tables, figures, charts from other criteria) used for the report.

B. HYDROLOGIC CALCULATIONS (see Manual Sections 600 and 700)

X 1. Land use assumptions for off-site runoff calculations.
X 2. Time of concentration and runoff coefficients for pre-existing and post development conditions.
X 3. Pre-developed hydrologic computations.
X 4. Developed conditions hydrologic computations.

C. HYDRAULIC CALCULATIONS

NA 1. Capacity of existing channels, streets, storm sewers, inlets, culverts and other facilities.
NA 2. Calculations for existing storm sewer and open channel.
NA 3. Irrigation ditch flows and ditch system capacity.
X * 4. Detention pond design (see Manual, Section 1400 for requirements).
X * a. Storage volume, release rates, and pool elevations for 10-year and 100-year storm.
X * b. Outlet structure dimensions, orifice diameter, weir lengths, pipe headwater and other data.
X * c. Outlet velocity and energy dissipation requirements.
X * d. Routing of outlet flows and emergency spillway flows.
X * 5. Street capacity calculations, if data in Manual not used (see Section 1100).
NA * 6. Storm inlet capacity calculations, if data in Manual not used (see Section 1100).
NA * 7. Storm sewer capacity calculations, if data in Manual not used (see Section 1000).
NA * 8. Channel capacity calculations, if data in Manual not used (see Section 800).
NA * 9. Culvert capacity calculations (see Manual, Section 1200).
NA * 10. Other hydraulic structure calculations (see Manual, Section 900).

D. STORMWATER QUALITY CALCULATIONS

X 1. Water Quality Capture Volume (WQCV).
X * 2. Storage volume for sediment volume and pool elevations for WQCV.
X * 3. Outlet calculations for required area per row, diameter of individual holes, number of holes per row, and number of holes per column.

X

CERTIFICATION – PROFESSIONAL ENGINEER'S SEAL AND SIGNATURE

ACKNOWLEDGEMENTS

Drainage Report checklist was prepared by: SSM

Table 303
Stormwater Management Manual

Drainage Plan Checklist

Instructions:
1. Applicant to identify with a "check-mark" if information is provided. If applicant believes information is not required, indicate with "n/a".
2. County will determine if information labeled "n/a" is required and whether information must be submitted.

I. EXISTING FACILITIES

- X A. Contours at two foot intervals, based on USGS datum. Contours to extend at least 50 feet past property line.
- X B. Location and elevation of USGS benchmarks or benchmarks referenced to USGS.
- X C. Property lines.
- X D. Drainage easements.
- X E. Street names.
- X F. Major and minor channels and floodplains.
- X G. A historic drainage plan including historic basin boundaries and flow paths.

II. PROPOSED FACILITIES

- X A. Contours at two-foot intervals, based on USGS datum.
- X B. Property lines.
- X C. Drainage easements.
- X D. Street names and grades.
- X E. Right of way and easement.
- X F. Finished floor elevations for protection from major storm run-off.
- X G. Detention pond information:
  1. X Location of each detention pond with site at 1"=50' scale or larger with 2-foot contour intervals.
  2. X Inlet and outlet structure, and trickle channel design details.
  3. X Details of emergency spillway and channel.
  4. X Landscape information, including side slopes, vegetation and planting requirements.
  5. X Details of water quality outlet structure.
- X H. Channel Information:
  1. X Profiles with existing and proposed grades.
  2. X Cross sections on 100-foot stations showing existing and proposed topography and required rights of way.
  3. X Locations and size of all existing and proposed structures.
  4. X Locations and profiles of adjacent utilities.
  5. X Typical channel section and lining details.
- X I. Storm sewer information:
  1. X Alignment and location of manholes, inlets, and outlet structures.
  2. X Profile of invert and pipe crown.
  3. X Invert elevations at manholes and inlets.
  4. X Lengths and grades between manholes and inlets.
  5. X Locations and elevations of utilities adjacent to and crossing storm sewer.
  6. X Easement and other O&M access geometry.
  7. X Outlet details, such as end sections, headwall and wingwalls, erosion control, and vegetation.
- N/A J. Street cross sections with design 100-year flood depth.
- N/A K. Other drainage related structures and facilities, including underdrains and sump pump discharge lines.
- N/A L. Other permanent BMP measures to control pollutant discharges to the County's MS4 system.

III. HYDRAULIC AND HYDROLOGIC INFORMATION

X A. Routing and accumulative runoff peaks at upstream and downstream ends of the site and at various critical points onsite for initial and major storms. Inflow and outflow from each subbasin shall be shown for both initial and major storms.

NA B. Street cross sections showing 100-year flood levels.

NA C. Major and minor channels and floodplains.

X D. Detention pond data:

X 1. Release rates for 10- and 100-year storm events.

X 2. Required and provided volumes for 10- and 100-year storm events.

X 3. Design depths for 10- and 100-year storm events.

X 4. Water quality capture volume and pool elevation.

NA E. Channel data:

NA 1. Water surface profiles.

NA 2. Representative 100-year flow velocity and Froude number.

NA F. Storm sewer data:

NA 1. Profile of water surface for design flow rate.

NA 2. Peak flows for design flow, 2-year and 100-year storm events.

IV. STANDARD NOTES

X A. No building, structure, or fill will be placed in the detention areas and no changes or alterations affecting the hydraulic characteristics of the detention areas will be made without the approval of the County.

X B. Maintenance and operation of the detention and water quality areas is the responsibility of property owner. If owner fails in this responsibility, the County has the right to enter the property, maintain the detention areas, and be reimbursed for costs incurred.

X C. Detention pond volumes, all drainage appurtenances, and basin boundaries shall be verified. As-built drawings shall be prepared by a registered professional engineer prior to issuance of certificate of occupancy for any structure within the development.

X D. Permission to reproduce these plans is hereby given to Mesa County for County purposes associated with plan review, approval, permitting, inspection and construction of work.

X **V. PROFESSIONAL ENGINEER'S SEAL AND SIGNATURE**

Y **VI. OTHER**

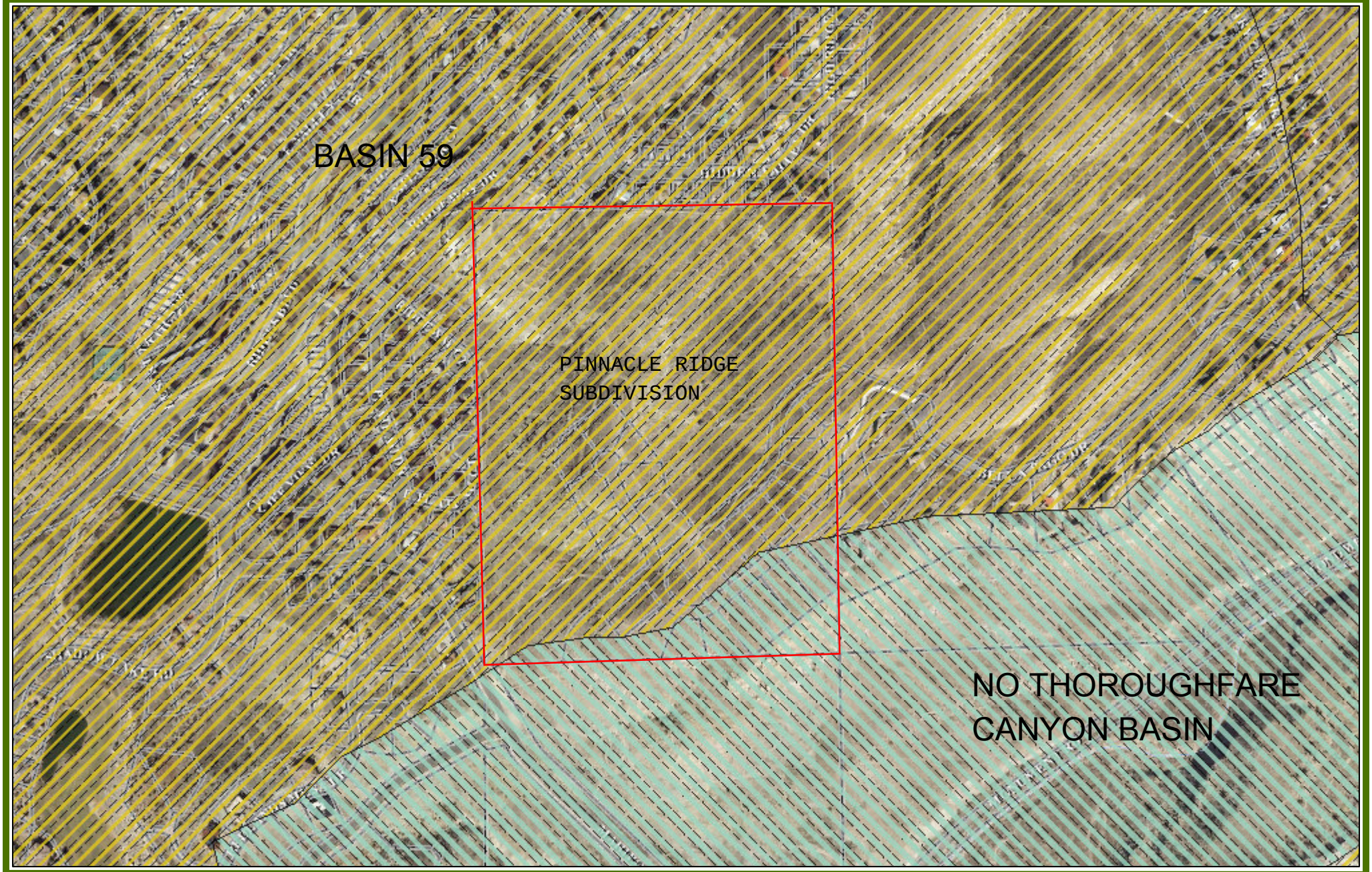
A. Horizontal and vertical control information and ties to existing and proposed features.

ACKNOWLEDGEMENTS

Drainage Plan checklist was prepared by: CSM

Appendix G – Major Basins Exhibit

City of Grand Junction



N

0 0.125 0.25 Miles

Printed: 6/23/2015

1 inch = 468 feet

CITY OF Grand Junction COLORADO GEOGRAPHIC INFORMATION SYSTEM

Appendix H – Variance Request Letter

VORTEX
ENGINEERING, INC.

December 22, 2015

City of Grand Junction
Attn: Rick Dorris, P.E.
250 N 5th Street
Grand Junction, CO 81501

RE: Pinnacle Ridge Subdivision
Drainage Variance Request
East of Mariposa Drive
Grand Junction, CO

VEI #: F04-006
PROJECT #: SUB-2015-120

Dear Mr. Dorris,

This letter is to request a variance from compliance with section 1407.3 of The Grand Junction Storm Water Management Manual, hereinafter SWMM, which requires that "The total of un-detained area shall not exceed 5% or 5000 square feet of total area whichever is less." This request shall be taken into consideration in conjunction with the data and narrative contained in the approved "Preliminary Drainage Report for Pinnacle Ridge Subdivision". The copy of this letter is found in Appendix H of the above mentioned report. The subject project has two (2) basins that do not meet the above requirement, and are the cause for this request; Basins DD1 and DD2.

The proposed basin DD1 is about 1.93 acres in size, located in the south east corner of the project site. In proposed conditions this basin shall remain mostly undisturbed. Historically, the runoff from this area is generated by the existing basin EX1, with an area of 5.96 acres and discharges 1.62 and 4.47 cfs runoff for the minor (10 year storm) and the major (100 year storm), respectively. The runoff during the proposed conditions from DD1 is estimated to be 0.32 cfs and 1.61 cfs for minor and major storm event, respectively. The reduction of the runoff in the proposed conditions is created by reducing the existing basin area, due to the onsite grading.

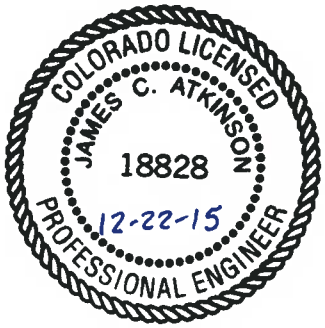
Basin DD2 is located in the north east corner of the site with an area of 0.39 acres. The proposed runoffs from this basin are 0.06 cfs and 0.33 cfs for minor and major storm, respectively. The existing runoff flows in this area are generated by the existing basin EX6 and are estimated to be 0.11 cfs and 0.55 cfs for minor and major storm, respectively. The area of the basin in proposed conditions is decreased by almost a half. The runoff from this basin is impossible to route via gravity through Pond 4 due to the basin elevations at low end are below the inverts of the designated ponds. The runoff from DD2 shall be concentrated in swales along the northern property boundary and diverted into the adjacent vacant lot owned by Genie Inc., and located between 2417 and 2419 Hidden Valley Drive, at the same point of discharge as the outfall from Pond 4. The sum of the flows into the vacant lot from Pond 4 outfall and DD2 runoff, in proposed conditions, is estimated to be 1.96 cfs and 10.40 cfs, for minor and major storm respectively, which is less than the adjusted allowable 2.71 cfs and 11.28 and also less than the historic runoff from basin EX4 = 2.91 cfs and 13.46 during the minor and major storm events, respectively.

In both cases of the direct discharge from basins DD1 and DD2, in the proposed conditions is less than in the existing conditions. In case of DD2 the runoff onto the north property shall be controlled with diversion ditches running along the boundary in the direction of the above mentioned vacant lot, thus reducing the cross lot drainage onto the developed lots located directly north of the basin.

In both cases the low points of DD1 and DD2 basins are well below inverts of their respective detention ponds, thus the hydraulic conditions in these basins cannot be adequately addressed to comply with the SWMM. Nevertheless, both basins DD1 and DD2 are over detained in Pond 1 and Pond 4, respectively.

Vortex Engineering, Inc. looks forward to successfully working with the City of Grand Junction to permit this project. Upon your review of this information, should you have any questions or require additional information, please do not hesitate to contact me at 970-245-9051. Thank you.

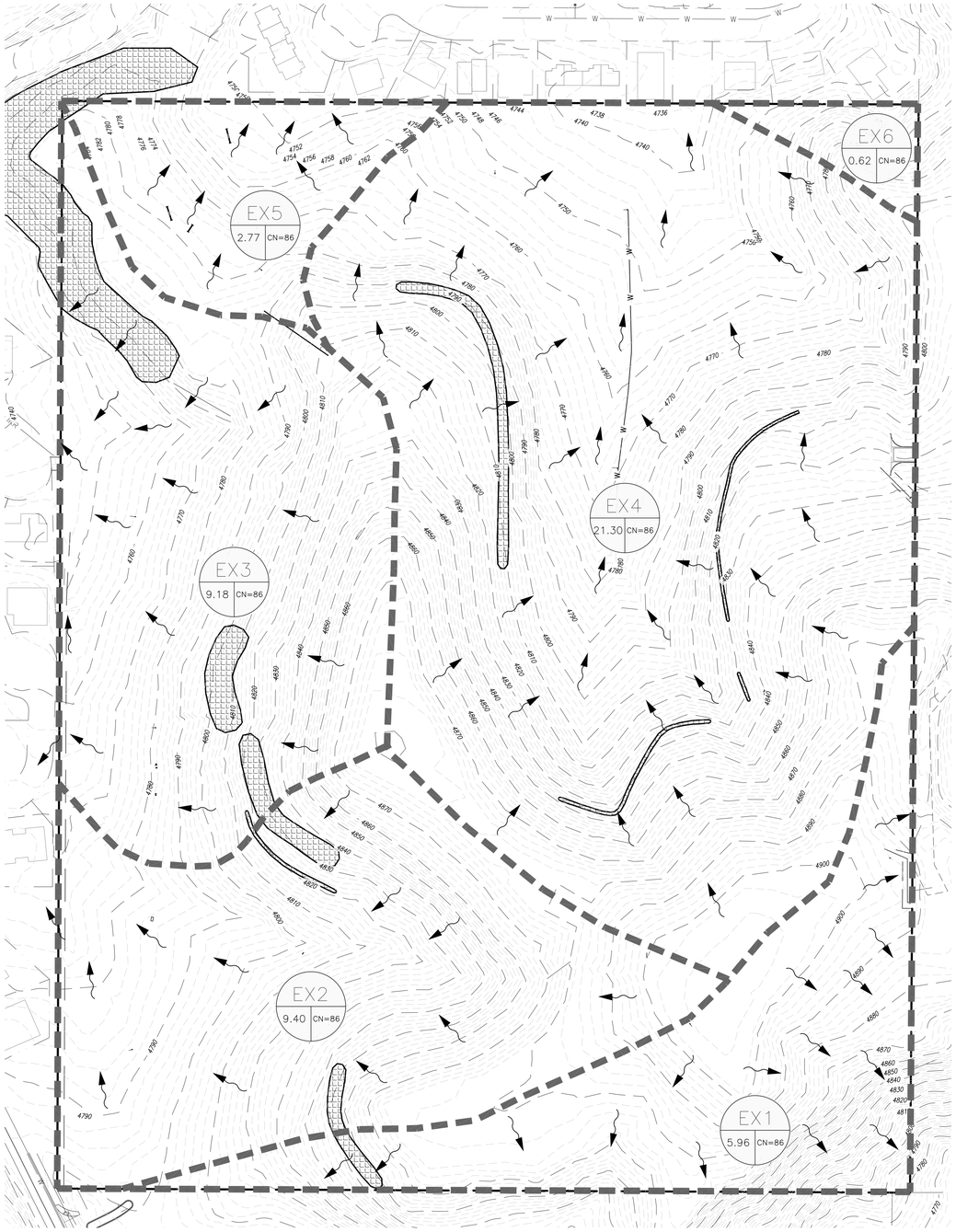
Sincerely,
Vortex Engineering, Inc

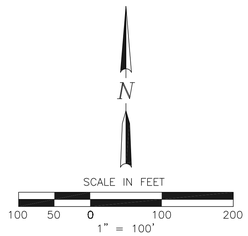


James C. Atkinson, P.E.

Cc: Two R&D
File

Appendix I – Drainage Maps





RUNOFF TABLE

BASIN	10 YEAR RUNOFF (CFS)	100 YEAR RUNOFF (CFS)
EX1	1.62	4.47
EX2	1.41	6.74
EX3	1.42	6.80
EX4	2.91	13.46
EX5	0.45	2.22
EX6	0.11	0.55

PROJECT BENCHMARK

PROJECT BENCHMARK #1 IS A SURVEY MONUMENT LOCATED AT THE SE1/16 CORNER OF SECTION 4, T1S, R1W, ON F 1/4 ROAD. ELEVATION IS BASED ON THE MESA COUNTY SURVEY INFORMATION MANAGEMENT SYSTEM.
ELEVATION=4571.298
PROJECT BENCHMARK #2 IS A SURVEY MONUMENT LOCATED AT THE C-E1/16 CORNER OF SECTION 4, T1S, R1W. ELEVATION IS BASED ON THE MESA COUNTY SURVEY INFORMATION MANAGEMENT SYSTEM.
ELEVATION=4580.794

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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FOR REVIEW

MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	08/08/17	REVISED PRE CITY COMMENTS DATED JULY 18, 2017	SSM

Drainage Map - Existing Conditions

-

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/07/17**
SCALE: **SEE PLAN**
CAD: **pinnacledrainagemap.dwg**

~SHEET~
1/2

PONDS' SUMMARY TABLES

POND 1	VOLUME (CF)	WSEL (FT)	DESIGN PEAK DISCHRGE FLOW (CFS)	SUM OF DD1 AND POND 1 PEAK FLOWS (CFS)	ADJUSTED ALLOWABLE PEAK DISCHARGE FLOW (CFS)
WQCV	3,296	4801.50	NA	NA	NA
10 YEAR	6,082	4802.31	0.26	.58	0.59
100 YEAR	15,335	4804.31	0.48	2.09	2.47

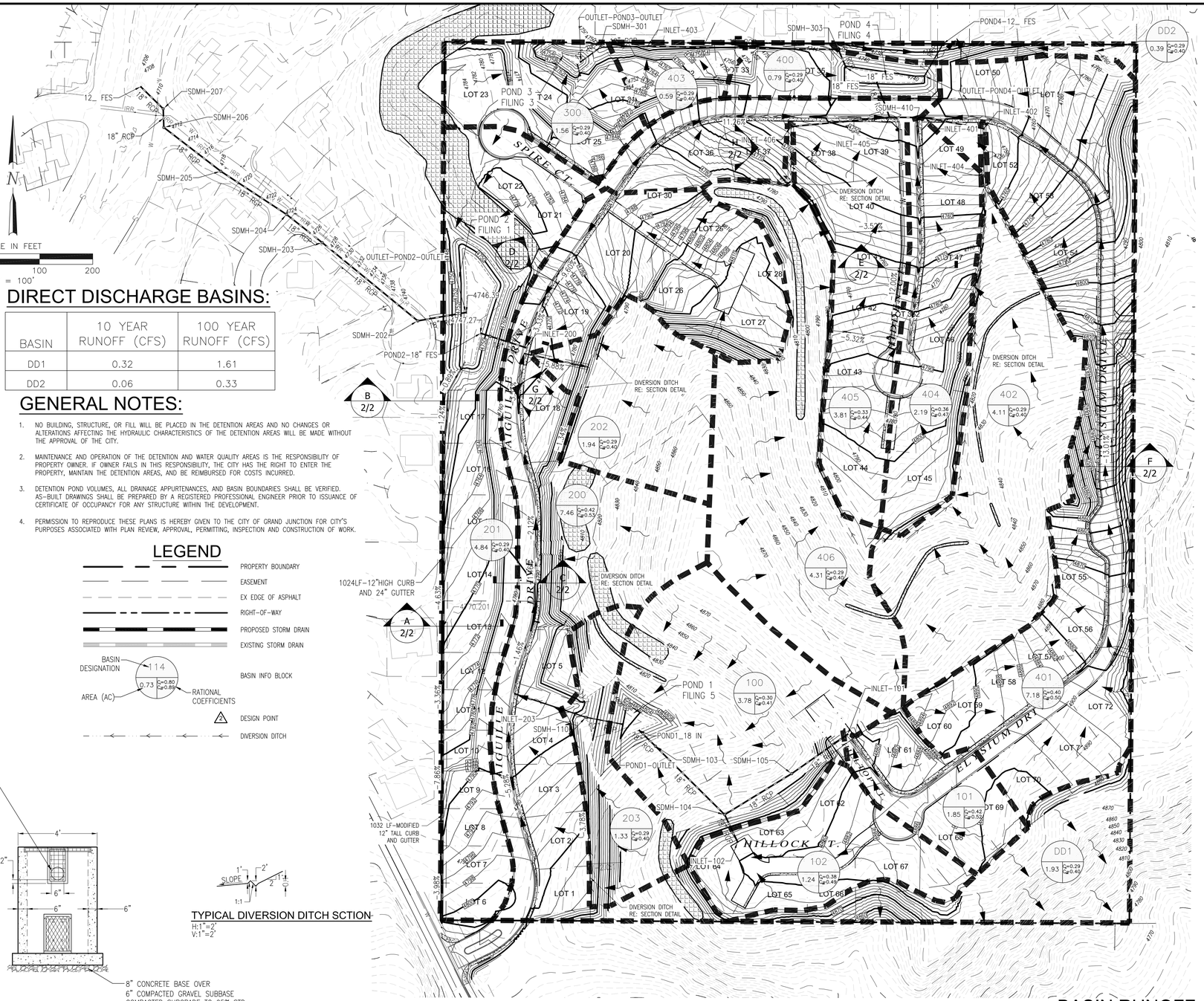
POND 2	VOLUME (CF)	WSEL (FT)	PEAK DISCHRGE FLOW (CFS)	ALLOWABLE PEAK DISCHRGE FLOW (CFS)
WQCV	7,575	4847.71	NA	NA
10 YEAR	13,992	4748.32	0.52	1.87
100 YEAR	31,059	4749.95	4.21	7.79

POND 3	VOLUME (CF)	WSEL (FT)	PEAK DISCHRGE FLOW (CFS)	ALLOWABLE PEAK DISCHRGE FLOW (CFS)
WQCV	720	4752.64	NA	NA
10 YEAR	820	4752.88	.17	0.19
100 YEAR	2,077	4754.06	.55	0.78

POND 4	VOLUME (CF)	WSEL (FT)	PEAK DISCHRGE FLOW (CFS)	SUM OF DD2 AND POND 4 PEAK FLOWS (CFS)	ADJUSTED ALLOWABLE PEAK DISCHARGE FLOW (CFS)
WQCV	11,098	4742.19	NA	NA	NA
10 YEAR	14,737	4742.73	1.91	1.96	2.71
100 YEAR	33,969	4745.13	10.21	10.40	11.28

OUTLET STRUCTURE TABLES

POND	A	B	C	D	E	F	G	H	I
POND 1	4799.00	4801.50	4802.31	4804.31	6"	32"	1	7	5/8"
POND 2	4746.06	4747.71	4748.32	4749.95	20"	21"	4	5	7/8"
POND 3	4751.00	4752.64	4752.88	4754.06	6"	21"	1	4	5/16"
POND 4	4739.00	4742.19	4742.73	4745.13	20"	35"	1	8	13/16"



DIRECT DISCHARGE BASINS:

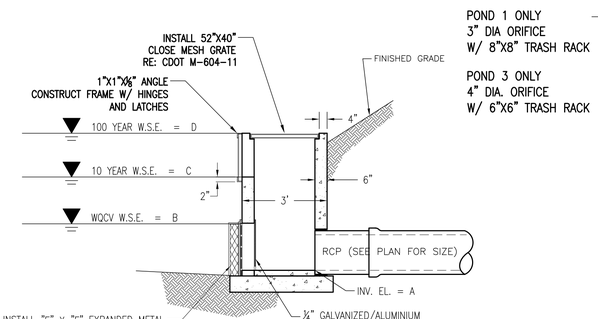
BASIN	10 YEAR RUNOFF (CFS)	100 YEAR RUNOFF (CFS)
DD1	0.32	1.61
DD2	0.06	0.33

GENERAL NOTES:

1. NO BUILDING, STRUCTURE, OR FILL WILL BE PLACED IN THE DETENTION AREAS AND NO CHANGES OR ALTERATIONS AFFECTING THE HYDRAULIC CHARACTERISTICS OF THE DETENTION AREAS WILL BE MADE WITHOUT THE APPROVAL OF THE CITY.
2. MAINTENANCE AND OPERATION OF THE DETENTION AND WATER QUALITY AREAS IS THE RESPONSIBILITY OF PROPERTY OWNER. IF OWNER FAILS IN THIS RESPONSIBILITY, THE CITY HAS THE RIGHT TO ENTER THE PROPERTY, MAINTAIN THE DETENTION AREAS, AND BE REIMBURSED FOR COSTS INCURRED.
3. DETENTION POND VOLUMES, ALL DRAINAGE APPURTENANCES, AND BASIN BOUNDARIES SHALL BE VERIFIED. AS-BUILT DRAWINGS SHALL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY FOR ANY STRUCTURE WITHIN THE DEVELOPMENT.
4. PERMISSION TO REPRODUCE THESE PLANS IS HEREBY GIVEN TO THE CITY OF GRAND JUNCTION FOR CITY'S PURPOSES ASSOCIATED WITH PLAN REVIEW, APPROVAL, PERMITTING, INSPECTION AND CONSTRUCTION OF WORK.

LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- BASIN INFO BLOCK (BASIN DESIGNATION, AREA (AC), RATIONAL COEFFICIENTS)
- DESIGN POINT
- DIVERSION DITCH



PROFILE

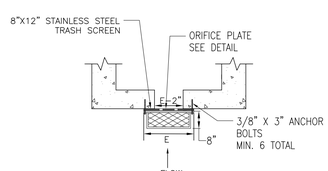
POND 1 ONLY
3" DIA ORIFICE
W/ 8"X8" TRASH RACK

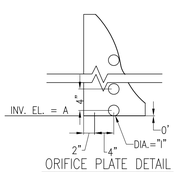
POND 3 ONLY
4" DIA. ORIFICE
W/ 6"X6" TRASH RACK

8" CONCRETE BASE OVER 6" COMPACTED GRAVEL SUBBASE COMPACTED SUBGRADE TO 95% STD. PROCTOR

FRONT ELEVATION

TYPICAL DIVERSION DITCH SCTION
H:1"=2'
V:1"=2'





ORIFICE PLATE DETAIL
NTS

POND OUTLET STRUCTURE DETAIL

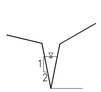
N.T.S.



SECTION - A
H:1"=20'
V:1"=2'
Q_{100} = 9.05 CFS
V = 7.99 FPS
DEPTH = 0.61 FT
GRADE = 4%



SECTION - C
H:1"=20'
V:1"=2'
Q_{100} = 24.5 CFS
V = 5.10 FPS
DEPTH = 1.39 FT
GRADE = 3.5%



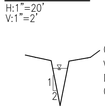
SECTION - E
H:1"=20'
V:1"=2'
Q_{100} = 12.79 CFS
V = 8.07 FPS
DEPTH = 0.89 FT
GRADE = 13.0%



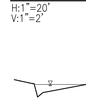
SECTION - G
H:1"=20'
V:1"=2'
Q_2 = 3.62 CFS
V = 4.67 FPS
DEPTH = 0.88 FT
GRADE = 5.88%



SECTION - B
H:1"=20'
V:1"=2'
Q_{100} = 9.05 CFS
V = 4.43 FPS
DEPTH = 0.96 FT
GRADE = 0.9%



SECTION - D
H:1"=20'
V:1"=2'
Q_{100} = 24.5 CFS
V = 10.74 FPS
DEPTH = 1.04 FT
GRADE = 9.60%



SECTION - F
H:1"=20'
V:1"=2'
Q_{100} = 17 CFS
V = 9.38 FPS
DEPTH = 0.35 FT
GRADE = 13%



SECTION - H
H:1"=20'
V:1"=2'
Q_{100} = 1.5 CFS
V = 4.69 FPS
DEPTH = 0.40 FT
GRADE = 13%

BASIN RUNOFF

DRAINAGE AREA	Area (ac)	2-Yr. Q (cfs) Basin Runoff	100-Yr. Q (cfs) Basin Runoff
100	3.78	1.36	7.24
101	1.85	0.85	4.21
102	1.24	0.62	3.00
200	7.46	3.80	18.35
201	4.84	1.68	9.05
202	1.94	0.67	3.62
203	1.33	0.46	2.50
300	1.56	0.54	2.92
400	0.79	0.28	1.48
401	7.18	3.44	16.86
402	4.11	1.43	7.69
403	0.59	0.21	1.11
404	2.19	0.95	4.79
405	3.81	1.52	7.82
406	4.31	1.50	8.06
DD1	1.93	0.67	3.60
DD2	0.39	0.13	0.72

VORTEX ENGINEERING, INC.
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• PROJECT MANAGERS
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18928

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	08/08/17	REVISED PRE CITY COMMENTS DATED JULY 18, 2017	SSM

Drainage Map - Proposed Conditions

-

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/07/17
SCALE: SEE PLAN
CAD: pbmanacledrainagemap.dwg

~SHEET~
2/2

LANDSCAPE LEGEND

Evergreen Trees

Large Deciduous Shrubs

Small Deciduous Shrubs

Landscape Boulders
Optional

UTILITY NOTIFICATION
CENTER OF COLORADO
CALL 811
LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

PLANT LIST

No.	Sym.	Common Name/ Biological Name	Planting Size/ Remarks	Mature Size
Trees:				
20	JUN	Utah Juniper/ Juniperus osteosperma	4'-5' Tall/ #5	15' Ht. & 15' Spd.
10	PIN	Pinon Pine/ Pinus edulis	6'-8' Tall/ B&B	25' Ht. & 15' Spd.
Shrubs:				
8	BLT	Broom Lilac Time/ Cytisus x 'Lilac Time'	18" -24" Spread/ #5	3' Ht. & 3' Spd.
9	MOR	Mormon Tea/ Ephedra virdis	15"-18" Spread/ #5	3' Ht. & 3' Spd.
40	MMA	Mountain Mohogany/ Cercocapus montanus	15"-18" Spread/ #5	10' Ht. & 6' Spd.
40	SSK	Saskatoon Serviceberry/ Amelanchier alnifolia	18"-24" Spread/ #5	10' Ht. & 8' Spd.
39	RDW	Rabbitbrush/ Chrysothamnus nauseosus	18"-24" Spread/ #5	4' Ht. & 4' Spd.
14	RSA	Russian Sage/ Perovskia artiplicifolia	18"-24" Spread/ #5	4' Ht. & 4' Spd.
28	TWS	Tall Western Sage/ Artemisia tridentata	18"-24" Spread/ #5	4' Ht. & 4' Spd.
30	YUF	Yucca Filamenentosa	15"-18" Spread/ #5	3' Ht. & 3' Spd.

*ALL PLANT TOTALS ON THE PLANT LIST SHALL BE VERIFIED WITH PLANT NUMBERS ON THE LANDSCAPE PLANS.

LANDSCAPE AND TEMPORARY IRRIGATION NOTES

1. The goal of the landscape plan is to create a natural landscape around the proposed detention ponds. Native and xeric plant materials are to be used in the landscape.
2. During excavation place all topsoil into proposed landscape areas prior to planting.
3. Planting beds are to have 3" of crushed buff landscape rock over landscape fabric. All plant material shall have a planting ring at the base of each plant with 3" of western red cedar mulch over landscape fabric
4. A temporary drip irrigation system should be provided to all plant material. Irrigation water will need to be trucked to the site and a pump will pressurize the temporary irrigation system. Each irrigation zone will need a point of connection for the water truck to hook into and deliver the necessary water to each drip zone.
5. Steel edging is to be installed along the edge of the planting beds.
6. Landscape boulders shall be 2' to 4' moss rock boulders.
7. Detention Ponds and drainage swales are to be 3" of Western Sunrise Shale. The shale shall be between 2" and 4" in size.

SOIL PREPARATION AND PLANTING SPECIFICATIONS

1.1 PREPARATION - GENERAL
- A. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations and outline areas and secure Architect's acceptance before start of planting work. Make minor adjustments as may be required.

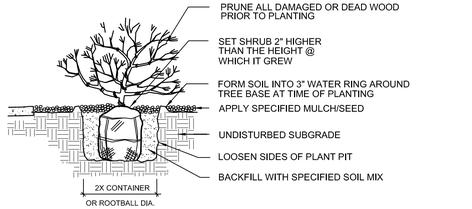
1.2 PREPARATION OF PLANTING SOIL
- A. Before mixing, clean topsoil of roots, plants, stones, clay lumps, and other extraneous materials harmful or toxic to plant growth.
- B. Mix soil amendments and fertilizers with topsoil as required based on existing soil conditions. Delay mixing of fertilizer if planting will not follow placing of planting soil within a few days.
- C. For pit and trench type backfill, mix planting soil prior to backfilling, and stockpile at site.
- D. For planting beds mix planting soil either prior to planting or apply on surface of topsoil and mix thoroughly before planting.

1.3 PREPARATION OF PLANTING BEDS
- A. Spread planting soil mixture to minimum depth required to meet lines, grades, and elevations shown, after light rolling and natural settlement. Place approximately 1/2 of total amount of planting soil required. Work into top of loosened subgrade to create a transition layer, then place remainder of the planting soil.
- B. Remove 8 inches to 10 inches of soil and replace with prepared planting soil mixture. Backfill for each bed with three parts topsoil and one part Cow Manure thoroughly mixed prior to placing.

1.4 EXCAVATION FOR TREES AND SHRUBS
- A. Excavate pits, beds, and trenches with vertical sides and with bottom of excavation slightly raised at center to provide proper drainage. Loosen hard subsoil in bottom of excavation.
  1. For balled and burlapped trees, make excavations at least half again as wide as the ball diameter and equal to the ball depth, plus following allowance for setting of ball on a layer of compacted backfill.
  2. Allow for 3 inch thick setting layer of planting soil mixture.
  3. For container grown stock, excavate as specified for balled and burlapped stock, adjusted to size of container width and depth.
- B. Dispose of subsoil removed from planting excavations. Do not mix with planting soil or use as backfill.
- C. Fill excavations for trees and shrubs with water and allow water to percolate out prior to planting.
- D. Backfill pits with three parts topsoil and one part A-1 Compost thoroughly mixed prior to placing.
- E. Place Agriform tablets in planting pit prior to backfilling at the following rate: three per each tree, one per each shrub.

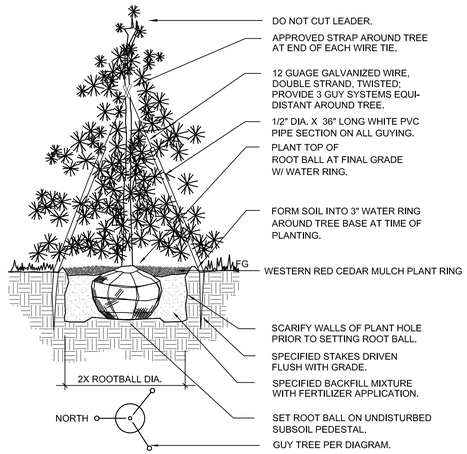
1.5 PLANTING TREES AND SHRUBS
- A. Set balled and burlapped (B&B) stock on layer of compacted planting soil mixture, plumb and in center of pit or trench with top of ball at same elevation as adjacent finished landscape grades. Remove burlap from sides of balls; retain on bottoms. When set, place additional backfill around base and sides of ball, and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill.
- B. Set container grown stock, as specified, for balled burlapped stock, except cut cans on 2 sides with an approved can cutter an from plantball so as not to damage root balls.
- C. Dish top of backfill to allow for mulching.
- D. Apply anti-desiccant, using power spray, to provide an adequate film over trunks, branches, stems, twigs and foliage.
  1. If deciduous trees or shrubs are moved when in full-leaf, spray with anti-desiccant at nursery before moving and spray again 2 weeks after planting.
- E. Remove and replace excessively pruned or misformed stock resulting from improper pruning.
- F. Wrap tree trunks of 2 inches caliper and larger. start at ground and cover trunk to height of first branches and securely attach. Inspect tree trunks for injury, improper pruning and insect infestation and take corrective measures before wrapping.
- G. Guy and stake trees immediately after planting, as indicated .

CITY OF GRAND JUNCTION PLANNING DIVISION
APPROVED FOR CONSTRUCTION:
BY: _____ DATE: _____



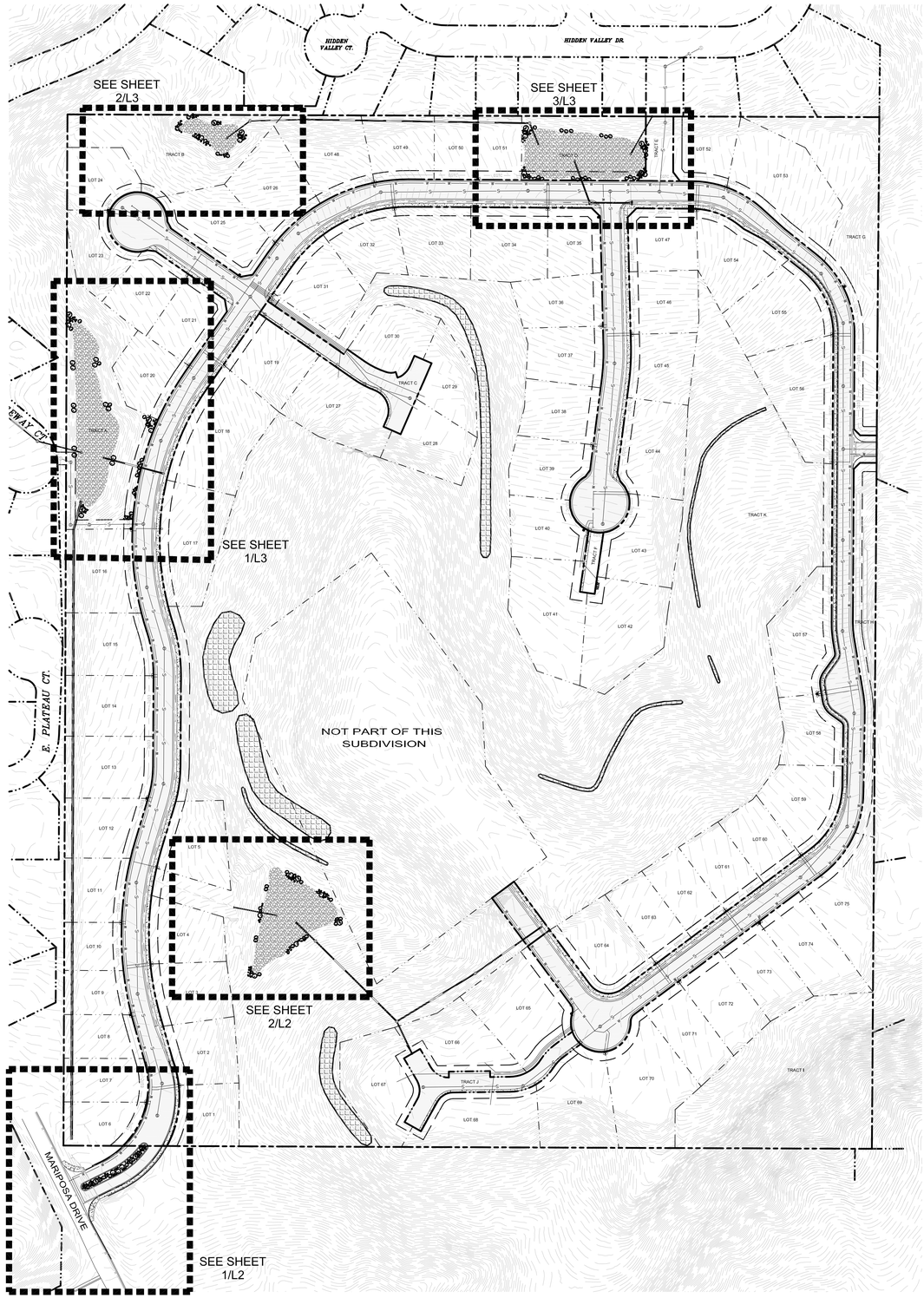
2 Shrub Planting Detail

SCALE: NTS



3 Evergreen Tree Planting Detail

SCALE: NTS



1 Overall Landscape Key Plan

SCALE: 1" = 100'-0"

NORTH 0 100' 200'

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

MRLA
MITCH REWOLD LANDSCAPE ARCHITECT
LANDSCAPE ARCHITECTURE AND LAND PLANNING
386 34 1/2 Road
Palisade, Colorado 81526 (970) 434-1155

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REV.	DATE	COMMENT	BY

PINNACLE RIDGE SUBDIVISION

LANDSCAPE PLAN

Mariposa Drive
Grand Junction, Colorado

SCALE:	DATE:	DRAWN BY:
1"=20'	06/24/15	MLR
CHECKED BY:		PROJECT NO:
MLR		F04-006

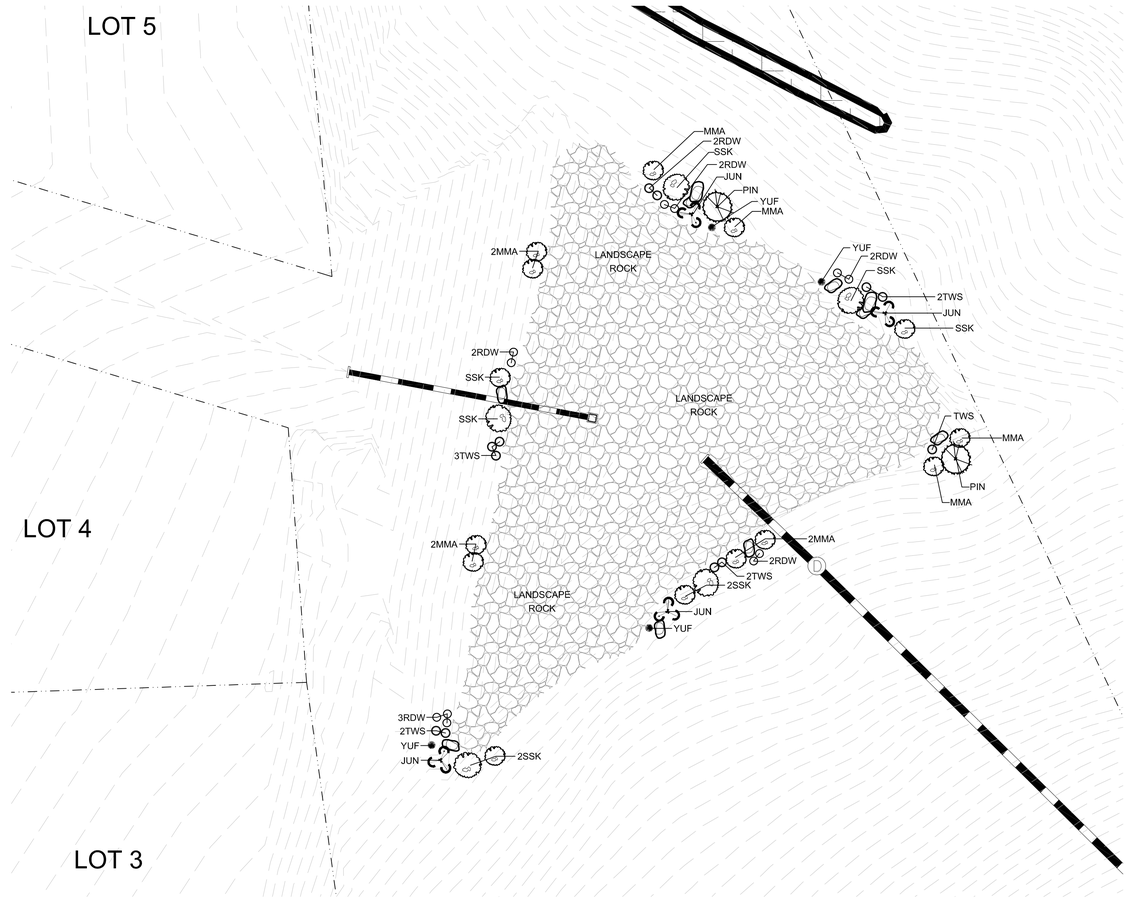
~SHEET~ L1 Of L3

LANDSCAPE LEGEND

- Evergreen Trees
- Large Deciduous Shrubs
- Small Deciduous Shrubs
- Landscape Boulders Optional

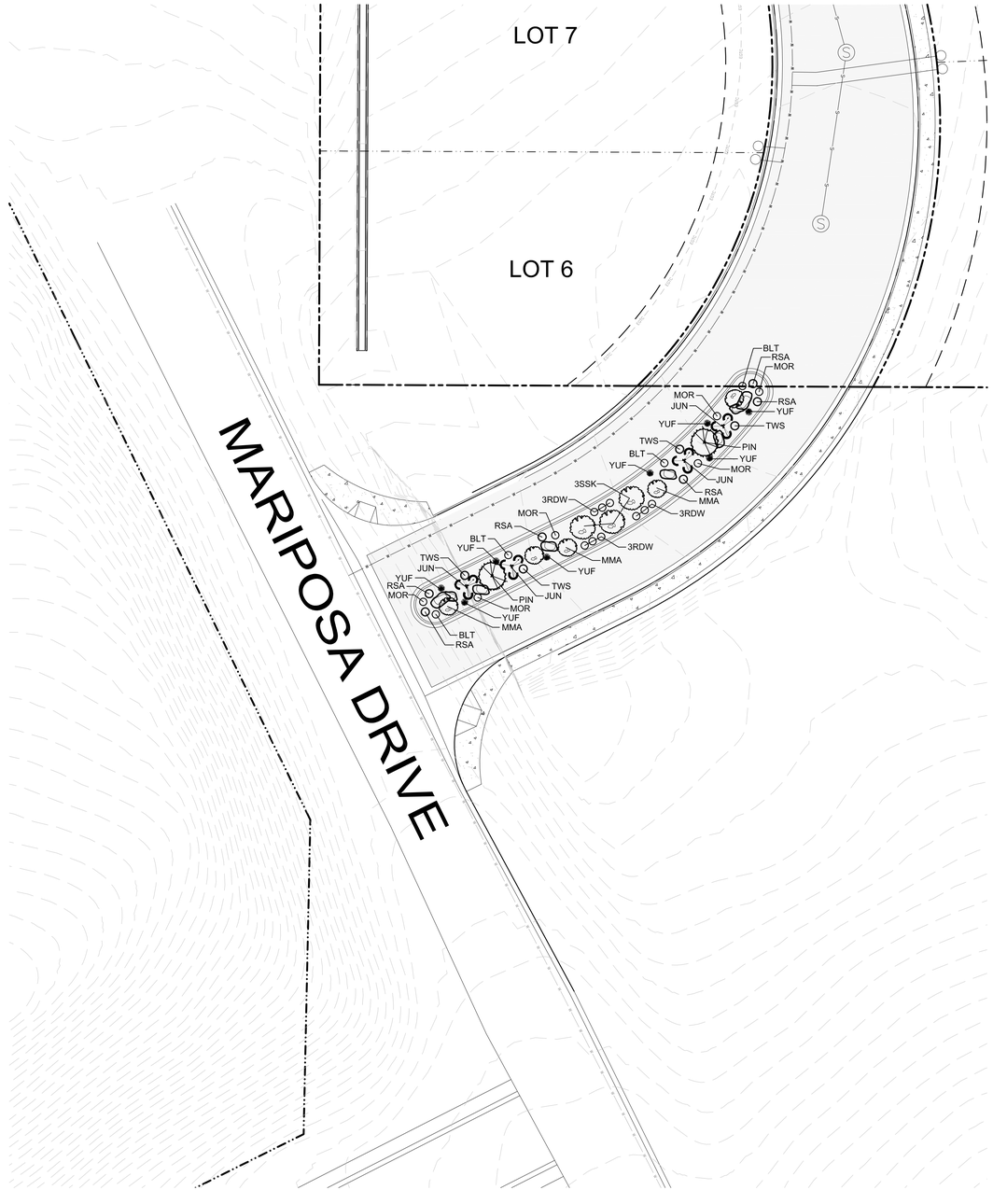
UTILITY NOTIFICATION CENTER OF COLORADO
CALL 811
LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

CITY OF GRAND JUNCTION PLANNING DIVISION
APPROVED FOR CONSTRUCTION:
BY: _____ *DATE:* _____



2 Landscape Plan - Detention Pond 1
SCALE: 1" = 20'-0"

NORTH 0 20' 40'



1 Landscape Plan - Entry
SCALE: 1" = 20'-0"

NORTH 0 20' 40'

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
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REV. DATE	COMMENT	BY

LANDSCAPE PLAN

PINNACLE RIDGE SUBDIVISION

Mariposa Drive
Grand Junction, Colorado

SCALE:	DATE:	DRAWN BY:
1"=20'	06/24/15	MLR
CHECKED BY: MLR		PROJECT NO: F04-006

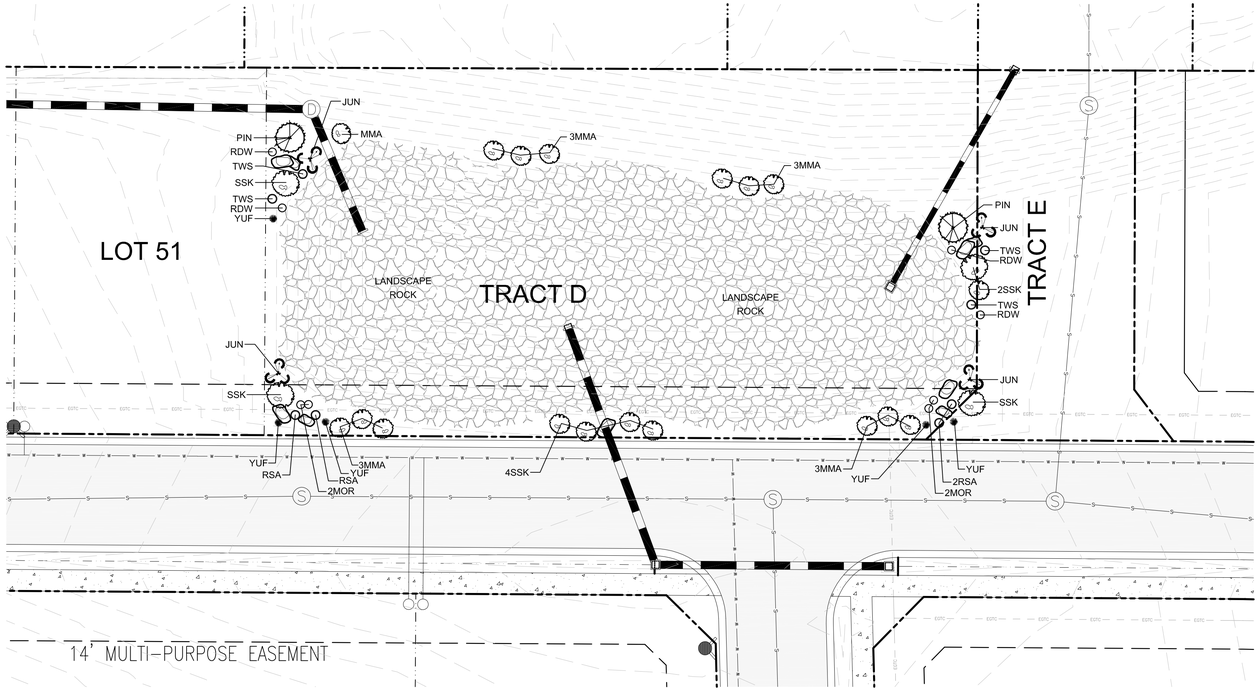
~SHEET~
L2 Of L3

LANDSCAPE LEGEND

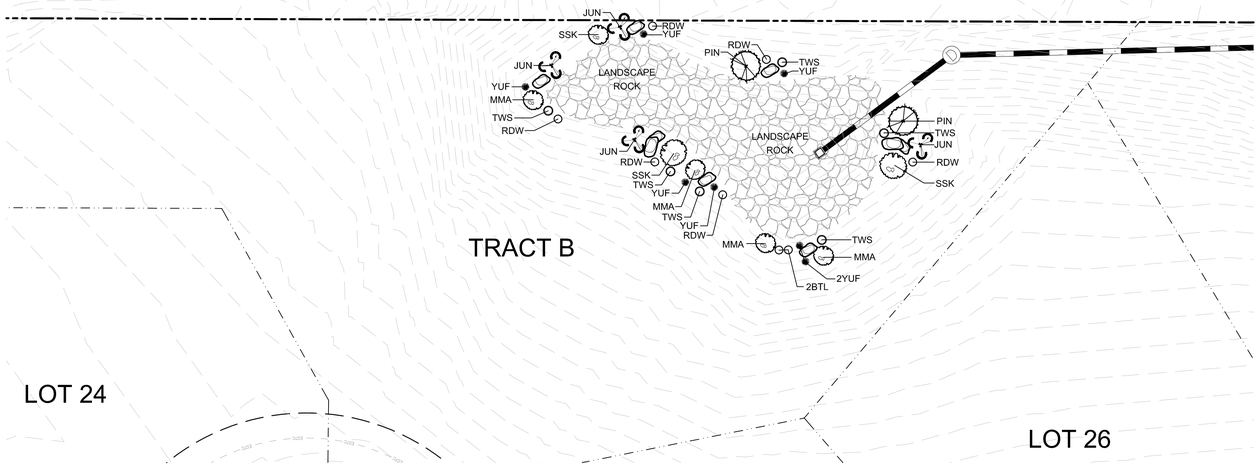
- Evergreen Trees
- Large Deciduous Shrubs
- Small Deciduous Shrubs
- Landscape Boulders Optional

UTILITY NOTIFICATION CENTER OF COLORADO
CALL 811
LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

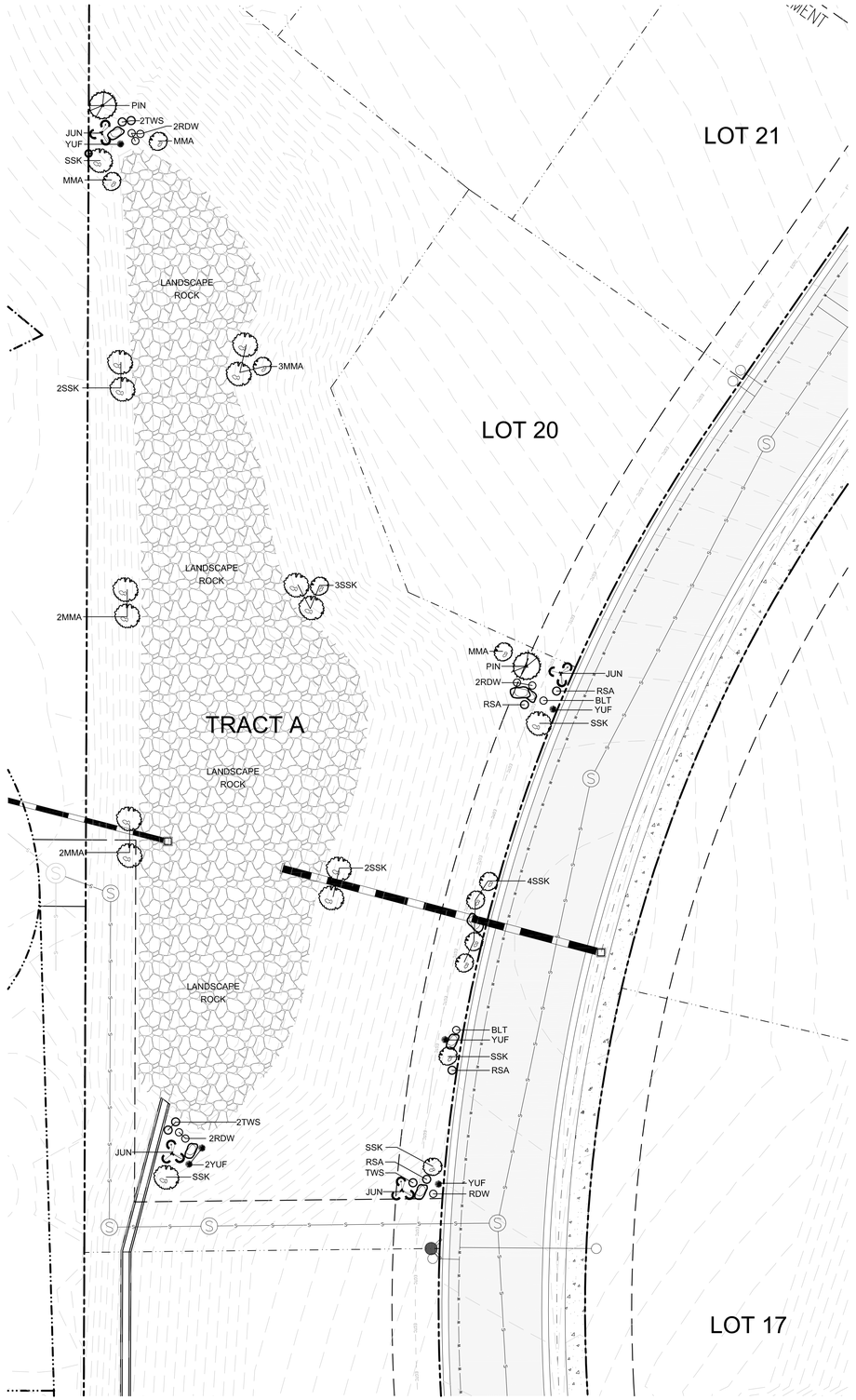
CITY OF GRAND JUNCTION PLANNING DIVISION
APPROVED FOR CONSTRUCTION:
BY: _____ *DATE:* _____



3 Landscape Plan - Detention Pond 4
SCALE: 1" = 20'-0"
NORTH 0 20' 40'



2 Landscape Plan - Detention Pond 3
SCALE: 1" = 20'-0"
NORTH 0 20' 40'



1 Landscape Plan - Detention Pond 2
SCALE: 1" = 20'-0"
NORTH 0 20' 40'

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• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
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REV. DATE	COMMENT	BY

LANDSCAPE PLAN
PINNACLE RIDGE SUBDIVISION
Mariposa Drive
Grand Junction, Colorado

SCALE:	DATE:	DRAWN BY:
1"=20'	06/24/15	MLR
CHECKED BY: MLR		PROJECT NO: F04-006

~SHEET~
L3 Of L3

EXHIBIT B

UTILITY EASEMENT DESCRIPTION

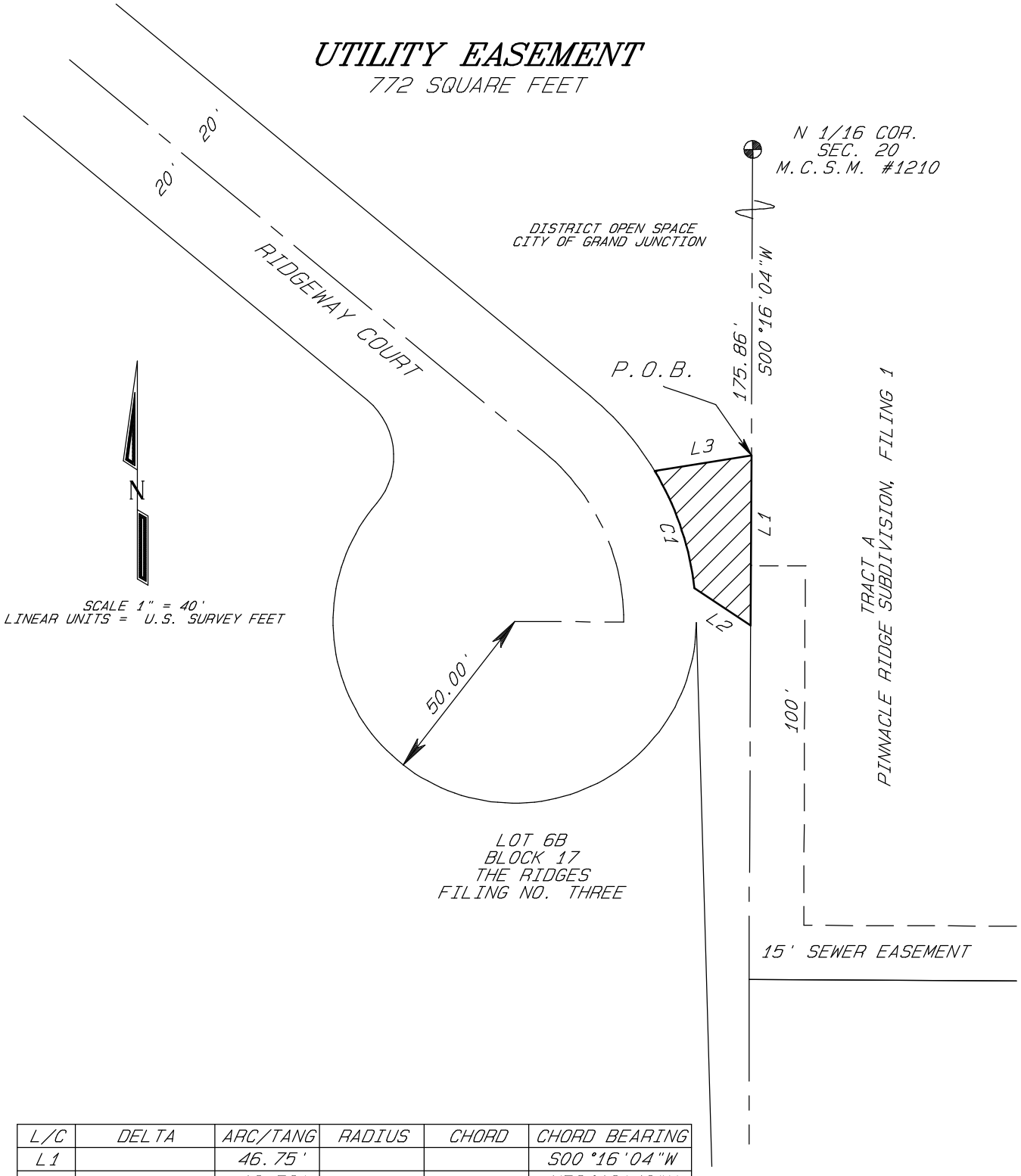
A parcel of land for a utility easement, situate in the SE 1/4 NE 1/4 of Section 20, Township 1 South, Range 1 West of the Ute Meridian, City of Grand Junction, Mesa County, Colorado, being more particularly described as follows:

Commencing at the N 1/16 corner of said Section 20;
thence S00°16'04"W a distance of 175.86 feet along the east line of said SE 1/4 NE 1/4 to the point of beginning;
thence S00º16’04”W a distance of 46.75 feet along said east line;
thence N56°19'42"W a distance of 18.58 feet to the right-of-way of Ridgeway Court;
thence along the arc of a non-tangent curve to the left 34.25 feet, having a central angle of 24°25'45" and a radius of 80.33 feet, the chord of which bears N18°41'34"W a distance of 33.99 feet along said right-of-way;
thence N80°54'55"E a distance of 26.91 feet to the point of beginning.
Said parcel contains 772 square feet more or less.

This description was prepared by:
Michael W. Drissel PLS
118 Ouray Ave.
Grand Junction, CO. 81501

EXHIBIT A

UTILITY EASEMENT
772 SQUARE FEET



L/C	DELTA	ARC/TANG	RADIUS	CHORD	CHORD BEARING
L1		46.75'			S00°16'04"W
L2		18.58'			N56°19'42"W
C1	24°25'45"	34.25'	80.33'	33.99'	N18°41'34"W
L3		26.91'			N80°54'55"E

D H SURVEYS, INC.
970-245-8749
JOB #129-04-03

POST-CONSTRUCTION STORMWATER CONTROL OPERATIONS AND MAINTENANCE AGREEMENT

Agreement No. _____

THIS AGREEMENT ("Agreement") is made and entered into this 16th day of June, 20 17, by and between Two R & D, LLC _____, (hereinafter the "Landowner"), and the 5-2-1 Drainage Authority (hereinafter the "Authority") as a representative of the City of Grand Junction ("City").

RECITALS

The Landowner is the owner of the following real property (hereinafter referred to as "the Property").

__ If the Property is a single parcel:

Street Address: _____

Parcel Number: _____

X If the Property is a subdivision or planned unit development:

Development Name: Pinnacle Ridge Subdivision

The Landowner is developing the Property.

The Authority and the Landowner, on behalf of all successors and assigns, agree that the health, safety, and welfare of the residents and the protection and maintenance of water quality require that on-site stormwater Best Management Practices be constructed and maintained on the Property. The Landowner acknowledges the 521 Drainage Authority has been granted legal authority by the City to execute this Agreement and perform the activities identified in this agreement within the jurisdiction of the City.

For the purposes of this Agreement, the following definition shall apply:

> BMP – "Best Management Practice;" activities, facilities, designs, measures or procedures used to manage stormwater impacts from land development, to protect and maintain water quality and groundwater recharge and to otherwise meet the purposes of the Municipal Stormwater Pollution Prevention Ordinance, including but not limited to infiltration trenches, seepage pits, filter strips, bioretention, wet ponds, permeable paving, grassed swales, forested buffers, sand filters and detention basins.

As part of the approval of the development of the property, the Authority will review and approve a Final Drainage Report which will implement Post-Construction Storm Water Management BMPs required by the Mesa County/City of Grand Junction Stormwater Management Manual.

The purpose of this Agreement is to insure the adequate maintenance, operation and repair of the storm water management facilities, in perpetuity, by the owners of the property served by these facilities.

The Landowner desires to subject and place upon the Property the covenants and servitudes set forth herein which shall run with the Property and be binding on all parties having any right, title, or interests in the Property or any part thereof, their heirs, personal representatives, successors and assigns, and shall inure to the benefit of each owner thereof.

NOW, THEREFORE, in consideration of the foregoing promises, the mutual covenants contained herein and the following terms and conditions, the parties hereto agree as follows:

1. The BMPs shall be constructed by the Landowner in accordance with the plans and specifications shown and described in the Final Drainage Report.

2. The Landowner shall operate and maintain in perpetuity the BMP(s) as shown and described on the Final Drainage Report in good working order as reasonably determined by the Authority and in accordance with the specific maintenance requirements noted on the Final Drainage Report.

3. The Landowner shall cause the BMP(s) to be inspected annually by a Qualified Erosion Control Specialist to ensure good working order and shall send a report from said inspection to the Authority annually, on or before December 31st of each year.

4. The Landowner hereby grants a perpetual easement to the Authority, its authorized agents and employees, to enter upon the Property, at reasonable times and upon presentation of proper identification, to inspect the BMP(s) whenever it deems necessary. The Authority shall make reasonable efforts to notify the Landowner prior to entering the Property.

5. In the event the Landowner fails to operate and maintain the BMP(s) as shown and described on the Final Drainage Report in good working order as reasonably determined by the Authority, the Authority and the City may enter upon the Property and take action to maintain and/or repair and/or reconstruct said BMP(s). It is expressly understood and agreed that the Authority and the City are under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on the Authority and the City.

6. In the event the Authority and the City, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner shall reimburse the Authority and the City for all reasonable expenses (direct and indirect) incurred within 10 days of receipt of invoice from the Authority and the City.

7. The intent and purpose of this Agreement is to ensure the proper maintenance of the onsite BMP(s) by the Landowner. This Agreement shall not be deemed to create or affect any additional liability of any party for damage alleged to result from or be caused by stormwater runoff.

8. The Authority may conduct routine inspections of the BMP(s) to verify their continued adequate functioning. The Authority may also inspect the BMP(s) in the event of reported or suspected failure to function adequately. These inspection activities shall not absolve the Landowner of its obligation to maintain the BMPs in perpetuity or to provide the Authority with the required Landowner inspection report.

9. This Agreement shall not be interpreted or deemed to limit the authority, privilege or right of the Authority and the City pursuant to any duly enacted ordinance of the Authority or the City, charter provision, statute or any duly granted federal or state water discharge permit.

10. Notifications and reports made under this Agreement shall be provided to the Authority at:

5-2-1 Drainage Authority
P.O. Box 3389
Grand Junction, CO 81502

and to the Landowner at:

Two R & D, LLC
P.O. Box 39
Fruita, CO 81521

This Agreement shall be recorded in the Mesa County, Colorado land records and shall, once recorded, constitute a covenant running with the Property and shall be an equitable servitude binding on present and subsequent owners of the Property in whole or in part, and their administrators, executors, assigns, heirs and successors in interest, in perpetuity

WITNESS the following signatures and seals:

FOR THE AUTHORITY:

By: _____
521 Drainage Authority Manager

ATTEST:

_____

_____
Printed Name & Title

LANDOWNER: Two R & D, LLC (SEAL – if incorporated)

By: Robert W. Jones

Printed name and title: Robert W. Jones II, Managing Member

COUNTY OF Mesa, STATE OF Colorado

I, Mary F. Burns, a Notary Public in and for the County and State aforesaid, whose commission expires on the 11th day of January, 2021, do hereby certify that Robert W. Jones II, whose name(s) is/are signed to the foregoing Agreement has/have acknowledged the same before me in my said County and State.

Given under my hand this 6th day of June, 2017.

Mary F Burns
Notary Public (SEAL)

MARY F BURNS
Notary Public – State of Colorado
Notary ID 20064010840
My Commission Expires Jan 11, 2021

August 14, 2017

City of Grand Junction – Planning Department
Attn: Scott Peterson, Senior Planner
250 North 5th Street
Grand Junction, CO 81501

RE: Pinnacle Ridge Subdivision Filing 1
Response to Comments – Round 1
East of Mariposa Drive
Grand Junction, CO
VEAI #: F04-006
FILE #: SUB-2017-271

Dear Mr. Peterson,

Pinnacle Ridge Subdivision is proposed at the above-referenced location in the City of Grand Junction. The following information is provided in response to Round 1 Review Comments dated July 18, 2017 from various City Departments and outside agencies.

CITY PLANNING –Scott Peterson

1. Proposal Request is for Final Subdivision Plan review for Filing 1 of Pinnacle Ridge Subdivision in order to develop 13 single-family detached residential lots, 2 tracts of land and 4 additional lots that would be reserved for future residential development that would be developed in accordance with the approved Preliminary Plan (City file # SUB-2015-120) all on 45.36 +/- acres in an existing R-2 (Residential – 2 du/ac) zoning district. Proposed residential density for all filings within the subdivision would be 1.58 +/- dwelling units/acre (72 lots total). The Comprehensive Plan Future Land Use Map identifies the area as Residential Low (.5 - 2 dwelling units/acre). No further response required.

Response:
Comment acknowledged.

2. Subdivision Plat (Sheets 1 & 2):
a. FYI. The Preliminary Plan application approved the use of the cluster provisions for the subdivision, therefore the bulk requirements, building setbacks, etc., for the subdivision will need to meet the standards of the R-4 zone district (Section 21.03.060 (c) (4) of the Zoning and Development Code); minimum lot width of 70', building setbacks of 20' front, 7' side and 25' rear and maximum lot coverage of 50%. Please design house plans accordingly within these parameters.

Response:
Homes sites will be designed utilizing the R4 bulk standards.

b. Are private Drainage Easements needed to be identified at the rear of the properties located along the west property line of the subdivision? If so, please identify and label locations on the plat. Same comment for the properties located on the eastside of Aiguille Drive. Are private Irrigation Easements also needed to serve each individual lot?

Response:
Drainage easements have been delineated and labeled on the final plat. A separate conveyance document for the drainage easements to the HOA will be submitted for review prior to recordation.

There are no public or private irrigation easements associated with this development because there is no irrigation water available or being provided.

c. Correct misspelling of “Aiguille” on Sheet 2.

Response:
The spelling has been corrected.

d. Label locations of 14’ Multi-Purpose Easements on Sheet 2.

Response:
The easements have been labeled.

e. Proposed Lots 9 & 10 must not fall under 7,125 sq. ft. in size per the approved Cluster Provisions of the Preliminary Plan. Revise as necessary.

Response:
Minimum lot sizes have been adjusted and meet the minimum 7,125 sf requirement.

f. On Sheet 1, in the Dedication and Notary Public Blocks, add Christopher Walston as a property owner (Parcel # 2945-212-08-009).

Response:
The Energy Center Subdivision has been removed from the plat for Filing 1, therefore Christopher Walston has no ownership interests in property associated with the plat for Filing 1.

g. On Sheet 1, in the Dedication Block, revise Multi-Purpose Easement paragraph to the correct Model Dedication Language (April 2008).

Response:
The language has been revised to reflect the Model Dedication Language.

h. On Sheet 2, label Tract A as a “Drainage Easement” and on Sheet 1 in the Dedication Block, add the following paragraph; “An easement over Tract A is dedicated to the City of Grand Junction as perpetual easements for the inspection, installation, operation, maintenance and repair of detention and drainage facilities and appurtenants thereto. The City of Grand Junction is dedicated reasonable ingress/egress access to the drainage/detention easement areas. The owner(s) and/or the property owners’ association, if one exists, is not relieved of its responsibility to inspect, install, operate, maintain and repair the detention and drainage facilities.”

Response:
Tract A has been labeled as a “Drainage Easement” and the required language has been added to Sheet 1 of the final plat for Filing 1 as requested.

l. See City Surveyor review comments and revise as applicable.

Response:
Comments acknowledged.

j. On Sheet 2, connect proposed public sanitary sewer easement from the Foster Family's property to the sanitary sewer easement within Tract A.

Response:
The 20' sewer easement from Block 3 Energy Center Subdivision will be connected to Tract A via an ingress/egress and utility easement to be dedicated on the final plat of Filing 1. The sanitary sewer lines will be installed in what will be dedicated right-of-way when the final plat for Filing 2 is recorded. The utility easement will provide legal connectivity until the final plat for Filing 2 has been recorded.

k. On Sheet 2, provide public storm sewer easement from Aiguille Drive to Tract A.

Response:
An ingress/egress and utility easement to be dedicated on the final plat of Filing 1 to provide storm sewer connectivity to Tract A. The storm sewer lines will be installed in what will be dedicated right-of-way when the final plat for Filing 2 is recorded. The utility easement will provide legal connectivity until the final plat for Filing 2 has been recorded.

l. On Sheet 1, add Model Dedication Language for "All Utility Easements are dedicated to the City of Grand Junction……"

Response:
Model Dedication Language has been added to the plat.

m. FYI. Urban Trail Map does not designate any future public trail easements located within the proposed development and also the applicant is not requesting a PD Planned Development zone district, therefore no public dedicated trail easements will be required for this development.

Response:
Comments acknowledged.

n. In order for Section 21.06.060 (f) (1) of the Zoning and Development Code to not apply (Easements shall be used to access not more than one lot with no street frontage), City Project Manager suggests that applicant plat the entire subdivision located outside of Filing 1 and Tracts A & B as one lot. Please review options, address further and revise plat as necessary.

Response:
An ingress/egress and utility easement has been dedicated on the final plat for Filing 1 to provide access to Lots 101 and 102. The Energy Center Subdivision has been removed from the final plat for Filings 1 and 2.

o. Submit separate legal description and map exhibit for proposed temporary turn-around easement located at the end of Filing 1. Identify easement on plat. Senior City Staff Attorney will prepare dedication document for property owner's signature to be recorded at time of final subdivision plan recording.

Response:
Comments A – O have been added/revised. Drainage easements added, revised street name, easements are defined in the blow-up of the lots, Christopher Walston is not an owner with boundary change, multipurpose language changed, drainage dedication added, utility easement dedication added.

The temporary turnaround is shown in the ingress/egress and utility easement on Lot 101 and is dedicated with Filing 1. These revisions have been discussed with City Surveyor Peter Krick as the best way to address the various survey and platting issues.

3. Vacation of Rights-of-Way within Energy Center Subdivision, Phase 1: Prior to recording of Filing 1, applicant will need to vacate the existing right-of-way and utility easements as identified within the Energy Center Subdivision, Phase I (Blocks 1 & 2) with the exception of the Foster Family's property which is located outside of the City limits. If wishing to proceed, please address the review criteria for a vacation as identified within Section 21.02.100 (c) of the Zoning and Development Code and submit separate legal description and map exhibit of proposed vacation area for inclusion within proposed City Ordinance. The vacation process will require both Planning Commission and City Council review and approval.

Response:
The Energy Center Subdivision has been removed from Filing 1 and 2; it will be added later. The vacation of existing right-of-way and utility easements identified within the Energy Center Subdivision will be addressed as part of the application for Filing 3 of Pinnacle Ridge subdivision.

4. Landscaping Plan:
a. Submit Landscaping Plan for review. Preliminary Plan indicated landscaping proposed within the detention pond (Tract A) and the subdivision entrance feature from Mariposa Drive (Section 21.06.060 (h) (9) of the Zoning and Development Code). Landscaping Plan shall be prepared by Licensed Landscape Architect.

Response:
The Landscape Plan was shown on the Letter of Transmittal with the initial submittal but inadvertently left out. We apologize for that oversight. The Landscape Plan for the Pinnacle Ridge subdivision is designed for xeric plant materials and installation methods (see Landscape Notes).

A temporary irrigation system will be installed to ensure that the plants are provided with sufficient water to establish themselves in the landscape. The temporary irrigation system will be in place for approximately 1-2 years, or until such time as the plants have been established and are viable.

b. FYI. At time of subdivision infrastructure acceptance, Licensed Landscape Architect shall provide a letter to the City Project Manager stating that all landscaping was installed per the approved Landscaping Plan.

Response:
Comment acknowledged.

c. Is the applicant proposing any subdivision perimeter fencing? If so, please label location and include overall height of fencing (Section 21.04.040 (i) (4) of the Zoning and Development Code).
Code Reference: Sections 21.06.040 (g) and 21.06.060 (h) (9) of the Zoning and Development Code and V-10 of the SSIDS Manual.

Response:
There is no perimeter fencing proposed for the Pinnacle Ridge subdivision.

5. Covenants and Dedication Documents, etc.:
a. Senior City Staff Attorney is currently reviewing submitted CCR's. City Project Manager will email applicant with the requested changes once review is complete.

Response:
City Senior Staff Attorney comments have been incorporated into the CC&Rs.

b. All proposed private drainage and irrigation easements etc., dedicated to the HOA shall be conveyed by separate document(s). Please submit proposed conveyance documents, legal descriptions and map exhibits for review prior to recording.

Response:
A separate conveyance document for the drainage easements to the HOA will be submitted for review prior to recordation. There are no private irrigation easements associated with the Pinnacle Ridge development.

c. Senior City Staff Attorney has reviewed the submitted Special Warranty Deed for the dedication of the Tracts to the HOA and has requested changes (see attached redlines).

Response:
The changes shall be made as requested and submitted fully executed prior to recordation with appropriate recording fees.

d. Submit Statement of Authority document (either previously recorded or proposed) which authorizes Robert W. Jones II to sign as Managing Member (or other Title) on behalf of Two R & D LLC. If not previously recorded, submit original document at time of final subdivision plan recording.
Code Reference: IV-2 of the SSIDS Manual.

Response:
A new Statement of Authority has been executed and will be recorded with a copy provided to the City.

6. Fees:
a. City Park Fee: $2,925.00 (13 new lots @ $225 per new lot payable at time of subdivision plat recording).

Response:
Comments acknowledged.

b. City Open Space Fee: 10% of the value of the raw land payable at time of subdivision plat recording. Senior City Staff Attorney is currently reviewing submitted MAI Appraisal Report and will let City Project Manager know if acceptable in determination of this fee. It appears that the applicant will be paying the required 10% fee for all phases of development, rather than on a per filing basis, since the appraisal report included all 45 acres.

Response:
The developer has offered to dedicate the open space shown as Tract B to the City of Grand Junction Parks and Recreation Department. Please see information and graphics in the project General Report for information supporting the proposed dedication. The Open Space fee will not be applicable with the dedication of Tract B to the City.

c. School Impact Fee: $560 per dwelling unit payable at time of Planning Clearance issuance.

Response:
Comments acknowledged.

d. Plant Investment Fees: Contact City Customer Service Division for sewer fees payable at time of Planning Clearance issuance. Contact Ute Water Conservancy District for water tap fees payable at time of Planning Clearance issuance.

Response:
Comments acknowledged.

e. See City Development Engineer comments for other applicable fees.
Code Reference: Section 21.06.020 and 030 of the Zoning and Development Code.

Response:
Comments acknowledged.

7. Public Correspondence Received:
City Project Manager has received one email from the public concerning the proposed development. I have included this attachment for the applicant's information and file.

Response:
Comments acknowledged.

CITY DEVELOPMENT ENGINEER

Fees:
Transportation Capacity Payment (TCP) – To be determined and collected at the time of planning clearance for individual building permits.

Storm Drainage Fee (in lieu of detention) – None, detention provided.

Inspection Fee – 13 residential units x $90/unit = $1170.

Fee In Lieu of Utility Undergrounding – None, no overhead utilities to underground.

Response:
Comments acknowledged.

General:

1. The applicant is requesting a grading permit. The City will support issuing a grading permit in concept. The plans and reports aren't clear what will be graded at this time. Is it the entire project, filings 1 and 2, or something else? The Stormwater management drawing and/or plan need to describe how disturbed areas will be stabilized if allowed to sit for an extended period of time. Dust and erosion will be prevalent if disturbed ground protected. Prepare a grading plan showing the desired limits of grading, construction erosion control measures, and permanent or temporary dust and erosion control measures. If revegetation is the chosen measure, appropriate soil preparation and probably temporary irrigation will be necessary to establish growth.

   Response:
   The site disturbance will be minimized as much as possible. The owner and contractor will work with Mark Barslund and City staff to maintain erosion and storm water management controls during construction activities. Notes have been added to the plans for erosion and re-vegetation measures.

2. When the grading plan is complete, provide a letter from the building department stating they have received hard copies of 1) the geotechnical report, 2) the final grading plan, and 3) a tabulation of the minimum and maximum finished floor elevations by lot. Also reference the individual lot specific grading and drainage plan requirement. This must be the final grading plan and tabulation after all revisions. Include the revision date for the grading plan on the letter: this date must match the revision date on the final plans to be approved by the City.

   Response:
   Notes have been added to the plans referencing the need for an individual lot drainage and grading plan.

3. Provide easement description and exhibit for the storm and sanitary sewers crossing City property. The City will prepare the easement document.

   Response:
   The description and exhibit are provided with this re-submittal.

4. Street lights are not shown at the required TEDS manual spacing of every 250' and at all intersections. Either install per standards or submit a TED's exception requesting something different.

Response:
A new site plan Sheet C1.1 depicting street lights and street signage with fire hydrant flange elevations has been added to the plan set. Street lights are also shown on Sheet C3.0.

5. Record a site plan establishing the unusual CC&R responsibilities, lot grading plans, engineered foundations, etc.

Response:
A new site plan to be recorded with the requested notes has been added to the plan set.

Plans:

1. See redlined plans. Respond in different color ink next to each comment and return with written response.

Response:
See the "green lines" on the attached plan re-submittal.

2. The plans need a thorough quality control check and many details have not been.

Response:
Comments acknowledged.

3. Include a sheet that shows all filing 1 construction including the storm sewer outfall and any grading outside of phase I.

Response:
Filing 1 storm outfall is shown on Sheet C0.2 as well as C5.0.

4. Please include a benchmark with the appropriate description and coordinates on the construction drawings. Include the horizontal and vertical datum source. It shall be located on or close to the site for ease of use, where it won't be destroyed, and shown graphically. Also include on the construction drawings coordinates on a minimum of two of the exterior boundary corners.

Response:
These are shown on Sheet C0.2

5. Make sure acceptance blocks are on all sheets except the outside agency detail sheets and 521 sheets.

Response:
Acceptance Blocks are shown on all sheets.

6. There have been recent problems with fire hydrants set to the wrong elevations and having to be raised after the fact. Call out flange elevations for all fire hydrants according to the appropriate water utility providers details. The hydrants shall be as-built prior to concrete.

Response:
Fire hydrant top of bottom flange elevations are shown on Sheet C1.1 and referenced on Sheet C3.0.

7. The grading for the diversion ditches needs to be reflected on the grading plan and the cross sections. Currently, they are only shown on the Stormwater management plan. They are shown as unlined on sheet C6.0. I suspect there will be a lot of sediment in these ditches and it will deposit a lot of sediment in the roadside ditches. The City will be maintaining the roadside ditches and all grading must be designed to minimize sedimentation and erosion in these ditches. The drainage report must design these ditches including design flow velocity erosion and sedimentation.

Response:
The ditches are shown on the grading plans. Design flows, velocities, and depths are included in the drainage report. The roadside ditches will be lined with filter fabric and rock.

8. Address driveway culverts and how they will be handled on the plans.

Response:
A typical detail for future driveway culverts and sidewalk replacement has been added to Sheet C4.1.

9. It is critical to establish areas of no disturbance so construction traffic doesn't travel on open spaces. The desert pavement is pretty well established in many areas and erosion is fairly small. Any disturbance of these areas will increase erosion.

Response:
Minimal disruption to areas not needed for grading purposes will be enforced. Defined haul and access roads for circulation will be clearly marked in the field and used exclusively for site circulation.

10. Review the signage memo from a few months ago. No outlet or dead end signs are required. May be others. Include in DIA.

Response:
Signage Sheet C1.1 has been added to the plan set.

11. Provide a temporary turn around and easement at the end of filing 1 and/or filing 2.

Response:
A temporary turnaround has been provided through an ingress/egress and utility easement dedicated with Filing 1.

12. Provide landscaping plan.

Response:
The landscape plan was inadvertently left out of the original submittal and has been included with this Response to Comments.

Drainage Report:

1. All detention basins and infiltration-based retention basins must be registered on the State of Colorado Stormwater Detention and Infiltration Facility portal. The design engineer must visit the website and follow the directions to register the new basin. The web portal address is: https://maperture.digitaldataservices.com/gvh/?viewer=cswdif
   This must be complete and accepted prior to plan approval.

   Response:
   The drainage ponds will be registered on the State website.

2. Refer to section 404.2, Design Storm Events, in the SWMM. The street must be designed to carry the 100 event with less than 1.0' of ponding at the flowline. Given the roadside ditches and no crown in the street plus the street is in cut on the uphill side and fill on the downhill a new criterion should be proposed. Also, every time a driveway culvert is encountered, the ditch hydraulics are likely reduced. Propose a method to evaluate the 100 yr street capacity. Also evaluate how the ditches and driveway culverts work and the culverts don't wash out. We should discuss this.

   Response:
   The proposed ditches are designed to convey the 100 year flows. The driveway culvert has been detailed on Sheet C0.2. The 100 yr. event is contained within the ditches and does not inundate the roadway surface. Calculations for the flows, depths, and velocities are contained in the drainage report.

3. The report mentions ditch velocity, check dams, and hydraulic structures but doesn't discuss and none are proposed on the plans. The report must discuss ditch velocities and how they will be designed to prevent both sedimentation and erosion as was discussed in the Preliminary Plan review. The report shows velocities for the 2-yr storm in excess of 6 fps which will erode site soils.

   Response:
   The ditches and velocities are detailed in the drainage report. The roadside ditches will be lined with filter fabric and rock. All velocities are below the permissible velocities shown in Table 805 of the SWMM manual.

4. The curb and gutter on the west side must be designed to carry the 100 yr event.

   Response:
   The height of the curb has been raised….the calculations are shown in the drainage report.

5. The pipe down Ridgeway Court was designed but the pipes on site conveying water from the ditches to the ponds were not.

   Response:
   Plan schematics of the storm piping, and HGL calculations are shown in the drainage report for inlets, pipe segments and culverts.

6. Section 3D, report talks about checking street and inlet capacities to be done in the final drainage report. This is the final. No inlets were sized or designed.

Response:
The sizing has been included in the drainage report, see Appendix D and the inlet capacity chart. Only one type of inlet is proposed for this project. It is a 2x3 area inlet. Also, to increase the capacity of inlet 200 to accept the 100 year flows, the inlet has been modified with weir openings in the side, see the detail on Sheet C7.0.

7. The report says the runoff from basin DD2 will be routed to the lot at the pond 4 outfall. The plan doesn't show how to accomplish this.

Response:
A drainage swale has been added to the grading plan that intercepts the runoff and directs it to the outfall.

8. The outflow from pond 1 appears to travel in an open ditch down a steep slope to the roadside ditch. This will deposit sediment quickly in the roadside ditch.

Response:
We have revised the design to run a pipe to the bottom of the hill and discharge directly to the roadside ditch.

9. I don't understand the HGEGL2y table although it looks like the 18" pipe will easily handle the pond 2 100 yr discharge. Let's visit.

Response:
A more descriptive piping schematic and table have been added to the drainage report. The HGL calculations and HGL have been added to the pipe segment profiles for clarity. These are also located in the drainage report.

10. The report needs to address the diversion ditches on the hillside behind all houses, see comment under plans.

Response:
The drainage ditches have been shown on the grading plans and are detailed in the drainage report.

Stormwater:

1. Obtain the 521 permit.

Response:
5-2-1 permit will be obtained.

Geotechnical Report:

1. General note 9 says the contractor shall provide testing. To ensure the requirements of the geotech report and the materials testing plan are correctly implemented, the owner should be providing testing and on-site geotechnical engineering.

Response:
The owner will provide the construction testing.

2. Address the water quality and detention basins uphill of existing houses. The water quality component will keep water in the basins for up to 40 hours whenever it rains. Will this water infiltrate and cause problems for downhill structures? Do the ponds need to be lined up to the water quality capture volume elevation plus a little freeboard? Any other concerns about this situation?
   Response:
   A pond liner has been added to the detention ponds to the elevation of the WQ ponding volume

3. The report mentions underdrains below the sidewalk where it is attached. This filing has very little attached walk. Is an underdrain necessary.

   Response:
   No underdrain is provided in the first filings. It will be installed in Filing 4 & 5 on Elysium Drive.

4. The report mentions to excavate rock to provide gradual transition from rock to soil. This may not apply on Filing 1 but show on the plans in filings where it does apply.

   Response:
   This work will be coordinated in the field with the Geotech Engineer during construction.

5. The lab work focuses mostly on test pits #1 and #4. What is the reason other test pits weren't tested?

   Response:
   I believe they encountered the rock material.

6. Will grading in the areas of filing 4 and 5 occur with filing 1? If so, we need geotechnical info. to assess viability.

   Response:
   The Geotechnical Engineer will be on site as Grading operations are commencing. We will also be preparing and completing the Final Geotechnical Report for Filings 4 & 5 as the Filing 1 & 2 construction is commencing. Some borrow will occur in Filing 5 area, some filling will occur in the Filing 4 cul-de-sac.

7. What about benching details for fill placement? Are they needed? What about cut areas?

   Response:
   These details are not needed. Benching is not anticipated, however, if recommended by the Geotech during construction, it will be performed.

8. Is there any value in bedding the utilities in low permeability materials similar to Summer Hill?

Response:
There is merit to this suggestion. We will discuss in further detail as trenching is occurring with the Engineer of Record, City Inspector & Development Engineer after we are able to assess actual conditions. Sanitary sewer will have cut-off walls installed.

Testing Plan:

1. In the reporting section, The City will require a report from HBET stating construction was done in accordance with the geotechnical report, City standards, and the materials testing plan. It shall also summarize site issues encountered and how they were resolved.

Response:
Comments acknowledged.

2. I didn't see subgrade proof rolling prior to basecourse placement. Shouldn't this be done?

Response:
Yes, subgrade proof rolling will be conducted prior to placement of base.

3. Is trench compaction to be 98% of modified like fill placement?

Response:
Recommendations by the Geotech will be followed.

4. Reference benching if required.

Response:
Benching is not anticipated, however will be conducted if required by Geotech.

5. Reference underdrain construction.

Response:
Under drain construction does not occur until Filing 5.

6. In section 2.2 where it identifies 1 test per 300 SY or fill, include a depth requirement. I.e. 1 test per 300 SY per 2' rise or whatever is appropriate.

Response:
We will have this incorporated into the testing plan as we commence construction.

DIA:

1. $20 per foot for sanitary sewer seems pretty light.

Response:
The unit price has been increased.

2. The 8” gate valves should be 10”.

Response:
Valve has been changed to 10”.

3. Aren’t two fire hydrants needed?

Response:
Yes, two (2) are now shown.

4. Fire hydrant seems light.
Response:
Unit price has been increased.

5. What are the irrigation sleeves for? Is irrigation being provided?

Response:
The 4” sleeving are for dry utilities. Irrigation sleeves are not needed.

6. $20 per yard is real light for basecourse.

Response:
The unit price for base is shown as $22.00/ton.

7. Asphalt seems light at $90 per ton. Include reconditioning for subgrade prep.

Response:
The unit price has been increased to $92.00/ton. The prices are obtained from hard bids for the project.

8. $20 for curb, gutter, and walk is light.

Response:
Unit price has been increased to $43.00/ft for combination curb gutter and walk.

9. Include end of road barriers.

Response:
Barrier has been added.

10. Are $2 and $3 real numbers for excavation and backfill?

Response:
Unit price has been increased to $4.00/yd.

11. Section D3 needs more items.

Response:
Addition items have been added.

12. Include street repair for the storm sewer in the street. Also, there will likely be many services affected that will cost money.

Response:
Asphalt patch/repair has been added. The unit price of the storm line has been increased to account for any services that are encountered.

13. Where is the money for the curb and gutter on the west side?

Response:
This is shown under item #13 in Section C.1.

14. Include landscaping costs.

Response:
Landscaping has been added.

15. Delete City inspection fees.

Response:
City inspection fees have been eliminated.

16. Is this a good quality control testing number given the added geotechnical presence?

Response:
A 2% cost of construction cost for inspection services seems appropriate.

17. Include money for the Developer's inspection cost.

Response:
What is the purpose of this?

18. Include dry utilities and trenching.

Response:
Dry utility trenching has been added to Section D-1, line item 6.

CC&R'S

1. Complete section 1.10.

Response:
Section 1.10 has been completed to reflect Tracts A and B. See revised CC&Rs for changes. Upon final review and approval of the CC&Rs by the City, a fully revised copy of the final document will be submitted for recordation with the final plat and warranty deed.

2. Add diversion ditches to 1.18.

Response:
Diversion ditches have been added to the CC&Rs. See revised CC&Rs for changes.

3. The CC & Rs talk about irrigation water provided by the City. Is irrigation water really being provided? It isn't shown on the plans.

Response:
The CC&Rs have been revised to remove this section. There will not be any irrigation water provided to the Pinnacle Ridge subdivision. See revised CC&Rs for changes.

4. A condition of the preliminary plan approval is for the HOA to provide snow removal on Elysium Drive and to post signs stating such in conspicuous locations. Include in the CCRs.

Response:
These provisions are contained within the CC&Rs. See Section 9.12 for details.

CITY SURVEYOR – Peter Krick – peterk@gjcity.org (970) 256-4003

Comments:

1. Provide the required documents for the vacation of the public rights of way within the Energy Center Subdivision Phase 1.

Response:
Energy Center Subdivision has been removed from Filing 1 and 2. The vacation of existing right-of-way and utility easements identified within the Energy Center Subdivision will be addressed as part of the application for Filing 3 of Pinnacle Ridge subdivision.

2. Label the 4.12 Acre Not-Included parcel as Block3 of the Energy Center Subdivision Phase 1.

Response:
This has been labeled as requested.

3. Graphically depict Spua Drive and the lots that lie within the 4.12 Acre Not-Included parcel (Block

Response:
This is no longer necessary because this Block is not being platted with Filing 1.

4. Access must be provided to Spua Drive within Block 3 of the Energy Center Subdivision. The existing lots within Block 3 will have their access severed if the alternative access from within Tract B is not provided.

Response:
This issue has been resolved for Filings 1 and 2. The vacation of existing right-of-way and utility easements identified within the Energy Center Subdivision will be addressed as part of the application for Filing 3 of Pinnacle Ridge subdivision.

5. Verify if updated monument records will be required for any or all of the aliquot corners depicted and used as control for this proposed subdivision and improvement survey. Several of the existing monument records have only one tie for the aliquot corner.

Response:
Will verify and update.

6. Graphically depict and label any existing easements from the Ridges Filing No. Three.

Response:
There are no easements that border this property.

CITY FIRE DEPARTMENT – Mike Gazdak – mikega@gjcity.org 970) 549-5852

Comments:

1. Fire flow form (Ute Water dated 5/31/17) submitted shows 3621 gpm at 20 psi available at test hydrant. The Fire Flow Water System Report (Vortex) provided on January 12, 2015 Appendix B indicates a predicted fire flow of 2001 gpm at 20 psi for all proposed fire hydrants which is acceptable for the proposed residential structures (V-B construction) up to 6000 square feet.

Response:
Comments acknowledged.

2. The fire department has no other comments or objections to this Major Subdivision (Filing 1).

Response:
Comments acknowledged.

CITY TRANSPORTATION ENGINEER – Sandy Mallory – sandym@gjcity.org (970) 244-1567

Comments:

1. Filing 1 does not list or show traffic signs...Need a stop sign (R1-1), Street Name signs (D3-1), No outlet sign (W14-2a) at intersection of Mariposa Dr. & Auguille Dr. and 20 MPH Speed Limit sign (R2-1) on Aiguille Dr.

Response:
Required signage has been shown on the plans.

CITY ADDRESSING – Pat Dunlap – patd@gjcity.org (970) 256-4030

Comments:

1. Addresses to be assigned at time of final plat recording.

Response:
Comments acknowledged.

OUTSIDE REVIEW AGENCY COMMENTS
(Non-City Agencies)

5-2-1 Drainage Authority - Mark Barslund - markb@gjcity.org (970) 256-4106

Comment:
The SWMP is accepted as submitted. Prior to the issuance of a 521 storm water permit the following items must be submitted.

1. A copy of the CDPHE permit.
2. An ORIGINAL signed and notarized 521 O&M agreement.
3. A $900.00 permit fee.

Response:
The above mentioned items have been or will be provided.

Mesa County Development Engineer - Dana Brosig - dana.brosig@mesacounty.us (970) 255-5035

No Comments.

Response:
Comments acknowledged.

Ute Water Conservancy District - Jim Daugherty - jdaugherty@utewater.org (970) 242-7491

Comments:

1. The water main in Monument Rd is a Contract Water Line (CWL) assessments for the CWL will need to be paid prior to wet tap or tap and meter sales.

Response:
Comments acknowledged.

2. Note 17 needs to read OF 250 “MINIMUM” AND SHALL

Response:
Wording of Note 17 has been revised.

3. Show a PRV & Vault at the entrance to the subdivision. A pressure regulating valve and vault will be required at the entrance to the subdivision, Ute will construct the vault and related equipment, and developer will reimburse the District time and materials for this work & equipment. Or as an alternative to the PRV, regulated yokes may be installed during construction at services based on pressure limits as determined in the hydraulic analysis. Developer will reimburse the District for materials required for this work.

Response:
The regulated yokes are the preferred option. A Note 14 has been added to Sheet C3.0 describing the water service laterals.

4. Check separation on SS and water main.

Response:
10' of clearance has been checked.

5. Show the laterals for lot 8 & 9 to include the FH as perpendicular to the water main.

Response:
Services are shown perpendicular.

6. See redline drawing for further comment.

Response:
Red-lined comments have been addressed and plans revised.

7. ALL FEES AND POLICIES IN EFFECT AT TIME OF APPLICATION WILL APPLY.

Response:
Comments acknowledged.

8. If you have any questions concerning any of this, please feel free to contact Ute Water.

Response:
Comments acknowledged.

United States Postal Service - Christopher Buzzell - Christopher.w.buzzell@usps.gov (970) 858-7715

Comments:

1. All new development must be centralized with the cost of mailbox purchase and installation the sole responsibility of the developer.

Response:
Comments acknowledged.

2. Mailbox equipment may be purchased from www.florencemailboxes.com but is only a recommendation; other vendors may also be used.

Response:
Comments acknowledged.

3. Location of mailbox equipment must be pre-approved by local USPS management. For any questions, please contact:
   Chris Buzzell
   (970) 260-3719
   Plat maps can be submitted to:
   Christopher.w.buzzell@usps.gov
   To determine mailbox placement.

Response:
Copies of the final plats for Filings 1 and 2 have been sent to the USPS for approval of mailbox equipment locations.

Colorado Geological Survey - Jill Carlson - carlson@mines.edu (303) 384-2643

Comments:
CGS has reviewed the Pinnacle Ridge Subdivision Filing 1 final subdivision plan referral, for 13 single family detached lots in the southwestern corner of the overall Pinnacle Ridge property, two HOA tracts, and four reserve lots for future development. The referral documents include:

- Set of two Pinnacle Ridge Subdivision, Filing 1 plat sheets (D H Surveys Inc., May 2017),
- General Project Report for Pinnacle Ridge Final Plat and Plan – Filing 1 (Vortex Engineering & Architecture, Inc. [Vortex], June 8, 2017)
- Final Geotechnical Report, Pinnacle Ridge Subdivision, Filings 1, 2, and 3 (Huddleston-Berry Engineering & Testing, LLC [HBET], June 7, 2017),
- Construction Materials Testing and Engineering Oversight Plan, Pinnacle Ridge Subdivision Filings 1, 2, and 3 (HBET, June 7, 2017),
- Improvement Survey Plat (DH Surveys, January 2008),
- Set of 15 construction plans (Vortex, June 8, 2017),
- Final Drainage Report (Vortex, June 9, 2017),
- and other documents.

HBET has satisfactorily addressed CGS's concerns regarding slope stability and rockfall in the western portion of the site, corresponding to proposed Filings 1, 2, and 3.

1. CGS agrees with HBET's recommendations for construction materials testing and engineering oversight to (1) evaluate cut slopes during construction to confirm that soil conditions are consistent with assumptions and to verify long term stability of cut slopes in rock, and (2) evaluate rockfall hazards after completion of site grading. Inconsistencies may require stabilization or other mitigation.

Response:
Comments acknowledged.

2. Provided the recommendations in HBET's Final Geotechnical Report and Construction Materials Testing and Engineering Oversight for Filings 1, 2, and 3 are strictly adhered to, CGS has no objection to approval of Filing 1 as proposed. A similar level of slope and roadway analysis will be needed prior to platting individual lots within proposed Filings 4 and 5 (reserve Lots 102 and 103). CGS looks forward to reviewing this when available.

Response:
Comments acknowledged.

3. As HBET notes on page 14 of their Final Geotechnical Report, lot-specific geotechnical investigations will be needed for use in design of individual foundations, floor slabs, slope stability, grading, drainage, etc.

Response:
Comments acknowledged.

Thank you for the opportunity to review and comment on this project. If you have questions or require further review, please call me at (303) 384-2643, or e-mail carlson@mines.edu.

Mesa County Building Department - Darrell Bay - Darrell.bay@mesacounty.us (970) 244-1651

Comments:
MCBD has no objections.
Provide a soil report, drainage plan and TOF tabulation sheet to our office in paper form.

Response:
The soils report, drainage plan and TOF tabulation will be provided to Mesa County Building Department when final plans are approved.

REVIEW AGENCY
(Responding with "No Comment" or have not responded as of the due date)

The following Review Agencies have responded with "No Comment."

1. Regional Transportation Planning Office (RTPO)

The following Review Agencies have not responded as of the comment due date.

1. Mesa County Valley School District #51
2. Mesa County Assessor's Office
3. Redlands Water & Power
4. Urban Trails Committee
5. Xcel Energy

The Petitioner is required to submit electronic responses, labeled as "**Response to Comments**" for the following agencies:

1. **City Planning**
2. **City Development Engineer**
3. **City Surveyor**
4. **City Transportation Engineer**
5. **Ute Water Conservancy District**
6. **5-2-1 Drainage Authority**

Date due: **October 18, 2017**

Please provide a written response for each comment and, for any changes made to other plans or documents indicate specifically where the change was made.

Vortex Engineering, Inc. looks forward to working successfully with the City of Grand Junction to permit this project.

Upon your review of this information, should you have any questions or require additional information, please do not hesitate to contact me at 970-245-9051. Thank you.

Sincerely,
Vortex Engineering, Inc.



Robert W. Jones, II, P.E.

Cc: File

City of Grand Junction
Review Comments

Date: September 13, 2017 **Comment Round No.** 2 **Page No.** 1 of 9
Project Name: Pinnacle Ridge Subdivision, Filing 1 **File No:** SUB-2017-271
Project Location: East of Mariposa Drive

Check appropriate [X] **if comments were mailed, emailed, and/or picked up.**

Property Owner(s): Two R & D LLC – Attn: Robert Jones II
[ ] **Mailing Address:** P. O. Box 39, Fruita, CO 81521
[X] **Email:** rjones@vortexeng.us **Telephone:** (970) 245-9051
[ ] **Date Picked Up:** _____ **Signature:** _____

Representative(s): Vortex Engineering Inc. – Attn: Robert Jones II
[ ] **Mailing Address:** 2394 Patterson Road, Suite 201, Grand Junction, CO 81505
[X] **Email:** rjones@vortexeng.us **Telephone:** (970) 245-9051
[ ] **Date Picked Up:** _____ **Signature:** _____

Developer(s):
[ ] **Mailing Address:**
[ ] **Email:** **Telephone:**
[ ] **Date Picked Up:** _____ **Signature:** _____

CITY CONTACTS

Project Manager: Scott D. Peterson, Senior Planner
Email: scottp@gjcity.org **Telephone:** (970) 244-1447

Dev. Engineer: Rick Dorris
Email: rickdo@gjcity.org **Telephone:** (970) 256-4034

City of Grand Junction
REQUIREMENTS
(with appropriate Code citations)

CITY PLANNING

1. Subdivision Plat (Sheets 1 & 2):

a. See City Surveyor review comments and revise as applicable.

b. Shouldn't the temporary turn-around easement be located at the end of Lot 13 on the chance that Filing 2 never gets developed?

c. Connect proposed private 10' Drainage Easement along the western property line of Filing 1 to proposed Tract A, across Lot 100.

d. For the signature and notary blocks on Sheet 1, Robert W. Jones II, Managing Member will be signing the plat on behalf of Two R & D LLC in accordance with the submitted Statement of Authority document. Revise subdivision plat as necessary.

e. As mentioned in the first round of review comments, in order for Section 21.06.060 (f) (1) of the Zoning and Development Code to not apply (Easements shall be used to access not more than one lot with no street frontage), City Project Manager suggests that the applicant combine proposed Lots 101 & 102 to be one platted lot in order to meet with this requirement since the proposed right-of-way

dedication ends at Lot 13. Under this scenario, the proposed Ingress/Egress & Utility Easement could still be shown as the location of the future right-of-way and utility infrastructure.
f. Submit separate legal description and map exhibit for proposed temporary turn-around easement located at the end of Filing 1. Identify easement on plat. Senior City Staff Attorney will prepare dedication document for property owner's signature to be recorded at time of final subdivision plan recording.
g. In the City of Grand Junction Use Block, add recording information for proposed dedication document for private Drainage Easement & Ingress & Egress Easement to the HOA.
Code Reference: V-15 of the SSIDS Manual.
Applicant's Response:
Document Reference:

2. Landscaping Plan:
a. What is proposed for the disturbed area around the detention ponds to prevent weed growth within Tracts A & B, for Filings 1 & 2? Native grass seed mix? Please address further.
b. Landscaping Plan will only be reviewed for Filings 1 & 2. Future filings as identified on this Landscaping Plan will need to be re-submitted for review at the appropriate time.
c. In accordance with Section 21.06.040 (b) (19) of the Zoning and Development Code, only the Planning Director may approve xeric or low water use plants. City Project Manager will notify applicant of any requested changes once review is complete.
d. See City Development Engineer review comment concerning the use of rocks within the detention basin and revise as applicable.
Code Reference: Section 21.06.060 (h) (9) of the Zoning and Development Code and V-10 of the SSIDS Manual.
Applicant's Response:
Document Reference:

3. Covenants and Dedication Documents, etc.:
a. Senior City Staff Attorney is currently reviewing re-submitted CCR's. City Project Manager will email applicant with the requested changes once review is complete.
b. Submit conveyance document for proposed private drainage easements (and proposed Ingress/Egress Easement) to the HOA, along with legal description and map exhibit for review prior to recording.
c. Senior City Staff Attorney has reviewed the submitted Special Warranty Deed for the dedication of the Tracts to the HOA and has requested changes. *This comment is a carry-over from the 1st Round of Review Comments as a reminder and will need to be addressed by the applicant prior to approval.*
Code Reference: IV-2 of the SSIDS Manual.
Applicant's Response:
Document Reference:

4. Fees:
Senior City Staff Attorney has reviewed and approved submitted appraisal report regarding the required payment of the 10% City Open Space Fee. However, applicant is requesting that this fee be waived in-lieu of the applicant proposing to dedicate 15.06 +/- acres of open space to the City of Grand Junction for the use and enjoyment of the general public (Section 21.06.020 (b) of the Zoning and Development Code). City Project Manager will process applicants request and will keep applicant apprised as to status of request as the City Park's Board will need to make a recommendation with final review and approval by City Council.
Code Reference: Section 21.06.020 of the Zoning and Development Code.
Applicant's Response:
Document Reference:

5. Revocable Permit – Sign/Landscaping:
a. City Project Manager will process proposed Revocable Permit for an upcoming City Council Meeting prior to installation and development.
b. Submit legal description of proposed Revocable Permit area in a Word document for review and approval along with signed/sealed map exhibit for inclusion into permit document.
Code Reference: Section 21.02.180 of the Zoning and Development Code.
Applicant's Response:
Document Reference:

CITY DEVELOPMENT ENGINEER

GENERAL

Review Comment: When the grading plan is complete, provide a letter from the building department stating they have received hard copies of 1) the geotechnical report, 2) the final grading plan, and 3) a tabulation of the minimum and maximum finished floor elevations by lot. Also reference the individual lot specific grading and drainage plan requirement. This must be the final grading plan and tabulation after all revisions. Include the revision date for the grading plan on the letter: this date must match the revision date on the final plans to be approved by the City.

Applicant's Response:
Document Reference:

Review Comment: Execute the easement for the offsite utilities in Ridgeway Court.
Applicant's Response:
Document Reference:

PLANS

Review Comment: See redlined plans. Respond in different color ink next to each comment and return with written response.
Applicant's Response:
Document Reference:

Review Comment: See redlined site plan to be recorded. Show all filing 1 construction including the storm sewer outfall and any grading outside of phase I.
Applicant's Response:
Document Reference:

Review Comment: I suspect there will be a lot of sediment in the diversion ditches which will likely be deposited in the roadside ditches. The City will be maintaining the roadside ditches and all grading and ditches must be designed to minimize sedimentation and erosion. The drainage report must design these ditches including design flow velocity erosion and sedimentation. The revised drainage report did address hydraulics on the roadside ditches and shows rock lining but only included hydraulics on one diversion ditch and didn't address erosion, sedimentation, or revegetation. Include the necessary calculations and include a discussion in the body of the report how the ditches have been addressed and erosion and sedimentation controlled.
Applicant's Response:

Document Reference:

Review Comment: Provide a temporary turn around and easement at the end of filing 1 and/or filing 2.
Applicant's Response:
Document Reference:

LANDSCAPE PLAN

Review Comment: Rock is not allowed in the detention basins per SWMM, must be seeded.
Applicant's Response:
Document Reference:

Review Comment: Show sight triangles on the plan at Mariposa.
Applicant's Response:
Document Reference:

Review Comment: Provide the proper acceptance block.
Applicant's Response:
Document Reference:

Review Comment: How will landscape be irrigated?
Applicant's Response:
Document Reference:

DRAINAGE REPORT

Review Comment: See redlined report. Respond in different color ink next to each comment and return with written response.
Applicant's Response:
Document Reference:

Review Comment: In section D the pond 1 description needs to be revised to address piping the outfall instead of the ditch.
Applicant's Response:
Document Reference:

Review Comment: The drainage report doesn't design all the diversion ditches. The one it does design for section 202 has a 100-yr velocity of 4.75 fps which will be erosive. These ditches must all be designed and permanently stabilized with erosion control measures.
Applicant's Response:
Document Reference:

Review Comment: The culverts under the driveways were not evaluated to ensure they pass the ditch flows. Be sure to look at inlet and outlet control.
Applicant's Response:
Document Reference:

Review Comment: One ditch section on Aiguille doesn't stay within the ditch. It is redlined in the report. What needs to happen on this.
Applicant's Response:

Document Reference:

Review Comment: The plans call for D_{50} of 4" rip rap to line the ditches. This needs to be evaluated to demonstrate it will withstand the velocities identified in the ditch design.

Applicant's Response:
Document Reference:

Review Comment: All detention basins and infiltration-based retention basins must be registered on the State of Colorado Stormwater Detention and Infiltration Facility portal. The design engineer must visit the website and follow the directions to register the new basin. The web portal address is: https://maperture.digitaldataservices.com/gvh/?viewer=cswdif This must be complete and accepted prior to plan approval.

Applicant's Response:
Document Reference:

STORMWATER

Review Comment: The 521 permit has been obtained.

Applicant's Response:
Document Reference:

GEOTECHNICAL REPORT

Review Comment: From Round 1: "Address the water quality and detention basins uphill of existing houses. The water quality component will keep water in the basins for up to 40 hours whenever it rains. Will this water infiltrate and cause problems for downhill structures? Do the ponds need to be lined up to the water quality capture volume elevation plus a little freeboard? Any other concerns about this situation?"

The response says the detention basins will be lined to the WQCV level but nothing is called out on the plans. Be sure to provide proper materials specifications and details to address how this liner shall be installed and not leak.

Applicant's Response:
Document Reference:

Review Comment: From round 1: "Is there any value in bedding the utilities in low permeability materials similar to Summer Hill?"

The response says this will be evaluated in the field in coordination with the City. The City is agreeable to this approach.

Applicant's Response:
Document Reference:

TESTING PLAN

These are the comments from round 1. Revise the testing plan to incorporate these comments. Otherwise they will get lost in the shuffle.

Review Comment: In the reporting section, The City will require a report from HBET stating construction was done in accordance with the geotechnical report, City standards, and the materials testing plan. It shall also summarize site issues encountered and how they were resolved.
Applicant's Response:
Document Reference:

Review Comment: I didn't see subgrade proof rolling prior to basecourse placement. Shouldn't this be done?
Applicant's Response:
Document Reference:

Review Comment: Is trench compaction to be 98% of modified like fill placement?
Applicant's Response:
Document Reference:

Review Comment: Reference benching if required.
Applicant's Response:
Document Reference:

Review Comment: Reference underdrain construction.
Applicant's Response:
Document Reference:

Review Comment: In section 2.2 where it identifies 1 test per 300 SY or fill, include a depth requirement. I.e. 1 test per 300 SY per 2' rise or whatever is appropriate.
Applicant's Response:
Document Reference:

DIA

Review Comment: Include reconditioning for subgrade prep.
Applicant's Response:
Document Reference:

Review Comment: The quantities in Section D3 need to cover all areas to be disturbed by overlot grading, not just filing 1. Money should be included for soil prep, mulching, other additives, etc. There is no way simply seeding will grow. Temporary irrigation may be required too.
Applicant's Response:
Document Reference:

Review Comment: Include street repair for the storm sewer in the street. Also, there will likely be many services affected that will cost money. Some cost should be included for these.
Applicant's Response:
Document Reference:

Review Comment: It seems the quality control testing number should be higher given they will be covering overlot grading for much of the site.
Applicant's Response:

Document Reference:

Review Comment: From round 1: “Include money for the Developer’s inspection cost.” This is for the developer’s engineering onsite inspection.
Applicant’s Response:
Document Reference:

Review Comment: Include money for the dry utilities, not just the trenching.
Applicant’s Response:
Document Reference:

Review Comment: Include money for the diversion ditches.
Applicant’s Response:
Document Reference:

Review Comment: Include money for lining the detention basins.
Applicant’s Response:
Document Reference:

Review Comment: Sanitary sewer quantities don’t include the outfall through filing two.
Applicant’s Response:
Document Reference:

CITY SURVEYOR – Peter Krick – peterk@gjcity.org (970) 256-4003

Sheet 1 of 2

1. The Description shall be revised to include a portion of the Energy Center Subdivision that is currently left out. A metes and bounds description is an alternative solution.
Applicant’s Response:
Document Reference:

Sheet 2 of 2

1. Provide dimensions for the 20’ sewer easement lying adjacent to Block 3, Energy Center Subdivision.

2. In all instances, the easements labeled as Sewer Easements should be Utility Easements.

3. There is an additional curve that requires dimensioning immediately South of adjoining curve C23.

4. Provide additional dimensions for the Temporary Turn-around Easement. Temporary Turn-around Easements are typically created by a separate instrument but this may not apply in this instance. Verify with the City Planner assigned to this project. If not created by separate instrument, proper and approved language is required within the Dedication.

5. Verify the centerline and sideline dimensions for the Temporary Turn-around Easement.
Applicant’s Response:
Document Reference:

CITY TRANSPORTATION ENGINEER – Sandy Mallory – sandym@gjcity.org (970) 244-1567

Filing 1 still not showing all traffic signs. Need to show No outlet sign (W14-2a) at intersection of Mariposa Dr. & Auguille Dr. and 20 MPH Speed Limit sign (R2-1) on Aiguille Dr.
Applicant's Response:
Document Reference:

OUTSIDE REVIEW AGENCY COMMENTS

(Non-City Agencies)

Review Agency: 5-2-1 Drainage Authority
Contact Name: Mark Barslund
Email / Telephone Number: markb@gjcity.org (970) 256-4106

All requirements have been met. A 521 D.A. permit may be issued.
Applicant's Response:

Review Agency: Ute Water Conservancy District
Contact Name: Jim Daugherty
Email / Telephone Number: jdaugherty@utewater.org (970) 242-7491

• See redline drawing for further comment.
• ALL FEES AND POLICIES IN EFFECT AT TIME OF APPLICATION WILL APPLY.
• If you have any questions concerning any of this, please feel free to contact Ute Water.
Applicant's Response:

REVIEW AGENCIES

(Responding with "No Comment" or have not responded as of the due date)

The following Review Agencies have not responded as of the comment due date.

1. N/A.

The Petitioner is required to submit electronic responses, labeled as "**Response to Comments**" for the following agencies:

1. **City Planning**
2. **City Development Engineer**
3. **City Surveyor**
4. **City Transportation Engineer**
5. **Ute Water Conservancy District**

Date due: **December 13, 2017**

Please provide a written response for each comment and, for any changes made to other plans or documents indicate specifically where the change was made.

I certify that all of the changes noted above have been made to the appropriate documents and plans and there are no other changes other than those noted in the response.

Applicant’s Signature	Date

Revocable Permit Narrative
For
Pinnacle Ridge – Filing 1
Grand Junction, CO

Date:	August 15, 2017
Prepared by:	Robert W. Jones II, P.E. Vortex Engineering and Architecture, Inc. 2394 Patterson Road, Suite 201 Grand Junction, CO 81505 VEI# F04-006
Submitted to:	City of Grand Junction 250 N. 5th Street Grand Junction, CO 81501
Type of Design:	Revocable Permit
Property Owner:	Two R & D, LLC PO Box 39 Fruita, CO 81521
Property Address:	Northeast of Mariposa Drive and ¼ mile north of Monument Road Grand Junction, CO 81507
Public property Tax Schedule No:	2945-213-00-001

I. Project Intent

To provide signage at the entrance of the Pinnacle Ridge Subdivision within right-of-way owned by the City of Grand Junction for purposes of identification and safe way finding by the general public and public safety providers such as Police, Fire and ambulance personnel. Landscaping shall also be provided in the median of Aiguille Drive to enhance the visual appeal of the community.

II. Project Description

The subject property is located northeast of Mariposa Drive and ¼ mile north of Monument Road (see Attachment A). The applicant wishes to construct an entrance sign which complies with all requirements of Section 21.06.070, Sign Regulation, of the Zoning and Development Municipal Code, at the corner of Mariposa Drive and Aiguille Drive.

The sign is proposed to be constructed in the median of Aiguille Drive within right-of-way owned by the City of Grand Junction and therefore requires approval of a Revocable Permit by City Council in accordance with Section 21.02.180, Revocable Permit. The sign shall be located outside of the clear zone to prevent any negative impacts or conflicts with traffic or pedestrians (see Attachment B).

The proposed sign will be owned and maintained by the Pinnacle Ridge Home Owner's Association. The sign shall be monument style with external, indirect lighting which complies with all requirements of Section 21.06.070, Sign Regulations (see Attachment C). A licensed sign contractor shall be responsible for obtaining all required permits prior to installation and after approval of the Revocable Permit.

In addition to construction of the sign, the applicant would like to landscape the median at the entrance to the subdivision in the right-of-way of Aiguille Drive. The applicant requests approval for landscaping the median with the Revocable Permit (see Attachment D for sign location and landscaping in the median). The landscaping shall be maintained by the Pinnacle Ridge Home Owner's Association as noted in the CC&Rs.

The legal description of the right-of-way is:

A parcel of land for right-of-way purposes, situated in the NW ¼ SW ¼ of Section 21, Township 1 South, Range 1 West of the Ute Meridian, City of Grand Junction, Mesa County, Colorado, being more particularly described as follows:

Commencing at the W ¼ corner of said Section 21, the basis of bearing being S01°17'29"W to the southwest corner of said Section 21;
thence S89°46'23"E a distance of 89.68 feet along the north line of said NW ¼ SW ¼ to the point of beginning;
thence S89°46'23"E a distance of 76.20 feet;
thence along the arc of a non-tangent curve to the right 106.20 feet, having a central angle of 33°48'13" and a radius of 180 feet, the chord of which bears S46°55'03"W a distance of 104.66 feet;
thence S63°49'09"W a distance of 38.69 feet to the northerly right-of-way line of Mariposa Drive as recorded in Book 1136 at Page 301 of said Mesa County records;
thence N26°01'41"W a distance of 60.00 feet along said northerly right-of-way;

thence N63°49’09”E a distance of 38.53 feet;
thence along the arc of a curve to the left 32.29 feet, having a central angle of 15°24’56” and a radius of 120.00 feet, the chord of which bears N56°06’42”E a distance of 32.19 feet to the point of beginning.
Said parcel contains 6,530 square feet more or less.

III. Sign and landscape detail

The applicant is proposing to construct a monument style sign with not more than 32 square feet of sign face area in the median of Aiguille Drive. The entrance sign shall measure not more than 4 feet in height and 8 feet in length and shall be constructed on a monument style base measuring not more than 2 feet in height. The sign shall be externally illuminated with indirect lighting and shall be maintained by the Pinnacle Ridge Home Owner’s Association as noted in the CC&Rs.

The proposed landscaping in the median of Aiguille Drive will consist of xeric plant materials and installation methods. All plant and landscaping materials shall be installed such that there will not be any conflicts with the clear zone or sight distance for vehicles or pedestrians.

The proposed plant materials and installation detail were previously submitted to the City for review and approval as part of the Pinnacle Ridge, Filing 1 final plat and plans.

IV. Zoning

The subject property is zoned R2. Final plat and plans are currently under review for a single family residential subdivision which is anticipated to begin construction in the late summer to early fall of 2017. The proposed sign and landscaping are compliant with all requirements of the R2 zone district.

V. Approval Criteria

Sec. 21.02.180(c) Approval Criteria. Applications for a revocable permit shall demonstrate compliance with all of the following:

(1) There will be benefits derived by the community or area by granting the proposed revocable permit;
Response: The community will benefit from construction of the signage which will provide identification of the development for both the general public and emergency services, as well as service providers such as trash trucks and delivery services. Provision of landscaping in the median of Aiguille Drive will enhance the visual appeal and character of the community and create a more pleasant experience for pedestrians and residents.

(2) There is a community need for the private development use proposed for the City property;
Response: The entrance signage and landscaping will be provided at no cost to the City, will enhance the visual appearance of the community and be maintained by the Pinnacle Ridge Home Owner’s Association. Landscaping the median will beautify the entrance to the new subdivision and create a more pleasant environment for pedestrians.

(3) The City property is suitable for the proposed uses and no other uses or conflicting uses are anticipated for the property;
Response: The location for the proposed sign and landscaping in the median is the best location for said improvements because they will be installed to enhance the visual appearance of the community in a manner that will not create sight distance conflicts at the intersection of Aiguille Drive and Mariposa Drive. There are no other competing uses that are required in the proposed location. All other utilities and services shall be installed in other locations along the public rights-of-way.

(4) The proposed use shall not negatively impact access, traffic circulation, neighborhood stability or character, sensitive areas such as floodplains or natural hazard areas;
Response: The proposed sign and landscaping shall be constructed outside of the clear zone and sight distance triangle so as to not create an obstruction for drivers or pedestrians. The improvements will not negatively impact access to the Pinnacle Ridge development, Mariposa Drive or traffic circulation and is not located within a floodplain or any known natural hazard area. The improvements will enhance the visual appearance of the neighborhood and community.

(5) The proposed use is in conformance with and in furtherance of the implementation of the goals, objectives and policies of the Comprehensive Plan, other adopted plans and the policies, intents and requirements of this code and other City policies; and
Response: The proposed improvements meet the following goal and policies of the Grand Junction Comprehensive Plan:
Goal 8: Create attractive public spaces and enhance the visual appeal of the community through quality development.
Policy 8A: Design streets and walkways as attractive public spaces.
Policy 8E: Encourage the use of xeriscape landscaping.

(6) The application complies with the submittal requirements as set forth in Section 127 of the City Charter, this chapter and the Submittal Standards for Improvements and Development manual.
Response: The application for a Revocable Permit has been prepared and submitted in accordance with all requirements as set forth in Section 127 of the City Charter, the Submittal Standards for Improvements and Development manual, and Title 21 of the Grand Junction Municipal Code also known as the Zoning and Development Code.

VI. Conclusion

We respectfully request approval of a Revocable Permit to provide signage at the entrance of the Pinnacle Ridge Subdivision within right-of-way owned by the City of Grand Junction for purposes of identification and safe way finding by the general public and public safety providers such as Police, Fire and ambulance personnel; and to provide landscaping in the median of Aiguille Drive to enhance the visual appeal of the community.

VII. Limitations/Restrictions

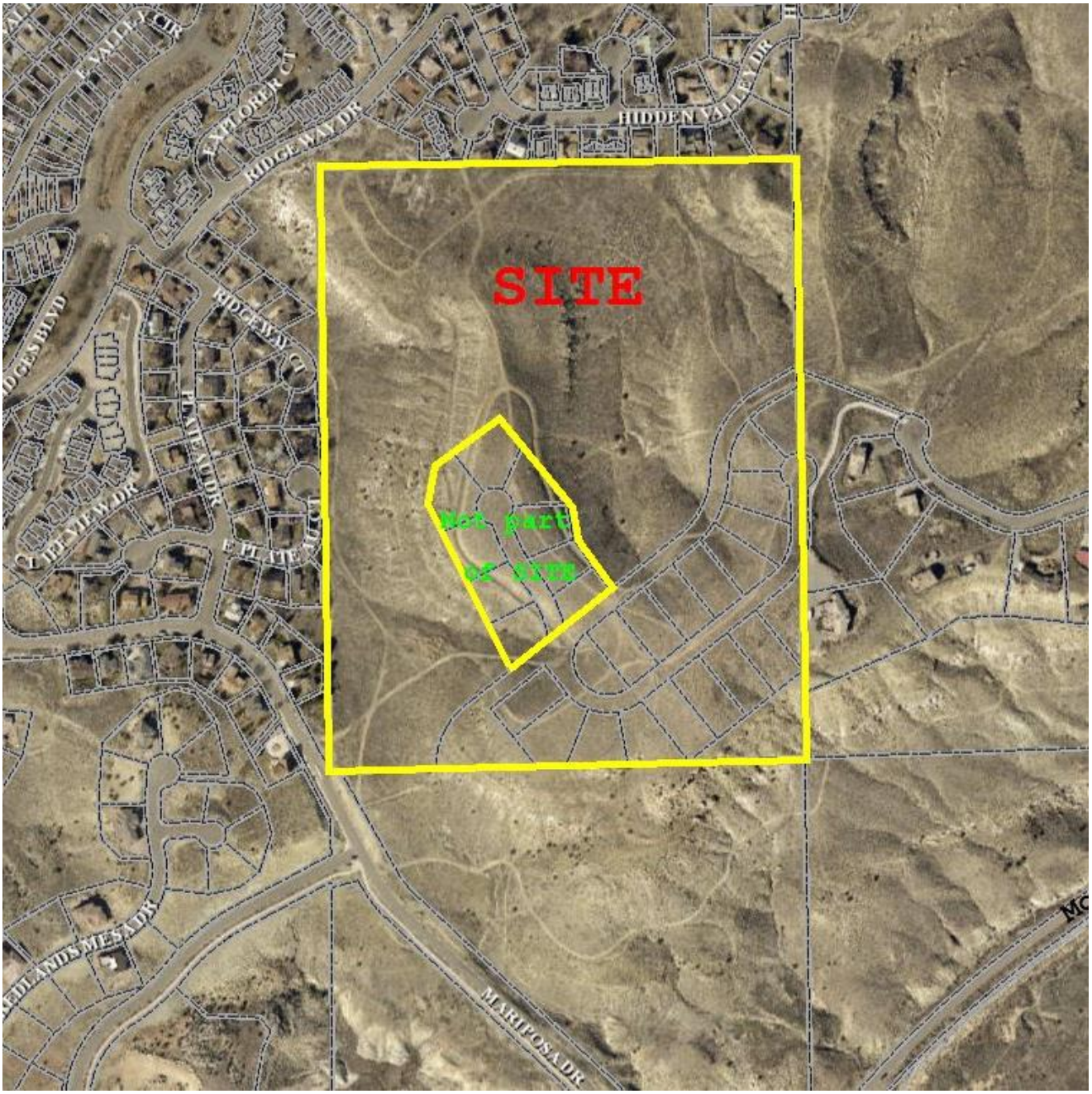
This report is a site-specific report and is applicable only for the client for whom our work was performed. The review and use of this report by City of Grand Junction, affiliates, and review agencies is fully permitted and requires no other form of authorization. Use of this report under other circumstances is not an appropriate application of this document. This report is a product of Vortex Engineering, Inc. and is to be taken in its entirety. Excerpts from this report when taken out of context may not convey the true intent of the report. It is the owner's and owner's agent's responsibility to read this report and become familiar with recommendations and findings contained herein. Should any discrepancies be found, they must be reported to the preparing engineer within 5 days.

The recommendations and findings outlined in this report are based on: 1) The site visit and discussion with the owner, 2) the site conditions disclosed at the specific time of the site investigation of reference, 3) various conversations with planners and utility companies, and 4) a general review of the zoning and transportation manuals. Vortex Engineering, Inc. assumes no liability for the accuracy or completeness of information furnished by the client or municipality/agency personnel. Site conditions are subject to external environmental effects and may change over time. Use of this report under different site conditions is inappropriate. If it becomes apparent that current site conditions vary from those reported, the design engineering should be contacted to develop any required report modifications. Vortex Engineering, Inc. is not responsible and accepts no liability for any variation of assumed information.

Vortex Engineering, Inc. represents this report has been prepared within the limits prescribed by the owner and in accordance with the current accepted practice of the civil engineering profession in the area. No warranty or representation either expressed or implied is included or intended in this report or in any of our contracts.

ATTACHMENT "A"

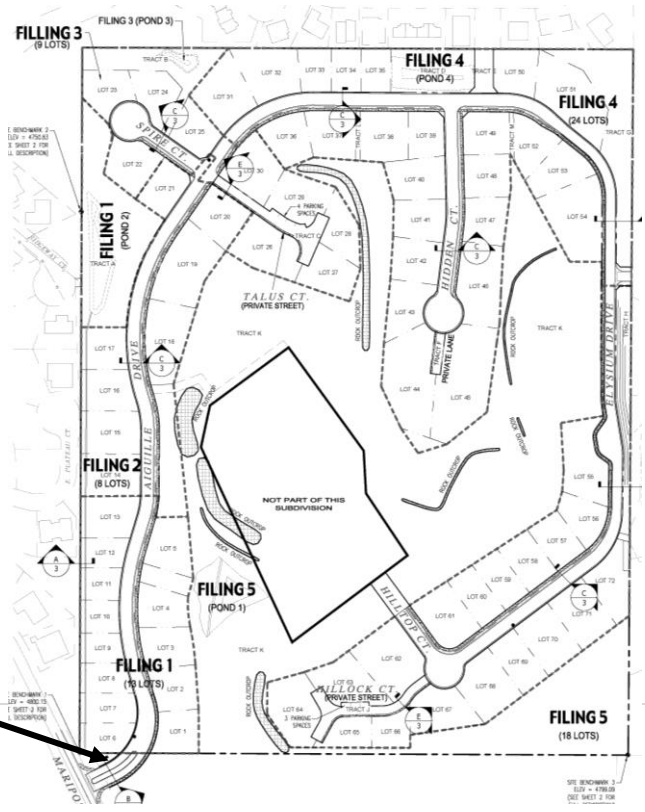
Pinnacle Ridge Subdivision LOCATION MAP



ATTACHMENT "B"

SIGN & LANDSCAPING LOCATION

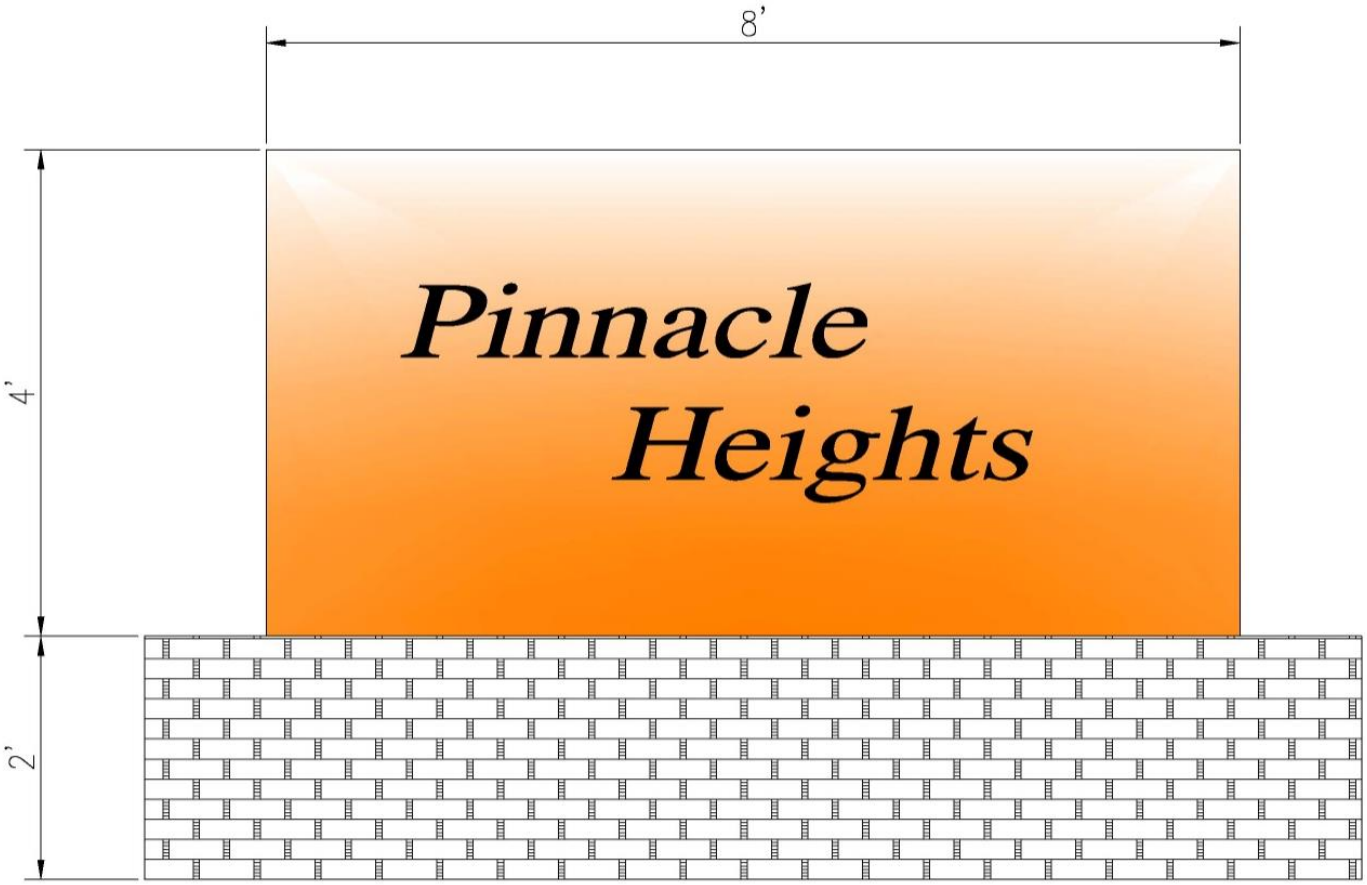




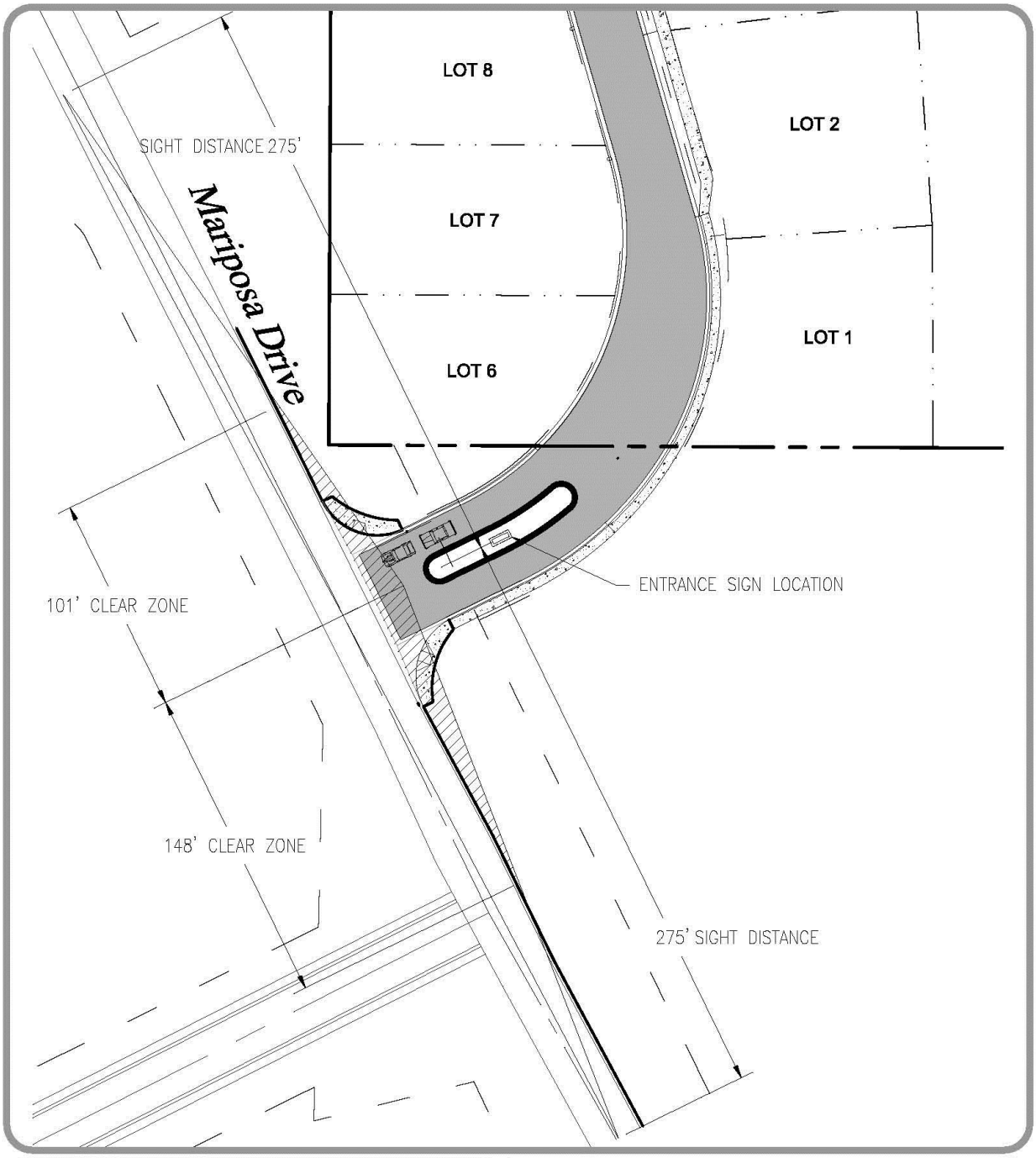
Sign and landscaping location

ATTACHMENT "C"

Proposed Signage



ATTACHMENT "D"

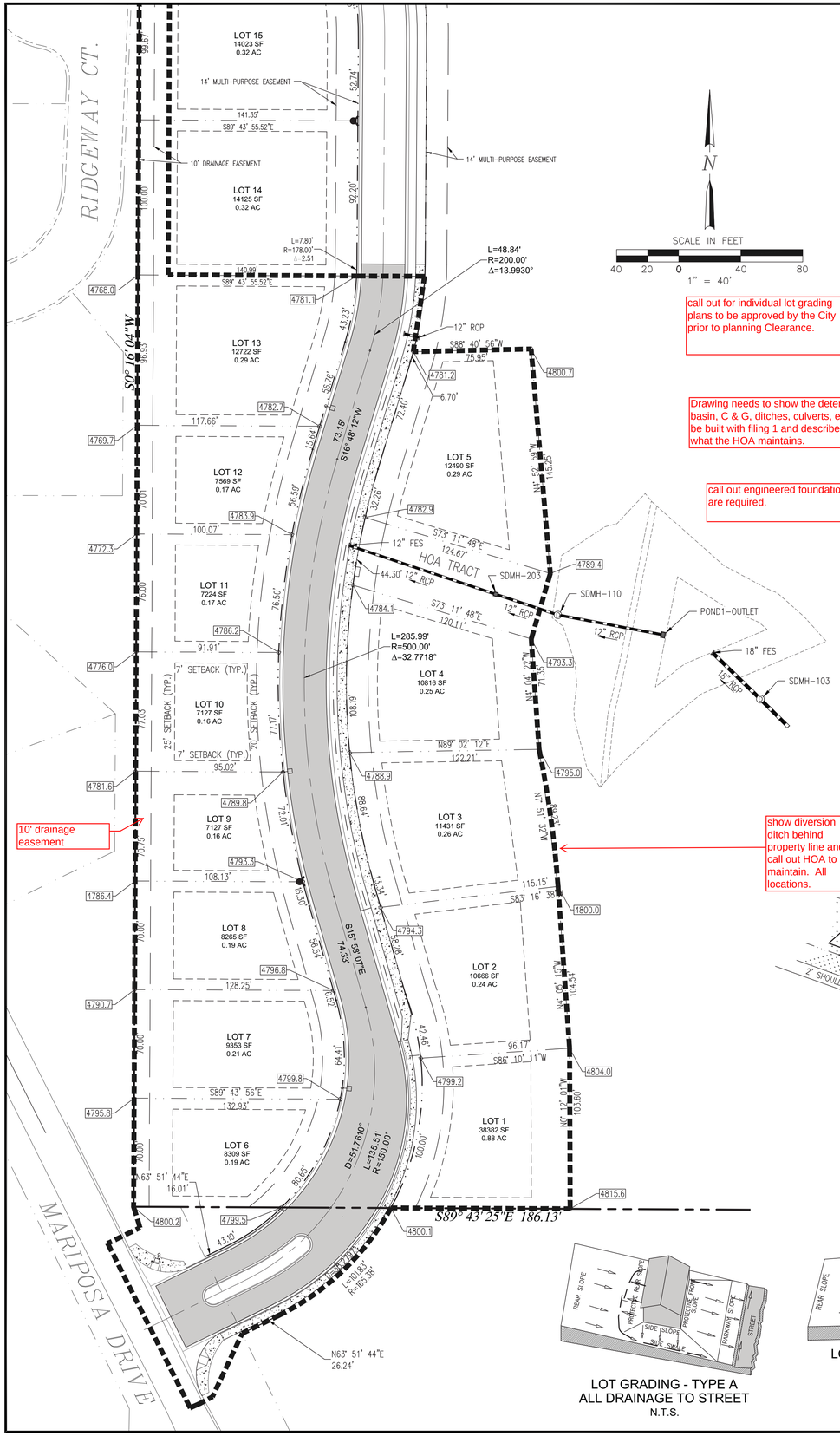


Pinnacle Ridge Subdivision
Sight Distance &
Entrance Sign Exhibit

PROJECT NO:	DATE:	DRAWN BY:	CHECKED BY:
F04-006	8/15/17	dls	JCA

- Civil & Consulting Engineering
- Construction Management & Site Planning
- Feasibility Studies Permit Expediting
- Environmental Scientists
- Project Management
- Hydrologic Studies

Prepared By
VORTEX
ENGINEERING, INC.
2394 Patterson Rd., Ste. 201
Grand Junction, CO 81505
(970) 245-9051



call out for individual lot grading plans to be approved by the City prior to planning Clearance.

Drawing needs to show the detention basin, C & G, ditches, culverts, etc. to be built with filing 1 and describe what the HOA maintains.

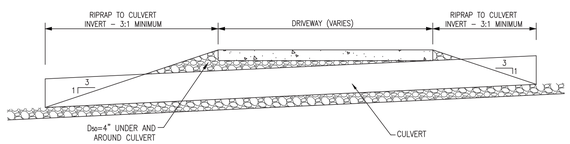
call out engineered foundations are required.

show diversion ditch behind property line and call out HOA to maintain. All locations.

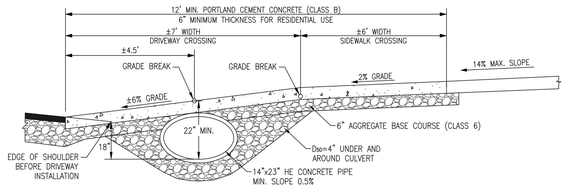
CONSTRUCTION NOTES:

1. PROPOSED FIRE HYDRANT
2. PROPOSED MAILBOX PAD
3. 15' TRANSITION FROM ATTACHED SIDEWALK TO DETACHED SIDEWALK
4. PROPOSED ELECTRIC TRANSFORMER BY XCEL ENERGY
5. PROPOSED ELECTRIC PEDESTAL BY XCEL ENERGY
6. PROPOSED DIVERSION DITCHES DO NOT DISTURB

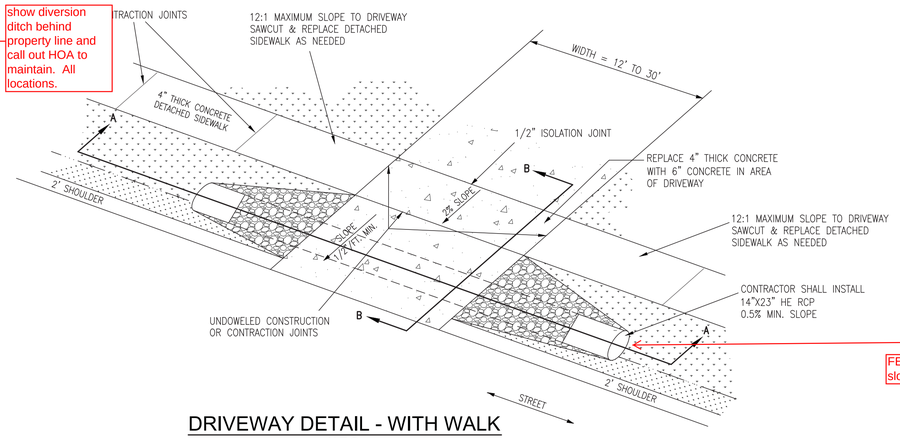
FILING 1 TOF TABLE			
Lot	*Grading*	*Min. TOF*	*Max. TOF*
1	Type A	4801.00	4801.50
2	Type A	4798.70	4799.20
3	Type A	4793.30	4793.80
4	Type A	4787.90	4788.40
5	Type A	4783.60	4784.10
6	Type C	4801.60	4802.10
7	Type C	4799.30	4799.80
8	Type C	4796.00	4796.50
9	Type C	4792.50	4793.00
10	Type C	4789.00	4789.50
11	Type C	4786.00	4786.50
12	Type C	4784.30	4784.80
13	Type C	4783.10	4783.60



SECTION A-A



SECTION B-B

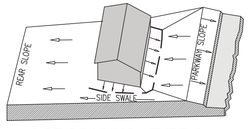


FES or miter to slope.

DRIVEWAY DETAIL - WITH WALK

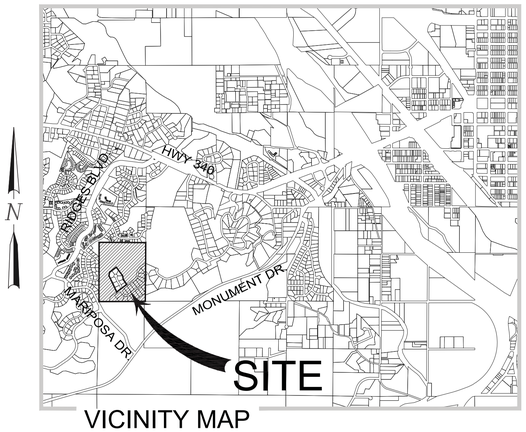
N.T.S.

LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.



LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.

PROPOSED LAND USE TABLE				
USE	*AREA*	*AC*	*% OF TOTAL*	*OWNER*
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. – 45.11 AC			



VICINITY MAP

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. ALL LOTS MUST HAVE AN INDIVIDUAL GEOTECHNICAL INVESTIGATION PERFORMED AND A SITE SPECIFIC ENGINEERING FOUNDATION.
10. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL.
9. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
10. ALL WATER SERVICES SHALL HAVE A PRESSURE REGULATED YOKE INSTALLED BASED ON PRESSURE LIMITS AS DETERMINED IN THE HYDRAULIC ANALYSIS.
11. DIVERSION DITCHES SHOWN ON THIS PLAN SHALL NOT BE DISTURBED AT ANY TIME.
12. DRIVEWAYS SHALL CONFORM TO THE DETAIL SHOWN ON THIS PLAN.

LEGEND

- PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- 4550.00 LOT CORNER SPOT ELEVATION
- PROPOSED FIRE HYDRANT

CLERK AND RECORDER'S CERTIFICATE

STATE OF COLORADO } ss
COUNTY OF MESA }

I hereby certify that this instrument was filed in my office at _____o'clock__M., this _____ day of _____ A.D. 2017, and is duly recorded in Book No. _____, at page _____, Reception No. _____, Drawer No. _____ Fees $ _____

_____
Clerk and Recorder

By:_____
Deputy

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 8-16-17 PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/09/17	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017	DLS

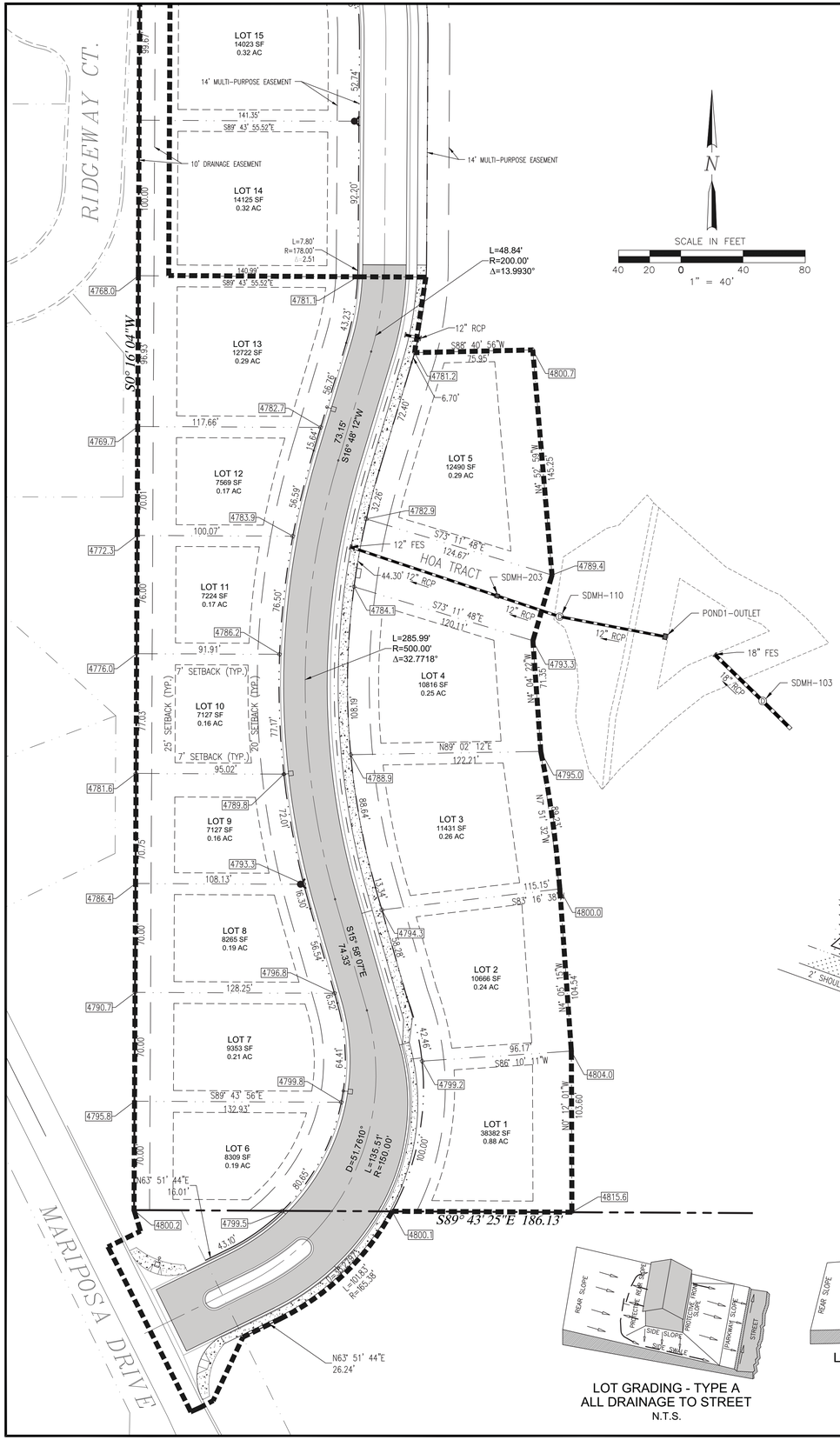
Site Plan for Recording

Filing 1
Pinnacle Ridge Subdivision

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 60'**
CAD ID: **pinnacle-sfr.dwg**

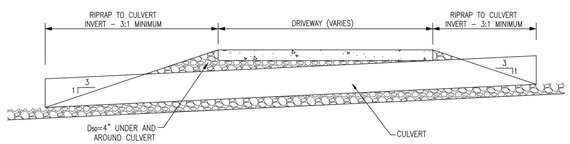
~SHEET~
1



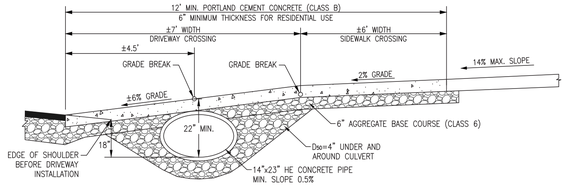
CONSTRUCTION NOTES:

1. PROPOSED FIRE HYDRANT
2. PROPOSED MAILBOX PAD
3. 15' TRANSITION FROM ATTACHED SIDEWALK TO DETACHED SIDEWALK
4. PROPOSED ELECTRIC TRANSFORMER BY XCEL ENERGY
5. PROPOSED ELECTRIC PEDESTAL BY XCEL ENERGY
6. PROPOSED DIVERSION DITCHES DO NOT DISTURB

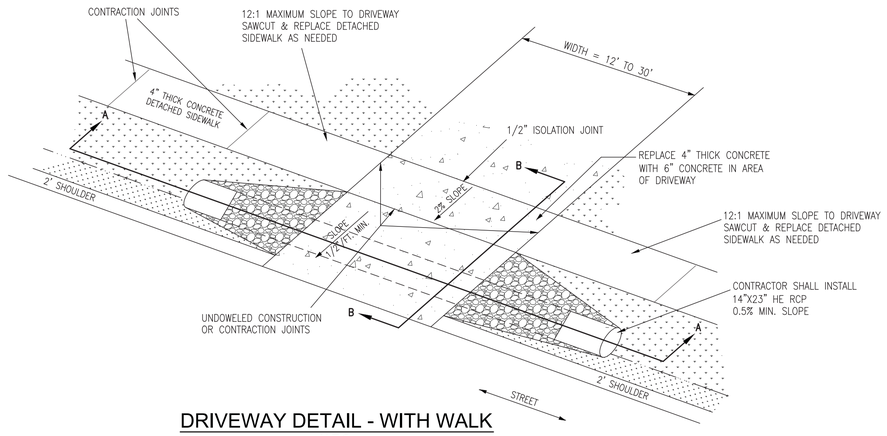
FILING 1 TOF TABLE			
Lot	*Grading*	*Min. TOF*	*Max. TOF*
1	Type A	4801.00	4801.50
2	Type A	4798.70	4799.20
3	Type A	4793.30	4793.80
4	Type A	4787.90	4788.40
5	Type A	4783.60	4784.10
6	Type C	4801.60	4802.10
7	Type C	4799.30	4799.80
8	Type C	4796.00	4796.50
9	Type C	4792.50	4793.00
10	Type C	4789.00	4789.50
11	Type C	4786.00	4786.50
12	Type C	4784.30	4784.80
13	Type C	4783.10	4783.60



SECTION A-A



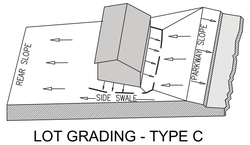
SECTION B-B



DRIVEWAY DETAIL - WITH WALK

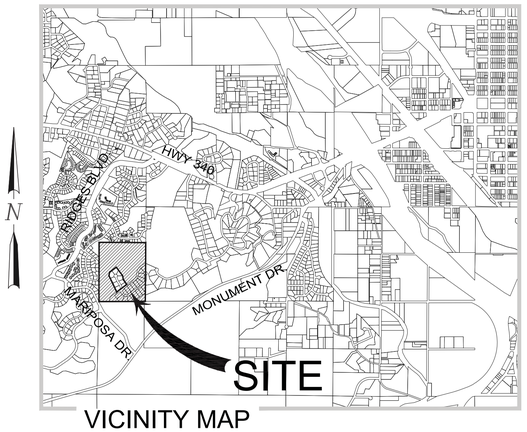
N.T.S.

LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.



LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.

PROPOSED LAND USE TABLE				
USE	*AREA*	*AC*	*% OF TOTAL*	*OWNER*
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. – 45.11 AC			



VICINITY MAP

GENERAL NOTES

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- PROPERTY BOUNDARY
- BUILDING ENVELOPE
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CLERK AND RECORDER'S CERTIFICATE

STATE OF COLORADO } ss
COUNTY OF MESA }

I hereby certify that this instrument was filed in my office at _____o'clock__M., this _____ day of _____ A.D. 2017, and is duly recorded in Book No. _____, at page _____, Reception No. _____, Drawer No. _____ Fees $ _____

_____
Clerk and Recorder

By:_____
Deputy

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
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COLORADO LICENSE No. 18828

COLORADO LICENSED
James C. Atkinson
18828
8-16-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT
1	8/09/17	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017

BY: DLS

Site Plan for Recording
Filing 1
Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 60'**
CAD ID: **pinnacle-sfr.dwg**

~SHEET~
1

STATEMENT OF AUTHORITY

This Statement of Authority concerns an entity named:
Two R & D, LLC.

and is executed on behalf of the entity pursuant to the provisions of Section 38-30-172, C.R.S.

The type of entity is: Limited Liability Corporation.

The entity is formed under the laws of the State of Colorado.

The mailing address for the entity is: P.O. Box 39, Fruita, CO 81521.

The name and position of each person authorized to execute instruments conveying, encumbering, or otherwise affecting title to real property on behalf of the entity is:
Robert W. Jones II
Managing Member.

The authority of the foregoing person(s) to bind the entity is (not limited) (limited as follows):

.

Other matters concerning the manner in which the entity deals with interests in real property:

.

Executed this 31st day of July, 2017.

Signature (Type or Print Name Below)

Robert W. Jones II, Managing Member

STATE OF COLORADO)
)ss.
COUNTY OF Mesa)

The foregoing instrument was acknowledged before me this 31st day of July, 2017, by Robert W. Jones II (insert name of individual) as Managing Member (insert office held or role (President, Vice President or member, manager or managing member for LLCs) for Two R & D, LLC (insert name of corporation or LLC).

Witness my hand and official seal.
My commissioner expires: June 19, 2021

Notary Public

JENNIFER CHRISTENSEN
Notary Public – State of Colorado
Notary ID 20024020423
My Commission Expires Jun 19, 2021

COLORADO
Department of Public Health & Environment

CERTIFICATION TO DISCHARGE
UNDER
CDPS GENERAL PERMIT COR-0300000
STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITIES

Certification Number: **COR03R544**

This Certification to Discharge specifically authorizes:

Two R and D
to discharge stormwater from the facility identified as

Pinnacle Ridge Subdiv

To the waters of the State of Colorado, including, but not limited to:

- Colorado River

Facility Activity :	Residential development
Disturbed Acres:	31.67 acres
Facility Located at:	Mariposa Dr and Monument Rd Grand Junction CO 81507 Mesa County Latitude 39.058981 Longitude -108.605570
Specific Information (if applicable):	

Certification is issued and effective: 6/21/2017
Expiration Date: This authorization expires upon effective date of the General Permit COR030000 renewal unless otherwise notified by the division.

*ADMINISTRATIVELY CONTINUED

This certification under the permit requires that specific actions be performed at designated times. The certification holder is legally obligated to comply with all terms and conditions of the permit.

This certification was approved by:
Lillian Gonzalez, Unit Manager
Permits Section
Water Quality Control Division

*explanation of Admin Continued in cover letter

PINNACLE RIDGE SUBDIVISION, FILING 1

W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.
City of Grand Junction, Mesa County, Colorado

DEDICATION

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, TWO R & D, LLC a Colorado limited liability company is the owner of that real property situate in the W 1/2 NW 1/4 of Section 21, Township 1 South, Range 1 of the Ute Meridian, City of Grand Junction, Mesa County, Colorado; being more particularly described as follows:

The SW 1/4 of the NW 1/4 and the South 10 Acres of the NW 1/4 of the NW 1/4 of said Section 21,
EXCEPT, ENERGY CENTER SUBDIVISION recorded under Reception No. 644620.

Said parcel contains 32.70 acres more or less.

Said Owner has by these presents laid out, platted and subdivided the above-described real property into Lots, and Tracts as shown hereon, and designated the same as PINNACLE RIDGE SUBDIVISION, FILING 1 in the City of Grand Junction, County of Mesa, State of Colorado, and does hereby offer the following dedications and grants:

All streets, roads and Rights-of-Way are dedicated to the City of Grand Junction for the use of the public forever.

All Multipurpose Easements are dedicated to the City of Grand Junction as perpetual easements for City approved utilities including the installation, operation, maintenance and repair of said utilities and appurtenances which may include but are not limited to, electric lines, cable TV lines, natural gas pipelines, sanitary sewer lines, storm sewers, water lines, telephone lines, traffic control facilities, street lighting, landscaping, trees and grade structures.

All Utility Easements are dedicated to the City of Grand Junction as perpetual easements for City approved utilities including the installation, operation, maintenace and repair of said utilities and appurtenances which may include but are not limited to, electric lines, cable TV lines, natural gas pipelines, sanitary sewer lines, storm sewers, water lines, telephone lines, equivalent other public utility providers and appurtenant facilities.

A Drainage Easement over Tract A is dedicated to the City of Grand Junction as a perpetual easement for the inspection, installation, operation, maintenance and repair of detention and drainage facilities and appurtenants thereto. The City of Grand Junction is dedicated reasonable ingress/egress access to the drainage/detention easement areas. The owner(s) and/or the property owners' association, if one exists, is not relieved of its responsibility to inspect, install, operate, maintain and repair the detention and drainage facilities.

All other Drainage easement are granted to the Homeowner's Association by separate instrument.

_____
TWO R & D, LLC, Member

STATE OF COLORADO)
)ss
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____
2017 A.D. by TWO R & D, LLC, Member _____
Witness my hand and official seal: _____
Notary Public

My commission expires: _____

TITLE CERTIFICATION

State of Colorado
County of Mesa

We, Heritage Title Company, a title insurance company, as duly licensed in the State of Colorado, hereby certify that we have examined the title to the hereon described property, that we find the title to the property is vested to Two R & D, LLC, a Colorado limited liability company ; that the current taxes have been paid; that all mortgages not satisfied or released of record or otherwise terminated by law are shown hereon and that there are no other encumbrances of record; that all easements, reservations and right-of-ways of record are shown hereon.

Date: _____ By: _____

LIENHOLDERS RATIFICATION OF PLAT

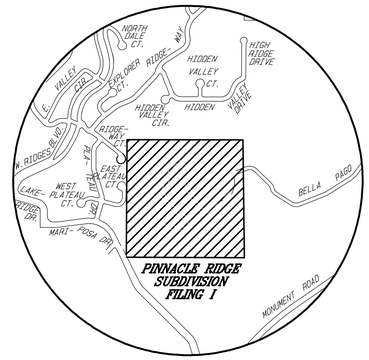
The undersigned, hereby certifies that it is a holder of a security interest upon the property hereon described and does hereby join in and consent to the dedication of the land described in said dedication by the owners thereof and agree that its security interest which is recorded under Reception No. 2236040, 2310515, 2402221, 2402230, 2439195, 2489454, 2554494, 2351449, 2351450, 2439196, 2488467, 2654493 of the public records of Mesa County, Colorado shall be subordinated to the dedications shown hereon.

BY: _____ FOR: Alpine Bank

STATE OF COLORADO)
)ss
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____
2017 A.D. by
Witness my hand and official seal: _____
Notary Public

My commission expires: _____



VICINITY MAP
N.T.S.

To be completed by the City of Grand Junction personnel. The accuracy of this information is the responsibility of the City of Grand Junction.

Declaration of Covenants, Restrictions and Conditions of the Pinnacle Ridge Homeowner's Association, Inc.

recorded under Reception No. _____.

Tracts A and B are conveyed to the Pinnacle Ridge Homeowner's Association, Inc.

recorded under Reception No. _____.

SURVEYOR'S STATEMENT

I, Michael W. Drissel, a registered Professional Land Surveyor in the State of Colorado, do hereby state that this survey was performed by me or under my direct responsibility, supervision, and checking. It is based upon my professional knowledge, information and belief according to applicable standards of practice. This is not a guarantee or warranty, either expressed or implied. Title research was supplied by Heritage Title Company under FILE NUMBER: 598-H0502823-900-GTO.

FOR REVIEW

CITY APPROVAL

This plat of PINNACLE RIDGE SUBDIVISION, FILING 1, a subdivision of the City of Grand Junction, County of Mesa, State of Colorado, is approved and accepted on the ____ day of _____, 2017 A.D.

_____ _____
City Manager City Mayor

CLERK AND RECORDER'S CERTIFICATE

This plat was accepted for filing in the office of the Clerk and Recorder of Mesa County, Colorado at _____ o'clock__M., on this ____ day of _____ 2017 A.D., and was recorded at Reception No. _____, Drawer No. _____, and Fees _____.

_____ _____
Clerk and Recorder Deputy

NOTICE: According to Colorado law you must commence any legal action based upon any defect in the survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of this certification/statement shown hereon.

REVISED 07/27/17

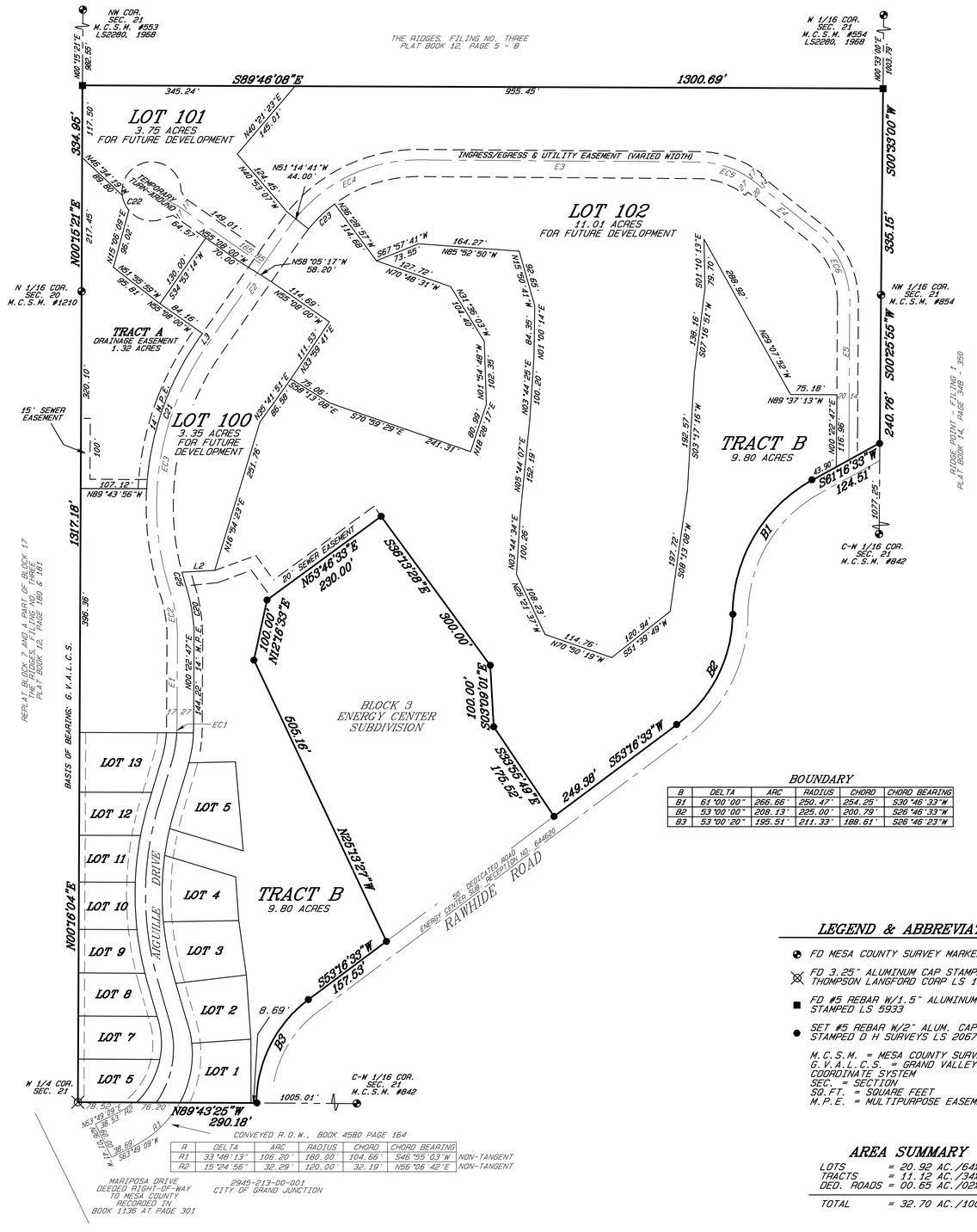
PINNACLE RIDGE SUBDIVISION
FILING 1
LOCATED IN THE
W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.

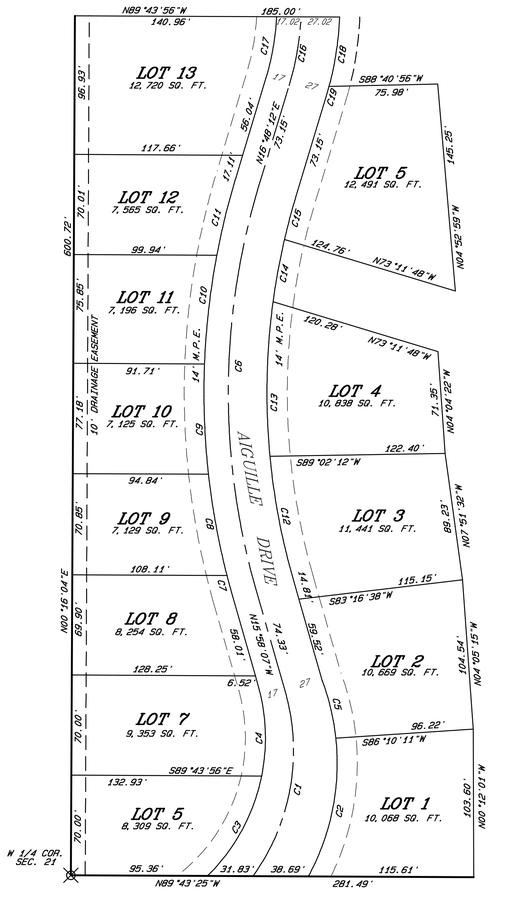
D H SURVEYS INC.
118 OURAY AVE. - GRAND JUNCTION, CO.
(970) 245-8749

Designed By M.W.D.	Checked By E.E.B.	Job No. 129-04-03
Drawn By TMODEL	Date MAY 2017	Sheet 1 OF 2

PINNACLE RIDGE SUBDIVISION, FILING 1

W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M., City of Grand Junction, Mesa County, Colorado





SCALE 1" = 50'

LOT & CENTER LINE DIMENSIONS

L/C	DELTA	ARC	RADIUS	CHORD	CHORD BEARING	
C1	51°45'39"	135.51	150.00'	130.95'	S09°54'43"W	
C2	34°44'09"	100.03'	165.00'	98.51'	S11°15'38"W	NON-TANGENT
C3	34°13'41"	80.65'	135.00'	79.45'	N28°28'58"E	
C4	27°20'14"	64.41'	135.00'	63.80'	N02°18'00"W	
C5	14°18'25"	41.20'	165.00'	41.09'	S13°15'41"E	NON-TANGENT
C6	32°46'18"	285.99'	500.00'	282.11'	S00°25'03"W	
C7	1°38'41"	14.84'	517.00'	14.84'	N15°08'46"W	
C8	7°59'00"	72.04'	517.00'	71.98'	N10°19'55"W	
C9	8°33'07"	77.17'	517.00'	77.10'	N02°03'52"W	
C10	8°28'47"	76.51'	517.00'	76.44'	N06°27'05"E	
C11	6°06'43"	55.15'	517.00'	55.12'	N13°44'50"E	
C12	10°33'49"	87.21'	473.00'	87.08'	S10°41'12"E	
C13	13°26'47"	108.25'	473.00'	108.02'	S01°09'06"W	
C14	5°21'55"	44.29'	473.00'	44.28'	S10°23'27"W	
C15	3°43'47"	30.79'	473.00'	30.79'	S14°56'18"W	
C16	13°59'35"	48.84'	200.00'	48.72'	S09°48'24"W	
C17	13°45'24"	43.94'	183.00'	43.83'	N09°55'30"E	
C18	12°25'26"	49.22'	227.00'	49.13'	S08°43'11"W	
C19	1°52'18"	7.42'	227.00'	7.42'	N15°52'03"E	
C20	18°18'09"	86.88'	271.98'	86.51'	S08°46'17"E	
C21	31°36'19"	260.36'	472.00'	257.07'	S19°03'51"W	
L2		53.58'			S86°44'38"W	
C22	31°33'47"	26.44'	48.00'	26.11'	N24°00'53"W	
L3		11.70'			N34°52'00"E	
C23	14°45'44"	58.74'	228.00'	58.58'	S46°08'11"W	
C25	03°11'16"	23.81'	428.00'	23.81'	S16°19'43"E	

INGRESS/EGRESS EASEMENT (varied width)

#	DELTA	ARC	RADIUS	CHORD	CHORD BEARING
EC1	2°25'50"	8.48'	200.00'	8.48'	N01°35'42"E
E1		144.22'			S00°22'47"W
EC2	18°18'09"	78.26'	244.98'	77.93'	S08°46'17"E
EC3	52°47'22"	419.21'	455.00'	404.54'	S08°28'20"W
E2		233.78'			N34°52'00"E
EC4	55°33'35"	247.27'	255.00'	237.70'	S62°38'48"W
E3		453.94'			S89°34'24"E
EC5	38°23'02"	100.49'	150.00'	98.62'	N70°22'53"W
E4		125.09'			S51°11'22"E
EC6	51°34'09"	134.11'	149.00'	129.63'	N25°24'18"W
E9		255.63'			S00°22'47"W

BOUNDARY

B	DELTA	ARC	RADIUS	CHORD	CHORD BEARING
B1	61°00'00"	266.66'	250.47'	254.25'	S30°46'33"W
B2	53°00'00"	208.13'	225.00'	200.79'	S26°46'33"W
B3	53°00'20"	195.51'	211.33'	188.61'	S26°46'23"W

R	DELTA	ARC	RADIUS	CHORD	CHORD BEARING	
R1	33°48'13"	106.20'	180.00'	104.66'	S46°55'03"W	NON-TANGENT
R2	15°24'56"	32.29'	120.00'	32.19'	N56°06'42"E	NON-TANGENT

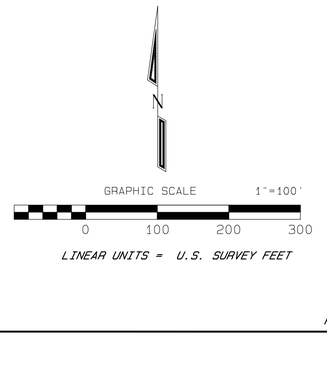
LEGEND & ABBREVIATIONS

- FD MESA COUNTY SURVEY MARKER
- FD 3.25" ALUMINUM CAP STAMPED THOMPSON LANGFORD CORP LS 18480
- FD #5 REBAR W/1.5" ALUMINUM CAP STAMPED LS 5933
- SET #5 REBAR W/2" ALUM. CAP STAMPED D H SURVEYS LS 20677

M.C.S.M. = MESA COUNTY SURVEY MARKER
G.V.A.L.C.S. = GRAND VALLEY AREA LOCAL COORDINATE SYSTEM
SEC. = SECTION
SQ.FT. = SQUARE FEET
M.P.E. = MULTIPUAPOSE EASEMENT

AREA SUMMARY

LOTS	= 20.92 AC./64%
TRACTS	= 11.12 AC./34%
DED. ROADS	= 00.65 AC./02%
TOTAL	= 32.70 AC./100%



LINEAR UNITS = U.S. SURVEY FEET

FOR REVIEW

REVISED 07/27/17

PINNACLE RIDGE SUBDIVISION FILING 1

LOCATED IN THE

W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.

D H SURVEYS INC.
118 OURAY AVE. - GRAND JUNCTION, CO.
(970) 245-8749

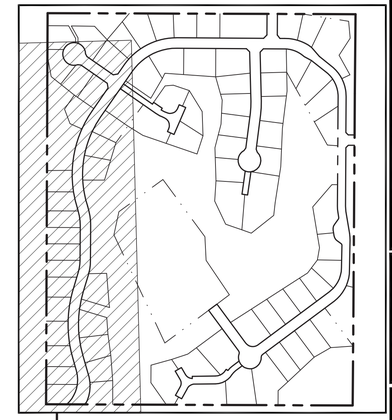
Designed By M.W.D.	Checked By E.E.B.	Job No.	129-04-03
Drawn By TMODEL	Date MAY 2017	Sheet	2 OF 2

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET 3
6. HOUSES CONSTRUCTED ON LOTS 26-29 AND LOTS 55-72 SHALL HAVE SPRINKLER SYSTEMS INSTALLED. A 1" CUSTOMER WATER SERVICE LINE AND ¾" WATER METER WILL BE UTILIZED IN ACCORDANCE WITH UTE WATER CONSERVANCY DISTRICT STANDARDS & SPECIFICATIONS.
7. ALL WATER SERVICES SHALL HAVE A PRESSURE REGULATED YOKE INSTALLED BASED ON PRESSURE LIMITS AS DETERMINED IN THE HYDRAULIC ANALYSIS.

FILING NOTES

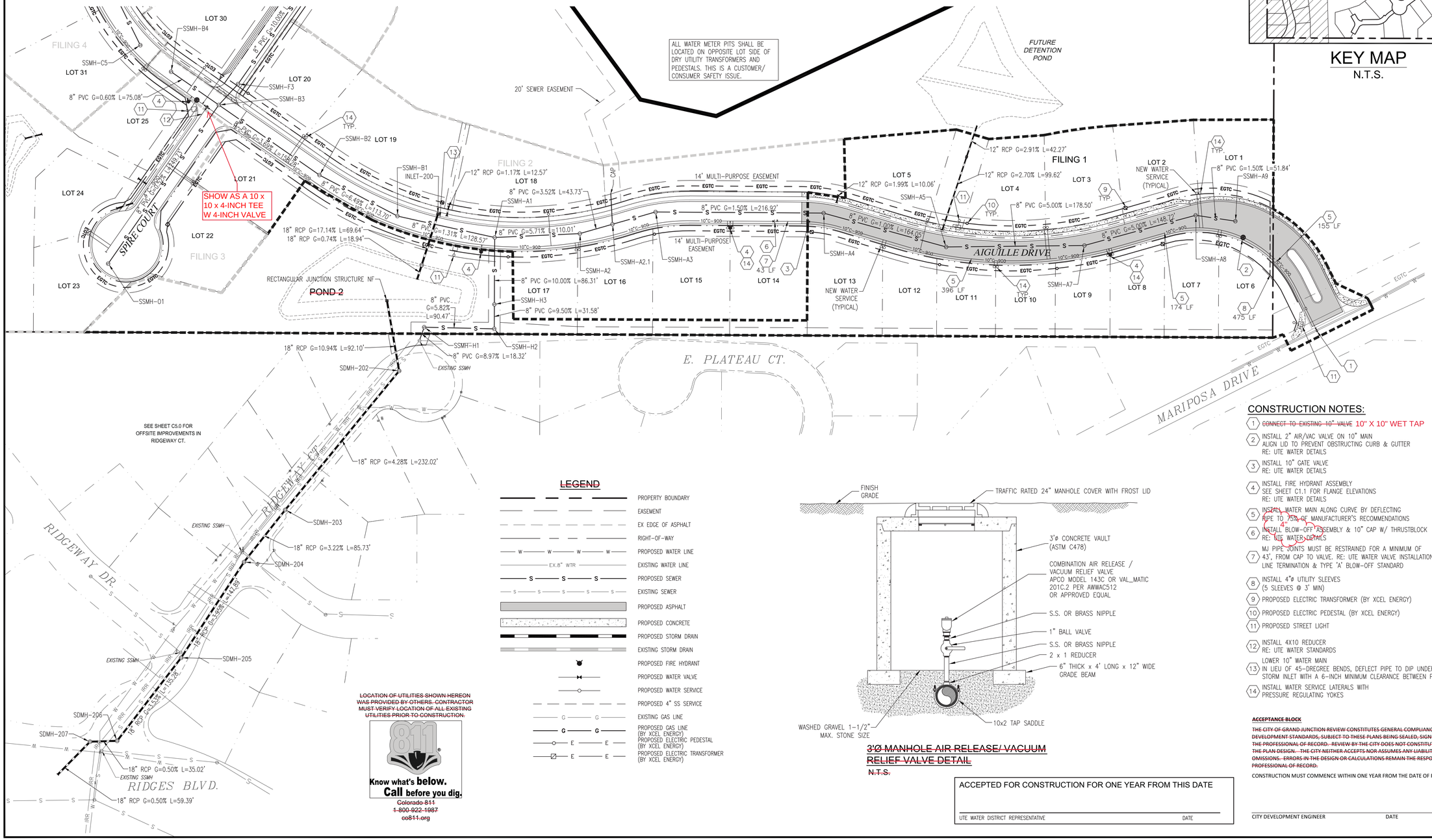
1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
2. INSTALL SANITARY SEWER FROM SSMH-A9 TO EXISTING MAN-HOLE IN RIDGEWAY COURT AS SHOWN INCLUDING LINE TO MAN-HOLE B-1.
3. END WATER LINE CONSTRUCTION AT THE MIDDLE OF LOT 14 AS SHOWN.
4. ASPHALT PAVEMENT TO END AT THE NORTH END OF LOT 13 FOR FILING 1.
5. ROAD ALIGNMENT TO BE GRADED AND BASE COURSE INSTALLED TO THE NORTH END OF LOTS 20 & 21.



KEY MAP
N.T.S.

N

SCALE IN FEET
60 30 0 60 120
1" = 60'



LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE
- EXISTING WATER LINE
- PROPOSED SEWER
- EXISTING SEWER
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER SERVICE
- PROPOSED 4" SS SERVICE
- EXISTING GAS LINE
- PROPOSED GAS LINE (BY XCEL ENERGY)
- PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
- PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

Know what's below. Call before you dig.
Colorado 811
1-800-922-1987
co811.org

3'Ø MANHOLE AIR RELEASE/ VACUUM RELIEF VALVE DETAIL
N.T.S.

CONSTRUCTION NOTES:

1. ~~CONNECT TO EXISTING 10" VALVE~~ 10" X 10" WET TAP
2. INSTALL 2" AIR/VAC VALVE ON 10" MAIN ALIGN LID TO PREVENT OBSTRUCTING CURB & GUTTER RE: UTE WATER DETAILS
3. INSTALL 10" GATE VALVE RE: UTE WATER DETAILS
4. INSTALL FIRE HYDRANT ASSEMBLY SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL WATER MAIN ALONG CURVE BY DEFLECTING ~~PIPE TO 75% OF MANUFACTURER'S RECOMMENDATIONS~~ 4°
6. INSTALL BLOW-OFF ASSEMBLY & 10" CAP W/ THRUSTBLOCK RE: UTE WATER DETAILS
7. MJ PIPE JOINTS MUST BE RESTRAINED FOR A MINIMUM OF 43', FROM CAP TO VALVE. RE: UTE WATER VALVE INSTALLATION, LINE TERMINATION & TYPE 'A' BLOW-OFF STANDARD
8. INSTALL 4"ø UTILITY SLEEVES (5 SLEEVES @ 3' MIN)
9. PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)
10. PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
11. PROPOSED STREET LIGHT
12. INSTALL 4X10 REDUCER RE: UTE WATER STANDARDS
13. LOWER 10" WATER MAIN IN LIEU OF 45-DREGREE BENDS, DEFLECT PIPE TO DIP UNDER STORM INLET WITH A 6-INCH MINIMUM CLEARANCE BETWEEN PIPES.
14. INSTALL WATER SERVICE LATERALS WITH PRESSURE REGULATING YOKES

~~ACCEPTANCE BLOCK~~

~~THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE~~ WITH THE CITY'S ~~DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED,~~ AND DATED BY ~~THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY~~ FOR ERRORS OR ~~OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY~~ OF THE ~~PROFESSIONAL OF RECORD.~~

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

ACCEPTED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE

UTE WATER DISTRICT REPRESENTATIVE DATE

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED
James C. Atkinson
18828
8-15-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

BY	REV. DATE	COMMENT
DLS	8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017

Composite Site Plan - Utility and Water Plan

Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1"= 60'**
CAD ID: **3.0utility-f1.dwg**

~SHEET~
C3.0

Grand Junction City Council

Regular Session

Item

Information

SUBJECT:

Resolution Issuing a Revocable Permit for the Installation of a Center Median that would include Landscaping and Subdivision Monument Signage in the proposed Aiguille Drive Right-of-Way as part of the Pinnacle Ridge Subdivision, Located East of Mariposa Drive in the Redlands.

RECOMMENDATION:

Staff recommends approval with the findings of fact as identified within the attached Staff Report.

EXECUTIVE SUMMARY:

Two R & D LLC is requesting a Revocable Permit to construct a 745 sq. ft. center median that would include xeric landscaping and a subdivision monument entrance sign of 32 sq. ft. and 6 feet in height to be located within the proposed Aiguille Drive Right-of-Way as part of the proposed Pinnacle Ridge Subdivision. When a property owner wants to place improvements within a right-of-way, a revocable permit is needed to ensure that the improvements are appropriate and placed in a manner that does not pose potential burdens on the public. Furthermore, the revocable permit documents to the public, applicant and future owners that the City may, at any time, remove the private improvements, at the owner's expense. The issuance of a Revocable Permit is subject to the review criteria in Section 21.02.180 (c) of the Zoning and Development Code.

BACKGROUND OR DETAILED INFORMATION:

The Applicant, Two R & D LLC is requesting a Revocable Permit to construct a center median that would also include landscaping and a subdivision entrance monument style sign of 32 sq. ft. in size and be no more than 6 feet in height per the requirements for residential signage as identified within Section 21.06.070 (h) (1) of the Zoning and Development Code. The proposed center median would be 745 sq. ft. and would roughly be dimensioned as 63' long and 12' wide located within the Aiguille Drive Right-of-Way as part of the proposed Pinnacle Ridge Subdivision.

Infrastructure construction for Filings 1 & 2 of Pinnacle Ridge Subdivision is currently underway. The proposed center median, landscaping and signage would serve as a subdivision entrance feature and will be maintained by the homeowner's association of Pinnacle Ridge as outlined with the Covenants. Landscaping within the center median would consist of xeric plant materials and installation methods which will enhance the visual appeal of the community. All plant and landscaping materials, subdivision signage shall be installed such that there will not be any conflicts with sight distances for vehicles or pedestrians as reviewed by the City Development Engineer.

FISCAL IMPACT:

This action does not have any fiscal impact for the City.

SUGGESTED MOTION:

I move to (approve or deny) Resolution No. _____, A Resolution Concerning the Issuance of a Revocable Permit to Two R & D LLC, to Allow the Installation of a Center Median that would include Landscaping and Subdivision Signage in the proposed Aiguille Drive Right-of-Way as part of the Pinnacle Ridge Subdivision, Located East of Mariposa Drive in the Redlands.

Attachments

ATTACHMENT 1 – Staff Review and Findings which includes the Site Location Map, the Aerial Photo Map, the Comprehensive Plan Future Land Use Map, and the Existing Zoning Map
ATTACHMENT 2 – Proposal Request prepared by Architect
ATTACHMENT 3 – Site Plan
ATTACHMENT 4 – Fence Detail
ATTACHMENT 5 – Proposed Resolution

Staff Review and Findings:

BACKGROUND INFORMATION					
Location:		East of Mariposa Drive			
Applicant:		Two R & D LLC, Owner			
Existing Land Use:		Unimproved Right-of-Way (To be named Aiguille Drive)			
Proposed Land Use:		Installation of a Center Median, Landscaping and Subdivision Signage			
Surrounding Land Use:	**North**	Single-family detached			
	South	Vacant Land (Owned by the City of Grand Junction)			
	East	Vacant Land (Owned by the City of Grand Junction)			
	West	Single-Family Detached			
Existing Zoning:		R-2 (Residential – 2 du/ac)			
Proposed Zoning:		N/A			
Surrounding Zoning:	**North**	PD (Planned Development)			
	South	CSR (Community Service & Recreation)			
	East	CSR (Community Service & Recreation)			
	West	PD (Planned Development)			
Future Land Use Designation:		Park			
Zoning within density range?		X	**Yes**		**No**

When a property owner wants to place improvements within a right-of-way, a revocable permit is needed to ensure that the improvements are appropriate and placed in a manner that does not pose potential burdens on the public. Furthermore, the revocable permit documents to the public, applicant and future owners that the City may, at any time, remove the private improvements, at the owner's expense.

Section 21.02.180 (c) of the Grand Junction Zoning and Development Code:

Requests for a revocable permit must demonstrate compliance with all of the following criteria:

a. There will be benefits derived by the community or area by granting the proposed revocable permit.

   The community will benefit from construction of the signage which will provide identification of the development for both the general public and emergency services, etc. Also, landscaping within the proposed center median will enhance the visual appeal and character of the subdivision and create a more pleasant experience for the community and residents. Staff therefore finds this criterion has been met.

b. There is a community need for the private development use proposed for the City property.

   The entrance signage and landscaping will be installed at no cost to the City, will enhance the visual appearance of the community and be maintained by the Pinnacle Ridge Homeowner's Association with no financial impacts to the City or long term obligations for maintenance. Landscaping the median will beautify the entrance to the new subdivision and create a more pleasant environment for the area. Staff, therefore finds this criterion has been met.

c. The City property is suitable for the proposed uses and no other uses or conflicting uses are anticipated for the property.

   The location for the proposed monument sign and landscaping in the center median at the subdivision entrance is the best location for said improvements because they will be installed to enhance the visual appearance of the community in a manner that will not create any conflicts for the traveling public including sight distance at the intersection of Aiguille and Mariposa Drives. Staff, therefore finds this criterion has been met.

d. The proposed use shall not negatively impact access, traffic circulation, neighborhood stability or character, sensitive areas such as floodplains or natural hazard areas.

   The proposed monument sign and landscaping will be constructed outside of the sight distance triangles as to not create an obstruction for drivers or pedestrians. The proposed center median will not negatively impact access to the Pinnacle Ridge subdivision, Mariposa Drive or traffic circulation and is not located within a floodplain or any known hazard area as reviewed by the City Development Engineer. Staff believes the proposed improvements will enhance the visual appearance of the neighborhood and community and as such will not negatively impact the neighborhood. Therefore, Staff has found this criterion to have been met.

e. The proposed use is in conformance with and in furtherance of the implementation of the goals, objectives and policies of the Comprehensive Plan, other adopted plans and policies, intents and requirements of the Code and other City policies.

   Staff has reviewed the proposal and has found it to be in conformance with all relevant standards, codes and regulations. In addition, the proposed right-of-way improvements meet the following goal and policies of the Grand Junction Comprehensive Plan:

   Goal 8: Create attractive public spaces and enhance the visual appeal of the community through quality development.

   Policy 8A: Design streets and walkways as attractive public spaces.
   Policy 8E: Encourage the use of xeriscape landscaping.

   Staff therefore finds this criterion has been met.

f. The application complies with the submittal requirements as set forth in Section 127 of the City Charter, Chapter Two of the Zoning and Development Code and the SSID Manual.

   Staff has found the Revocable Permit application complies with all submittal requirements for a Revocable Permit as applicable per the Zoning and Development Code and SSIDS Manual.

   Therefore, staff finds this criterion has been met.

FINDINGS OF FACT/CONCLUSIONS

After reviewing the Two R & D LLC application, for the issuance of a Revocable Permit to Allow the Installation of a Center Median that would include Landscaping and Subdivision Monument Signage in the proposed Aiguille Drive Right-of-Way as part of the Pinnacle Ridge Subdivision, Located East of Mariposa Drive in the Redlands, City Staff makes the following findings of fact, conclusions:

1. The review criteria in Section 21.02.180 (c) of the Grand Junction Zoning and Development Code have all been met.

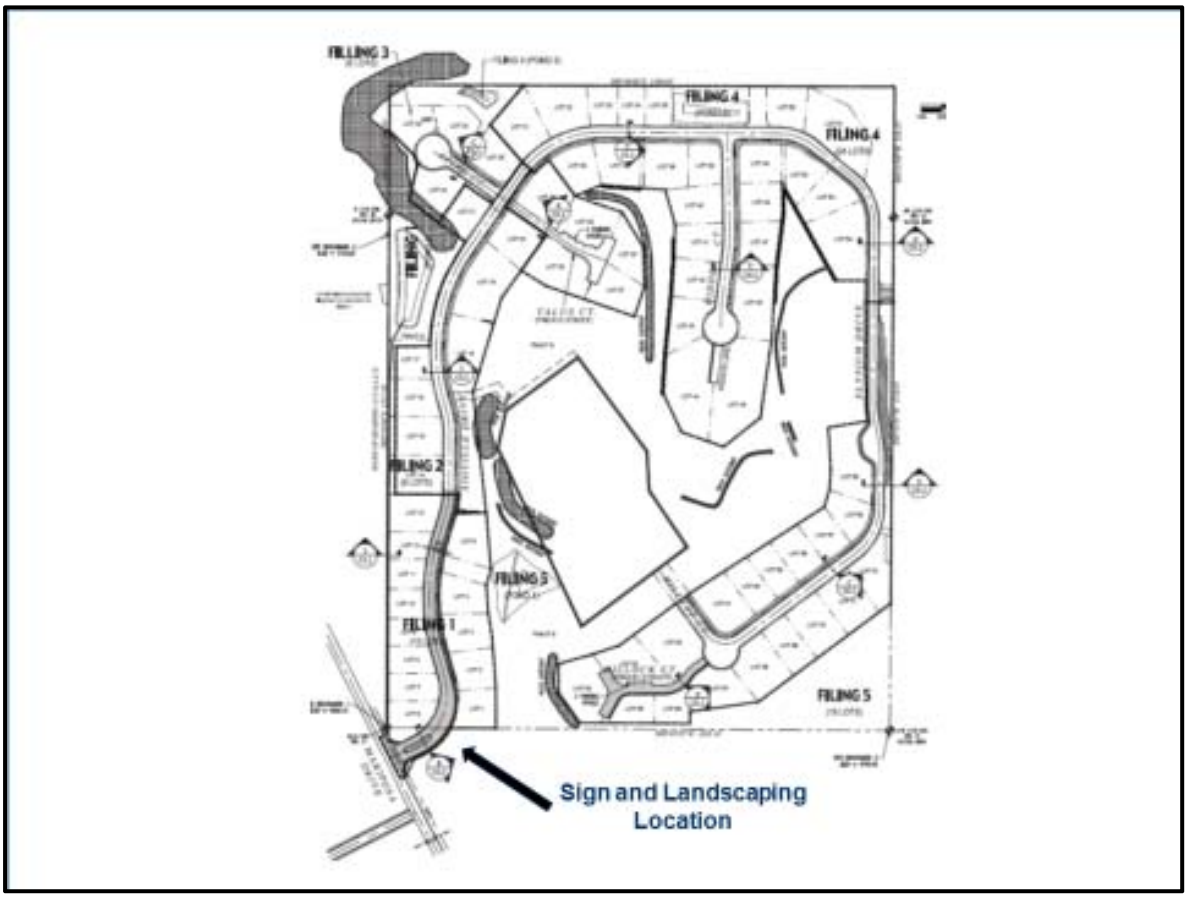
STAFF RECOMMENDATION:

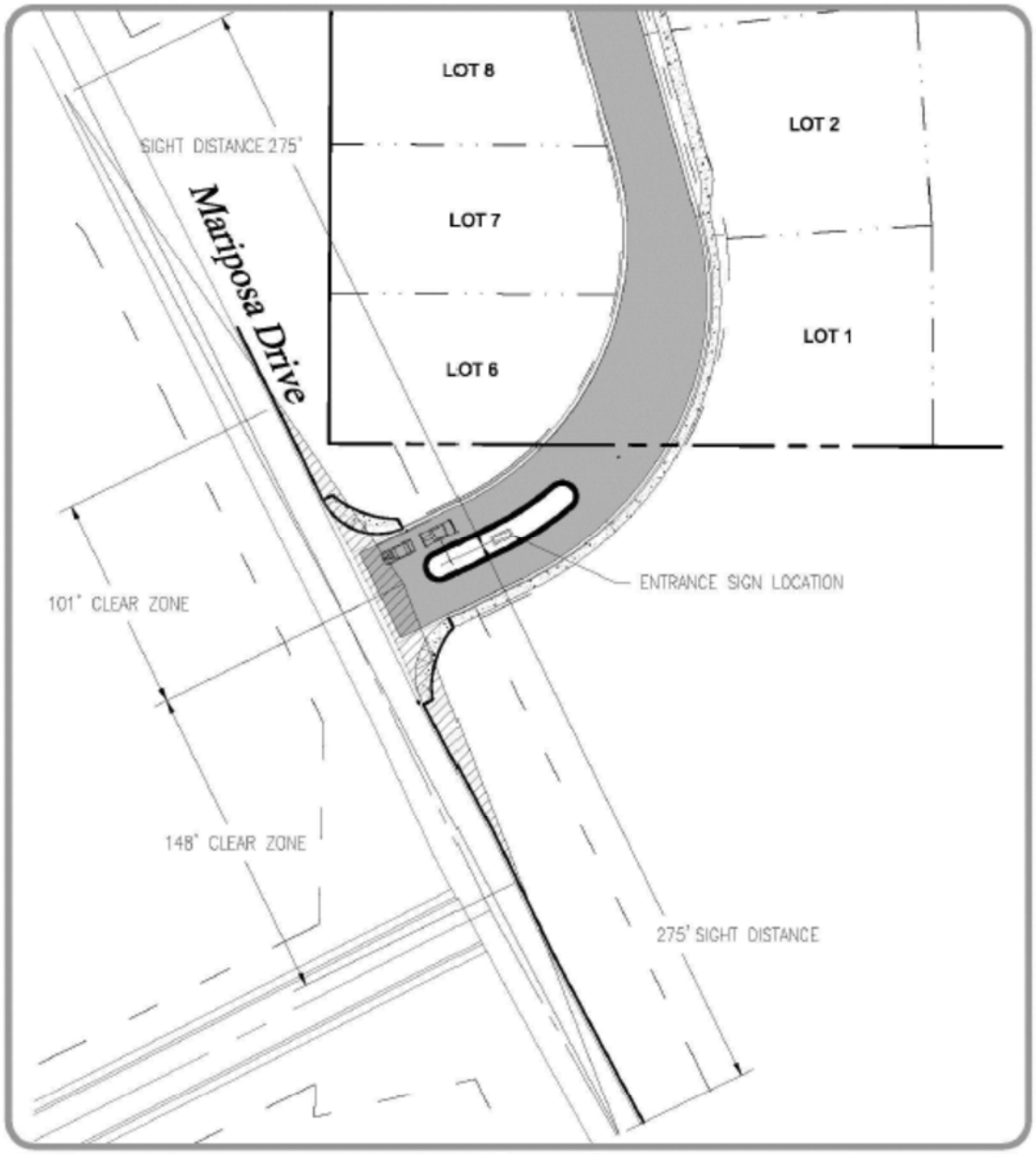
City Staff recommends a Revocable Permit be granted to Two R & D LLC, to Allow the Installation of a Center Median that would include Landscaping and Subdivision Monument Signage in the proposed Aiguille Drive Right-of-Way as part of the Pinnacle Ridge Subdivision, Located East of Mariposa Drive in the Redlands, with the findings of fact and conclusions as identified within the Staff Report.


Site Location Map
Broadway
(Hwy 340)
W. Ridges Blvd.
Site
Monument Road
Mariposa Drive
Redlands Mesa


Sign and Landscaping Location
Alguille Drive
Mariposa Drive
RABBITBRUSH CT
W RIDGES BLVD

Pinnacle Ridge Subdivision





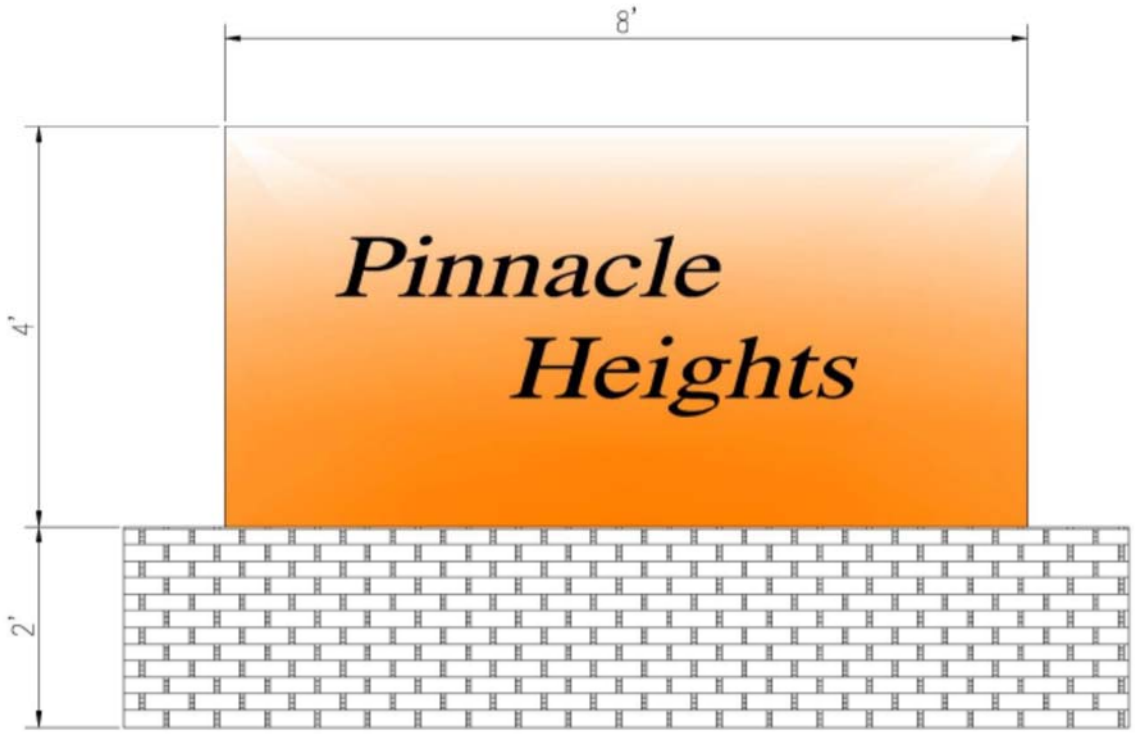
Pinnacle Ridge Subdivision
Sight Distance &
Entrance Sign Exhibit

PROJECT NO:	DATE:	DRAWN BY:	CHECKED BY:
F04-006	8/15/17	dls	JCA

- Civil & Consulting Engineering
- Construction Management & Site Planning
- Feasibility Studies Permit Expediting
- Environmental Scientists
- Project Management
- Hydrologic Studies

Prepared By
VORTEX
ENGINEERING, INC.
2394 Patterson Rd., Ste. 201
Grand Junction, CO 81505
(970) 245-9051

Proposed Signage Example



RESOLUTION NO. ___-17

**A RESOLUTION CONCERNING
THE ISSUANCE OF A REVOCABLE PERMIT TO
TWO R & D LLC
TO ALLOW THE INSTATION OF A CENTER MEDIAN THAT WOULD INCLUDE LANDSCAPING AND SUBDIVISION MONUMENT SIGNAGE IN THE PROIPOSED AIGUILLE DRIVE RIGHT-OF-WAY AS PART OF THE PINNACLE RIDGE SUBDIVISION, LOCATED EAST OF MARIPOSA DRIVE IN THE REDLANDS**

Recitals.

A. Two R & D LLC, hereinafter referred to as the Petitioner, represents it is the owner of the following described real property in the City of Grand Junction, County of Mesa, State of Colorado, to wit:

PINNACLE RIDGE PROPERTY LEGAL DESCRIPTION

A parcel of land situated in the W ½ NW ¼ of Section 21, Township 1 South, Range 1 West of the Ute Meridian, Mesa County, Colorado, being described as follows:

The south 10 acres of the NW ¼ NW ¼ and the SW ¼ NW ¼ of said Section 21.

EXCEPTING THEREFROM: Lots 1-9, Block 3 and the adjoining dedicated right-of-way know as Spur Drive and Lot 2, Block 2, Energy Center Subdivision, Phase I as platted and recorded in Plat Book 8 at Page 55 with a Reception Number 644620 of the Mesa County records.

Said parcels contains 45.11 +/- acres, more or less, as described.

B. The Petitioner has requested that the City Council of the City of Grand Junction issue a Revocable Permit to allow the Petitioner to install a Center Median that would include Landscaping and Subdivision Monument Signage within the following described public right-of-way as identified on Exhibit A:

A strip of land situate in the NW 1/4 SW 1/4 of Section 21, Township 1 South, Range 1 West of the Ute Meridian, City of Grand Junction, Mesa County, Colorado, being described as follows:

Commencing at the W 1/4 corner of said Section 21;
the basis of bearing is S89°43'25"E along the north line of said NW 1/4 SW 1/4;
thence S43°02'49"E a distance of 72.33 feet to the point of beginning;
thence N63°50'42"E a distance of 30.94 feet;

thence along the arc of a curve to the left 33.52 feet, having a central angle of 13°47'00" and a radius of 139.33 feet the chord of which bears N56°12'39"E a distance of 33.44 feet;
thence along the arc of a curve to the right 16.08 feet, having a central angle of 179°51'16" and a radius of 5.12 feet the chord of which bears S40°45'13"E a distance of 10.12 feet;
thence along the arc of a curve to the right 35.00 feet, having a central angle of 14°29'27" and a radius of 138.39 feet the chord of which bears S56°25'09"W a distance of 34.91 feet;
thence S63°50'37"W a distance of 32.05 feet;
thence along the arc of a curve to the right 16.08 feet, having a central angle of 184°22'37" and a radius of 5.00 feet the chord of which bears N72°13'48"W a distance of 14.20 feet to the point of beginning.
Said parcel contains 745 square feet more or less.

These descriptions were written by:
Michael W. Drissel PLS
118 Ouray Ave.
Grand Junction, CO. 81501

C. Relying on the information supplied by the Petitioner and contained in File No. SUB-2017-271 in the office of the City's Community Development Department, the City Council has determined that such action would not at this time be detrimental to the inhabitants of the City of Grand Junction.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF GRAND JUNCTION, COLORADO:

1. That the City Manager is hereby authorized and directed to issue the attached Revocable Permit to the above-named Petitioner for the purpose aforedescribed and within the limits of the public right-of-way aforedescribed, subject to each and every term and condition contained in the attached Revocable Permit.

PASSED and ADOPTED this _____ day of _____, 2017.

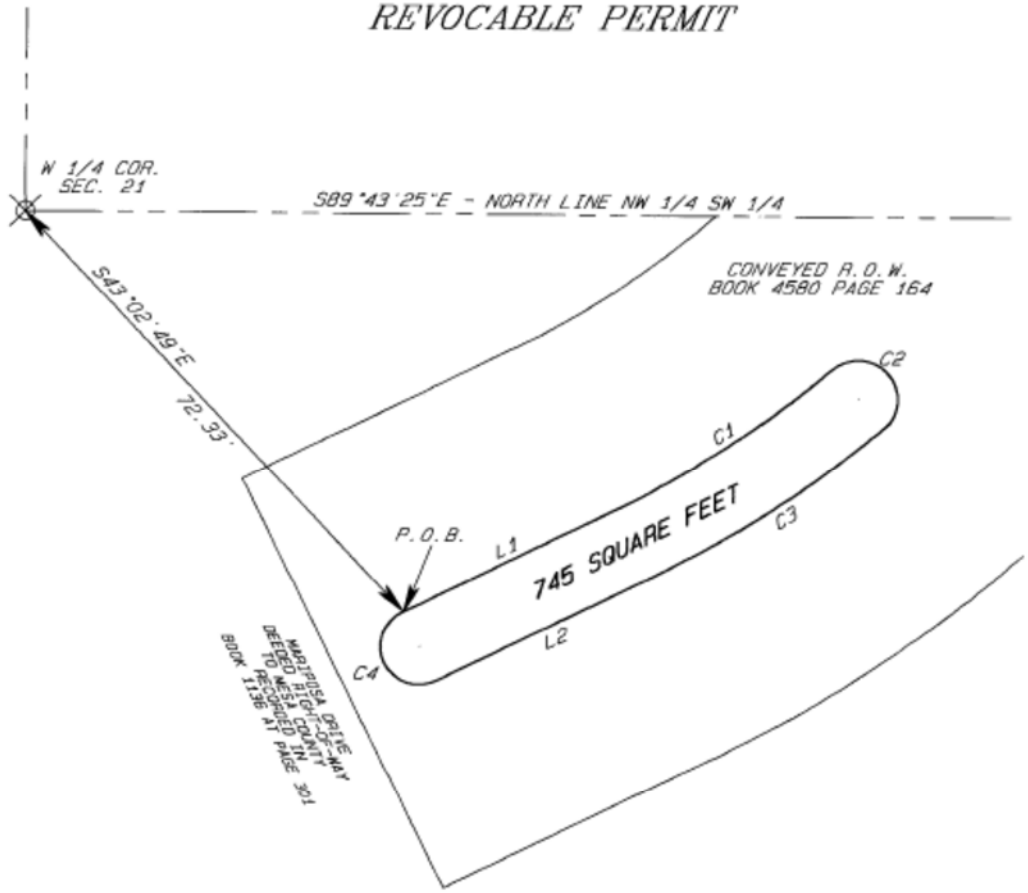
Attest:

_____
President of the City Council

_____
City Clerk

EXHIBIT A

REVOCABLE PERMIT



L/C	DELTA	ARC	RADIUS	CHORD	CHORD BEARING
L1		30.94'			N83°50'42"E
C1	13°47'00"	33.52'	139.33'	33.44'	N56°12'39"E
C2	179°51'16"	16.08'	5.12'	10.24'	S40°45'13"E
C3	14°29'27"	35.00'	138.39'	34.91'	S56°25'09"W
L2		32.05'			S63°50'37"W
C4	184°22'37"	16.08'	5.00'	10.20'	N72°13'48"W



N

SCALE 1" = 20'
LINEAR UNITS = U.S. SURVEY FEET
P.O.B. = POINT OF BEGINNING

D H SURVEYS, INC.
970-245-8749
JOB #129-04-03

REVOCABLE PERMIT

Recitals.

A. Two R & D LLC, hereinafter referred to as the Petitioner, represents it is the owner of the following described real property in the City of Grand Junction, County of Mesa, State of Colorado, to wit:

PINNACLE RIDGE PROPERTY LEGAL DESCRIPTION

A parcel of land situated in the W ½ NW ¼ of Section 21, Township 1 South, Range 1 West of the Ute Meridian, Mesa County, Colorado, being described as follows:

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EXCEPTING THEREFROM: Lots 1-9, Block 3 and the adjoining dedicated right-of-way know as Spur Drive and Lot 2, Block 2, Energy Center Subdivision, Phase I as platted and recorded in Plat Book 8 at Page 55 with a Reception Number 644620 of the Mesa County records.

Said parcels contains 45.11 +/- acres, more or less, as described.

B. The Petitioner has requested that the City Council of the City of Grand Junction issue a Revocable Permit to allow the Petitioner to install a Center Median that would include Landscaping and Subdivision Monument Signage within the following described public right-of-way as identified on Exhibit A:

A strip of land situate in the NW 1/4 SW 1/4 of Section 21, Township 1 South, Range 1 West of the Ute Meridian, City of Grand Junction, Mesa County, Colorado, being described as follows:

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thence S43°02'49"E a distance of 72.33 feet to the point of beginning;
thence N63°50'42"E a distance of 30.94 feet;
thence along the arc of a curve to the left 33.52 feet, having a central angle of 13°47'00" and a radius of 139.33 feet the chord of which bears N56°12'39"E a distance of 33.44 feet;
thence along the arc of a curve to the right 16.08 feet, having a central angle of 179°51'16" and a radius of 5.12 feet the chord of which bears S40°45'13"E a distance of 10.12 feet;
thence along the arc of a curve to the right 35.00 feet, having a central angle of 14°29'27" and a radius of 138.39 feet the chord of which bears S56°25'09"W a distance of 34.91 feet;
thence S63°50'37"W a distance of 32.05 feet;

thence along the arc of a curve to the right 16.08 feet, having a central angle of 184°22'37" and a radius of 5.00 feet the chord of which bears N72°13'48"W a distance of 14.20 feet to the point of beginning.
Said parcel contains 745 square feet more or less.

These descriptions were written by:
Michael W. Drissel PLS
118 Ouray Ave.
Grand Junction, CO. 81501

C. Relying on the information supplied by the Petitioner and contained in File No. SUB-2017-271 in the office of the City's Community Development Department, the City Council has determined that such action would not at this time be detrimental to the inhabitants of the City of Grand Junction.

NOW, THEREFORE, IN ACCORDANCE WITH THE ACTION OF THE CITY COUNCIL OF THE CITY OF GRAND JUNCTION, COLORADO:

There is hereby issued to the above-named Petitioner a Revocable Permit for the purpose aforedescribed and within the limits of the public right-of-way aforedescribed; provided, however, that the issuance of this Revocable Permit shall be conditioned upon the following terms and conditions:

1. The Petitioner's use and occupancy of the public right-of-way as authorized pursuant to this Permit shall be performed with due care or any other higher standard of care as may be required to avoid creating hazardous or dangerous situations and to avoid damaging public improvements and public utilities or any other facilities presently existing or which may in the future exist in said right-of-way.

2. The City hereby reserves and retains a perpetual right to utilize all or any portion of the aforedescribed public right-of-way for any purpose whatsoever. The City further reserves and retains the right to revoke this Permit at any time and for any reason.

3. The Petitioner, for itself and for its successors, assigns and for all persons claiming through the Petitioner, agrees that it shall defend all efforts and claims to hold, or attempt to hold, the City of Grand Junction, its officers, employees and agents, liable for damages caused to any property of the Petitioner or any other party, as a result of the Petitioner's occupancy, possession or use of said public right-of-way or as a result of any City activity or use thereof or as a result of the installation, operation, maintenance, repair and replacement of public improvements.

4. The Petitioner agrees that it shall at all times keep the above described public right-of-way in good condition and repair.

5. This Revocable Permit shall be issued only upon the concurrent execution by the Petitioner of an agreement that the Petitioner and the Petitioner's successors and assigns

shall save and hold the City of Grand Junction, its officers, employees and agents harmless from, and indemnify the City, its officers, employees and agents, with respect to any claim or cause of action however stated arising out of, or in any way related to, the encroachment or use permitted, and that upon revocation of this Permit by the City the Petitioner shall, at the sole cost and expense of the Petitioner, within thirty (30) days of notice of revocation (which may occur by mailing a first class letter to the last known address), peaceably surrender said public right-of-way and, at its own expense, remove any encroachment so as to make the aforedescribed public right-of-way available for use by the City or the general public. The provisions concerning holding harmless and indemnity shall survive the expiration, revocation, termination or other ending of this Permit.

6. This Revocable Permit, the foregoing Resolution and the following Agreement shall be recorded by the Petitioner, at the Petitioner's expense, in the office of the Mesa County Clerk and Recorder.

7. Permitee shall obtain all applicable Planning Clearance's from City Planning and Mesa County Building Department.

Dated this _____ day of _____, 2017.

The City of Grand Junction,
a Colorado home rule municipality

Attest:

_____ _____

City Clerk City Manager

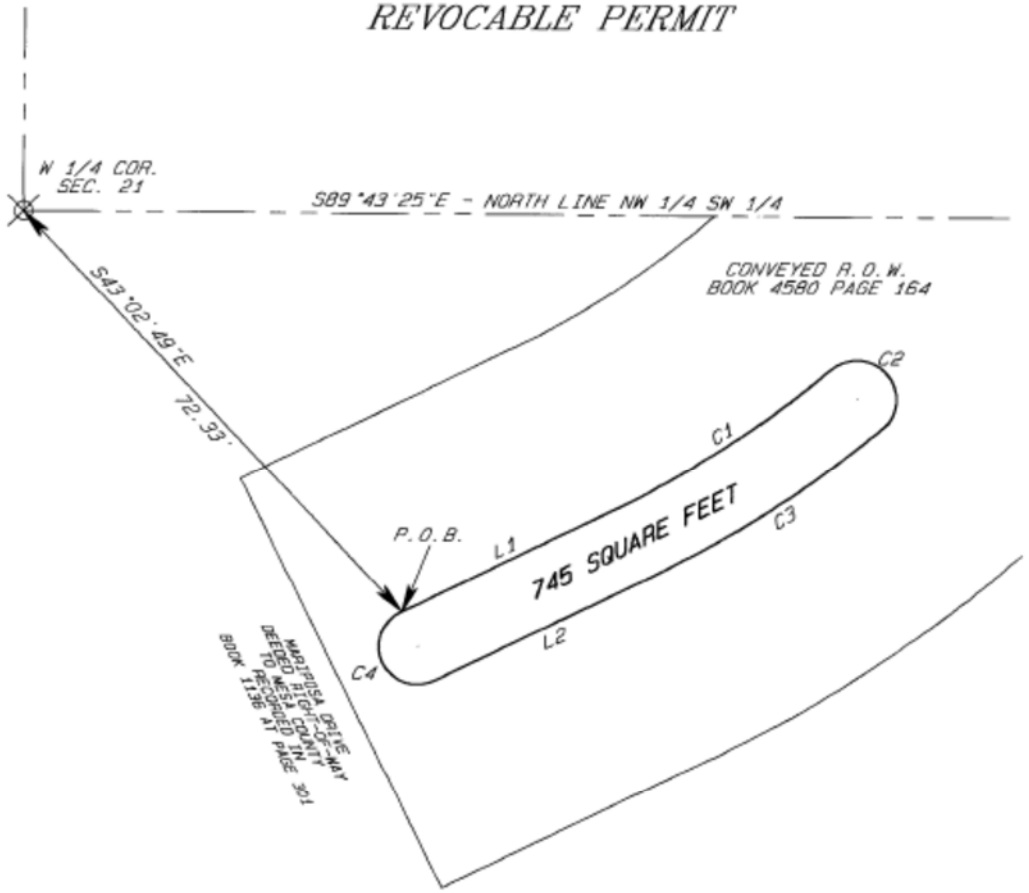
Acceptance by the Petitioner:

_____

Two R & D LLC
Robert W. Jones II, Managing Member

EXHIBIT A

REVOCABLE PERMIT



L/C	DELTA	ARC	RADIUS	CHORD	CHORD BEARING
L1		30.94'			N63°50'42"E
C1	13°47'00"	33.52'	139.33'	33.44'	N56°12'39"E
C2	179°51'16"	16.08'	5.12'	10.24'	S40°45'13"E
C3	14°29'27"	35.00'	138.39'	34.91'	S56°25'09"W
L2		32.05'			S63°50'37"W
C4	184°22'37"	16.08'	5.00'	10.20'	N72°13'48"W



N

SCALE 1" = 20'
LINEAR UNITS = U.S. SURVEY FEET
P.O.B. = POINT OF BEGINNING

D H SURVEYS, INC.
970-245-8749
JOB #129-04-03

AGREEMENT

Two R & D LLC, for itself and for its successors and assigns, does hereby agree to:

(a) Abide by each and every term and condition contained in the foregoing Revocable Permit;

(b) Indemnify and hold harmless the City of Grand Junction, its officers, employees and agents with respect to all claims and causes of action, as provided for in the approving Resolution and Revocable Permit;

(c) Within thirty (30) days of revocation of said Permit by the City Council, peaceably surrender said public right-of-way to the City of Grand Junction;

(d) At the sole cost and expense of the Petitioner, remove any encroachment so as to make said public right-of-way fully available for use by the City of Grand Junction or the general public.

Dated this _____ day of _____, 2017.

_____
Two R & D LLC
Robert W. Jones II, Managing Member

State of Colorado)
) ss.
County of Mesa)

The foregoing Agreement was acknowledged before me this_____ day of _____, 2017, by Robert W. Jones II, Managing Member, Two R & D LLC.

My Commission expires:_____
Witness my hand and official seal.

_____
Notary Public

Scott Peterson

From: Tamra Allen
Sent: Wednesday, November 08, 2017 8:14 AM
To: Scott Peterson
Subject: RE: Pinnacle Ridge landscaping - Xeric Plants Approval

Scott – Thank you for previewing the request by Pinnacle Ridge for a landscaping plan using xeric or low water use plants. In accordance with Section 21.06.040 (b) (19) of the Zoning and Development Code, only the Planning Director may approve xeric or low water use plants. The landscaping plan proposed for Pinnacle Ridge includes xeric and low water plants with no long term water supply but will provide for a temporary drip irrigation system that will be installed with irrigation water being provided by trucking it to the site and a pump will pressurize the system. The Plan includes the provision that watering will continue to occur until all vegetation is firmly established. This landscaping plan was prepared and designed by a Licensed Landscape Architect. As such, based on staff's and that of the Licensed Landscape Architect that this plan meets the intent of the City's landscaping code, I hereby approve the plan.

Respectfully,

Tamra Allen, AICP
Community Development Director
City of Grand Junction
P: 970.256.4023
tamraa@gjcity.org

From: Scott Peterson
Sent: Tuesday, November 7, 2017 4:56 PM
To: Tamra Allen <tamraa@gjcity.org>
Subject: RE: Pinnacle Ridge landscaping - Xeric Plants Approval

Probably just a simple email that I will add to Energov.

Scott

From: Tamra Allen
Sent: Tuesday, November 07, 2017 4:51 PM
To: Scott Peterson <scottp@gjcity.org>
Subject: RE: Pinnacle Ridge landscaping - Xeric Plants Approval

Thanks, Scott. What is the best way to memorialize this approval?

Tamra Allen, AICP
Community Development Director
City of Grand Junction
P: 970.256.4023
tamraa@gjcity.org

From: Scott Peterson
Sent: Tuesday, November 7, 2017 4:21 PM

To: Tamra Allen <tamraa@gjcity.org>
Subject: Pinnacle Ridge landscaping - Xeric Plants Approval

Tamra,

See attached Landscaping Plan for Pinnacle Ridge for your review and approval. In accordance with Section 21.06.040 (b) (19) of the Zoning and Development Code, only the Planning Director may approve xeric or low water use plants. No irrigation water is being provided to the subdivision, however the applicant is proposing a temporary drip irrigation system that will be installed with irrigation water trucked to the site and a pump will pressurize the system. The Plan states that the landscaping areas will be maintained for 3 years or until all vegetation is firmly established.

For this type of development, there is not a formula or requirement that you have to have so many trees or shrubs, etc. Section 21.06.060 (h) states that retention and detention ponds shall be located, designed, maintained, planted and managed to serve as visual amenities, entryway features, or opportunities for passive recreation within the subdivision.

My recommendation will be to approve the Landscaping Plan as submitted since the Licensed Landscape Architect has designed and approved the Plan and the intent of the Code is being met.

Thank you.

Scott

Final Plan of Subdivision

Pinnacle Ridge Subdivision

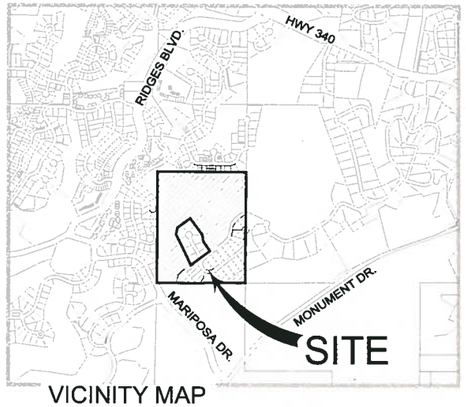
Filing 1

Grand Junction, Colorado

Green line Responses 10-2-17

LEGEND

- EXISTING CONTOUR (4560)
- PROPERTY BOUNDARY
- OLD PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE (W)
- EXISTING WATER LINE
- PROPOSED IRRIGATION (IRR)
- EXISTING FENCE
- PROPOSED DRY UTILITIES (BY OTHERS) (EGTC)
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- 4550.00 LOT CORNER SPOT ELEVATION
- G 4550.00 PROPOSED SWALE/BERM ELEVATION
- FL 4550.00 PROPOSED FL CURB/V-PAN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER METER
- PROPOSED IRRIGATION RISER
- PROPOSED IRRIGATION VALVE
- CO PROPOSED IRRIGATION CLEANOUT
- 4550.00 EXISTING CONTOUR LABEL
- 4550.00 PROPOSED CONTOUR LABEL



VICINITY MAP

SHEET NUMBER	SHEET TITLE
C0.0	COVER
C0.1	PROJECT NOTES
C0.2	OVERALL SITE PLAN AND FILING PLAN
C1.0	COMPOSITE SITE PLAN - LAYOUT AND GEOMETRY PLAN
C1.1	COMPOSITE SITE PLAN - SIGNAGE & LIGHTING PLAN
C2.0 - C2.2	COMPOSITE SITE PLAN - GRADING PLAN, ROAD CROSS SECTIONS
C3.0	COMPOSITE SITE PLAN - OVERALL UTILITY AND WATER PLAN
C4.0	ROAD AND SEWER PLAN AND PROFILE - AIGUILLE DRIVE
C4.1	ROAD AND SEWER PLAN AND PROFILE - SPIRE CT. & TALUS CT.
C5.0 - C5.1	STORM SEWER PLAN & PROFILE
C6.0 - 6.2	CONSTRUCTION STORM WATER MANAGEMENT PLAN

ABBREVIATION LEGEND

&	AND	MCSM	MESA COUNTY SURVEY MONUMENT
℄	CENTERLINE	MFG'S	MANUFACTURER'S
Ø	DIAMETER	M.P.E.	MULTI-PURPOSE EASEMENT
'	FEET	MPH	MILES PER HOUR
"	INCHES	NE COR	NORTHEAST CORNER
±	PLUS OR MINUS	N/ASSE	NORTH AND SOUTH AND EAST
APPROX	APPROXIMATELY	NO	NUMBER
BRL	BUILDING RESTRICTION LINE	N.T.S	NOT TO SCALE
BVCS	BEGIN VERTICAL CURVE STATION	PROP	PROPOSED
BVCE	BEGIN VERTICAL CURVE ELEVATION	PRV	PRESSURE REDUCING VALVE
CB	CATCH BASIN	PSI	POUNDS PER SQUARE INCH
CL III	CLASS 3	PVC	POLYVINYL CHLORIDE
CMP	CORRUGATED METAL PIPE	PVI	POINT OF VERTICAL INTERSECTION
CR	CURB RETURN	PVMT	PAVEMENT
CT	COURT	O.C. E.W	ON CENTER EACH WAY
DR	DRIVE	RCP	REINFORCED CONCRETE PIPE
EL.	ELEVATION	RD	ROAD
ELEV	ELEVATION	RET. WALL	RETAINING WALL
EX	EXISTING	R.O.W	RIGHT-OF-WAY
EXIST	EXISTING	RT	RIGHT
EVCS	END VERTICAL CURVE STATION	SCH	SCHEDULE
EVCE	END VERTICAL CURVE ELEVATION	SD	STORM DRAIN
FL	FLOWLINE	SEC	SECTION
FH	FIRE HYDRANT	SF	SQUARE FEET
FT	FEET	SQ. FT	SQUARE FEET
GPM	GALLONS PER MINUTE	SS	SANITARY SEWER
GV	GAS VALVE	ST.	STREET
G.V.A.L.C.S	GRAND VALLEY ALIQUOT LOCAL COORDINATE SYSTEM	STA	STATION
		THRU	THROUGH
HGL	HYDRAULIC GRADE LINE	TYP	TYPICAL
HI PT	HIGH POINT	TW	TOP OF WALL
HP	HORSE POWER	U.W.C.D	UTE WATER CONSERVANCY DISTRICT
INV	INVERT	VC	VERTICAL CURVE
LT	LEFT	VCP	VITRIFIED CLAY PIPE
MAX	MAXIMUM	W/	WITH
MIN	MINIMUM	WM	WATER METER
MH	MANHOLE	WV	WATER VALVE

UTILITY PROVIDERS INFORMATION

UTILITY	PROVIDER	PHONE NUMBER
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	REDLANDS IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION

811 Know what's below. Call before you dig.

Colorado 811
1-800-922-1987
co811.org

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM LOTS 1 – 9, BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK 8 AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = RSF-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'
   REAR = 25'
   SIDE = 7'
7. PROPERTY APPLICANT: TWO R&O, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE

CITY DEVELOPMENT ENGINEER _____ DATE _____

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18826

COLORADO LICENSED 18826 10-16-17 PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION FINAL PLAN

NO.	DATE	REV. DATE	COMMENT
1	10/2/17		REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017 DLS BY

Cover
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/08/17
SCALE:
CAD ID: 0.0cover-f1.dwg

SHEET
C0.0

LOCAL CONTACT INFORMATION
GRAND JUNCTION DEVELOPMENT INSPECTOR MARK BARSLUND 970-201-1362

GENERAL NOTES:

1 THESE GENERAL NOTES SHALL BE APPLICABLE TO ALL SHEETS WITHIN THIS SET OF DRAWINGS
2 ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE GOVERNING AGENCY. CONTRACTOR MUST CONTACT THE APPROPRIATE AGENCY PRIOR TO CONSTRUCTION IN THE RIGHT-OF-WAY.
3 PLANNING PERMIT APPROVAL MUST BE OBTAINED BY INDIVIDUAL LOT OWNERS PRIOR TO CONSTRUCTION. THE LOT OWNER MUST SUBMIT A PROPOSED DRAINAGE PLAN OF EACH SITE TO THE GOVERNING AGENCY FOR REVIEW
4 EXISTING WATER, SANITARY, AND STORM SEWER LINES ARE SHOWN BASED ON BEST AVAILABLE INFORMATION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS SPECIFICALLY AT CONNECTION POINTS AND AT POTENTIAL POINTS OF CONFLICT. ALL INFORMATION SHALL BE SUPPLIED TO THE ENGINEER PRIOR TO CONSTRUCTION
5 CONTRACTOR SHALL BE RESPONSIBLE FOR:
(A) CONTACTING THE APPROPRIATE AGENCY TO ARRANGE A PRE-CONSTRUCTION MEETING AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
(B) OBTAINING ALL PERMITS FOR STREET CUTS, UTILITIES CONSTRUCTION AND GRADING. THE COST OF ALL PERMITS SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S BID.
(C) COORDINATING WITH ALL UTILITY COMPANIES INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. ADVANCE COORDINATION BY THE CONTRACTOR TO ALL UTILITY COMPANIES INVOLVED SHALL BE REQUIRED FOR ANY SERVICE INTERRUPTIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER, PROJECT MANAGER AND THE UTILITY COMPANY 48 HOURS PRIOR TO START OF CONSTRUCTION. NO UTILITY TAPS SHALL BE MADE WITHOUT WRITTEN AUTHORIZATION BY THE UTILITY COMPANY AND THE CITY.
(D) VERIFICATION OF ALL OTHER UNDERGROUND FACILITIES WHICH MAY BE AFFECTED BY THIS PROJECT AND REPAIR THEREOF IN CASE OF DAMAGE.
(E) CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO OBTAIN TEMPORARY POWER AND TELEPHONE SERVICE DURING CONSTRUCTION. ALL COST FOR TEMPORARY SERVICES SHALL BE THE CONTRACTORS RESPONSIBILITY
(F) RESTORATION OF DISTURBED STREET PAVEMENT AS REQUIRED BY THE CITY AND THE STATE'S DEPARTMENT OF TRANSPORTATION.
(G) ALL PROJECT SAFETY INCLUDING, BUT NOT LIMITED TO, TRENCH EXCAVATION AND SHORINGS, TRAFFIC CONTROL, AND SECURITY
(H) COORDINATING ALL WORK AND INSPECTIONS AS REQUIRED BY THE CITY OR THE STATE
(I) OBTAINING NECESSARY PERMITS FROM THE DEPARTMENT OF TRANSPORTATION FOR ALL WORK IN AND ADJACENT TO STATE RIGHT-OF-WAY.
(J) RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE. AS-BUILTS SHALL INCLUDE UNDERGROUND UTILITIES AS WELL AS ANY FIELD MODIFICATIONS OF THE PLANS
(K) KEEPING ADJACENT STREETS FREE AND CLEAN OF ALL DEBRIS AND DIRT FROM THE JOB SITE.
(L) THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED AT THE JOB SITE AT ALL TIMES. EACH SUBCONTRACTOR (INCLUDING THE SURVEYOR) SHALL HAVE A SIGNED COPY OF THE PLANS AND THE APPROPRIATE STANDARDS AND SPECIFICATIONS IN HIS POSSESSION AT ALL TIMES WHEN IMPROVEMENTS ARE BEING INSTALLED.
(M) THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR COMPLETION OF INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED BY NOTE TO BE "PROVIDED," "INSTALLED" OR "CONSTRUCTED" UNLESS SPECIFICALLY NOTED OTHERWISE.
(N) CONTRACTOR WILL HAVE A COPY OF APPROVED SOILS REPORTS FOR PAVEMENT DESIGN AND COMPACTION REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL RECOMMENDATIONS CONTAINED WITHIN THE SOILS REPORT
(O) VERIFYING THE ACCURACY OF THE VERTICAL BENCHMARK INFORMATION. CONTRACTOR SHALL USE BENCHMARKS AND DATUMS SHOWN HEREON TO SET PROJECT BENCHMARK(S), BY RUNNING A LEVEL LOOP BETWEEN AT LEAST TWO BENCHMARKS, AND SHALL PROVIDE SURVEY NOTES OF SUCH TO PROJECT ENGINEER PRIOR TO COMMENCING CONSTRUCTION
6 IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY
7 TWO WORKING DAYS BEFORE YOU DIG, GRADE, OR EXCAVATE, CALL THE APPROPRIATE UTILITY NOTIFICATION CENTER FOR THE MARKING OF MEMBER UNDERGROUND UTILITIES. THE UTILITIES SHOWN ON THESE PLANS ARE PLOTTED BASED ON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION, AND REPAIR OF ANY EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. ANY UTILITY DAMAGED BY CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
8 THIS PLAN WAS PREPARED BASED ON SURVEY INFORMATION PROVIDED BY A LICENSED SURVEYOR. VORTEX ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR ERRORS DUE TO INCOMPLETE OR INACCURATE SURVEY INFORMATION
9 SUBGRADE DENSITY SHALL BE TESTED BY A PRIVATE SOILS TESTING FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING BASE COURSE OR CONCRETE. BASE COURSE DENSITY SHALL ALSO BE TESTED BY THE PRIVATE GEOTECHNICAL FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING PAVEMENT
10 THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT

DEMOLITION NOTES:

1 THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM ALL UTILITY COMPANIES PRIOR TO ANY DEMOLITION WORK OR DISCONNECTION OF ANY SERVICE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANIES.
2 ALL UTILITIES INCLUDING STORM SEWER, SANITARY SEWER AND WATER MAINS SHALL BE COMPLETELY REMOVED FROM THE GROUND UNLESS OTHERWISE SPECIFIED. NO EXISTING UTILITY, STRUCTURES OR UNDERGROUND IMPROVEMENT SHALL BE ABANDONED IN PLACE WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER, OWNER AND GOVERNING AGENCY.
3 THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES WHICH ARE TO REMAIN IN SERVICE, INCLUDING BUT NOT LIMITED TO GAS, ELECTRIC, CABLE AND TELEPHONE SERVICES
4 ALL STRUCTURE INCLUDING BASEMENT WALLS AND FLOOR SLABS SHALL BE COMPLETELY REMOVED FROM THE SITE
5 ALL DEMOLITION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS INCLUDING BUT NOT LIMITED TO HAZARDOUS MATERIALS, DISPOSAL, HOURS OF OPERATION
6 ALL EROSION CONTROL MEASURES DESIGNED FOR THE SITE PERIMETER OR TO PROTECT EXISTING IMPROVEMENTS SHALL BE IN PLACE PRIOR TO THE START OF ANY DEMOLITION ACTIVITIES
7 THE CONTRACTOR SHALL OBTAIN AND REVIEW THE ENVIRONMENTAL STUDIES PROVIDED BY THE OWNER AND TAKE ALL NECESSARY PRECAUTIONS FOR ENVIRONMENTAL SAFETY DURING DEMOLITION ACTIVITIES. IT SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE EXISTING STRUCTURES FOR ANY OTHER CONDITIONS WHICH MAY AFFECT THE DEMOLITION PROCEDURES.
8 ANY CONDITIONS WHICH MAY BE UNCOVERED DURING THE PROCESS OF DEMOLITION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER IMMEDIATELY. ADDITIONAL EXPENSES INCURRED BY UNFORESEEN CONDITIONS SHALL BE APPROVED BY THE OWNER PRIOR TO THE ADDITIONAL WORK.
9 IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE PROPERTY FOR THE TYPE AND QUANTITY OF DEMOLITION REQUIRED, PRIOR TO SUBMISSION OF A BID
10 THE CONTRACTOR SHALL HAVE WATER ON SITE FOR DUST ABATEMENT AT ALL TIMES DURING DEMOLITION ACTIVITIES
11 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF ALL DEBRIS. BURNING ON SITE SHALL NOT BE PERMITTED. NO DEBRIS INCLUDING CONCRETE OR ASPHALT MAY BE PLACED IN ANY FILL AREA
12 ANY DAMAGE TO PUBLIC UTILITIES OR ADJACENT PROPERTIES AS A RESULT OF THE DEMOLITION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. REPAIRS SHALL BE MADE IN A TIMELY MANNER TO THE SATISFACTION OF THE DAMAGED PARTY
13 THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH DOCUMENTATION OF THE CONDITION OF EXISTING IMPROVEMENTS TO REMAIN IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS NOT DOCUMENTED AS PRE-EXISTING. DOCUMENTATION SHALL BE PROVIDED PRIOR TO COMMENCEMENT OF WORK
14 ALL EXISTING UTILITY SERVICES SHALL BE COMPLETELY REMOVED FROM THE SITE. SERVICE SHALL BE CUT AND PLUGGED AT THE PROPERTY LINE IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS. THE DEMOLITION CONTRACTOR SHALL CLEARLY MARK ALL STUBS AT THE PROPERTY LINE WITH A 4 x 4 x 4 WOOD POST (MINIMUM 4' ABOVE GRADE, 4' BELOW GRADE) MARKED WITH THE SERVICE TYPE
15 ALL EXISTING WELLS SHALL BE CAPPED AND ABANDONED IN ACCORDANCE WITH ALL STATE REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL REQUIRED PROCEDURES, FILE ALL REQUIRED FORMS, APPLICATIONS AND REPORTS, AND OBTAIN ALL REQUIRED APPROVALS FROM THE STATE ENGINEER'S OFFICE.
16 DURING THE COURSE OF DEMOLITION, CONTRACTOR SHALL PROVIDE SECURITY FENCING AND OTHER PRECAUTIONARY SAFETY MEASURE AS NECESSARY

EROSION CONTROL NOTES:

1 REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS
2 AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL FACILITIES SHOWN.
3 ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORESEEN PROBLEMS OR IF THE PLAN DOES NOT FUNCTION AS INTENDED. A JURISDICTION REPRESENTATIVE MAY REQUIRE ADDITIONAL CONTROL DEVICES UPON INSPECTION OF PROPOSED FACILITIES
4 CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED, STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM TRAFFIC FROM THE SITE
5 ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE PAVED, SEEDED WITH NATIVE VEGETATION OR LANDSCAPED. REFER TO LANDSCAPE PLANS FOR SEED MIX AND PLANTING SPECIFICATIONS
6 EROSION CONTROL STRUCTURES BELOW SODDED AREAS MAY BE REMOVED ONCE SOD AND FINAL LANDSCAPING IS IN PLACE. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION. EROSION CONTROL IN PROPOSED PAVED AREAS SHALL REMAIN IN PLACE UNTIL PAVEMENT IS COMPLETE.
7 THIS PLAN IS ONLY TO BE USED FOR INSTALLATION OF EROSION CONTROL FACILITIES. DO NOT USE THIS PLAN FOR GRADING OR STORM SEWER CONSTRUCTION.
8 CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLE WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES WILL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS, MOVED WHEN NECESSARY AND REMOVED WHEN THE SITE IS PAVED.
9 INLET PROTECTION DEVICES SHALL BE INSTALLED IMMEDIATELY UPON INDIVIDUAL INLET'S BECOMING FUNCTIONAL
10 ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH GRADING AND/OR UTILITY CONSTRUCTION SHALL OBTAIN A COPY OF THE STORM WATER MANAGEMENT PLAN (SWMP) AND ANY OTHER DOCUMENTATION REGARDING "STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY" AND BECOME FAMILIAR WITH THEIR CONTENTS
11 THE TEMPORARY PARKING AND STORAGE AREA SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AREA, EQUIPMENT CLEANING AREA, EMPLOYEE BREAK AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES
12 ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, ETC.) SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT WITH STORM WATER DISCHARGES FROM THE SITE
13 MAINTAIN ON THE SITE OR HAVE READILY AVAILABLE SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS
14 FUGITIVE DUST BLOWING FROM THE SITE SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS ABSOLUTELY PROHIBITED
15 NO RUBBISH, TRASH, GARBAGE, OR OTHER SUCH MATERIALS SHALL BE DISCHARGED INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
16 ALL MEASURES PRESENTED IN THE SWMP SHALL BE INITIATED AS SOON AS PRACTICABLE.
17 IF THE GRAVEL CONSTRUCTION ENTRANCES ARE NOT EFFECTIVE IN REMOVING THE MAJORITY OF DIRT OR MUD FROM THE TIRES OF THE CONSTRUCTION VEHICLES, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP AND THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.
18 ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
19 IF SOIL STOCKPILING IS EMPLOYED ON THE SITE, SILT FENCES SHALL BE USED TO HELP CONTAIN THE SEDIMENT
20. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION
21 ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN 30 DAYS AFTER FINAL STABILIZATION. FINAL STABILIZATION HAS OCCURRED WHEN ALL SOIL DISTURBING ACTIVITIES ARE COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OF THE COVER FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES HAS BEEN EMPLOYED
22 THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) DUE TO GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT
23 ALL OFF-SITE CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR STORM DRAIN CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION

EROSION CONTROL MAINTENANCE NOTES:

1 REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS
2. ALL MEASURES CONTAINED IN THIS PLAN SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT, AND SHOULD BE CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING
3 STRAW BALE INLET PROTECTION DEVICES AND BARRIERS SHALL BE FIXED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR SHALL BE REPLACED IF THEY SHOW SIGNS OF DETERIORATION
4 ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, RE-SEEDED, AND WATERED AS NEEDED
5 SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-THIRD TO ONE-HALF THE HEIGHT OF THE SILT FENCE.
6 THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
7 THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND
8 OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES, SEDIMENT IN THE SEDIMENTATION BASINS SHALL NOT EXCEED THE SEDIMENTATION CLEANOUT LEVEL.
9 IF THE STONES IN THE GRAVEL CURB INLET SEDIMENT FILTERS BECOME CLOGGED WITH SEDIMENT, THE STONES MUST BE PULLED AWAY, CLEANED AND REPLACED
10 THE EMBANKMENT OF THE SEDIMENTATION BASIN SHALL BE CHECKED REGULARLY TO INSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT
11 THE TEMPORARY SEDIMENT TRAP AND SEDIMENTATION BASIN STRUCTURES SHALL BE CHECKED REGULARLY TO INSURE THAT THEY ARE STRUCTURALLY SOUND AND HAVE NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. SEDIMENT DEPOSITION SHALL BE REMOVED PERIODICALLY TO ENSURE FULL VOLUME IS AVAILABLE IN THE POND

GRADING NOTES:

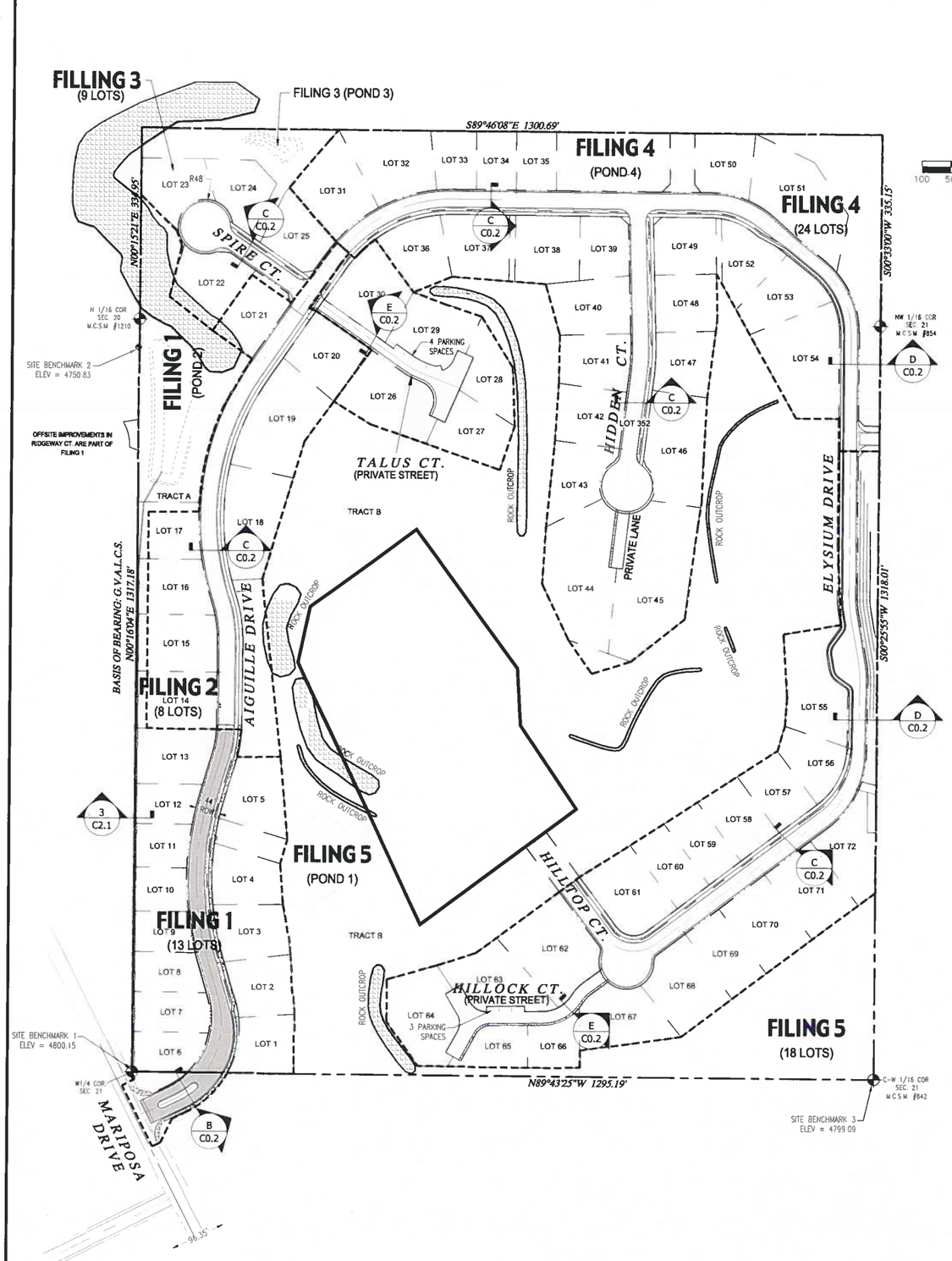
1 REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS
2 CONTOURS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY. CONTOUR INTERVAL = 1 FOOT UNLESS OTHERWISE NOTED ON PLANS
3 ALL DISTURBED AREAS THAT ARE UNSURFACED OR ARE NOT DESIGNATED AS LANDSCAPE AREAS ARE TO BE RE-SEEDED WITH DRY NATIVE GRASS SEED MIX.
4 IF DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE SOILS ENGINEER SHALL BE CONTACTED FOR RECOMMENDATIONS.
5 SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND STANDARDS OF THE GOVERNING AGENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED AS SPECIFIED BY THE GEOTECH REPORT. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED, LICENSED, SOILS ENGINEER, CERTIFYING THAT THE SUBBASE WITHIN THE AREAS TO BE PAVED HAS BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECS
6 NO PROPOSED SLOPE SHALL EXCEED TWO (2) HORIZONTAL TO ONE (1) VERTICAL, EXCEPT FOR DIVERSION DITCHES. ALL SLOPED AREAS MUST BE PROTECTED FROM EROSION.
7 IF STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS ARE STOCKPILED ON THE SITE, TOPSOIL MAY BE PLACED TO A HEIGHT OF FIVE FEET. SILT FENCE SHALL BE PLACED AROUND THE BASE OF THE STOCKPILE AND THE STOCKPILE SHALL BE SEEDED WITH NATIVE SEED MIX IMMEDIATELY AFTER STRIPPING OPERATIONS ARE COMPLETE.
8. ON-SITE MATERIALS SUITABLE FOR FILL BENEATH DRIVES, AND PARKING AREAS BEYOND 5' OF THE BUILDING SHALL BE COMPACTED IN ACCORDANCE WITH THE GUIDELINES PRESENTED IN THE SOILS REPORT
9 CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHY AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO ENSURE 0.75% MIN. SLOPE AGAINST ALL GUTTERS TO PREVENT PUDDLING. ANY DISCREPANCIES SHALL BE PROVIDED TO THE ENGINEER IN WRITING IMMEDIATELY
10 SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED AS SPECIFIED IN THE GEOTECH REPORT
11 SPOT ELEVATIONS REPRESENT FLOWLINE OR TOP OF ASPHALT UNLESS OTHERWISE NOTED.
12 SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS WHICH DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB AND GUTTER AND UTILITIES.
13 ALL UTILITIES (MANHOLES, VALVE COVERS, CLEANOUTS, VAULTS, BOXES, ETC.) SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT
14 ALL EARTH MOVING AND PLACEMENT OPERATIONS SHALL BE IN CONFORMANCE WITH THE RECOMMENDATIONS IDENTIFIED IN THE SOILS REPORT. THE CONTRACTOR SHALL HAVE A SIGNED AND SEALED COPY OF THE SOILS REPORT ON THE SITE AT ALL TIMES
15 THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES
16 WHERE NEW CURB AND GUTTER IS BEING CONSTRUCTED ADJACENT TO EXISTING ASPHALT, THE FOLLOWING SHALL APPLY PRIOR TO PLACEMENT OF ANY CONCRETE. THE CONTRACTOR SHALL HAVE A LICENSED SURVEYOR VERIFY GRADE AND CROSS SLOPE OF THE CURB AND GUTTER FORMS. THE CONTRACTOR SHALL SUBMIT THE SLOPES AND GRADES TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY SECTION WHICH DOES NOT CONFORM TO THE DESIGN OR TYPICAL CROSS SECTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CURB AND GUTTER POURS WITHOUT APPROVAL OF THE ENGINEER
17 MAINTENANCE OF ANY STORMWATER MANAGEMENT FACILITY SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL GUIDELINES FOR PRIVATE STORMWATER MANAGEMENT FACILITIES AND SHALL BE THE RESPONSIBILITY OF THE OWNER AND THE ASSIGNEES
18 SURFACE RESTORATION SHALL BE AS FOLLOWS.
(A) FINE GRADE ALL AREAS DISTURBED BY THE CONSTRUCTION OPERATIONS AFTER COMPLETION OF BACKFILLING AND COMPACTING. AREAS WHICH ARE TO RECEIVE PAVEMENTS, SURFACING, TOPSOIL OR LANDSCAPING SHALL BE GRADED AS REQUIRED TO ALLOW INSTALLATION OF THE SPECIFIC SURFACE TREATMENT. GRADE ALL OTHER AREAS TO MATCH THE EXISTING GROUND LINE.
(B) REPLACE AND REPAIR ANY SURFACE IMPROVEMENTS DAMAGED OR REMOVED CONFORM TO CITY STANDARDS & SPECIFICATIONS.
19. BITUMINOUS PAVEMENT
(A) BITUMINOUS PAVEMENT SHALL BE REMOVED TO CLEAN STRAIGHT LINES AT THE LOCATIONS INDICATED ON PLANS. WIDTH OF REMOVAL FOR PIPELINES SHALL BE KEPT TO A MINIMUM AS DICTATED BY TRENCHING OPERATIONS. BUT SHALL EXTEND AT LEAST 6 INCHES BEYOND THE LIMITS OF TRENCH EXCAVATION
(B) THE CUT SHALL BE MADE WITH PAVEMENT CUTTING WHEEL, SAW OR OTHER APPROVED METHOD, SO AS TO PROVIDE A REASONABLY STRAIGHT AND SQUARE EDGE

SANITARY SEWER NOTES:

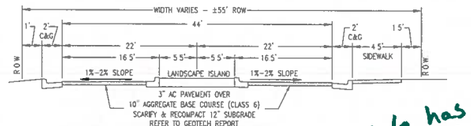
1 REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS
2 ALL GRAVITY SANITARY SEWER LINES SHALL BE POLYVINYL CHLORIDE PIPE (PVC), ASTM D-3034 SDR 35, SEWER LINE MATERIALS AND CONSTRUCTION SHALL CONFORM TO ASTM STANDARDS AND SPECIFICATIONS
3 DISTANCES FOR SANITARY SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. THEREFORE, DISTANCES SHOWN ON PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT
4 RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATION. PIPELINE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT AND STEEL SHIMS TO ADJUST THE MANHOLE FRAME TO THE REQUIRED FINAL GRADE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS. ALL FRAMES SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT
5 ALL SANITARY SEWER MAINS TESTING SHALL BE IN ACCORDANCE WITH LOCAL SPECIFICATIONS COPIES OF ALL TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER, THE OWNER AND THE GOVERNING AUTHORITY PRIOR TO THE START OF THE WARRANTY PERIOD
6 COMPACTION OF ALL TRENCHES WITHIN THE PROJECT SITE MUST BE ATTAINED AND COMPACTION RESULTS SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE
7 THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING STRUCTURES AND IMPROVEMENTS DURING INSTALLATION OF THE SANITARY SEWER LINE
8 THE CONTRACTOR SHALL POTHOLE THE EXISTING SEWER MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION
9 SANITARY SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY

STORM SEWER NOTES:

1 REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS
2 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING
(A) OBTAINING ALL REQUIRED PERMITS FROM THE CITY, THE DOT, OR ANY REGULATORY AUTHORITY AT THE CONTRACTOR'S COST INCLUDING PERMITS REQUIRED FOR WORK WITHIN THE PUBLIC RIGHT-OF-WAY
(B) RESTORATION OF ANY EXISTING IMPROVEMENTS INCLUDING (BUT NOT LIMITED TO) FENCES, SOD, LANDSCAPING, PAVEMENT, SPRINKLER SYSTEMS.
(C) VERIFICATION AND PROTECTION OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF THE PROJECT
(D) PROVIDING AS-BUILT DRAWINGS TO THE CITY AND ENGINEER
(E) ALL PERMITTING, DEVELOPMENT, CONNECTION, LOCATION INSPECTION AND TESTING FEES REQUIRED FOR STORM SEWER CONSTRUCTION
(F) VERIFYING ALL STANDARD DETAILS CONFORM TO CURRENT CITY/COUNTY STANDARDS AND SPECIFICATIONS
(G) FOR OBTAINING AND UNDERSTANDING ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THE CONSTRUCTION OF THE STORM SEWER IMPROVEMENTS
(H) FOR SCHEDULING AND COORDINATING ALL WORK WITH THE CONTRACTOR'S SUBCONTRACTORS
3 THE CONTRACTOR SHALL POTHOLE THE EXISTING STORM MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION
4 STORM SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY
5 THE CONTRACTOR SHALL COORDINATE HIS WORK SCHEDULE WITH THE DITCH COMPANY TO ENSURE ALL DITCH FACILITIES ARE CONSTRUCTED WITHOUT DISRUPTION TO DITCH COMPANY OPERATIONS
6 ALL STORM SEWER CONSTRUCTION SHALL BE IN CONFORMANCE WITH LOCAL STANDARDS AND SPECIFICATIONS
7 DISTANCES FOR STORM SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE OR INLET TO CENTER OF MANHOLE OR INLET. THEREFORE, DISTANCES SHOWN ON PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERT

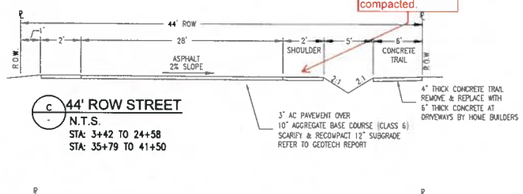


PROPOSED LAND USE TABLE			
SINGLE FAMILY LOTS (72 TOTAL)	934,944 S.F. – 21.46 AC	47.58%	OWNER: PRIVATE
TRACT A	57,533 S.F. – 1.32 AC	2.93%	OWNER: HOA
TRACT B: OPEN SPACE	658,275 S.F. – 15.11 AC	33.50%	OWNER: HOA
FUTURE TRACTS	122,687 S.F. – 2.82 AC	6.24%	OWNER: HOA
RIGHT-OF-WAY	191,434 S.F. – 4.39 AC	9.74%	OWNER: PUBLIC
TOTAL SITE AREA:	1,964,873 S.F. – 45.11 AC		



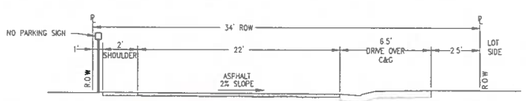
B — MARIPOSA DRIVE ENTRANCE
N.T.S.
STA: 0+24 TO STA: 1+52
(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 3+42)

Note has been added.

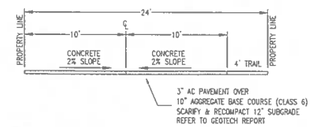


call out shoulder treatment all sections. 6" class 6 base, compacted.

C — 44' ROW STREET
N.T.S.
STA: 3+42 TO 24+58
STA: 35+79 TO 41+50



D — 34' ROW STREET
N.T.S.
STA: 24+58 TO 35+79



E — PRIVATE STREET & LANE DETAIL
N.T.S.
TRACTS C,F,J

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21 EXCEPTING THEREFROM LOTS 1 – 9 BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK 8 AT PAGE 55 WITH A RECEPTION NUMBER 644820 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = RSF-2
6. MINIMUM BUILDING SETBACKS (PRINCIPAL/ACCESSORY)
   STREET = 20'
   REAR = 25'
   SIDE = 7'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

LEGEND

■■■■■■■■■ FILING & LIMITS OF DEVELOPMENT DESIGNATION

PROJECT BENCHMARK

PROJECT BENCHMARK #1
LOCATED AT THE SOUTHWEST CORNER OF THE SITE.
MONUMENT ID: PLS 18480, THE W1/4 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO
NORTHING: 31563.18 EASTING: 78944.74 ELEV: 4800.15 (NAVD88)

PROJECT BENCHMARK #2
LOCATED AT THE WEST PROPERTY LINE, NEAR OUTLOOK COURT.
MONUMENT ID: NCSN #1210, THE N1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO
NORTHING: 32880.35 EASTING: 78949.85 ELEV: 4750.83 (NAVD88)

PROJECT BENCHMARK #3
LOCATED AT THE SOUTHEAST CORNER OF THE SITE.
MONUMENT ID: NCSN #842, THE W1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO
NORTHING: 31558.05 EASTING: 80239.95 ELEV: 4799.09 (NAVD88)

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 4-16-17 PROFESSIONAL ENGINEER

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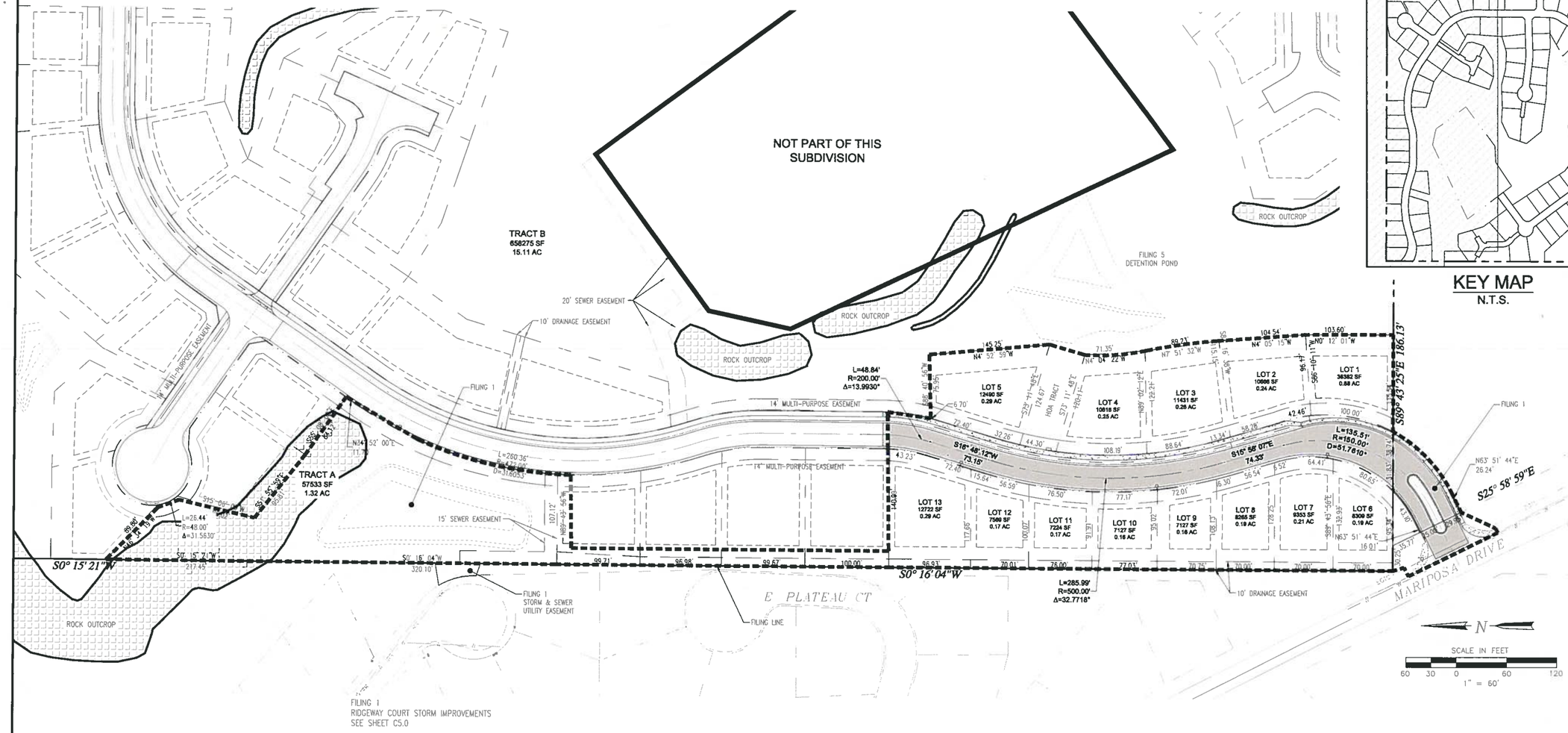
MAJOR SUBDIVISION
FINAL PLAN

REV #	REV DATE	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	BY
1	8/08/17	COMMENT	DLS

Filing Plan
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO. F04-006
DATE: 06/08/17
SCALE: 1" = 100'
CAD ID: 0.0cover-f1.dwg

-SHEET-
C0.2



KEY MAP
N.T.S.

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED James C. Atkinson 18828 8-15-17 PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

#	DATE	DESCRIPTION	BY
1	8/15/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DKS
	MOY DATE	COMMENT	

Composite Site Plan - Layout and Geometry Plan

Filing 1
Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROPOSED LAND USE TABLE

USE	AREA	AC	% OF TOTAL	OWNER
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. – 45.11 AC			

UTILITY PROVIDERS INFORMATION

UTILITY	PROVIDER	PHONE NUMBER
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT
5. FOR BENCHMARK SEE SHEET C0.2

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

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ACCEPTANCE BLOCK

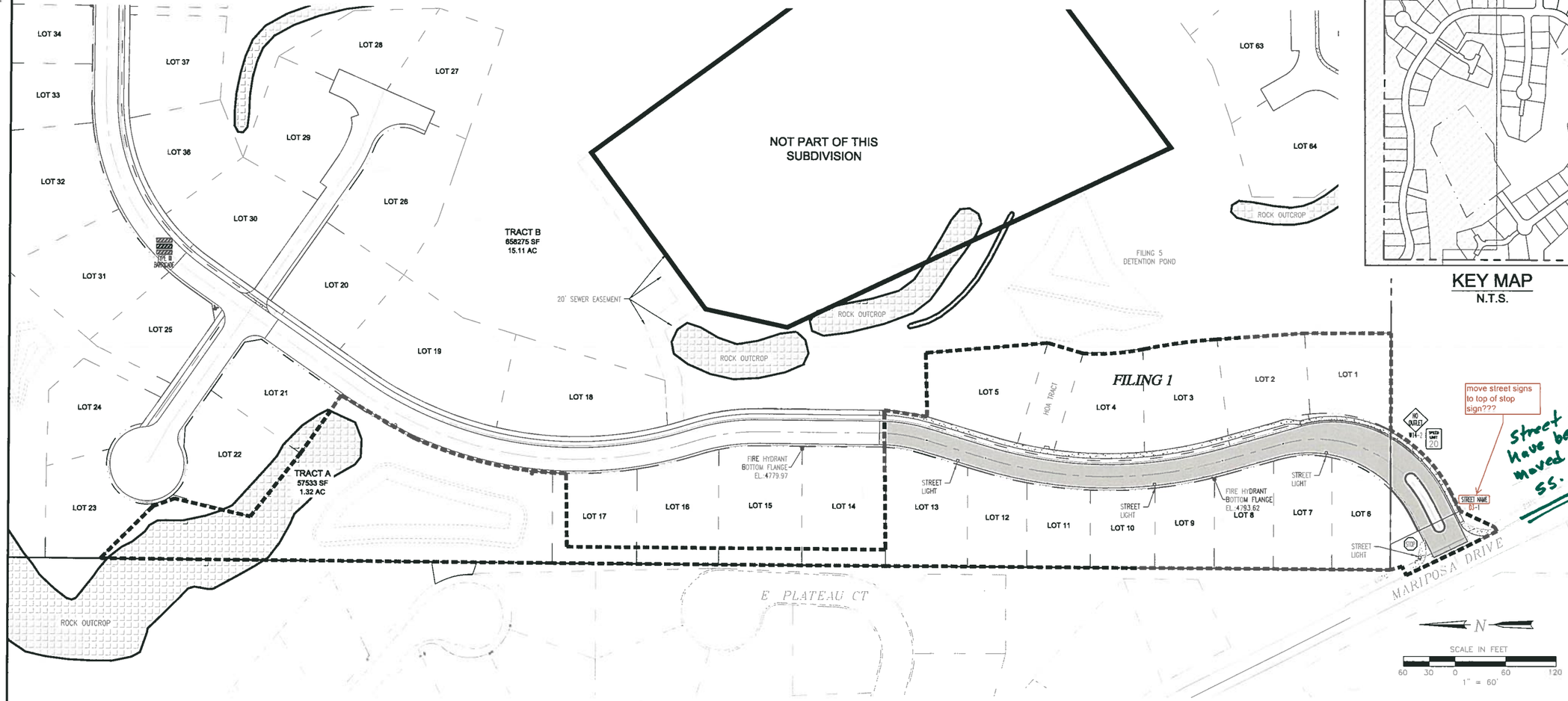
THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1" = 60'
CAD ID: 1.0layout-f1.dwg

~SHEET~
C1.0



KEY MAP
N.T.S.

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 8-15-17 PROFESSIONAL ENGINEER

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SIGN SCHEDULE

- STOP SIGN (30"x30") & D3-1 STREET SIGN COMBINED
- NO OUTLET SIGN W14-2
- FIXED TYPE III CDOT ROAD BARRICADES (3' x 8' SECTIONS, SEE STD. S-630-2)
- NO TRESPASSING SIGN
- STREET NAME SIGN D3-1
- SPEED LIMIT SIGN R2-1

ALL SIGN POST MOUNTING AND PLACEMENT SHALL BE PER MUTCD OR MESA COUNTY SPECIFICATIONS. CONTRACTOR TO CONTACT MESA COUNTY TRAFFIC PRIOR TO INSTALLATION OF SIGNS. (ph. 970-244-1817)

PROPOSED LAND USE TABLE

USE	AREA	AC	% OF TOTAL	OWNER
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CITY DEVELOPMENT ENGINEER _____ DATE _____

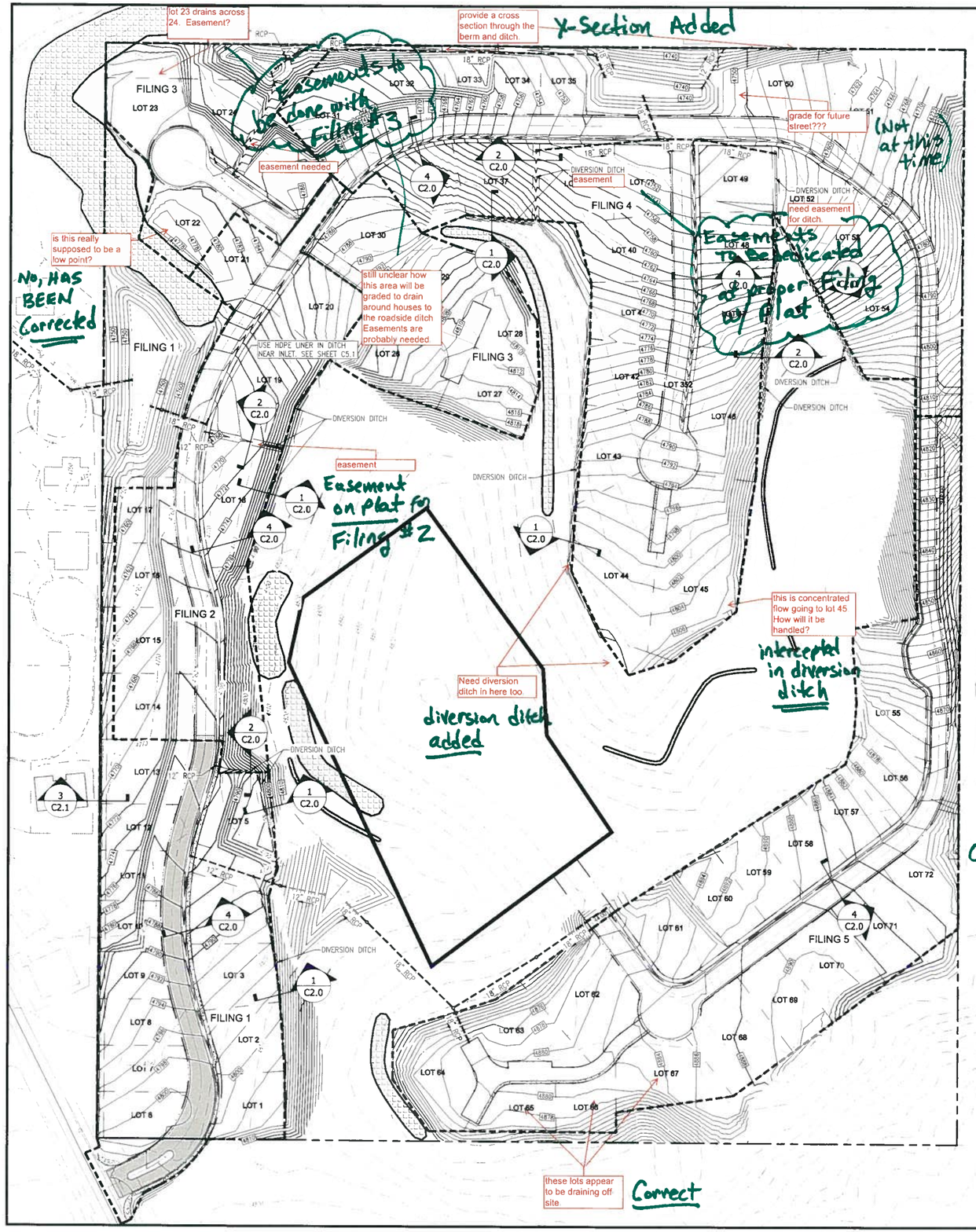
MAJOR SUBDIVISION
FINAL PLAN

REV	BY/ST	REV. DATE
1	REVISED PER CITY COMMENTS	DATED JULY 14, 2017
	COMMENT	DKS
		BT

Signage & Lighting Plan
Filing 1
Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1" = 60'
CAD ID: 1.0layout-f1.dwg

-SHEET-
C1.1



Address whether each lot is a type A, b, C, or something else and give typicals for each lot

TOP TABLE on sheet C2.1 calls out the LOT TYPE.

N

SCALE IN FEET
80 40 0 80 160
1" = 80'
CONTOUR INTERVAL = 2'

GRADING NOTE:

FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS

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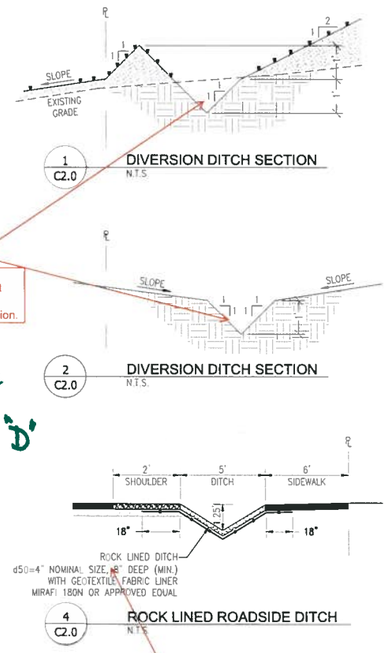
4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE STORM SEWER, SEE SHEET C5.0 & C5.1.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE FILING PLAN
8. REFER TO SHEETS C0.1, C6.0, THRU C6.2 FOR STORMWATER MANAGEMENT CONTROL PLANS AND EROSION CONTROL NOTES
9. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
10. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL.



Design in the drainage report and provide erosion protection.

Calc's added to Drainage Report Appendix 'D'

needs to be angular rip rap. River cobble won't work. specify.

Added.

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COLORADO LICENSE No. 18828

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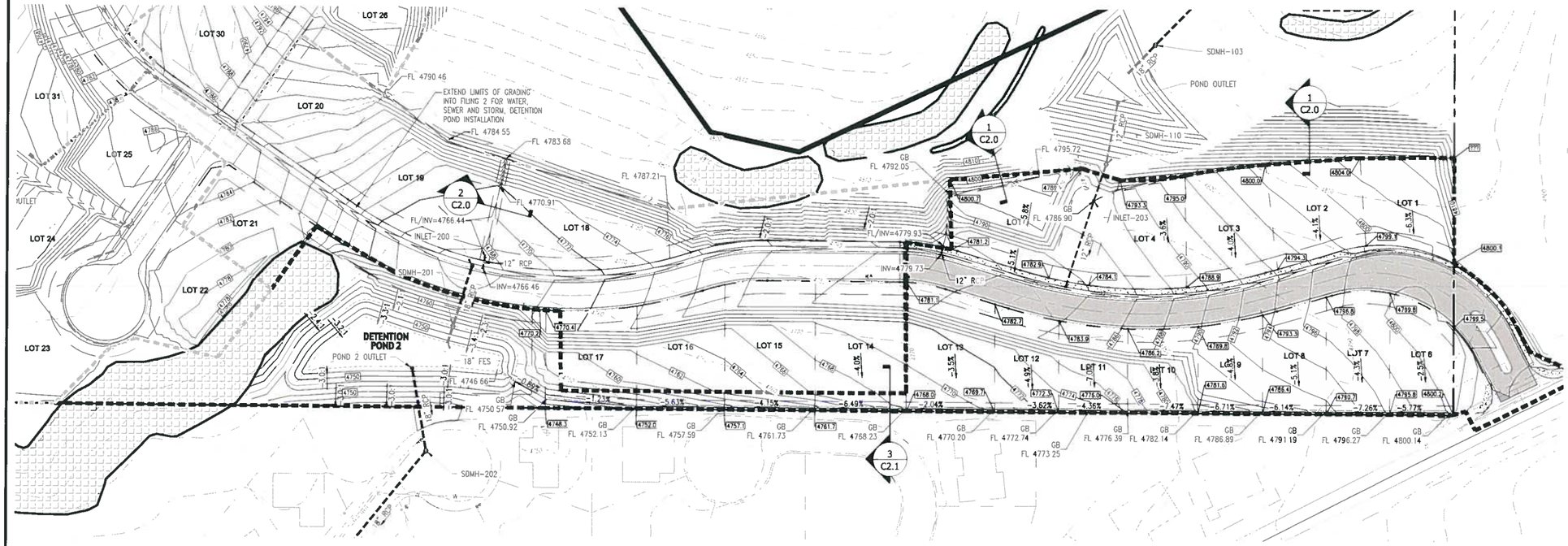
MAJOR SUBDIVISION
FINAL PLAN

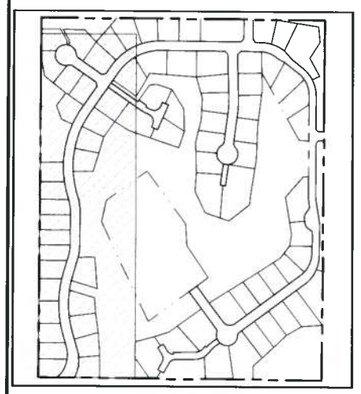
NO.	BY	REVISIONS	DATE
1	RSK	REVISED PER CITY COMMENT ROUND 1	DATED JULY 14, 2017
		COMMENT	

Overall Grading Plan Filings 1 - 5
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1"= 80'
CAD ID: 2.0grad-f1.dwg

~SHEET~
C2.0

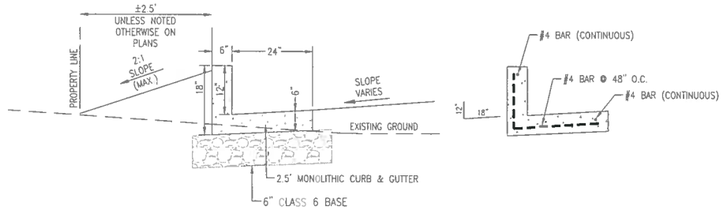




KEY MAP
N.T.S.

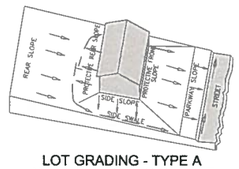
FILING 1 TOF TABLE

Lot	Grading	Min. TOF	Max. TOF
1	Type A	4801.00	4801.50
2	Type A	4798.70	4799.20
3	Type A	4793.30	4793.80
4	Type A	4787.90	4788.40
5	Type A	4783.60	4784.10
6	Type C	4801.60	4802.10
7	Type C	4799.30	4799.80
8	Type C	4796.00	4796.50
9	Type C	4792.50	4793.00
10	Type C	4789.00	4789.50
11	Type C	4786.00	4786.50
12	Type C	4784.30	4784.80
13	Type C	4783.10	4783.60

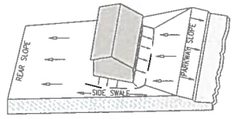


WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

3 C2.1 CONCRETE CURB & GUTTER DETAIL
N.T.S.



LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.



LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.

GRADING NOTE:

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5. FOR OFFSITE SANITARY SEWER, SEE SANITARY SEWER PLAN & PROFILE
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE FILING PLAN.
8. REFER TO SHEETS C0.1, C6.0, THRU C6.2 FOR STORMWATER MANAGEMENT CONTROL PLANS AND EROSION CONTROL NOTES.
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COLORADO LICENSED
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18828
8-15-17
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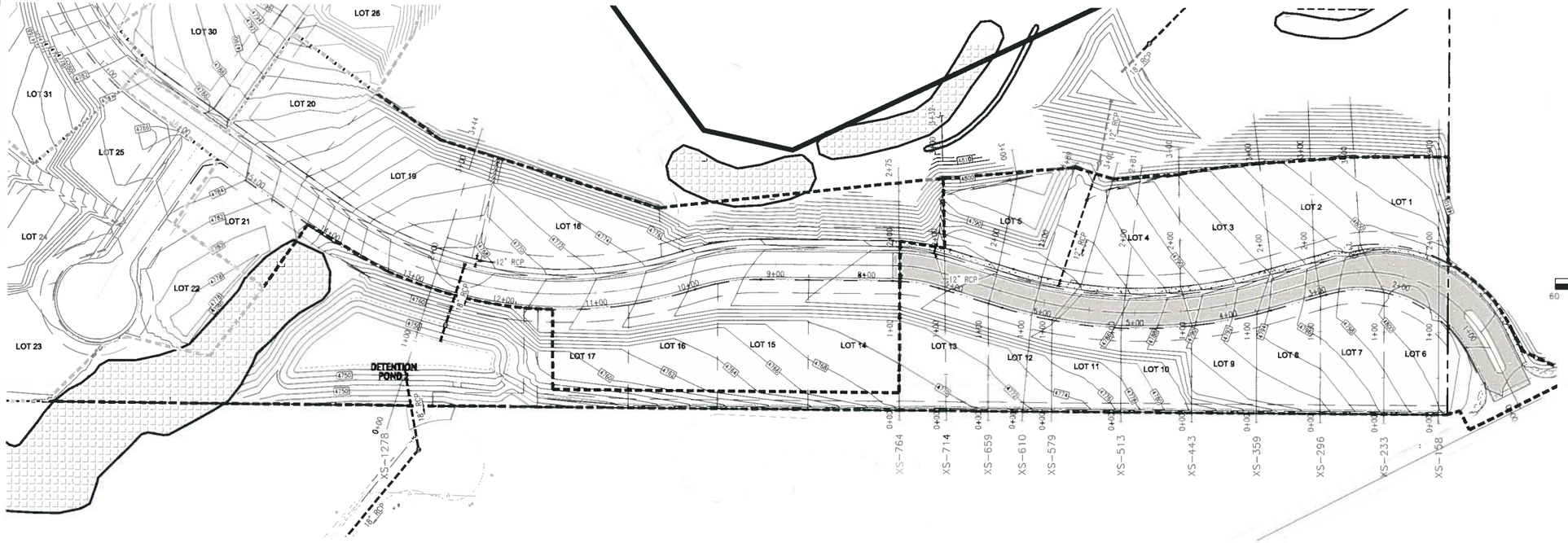
MAJOR SUBDIVISION
FINAL PLAN

REV.	DRWT.	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017	DLS
1		COMMENT	BT

Grading Plan Filing 1
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

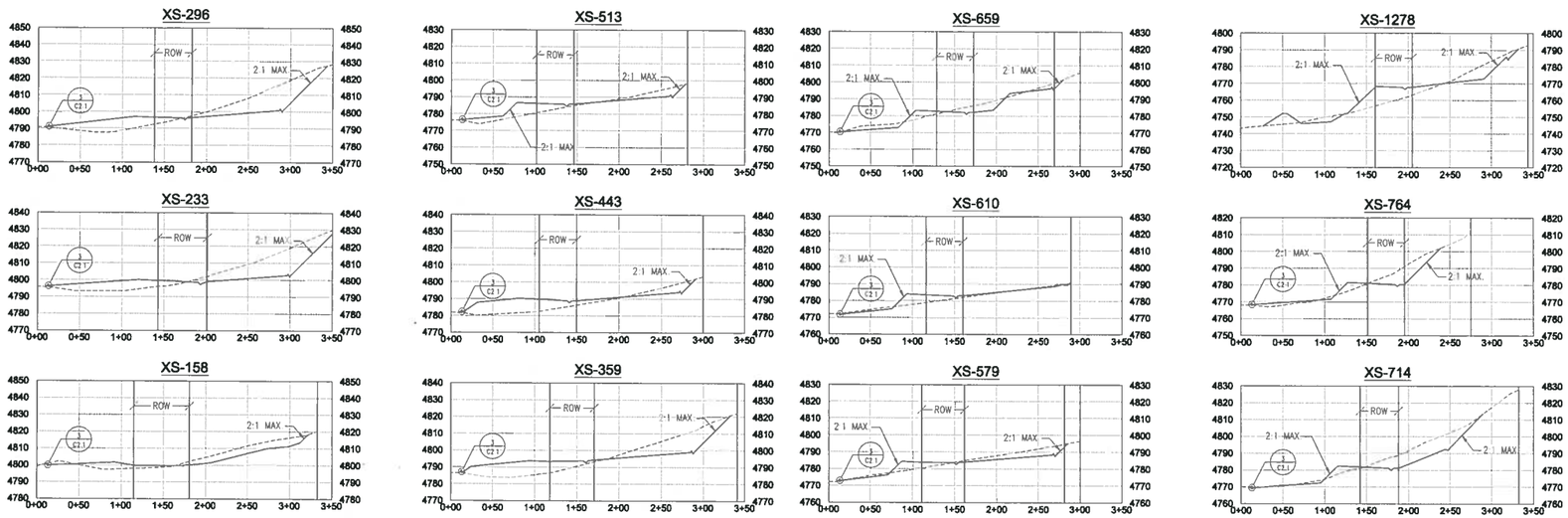
PROJECT NO: F04-006
DATE: 06/08/17
SCALE: SEE PLAN
CAD ID: 2.0grad-f1.dwg

SHEET
C2.1



SECTIONS ALONG LOT LINES

SCALE: 1" = 80' HORIZONTAL
1" = 40' VERTICAL



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MAJOR SUBDIVISION
FINAL PLAN

NO.	BY	REV DATE	COMMENT
1	DS	8/9/17	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017

Grading Plan Filing 1 - Road Cross Sections

Pinnacle Ridge Subdivision
Filing 1

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 08/08/17
SCALE: SEE PLAN
CAD ID: 2.0grad-f1.dwg

SHEET
C2.2

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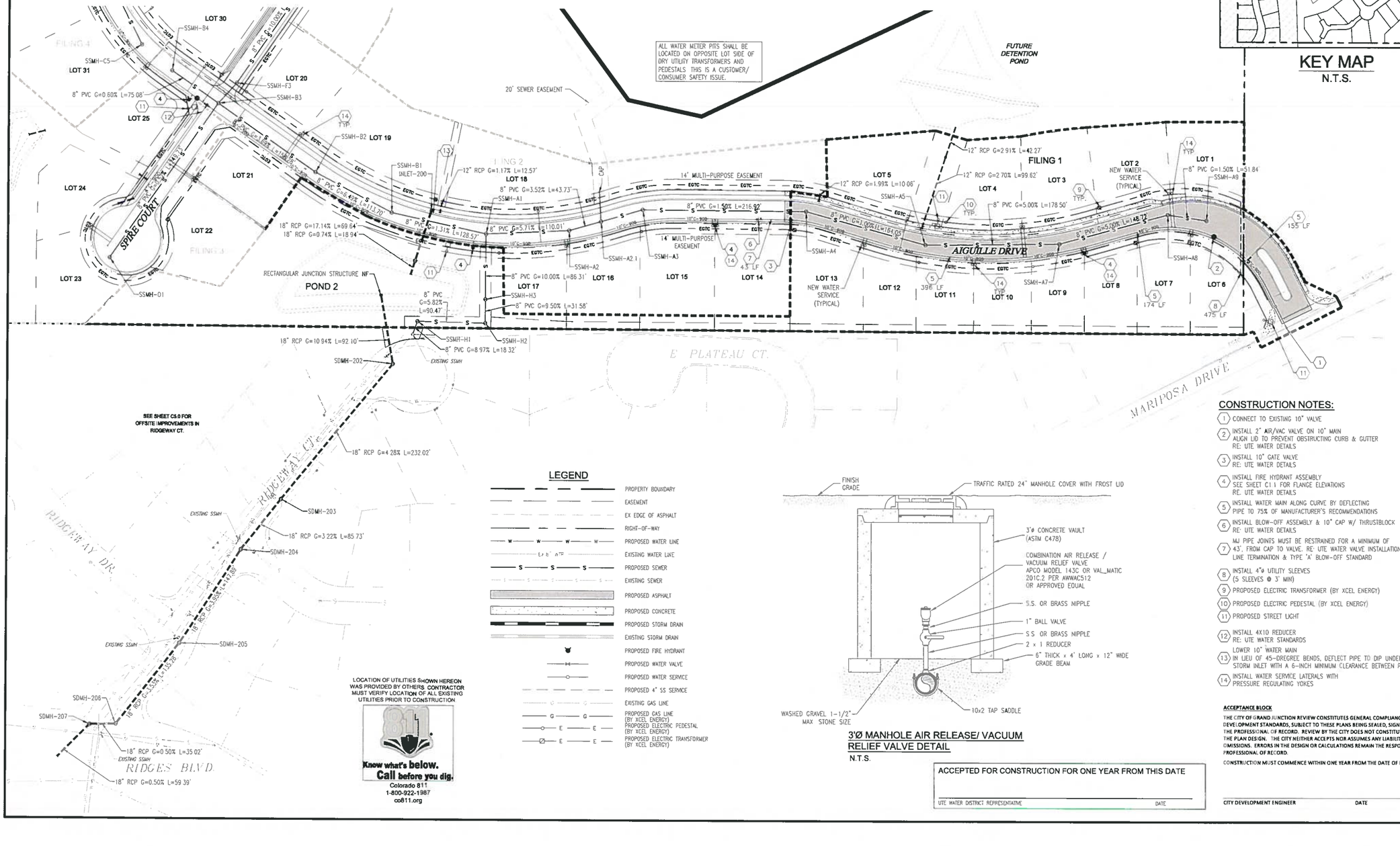
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET 3
6. HOUSES CONSTRUCTED ON LOTS 26-29 AND LOTS 55-72 SHALL HAVE SPRINKLER SYSTEMS INSTALLED. A 1" CUSTOMER WATER SERVICE LINE AND ¾" WATER METER WILL BE UTILIZED IN ACCORDANCE WITH UTE WATER CONSERVANCY DISTRICT STANDARDS & SPECIFICATIONS
7. ALL WATER SERVICES SHALL HAVE A PRESSURE REGULATED YOKE INSTALLED BASED ON PRESSURE LIMITS AS DETERMINED IN THE HYDRAULIC ANALYSIS.

FILING NOTES

1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
2. INSTALL SANITARY SEWER FROM SSMH-A9 TO EXISTING MAN-HOLE IN RIDGEWAY COURT AS SHOWN INCLUDING LINE TO MAN-HOLE B-1.
3. END WATER LINE CONSTRUCTION AT THE MIDDLE OF LOT 14 AS SHOWN
4. ASPHALT PAVEMENT TO END AT THE NORTH END OF LOT 13 FOR FILING 1
5. ROAD ALIGNMENT TO BE GRADED AND BASE COURSE INSTALLED TO THE NORTH END OF LOTS 20 & 21.



KEY MAP
N.T.S.

LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE
- EXISTING WATER LINE
- PROPOSED SEWER
- EXISTING SEWER
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER SERVICE
- PROPOSED 4" SS SERVICE
- EXISTING GAS LINE
- PROPOSED GAS LINE (BY XCEL ENERGY)
- PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
- PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)

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Know what's below. Call before you dig.
Colorado 811
1-800-922-1987
co811.org

3'Ø MANHOLE AIR RELEASE/ VACUUM RELIEF VALVE DETAIL
N.T.S.

CONSTRUCTION NOTES:

1. CONNECT TO EXISTING 10" VALVE
2. INSTALL 2" AIR/VAC VALVE ON 10" MAIN ALIGN LID TO PREVENT OBSTRUCTING CURB & GUTTER RE: UTE WATER DETAILS
3. INSTALL 10" GATE VALVE RE: UTE WATER DETAILS
4. INSTALL FIRE HYDRANT ASSEMBLY SEE SHEET C11 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL WATER MAIN ALONG CURVE BY DEFLECTING PIPE TO 75% OF MANUFACTURER'S RECOMMENDATIONS
6. INSTALL BLOW-OFF ASSEMBLY & 10" CAP W/ THRUSTBLOCK RE: UTE WATER DETAILS
7. MJ PIPE JOINTS MUST BE RESTRAINED FOR A MINIMUM OF 43', FROM CAP TO VALVE. RE: UTE WATER VALVE INSTALLATION, LINE TERMINATION & TYPE 'A' BLOW-OFF STANDARD
8. INSTALL 4"Ø UTILITY SLEEVES (5 SLEEVES @ 3' MIN)
9. PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)
10. PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
11. PROPOSED STREET LIGHT
12. INSTALL 4X10 REDUCER RE: UTE WATER STANDARDS
13. LOWER 10" WATER MAIN IN LIEU OF 45-DREGREE BENDS, DEFLECT PIPE TO DIP UNDER STORM INLET WITH A 6-INCH MINIMUM CLEARANCE BETWEEN PIPES.
14. INSTALL WATER SERVICE LATERALS WITH PRESSURE REGULATING YOKES

ACCEPTED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE

UTE WATER DISTRICT REPRESENTATIVE — DATE

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER — DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSEE No. 18828

COLORADO LICENSED
James C. Atkinson
18828
8-15-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	BY
1	8/28/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

Composite Site Plan - Utility and Water Plan

Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1"= 60'
CAD ID: 3.0utility-f1.dwg

~SHEET~
C3.0

FILING NOTES

1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2 INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
2. INSTALL SANITARY SEWER FROM SSMH-A9 TO EXISTING MAN-HOLE IN RIDGEWAY COURT AS SHOWN INCLUDING LINE TO MAN-HOLE B-1.
3. END WATER LINE CONSTRUCTION AT THE MIDDLE OF LOT 14 AS SHOWN.
4. ASPHALT PAVEMENT TO END AT THE NORTH END OF LOT 13 FOR FILING 1.
5. ROAD ALIGNMENT TO BE GRADED AND BASE COURSE INSTALLED TO THE NORTH END OF LOTS 20 & 21.

CONSTRUCTION NOTES:

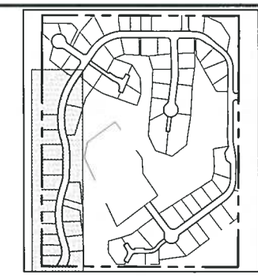
1. INSTALL STOP SIGN & STREET SIGN RE: MUTCD
2. CONSTRUCT HANDICAPPED RAMP RE: CITY OF GJ DETAILS
3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL 6" STANDARD CURB & GUTTER W/ATTACHED SIDEWALK - 87 LF
6. INSTALL 6" DRIVE-OVER CURB & GUTTER W/ATTACHED SIDEWALK - 158 LF
7. INSTALL 6" STANDARD CURB & GUTTER 74 LF
8. SAWCUT & REMOVE ±106 LF EXISTING CONCRETE CURB USE CARE TO ENSURE PAVEMENT EDGE PROVIDES A CLEAN JOIN FOR INSTALL OF NEW CONCRETE VALLEY PAN
9. 15' SIDEWALK TRANSITION FROM ATTACHED TO DETACHED

this is 7', not 6'.

6" Curb Ht.

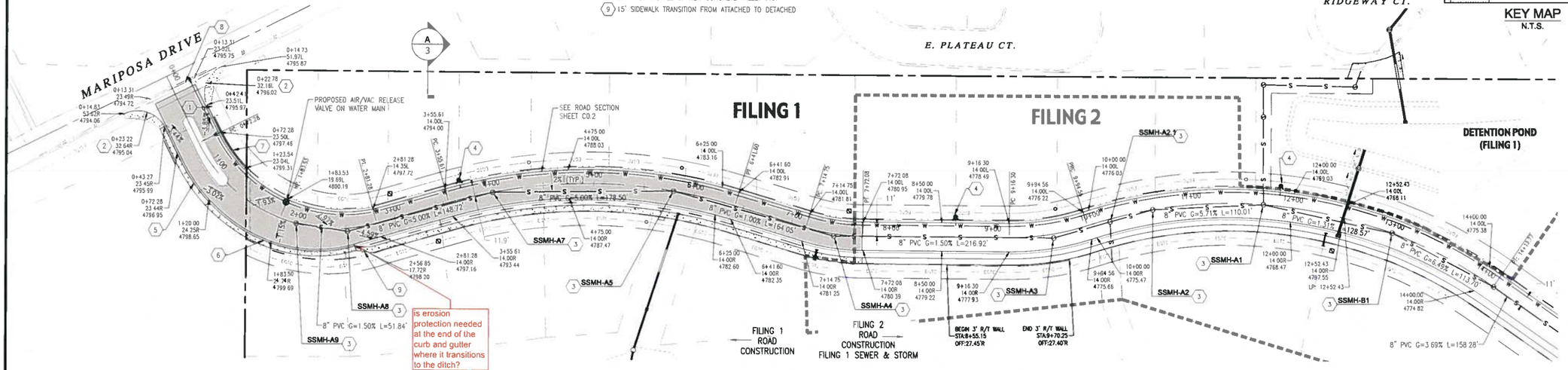
GENERAL NOTES:

1. REFERENCE SHEET C0.1 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET C0.2 FOR STREET SECTIONS
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION



ROAD AND SAN. SEWER PLAN - AIGUILLE DRIVE

SCALE: 1" = 50'



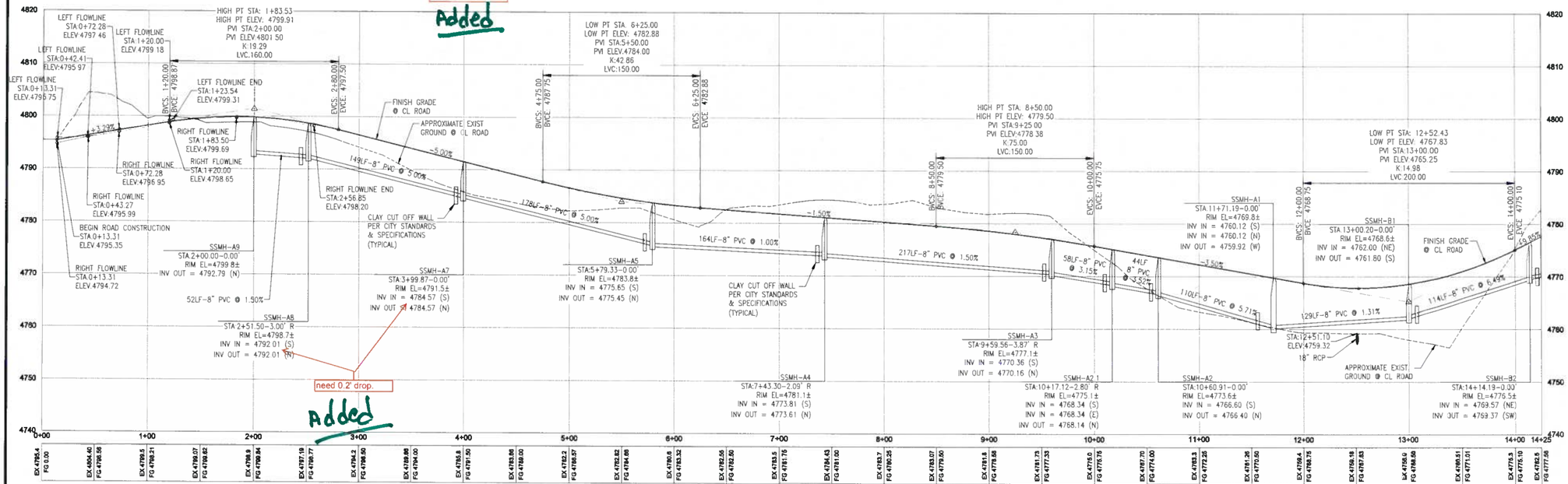
Added

is erosion protection needed at the end of the curb and gutter where it transitions to the ditch?

ROAD AND SAN. SEWER PROFILE - AIGUILLE DRIVE

HORIZONTAL SCALE: 1" = 50'

VERTICAL SCALE: 1" = 5'



ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

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• PROJECT MANAGERS
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2394 Patterson Road, Suite 201
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Phone: (970) 245-9051
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 8-15-17 PROFESSIONAL ENGINEER

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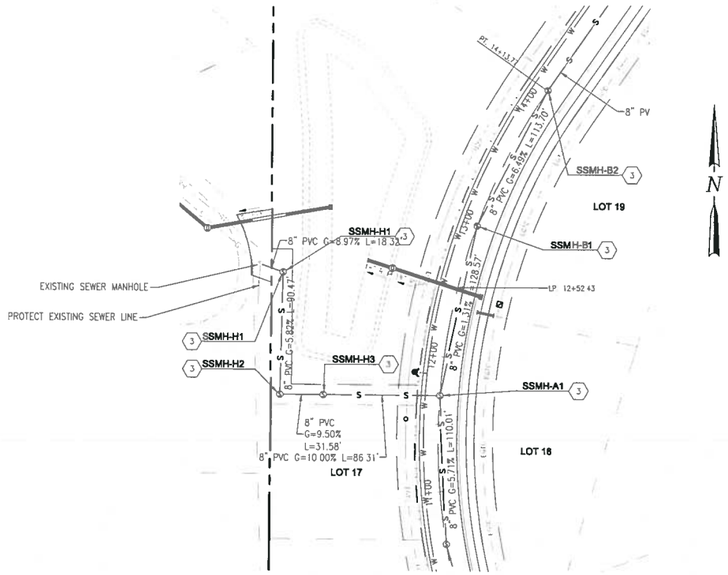
MAJOR SUBDIVISION
FINAL PLAN

NO.	REF.	DATE	REVISED PER CITY COMMENT ROUND 1 DATED JULY 14, 2017	DES.
1		8/15/17		DES

Road & Sanitary Sewer Plan & Profile
Aiguille Drive
Pinnacle Ridge Subdivision Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/02/17**
SCALE: **1" = 50'**
CAD ID: **4.Dss-road-f1.dwg**

—SHEET—
C4.0



ROAD AND SAN. SEWER PLAN - RIDGEWAY CT. CONNECTION

SCALE 1" = 50'

FILING NOTES

1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
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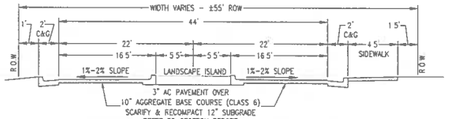
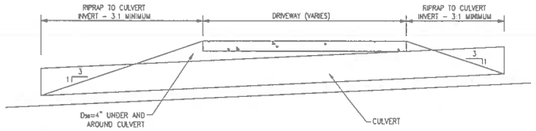


MARIPOSA DRIVE ENTRANCE

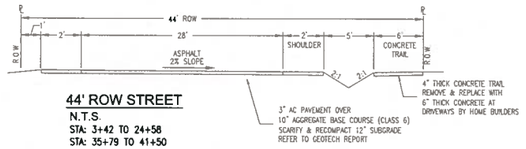
N.T.S.

STA: 0+24 TO STA: 1+52

(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 3+42)



SECTION A-A

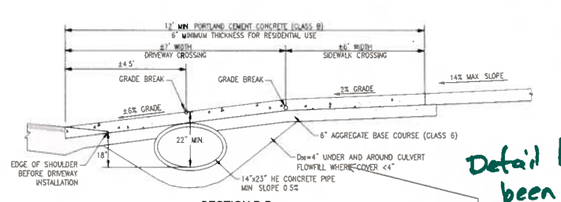


44' ROW STREET

N.T.S.

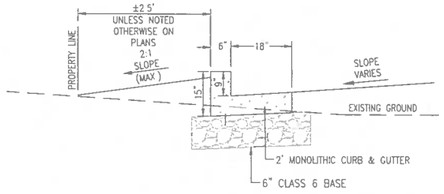
STA: 3+42 TO 24+58

STA: 35+79 TO 41+50



SECTION B-B

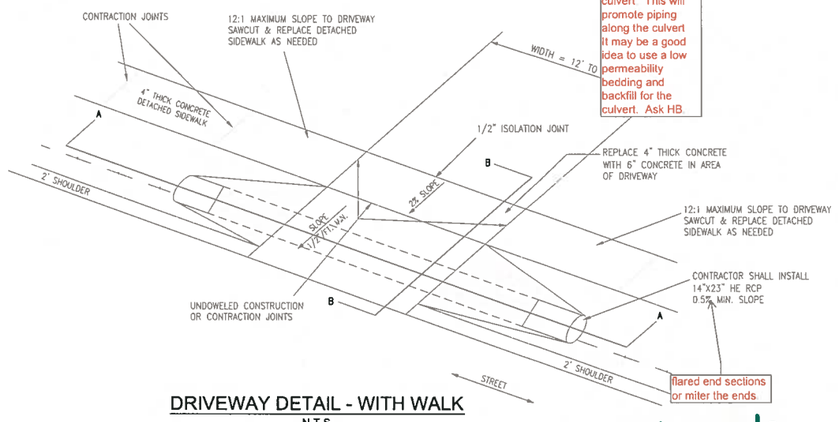
Detail has been revised



WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

CONCRETE CURB DETAIL

N.T.S.



Don't want 4" rock under and around culvert. This will promote piping along the culvert It may be a good idea to use a low permeability bedding and backfill for the culvert. Ask HB.

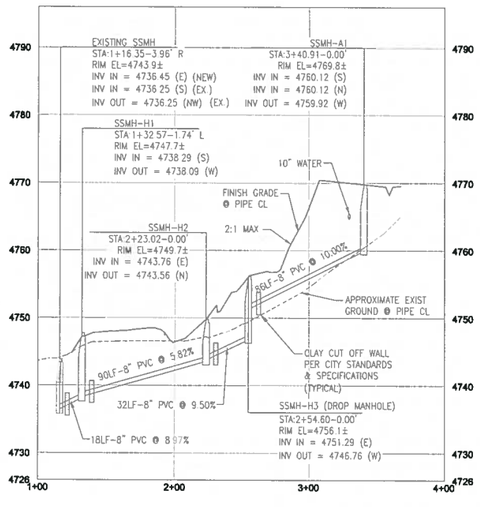
DRIVEWAY DETAIL - WITH WALK

N.T.S.

Miter ends called out

NOTE:

CARE SHALL BE TAKEN TO REMOVE EXISTING ROCK LINING AND GEOTEXTILE FABRIC PRIOR TO NEW CULVERT INSTALLATION. FABRIC AND ROCK TO BE CAREFULLY REPLACED AROUND NEW CULVERT



ROAD AND SAN. SEWER PROFILE - RIDGEWAY CT. CONNECTION

HORIZONTAL SCALE: 1" = 50'

VERTICAL SCALE: 1" = 5'

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER _____ DATE _____

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED
JAMES C. ATKINSON
18828
8-16-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

NO.	BY	REVISION	DATE
1	DAS	REVISED PER CITY COMMENTS FOUND 1, DATED JULY 18, 2017	8/16/17

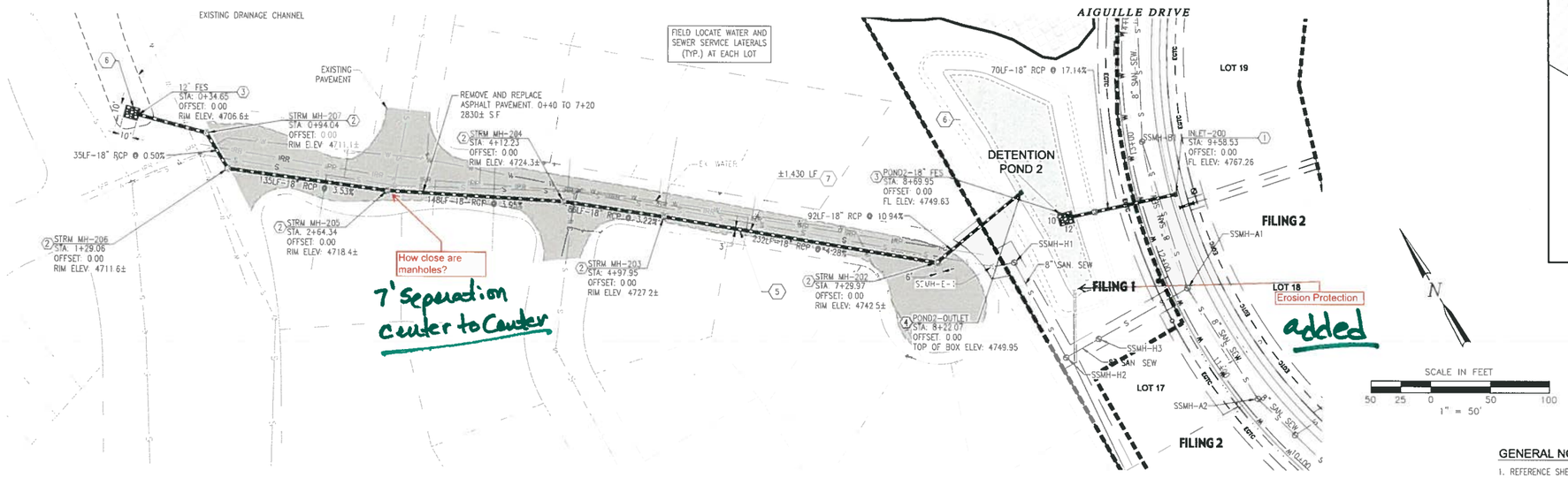
Road & Sanitary Sewer Plan & Profile

Ridgeway Court Sewer Connection
Pinnacle Ridge Subdivision Filing 1

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/02/17
SCALE: 1" = 50'
CAD ID: 4.0ss-road-f1.dwg

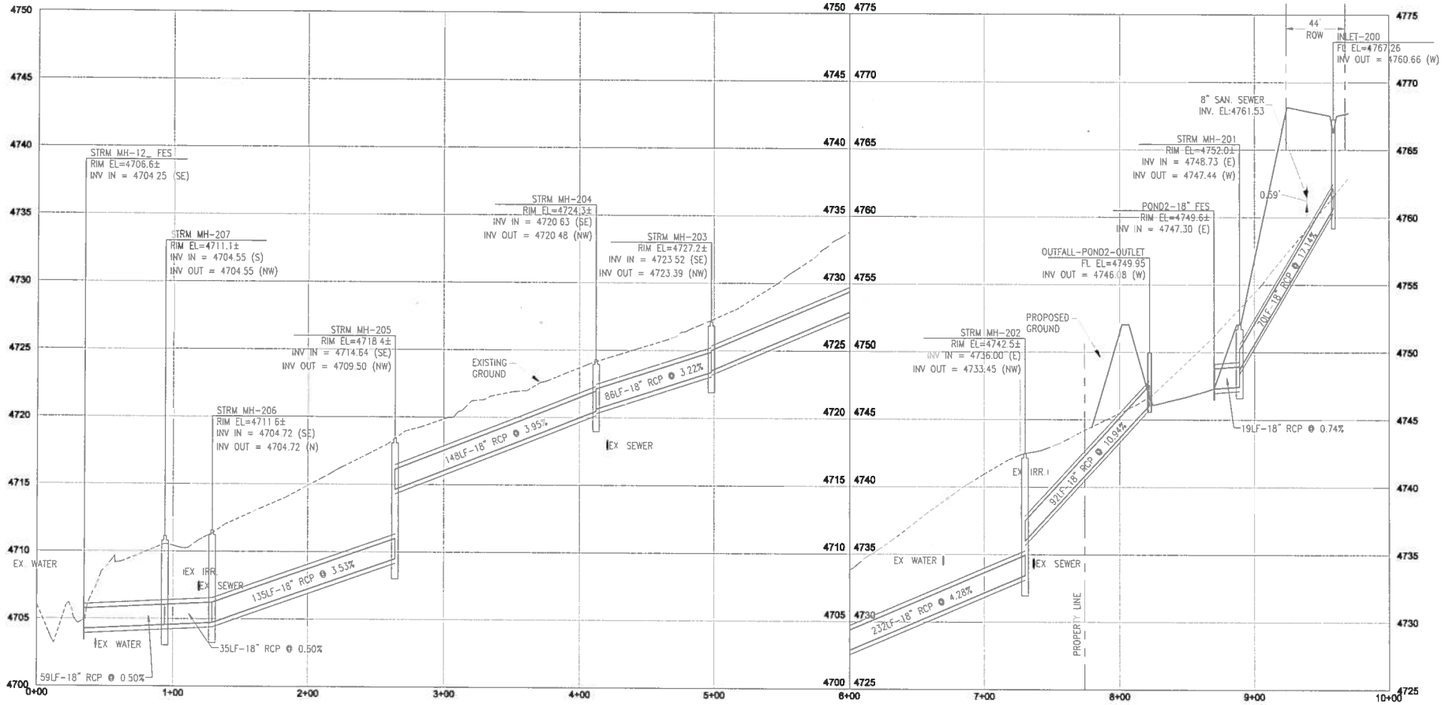
~SHEET~
C4.1



KEY MAP
N.T.S.

STORM SEWER PLAN AND PROFILE - POND 2 OUTFALL

HORIZONTAL SCALE 1" = 50'
VERTICAL SCALE 1" = 5'



GENERAL NOTES:

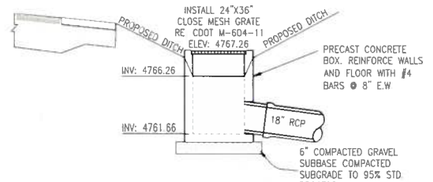
1. REFERENCE SHEET C0.1 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. STATIONS ARE IN REFERENCE TO CENTER LINE OF ROAD, UNLESS OTHERWISE INDICATED.
4. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.

CONSTRUCTION NOTES:

1. INSTALL/MODIFY 2'x3' AREA INLET RE: CITY STD. DETAILS, & THIS SHEET
2. INSTALL 48"ø MANHOLE RE: CITY STD. DETAILS
3. INSTALL FES WITH RIP RAP AT SHOWN SIZE RE: CITY STD. DETAILS
4. INSTALL POND OUTLET STRUCTURE. RE: SEE DETAIL ON SHEET 21
5. PAVEMENT PATCH BACK AT SHOWN DIMENSIONS RE: CITY OF GJ DETAILS
6. INSTALL D$_{50}$=6", 12" DEEP RIPRAP OVER GEOFABRIC AT SHOWN DIMENSIONS.
7. SAWCUT LINE

NOTE:

CONTRACTOR TO LOCATE INDIVIDUAL WATER AND SANITARY SEWER LATERALS TO EACH HOUSE PRIOR TO BEGINNING CONSTRUCTION. NOTIFY ENGINEER IF CONFLICTS ARE FOUND.



MODIFIED STORM DRAIN AREA INLET-200
N.T.S.

ACCEPTANCE BLOCK

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• SURVEYING
• CIVIL & CONSULTING ENGINEERS
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MAJOR SUBDIVISION
FINAL PLAN

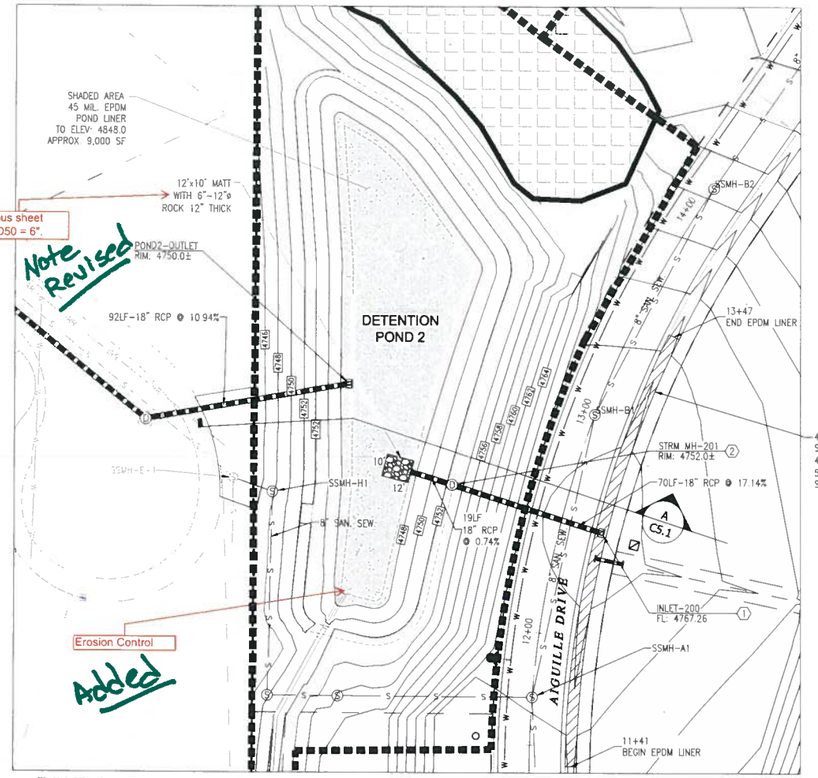
REV.	DATE	COMMENT
1	8/28/17	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017

Storm Sewer Plan and Profile
Pond 2 Outfall

Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

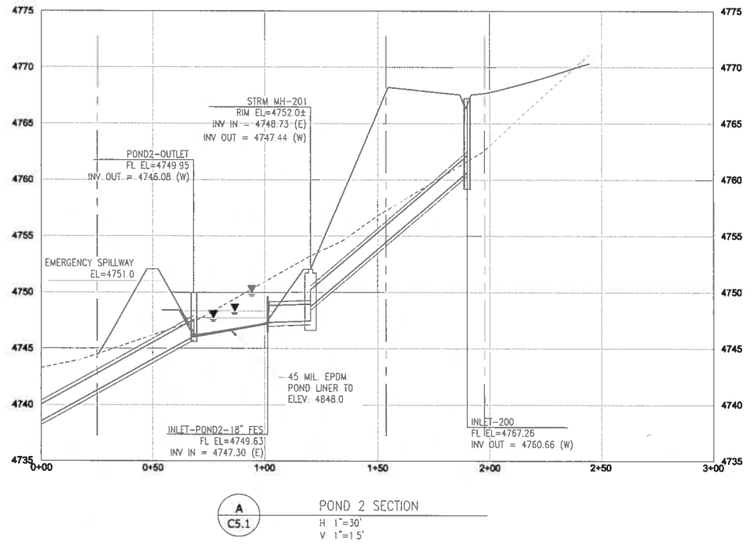
PROJECT NO. F04-006
DATE: 06/08/17
SCALE: 1" = 50'
CAD ID: 5.0storm-f1.dwg

SHEET
C5.0



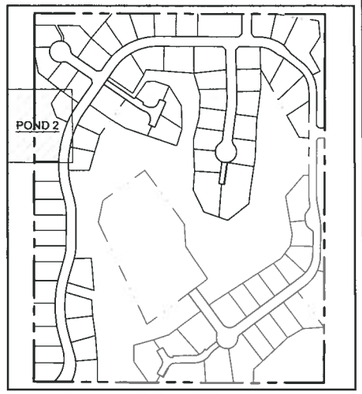
POND 2 - PLAN

SCALE: 1" = 30'



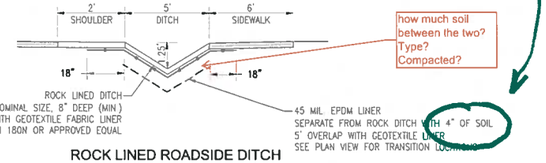
A / C5.1 POND 2 SECTION

H: 1"=30'
V: 1"=1.5'



KEY MAP

N.T.S.

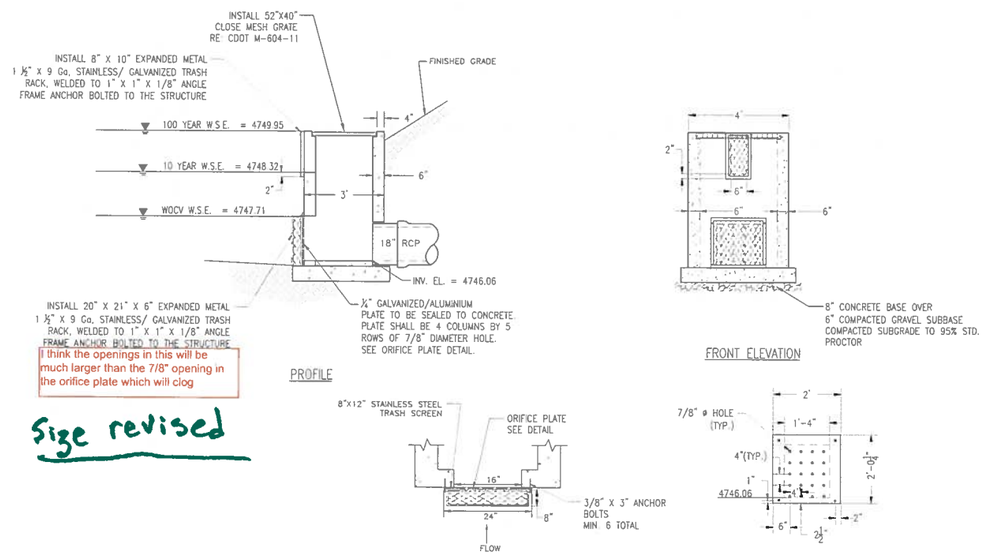


ROCK LINED ROADSIDE DITCH WITH EPDM LINER

N.T.S.

CONSTRUCTION NOTES:

1. INSTALL/MODIFY 3'X4' AREA INLET RE: CITY STD. DETAILS, & THIS SHEET
2. INSTALL 48"ø MANHOLE RE: CITY STD. DETAILS



POND OUTLET STRUCTURE DETAIL

N.T.S.

POND 2 - SUMMARY TABLES

POND 2	VOLUME (CF)	WSEL (FT)	PEAK DISCHARGE FLOW (CFS)	ALLOWABLE PEAK DISCHARGE FLOW (CFS)
WQCV	7,575	4847.71	NA	NA
10 YEAR	13,992	4748.32	0.52	1.87
100 YEAR	31,059	4749.95	4.21	7.79

GENERAL NOTES:

1. REFERENCE SHEET C0.2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. STATIONS ARE IN REFERENCE TO CENTER LINE OF ROAD, UNLESS OTHERWISE INDICATED.
4. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
5. REFER TO SHEET C5.0 FOR CONSTRUCTION KEY NOTES

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED (JAMES C. ATKINSON) 18828 8-15-17 PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

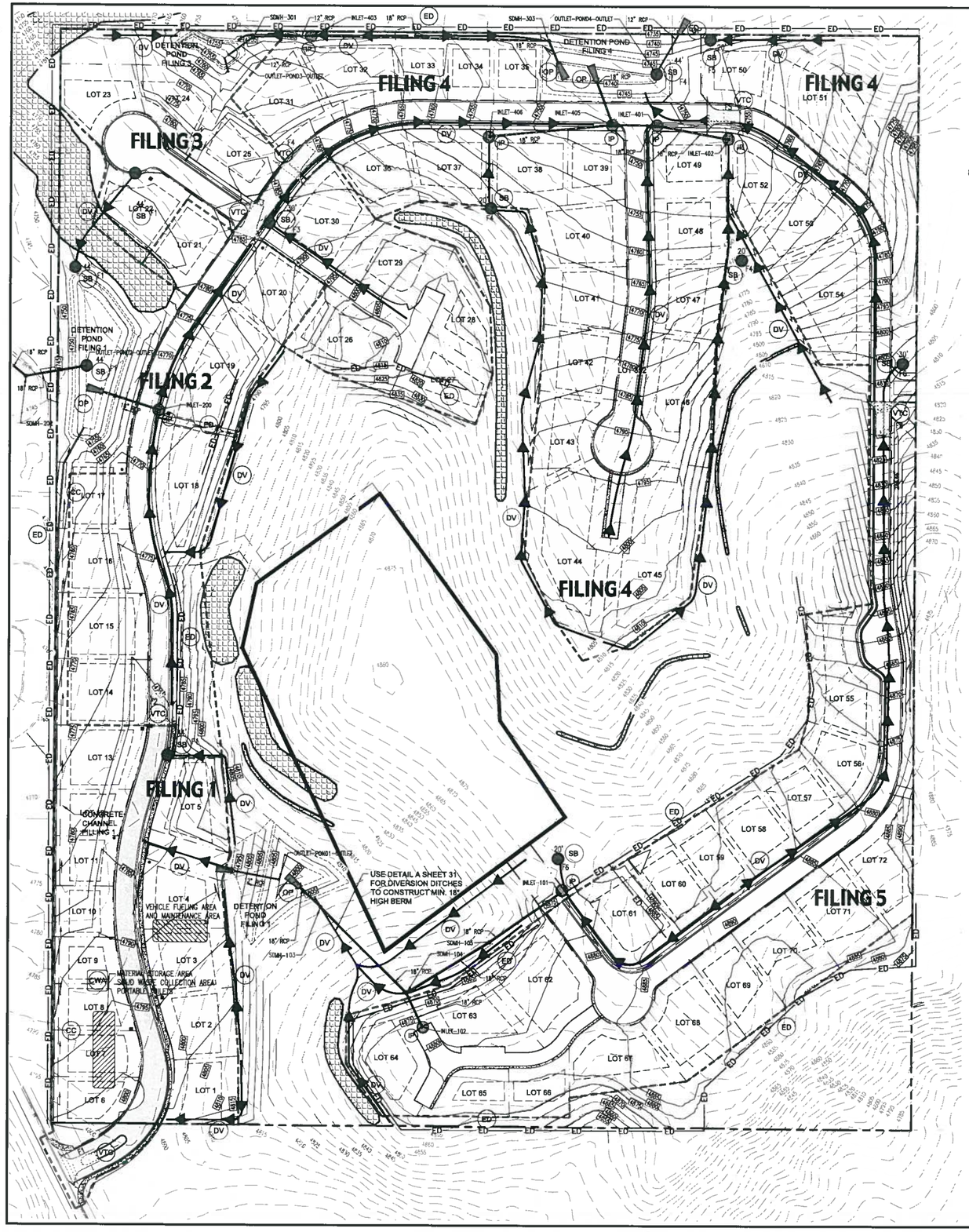
NO	REV DATE	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS / BR
1	8/9/17	COMMENT	

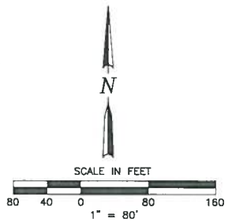
Storm Sewer Plan
Pond 1 and 2 Details

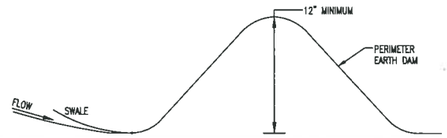
Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1" = 30'
CAD ID: 5.0storm-f1.dwg

SHEET
C5.1







EARTH DAM SECTION
SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
EARTHEN DAM	ED	
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
SEDIMENT BASIN	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

GRADING NOTE:

FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

GENERAL NOTES:

1. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL REQUIRED EASEMENTS, RIGHT AND/OR RIGHTS-OF-WAY PURSUANT TO THE DISCHARGE FROM THE SEDIMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS AND GRADING OR OTHER WORK TO BE PERFORMED ON ADJACENT OR DOWNSTREAM PROPERTIES AFFECTED BY THE PLAN.
2. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1); FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE. THE IN-PLACE SEDIMENT CONTROL MEASURES WILL BE MAINTAINED ON A CONTINUING BASIS UNTIL THE SITE IS PERMANENTLY STABILIZED AND ALL PERMIT REQUIREMENTS ARE MET.
3. REFER TO CITY OF GRAND JUNCTION STANDARD DRAWINGS AND SPECIFICATIONS.
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE 5-2-1 DRAINAGE AUTHORITY. CONTACT MARK BARSLUND 970-201-1362

ACCEPTANCE BLOCK

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COLORADO LICENSED JAMES C. ATKINSON 18828 PROFESSIONAL ENGINEER 8-15-17

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MAJOR SUBDIVISION
FINAL PLAN

REV. DATE	REVISED PER CITY COMMENT ROUND 1, DATED JULY 16, 2017	DLS
8/15/17	COMMENT	BT

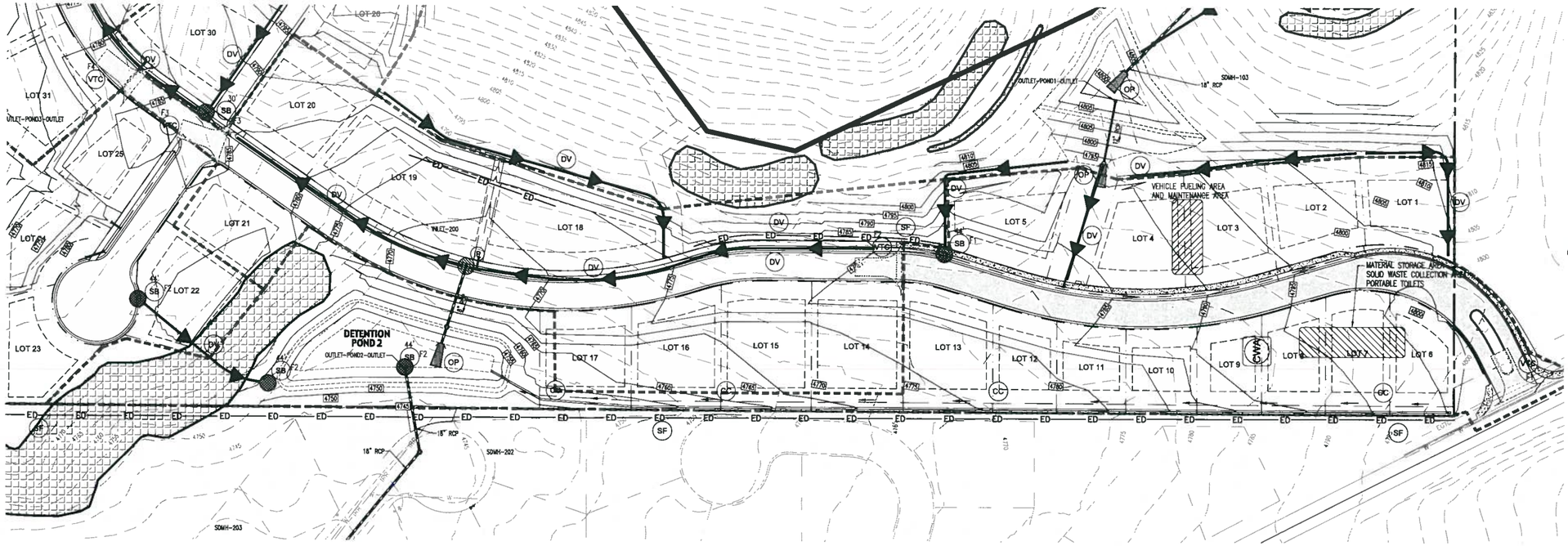
Overall Construction Stormwater Management Plan

Pinnacle Ridge Subdivison
Filing 1

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-008
DATE: 07/08/15
SCALE:
CAD ID: 6.0swm-f1.dwg

—SHEET—
C6.0



N

SCALE IN FEET

60 30 0 60 120

1" = 60'

CONTOUR INTERVAL = 2'

GRADING NOTE:

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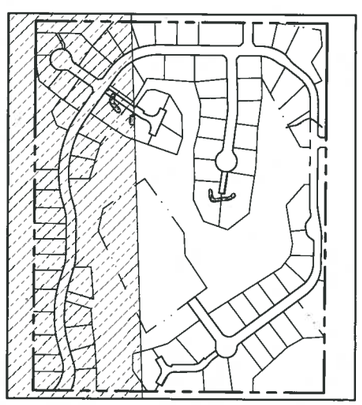
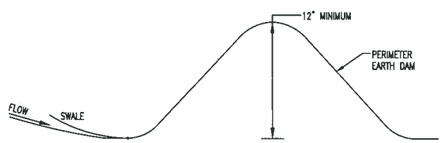


KEY MAP

N.T.S.



EARTH DAM SECTION

SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
EARTHEN DAM	ED	ED
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
SEDIMENT BASIN	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT
1	8/9/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 19, 2017

Construction Stormwater Management Plan Filing 1

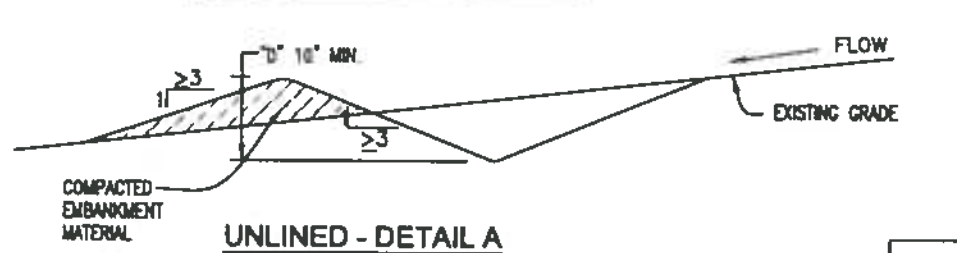
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 08/08/17
SCALE: SEE PLAN
CAD ID: 6.0swm-f1.dwg

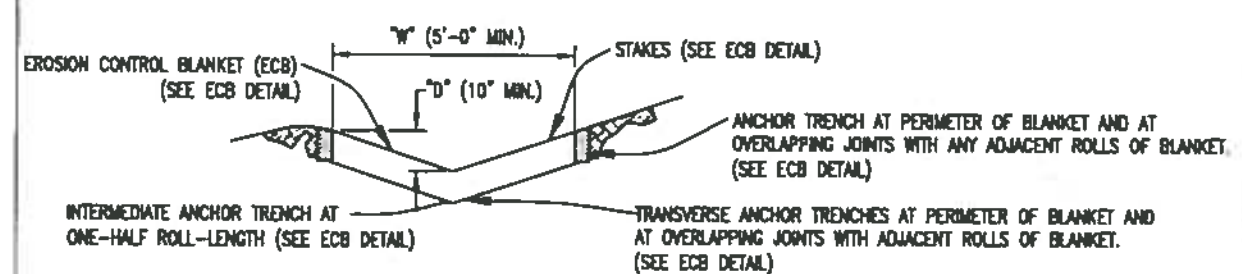
-SHEET-
C6.1

DIVERSION DITCH DETAIL A

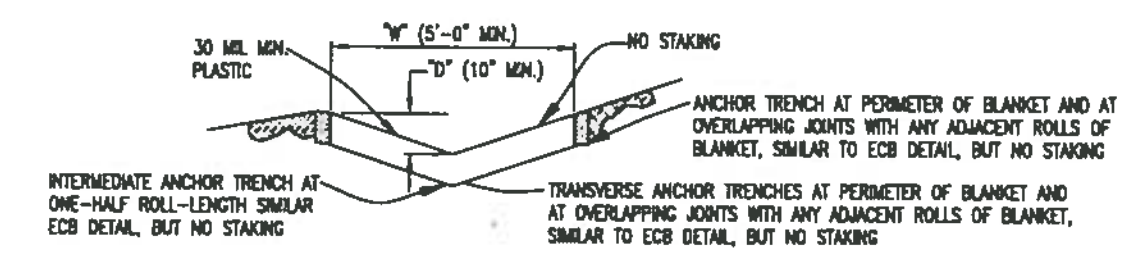
DV



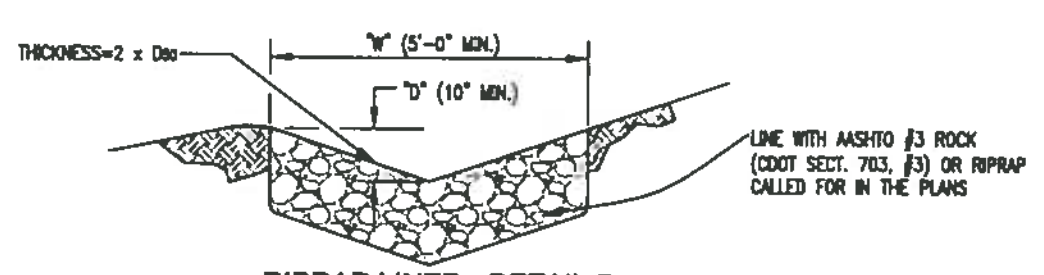
UNLINED - DETAIL A
LONGITUDINAL SLOPE < 0.5%



EROSION CONTROL BLANKET (ECB) LINED - DETAIL B
LONGITUDINAL SLOPE 0.5% TO 3 %



PLASTIC LINED - DETAIL C
LONGITUDINAL SLOPE 3% TO 33%



RIPRAP LINED - DETAIL D
LONGITUDINAL SLOPE 3% TO 33%

DIVERSION DITCH INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF DIVERSION DITCH.
   - TYPE OF DITCH (UNLINED, ECB PLASTIC LINED OR RIPRAP LINED).
   - LENGTH OF EACH TYPE OF DITCH.
   - DEPTH, "D", AND WIDTH, "W" DIMENSIONS.
   - FOR ECB LINED DITCH, EROSION CONTROL BLANKET TYPE (SEE ECB DETAIL).
   - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, "D 50 ".
2. SEE DRAINAGE PLANS FOR DETAILS OF ANY PERMANENT CONVEYANCE FACILITIES OR DIVERSION DITCHES EXCEEDING A 2 YEAR FLOOD 10 CFS.
3. DIVERSION DITCHES INDICATED ON INITIAL SWMP PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES..
4. FOR ECB LINED DITCHES, INSTALLATION OF EROSION CONTROL BLANKET SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.
5. IN LOCATIONS WHERE CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION DITCH, THE PERMITTEES SHALL INSTALL A TEMPORARY CULVERT WITH A MINUM DIAMETER OF 12-INCHES.

DIVERSION DITCH MAINTENANCE NOTES

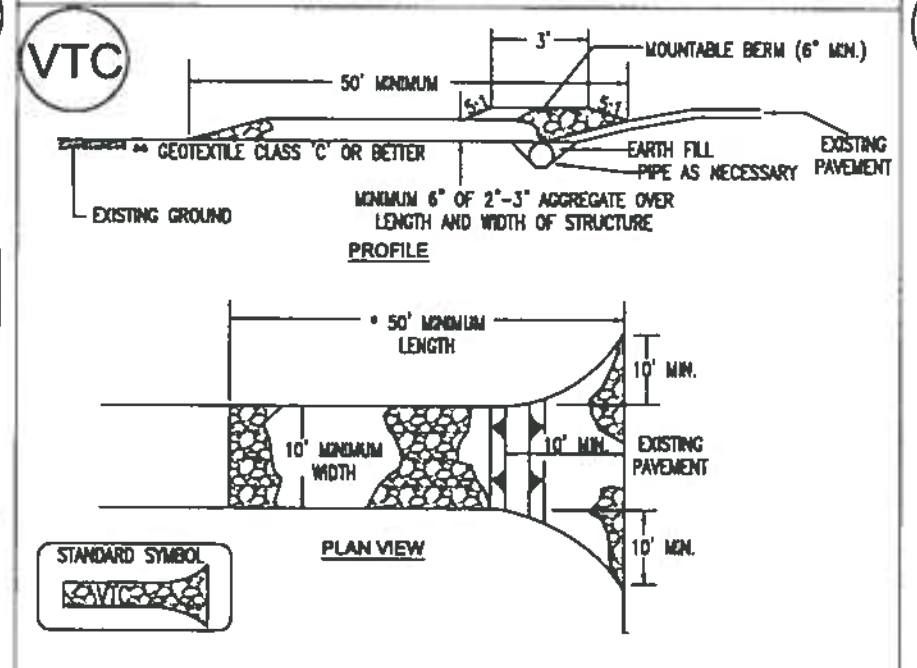
1. THE SWMP MANAGER SHALL INSPECT DIVERSION DITCHES WEEKLY AND DURING AND AFTER ANY STORM. MAKE REPAIRS AS NECESSARY.
2. DIVERSION DITCHES ARE TO REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION, OR IF APPROVED BY LOCAL JURISDICTION MAY BE LEFT IN PLACE.
3. IF DIVERSION DITCHES ARE REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, DRILL SEEDED, HAY CRIMPED MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

DETAIL BASED ON DETAILS PROVIDED BY DOUGLAS COUNTY

Urban Drainage and Flood Control District Drainage Criteria Manual (V.3)	Figure C5-3 DIVERSION DITCH AND DIKE

STABILIZED CONSTRUCTION ENTRANCE

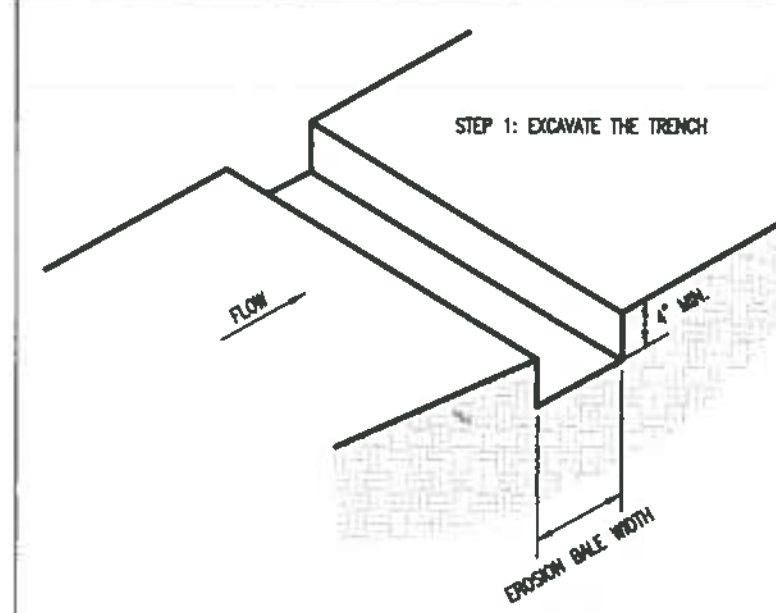
VTC

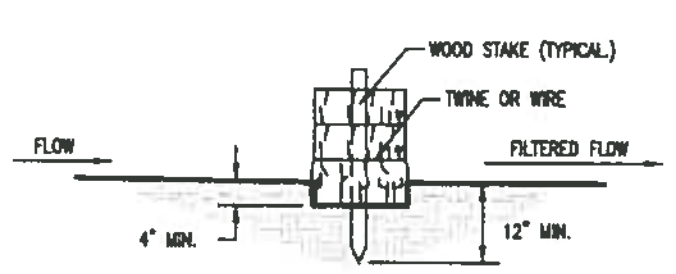


Construction Specification

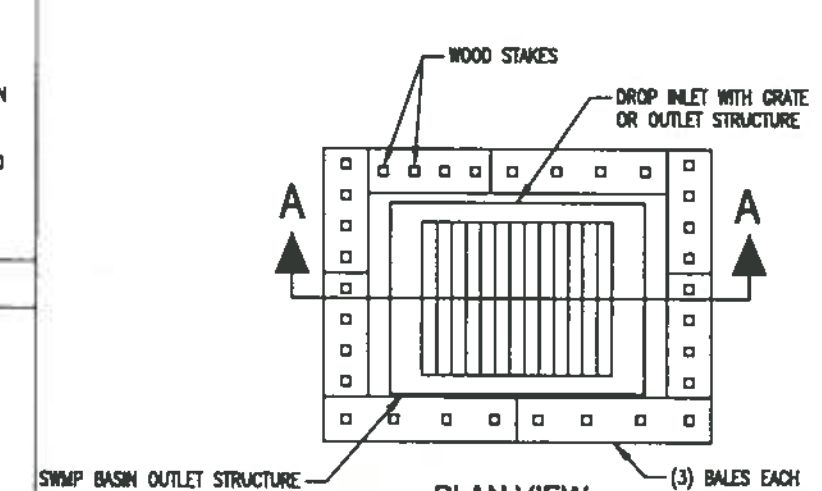
1. Length – minimum of 50' (*30' for single residence lot).
2. Width – 10' minimum, should be flared at the existing road to provide a turning radius
3. Geotextile fabric (filter cloth) shall placed over the exiting ground prior to placing stone. **This plan approval authority may not require single family residence to use geotextile.
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water – all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location – A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

IP

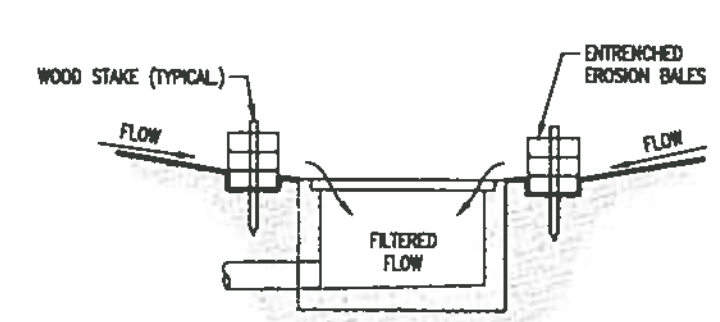




EROSION BALE TRENCHING AND STAKING
SCALE: N.T.S.



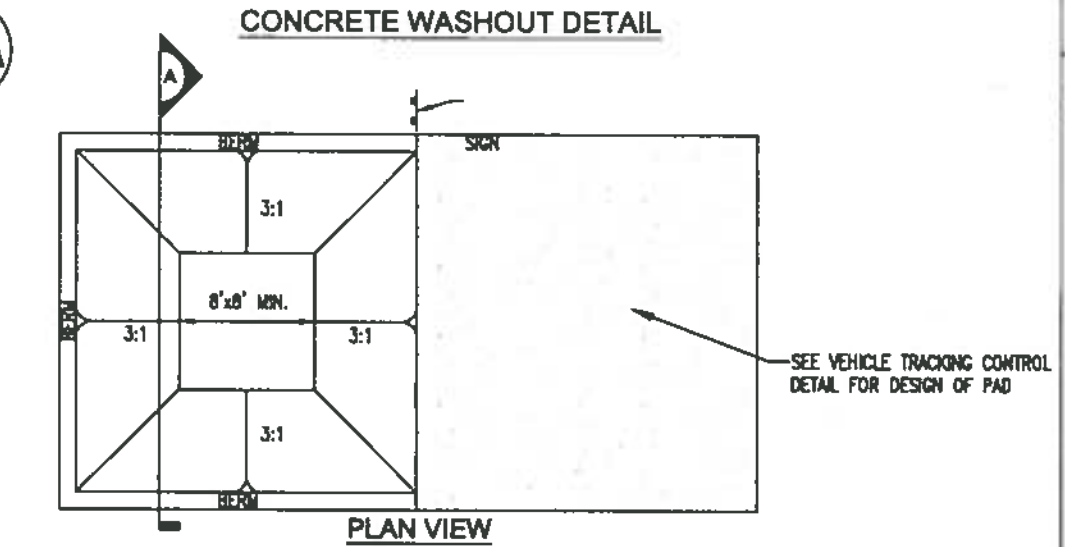
PLAN VIEW
SCALE: N.T.S.



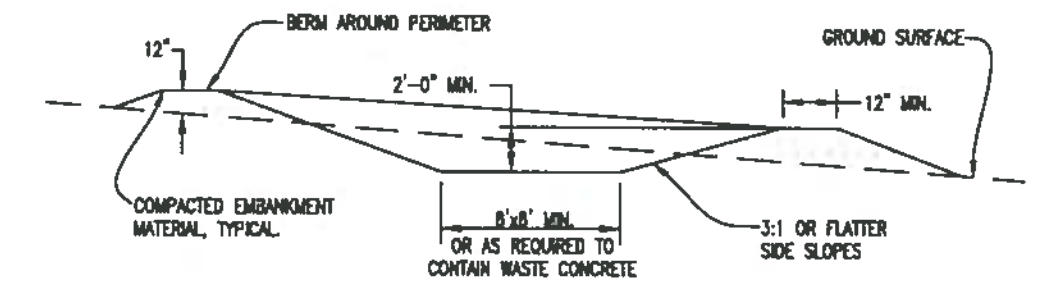
SECTION A-A
EROSION FILTER AT DROP INLET
SCALE: N.T.S.

CONCRETE WASHOUT DETAIL

CWA



PLAN VIEW



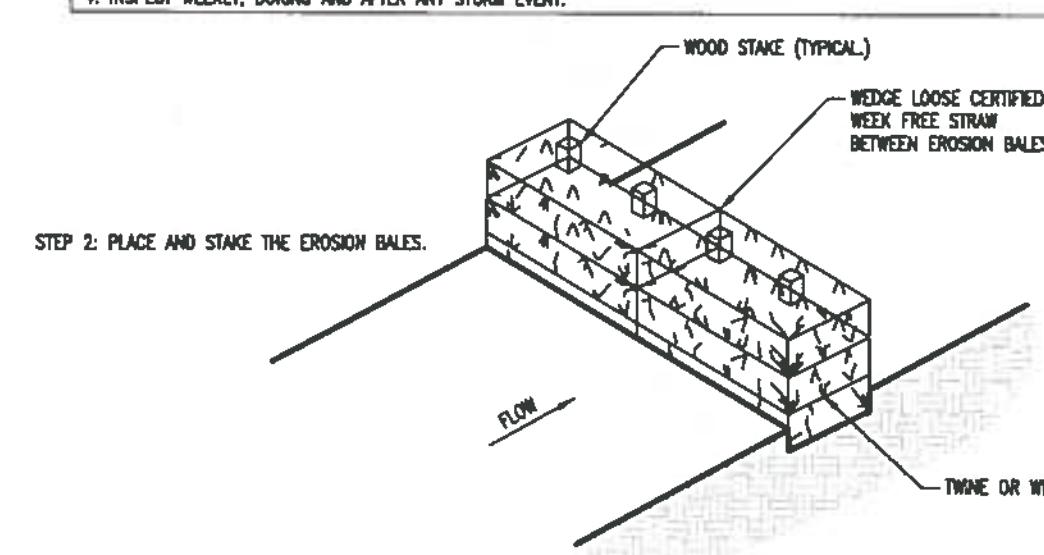
SECTION A

CONCRETE WASHOUT AREA INSTALLATION NOTES

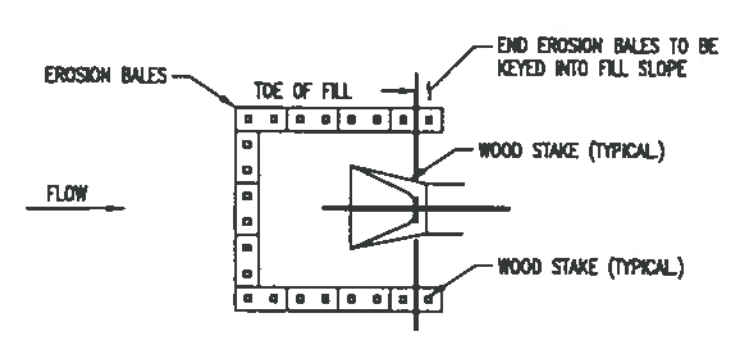
1. SEE PLAN VIEW FOR LOCATIONS OF CONCRETE WASHOUT AREA
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL IS REQUIRED AT THE ACCESS POINT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION

CONCRETE WASHOUT AREA MAINTENANCE NOTES

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, DRILL SEED AND CRIMP MULCH OR OTHERWISE STABILIZE IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
4. INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.



EROSION BALE BMP
SCALE: N.T.S.



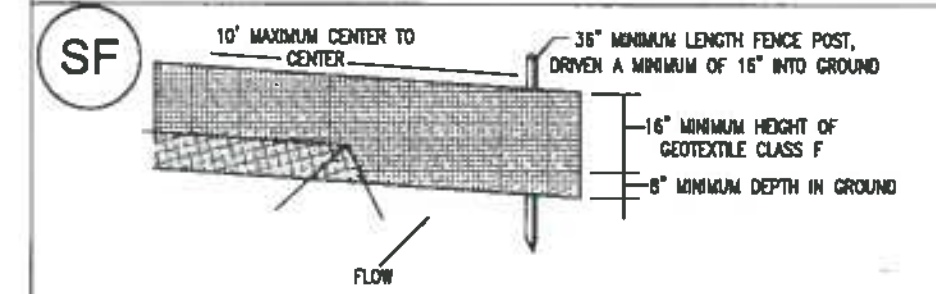
PLAN VIEW
EROSION BALE CULVERT INLET PROTECTION
SCALE: N.T.S.

NOTES

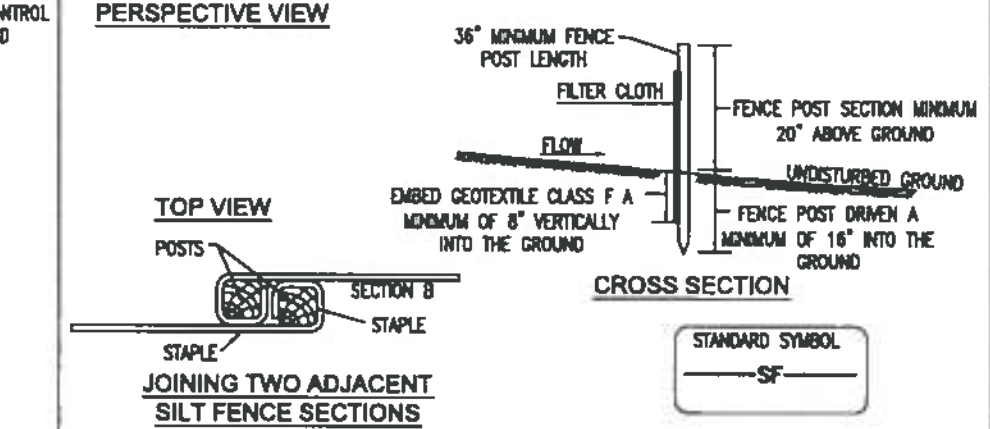
1. STAKES SHALL BE WOOD AND SHALL BE 2" X 2" NOMINAL.
2. EROSION BALES SHALL BE 18" X 18" X 36".
3. EROSION BALES SHALL BE ENTRENCHED 4 IN. MINIMUM INTO THE SOIL TIGHTLY ABUTTED WITH NO GAPS, STAKED, AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERIMETER.

DETAIL 22 - SILT FENCE

SF



PERSPECTIVE VIEW



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
2. Geotexile shall be fastened securely to each fence post with wire ties or staples at top and mid-setion and shall meet the following requirements for Geotextile Class F:

Tensile Strength:	50 lbs./in. (min.)	Test: MSMT 509
Tensile Modulus:	20 lbs./in. (min.)	Test: MSMT 509
Flow Rate	0.3 gal. ft. / minute (max.)	Test MSMT 322
Efficiency	75% (min.)	Test: MSMT 322

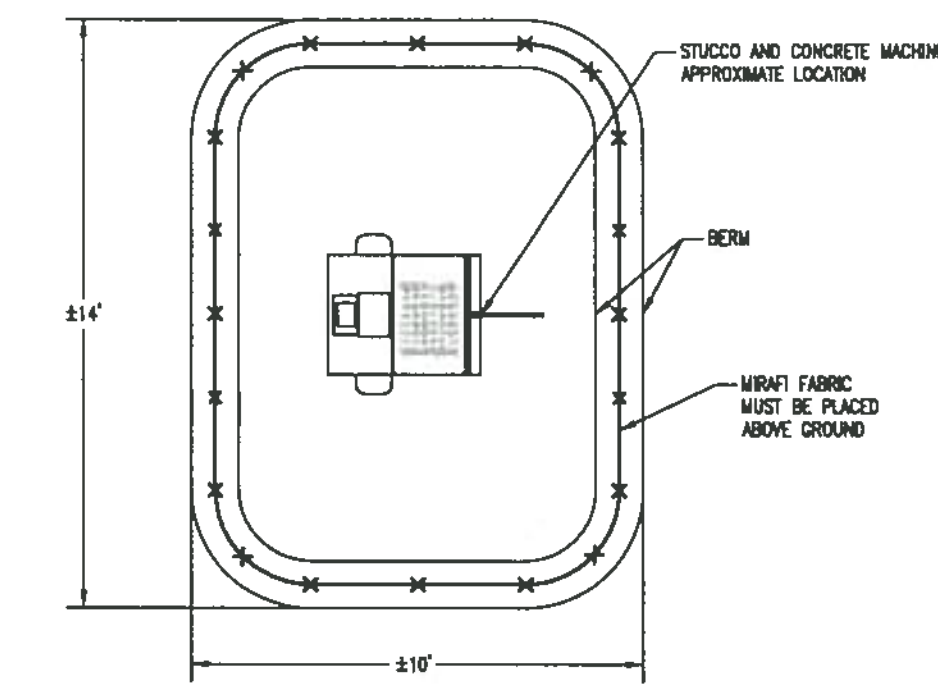
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

SILT FENCE

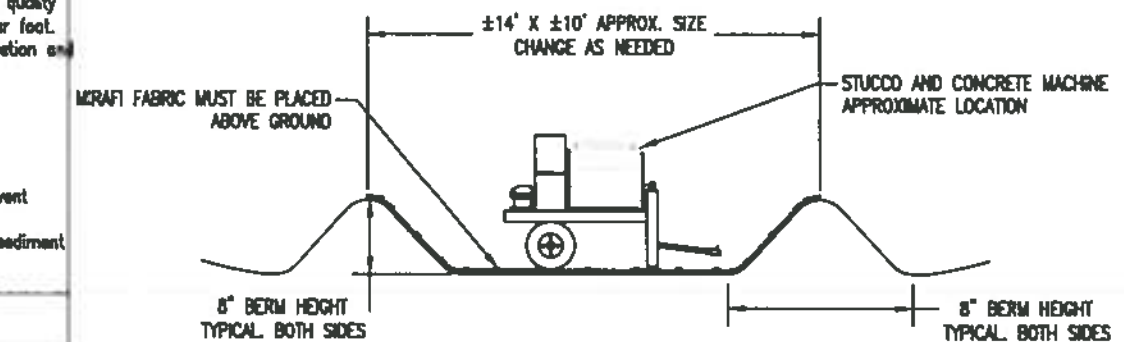
Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

NOTE:
In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.



PLAN VIEW
SCALE: N.T.S.



ELEVATION VIEW
SCALE: N.T.S.

STUCCO & CONCRETE MACHINE BMP
SCALE N.T.S

VORTEX ENGINEERING, INC.
* CONSTRUCTION MANAGERS & SITE PLANNERS
* PROJECT MANAGERS
* CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 8-15-17 PROFESSIONAL ENGINEER

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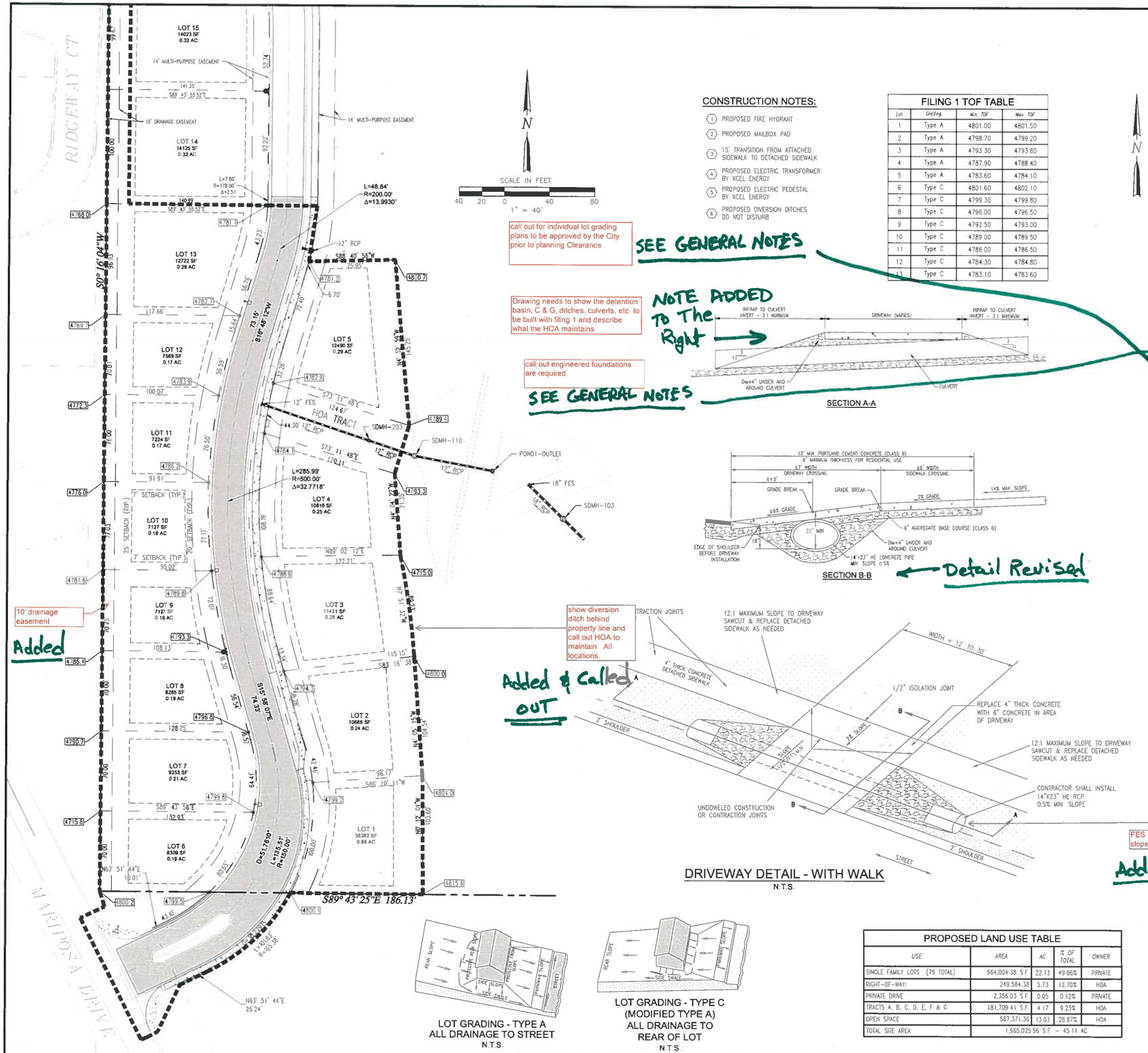
MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/15/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

Construction Stormwater Management Plan Details
Pinnacle Ridge Subdivison
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 07/08/15
SCALE:
CAD ID: 6.0swm-f1.dwg

~SHEET~
C6.2



CONSTRUCTION NOTES:

1. PROPOSED FIRE HYDRANT
2. PROPOSED MAILBOX PAD
3. 15' TRANSITION FROM ATTACHED SIDEWALK TO DETACHED SIDEWALK
4. PROPOSED ELECTRIC TRANSFORMER BY XCEL ENERGY
5. PROPOSED ELECTRIC PEDESTAL BY XCEL ENERGY
6. PROPOSED DIVERSION DITCHES DO NOT DISTURB

FILING 1 TOF TABLE			
Lot	Grading	Min. TOF	Max. TOF
1	Type A	4801.00	4801.50
2	Type A	4798.70	4799.20
3	Type A	4793.30	4793.80
4	Type A	4787.90	4788.40
5	Type A	4783.60	4784.10
6	Type C	4801.60	4802.10
7	Type C	4799.30	4799.80
8	Type C	4796.00	4796.50
9	Type C	4792.50	4793.00
10	Type C	4789.00	4789.50
11	Type C	4786.00	4786.50
12	Type C	4784.30	4784.80
13	Type C	4783.10	4783.60

SECTION A-A

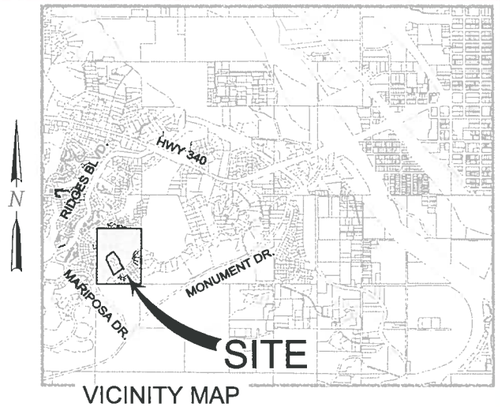
SECTION B-B ← Detail Revised

DRIVEWAY DETAIL - WITH WALK
N.T.S.

LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.

LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.

PROPOSED LAND USE TABLE				
USE	AREA	AC	% OF TOTAL	OWNER
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA	1,965,025.56 S.F. = 45.11 AC			



VICINITY MAP

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. ALL LOTS MUST HAVE AN INDIVIDUAL GEOTECHNICAL INVESTIGATION PERFORMED AND A SITE SPECIFIC ENGINEERING FOUNDATION.
10. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL.
9. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
10. ALL WATER SERVICES SHALL HAVE A PRESSURE REGULATED YOKE INSTALLED BASED ON PRESSURE LIMITS AS DETERMINED IN THE HYDRAULIC ANALYSIS.
11. DIVERSION DITCHES SHOWN ON THIS PLAN SHALL NOT BE DISTURBED AT ANY TIME.
12. DRIVEWAYS SHALL CONFORM TO THE DETAIL SHOWN ON THIS PLAN

LEGEND

- PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- 4550.00 LOT CORNER SPOT ELEVATION
- PROPOSED FIRE HYDRANT

CLERK AND RECORDER'S CERTIFICATE

STATE OF COLORADO } ss
COUNTY OF MESA }

I hereby certify that this instrument was filed in my office at _____ o'clock ___ M., this ____ day of _____ A.D. 2017, and is duly recorded in Book No _____, at page ____, Reception No _____, Drawer No _____, Fees $ _____

_____
Clerk and Recorder

By _____
Deputy

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	BY
1	8/08/17	DKS
	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	
	COMMENT	

Site Plan for Recording
Filing 1
Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO. F04-006
DATE: 06/08/17
SCALE: 1" = 60'
CAD ID: pinnacle-afr.dwg

-SHEET-
1

Final Plan of Subdivision

Pinnacle Ridge Subdivision

Filing 1

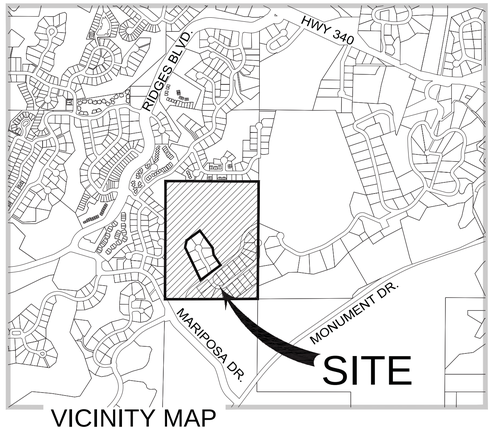
Grand Junction, Colorado

LEGEND

- EXISTING CONTOUR (4560)
- PROPERTY BOUNDARY
- OLD PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE (W)
- EXISTING WATER LINE (W)
- PROPOSED IRRIGATION (IRR)
- EXISTING FENCE (X)
- PROPOSED DRY UTILITIES (BY OTHERS) (EGTC)
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- LOT CORNER SPOT ELEVATION (4550.00)
- PROPOSED SWALE/BERM ELEVATION. (G 4550.00)
- PROPOSED FL CURB/V-PAN (FL 4550.00)
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER METER
- PROPOSED IRRIGATION RISER (I)
- PROPOSED IRRIGATION VALVE (V)
- PROPOSED IRRIGATION CLEANOUT (CO)
- EXISTING CONTOUR LABEL (4550.00)
- PROPOSED CONTOUR LABEL (4550.00)

UTILITY PROVIDERS INFORMATION

UTILITY	PROVIDER	PHONE NUMBER
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626



VICINITY MAP

ABBREVIATION LEGEND

&	AND	MCSM	MESA COUNTY SURVEY MONUMENT
℄	CENTERLINE	MFG'S	MANUFACTURER'S
Ø	DIAMETER	M.P.E.	MULTI-PURPOSE EASEMENT
'	FEET	MPH	MILES PER HOUR
"	INCHES	NE COR	NORTHEAST CORNER
±	PLUS OR MINUS	N&S&E	NORTH AND SOUTH AND EAST
APPROX.	APPROXIMATELY	NO.	NUMBER
BRL	BUILDING RESTRICTION LINE	N.T.S.	NOT TO SCALE
BVCS	BEGIN VERTICAL CURVE STATION	PROP.	PROPOSED
BVCE	BEGIN VERTICAL CURVE ELEVATION	PRV	PRESSURE REDUCING VALVE
CB	CATCH BASIN	PSI	POUNDS PER SQUARE INCH
CL III	CLASS 3	PVC	POLYVINYL CHLORIDE
CMP	CORRUGATED METAL PIPE	PVI	POINT OF VERTICAL INTERSECTION
CR	CURB RETURN	PVMT	PAVEMENT
CT.	COURT	O.C. E.W.	ON CENTER EACH WAY
DR.	DRIVE	RCP	REINFORCED CONCRETE PIPE
EL.	ELEVATION	RD	ROAD
ELEV	ELEVATION	RET. WALL	RETAINING WALL
EX.	EXISTING	R.O.W.	RIGHT-OF-WAY
EXIST.	EXISTING	RT	RIGHT
EVCS	END VERTICAL CURVE STATION	SCH	SCHEDULE
EVCE	END VERTICAL CURVE ELEVATION	SD	STORM DRAIN
FL	FLOWLINE	SEC	SECTION
FH	FIRE HYDRANT	SF	SQUARE FEET
FT	FEET	SQ. FT.	SQUARE FEET
GPM	GALLONS PER MINUTE	SS	SANITARY SEWER
GV	GAS VALVE	ST.	STREET
G.V.A.L.C.S.	GRAND VALLEY ALIQUOT LOCAL COORDINATE SYSTEM	STA	STATION
		THRU	THROUGH
HGL	HYDRAULIC GRADE LINE	TYP.	TYPICAL
HI PT	HIGH POINT	TW	TOP OF WALL
HP	HORSE POWER	U.W.C.D.	UTE WATER CONSERVANCY DISTRICT
INV	INVERT	VC	VERTICAL CURVE
LT	LEFT	VCP	VITRIFIED CLAY PIPE
MAX	MAXIMUM	W/	WITH
MIN	MINIMUM	WM	WATER METER
MH	MANHOLE	WV	WATER VALVE

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.

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SHEET NUMBER	SHEET TITLE
C0.0	COVER
C0.1	PROJECT NOTES
C0.2	OVERALL SITE PLAN AND FILING PLAN
C1.0	COMPOSITE SITE PLAN - LAYOUT AND GEOMETRY PLAN
C1.1	COMPOSITE SITE PLAN - SIGNAGE & LIGHTING PLAN
C2.0 - C2.2	COMPOSITE SITE PLAN - GRADING PLAN, ROAD CROSS SECTIONS
C3.0	COMPOSITE SITE PLAN - OVERALL UTILITY AND WATER PLAN
C4.0	ROAD AND SEWER PLAN AND PROFILE - AIGUILLE DRIVE
C4.1	ROAD AND SEWER PLAN AND PROFILE - SPIRE CT. & TALUS CT.
C5.0 - C5.2	STORM SEWER PLAN & PROFILE
C6.0 - 6.2	CONSTRUCTION STORM WATER MANAGEMENT PLAN

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21. TOWNSHIP 1 SOUTH. RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM. LOTS 1 - 9. BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK 8 AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = R-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'/25'
   REAR = 30'/5'
   SIDE = 15'/3'
7. PROPERTY APPLICANT:
   TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS & COST ESTIMATORS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
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PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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MAJOR SUBDIVISION
FINAL PLAN

BY	REV. DATE	COMMENT
DLS	1	8/09/17 REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017
DLS	2	10/09/17 REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017

Cover
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/08/17
SCALE:
CAD ID: 0.0cover-f1.dwg

~SHEET~
C0.0

LOCAL CONTACT INFORMATION
GRAND JUNCTION DEVELOPMENT INSPECTOR: MARK BARSLUND 970-201-1362

GENERAL NOTES:

1. THESE GENERAL NOTES SHALL BE APPLICABLE TO ALL SHEETS WITHIN THIS SET OF DRAWINGS.
2. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE GOVERNING AGENCY. CONTRACTOR MUST CONTACT THE APPROPRIATE AGENCY PRIOR TO CONSTRUCTION IN THE RIGHT-OF-WAY.
3. PLANNING PERMIT APPROVAL MUST BE OBTAINED BY INDIVIDUAL LOT OWNERS PRIOR TO CONSTRUCTION. THE LOT OWNER MUST SUBMIT A PROPOSED DRAINAGE PLAN OF EACH SITE TO THE GOVERNING AGENCY FOR REVIEW.
4. EXISTING WATER, SANITARY, AND STORM SEWER LINES ARE SHOWN BASED ON BEST AVAILABLE INFORMATION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS SPECIFICALLY AT CONNECTION POINTS AND AT POTENTIAL POINTS OF CONFLICT. ALL INFORMATION SHALL BE SUPPLIED TO THE ENGINEER PRIOR TO CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR:
   (A) CONTACTING THE APPROPRIATE AGENCY TO ARRANGE A PRE-CONSTRUCTION MEETING AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
   (B) OBTAINING ALL PERMITS FOR STREET CUTS, UTILITIES CONSTRUCTION AND GRADING. THE COST OF ALL PERMITS SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S BID.
   (C) COORDINATING WITH ALL UTILITY COMPANIES INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. ADVANCE COORDINATION BY THE CONTRACTOR TO ALL UTILITY COMPANIES INVOLVED SHALL BE REQUIRED FOR ANY SERVICE INTERRUPTIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER, PROJECT MANAGER AND THE UTILITY COMPANY 48 HOURS PRIOR TO START OF CONSTRUCTION. NO UTILITY TAPS SHALL BE MADE WITHOUT WRITTEN AUTHORIZATION BY THE UTILITY COMPANY AND THE CITY.
   (D) VERIFICATION OF ALL OTHER UNDERGROUND FACILITIES WHICH MAY BE AFFECTED BY THIS PROJECT AND REPAIR THEREOF IN CASE OF DAMAGE.
   (E) CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO OBTAIN TEMPORARY POWER AND TELEPHONE SERVICE DURING CONSTRUCTION. ALL COST FOR TEMPORARY SERVICES SHALL BE THE CONTRACTORS RESPONSIBILITY.
   (F) RESTORATION OF DISTURBED STREET PAVEMENT AS REQUIRED BY THE CITY AND THE STATE'S DEPARTMENT OF TRANSPORTATION.
   (G) ALL PROJECT SAFETY INCLUDING, BUT NOT LIMITED TO, TRENCH EXCAVATION AND SHORINGS, TRAFFIC CONTROL, AND SECURITY.
   (H) COORDINATING ALL WORK AND INSPECTIONS AS REQUIRED BY THE CITY OR THE STATE.
   (I) OBTAINING NECESSARY PERMITS FROM THE DEPARTMENT OF TRANSPORTATION FOR ALL WORK IN AND ADJACENT TO STATE RIGHT-OF-WAY.
   (J) RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE. AS-BUILTS SHALL INCLUDE UNDERGROUND UTILITIES AS WELL AS ANY FIELD MODIFICATIONS OF THE PLANS.
   (K) KEEPING ADJACENT STREETS FREE AND CLEAN OF ALL DEBRIS AND DIRT FROM THE JOB SITE.
   (L) THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED AT THE JOB SITE AT ALL TIMES. EACH SUBCONTRACTOR (INCLUDING THE SURVEYOR) SHALL HAVE A SIGNED COPY OF THE PLANS AND THE APPROPRIATE STANDARDS AND SPECIFICATIONS IN HIS POSSESSION AT ALL TIMES WHEN IMPROVEMENTS ARE BEING INSTALLED.
   (M) THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR COMPLETION OF INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED BY NOTE TO BE "PROVIDED," "INSTALLED" OR "CONSTRUCTED" UNLESS SPECIFICALLY NOTED OTHERWISE.
   (N) CONTRACTOR WILL HAVE A COPY OF APPROVED SOILS REPORTS FOR PAVEMENT DESIGN AND COMPACTION REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL RECOMMENDATIONS CONTAINED WITHIN THE SOILS REPORT.
   (O) VERIFYING THE ACCURACY OF THE VERTICAL BENCHMARK INFORMATION. CONTRACTOR SHALL USE BENCHMARKS AND DATUMS SHOWN HEREON TO SET PROJECT BENCHMARK(S), BY RUNNING A LEVEL LOOP BETWEEN AT LEAST TWO BENCHMARKS, AND SHALL PROVIDE SURVEY NOTES OF SUCH TO PROJECT ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
6. IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
7. TWO WORKING DAYS BEFORE YOU DIG, GRADE, OR EXCAVATE, CALL THE APPROPRIATE UTILITY NOTIFICATION CENTER FOR THE MARKING OF MEMBER UNDERGROUND UTILITIES. THE UTILITIES SHOWN ON THESE PLANS ARE PLOTTED BASED ON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION, AND REPAIR OF ANY EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. ANY UTILITY DAMAGED BY CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
8. THIS PLAN WAS PREPARED BASED ON SURVEY INFORMATION PROVIDED BY A LICENSED SURVEYOR. VORTEX ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR ERRORS DUE TO INCOMPLETE OR INACCURATE SURVEY INFORMATION.
9. SUBGRADE DENSITY SHALL BE TESTED BY A PRIVATE SOILS TESTING FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING BASE COURSE OR CONCRETE. BASE COURSE DENSITY SHALL ALSO BE TESTED BY THE PRIVATE GEOTECHNICAL FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING PAVEMENT.
10. THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM ALL UTILITY COMPANIES PRIOR TO ANY DEMOLITION WORK OR DISCONNECTION OF ANY SERVICE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANIES.
2. ALL UTILITIES INCLUDING STORM SEWER, SANITARY SEWER AND WATER MAINS SHALL BE COMPLETELY REMOVED FROM THE GROUND UNLESS OTHERWISE SPECIFIED. NO EXISTING UTILITY, STRUCTURE OR UNDERGROUND IMPROVEMENT SHALL BE ABANDONED IN PLACE WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER, OWNER AND GOVERNING AGENCY.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES WHICH ARE TO REMAIN IN SERVICE. INCLUDING BUT NOT LIMITED TO GAS, ELECTRIC, CABLE AND TELEPHONE SERVICES.
4. ALL STRUCTURE INCLUDING BASEMENT WALLS AND FLOOR SLABS SHALL BE COMPLETELY REMOVED FROM THE SITE.
5. ALL DEMOLITION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS INCLUDING BUT NOT LIMITED TO HAZARDOUS MATERIALS, DISPOSAL, HOURS OF OPERATION.
6. ALL EROSION CONTROL MEASURES DESIGNED FOR THE SITE PERIMETER OR TO PROTECT EXISTING IMPROVEMENTS SHALL BE IN PLACE PRIOR TO THE START OF ANY DEMOLITION ACTIVITIES.
7. THE CONTRACTOR SHALL OBTAIN AND REVIEW THE ENVIRONMENTAL STUDIES PROVIDED BY THE OWNER AND TAKE ALL NECESSARY PRECAUTIONS FOR ENVIRONMENTAL SAFETY DURING DEMOLITION ACTIVITIES. IT SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE EXISTING STRUCTURES FOR ANY OTHER CONDITIONS WHICH MAY AFFECT THE DEMOLITION PROCEDURES.
8. ANY CONDITIONS WHICH MAY BE UNCOVERED DURING THE PROCESS OF DEMOLITION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER IMMEDIATELY. ADDITIONAL EXPENSES INCURRED BY UNFORESEEN CONDITIONS SHALL BE APPROVED BY THE OWNER PRIOR TO THE ADDITIONAL WORK.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE PROPERTY FOR THE TYPE AND QUANTITY OF DEMOLITION REQUIRED, PRIOR TO SUBMISSION OF A BID.
10. THE CONTRACTOR SHALL HAVE WATER ON SITE FOR DUST ABATEMENT AT ALL TIMES DURING DEMOLITION ACTIVITIES.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF ALL DEBRIS. BURNING ON SITE SHALL NOT BE PERMITTED. NO DEBRIS INCLUDING CONCRETE OR ASPHALT MAY BE PLACED IN ANY FILL AREA.
12. ANY DAMAGE TO PUBLIC UTILITIES OR ADJACENT PROPERTIES AS A RESULT OF THE DEMOLITION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. REPAIRS SHALL BE MADE IN A TIMELY MANNER TO THE SATISFACTION OF THE DAMAGED PARTY.
13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH DOCUMENTATION OF THE CONDITION OF EXISTING IMPROVEMENTS TO REMAIN IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS NOT DOCUMENTED AS PRE-EXISTING. DOCUMENTATION SHALL BE PROVIDED PRIOR TO COMMENCEMENT OF WORK.
14. ALL EXISTING UTILITY SERVICES SHALL BE COMPLETELY REMOVED FROM THE SITE. SERVICE SHALL BE CUT AND PLUGGED AT THE PROPERTY LINE IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS. THE DEMOLITION CONTRACTOR SHALL CLEARLY MARK ALL STUBS AT THE PROPERTY LINE WITH A 4 X 4 WOOD POST (MINIMUM 4' ABOVE GRADE, 4' BELOW GRADE) MARKED WITH THE SERVICE TYPE.
15. ALL EXISTING WELLS SHALL BE CAPPED AND ABANDONED IN ACCORDANCE WITH ALL STATE REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL REQUIRED PROCEDURES, FILE ALL REQUIRED FORMS, APPLICATIONS AND REPORTS, AND OBTAIN ALL REQUIRED APPROVALS FROM THE STATE ENGINEER'S OFFICE.
16. DURING THE COURSE OF DEMOLITION, CONTRACTOR SHALL PROVIDE SECURITY FENCING AND OTHER PRECAUTIONARY SAFETY MEASURE AS NECESSARY.

EROSION CONTROL NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL FACILITIES SHOWN.
3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORESEEN PROBLEMS OR IF THE PLAN DOES NOT FUNCTION AS INTENDED. A JURISDICTION REPRESENTATIVE MAY REQUIRE ADDITIONAL CONTROL DEVICES UPON INSPECTION OF PROPOSED FACILITIES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED, STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM TRAFFIC FROM THE SITE.
5. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE PAVED, SEEDED WITH NATIVE VEGETATION OR LANDSCAPED. REFER TO LANDSCAPE PLANS FOR SEED MIX AND PLANTING SPECIFICATIONS.
6. EROSION CONTROL STRUCTURES BELOW SODDED AREAS MAY BE REMOVED ONCE SOD AND FINAL LANDSCAPING IS IN PLACE. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION. EROSION CONTROL IN PROPOSED PAVED AREAS SHALL REMAIN IN PLACE UNTIL PAVEMENT IS COMPLETE.
7. THIS PLAN IS ONLY TO BE USED FOR INSTALLATION OF EROSION CONTROL FACILITIES. DO NOT USE THIS PLAN FOR GRADING OR STORM SEWER CONSTRUCTION.
8. CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLE WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES WILL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS, MOVED WHEN NECESSARY AND REMOVED WHEN THE SITE IS PAVED.
9. INLET PROTECTION DEVICES SHALL BE INSTALLED IMMEDIATELY UPON INDIVIDUAL INLET'S BECOMING FUNCTIONAL.
10. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH GRADING AND/OR UTILITY CONSTRUCTION SHALL OBTAIN A COPY OF THE STORM WATER MANAGEMENT PLAN (SWMP) AND ANY OTHER DOCUMENTATION REGARDING "STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY" AND BECOME FAMILIAR WITH THEIR CONTENTS.
11. THE TEMPORARY PARKING AND STORAGE AREA SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AREA, EQUIPMENT CLEANING AREA, EMPLOYEE BREAK AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
12. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, ETC.) SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT WITH STORM WATER DISCHARGES FROM THE SITE.
13. MAINTAIN ON THE SITE OR HAVE READILY AVAILABLE SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
14. FUGITIVE DUST BLOWING FROM THE SITE SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS ABSOLUTELY PROHIBITED.
15. NO RUBBISH, TRASH, GARBAGE, OR OTHER SUCH MATERIALS SHALL BE DISCHARGED INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
16. ALL MEASURES PRESENTED IN THE SWMP SHALL BE INITIATED AS SOON AS PRACTICABLE.
17. IF THE GRAVEL CONSTRUCTION ENTRANCES ARE NOT EFFECTIVE IN REMOVING THE MAJORITY OF DIRT OR MUD FROM THE TIRES OF THE CONSTRUCTION VEHICLES, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP AND THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.
18. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
19. IF SOIL STOCKPILING IS EMPLOYED ON THE SITE, SILT FENCES SHALL BE USED TO HELP CONTAIN THE SEDIMENT.
20. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
21. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN 30 DAYS AFTER FINAL STABILIZATION. FINAL STABILIZATION HAS OCCURRED WHEN ALL SOIL DISTURBING ACTIVITIES ARE COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OF THE COVER FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES HAS BEEN EMPLOYED.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) DUE TO GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT.
23. ALL OFF-SITE CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR STORM DRAIN CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.

EROSION CONTROL MAINTENANCE NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL MEASURES CONTAINED IN THIS PLAN SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT, AND SHOULD BE CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:
3. STRAW BALE INLET PROTECTION DEVICES AND BARRIERS SHALL BE FIXED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR SHALL BE REPLACED IF THEY SHOW SIGNS OF DETERIORATION.
4. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, RE-SEEDED, AND WATERED AS NEEDED.
5. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-THIRD TO ONE-HALF THE HEIGHT OF THE SILT FENCE.
6. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
7. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
8. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES, SEDIMENT IN THE SEDIMENTATION BASINS SHALL NOT EXCEED THE SEDIMENTATION CLEANOUT LEVEL.
9. IF THE STONES IN THE GRAVEL CURB INLET SEDIMENT FILTERS BECOME CLOGGED WITH SEDIMENT, THE STONES MUST BE PULLED AWAY, CLEANED AND REPLACED.
10. THE EMBANKMENT OF THE SEDIMENTATION BASIN SHALL BE CHECKED REGULARLY TO INSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
11. THE TEMPORARY SEDIMENT TRAP AND SEDIMENTATION BASIN STRUCTURES SHALL BE CHECKED REGULARLY TO INSURE THAT THEY ARE STRUCTURALLY SOUND AND HAVE NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. SEDIMENT DEPOSITION SHALL BE REMOVED PERIODICALLY TO ENSURE FULL VOLUME IS AVAILABLE IN THE POND.

GRADING NOTES:

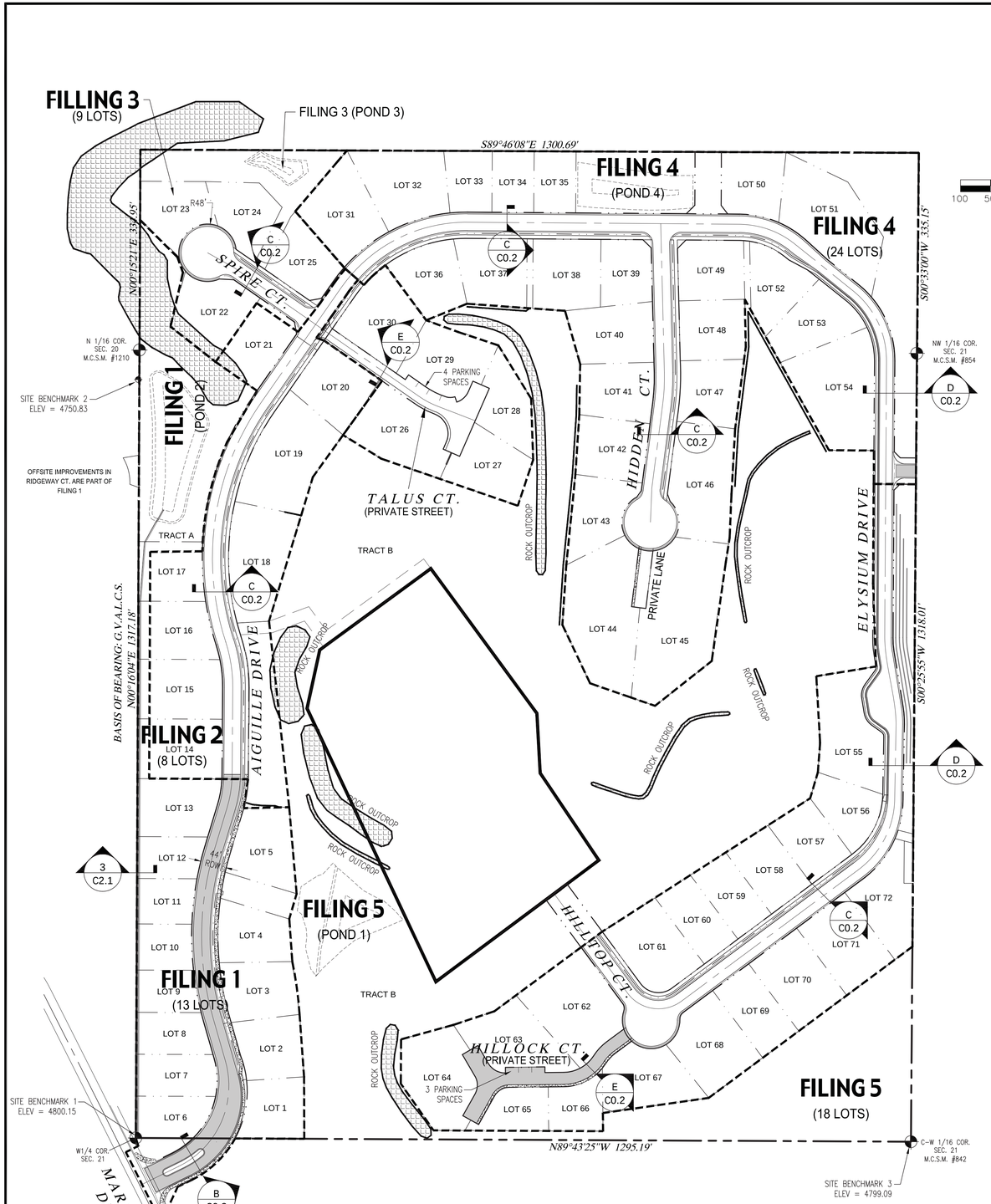
1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. CONTOURS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY. CONTOUR INTERVAL = 1 FOOT UNLESS OTHERWISE NOTED ON PLANS.
3. ALL DISTURBED AREAS THAT ARE UNSURFACED OR ARE NOT DESIGNATED AS LANDSCAPE AREAS ARE TO BE RE-SEEDED WITH DRY NATIVE GRASS SEED MIX.
4. IF DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE SOILS ENGINEER SHALL BE CONTACTED FOR RECOMMENDATIONS.
5. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND STANDARDS OF THE GOVERNING AGENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED AS SPECIFIED BY THE GEOTECH REPORT. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED, LICENSED, SOILS ENGINEER, CERTIFYING THAT THE SUBBASE WITHIN THE AREAS TO BE PAVED HAS BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECS.
6. NO PROPOSED SLOPE SHALL EXCEED TWO (2) HORIZONTAL TO ONE (1) VERTICAL, EXCEPT FOR DIVERSION DITCHES. ALL SLOPED AREAS MUST BE PROTECTED FROM EROSION.
7. IF STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS ARE STOCKPILED ON THE SITE, TOPSOIL MAY BE PLACED TO A HEIGHT OF FIVE FEET. SILT FENCE SHALL BE PLACED AROUND THE BASE OF THE STOCKPILE AND THE STOCKPILE SHALL BE SEEDED WITH NATIVE SEED MIX IMMEDIATELY AFTER STRIPING OPERATIONS ARE COMPLETE.
8. ON-SITE MATERIALS SUITABLE FOR FILL BENEATH DRIVES, AND PARKING AREAS BEYOND 5' OF THE BUILDING SHALL BE COMPACTED IN ACCORDANCE WITH THE GUIDELINES PRESENTED IN THE SOILS REPORT.
9. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHY AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO ENSURE 0.75% MIN. SLOPE AGAINST ALL GUTTERS TO PREVENT PUDDLING. ANY DISCREPANCIES SHALL BE PROVIDED TO THE ENGINEER IN WRITING IMMEDIATELY.
10. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED AS SPECIFIED IN THE GEOTECH REPORT.
11. SPOT ELEVATIONS REPRESENT FLOWLINE OR TOP OF ASPHALT UNLESS OTHERWISE NOTED.
12. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS WHICH DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB AND GUTTER AND UTILITIES.
13. ALL UTILITIES (MANHOLES, VALVE COVERS, CLEANOUTS, VAULTS, BOXES, ETC.) SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
14. ALL EARTH MOVING AND PLACEMENT OPERATIONS SHALL BE IN CONFORMANCE WITH THE RECOMMENDATIONS IDENTIFIED IN THE SOILS REPORT. THE CONTRACTOR SHALL HAVE A SIGNED AND SEALED COPY OF THE SOILS REPORT ON THE SITE AT ALL TIMES.
15. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.
16. WHERE NEW CURB AND GUTTER IS BEING CONSTRUCTED ADJACENT TO EXISTING ASPHALT, THE FOLLOWING SHALL APPLY: PRIOR TO PLACEMENT OF ANY CONCRETE THE CONTRACTOR SHALL HAVE A LICENSED SURVEYOR VERIFY GRADE AND CROSS SLOPE OF THE CURB AND GUTTER FORMS. THE CONTRACTOR SHALL SUBMIT THE SLOPES AND GRADES TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY SECTION WHICH DOES NOT CONFORM TO THE DESIGN OR TYPICAL CROSS SECTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CURB AND GUTTER POURS WITHOUT APPROVAL OF THE ENGINEER.
17. MAINTENANCE OF ANY STORMWATER MANAGEMENT FACILITY SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL GUIDELINES FOR PRIVATE STORMWATER MANAGEMENT FACILITIES AND SHALL BE THE RESPONSIBILITY OF THE OWNER AND THE ASSIGNEES.
18. SURFACE RESTORATION SHALL BE AS FOLLOWS:
   (A) FINE GRADE ALL AREAS DISTURBED BY THE CONSTRUCTION OPERATIONS AFTER COMPLETION OF BACKFILLING AND COMPACTING. AREAS WHICH ARE TO RECEIVE PAVEMENTS, SURFACING, TOPSOIL OR LANDSCAPING SHALL BE GRADED AS REQUIRED TO ALLOW INSTALLATION OF THE SPECIFIC SURFACE TREATMENT. GRADE ALL OTHER AREAS TO MATCH THE EXISTING GROUND LINE.
   (B) REPLACE AND REPAIR ANY SURFACE IMPROVEMENTS DAMAGED OR REMOVED. CONFORM TO CITY STANDARDS & SPECIFICATIONS.
19. BITUMINOUS PAVEMENT
   (A) BITUMINOUS PAVEMENT SHALL BE REMOVED TO CLEAN STRAIGHT LINES AT THE LOCATIONS INDICATED ON PLANS. WIDTH OF REMOVAL FOR PIPELINES SHALL BE KEPT TO A MINIMUM AS DICTATED BY TRENCHING OPERATIONS, BUT SHALL EXTEND AT LEAST 6 INCHES BEYOND THE LIMITS OF TRENCH EXCAVATION.
   (B) THE CUT SHALL BE MADE WITH PAVEMENT CUTTING WHEEL, SAW OR OTHER APPROVED METHOD, SO AS TO PROVIDE A REASONABLY STRAIGHT AND SQUARE EDGE.

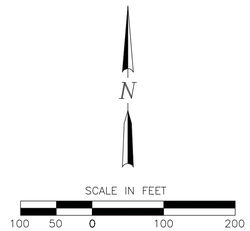
SANITARY SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL GRAVITY SANITARY SEWER LINES SHALL BE POLYVINYL CHLORIDE PIPE (PVC), ASTM D-3034 SDR.35, SEWER LINE MATERIALS AND CONSTRUCTION SHALL CONFORM TO ASTM STANDARDS AND SPECIFICATIONS.
3. DISTANCES FOR SANITARY SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. THEREFORE, DISTANCES SHOWN ON PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT.
4. RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATION. PIPELINE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT AND STEEL SHIMS TO ADJUST THE MANHOLE FRAME TO THE REQUIRED FINAL GRADE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS. ALL FRAMES SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
5. ALL SANITARY SEWER MAINS TESTING SHALL BE IN ACCORDANCE WITH LOCAL SPECIFICATIONS. COPIES OF ALL TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER, THE OWNER AND THE GOVERNING AUTHORITY PRIOR TO THE START OF THE WARRANTY PERIOD.
6. COMPACTION OF ALL TRENCHES WITHIN THE PROJECT SITE MUST BE ATTAINED AND COMPACTION RESULTS SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE. .
7. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING STRUCTURES AND IMPROVEMENTS DURING INSTALLATION OF THE SANITARY SEWER LINE.
8. THE CONTRACTOR SHALL POTHOLE THE EXISTING SEWER MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
9. SANITARY SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.

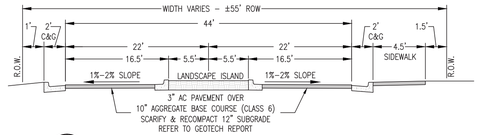
STORM SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING:
   (A) OBTAINING ALL REQUIRED PERMITS FROM THE CITY, THE DOT, OR ANY REGULATORY AUTHORITY AT THE CONTRACTOR'S COST INCLUDING PERMITS REQUIRED FOR WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
   (B) RESTORATION OF ANY EXISTING IMPROVEMENTS INCLUDING (BUT NOT LIMITED TO) FENCES, SOD, LANDSCAPING, PAVEMENT, SPRINKLER SYSTEMS.
   (C) VERIFICATION AND PROTECTION OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF THE PROJECT.
   (D) PROVIDING AS-BUILT DRAWINGS TO THE CITY AND ENGINEER.
   (E) ALL PERMITTING, DEVELOPMENT, CONNECTION, LOCATION INSPECTION AND TESTING FEES REQUIRED FOR STORM SEWER CONSTRUCTION.
   (F) VERIFYING ALL STANDARD DETAILS CONFORM TO CURRENT CITY/COUNTY STANDARDS AND SPECIFICATIONS.
   (G) FOR OBTAINING AND UNDERSTANDING ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THE CONSTRUCTION OF THE STORM SEWER IMPROVEMENTS.
   (H) FOR SCHEDULING ALL REQUIRED INSPECTIONS.
3. THE CONTRACTOR SHALL POTHOLE THE EXISTING STORM MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
4. STORM SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.
5. THE CONTRACTOR SHALL COORDINATE HIS WORK SCHEDULE WITH THE DITCH COMPANY TO ENSURE ALL DITCH FACILITIES ARE CONSTRUCTED WITHOUT DISRUPTION TO DITCH COMPANY OPERATIONS.
6. ALL STORM SEWER CONSTRUCTION SHALL BE IN CONFORMANCE WITH LOCAL STANDARDS AND SPECIFICATIONS.
7. DISTANCES FOR STORM SEWER ARE THE HORIZONTAL DISTANCES FROM CEN

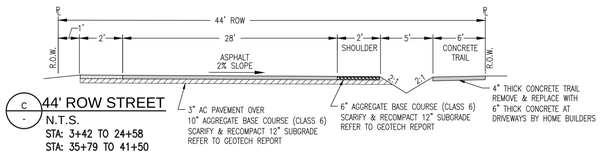




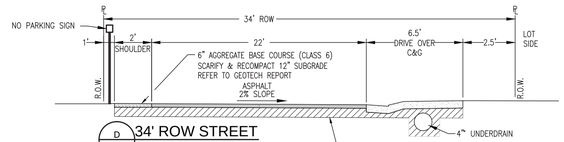
PROPOSED LAND USE TABLE			
SINGLE FAMILY LOTS (72 TOTAL)	934,944 S.F. – 21.46 AC	47.58%	OWNER: PRIVATE
TRACT A:	57,533 S.F. – 1.32 AC	2.93%	OWNER: HOA
TRACT B: OPEN SPACE	658,275 S.F. – 15.11 AC	33.50%	OWNER: HOA
FUTURE TRACTS	122,687 S.F. – 2.82 AC	6.24%	OWNER: HOA
RIGHT-OF-WAY:	191,434 S.F. – 4.39 AC	9.74%	OWNER: PUBLIC
TOTAL SITE AREA:	1,964,873 S.F. – 45.11 AC		



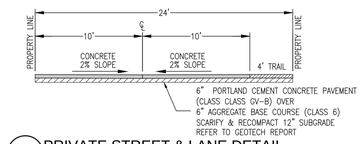
B
MARIPOSA DRIVE ENTRANCE
N.T.S.
STA: 0+24 TO STA: 1+52
(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 3+42)



C
44' ROW STREET
N.T.S.
STA: 3+42 TO 24+58
STA: 35+79 TO 41+50



D
34' ROW STREET
N.T.S.
STA: 24+58 TO 35+79



E
PRIVATE STREET & LANE DETAIL
N.T.S.
TRACTS C,F,J

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21. TOWNSHIP 1 SOUTH. RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM: LOTS 1 – 9. BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK B AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = R–2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'/25'
   REAR = 30'/5'
   SIDE = 15'/3'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

LEGEND

FILING & LIMITS OF DEVELOPMENT DESIGNATION

PROJECT BENCHMARK

PROJECT BENCHMARK #1
LOCATED AT THE SOUTHWEST CORNER OF THE SITE.
MONUMENT ID: PLS 18480, THE W1/4 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31563.18 EASTING: 78944.74 ELEV: 4800.15 (NAVD88)

PROJECT BENCHMARK #2
LOCATED AT THE WEST PROPERTY LINE, NEAR OUTLOOK COURT.
MONUMENT ID: NCSN #1210, THE N1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 32880.35 EASTING: 78949.85 ELEV: 4750.83 (NAVD88)

PROJECT BENCHMARK #3
LOCATED AT THE SOUTHEAST CORNER OF THE SITE.
MONUMENT ID: NCSN #842, THE W1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31558.05 EASTING: 80239.95 ELEV: 4799.09 (NAVD88)

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED
JAMES C. ATKINSON
18828
9-9-17
PROFESSIONAL ENGINEER

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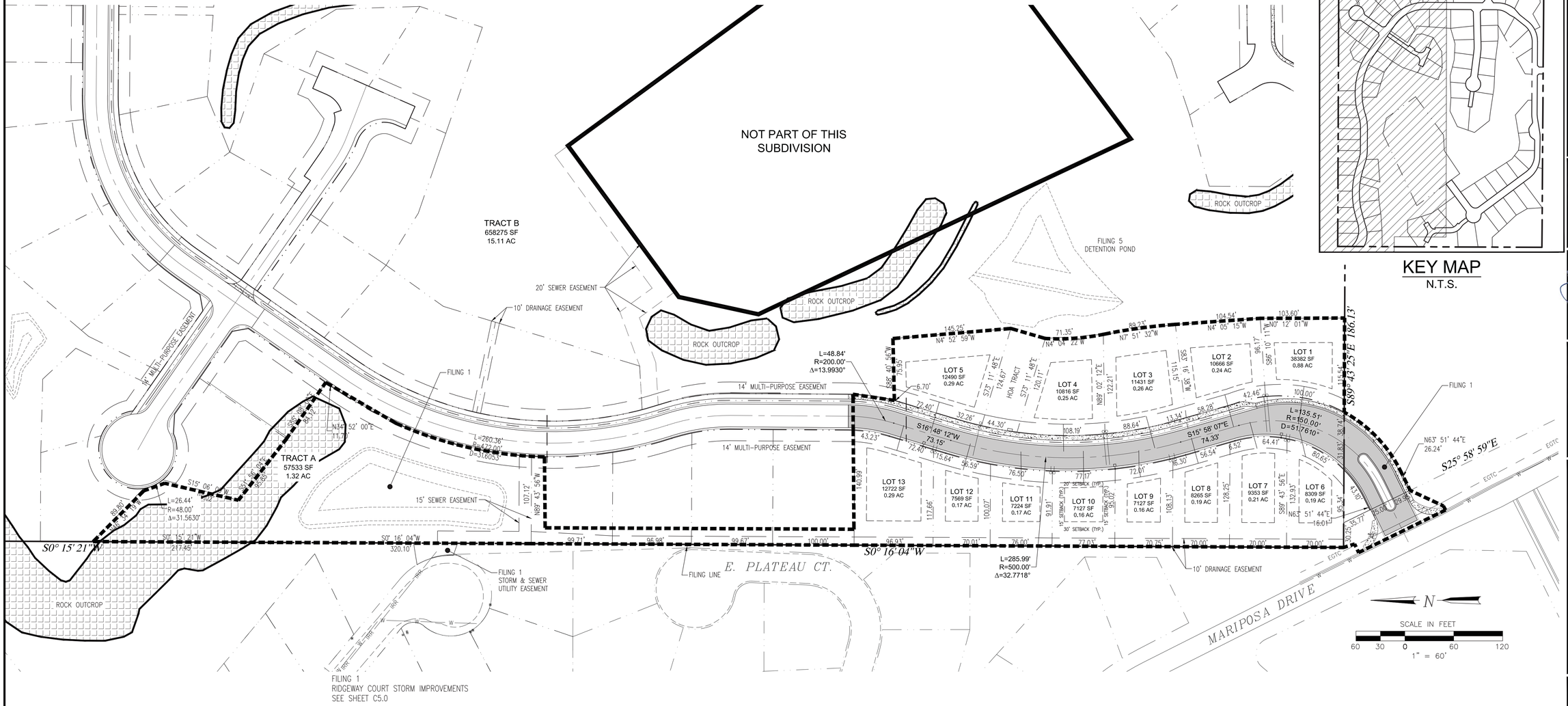
MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
2	10/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

Filing Plan
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 100'**
CAD ID: **0.0cover-f1.dwg**

~SHEET~
C0.2



PROPOSED LAND USE TABLE				
USE	*AREA*	*AC*	*% OF TOTAL*	*OWNER*
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. - 45.11 AC			

UTILITY PROVIDERS INFORMATION		
UTILITY	*PROVIDER*	*PHONE NUMBER*
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET C0.2

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.

Colorado 811
1-800-922-1987
co811.org

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

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CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 11-9-17 PROFESSIONAL ENGINEER

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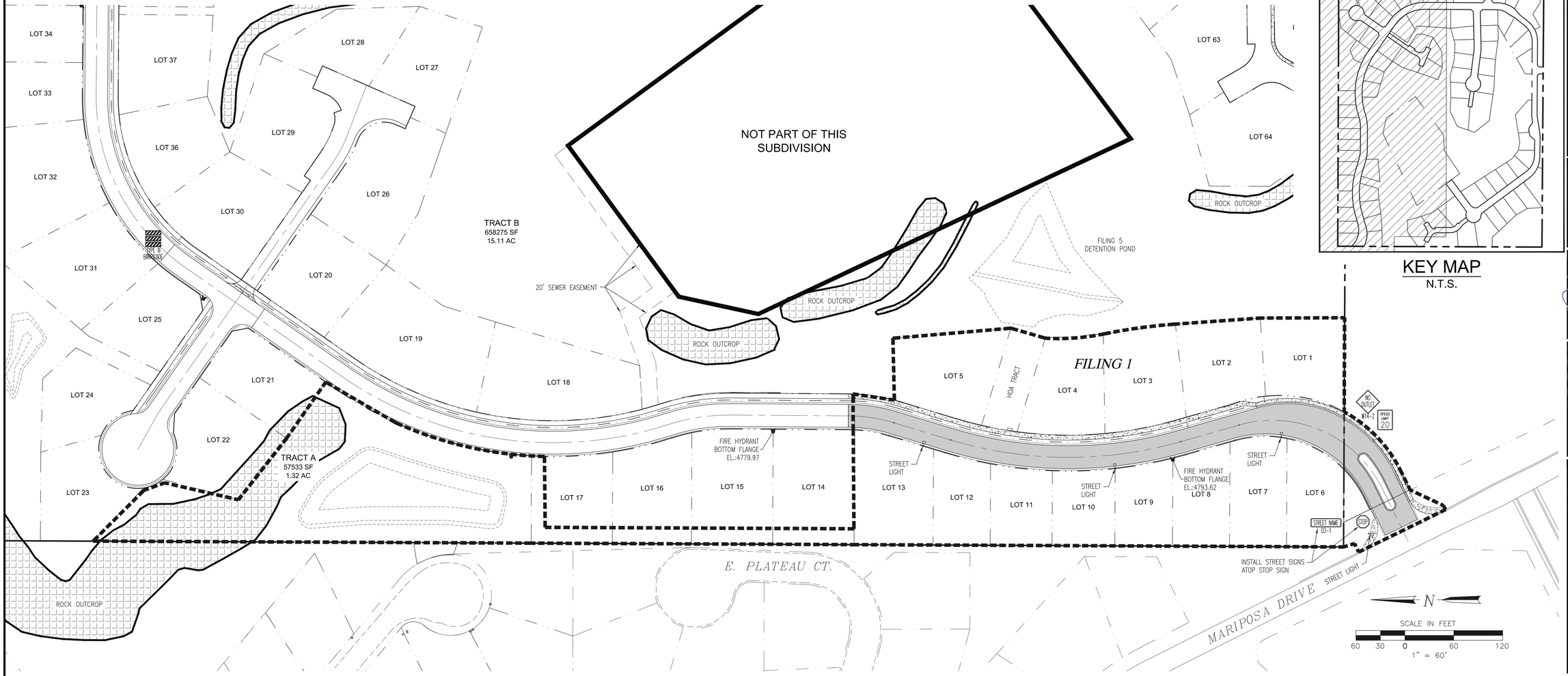
Composite Site Plan - Layout and Geometry Plan

Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 60'**
CAD ID: **1.0layout-f1.dwg**

~SHEET~
C1.0



KEY MAP
N.T.S.

SIGN SCHEDULE

- STOP — STOP SIGN (30"x30")
- STREET NAME — STREET NAME SIGN D3-1
- NO OUTLET — NO OUTLET SIGN W14-2
- FIXED TYPE III CDOT ROAD BARRICADES (3' x 8' SECTIONS, SEE STD. S-630-2)
- NO TRESPASSING — NO TRESPASSING SIGN
- SPEED LIMIT 20 — SPEED LIMIT SIGN R2-1

ALL SIGN POST MOUNTING AND PLACEMENT SHALL BE PER MUTCD OR MESA COUNTY SPECIFICATIONS. CONTRACTOR TO CONTACT MESA COUNTY TRAFFIC PRIOR TO INSTALLATION OF SIGNS. (ph. 970-244-1817)

PROPOSED LAND USE TABLE

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RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
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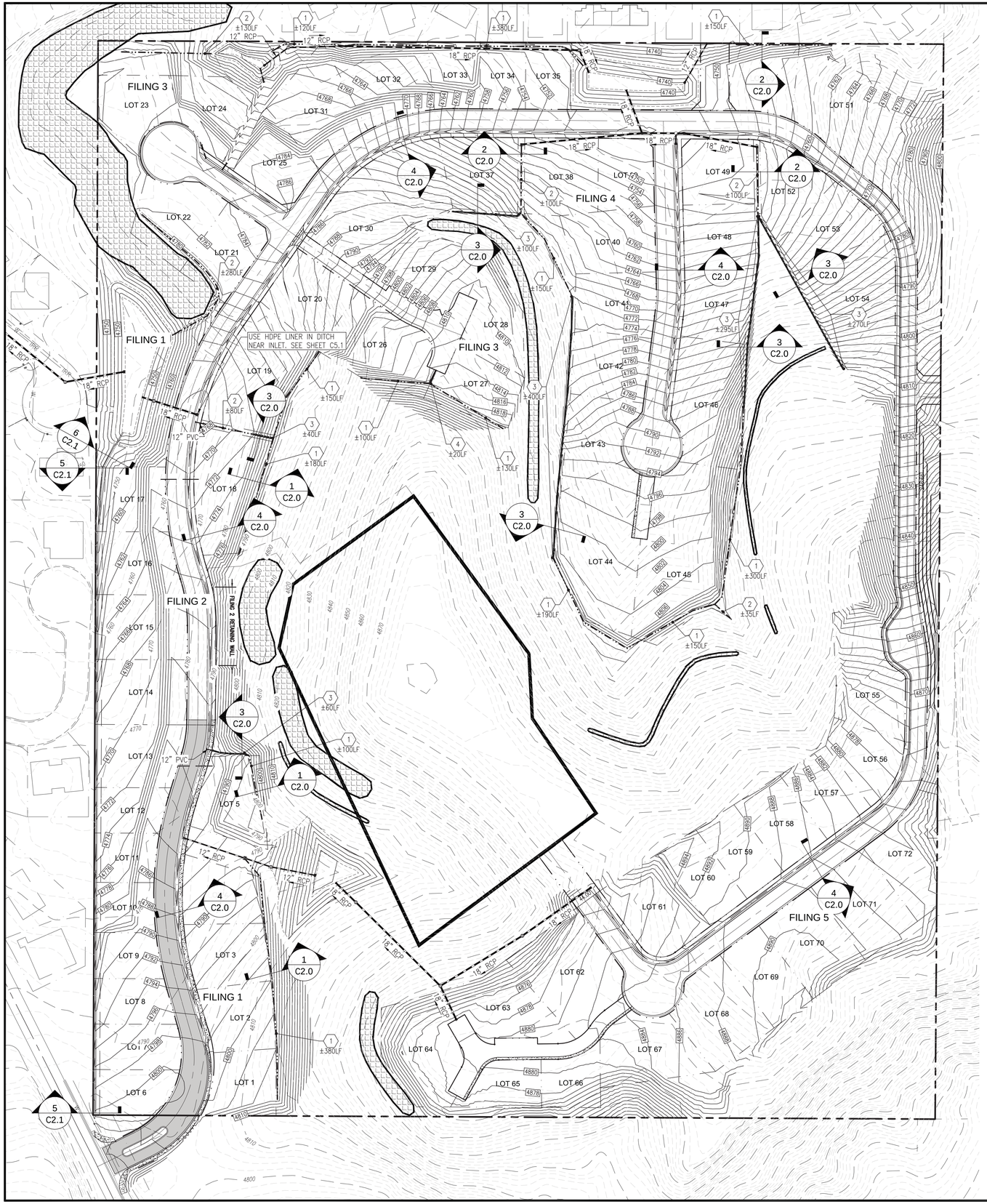
Signage & Lighting Plan
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 60'**
CAD ID: **1.0layout-f1.dwg**

~SHEET~
C1.1



CONSTRUCTION NOTES:

1. CONSTRUCT DIVERSION DITCH W/ BERM SEE DETAIL 1 THIS SHEET
2. CONSTRUCT DIVERSION DITCH SEE DETAIL 2 THIS SHEET
3. CONSTRUCT ROCK LINED DIVERSION DITCH SEE DETAIL 3 THIS SHEET
4. CONSTRUCT 2' CONCRETE V-PAN (FILING 3)

N

SCALE IN FEET

80 40 0 80 160

1" = 80'

CONTOUR INTERVAL = 2'

GRADING NOTE:

FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

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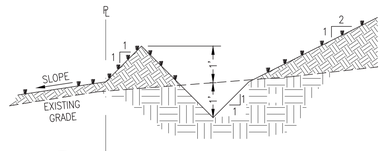
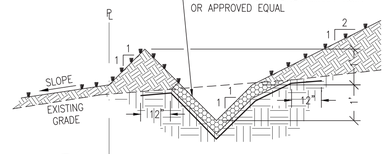
4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE STORM SEWER, SEE SHEET C5.0 & C5.1.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE FILING PLAN.
8. REFER TO SHEETS C0.1, C6.0, THRU C6.2 FOR STORMWATER MANAGEMENT CONTROL PLANS AND EROSION CONTROL NOTES.
9. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
10. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL.



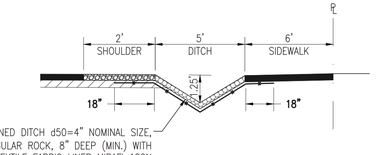
1 C2.0 DIVERSION DITCH SECTION W/ BERM N.T.S.



3 C2.0 ROCK LINED DIVERSION DITCH SECTION N.T.S.



2 C2.0 DIVERSION DITCH SECTION N.T.S.



ROCK LINED DITCH d50=4" NOMINAL SIZE, ANGULAR ROCK, 8" DEEP (MIN.) WITH GEOTEXTILE FABRIC LINER MIRAFI 180N OR APPROVED EQUAL

4 C2.0 ROCK LINED ROADSIDE DITCH N.T.S.

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• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 10-9-17 PROFESSIONAL ENGINEER

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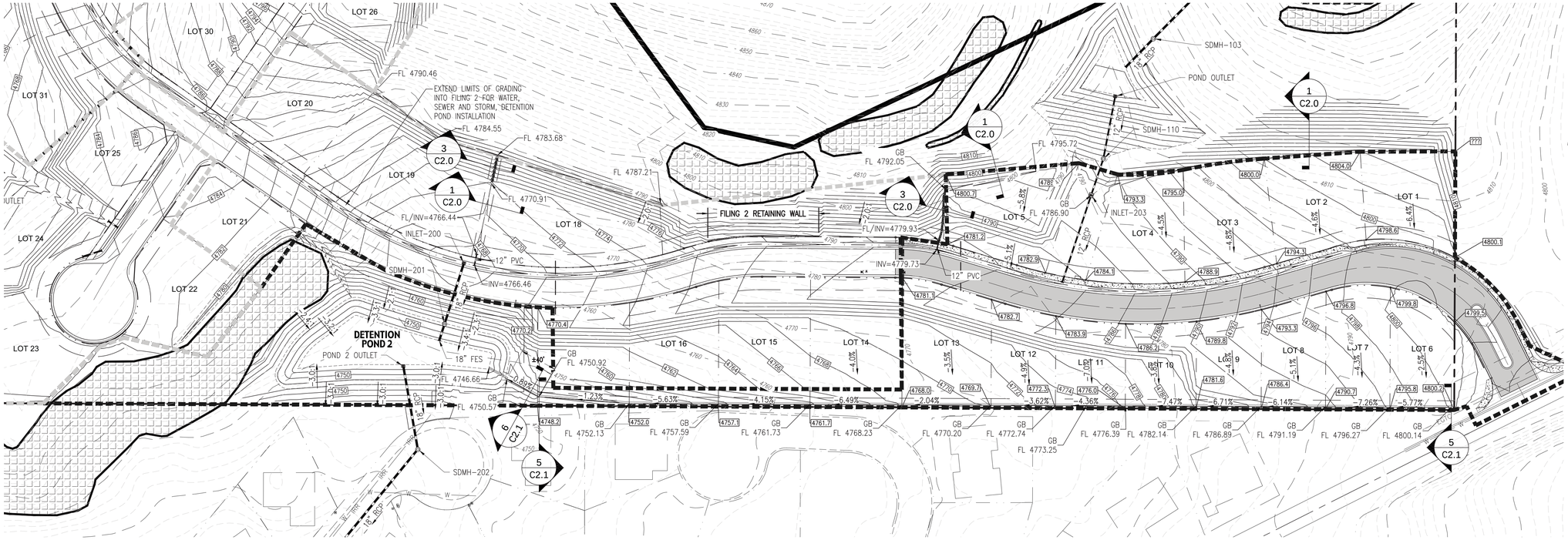
Overall Grading Plan Filings 1 - 5

Pinnacle Ridge Subdivision Filing 1

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1"= 80'**
CAD ID: **2.0grad-f1.dwg**

~SHEET~
C2.0



N

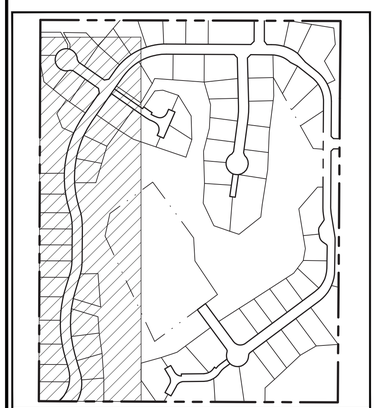
SCALE IN FEET

60 30 0 60 120

1" = 60'

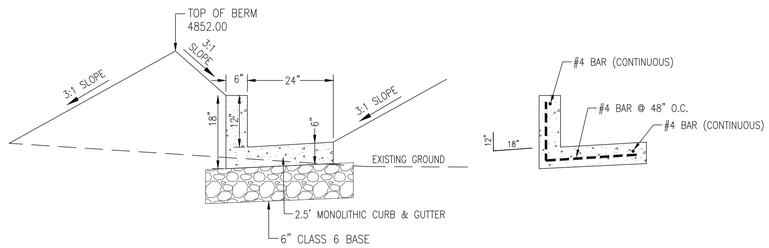
CONTOUR INTERVAL = 2'

FILING 1 TOF TABLE			
Lot	*Grading*	*Min. TOF*	*Max. TOF*
1	Type A	4801.00	4801.50
2	Type A	4798.70	4799.20
3	Type A	4793.30	4793.80
4	Type A	4787.90	4788.40
5	Type A	4783.60	4784.10
6	Type C	4801.60	4802.10
7	Type C	4799.30	4799.80
8	Type C	4796.00	4796.50
9	Type C	4792.50	4793.00
10	Type C	4789.00	4789.50
11	Type C	4786.00	4786.50
12	Type C	4784.30	4784.80
13	Type C	4783.10	4783.60



KEY MAP

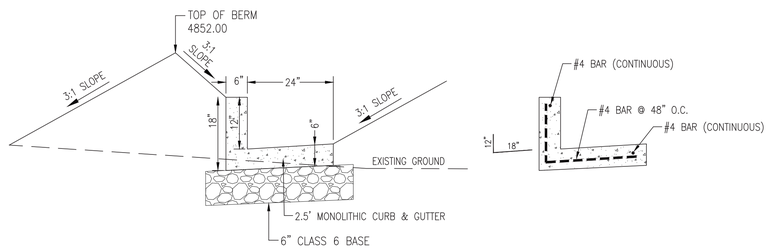
N.T.S.



WEST PROPERTY LINE SECTION - FINAL 45 LF TO DETENTION POND

5 C2.1 CONCRETE CURB & GUTTER DETAIL

N.T.S.



WEST PROPERTY LINE SECTION - FINAL 45 LF TO DETENTION POND

6 C2.1 CONCRETE CURB & GUTTER DETAIL

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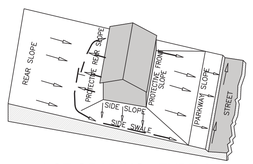
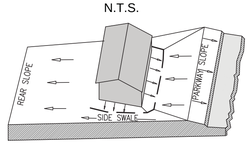


LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.



LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.

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Grading Plan Filing 1
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
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PROJECT NO: **F04-006**
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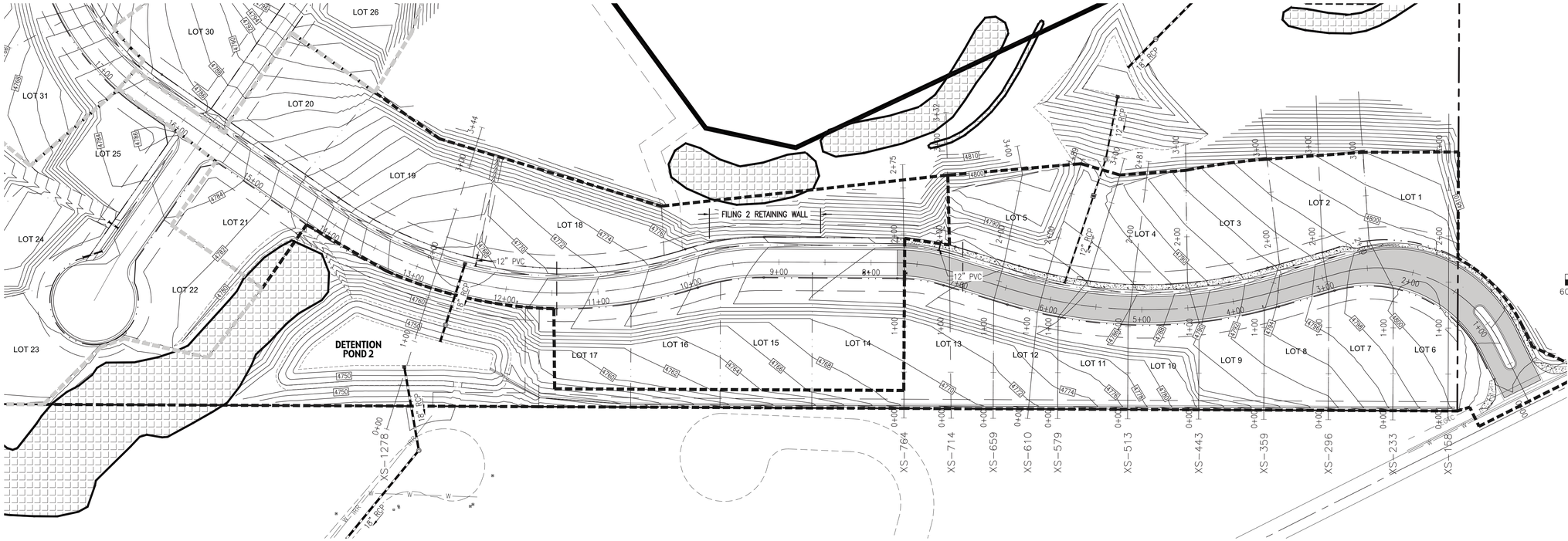
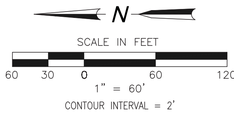
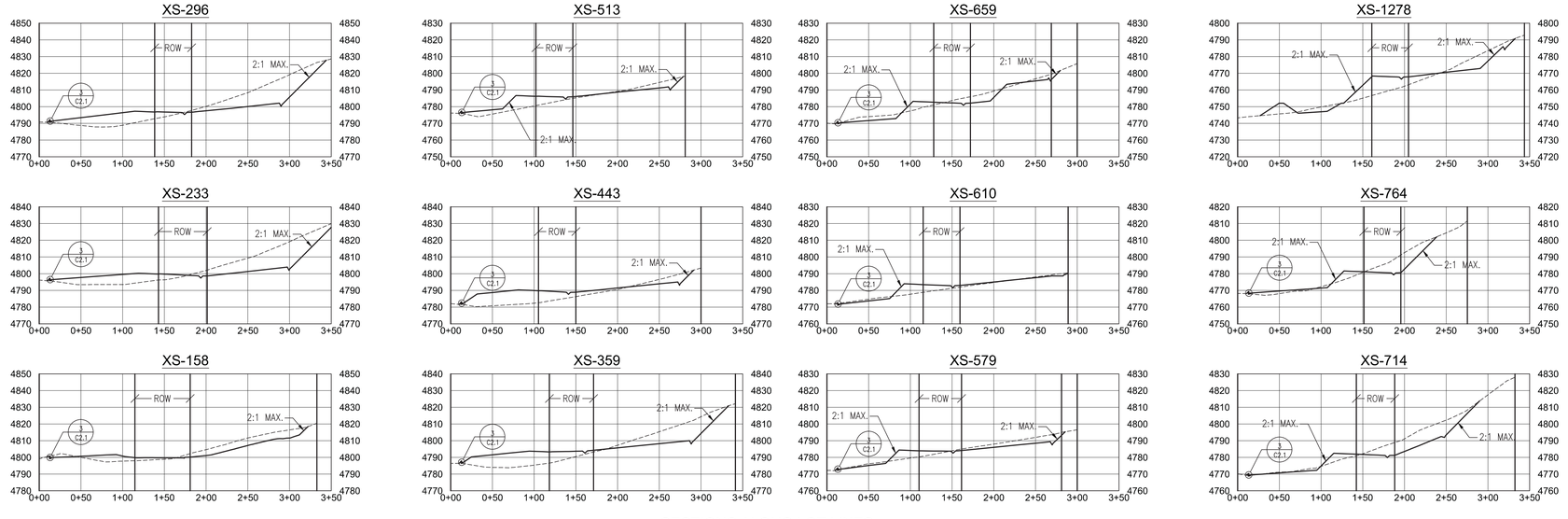
C2.1







SECTIONS ALONG LOT LINES

SCALE: 1" = 80' HORIZONTAL
1" = 40' VERTICAL

ACCEPTANCE BLOCK

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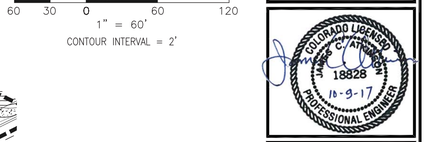
CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828



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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017 DLS
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017 DLS

Grading Plan Filing 1 - Road Cross Sections

Pinnacle Ridge Subdivision
Filing 1

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **SEE PLAN**
CAD ID: **2.0grad-f1.dwg**

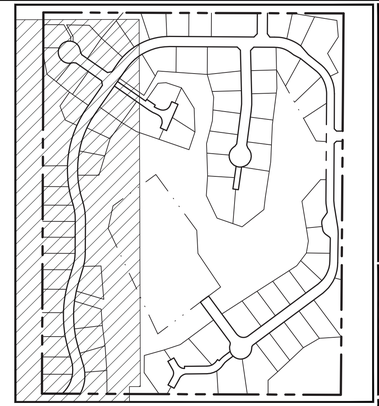
~SHEET~
C2.2

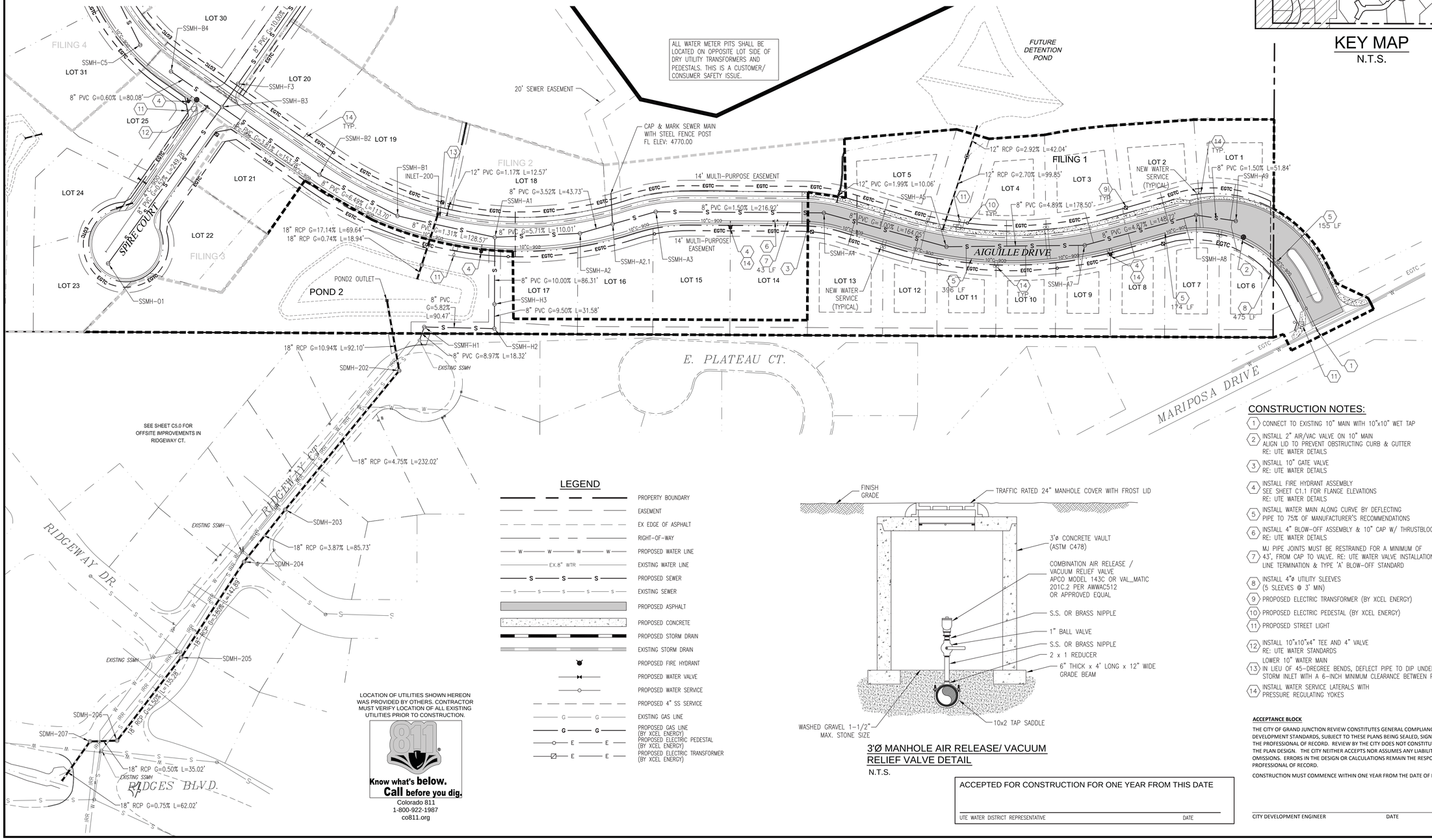
GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET 3
6. HOUSES CONSTRUCTED ON LOTS 26-29 AND LOTS 55-72 SHALL HAVE SPRINKLER SYSTEMS INSTALLED. A 1" CUSTOMER WATER SERVICE LINE AND ¾" WATER METER WILL BE UTILIZED IN ACCORDANCE WITH UTE WATER CONSERVANCY DISTRICT STANDARDS & SPECIFICATIONS.
7. ALL WATER SERVICES SHALL HAVE A PRESSURE REGULATED YOKE INSTALLED BASED ON PRESSURE LIMITS AS DETERMINED IN THE HYDRAULIC ANALYSIS.

FILING NOTES

1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
2. INSTALL SANITARY SEWER FROM SSMH-A9 TO EXISTING MAN-HOLE IN RIDGEWAY COURT AS SHOWN INCLUDING LINE TO MAN-HOLE B-1.
3. END WATER LINE CONSTRUCTION AT THE MIDDLE OF LOT 14 AS SHOWN.
4. ASPHALT PAVEMENT TO END AT THE NORTH END OF LOT 13 FOR FILING 1.
5. ROAD ALIGNMENT TO BE GRADED AND BASE COURSE INSTALLED TO THE NORTH END OF LOTS 20 & 21.





LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE
- EXISTING WATER LINE
- PROPOSED SEWER
- EXISTING SEWER
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER SERVICE
- PROPOSED 4" SS SERVICE
- EXISTING GAS LINE
- PROPOSED GAS LINE (BY XCEL ENERGY)
- PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
- PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.
Colorado 811
1-800-922-1987
co811.org

3'Ø MANHOLE AIR RELEASE/ VACUUM RELIEF VALVE DETAIL
N.T.S.

CONSTRUCTION NOTES:

1. CONNECT TO EXISTING 10" MAIN WITH 10"x10" WET TAP
2. INSTALL 2" AIR/VAC VALVE ON 10" MAIN ALIGN LID TO PREVENT OBSTRUCTING CURB & GUTTER RE: UTE WATER DETAILS
3. INSTALL 10" GATE VALVE RE: UTE WATER DETAILS
4. INSTALL FIRE HYDRANT ASSEMBLY SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL WATER MAIN ALONG CURVE BY DEFLECTING PIPE TO 75% OF MANUFACTURER'S RECOMMENDATIONS
6. INSTALL 4" BLOW-OFF ASSEMBLY & 10" CAP W/ THRUSTBLOCK RE: UTE WATER DETAILS
7. MJ PIPE JOINTS MUST BE RESTRAINED FOR A MINIMUM OF 43', FROM CAP TO VALVE. RE: UTE WATER VALVE INSTALLATION, LINE TERMINATION & TYPE 'A' BLOW-OFF STANDARD
8. INSTALL 4"ø UTILITY SLEEVES (5 SLEEVES @ 3' MIN)
9. PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)
10. PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
11. PROPOSED STREET LIGHT
12. INSTALL 10"x10"x4" TEE AND 4" VALVE RE: UTE WATER STANDARDS
13. LOWER 10" WATER MAIN IN LIEU OF 45-DREGREE BENDS, DEFLECT PIPE TO DIP UNDER STORM INLET WITH A 6-INCH MINIMUM CLEARANCE BETWEEN PIPES.
14. INSTALL WATER SERVICE LATERALS WITH PRESSURE REGULATING YOKES

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

ACCEPTED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE

UTE WATER DISTRICT REPRESENTATIVE DATE

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
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Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 10-9-17 PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAT

REV	DATE	COMMENT	BY
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS

Composite Site Plan - Utility and Water Plan
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1"= 60'**
CAD ID: **3.0utility-f1.dwg**

~SHEET~
C3.0

FILING NOTES

1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
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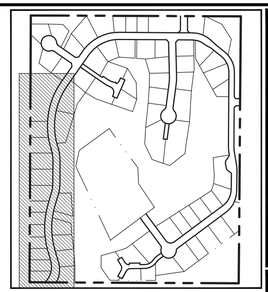
CONSTRUCTION NOTES:

1. INSTALL STOP SIGN & STREET SIGN RE: MUTCD
2. CONSTRUCT HANDICAPPED RAMP RE: CITY OF GJ DETAILS
3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL 6" STANDARD CURB & GUTTER W/ATTACHED SIDEWALK – 87 LF
6. INSTALL 6" DRIVE-OVER CURB & GUTTER W/ATTACHED SIDEWALK – 158 LF
7. INSTALL 6" STANDARD CURB & GUTTER 74 LF
8. SAWCUT & REMOVE ±106 LF EXISTING CONCRETE CURB USE CARE TO ENSURE PAVEMENT EDGE PROVIDES A CLEAN JOIN FOR INSTALL OF NEW CONCRETE VALLEY PAN
9. 15' SIDEWALK TRANSITION FROM ATTACHED TO DETACHED

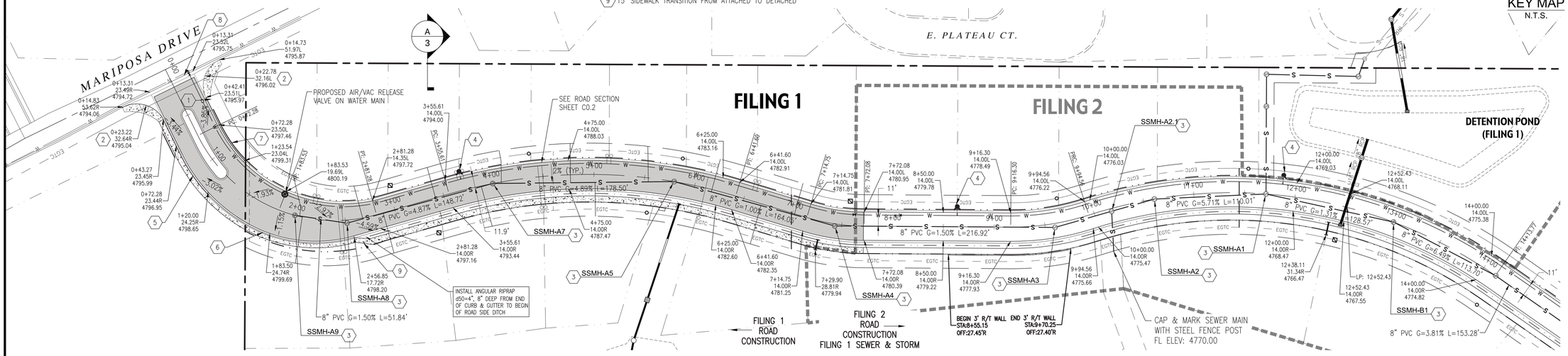
GENERAL NOTES:

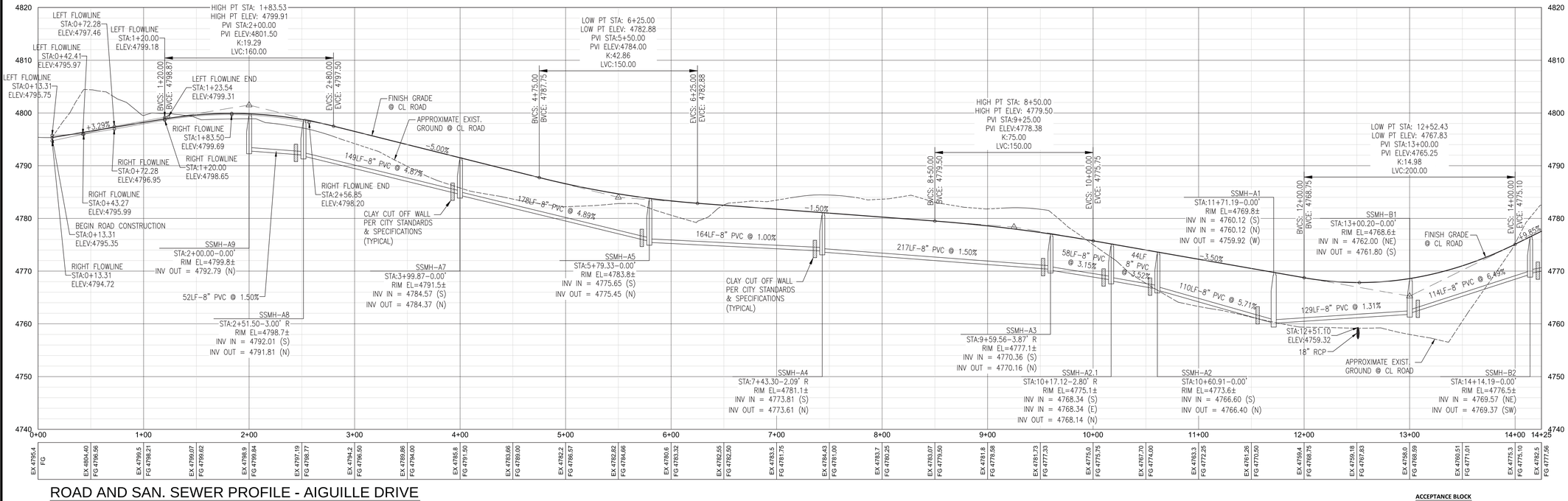
1. REFERENCE SHEET C0.1 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET C0.2 FOR STREET SECTIONS
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION



ROAD AND SAN. SEWER PLAN - AIGUILLE DRIVE

SCALE: 1" = 50'





EX 4795.4	EX 4804.40	EX 4799.5	EX 4799.07	EX 4798.9	EX 4797.19	EX 4794.2	EX 4789.86	EX 4785.8	EX 4783.66	EX 4782.2	EX 4782.82	EX 4780.6	EX 4782.55	EX 4783.5	EX 4784.43	EX 4783.7	EX 4781.8	EX 4781.73	EX 4775.0	EX 4767.70	EX 4763.3	EX 4761.26	EX 4759.4	EX 4759.18	EX 4758.0	EX 4760.51	EX 4775.3	EX 4782.5
FG	FG 4796.56	FG 4798.21	FG 4799.62	FG 4799.84	FG 4798.77	FG 4796.50	FG 4794.00	FG 4791.50	FG 4789.00	FG 4786.57	FG 4784.66	FG 4783.32	FG 4782.50	FG 4781.75	FG 4781.00	FG 4780.25	FG 4779.50	FG 4778.89	FG 4775.75	FG 4774.00	FG 4772.25	FG 4770.50	FG 4768.75	FG 4767.83	FG 4768.59	FG 4771.01	FG 4775.10	FG 4777.56

ROAD AND SAN. SEWER PROFILE - AIGUILLE DRIVE

HORIZONTAL SCALE: 1" = 50'

VERTICAL SCALE: 1" = 5'

ACCEPTANCE BLOCK

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017 DLS
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017 BY

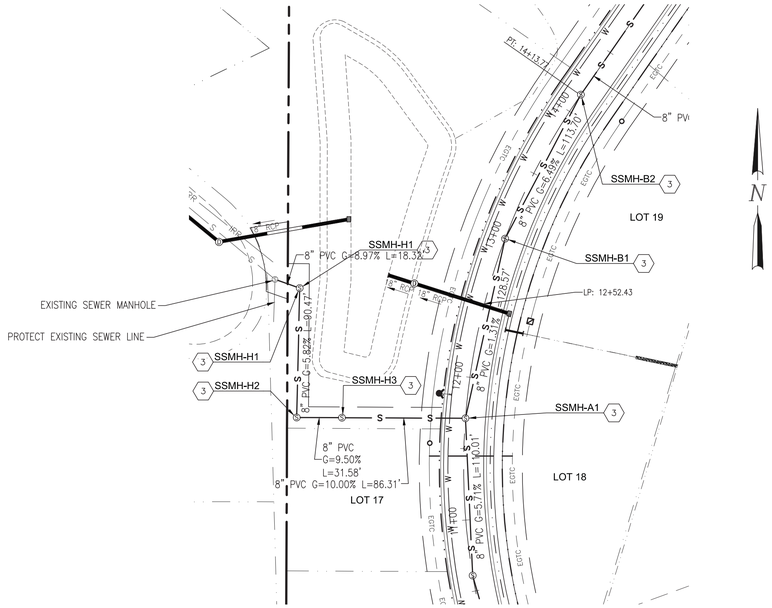
Road & Sanitary Sewer Plan & Profile

Aiguille Drive
Pinnacle Ridge Subdivision Filing 1

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/02/17**
SCALE: **1" = 50'**
CAD ID: **4.0ss-road-f1.dwg**

~SHEET~
C4.0



ROAD AND SAN. SEWER PLAN - RIDGEWAY CT. CONNECTION

SCALE: 1" = 50'

FILING NOTES

1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
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3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
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5. INSTALL 6" STANDARD CURB & GUTTER W/ATTACHED SIDEWALK – 87 LF
6. INSTALL 6" DRIVE-OVER CURB & GUTTER W/ATTACHED SIDEWALK – 158 LF
7. INSTALL 6" STANDARD CURB & GUTTER 74 LF
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GENERAL NOTES:

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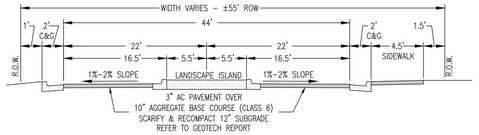
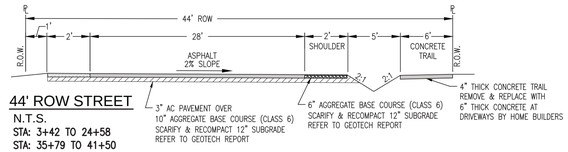
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET C0.2 FOR STREET SECTIONS
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION



MARIPOSA DRIVE ENTRANCE

N.T.S.

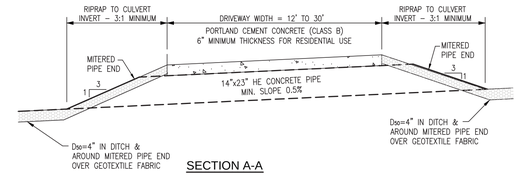
STA: 0+24 TO STA: 1+52
(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 3+42)



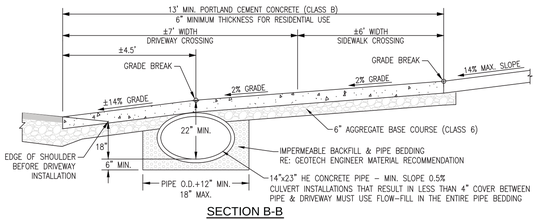
44' ROW STREET

N.T.S.

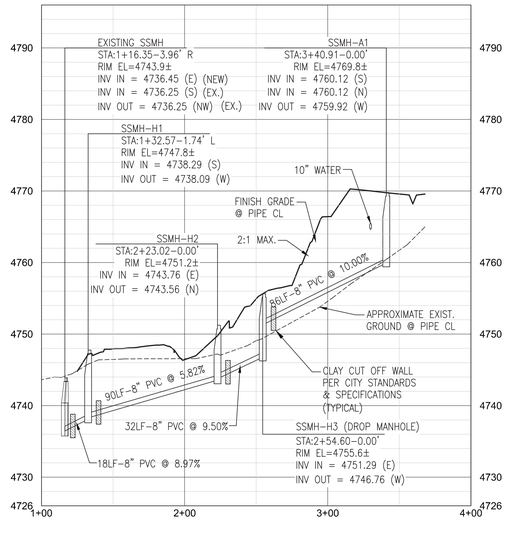
STA: 3+42 TO 24+58
STA: 35+79 TO 41+50



SECTION A-A

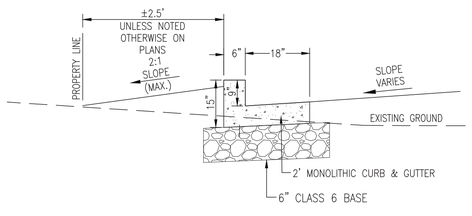


SECTION B-B



ROAD AND SAN. SEWER PROFILE - RIDGEWAY CT. CONNECTION

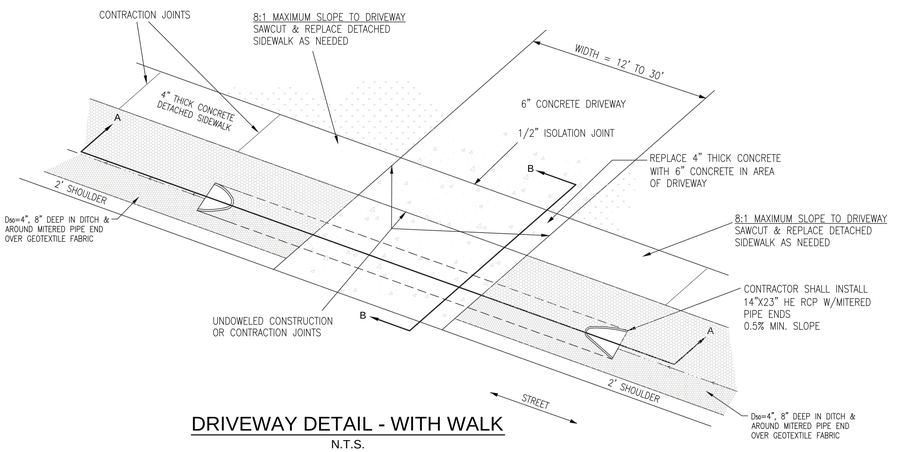
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

CONCRETE CURB DETAIL

N.T.S.



DRIVEWAY DETAIL - WITH WALK

N.T.S.

NOTE:

CARE SHALL BE TAKEN TO REMOVE EXISTING ROCK LINING AND GEOTEXTILE FABRIC PRIOR TO NEW CULVERT INSTALLATION. FABRIC AND ROCK TO BE CAREFULLY REPLACED AROUND NEW CULVERT.

ACCEPTANCE BLOCK

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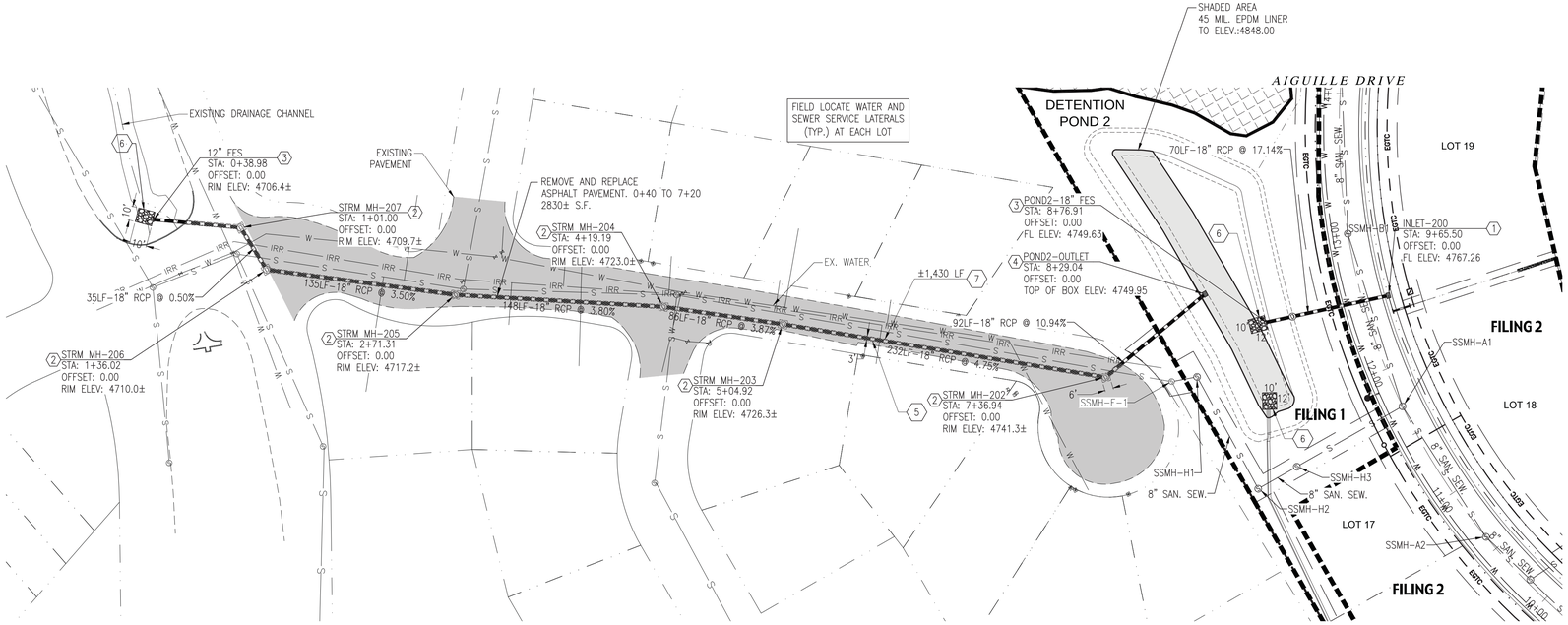
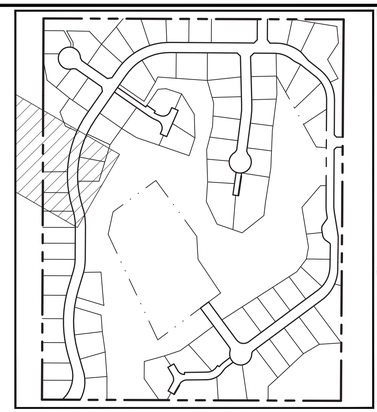
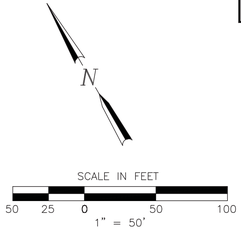
MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017





KEY MAP
N.T.S.



GENERAL NOTES:

1. REFERENCE SHEET C0.1 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. STATIONS ARE IN REFERENCE TO CENTER LINE OF ROAD, UNLESS OTHERWISE INDICATED.
4. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.

CONSTRUCTION NOTES:

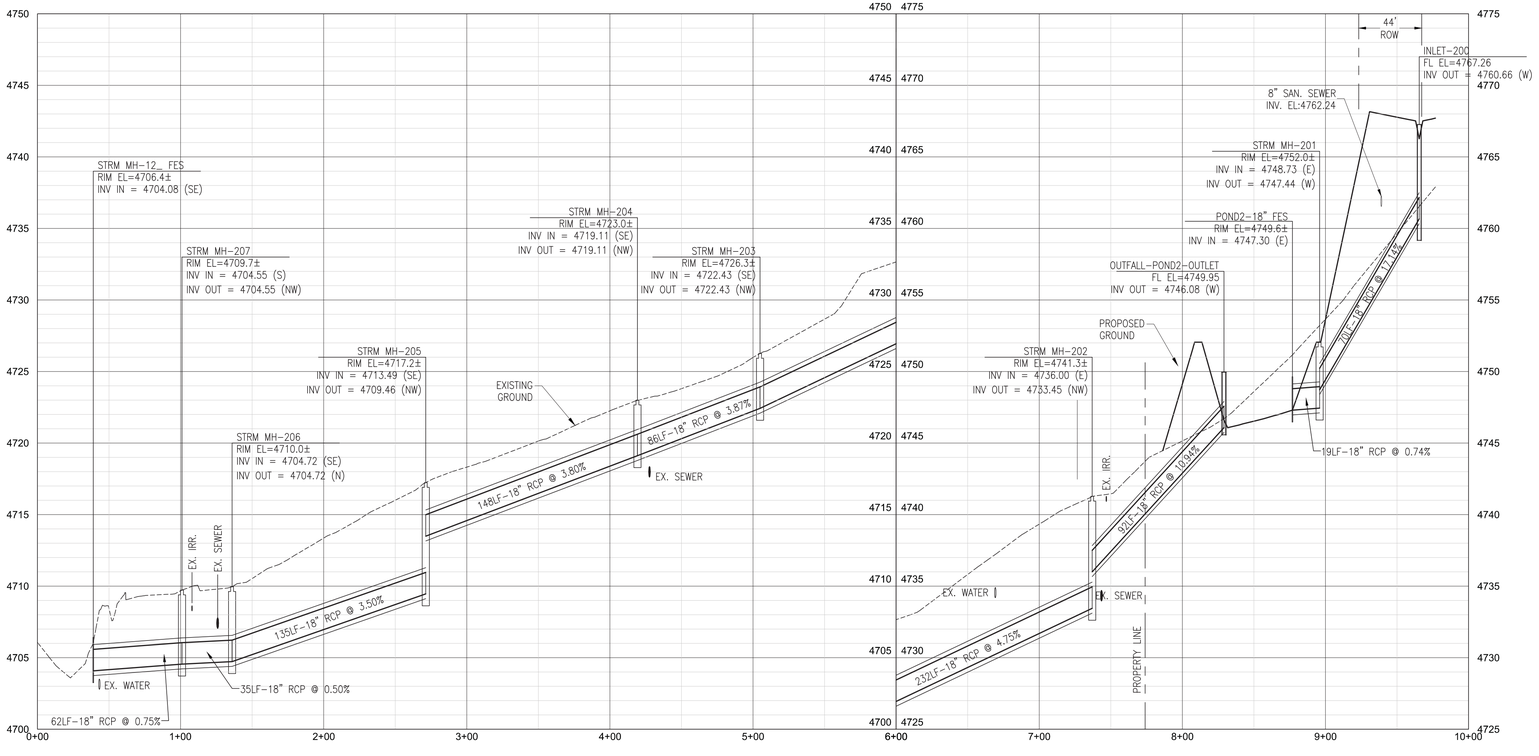
1. INSTALL/MODIFY 2'x3' AREA INLET RE: CITY STD. DETAILS, & THIS SHEET
2. INSTALL 48"ø MANHOLE RE: CITY STD. DETAILS
3. INSTALL FES WITH RIP RAP AT SHOWN SIZE RE: CITY STD. DETAILS
4. INSTALL POND OUTLET STRUCTURE RE: SEE DETAIL ON SHEET 21
5. PAVEMENT PATCH BACK AT SHOWN DIMENSIONS RE: CITY OF GJ DETAILS
6. INSTALL D_{50}=6", 12" DEEP RIPRAP OVER GEOFABRIC AT SHOWN DIMENSIONS
7. SAWCUT LINE

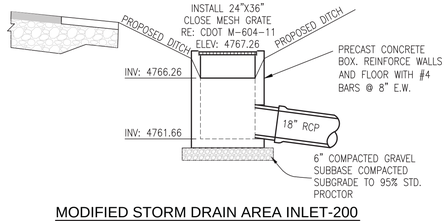
NOTE:

CONTRACTOR TO LOCATE INDIVIDUAL WATER AND SANITARY SEWER LATERALS TO EACH HOUSE PRIOR TO BEGINNING CONSTRUCTION. NOTIFY ENGINEER IF CONFLICTS ARE FOUND.

STORM SEWER PLAN AND PROFILE - POND 2 OUTFALL

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'





MODIFIED STORM DRAIN AREA INLET-200
N.T.S.

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LIBERATO JAMES C. ATKINSON 18828 PROFESSIONAL ENGINEER 10-9-17

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MAJOR SUBDIVISION
FINAL PLAN

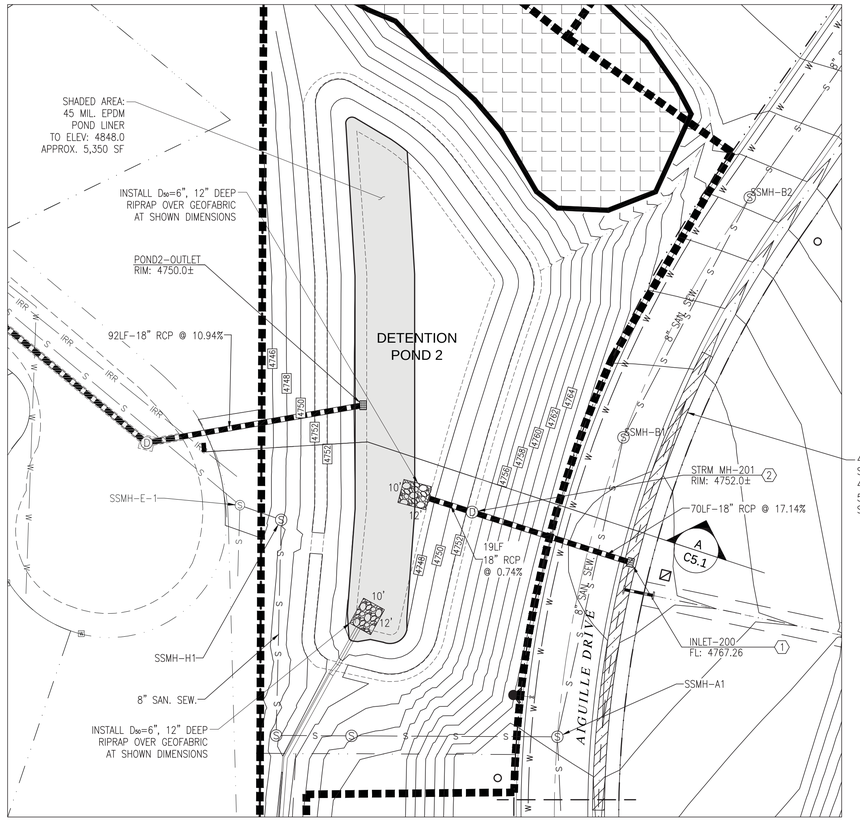
REV	DATE	COMMENT	BY
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

Storm Sewer Plan and Profile
Pond 2 Outfall

Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

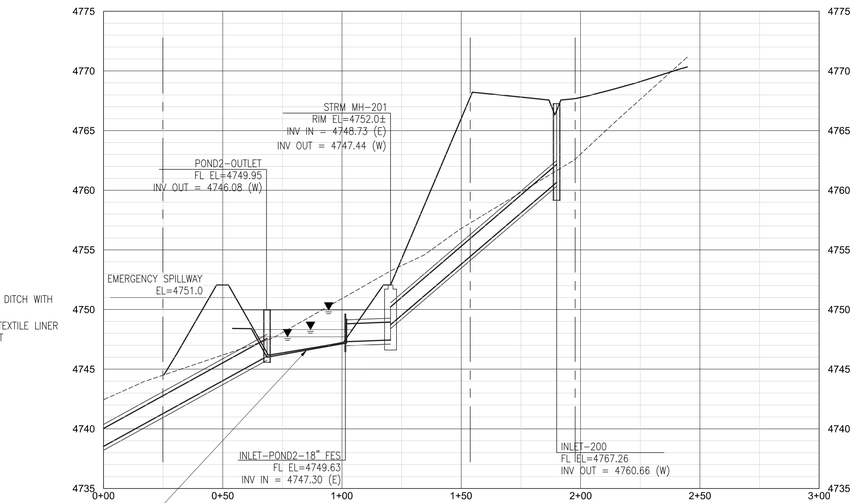
PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 50'**
CAD ID: **5.0storm-f1.dwg**

~SHEET~
C5.0



POND 2 - PLAN

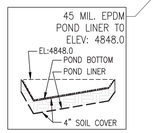
SCALE: 1" = 30'

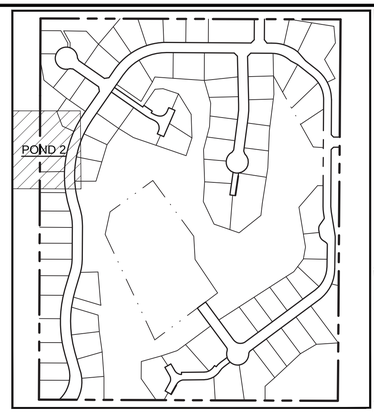


A
C5.1

POND 2 SECTION

H: 1"=30'
V: 1"=1.5'



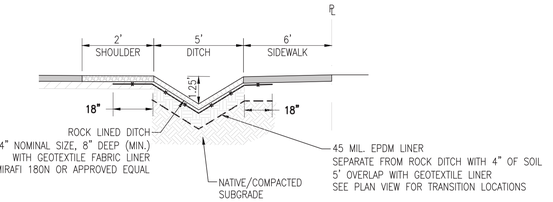


KEY MAP

N.T.S.

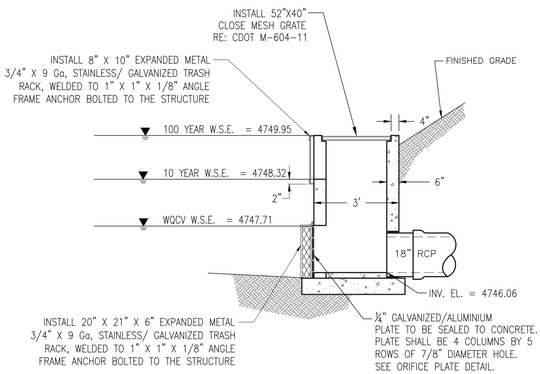
CONSTRUCTION NOTES:

1. INSTALL/MODIFIY 3'X4' AREA INLET
   RE: CITY STD. DETAILS, & THIS SHEET
2. INSTALL 48"ø MANHOLE
   RE: CITY STD. DETAILS

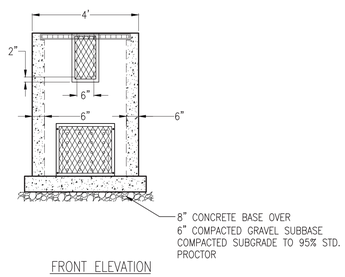


ROCK LINED ROADSIDE DITCH
WITH EPDM LINER

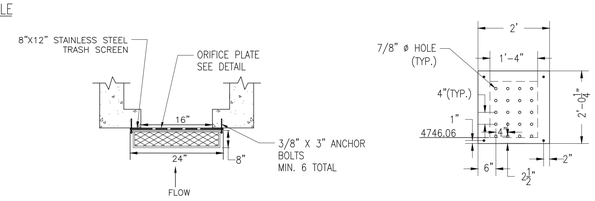
N.T.S.



PROFILE



FRONT ELEVATION



POND OUTLET STRUCTURE DETAIL

N.T.S.

POND 2 - SUMMARY TABLES

POND 2	VOLUME (CF)	WSEL (FT)	PEAK DISCHARGE FLOW (CFS)	ALLOWABLE PEAK DISCHARGE FLOW (CFS)
WQCV	7,575	4747.71	NA	NA
10 YEAR	13,992	4748.32	0.52	1.87
100 YEAR	31,059	4749.95	4.21	7.79

GENERAL NOTES:

1. REFERENCE SHEET C0.2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. STATIONS ARE IN REFERENCE TO CENTER LINE OF ROAD, UNLESS OTHERWISE INDICATED.
4. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
5. REFER TO SHEET C5.0 FOR CONSTRUCTION KEY NOTES.

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

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• PROJECT MANAGERS
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James C. Atkinson
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COLORADO LICENSE No. 18828

COLORADO LICENSED
JAMES C. ATKINSON
18828
11-9-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY
1	9/05/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS

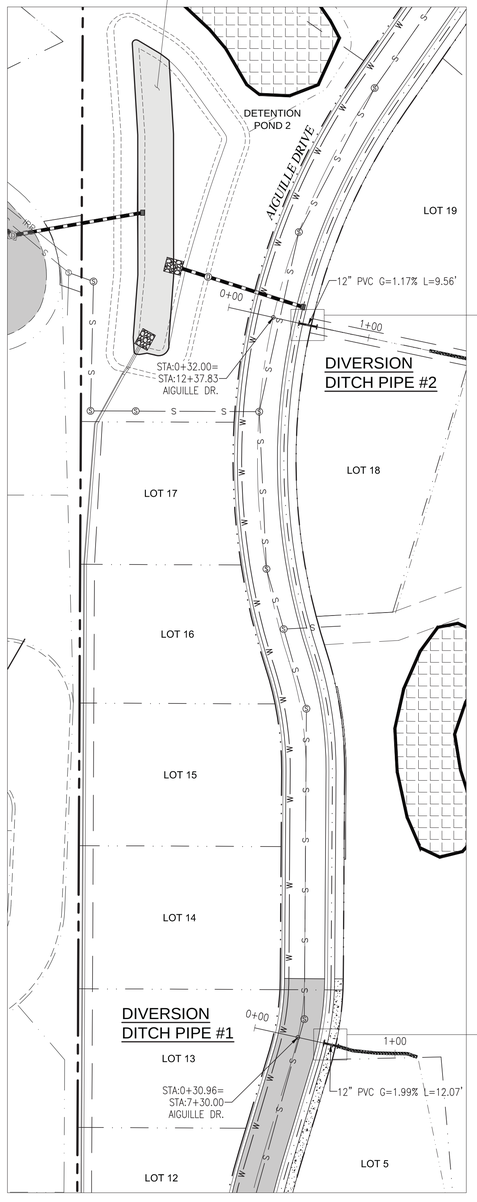
Storm Sewer Plan
Pond 1 and 2 Details

Pinnacle Ridge Subdivision

Mariposa Drive
Grand Junction, Colorado 81507

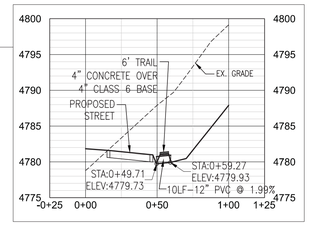
PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 30'**
CAD ID: **5.0storm-f1.dwg**

~SHEET~
C5.1



STORM SEWER PLAN - DIVERSION DITCH PIPES

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



DIVERSION DITCH PIPE #2

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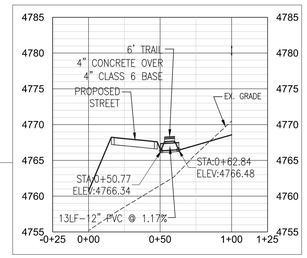
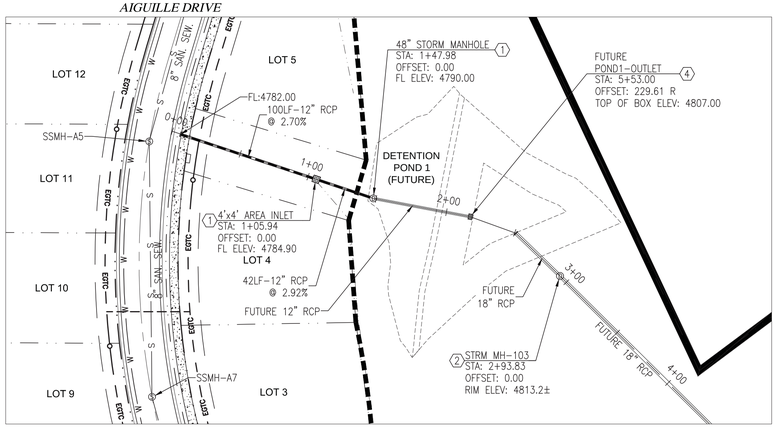
VERTICAL SCALE: 1" = 10'



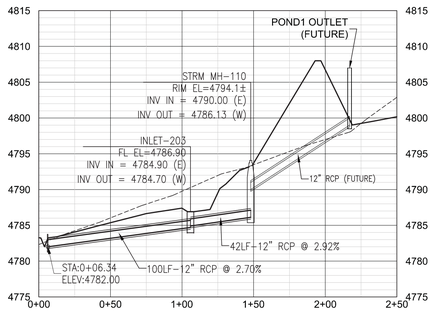
DIVERSION DITCH PIPE #1

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



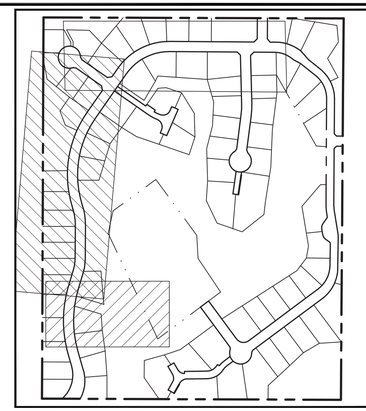
STORM SEWER PLAN - POND 1 OUTLET

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



STORM SEWER PROFILE - POND 1 OUTLET

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'



KEY MAP

N.T.S.

CONSTRUCTION NOTES:

1. INSTALL 4'X4' AREA INLET
   RE: CITY STD. DETAILS
2. INSTALL 48"ø MANHOLE
   RE: CITY STD. DETAILS
3. MITER PIPE END
   RE: CITY STD. DETAILS
4. INSTALL POND OUTLET STRUCTURE.
   RE: SEE DETAIL ON SHEET 21

GENERAL NOTES:

1. REFERENCE SHEET C0.2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. STATIONS ARE IN REFERENCE TO CENTER LINE OF ROAD, UNLESS OTHERWISE INDICATED.
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10-9-17

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MAJOR SUBDIVISION
FINAL PLAN

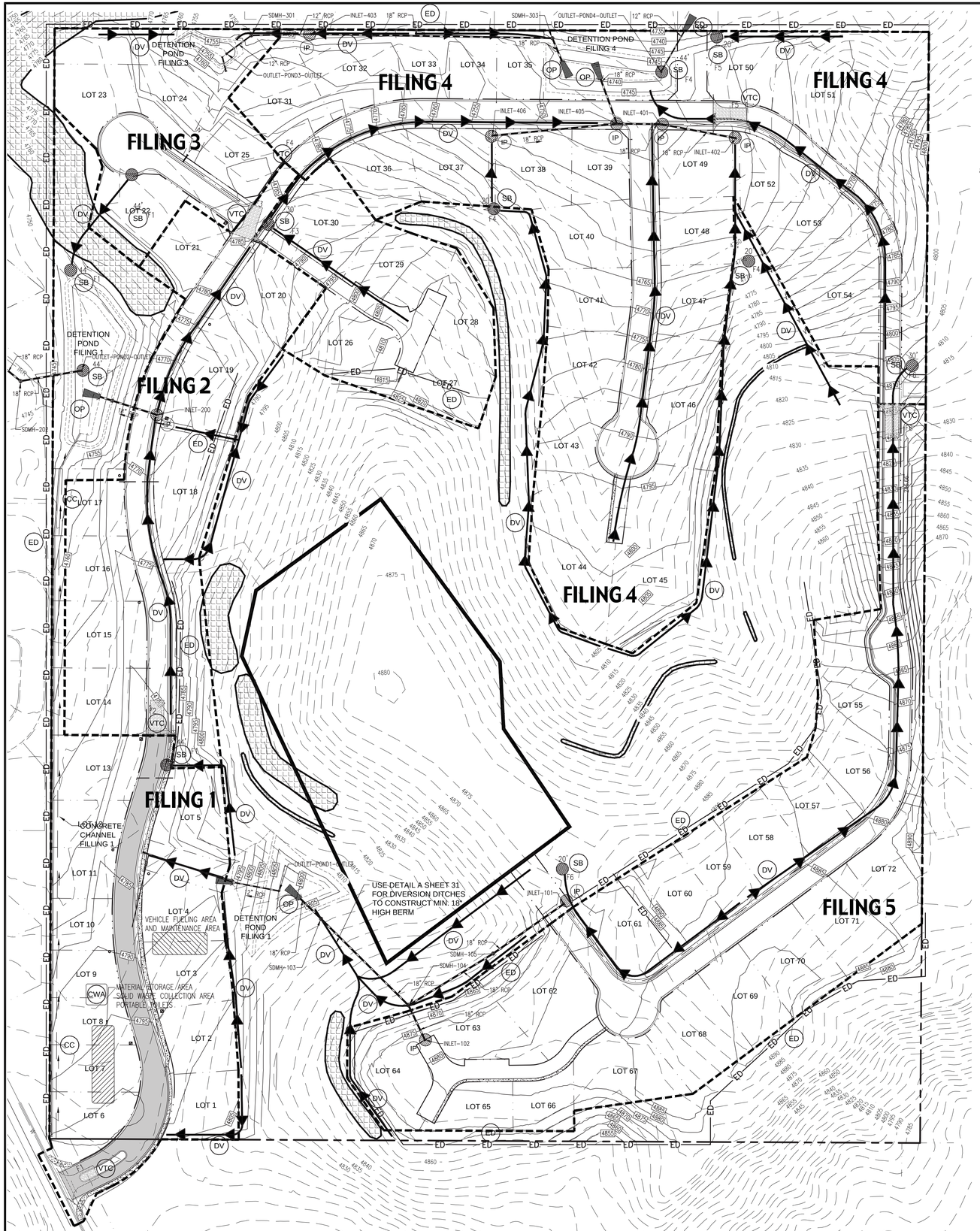
REV.	DATE	COMMENT	BY
2	10/09/17	REVISED PER CITY COMMENT ROUND 2 DATED SEPT. 13, 2017	DLS
1	8/09/17	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017	DLS

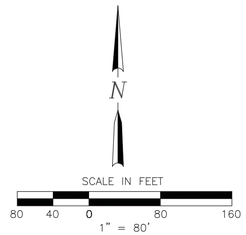
Storm Sewer Plan and Profile
Pond 3 & 4 Outlet

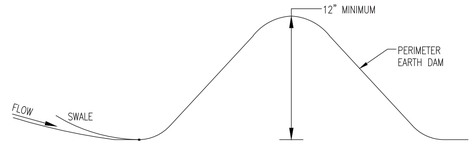
Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 50'**
CAD ID: **5.0storm-f1.dwg**

~SHEET~
C5.2







EARTH DAM SECTION
SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
EARTHEN DAM	ED	ED
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
SEDIMENT BASIN	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

GRADING NOTE:

FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

GENERAL NOTES:

1. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL REQUIRED EASEMENTS, RIGHT AND/OR RIGHTS-OF-WAY PURSUANT TO THE DISCHARGE FROM THE SEDIMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS AND GRADING OR OTHER WORK TO BE PERFORMED ON ADJACENT OR DOWNSTREAM PROPERTIES AFFECTED BY THE PLAN.
2. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1); FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE, THE IN-PLACE SEDIMENT CONTROL MEASURES WILL BE MAINTAINED ON A CONTINUING BASIS UNTIL THE SITE IS PERMANENTLY STABILIZED AND ALL PERMIT REQUIREMENTS ARE MET.
3. REFER TO CITY OF GRAND JUNCTION STANDARD DRAWINGS AND SPECIFICATIONS.
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE 5-2-1 DRAINAGE AUTHORITY. CONTACT MARK BARSLUND 970-201-1362

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828



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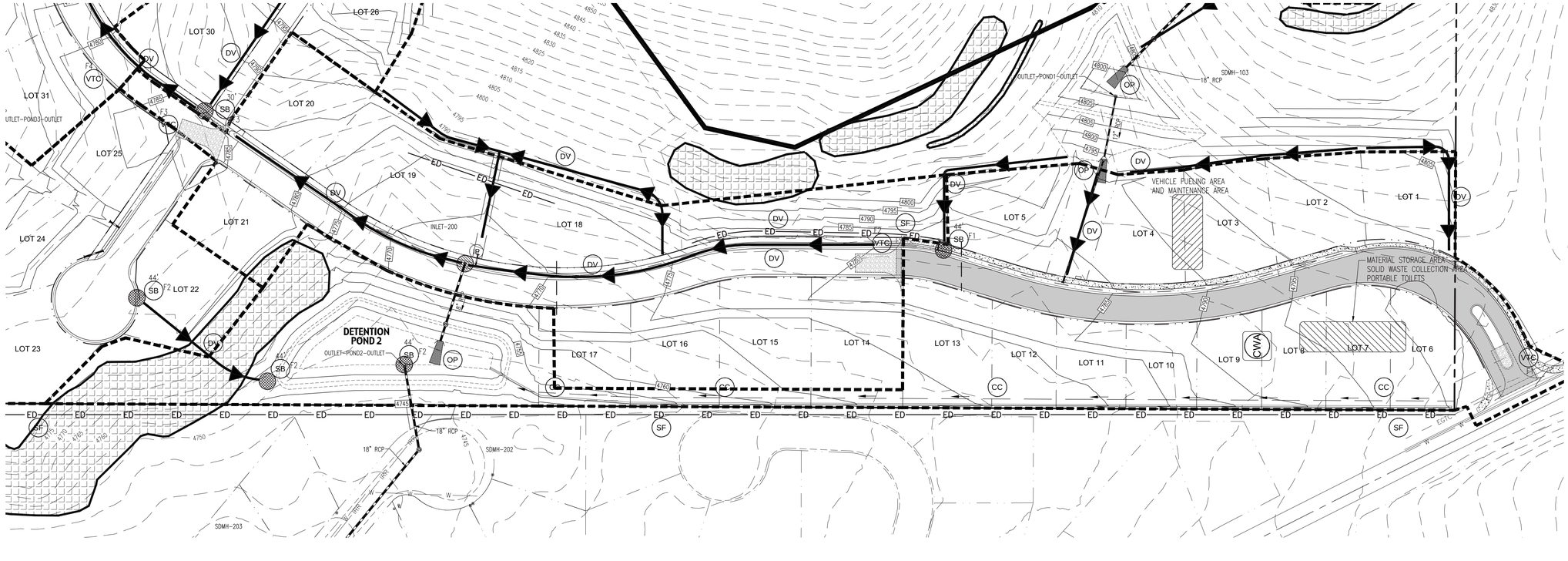
MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS

Overall Construction Stormwater Management Plan
Pinnacle Ridge Subdivison
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **07/08/15**
SCALE:
CAD ID: **6.0swm-f1.dwg**

~SHEET~
C6.0



N

SCALE IN FEET

60 30 0 60 120

1" = 60'

CONTOUR INTERVAL = 2'

GRADING NOTE:

FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

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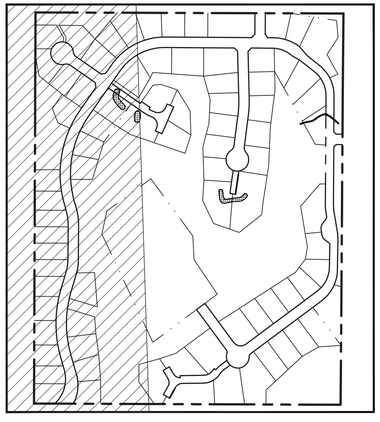
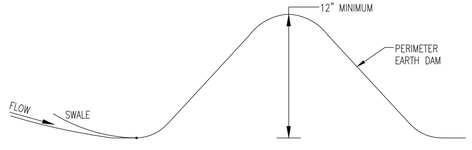
2. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1); FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE, THE IN-PLACE SEDIMENT CONTROL MEASURES WILL BE MAINTAINED ON A CONTINUING BASIS UNTIL THE SITE IS PERMANENTLY STABILIZED AND ALL PERMIT REQUIREMENTS ARE MET.
3. REFER TO CITY OF GRAND JUNCTION STANDARD DRAWINGS AND SPECIFICATIONS.
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE 5-2-1 DRAINAGE AUTHORITY. CONTACT MARK BARSLUND 970-201-1362



KEY MAP

N.T.S.



EARTH DAM SECTION

SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	DV
STORM DRAIN INLET PROTECTION	IP	IP
OUTLET PROTECTION	OP	OP
EARTHEN DAM	ED	ED
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
SEDIMENT BASIN	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 10-9-17 PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017

Construction Stormwater Management Plan Filling 1

Pinnacle Ridge Subdivison Filing 1

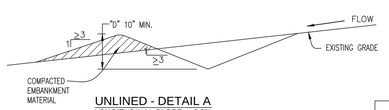
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **SEE PLAN**
CAD ID: **6.0swm-f1.dwg**

~SHEET~
C6.1

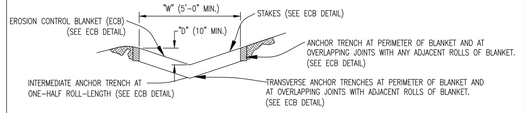
DIVERSION DITCH DETAIL A

DV

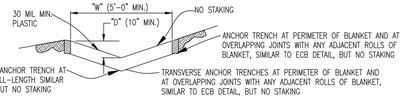


UNLINED - DETAIL A
LONGITUDINAL SLOPE ≤ 0.5%

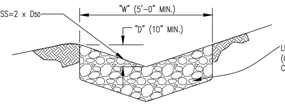




EROSION CONTROL BLANKET (ECB) LINED - DETAIL B
LONGITUDINAL SLOPE 0.5% TO 3 %



PLASTIC LINED - DETAIL C
LONGITUDINAL SLOPE 3% TO 33%



RIPRAP LINED - DETAIL D
LONGITUDINAL SLOPE 3% TO 33%

DIVERSION DITCH INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF DIVERSION DITCH.
   - TYPE OF DITCH (UNLINED, ECB PLASTIC LINED OR RIPRAP LINED).
   - LENGTH OF EACH TYPE OF DITCH.
   - DEPTH, "D", AND WIDTH, "W" DIMENSIONS.
   - FOR ECB LINED DITCH, EROSION CONTROL BLANKET TYPE (SEE ECB DETAIL).
   - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, "D 50 ".
2. SEE DRAINAGE PLANS FOR DETAILS OF ANY PERMANENT CONVEYANCE FACULTIES OR DIVERSION DITCHES EXCEEDING A 2 YEAR FLOOD 10 CFS.
3. DIVERSION DITCHES INDICATED ON INITIAL SWMP PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES..
4. FOR ECB LINED DITCHES, INSTALLATION OF EROSION CONTROL BLANKET SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.
5. IN LOCATIONS WHERE CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION DITCH, THE PERMITTEES SHALL INSTALL A TEMPORARY CULVERT WITH A MINUM DIAMETER OF 12-INCHES.

DIVERSION DITCH MAINTENANCE NOTES

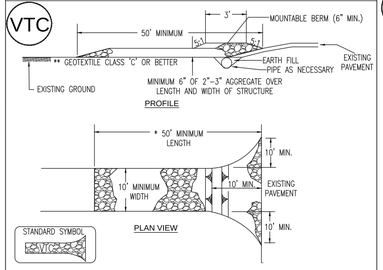
1. THE SWMP MANAGER SHALL INSPECT DIVERSION DITCHES WEEKLY AND DURING AND AFTER ANY STORM. MAKE REPAIRS AS NECESSARY.
2. DIVERSION DITCHES ARE TO REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION, OR IF APPROVED BY LOCAL JURISDICTION MAY BE LEFT IN PLACE.
3. IF DIVERSION DITCHES ARE REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, DRILL SEEDED, HAY CRIMPED MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

DETAIL BASED ON DETAILS PROVIDED BY DOUGLAS COUNTY

Urban Drainage and Flood Control District Drainage Criteria Manual (V.3)	Figure C5-3 DIVERSION DITCH AND DIKE

STABILIZED CONSTRUCTION ENTRANCE

VTC

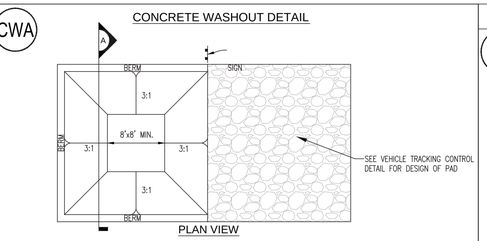


Construction Specification

1. Length – minimum of 50' (*30' for single residence lot).
2. Width – 10' minimum, should be flared at the existing road to provide a tuning radius
3. Geotextile fabric (filter cloth) shall placed over the exiting around prior to placing stone. **This plan approval authority may not require single family residence to use geotextile.
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water – all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location – A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

CONCRETE WASHOUT DETAIL

CWA



SECTION A

CONCRETE WASHOUT AREA INSTALLATION NOTES

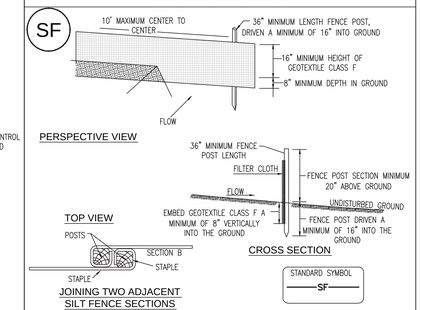
1. SEE PLAN VIEW FOR LOCATIONS OF CONCRETE WASHOUT AREA
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL IS REQUIRED AT THE ACCESS POINT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION

CONCRETE WASHOUT AREA MAINTENANCE NOTES

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, DRILL SEED AND CRIMP MULCH OR OTHERWISE STABILIZE IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
4. INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.

DETAIL 22 - SILT FENCE

SF



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-setion and shall meet the following requirements for Geotextile Class F:

Tensile Strength:	50 lbs./in. (min.)	Test: MSMT 509
Tensile Modulus:	20 lbs./in. (min.)	Test: MSMT 509
Flow Rate	0.3 gal. ft. / minute (max.)	Test MSMT 322
Efficiency	75% (min.)	Test: MSMT 322

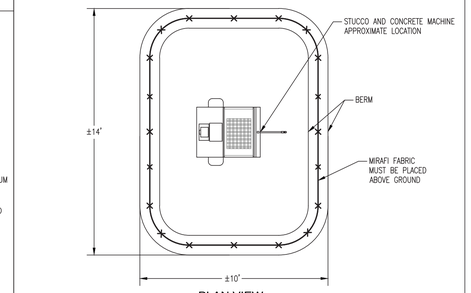
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

SILT FENCE

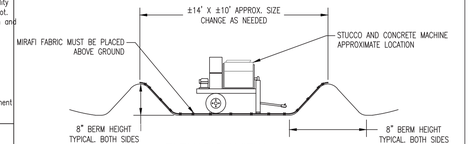
Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

NOTE:
In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.



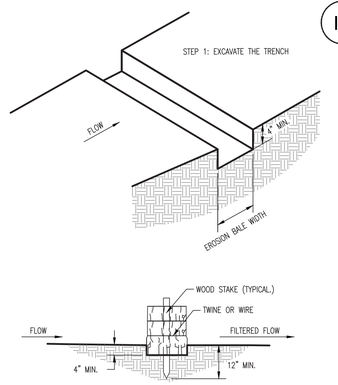
PLAN VIEW
SCALE: N.T.S.



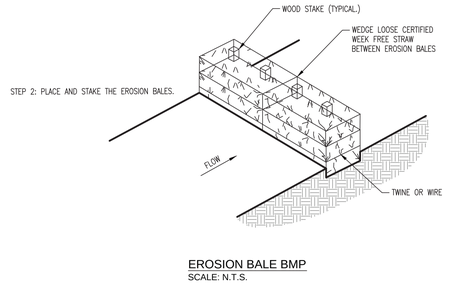
ELEVATION VIEW
SCALE: N.T.S.

STUCCO & CONCRETE MACHINE BMP
SCALE N.T.S.

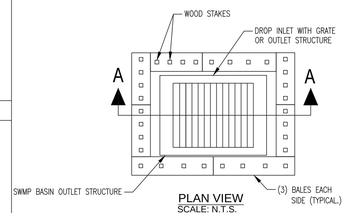
IP



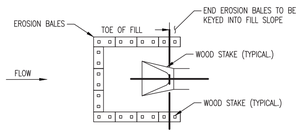
EROSION BALE TRENCHING AND STAKING
SCALE: N.T.S.



EROSION BALE BMP
SCALE: N.T.S.

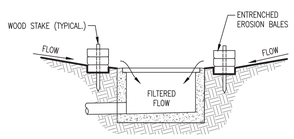


PLAN VIEW
SCALE: N.T.S.



PLAN VIEW
EROSION BALE CULVERT INLET PROTECTION
SCALE: N.T.S.

NOTES
1. STAKES SHALL BE WOOD AND SHALL BE 2" X 2" NOMINAL.
2. EROSION BALES SHALL BE 18" X 18" X 36".
3. EROSION BALES SHALL BE ENTRENCHED 4 IN. MINIMUM INTO THE SOIL TIGHTLY ABUTTED WITH NO GAPS, STAKED, AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERMETER.



SECTION A-A
EROSION FILTER AT DROP INLET
SCALE: N.T.S.

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
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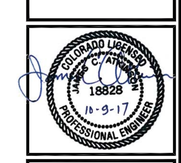
James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828



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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS

Construction Stormwater Management Plan Details

Pinnacle Ridge Subdivison
Filing 1

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **07/06/15**
SCALE:
CAD ID: **6.0swm-f1.dwg**

~SHEET~
C6.2

EXHIBIT B

IMPROVEMENTS COST ESTIMATE

DATE: October 9, 2017
DEVELOPMENT NAME: **PINNACLE RIDGE FILING 1**
LOCATION: Mariposa Drive, Grand Junction, CO
PERSON PREPARING:

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
A.	**SANITARY SEWER**				
1	8" PVC Sanitary Sewer Main	LF	1,265	$ 23.00	$ 29,095.00
2	10" PVC Sanitary Sewer Main	LF		$ 30.00	$ -
3	4 " PVC Sanitary Sewer Main	LF		$ 6.00	$ -
4	Sewer services	EA	13	$ 400.00	$ 5,200.00
5	Sanitary Sewer Manhole	EA	11	$ 15.00	$ 165.00
6	Sanitary Sewer Drop Manhole	EA	1	$ 6,000.00	$ 6,000.00
7	Connection to Existing Manhole	EA	1	$ 1,000.00	$ 1,000.00
8	Concrete Encasement	LF		$ 20.00	$ -
	Subtotal Part A Sanitary Sewer				**$ 41,460.00**
B.	**DOMESTIC WATER**				
1	Air Vacuum Release Valve	EA	1	$ 5,000.00	$ 5,000.00
2	8" PVC Water Main	LF		$ 30.00	$ -
3	10" PVC Water Main	LF	776	$ 35.00	$ 27,160.00
4	_4__" Gatevalve	EA			$ -
5	8" Gatevalve	EA		$ 1,200.00	$ -
6	10" Gatevalve	EA	2	$ 2,400.00	$ 4,800.00
7	Water Services (copper)	EA	13	$ 500.00	$ 6,500.00
8	Connect to Existing Water Line	EA	1	$ 1,500.00	$ 1,500.00
9	Fire Hydrant with Valve	EA	2	$ 4,000.00	$ 8,000.00
10	Utility Adjustments	EA			$ -
11	Blowoff	EA	1	$ 500.00	$ 500.00
12	UTE Water Tap Fee	EA			$ -
	Subtotal Part B - Domestic Water				**$ 53,460.00**
C1	**STREETS**				
1	4" PVC Utility sleeves	LF	250	$ 15.00	$ 3,750.00
2	8" & 12" PVC irr. Sleeves	LF		$ 20.00	$ -
3	Xcel (Gas & Electric) Services	EA	13		$ -
4	Qwest and Charter Services	EA	13		$ -
5	Aggregate Base Course (Class 6) (_6" Compacted Thickness)	ton		$ 22.00	$ -
6	Aggregate Base Course (Class 6) (12" Compacted Thickness)	ton	2,216	$ 22.00	$ 48,752.00
7	Hot Bituminous Paving, Grading (3" thick)	TON	409	$ 92.00	$ 37,628.00
8	Hot Bituminous Paving, Grading__ (5" thick)	TON		$ 92.00	$ -
9	Hot Bituminous Paving, Patching (3" Thick)	SY	400	$ 14.00	$ 5,600.00
10	EPDM Ditch Liner	SY	125	$ 13.00	$ 1,625.00
11	spill curb and gutter	LF	320	$ 15.00	$ 4,800.00

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
12	Concrete Curb and Gutter (2' wide)	LF		$ 22.00	$ -
13	Concrete Curb & Gutter (2' wide X 12" high)	LF	1,032	$ 25.00	$ 25,800.00
14	Monolithic, Vertical Curb, Gutter and Sidewalk (6.5' Wide)	LF	196	$ 43.00	$ 8,428.00
15	Drive Over Curb, Gutter, and Sidewalk (6.5' Wide)	LF	158	$ 43.00	$ 6,794.00
16	Detached Concrete Sidewalk (6' Wide)	LF	507	$ 28.00	$ 14,196.00
17	Concrete Gutter and Driveway Section (6" Thick)	SY			
18	Concrete Drainage Pan (6' Wide, 6" Thick)	LF		$ 15.00	$ -
19	Concrete Corner Fillet	EA	2	$ 5,000.00	$ 10,000.00
20	Concrete Curb Ramp	SY			$ -
21	8" Comb. Cross pans, Fillets & ADA Ramps	SF			$ -
22	Concrete Driveway (_6" Thick)	SY			$ -
23	Driveway/Concrete Repair	SY			$ -
24	Retaining Walls	LF	121	$ 25.00	$ 3,025.00
25	Street Signs	EA	5	$ 400.00	$ 2,000.00
26	Striping (New, Remove/Replace)	LF			$ -
27	Street Lights	EA	3	$ 2,500.00	$ 7,500.00
28	Signal Construction or Reconstruction	LS			$ -
29	Flowable Fill	CY			$ -
30	End of the Road Barrier	EA	1	$ 1,000.00	$ 1,000.00
C2	**BRIDGES**				
					$ -
1	Box Culvert Pre-Cast	LS			$ -
2	Box Culvert Cast-in-Place	LS			$ -
3	Wingwalls	LS			$ -
4	Parapet Wall	LS			$ -
5	Railing (handrail, guardrail)	LS			$ -
	Subtotal Part C - Streets and Bridges				**$ 180,898.00**
D1	**EARTHWORK**				
1	Mobilization	LS	1	$ 14,500.00	$ 14,500.00
2	Clearing and Grubbing	AC	7	$ 400.00	$ 2,800.00
3	Unclassified Excavation	CY	7,500	$ 4.00	$ 30,000.00
4	Unclassified Embankment	CY	22,042	$ 4.00	$ 88,168.00
5	Import Material	CY	1,452	$ 3.00	$ 4,356.00
6	Dry utilities trenching	LF	1,450	$ 4.00	$ 5,800.00
7	Re-condition / Subgrade Prep.	SY	400	$ 1.25	$ 500.00
8	Rock in Ditch	LF	497	$ 5.00	$ 2,485.00
D2	**REMOVALS AND RESETTING**				
1	Removal of Asphalt	SY			$ -
2	Removal of Miscellaneous Concrete	SY			$ -
3	Remove Curb and Gutter	LF	107	$ 5.00	$ 535.00
4	Removal of Culverts	LF			$ -
5	Remove Structures	EA		$ 400.00	$ -
6	Remove Signs	EA			$ -
7	Remove Fence	LF			$ -
8	Adjust Manhole	EA	13	$ 500.00	$ 6,500.00
9	Adjust Valvebox	EA	4	$ 100.00	$ 400.00
10	Relocate or Adjust Utilities	LS		$ 1,000.00	$ -
11	House & Garage Demo	LS			$ -

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
D3	**EROSION CONTROL, SEEDING, AND SOIL RETENTION**				
1	Sod	SY			$ -
2	Seeding (Native)	AC	7	$ 500.00	$ 3,500.00
3	Seeding (Bluegrass/Lawn)	SY or AC			$ -
4	Hydraulic Seed and Mulching	SY or AC			$ -
5	Soil Retention Blanket	SY			$ -
6	Silt Fence	LF			$ -
7	Straw Waddles	LF			$ -
8	Temporary Berms	LF	1,300	$ 1.75	$ 2,275.00
9	Inlet Protection	EA	1	$ 500.00	$ 500.00
10	Sediment Trap/Basin	EA	1	$ 500.00	$ 500.00
11	Monthly Maintenance/Inspection	Month			$ -
12	Watering (Dust Control)	LS	1	$ 3,500.00	$ 3,500.00
13	Temporary Irrigation	LS	1	$ 3,500.00	$ 3,500.00
14	Tracking Pad	EA	1	$ 7,000.00	$ 7,000.00
D4	**STORM DRAINAGE FACILITIES**				
1	Finish Grading (incl. Swales, and Ponds)	LS	1	$ 5,000.00	$ 5,000.00
2	18" ADS Storm Drain Pipe	LF		$ 20.00	$ -
3	15" RCP Storm Drain Pipe	LF		$ 35.00	$ -
4	18" RCP Storm Drain Pipe	LF	875	$ 40.00	$ 35,000.00
5	24" RCP Storm Drain Pipe	LF		$ 40.00	$ -
6	30" RCP Storm Drain Pipe	LF		$ 50.00	$ -
7	18" RCP Flared End Section	EA	2	$ 680.00	$ 1,360.00
8	30" Flared End Section	EA		$ 2,000.00	$ -
9	48" Storm Drain Manhole	EA	6	$ 3,000.00	$ 18,000.00
10	60" Storm Drain Manhole	EA		$ 3,500.00	$ -
11	72" Storm Drain Manhole	EA		$ 4,000.00	$ -
12	Manhole with Box Base	EA			$ -
13	Connection to Existing MH	EA			$ -
14	Single Curb Opening Storm Drain Inlet	EA		$ 1,000.00	$ -
15	Double Curb Opening Storm Drain Inlet	EA		$ 2,000.00	$ -
16	Triple Curb Opening Storm Drain Inlet	EA		$ 3,000.00	$ -
17	Area Inlet - large	EA	1	$ 2,000.00	$ 2,000.00
18	Detention Area Outlet structure	EA	1	$ 5,000.00	$ 5,000.00
19	EPDM Pond Liner	SY	500	$ 13.00	$ 6,500.00
20	Pump Systems including Electrical	LS		$ 2,000.00	$ -
21	Concrete V-pan (2' wide x 6" thick)	LF	150	$ 4.00	$ 600.00
22	seep drains	LF		$ -	$ -
23	Install Diversion Ditches	LF	772	$ 4.00	$ 3,088.00
	Subtotal Part D - Grading and Drainage				**$ 253,367.00**
E1	**IRRIGATION**				
1	Connect to Existing Pipe	LS			$ -
2	4" PVC Irrigation Pipe	LF		$ 3.00	$ -
3	8" PVC Irrigation Pipe	LF		$ 4.00	$ -
4	Fittings and Valves	LS			$ -
5	Services	EA		$ 10.00	$ -
6	Pump System and Concrete Vault	LS			$ -
7	Irrigation Structure	EA		$ 1,800.00	$ -
8	Vacuum Relief and/or Air Release Valve	EA			$ -
E2	**LANDSCAPING**				
1	Design/Architecture	LS			$ -
2	Earthwork	CY			$ -
3	Hardscape Features	LS			$ -
4	Plant Material & Planting	LS	1	$ 13,000.00	$ 13,000.00
5	Irrigation System	LS			$ -

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
6	Curbing	LF			$ -
7	Retaining Walls & Structures	LF			$ -
8	1 Year Maintenance Agrmnt.	LS			$ -
9	Topsoil	CY			$ -
	Subtotal Part E - Landscaping and Irrigation				**$ 13,000.00**
	Subtotal Construction Costs				**$ 542,185.00**
F.	**MISCELLANEOUS ITEMS**				
1	Construction staking/surveying	%	2.00%	$ 542,185.00	$ 10,843.70
2	Developer's inspection cost	%	2.00%	$ 542,185.00	$ 10,843.70
3	General construction supervsion	%		$ 542,185.00	$ -
4	Quality control testing	%	2.00%	$ 542,185.00	$ 10,843.70
5	Construction traffic control	%	0.00%	$ 542,185.00	$ -
6	City inspection fees	%	0.00%	$ 542,185.00	$ -
7	As-builts	%	2.00%	$ 542,185.00	$ 10,843.70
	Subtotal Part F - Miscellaneous Items				**$ 43,374.80**

% = Percentage of total site construction costs

G.	**COST SUMMARY**		
1	**Total Improvement Costs**		**$ 585,559.80**
2	**City Security (20%)**		**$ 117,111.96**
3	**Total Guarantee Amount**		**$ 702,671.76**

NOTES
1. All prices shall be for items complete in place and accepted.
2. All pipe prices shall include excavation, pipe, bedding, backfill, and compaction.
3. Water main shall include pipe, excavation, bedding, backfill, bends, and appurtenances not itemized elsewhere.
4. All concrete items shall include Aggregate Base Course where required by the drawings.
5. Fill in the pipe type for irrigation pipe and sleeves.
6. Reconditioning shall be calculated to at least 6" outside of back of walk on both sides.
7. Units can be changed if desired, simply annotate what is used.
8. Additional lines or items may be added as needed.

_____
Signature of Developer Date
(If corporation, to be signed by President and attested to by Secretary together with the corporate seals.)

I have reviewed the estimated costs and time schedule shown above and, based on the construction drawings submitted to date and the current cost of construction, I take no exception to the above.

_____
City Development Engineer Date

_____
Community Development Date

C. Offsite Tributary Areas

There are no offsite tributary basins discharging onto the project site.

D. Proposed Drainage System Description

The proposed storm sewer system for this project consists of overland sheets flows, shallow concentrated flows, gutter flows, ditch flows, piped storm sewer and 4 detention ponds in series of 2 each. The ponds are designed to treat and attenuate the Water Quality Capture Volume (WQCV), the 10 year minor storm and the 100 year major storm.

pond 1 outfall is piped now.

Agree, the narrative has been revised.

Pond 1, located in the southwest quarter of the site, shall intercept the runoff from approximately 6.8 acres. After, the water is released through the pond's outlet structure and discharge pipe to the roadside ditch along Aquille Dr. It then flows via a 1.25-foot-deep v-ditch for about 660 feet until it is intercepted by Inlet 200, and along with the surface runoff from Basin 200 it enters Pond 2. In addition to what is intercepted by Inlet 200, Pond 2 receives the surface runoff and concentrated flow delivered by concrete curb and gutter (12" tall with 24" gutter) located along the western property boundary, Basin 201. Total tributary basin area for Pond 2 is approximately 15.5 acres. This channel shall collect runoff from the lots located on the west side of Aiguille Drive, thus eliminating the potential of flash flooding onto Plateau Ct, and Ridgeway Ct. After the runoff in Pond 2 is treated and attenuated, the water shall exit the pond via an 18" concrete pipe for about 777 feet until it discharges into the ditch in the median located at the intersection of Ridgeway Court and Ridges Boulevard.

Pond 3 is designed to intercept the surface runoff from basin 300 located in the northwest corner of the property. After the runoff is treated and attenuated in Pond 3, it exits via a 12" RCP to the area Inlet 403 from where it travels in an 18" RCP for about 400 feet until it discharges into the Pond 4. In addition to the above, Pond 4 receives runoff from basins 401 and 402 in a concrete pipe, and surface runoff from 2 lots located directly west of Pond 4, Basin 400. The pond's outlet discharges the water onto the vacant lot located between 2417 and 2419 Hidden Valley Drive. From there the water shall exit the lot in the existing 24" culvert under Hidden Valley Drive into a small natural creek taking it to the Colorado River.

The parcels located along the side of the streets with the roadside ditch will require 18" culverts under the drives. These culverts will be installed at the time of the house and drive construction. For the scope of this Final report attached are normal water surface calculations for the 2 and 100 year storms for ditches and gutters in critical locations of the site. The roadside ditches are to be lined with riprap $D_{50} = 4"$.

Only saw the one for basin 202 designed. Erosion control

Additional Ditch Calc.'s are included in Appendix D.

The roadside ditches are designed to [illegible] event's runoff. Refer to Appendix D.

There are also diversion ditches to be constructed in the back of lots in the open space where applicable. The purpose of these ditches is to divert runoff and potential erosion from the open space behind the lots. These ditches were added to the proposed topography on the grading plan. Refer to the Grading Plan of the construction plans and Appendix D of this report.

The proposed grading on the site is designed to eliminate cross lot drainage and to maintain positive runoff out of the site. There are 2 minor basins, DD1 and DD2 whose runoff directly discharges onto the offsite. The areas of basins DD1 and DD2 are 1.93 acres and 0.39 acres, respectively. The runoff from these basins shall present no potential for adverse effects downstream of the site for the Basin DD1 shall remain mostly undisturbed, and Basin DD2 shall have its surface finished with a permanent erosion control and diversion ditches routing the runoff onto the vacant lot at the Pond 4 outfall. No impervious area shall be introduced within the boundary of these basins. **The runoff flows from basins DD1 and DD2 in the proposed conditions in minor storm yield 0.32 and 0.06 cfs, respectively. Whereas the minor storm runoff from basins EX1 and EX6 yield 1.62 and 0.11 cfs, respectively. The decrease in runoff from existing to proposed conditions from DD1 and DD2 is caused by decreasing of the area of the basins in proposed conditions. The runoff from basins DD1 and DD2 is compensated in volumes and discharge rates in ponds 1 and 4, respectively. Nevertheless, the size of either of the basins does not comply with the regulation 1407.3 of the SWMM. Therefore, a variance from compliance with the section 1407.3 of SWMM is hereby requested for Basins DD1 and DD2. A copy of the variance request letter is found in Appendix H of this report.**

3.0 Drainage Analysis and Drainage Criteria

A. Regulations

The supporting drainage design and calculations were performed in accordance with the Mesa County/City of Grand Junction Stormwater Management Manual (SWMM) and the UDFCD "Urban Storm Drainage Criteria Manual, Volume 1.
Variance requests are listed in Section 2.0 D and 4.0 A of this report.

B. Hydrologic Criteria

The hydrologic and hydraulic analysis proposed is to use procedures per the Mesa County Stormwater Management Manual (SWMM) guidelines, dated December 2007.

A Computer Aided Design program (HydroCAD) was used for modeling the hydrology and hydraulics of stormwater runoff. HydroCAD is based largely on hydrology techniques developed by the Soil Conservation Service (now the Natural Resources Conservation Service), combined with other hydrology and hydraulic calculations. The storm selected for analysis is the Mesa County 3 hour storm recommended by the SWMM.

C. Pond Summary Tables

Pond	Pond to be Built in Filing:	Pond Contributing Area (ac)	CN	Storm Events	Volume (cf)	WSEL (ft)	Design Peak Discharge (cfs)	SUM OF DD1 AND POND 1 PEAK FLOWS (CFS)	Allowable Peak Discharge (cfs)
POND 1	5	6.87	89	WQCV	3,296	4801.50	NA	NA	NA
				10 YEAR	6,082	4802.31	0.26	0.58	0.59
				100 YEAR	15,335	4804.31	0.48	2.09	2.47
POND 2	1	15.58	89	WQCV	7,575	4847.71	NA	NA	NA
				10 YEAR	13,992	4748.32	0.52		1.87
				100 YEAR	31,059	4749.95	4.21		7.79
POND 3	3	1.56	88	WQCV	702	4752.64	NA	SUM OF DD2 AND POND 4 PEAK FLOWS (CFS)	NA
				10 YEAR	820	4752.88	0.17		0.19
				100 YEAR	2,077	4754.06	0.55		0.78
POND 4	4	22.94	89	WQCV	11,098	4742.19	NA	NA	NA
				10 YEAR	14,737	4742.73	1.91	1.96	2.71
				100 YEAR	33,969	4745.13	10.21	10.40	11.28

D. Hydraulic Criteria

Storm Drains

Storm Drains are designed to have the 2 year EGL below the rim of the manhole or inlet's grates.

Street Flow and Inlet Capacities

The SWMM criteria were used to check for street flow capacity and inlet capacities. Ditch flows sections have been added to Appendix D.

Calculations included in Appendix D.

evaluate driveway culverts.

Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

CONCRETE C&G ALONG WESTERN BOUNDRY - FLAT - 100yr storm SECTION B

User-defined

Invert Elev (ft)	= 99.00
Slope (%)	= 0.90
N-Value	= 0.020

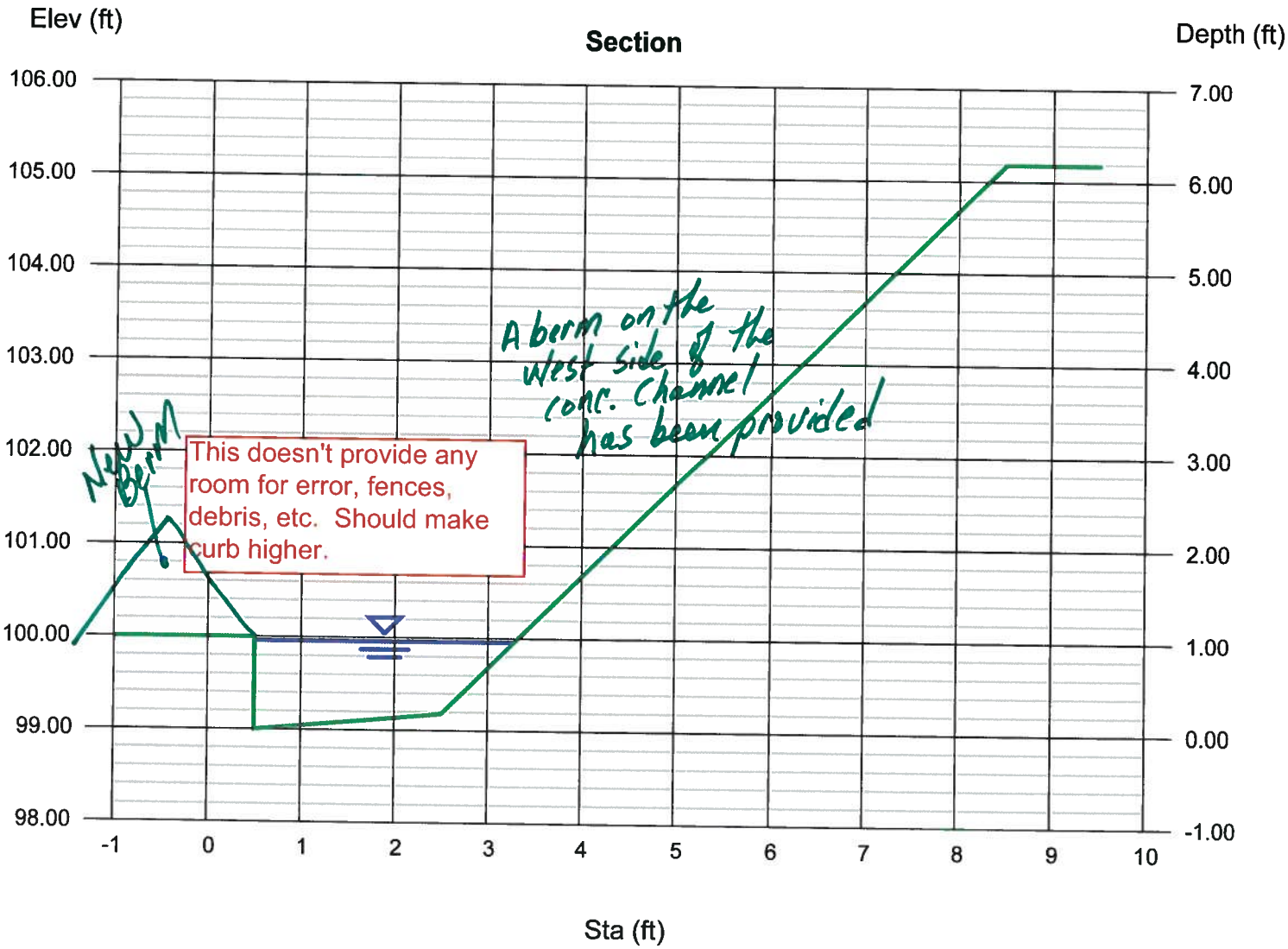
Calculations

Compute by:	Known Q
Known Q (cfs)	= 9.05

Highlighted

Depth (ft)	= 0.96
Q (cfs)	= 9.050
Area (sqft)	= 2.04
Velocity (ft/s)	= 4.43
Wetted Perim (ft)	= 4.07
Crit Depth, Yc (ft)	= 0.92
Top Width (ft)	= 2.78
EGL (ft)	= 1.26

(Sta, El, n)-(Sta, El, n)... (0.00, 100.00, 0.013)-(0.50, 99.00, 0.013)-(2.50, 99.18, 0.013)-(8.50, 105.18, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

44' ROW Aiguille Drive - FLAT - 100yr storm SECTION C

User-defined

Invert Elev (ft)	= 78.79
Slope (%)	= 3.50
N-Value	= 0.021

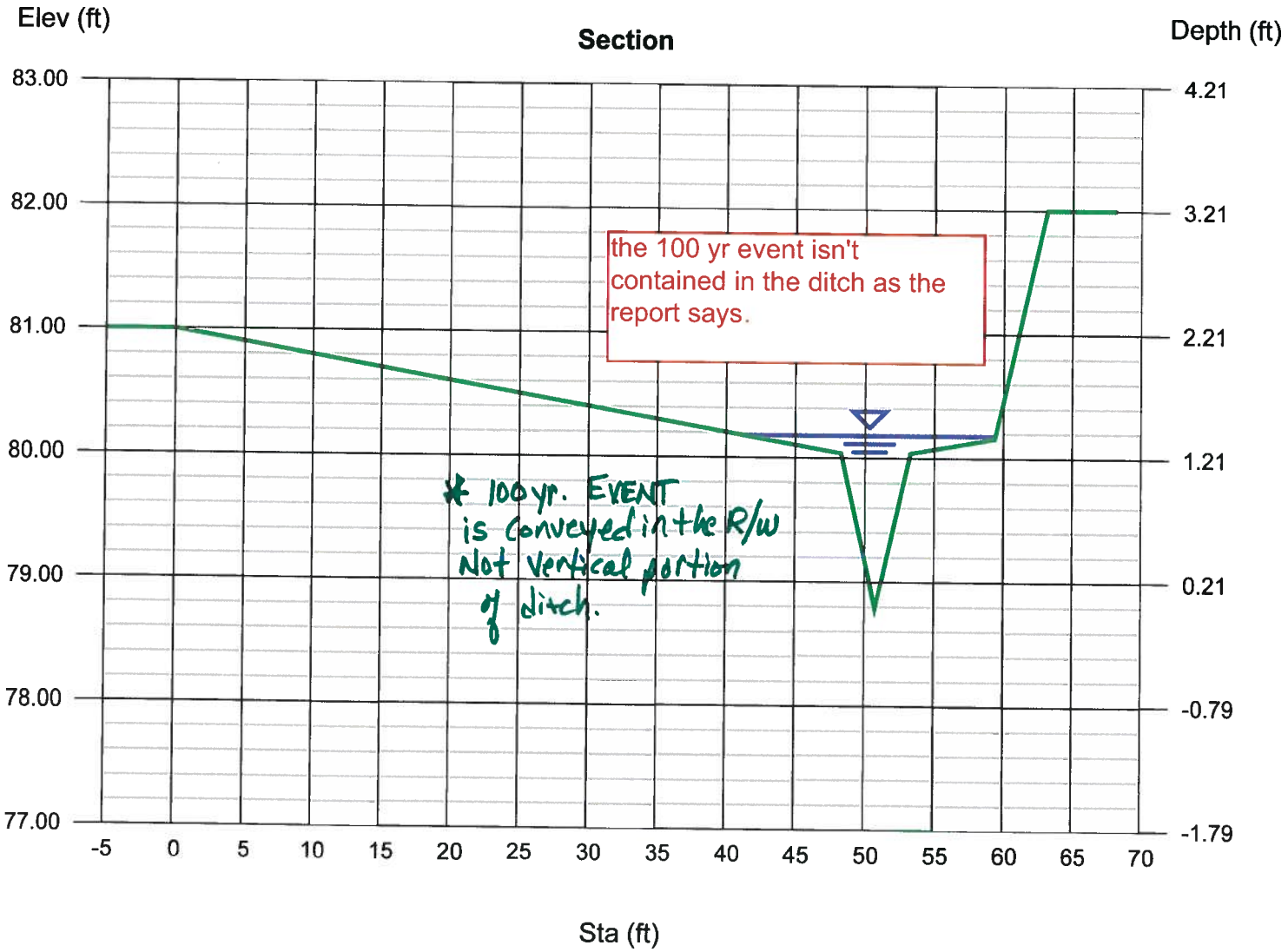
Calculations

Compute by:	Known Q
Known Q (cfs)	= 24.50

Highlighted

Depth (ft)	= 1.39
Q (cfs)	= 24.50
Area (sqft)	= 4.81
Velocity (ft/s)	= 5.10
Wetted Perim (ft)	= 18.78
Crit Depth, Yc (ft)	= 1.53
Top Width (ft)	= 18.18
EGL (ft)	= 1.79

(Sta, El, n)-(Sta, El, n)... (0.00, 81.00)-(48.05, 80.04, 0.014)-(50.77, 78.79, 0.035)-(53.27, 80.04, 0.035)-(59.37, 80.16, 0.014)-(63.14, 82.00, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

44' ROW - VERY STEEP HIDDEN COURT - 100yr storm SECTION E

User-defined

Invert Elev (ft)	= 60.32
Slope (%)	= 13.00
N-Value	= 0.035

Calculations

Compute by:	Known Q
Known Q (cfs)	= 12.79

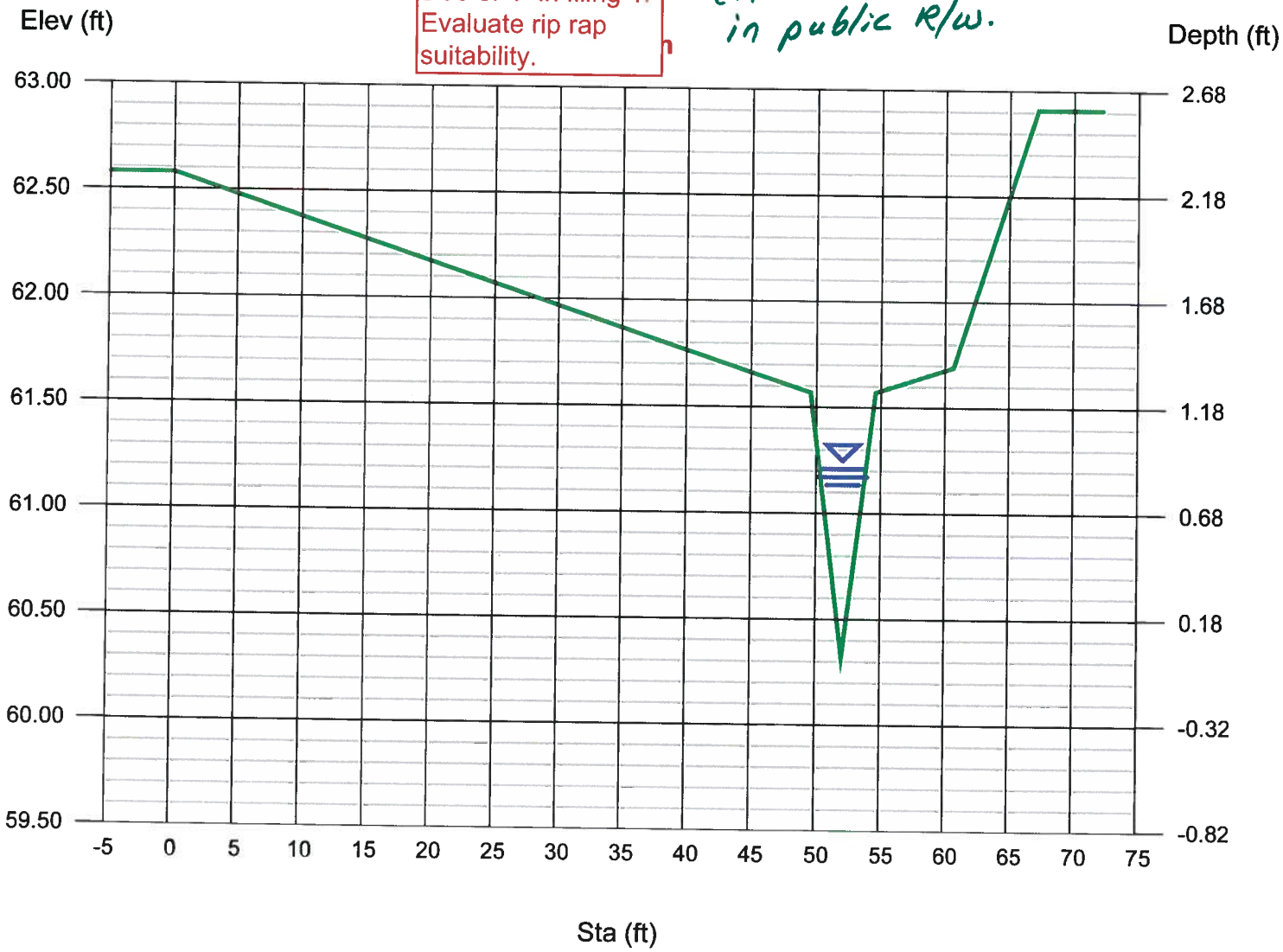
Highlighted

Depth (ft)	= 0.89
Q (cfs)	= 12.79
Area (sqft)	= 1.58
Velocity (ft/s)	= 8.07
Wetted Perim (ft)	= 3.98
Crit Depth, Yc (ft)	= 1.21
Top Width (ft)	= 3.56
EGL (ft)	= 1.90

(Sta, El, n)-(Sta, El, n)...(52.05, 60.32, 0.035)-(54.55, 61.57, 0.035)-(60.65, 61.69, 0.014)-(67.19, 62.91, 0.035)

erosive, I assume this will be rock lined. Plans call for D50 of 4" in filing 1. Evaluate rip rap suitability.

Yes, Rock lined ditch for all in public R/W.



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

Diversion ditch - Basin 202 runoff 100 yr storm SECTION G

Triangular

Side Slopes (z:1)	= 1.00, 1.00
Total Depth (ft)	= 1.00
Invert Elev (ft)	= 100.00
Slope (%)	= 5.88
N-Value	= 0.035

Calculations

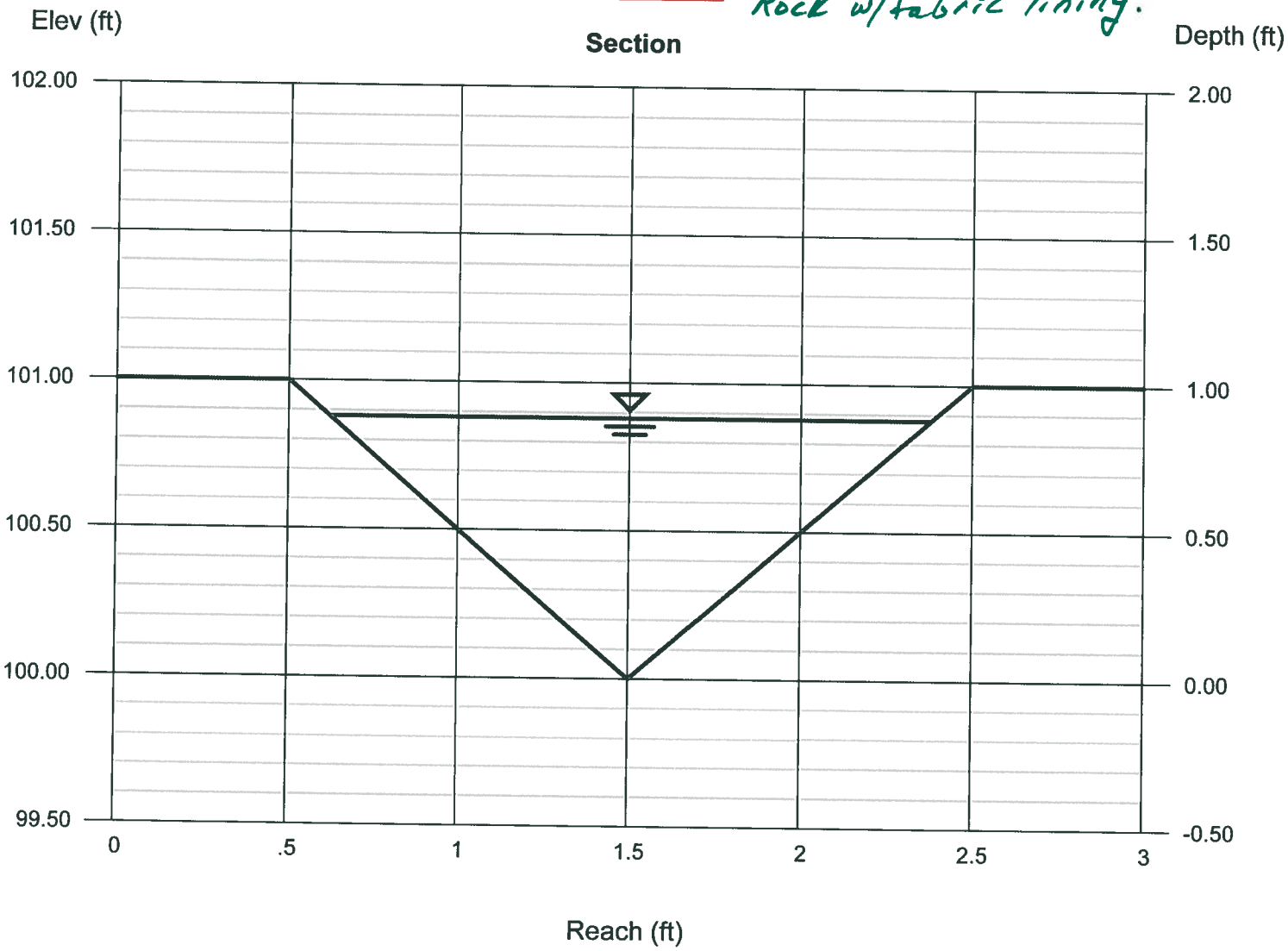
Compute by:	Known Q
Known Q (cfs)	= 3.62

Highlighted

Depth (ft)	= 0.88
Q (cfs)	= 3.620
Area (sqft)	= 0.77
Velocity (ft/s)	= 4.67
Wetted Perim (ft)	= 2.49
Crit Depth, Yc (ft)	= 0.96
Top Width (ft)	= 1.76
EGL (ft)	= 1.22

this will be erosive. Ditches need to have erosion control.

where velocities are excessive, ditches are to have Rock w/fabric lining.



Summary for Subcatchment EX1: EX1

Runoff = 0.14 cfs @ 1.85 hrs, Volume= 0.006 af, Depth= 0.01"

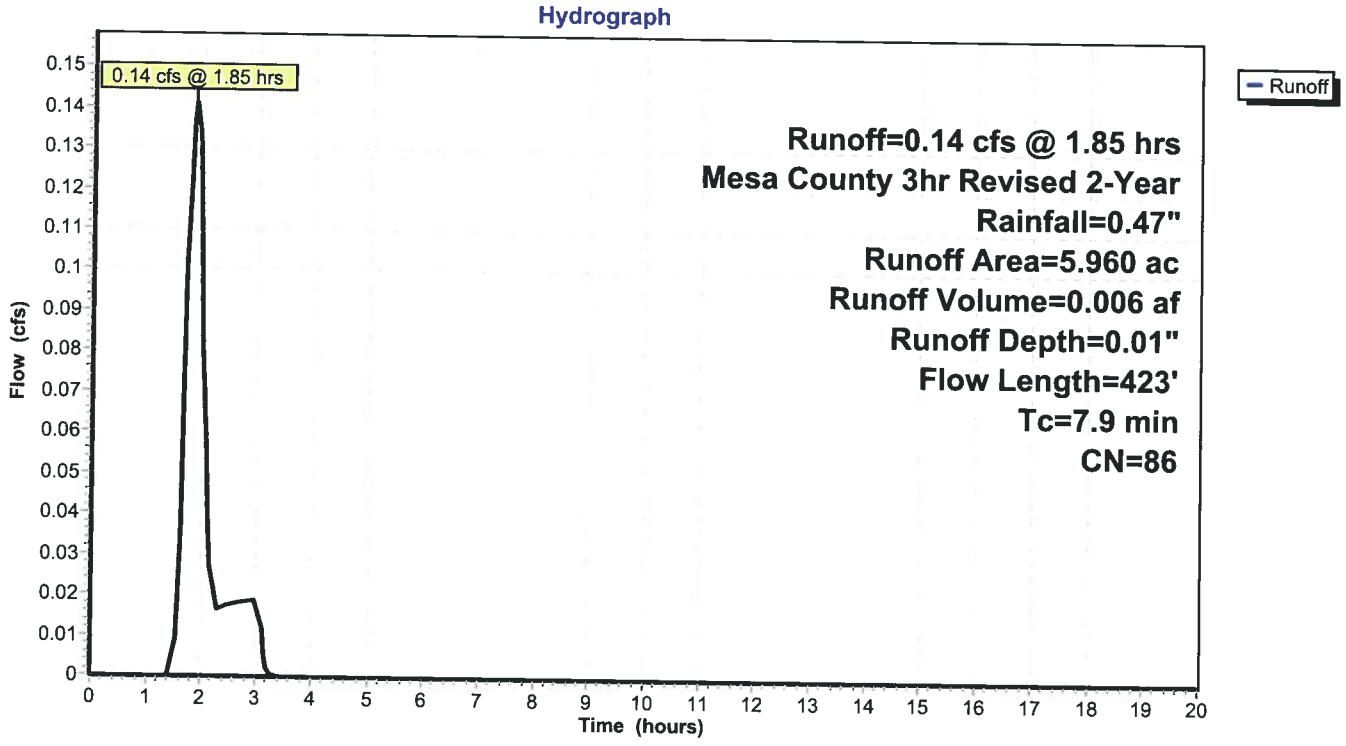
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
5.960	86	Desert shrub range, Fair, HSG D
5.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0200	0.26		**Sheet Flow,** n= 0.026 P2= 0.4
1.5	323	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
7.9	423	Total			

can't tell what these subcatchments area. Please explain.

Subcatchment EX1: EX1



PONDS' SUMMARY TABLES

POND 1	VOLUME (CF)	WSEL (FT)	DESIGN PEAK DISCHRGE FLOW (CFS)	SUM OF DD1 AND POND 1 PEAK FLOWS (CFS)	ADJUSTED ALLOWABLE PEAK DISCHARGE FLOW (CFS)
WQCV	3,296	4801.50	NA	NA	NA
10 YEAR	6,082	4802.31	0.26	.58	0.59
100 YEAR	15,335	4804.31	0.48	2.09	2.47

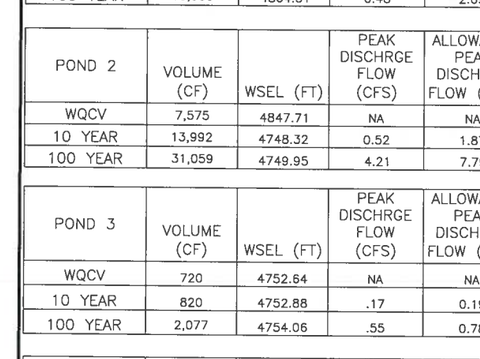
POND 2	VOLUME (CF)	WSEL (FT)	PEAK DISCHRGE FLOW (CFS)	ALLOWABLE PEAK DISCHRGE FLOW (CFS)
WQCV	7,575	4847.71	NA	NA
10 YEAR	13,992	4748.32	0.52	1.87
100 YEAR	31,059	4749.95	4.21	7.79

POND 3	VOLUME (CF)	WSEL (FT)	PEAK DISCHRGE FLOW (CFS)	ALLOWABLE PEAK DISCHRGE FLOW (CFS)
WQCV	720	4752.64	NA	NA
10 YEAR	820	4752.88	.17	0.19
100 YEAR	2,077	4754.06	.55	0.78

POND 4	VOLUME (CF)	WSEL (FT)	PEAK DISCHRGE FLOW (CFS)	SUM OF DD2 AND POND 4 PEAK FLOWS (CFS)	ADJUSTED ALLOWABLE PEAK DISCHARGE FLOW (CFS)
WQCV	11,098	4742.19	NA	NA	NA
10 YEAR	14,737	4742.73	1.91	1.96	2.71
100 YEAR	33,969	4745.13	10.21	10.40	11.28

OUTLET STRUCTURE TABLES

POND	A	B	C	D	E	F	G	H	I
POND 1	4799.00	4801.50	4802.31	4804.31	6"	32"	1	1	3/8
POND 2	4746.06	4747.71	4748.32	4749.95	20"	21"	4	5	7/8"
POND 3	4751.00	4752.64	4752.88	4754.06	6"	21"	1	4	5/16"
POND 4	4739.00	4742.19	4742.73	4745.13	20"	35"	1	8	13/16"

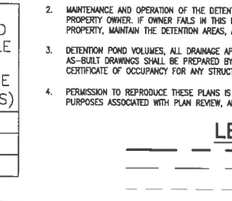


POND 1 ONLY
3" DIA ORIFICE
W/ 8"X8" TRASH RACK

POND 3 ONLY
4" DIA. ORIFICE
W/ 6"X6" TRASH RACK

These don't show up below in the detail

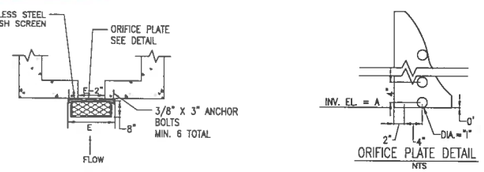
Shown Below



FRONT ELEVATION



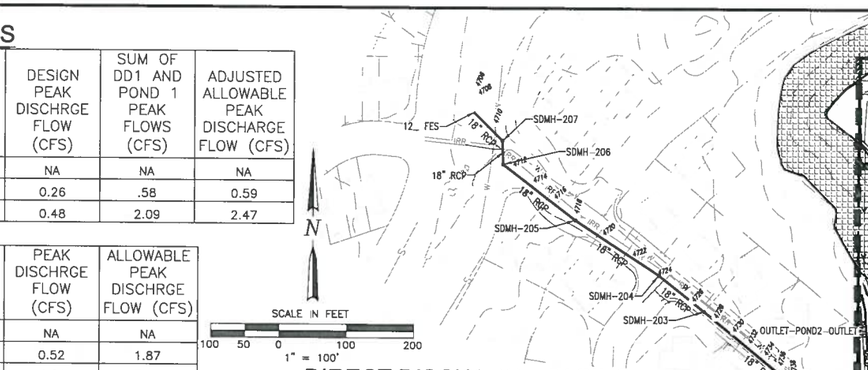
TYPICAL DIVERSION DITCH SCTION
H:1"=2'
V:1"=2'



ORIFICE PLATE DETAIL
NTS

POND OUTLET STRUCTURE DETAIL

N.T.S.



DIRECT DISCHARGE BASINS:

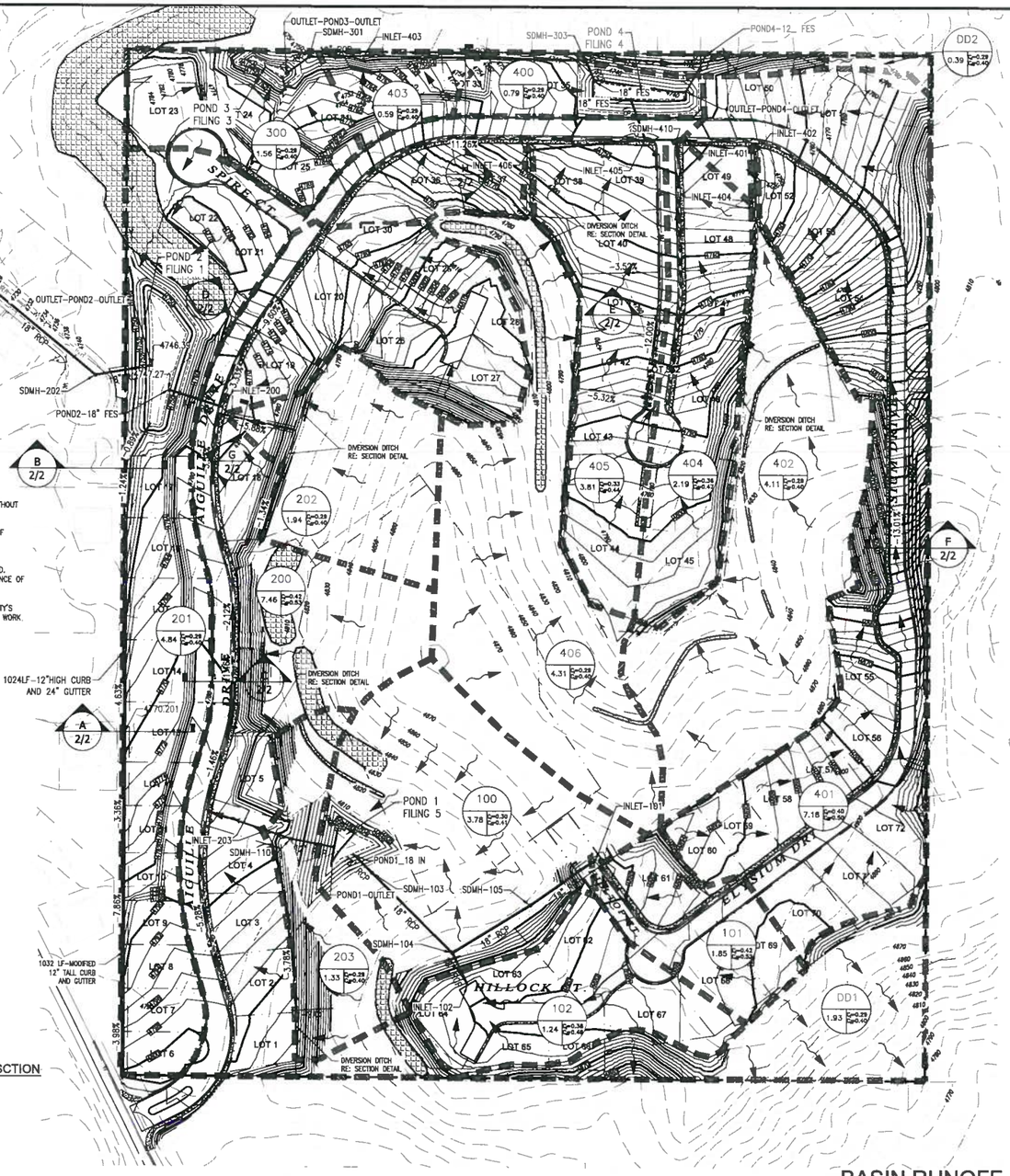
BASIN	10 YEAR RUNOFF (CFS)	100 YEAR RUNOFF (CFS)
DD1	0.32	1.61
DD2	0.06	0.33

GENERAL NOTES:

1. NO BUILDING, STRUCTURE, OR FILL WILL BE PLACED IN THE DETENTION AREAS AND NO CHANGES OR ALTERATIONS AFFECTING THE HYDRAULIC CHARACTERISTICS OF THE DETENTION AREAS WILL BE MADE WITHOUT THE APPROVAL OF THE CITY.
2. MAINTENANCE AND OPERATION OF THE DETENTION AND WATER QUALITY AREAS IS THE RESPONSIBILITY OF PROPERTY OWNER. IF OWNER FAILS IN THIS RESPONSIBILITY, THE CITY HAS THE RIGHT TO ENTER THE PROPERTY, MAINTAIN THE DETENTION AREAS, AND BE REIMBURSED FOR COSTS INCURRED.
3. DETENTION POND VOLUMES, ALL DRAINAGE APPURTENANCES, AND BASIN BOUNDARIES SHALL BE VERIFIED. AS-BUILT DRAWINGS SHALL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY FOR ANY STRUCTURE WITHIN THE DEVELOPMENT.
4. PERMISSION TO REPRODUCE THESE PLANS IS HEREBY GIVEN TO THE CITY OF GRAND JUNCTION FOR CITY'S PURPOSES ASSOCIATED WITH PLAN REVIEW, APPROVAL, PERMITTING, INSPECTION AND CONSTRUCTION OF WORK.

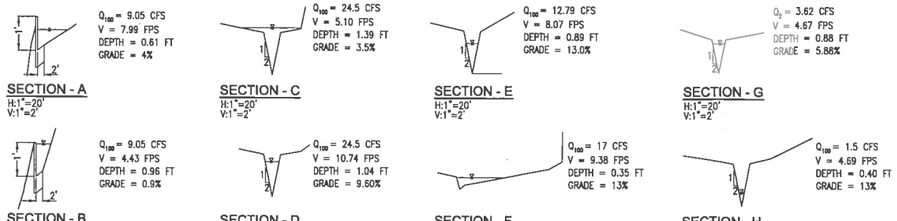
LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- BASIN INFO BLOCK (BASIN DESIGNATION, AREA (AC), RATIONAL COEFFICIENTS)
- DESIGN POINT
- DIVERSION DITCH



BASIN RUNOFF

DRAINAGE AREA	Area (ac)	2-Yr. Q (cfs) Basin Runoff	100-Yr. Q (cfs) Basin Runoff
100	3.78	1.36	7.24
101	1.85	0.85	4.21
102	1.24	0.62	3.00
200	7.46	3.80	18.35
201	4.84	1.68	9.05
202	1.94	0.67	3.62
203	1.33	0.46	2.50
300	1.56	0.54	2.92
400	0.79	0.28	1.48
401	7.18	3.44	16.86
402	4.11	1.43	7.69
403	0.59	0.21	1.11
404	2.19	0.95	4.79
405	3.81	1.52	7.82
406	4.31	1.50	8.06
DD1	1.93	0.67	3.60
DD2	0.39	0.13	0.72



VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
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MAJOR SUBDIVISION
FINAL PLAN

NO.	DATE	COMMENT	BY
1	06/09/17	REVISED PRE CITY COMMENTS DATED JULY 18, 2017	SSM

Drainage Map - Proposed Conditions
-
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/07/17
SCALE: SEE PLAN
C:\pdf\mariposadrainagemap.dwg

SHEET
2/2

Final Drainage Report
For
Pinnacle Ridge Subdivision
Grand Junction, Colorado

Date: June 9, 2017
Revised: **August 10, 2017**
October 9, 2017

Prepared by:
Vortex Engineering, Inc.
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
970-245-9051
VEI# F04-006

Submitted to:
City of Grand Junction
250 N. 5th Street
Grand Junction, CO 81501

Type of Design: Major Subdivision

Owners:
Two R & D LLC
Fruita, Co

Property Address:
Mariposa Drive
Grand Junction, CO

Tax Schedule No.: 2945-212-00-011

"I hereby certify that this Final Drainage Report for the design Pinnacle Ridge Subdivision was prepared by me (or under my direct supervision) in accordance with the provisions of the Stormwater Management Manual for the owners thereof. I understand that City of Grand Junction does not and will not assume liability for drainage facilities designed by others.

James C. Atkinson, P.E. Date

COLORADO LICENSED
JAMES C. ATKINSON
18828
10-9-17
PROFESSIONAL ENGINEER

As an authorized signing representative of Pinnacle Ridge Subdivision, I hereby certify that the drainage facilities shall be constructed according to the design presented in this report. I understand that City of Grand Junction does not and will not assume liability for the drainage facilities designed and/or certified by my engineer. I understand that City of Grand Junction reviews drainage plan but cannot, on behalf of Pinnacle Ridge Subdivision, guarantee that Final drainage design review will absolve Pinnacle Ridge Subdivision and/or their successors and/or assigns of future liability for improper design. I further understand that approval of the Construction Plans does not imply approval of my engineer's drainage design.

Signature

10/9/17
Date

Table of Contents

1.0 Introduction....4
A. Background....4
B. Project Location....4
C. Property Description....4
2.0 Drainage System Description....5
A. Existing Drainage Conditions....5
B. Master Drainage Plans....5
C. Offsite Tributary Areas....6
D. Proposed Drainage System Description....6
3.0 Drainage Analysis and Drainage Criteria....8
A. Regulations....8
B. Hydrologic Criteria....8
C. Pond Summary Tables....8
D. Hydraulic Criteria....9
4.0 Conclusions....9
A. Compliance with Manual....9
5.0 References....10
Appendix A – Location Map....11
Appendix B – NCRS Soils Map....13
Appendix C – FEMA FIRM Maps....14
Appendix D – Basin Runoff, HGL Calcs....15
Appendix E – HYDROCAD Report....16
Appendix F – SWMM Checklist....17
Appendix G – Major Basins Exhibit....18
Appendix H – Variance Request Letter....19
Appendix I – Drainage Maps....20

1.0 Introduction

A. Background

This Final Drainage Report has been prepared by Vortex Engineering, Inc., and is required as part of the Pinnacle Ridge Major Subdivision submittal. This Final Drainage report has been created in accordance with the Mesa County/Grand Junction Stormwater Management Manual.

B. Project Location

The Pinnacle Ridge Subdivision is approximately 45-acres in size, located in the area known as The Ridges/Redlands in the political boundary of The City of Grand Junction, Colorado. It is located about 1/4 mile directly north of the intersection of Mariposa Drive and Monument Rd. Surrounding Pinnacle Ridge Subdivision are existing residential and open space parcels. Legal description of the site is as follows: Township 1 North, Range 1 East, and in Section 21 of the Ute Meridian. A vicinity map is provided in Appendix A for reference.

C. Property Description

The study area for the development of the subject site consists of about 49.2 acres. The development itself site consists of approximately 45 acres which does not include a 4.12-acre-undeveloped parcel located near the middle of the property. The project site is covered with native vegetation consisting of grasses and sparsely located shrubs. The highest point on the site is the ridge in the southeast corner that reaches a height of 4904. Grades on the site vary from 5 to 30 percent.

The Natural Resources Conservation Service (NRCS) classifies the soils within the Pinnacle Ridge Heights site predominantly as Persayo-Blackstone (Soil Symbol 87). These soils are classified as Hydrologic Group “D” which is described as soils having a slow infiltration rate when thoroughly wet. These soils consist mainly of clays that have a high shrink-swell potential, and a slow rate of water transmission. The NRCS Soils report is included in Appendix B.
No jurisdictional FEMA flood plain has been established on the site. See FEMA panel 08077C0815F in Appendix C

2.0 Drainage System Description

A. Existing Drainage Conditions

The existing topography of the site creates outflow conditions only. No offsite runoff enters the project site. The site is also intersected by a major sub-basin boundary placing the majority of the site, about 43 acres (basins EX2 to EX5) in the Major Basin 51 and about 6 acres (basin EX1) in The No Thoroughfare Canyon Basin. Both of these basins discharge into the Colorado River, located about a mile downstream from the site. There are no existing drainage or irrigation facilities present on the site, other than the natural channels and gulleys. The runoff from all of the 5 existing basins identified on the project site, exits the site in a shallow concentrated flow manner. Basin EX1 discharges out of the site along the southeast corner. Basin EX2 discharges west onto Plateau Ct. The runoff from Basin EX3 exits the site at about Ridgeway Ct along the western property boundary. The runoff from Basin EX4, the largest of the set, exits the site at the north onto a vacant lot that is situated between the following addresses 2417 and 2419 Hidden Valley Drive. From the vacant lot, the runoff enters an existing 24" culvert which routes the water to a drainage way in The Hidden Valley Park. Likewise, Basin EX5 runs off into Hidden Valley Court to the north.

Existing Conditions 3 Hour Runoff

Basin	Basin Area	CN	Tc (min.)	Runoff	
				10 yr	100 yr
EX1	5.96	86	7.9	1.62	4.47
EX2	9.4	86	11.3	1.41	6.74
EX3	9.18	86	8.5	1.42	6.8
EX4	21.3	86	21.8	2.91	13.46
EX5	2.77	86	4.6	0.45	2.22
EX6	0.62	86	5	0.11	0.55

B. Master Drainage Plans

As indicated above, the site is intersected by a major sub-basin boundary which places the majority of the site, about 43 acres in the Major Basin 59 and about 6 acres in the No Thoroughfare Canyon Basin. The proposed development diverts approximately 3.5 acres from the No Thoroughfare Canyon Basin to Basin 59. This area is negligible in comparison to the sizes of the above basins, being about 1 and 19 square miles for Basin 51 and No Thoroughfare Canyon Basin, respectively.

C. Offsite Tributary Areas

There are no offsite tributary basins discharging onto the project site.

D. Proposed Drainage System Description

The proposed storm drainage system for this project consists of overland sheets flows, shallow concentrated flows, gutter flows, ditch flows, piped storm sewer and 4 detention ponds in series of 2 each. The ponds are designed to treat and attenuate the Water Quality Capture Volume (WQCV), the 10 year minor storm and the 100 year major storm.

Pond 1, located in the southwest quarter of the site, shall intercept the runoff from approximately 6.8 acres. Water is released through the pond's outlet structure and discharge pipe to the roadside ditch along Aquille Dr. It then flows northward via a 1.25-foot-deep roadside v-ditch for about 660 feet until it is intercepted by Inlet 200, and along with the surface runoff from Basin 200 it enters Pond 2. In addition to what is intercepted by Inlet 200, Pond 2 receives the surface runoff and concentrated flow delivered by concrete curb and gutter (12" tall with 24" gutter) located along the western property boundary, Basin 201. Total tributary basin area for Pond 2 is approximately 15.5 acres. This channel shall collect runoff from the lots located on the west side of Aiguille Drive, thus eliminating the potential of flash flooding onto Plateau Ct, and Ridgeway Ct. After the runoff in Pond 2 is treated and attenuated, the water shall exit the pond via an 18" concrete pipe for about 777 feet until it discharges into the ditch in the median located at the intersection of Ridgeway Court and Ridges Boulevard.

Pond 3 is designed to intercept the surface runoff from basin 300 located in the northwest corner of the property. After the runoff is treated and attenuated in Pond 3, it exits via a 12" RCP to the area Inlet 403 from where it travels in an 18" RCP for about 400 feet until it discharges into the Pond 4. In addition to the above, Pond 4 receives runoff from basins 401 and 402 in a concrete pipe, and surface runoff from 2 lots located directly west of Pond 4, Basin 400. The pond's outlet discharges the water onto the vacant lot located between 2417 and 2419 Hidden Valley Drive. From there the water shall exit the lot in the existing 24" culvert under Hidden Valley Drive into a small natural creek taking it to the Colorado River.

The parcels located along the side of the streets with the roadside ditch will require 18" culverts under the drives. These culverts will be installed at the time of the house and drive construction. For the scope of this Final report attached in Appendix D are normal water surface calculations for the 2 and 100 year storms for ditches and gutters in critical locations of the site. The roadside ditches are to be

lined with riprap D_{50} = 4". The roadside ditches are designed to convey the 100 year event's runoff. Refer to Appendix D.

There are also diversion ditches to be constructed in the back of lots in the open space where applicable. The purpose of these ditches is to divert runoff and potential erosion from the open space behind the lots, and direct water to the roadside ditches. These ditches were added to the proposed topography on the grading plan. Refer to the Drainage Map, Grading Plan of the construction plans and Appendix D of this report. The ditches were sized to convey 100 year flows, and where warranted by the velocity, the ditches are proposed to be lined with 6" riprap. See Grading Plan.

Culverts for drives onto the following lots; 1 -4, 18-20, 36, 37, 46-48, and 52, shall be 18" minimum diameter. Due to grade constraints, 14"x23" elliptical pipe (an equivalent of 18" circular) with mitered ends shall be used in such application. For 100 year analysis, the basin 202-C has been delineated to evaluate the culvert size. Design calculations are in Appendix D.

The proposed grading on the site is designed to eliminate cross lot drainage and to maintain positive runoff out of the site. There are 2 minor basins, DD1 and DD2 whose runoff directly discharges onto the offsite. The areas of basins DD1 and DD2 are 1.93 acres and 0.39 acres, respectively. The runoff from these basins shall present no potential for adverse effects downstream of the site for the Basin DD1 shall remain mostly undisturbed, and Basin DD2 shall have its surface finished with a permanent erosion control and diversion ditches routing the runoff onto the vacant lot at the Pond 4 outfall. No impervious area shall be introduced within the boundary of these basins. **The runoff flows from basins DD1 and DD2 in the proposed conditions in minor storm yield 0.32 and 0.06 cfs, respectively. Whereas the minor storm runoff from basins EX1 and EX6 yield 1.62 and 0.11 cfs, respectively. The decrease in runoff from existing to proposed conditions from DD1 and DD2 is caused by decreasing of the area of the basins in proposed conditions. The runoff from basins DD1 and DD2 is compensated in volumes and discharge rates in ponds 1 and 4, respectively. Nevertheless, the size of either of the basins does not comply with the regulation 1407.3 of the SWMM. Therefore, a variance from compliance with the section 1407.3 of SWMM is hereby requested for Basins DD1 and DD2. A copy of the variance request letter is found in Appendix H of this report.**

3.0 Drainage Analysis and Drainage Criteria

A. Regulations

The supporting drainage design and calculations were performed in accordance with the Mesa County/City of Grand Junction Stormwater Management Manual (SWMM) and the UDFCD "Urban Storm Drainage Criteria Manual, Volume 1.
Variance requests are listed in Section 2.0 D and 4.0 A of this report.

B. Hydrologic Criteria

The hydrologic and hydraulic analysis proposed is to use procedures per the Mesa County Stormwater Management Manual (SWMM) guidelines, dated December 2007.

A Computer Aided Design program (HydroCAD) was used for modeling the hydrology and hydraulics of stormwater runoff. HydroCAD is based largely on hydrology techniques developed by the Soil Conservation Service (now the Natural Resources Conservation Service), combined with other hydrology and hydraulic calculations. The storm selected for analysis is the Mesa County 3 hour storm recommended by the SWMM.

C. Pond Summary Tables

Pond	Pond to be Built in Filing:	Pond Contributing Area (ac)	CN	Storm Events	Volume (cf)	WSEL (ft)	Design Peak Discharge (cfs)	SUM OF DD1 AND POND 1 PEAK FLOWS (CFS)	Allowable Peak Discharge (cfs)
POND 1	5	6.87	89	WQCV	3,296	4801.50	NA	NA	NA
				10 YEAR	6,082	4802.31	0.26	0.58	0.59
				100 YEAR	15,335	4804.31	0.48	2.09	2.47
POND 2	1	15.58	89	WQCV	7,575	4847.71	NA	NA	NA
				10 YEAR	13,992	4748.32	0.52		1.87
				100 YEAR	31,059	4749.95	4.21		7.79
POND 3	3	1.56	88	WQCV	702	4752.64	NA	SUM OF DD2 AND POND 4 PEAK FLOWS (CFS)	NA
				10 YEAR	820	4752.88	0.17		0.19
				100 YEAR	2,077	4754.06	0.55		0.78
POND 4	4	22.94	89	WQCV	11,098	4742.19	NA	NA	NA
				10 YEAR	14,737	4742.73	1.91	1.96	2.71
				100 YEAR	33,969	4745.13	10.21	10.40	11.28

D. Hydraulic Criteria

Storm Drains

Storm Drains are designed to have the 2 year EGL below the rim of the manhole or inlet's grates.

Street Flow and Inlet Capacities

The SWMM criteria were used to check for street flow capacity and inlet capacities. Ditch flows sections have been added to Appendix D.

4.0 Conclusions

This report discusses the information requirements for a Final Drainage Report and Plan as defined by the Grand Valley "Stormwater Management Manual", Section 300. The proposed development of the Pinnacle Ridge property will effectively convey runoff from the site per the SWMM best recommendations.

The proposed drainage facilities are designed to accept the 100-year runoff and continue the conveyance to the ultimate discharge in the Colorado River. Erosion control BMP's will be implemented during construction in an effort to prevent adverse impacts on downstream properties and drainage facilities. The proposed development will not adversely affect the surrounding properties or existing storm drainage systems.

A. Compliance with Manual

This report discusses the information requirements for a Final Drainage Report and Plan per the Mesa County/City of Grand Junction Stormwater Management Manual. The proposed drainage facilities are designed to collect and detain the 10-year and 100-year event runoff rates from the site along with offsite contributory flows and release at/or below the allowed rates. The proposed development will not adversely affect the surrounding properties or existing drainage systems.

The following variance is hereby requested for this project:

A variance from compliance with the section 1407.3 of SWMM is hereby requested for Basins DD1 and DD2, as described in section 2.0 D of this report.

5.0 References

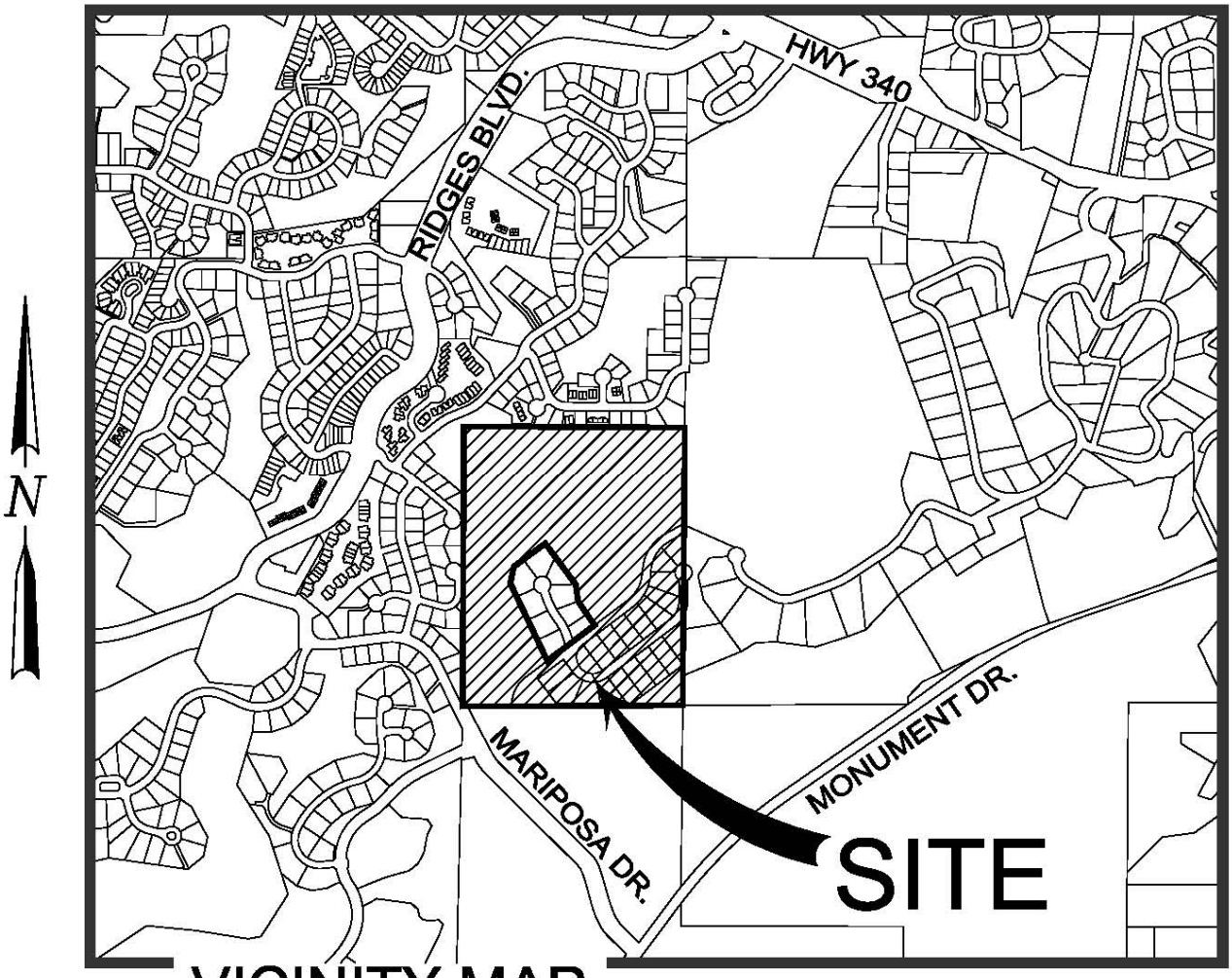
Mesa County/City of Grand Junction Stormwater Management Manual, adopted March 20, 2008.

"Soil Survey of Mesa County Area, Colorado", prepared by United States Department of Agriculture, Soil Conservation Service, issued September 1993.

"Urban Storm Drainage Criteria Manual, Volume 1", prepared by the Urban Drainage and Flood Control District, effective September 1999.

Federal Emergency Management Agency, Flood Insurance Rate Map, Mesa County, Colorado unincorporated Areas, Map No. 08077C0815F.

Appendix A – Location Map



VICINITY MAP

Appendix B – NCRS Soils Map

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Mesa County Area, Colorado



March 19, 2015

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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Contents

Preface.....2
Soil Map.....5
Soil Map.....6
Legend.....7
Map Unit Legend.....8
Map Unit Descriptions.....8
Mesa County Area, Colorado.....10
87—Persayo-Blackston complex, 6 to 45 percent slopes.....10
127—Rock outcrop-Persayo-Hostage complex, 25 to 99 percent slopes, extremely stony.....11

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:3,240 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 45 90 180 270

Feet
0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mesa County Area, Colorado
Survey Area Data: Version 5, Sep 22, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 22, 2010—Sep 2, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Mesa County Area, Colorado (CO680)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
87	Persayo-Blackston complex, 6 to 45 percent slopes	49.7	99.7%
127	Rock outcrop-Persayo-Hostage complex, 25 to 99 percent slopes, extremely stony	0.1	0.3%
Totals for Area of Interest		**49.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If

intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Mesa County Area, Colorado

87—Persayo-Blackston complex, 6 to 45 percent slopes

Map Unit Setting

National map unit symbol: k0bh
Elevation: 4,500 to 6,000 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 100 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

Persayo and similar soils: 65 percent
Blackston and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Persayo

Setting

Landform: Mesas
Landform position (two-dimensional): Backslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Residuum weathered from clayey shale

Typical profile

A - 0 to 4 inches: silty clay loam
C - 4 to 15 inches: silty clay loam
Cr - 15 to 19 inches: weathered bedrock

Properties and qualities

Slope: 6 to 45 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Silty saltdesert (R034XY410CO)

Description of Blackston

Setting

Landform: Mesas
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from sandstone and shale and/or outwash derived from sandstone and shale

Typical profile

A - 0 to 3 inches: very gravelly sandy clay loam
Bk1 - 3 to 7 inches: gravelly clay loam
Bk2 - 7 to 15 inches: very gravelly sandy clay loam
2Bk3 - 15 to 35 inches: extremely gravelly sandy loam
2C - 35 to 60 inches: extremely gravelly sand

Properties and qualities

Slope: 6 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Loamy saltdesert (R034XY401CO)

127—Rock outcrop-Persayo-Hostage complex, 25 to 99 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: k07k
Elevation: 4,700 to 5,400 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 150 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Rock outcrop: 35 percent

Persayo and similar soils: 30 percent
Hostage and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rock Outcrop

Setting
Landform: Ledges, cliffs

Typical profile
H1 - 0 to 60 inches: unweathered bedrock

Properties and qualities
Slope: 50 to 99 percent
Depth to restrictive feature: 0 to 4 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.00 in/hr)
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8

Description of Persayo

Setting
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Residuum weathered from clayey shale

Typical profile
A - 0 to 2 inches: very parachannery clay loam
C - 2 to 11 inches: very parachannery silty clay loam
Cr - 11 to 15 inches: weathered bedrock

Properties and qualities
Slope: 25 to 65 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Saltdesert breaks (R034XY406CO)

Description of Hostage

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium derived from sandstone and shale over residuum weathered from clayey shale

Typical profile

A - 0 to 4 inches: clay loam
B - 4 to 25 inches: clay loam
C1 - 25 to 50 inches: silty clay loam
C2 - 50 to 55 inches: silty clay loam
Cr - 55 to 59 inches: weathered bedrock

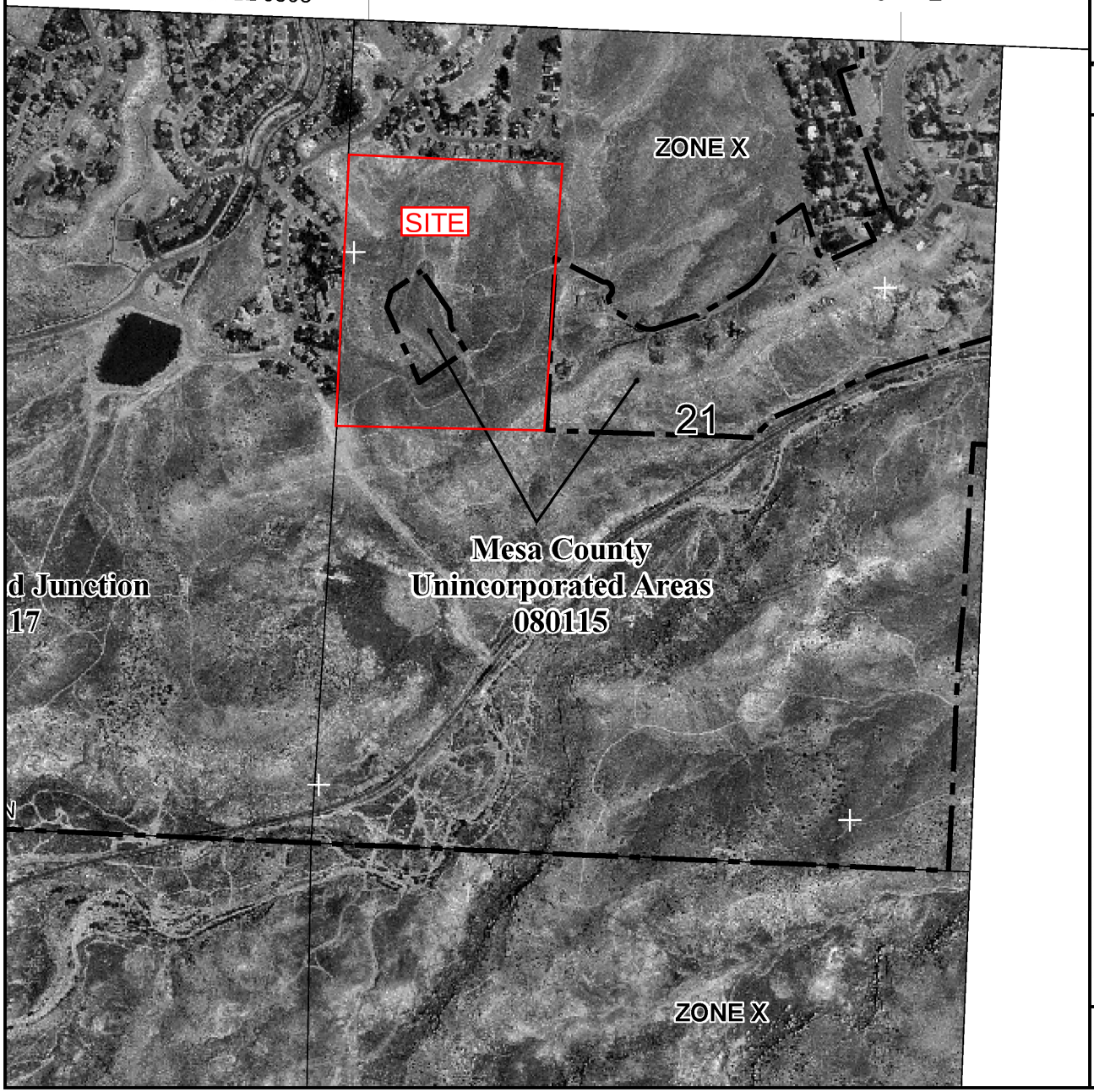
Properties and qualities

Slope: 25 to 50 percent
Percent of area covered with surface fragments: 10.0 percent
Depth to restrictive feature: 39 to 59 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Saltdesert breaks (R034XY406CO)

Appendix C – FEMA FIRM Maps



MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0815F

FIRM

FLOOD INSURANCE RATE MAP
MESA COUNTY, COLORADO
AND INCORPORATED AREAS

PANEL 815 OF 1725

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
GRAND JUNCTION, CITY OF	080117	0815	F
MESA COUNTY	080115	0815	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
08077C0815F

EFFECTIVE DATE
JULY 6, 2010

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Appendix D – Basin Runoff, HGL Calcs

Pinnacle Estates
Existing Basins

Vortex Engineering, Inc.
December 15, 2015

Basin	Basin Area	CN	Tc (min.)	Runoff	
				10 yr	100 yr
EX1	5.96	86	7.9	1.62	4.47
EX2	9.4	86	11.3	1.41	6.74
EX3	9.18	86	8.5	1.42	6.8
EX4	21.3	86	21.8	2.91	13.46
EX5	2.77	86	4.6	0.45	2.22
EX6	0.62	86	5	0.11	0.55

Pinnacle Ridge
Drainage Area C calculations - 2yr and 100yr Events

Vortex Engineering, Inc.
June 9, 2017
REVISED: 8/8/17
10/09/17

BASIN	TOTAL AREA (ft^2)	BASIN AREA (ac)	LOT/PERV. AREA (ft^2)	LOT AREA $C_{2\ year}$	LOT AREA $C_{100\text{-}year}$	STREET IMP. AREA (ft^2)	IMPREVIOUS AREA (ac)	STREET AREA $C_{2\ year}$	STREET AREA $C_{100\ year}$	2 yr WEIGHTED C VALUE	100 yr WEIGHTED C VALUE
100	164,742	3.78	162,042	0.29	0.40	2,700	0.06	0.89	0.96	0.30	0.41
101	53,987	1.24	42,611	0.29	0.40	11,376	0.26	0.89	0.96	0.42	0.52
102	80,428	1.85	67,828	0.29	0.40	12,600	0.29	0.89	0.96	0.38	0.49
200	324,828	7.46	251,928	0.29	0.40	72,900	1.67	0.89	0.96	0.42	0.53
201	210,613	4.84	210,613	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
202	84,338	1.94	84,338	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
203	58,101	1.33	58,101	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
300	67,941	1.56	67,941	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
400	34,503	0.79	34,503	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
401	312,940	7.18	256,240	0.29	0.40	56,700	1.30	0.89	0.96	0.40	0.50
402	178,940	4.11	178,940	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
403	25,850	0.59	25,850	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
404	95,303	2.19	83,753	0.29	0.40	11,550	0.27	0.89	0.96	0.36	0.47
405	165,832	3.81	154,232	0.29	0.40	11,600	0.27	0.89	0.96	0.33	0.44
406	187,532	4.31	187,532	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
DD1	83,873	1.93	83,873	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
DD2	16,796	0.39	16,796	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
Total On-Site Area =		49.28	45.16				4.12				
202-C	234,090	5.37	207,854	0.29	0.40	26,236	0.60	0.89	0.96	0.34	0.60

Description	Basin area (ac)	Impreviousness (%)
Lots	45.16	50.0%
Streets and Sidewalks	4.12	98.0%
Total Area/Impreviousne	49.28	54%

Pinnacle Ridge **Vortex Engineering, Inc.**
Curve Number Calculations **February 10, 2014**

Pond 1

Assumptions:		Impreviousness
4000 sf homes		
1.75 du/acre density	**From Figure 703 Mesa County**	**SWMM**
Streets Area (ac)	0.61	98%
Lot area (ac)	6.26	44%
Total Basin Area (ac)	6.87	
Impreviousness=	49%	

CN = 98*Imp+X*(1-Imp) Where: X=80 (D Type Soils)

CN= 88.79 **use 89**

Pond 2

Assumptions:		Impreviousness
4000 sf homes		
1.75 du/acre density	**From Figure 703 Mesa County**	**SWMM**
Streets Area (ac)	1.67	98%
Lot area (ac)	13.90	44%
Total Basin Area (ac)	15.58	
Impreviousness=	50%	

CN = 98*Imp+X*(1-Imp) Where: X=80 (D Type Soils)

CN= 88.96 **use 89**

Pond 3

Assumptions:		Impreviousness
4000 sf homes		
1.75 du/acre density	**From Figure 703 Mesa County**	**SWMM**
Streets Area (ac)	0.00	98%
Lot area (ac)	1.56	44%
Total Basin Area (ac)	1.56	
Impreviousness=	44%	

CN = 98*Imp+X*(1-Imp) Where: X=80 (D Type Soils)

CN= 87.92 **use 88**

Pond 4

Assumptions:		Impreviousness
4000 sf homes		
1.75 du/acre density	**From Figure 703 Mesa County**	**SWMM**
Streets Area (ac)	2.31	98%
Lot area (ac)	20.63	44%
Total Basin Area (ac)	22.94	
Impreviousness=	49%	

CN = 98*Imp+X*(1-Imp) Where: X=80 (D Type Soils)

CN= 88.90 **use 89**

Pinnacle Ridge | **Vortex Engineering, Inc.**
Detention Pond's | **February 10, 2014**
WQCV and Detention Volume Calculations | Rev. June 26, 2015
POND 1 | December 16, 2015

Elevation [ft.]	Area [ft²]	Stage Volume [cf]	Change in Elevation [ft]	Cumulative Volume [cf]	Cumulative Volume [acre-ft]
4799.00	0	0.00	0.0	0.0	0.000
4800.00	856	285.33	1.0	285.3	0.007
4802.00	3447	4013.83	2.0	4299.2	0.099
4804.00	5204	8590.90	2.0	12890.1	0.296
4806.00	7321	12464.93	2.0	25355.0	0.582
4808.00	9798	17058.95	2.0	42413.9	0.974

$WQCV=K(a(0.91*I^3-1.19*I^2+0.78*I))$

Where:

K = adjustment to equation for Mesa County = $d_6/0.43$) = 0.65

a = Adjustment for BMP's drain Time (for 40hrs a=1.0) = 1.00

I = watershed Impreviousness in decimal = 0.49

d_6 = Depth of average producing storm d_6 = 0.28

Watershed area (100+101+102) = 6.87

WQCV= 0.132 in

		WSEL (ft)	Pond Design Peak Discharge** (cfs)	Basin DD1 Design Peak Discharge ** (cfs)	Sum of Direct Discharge and Pond Design Discharge (cfs)	Adjusted Allowable Peak Discharge*** (cfs)
Req'd storage WQCV =	3,296 cf	4,801.50*	N/A	N/A	N/A	N/A
10 yr Runoff + WQCV =	6,082 cf	4802.31**	0.26	0.32	0.58	0.59
100 yr Runoff + WQCV =	15,335 cf	4804.31**	0.48	1.61	2.09	2.47

Pond 1 is designed to compensate for direct dicharge from Basin DD1 (SWMM Sec. 1407.3)
Allowable Discharge:

DD1 Q_{10} = 0.23 cfs

DD1 Q_{100}** = 0.96 cfs

* Water surface elevation thru linear interpolation

** By hydrograph routing

*** Mesa Co. SWMM Table 1402.

Pinnacle Ridge
Detention Pond 1
WQ Orifice Plate

Vortex Engineering, Inc.
June 2, 2017

WQCV Orifice Plate Area

Per UDFCD Volume 2, SO-13a, pg SO-12

$$A_o = \frac{88V^{(0.95/H^{0.085})}}{T_D S^{0.09} H^{(2.6S0.8)}}$$

A_o= area per row of orifice spaced on 4" centers (in^2)
V= design volume (WQCV, ac-ft)
T_D= Time to drain the prescribed volume (hrs)
H= Depth of Volume (ft)
S= slope (ft/ft)

V= 0.07567 ac-ft
T_D= 40 hrs
H= 2.50
S= 0.02
A_o= 0.3116
# of columns= 1
area per hole in a row (in^2)= 0.3116
hole diameter (in)= 0.6298

USE 5/8" DIA. HOLES

Pinnacle Ridge **Vortex Engineering, Inc.**
Detention Pond's **May 31, 2017**
WQCV and Detention Volume Calculations
POND 2

Elevation [ft.]	Area [ft²]	Stage Volume [cf]	Change in Elevation [ft]	Cumulative Volume [cf]	Cumulative Volume [acre-ft]
4746.06	0	0.00	0.0	0.0	0.000
4747.00	6765	2119.70	0.9	2119.7	0.049
4748.00	8746	7734.33	1.0	9854.0	0.226
4749.00	10334	9528.97	1.0	19383.0	0.445
4750.00	11994	11153.70	1.0	30536.7	0.701
4751.00	13830	12901.11	1.0	43437.8	0.997
4752.00	15490	14652.16	1.0	58090.0	1.334

$WQCV=K(a(0.91*I^3-1.19*I^2+0.78*I))$

Where:

K = adjustment to equation for Mesa County = $d_6/0.43$)= 0.65
a = Adjustment for BMP's drain Time (for 40hrs a=1.0)= 1.00
I = watershed Impreviousness in decimal = 0.50
d_6 = Depth of average producing storm d_6= 0.28
Watershed area = 15.58

WQCV= 0.134 in

		WSEL (ft)	Design Peak Discharge** (cfs)	Allowable Discharge*** (cfs)
Req'd storage WQCV =	7,575 cf	4,747.71*	N/A	N/A
10 yr Runoff + WQCV =	13,992 cf	4748.32**	0.52	1.87
100 yr Runoff + WQCV =	31,059 cf	4749.95**	4.21	7.79

* Water surface elevation thru linear interpolation
** Water Surface by hydrograph routing
*** Mesa Co. SWMM Table 1402

Pinnacle Ridge
Detention Pond 2
WQ Orifice Plate

Vortex Engineering, Inc.
June 2, 2017

WQCV Orifice Plate Area

Per UDFCD Volume 2, SO-13a, pg SO-12

$$A_o = \frac{88V^{(0.95/H^{0.085})}}{T_D S^{0.09} H^{(2.6S0.8)}}$$

A_o= area per row of orifice spaced on 4" centers (in^2)
V= design volume (WQCV, ac-ft)
T_D= Time to drain the prescribed volume (hrs)
H= Depth of Volume (ft)
S= slope (ft/ft)

V= 0.17389 ac-ft
T_D= 40 hrs
H= 1.65
S= 0.02
A_o= 0.6230
# of columns= 1
area per hole in a row (in^2)= 0.6230
hole diameter (in)= 0.8906

USE 7/8" DIA. HOLES

Pinnacle Ridge | **Vortex Engineering, Inc.**
Detention Pond's | **February 10, 2014**
WQCV and Detention Volume Calculations | Rev. June 26, 2015
POND 3 | December 16, 2015

Elevation [ft.]	Area [ft²]	Stage Volume [cf]	Change in Elevation [ft]	Cumulative Volume [cf]	Cumulative Volume [acre-ft]
4751.00	0	0.00	0.0	0.0	0.000
4752.00	483	161.00	1.0	161.0	0.004
4754.00	1277	1696.91	2.0	1857.9	0.043
4756.00	2080	3324.52	2.0	5182.4	0.119

$WQCV=K(a(0.91*I^3-1.19*I^2+0.78*I))$

Where:

K = adjustment to equation for Mesa County = $d_6/0.43$)= 0.65
a = Adjustment for BMP's drain Time (for 40hrs a=1.0)= 1.00
I = watershed Impreviousness in decimal = 0.44
d_6 = Depth of average producing storm d_6= 0.28
Watershed area = 1.56

WQCV= 0.124 in

		WSEL (ft)	Design Peak Discharge** (cfs)	Allowable Discharge*** (cfs)
Req'd storage WQCV =	702 cf	4,752.64*	N/A	N/A
10 yr Runoff + WQCV =	820 cf	4752.88**	0.17	0.19
100 yr Runoff + WQCV =	2,077 cf	4754.06**	0.55	0.78

* Water surface elevation thru linear interpolation
** By hydrograph routing
*** Mesa Co. SWMM Table 1402

Pinnacle Ridge
Detention Pond 3
WQ Orifice Plate

Vortex Engineering, Inc.
June 2, 2017

WQCV Orifice Plate Area

Per UDFCD Volume 2, SO-13a, pg SO-12

$$A_o = \frac{88V^{(0.95/H^{0.085})}}{T_D S^{0.09} H^{(2.6S0.8)}}$$

A_o= area per row of orifice spaced on 4" centers (in^2)
V= design volume (WQCV, ac-ft)
T_D= Time to drain the prescribed volume (hrs)
H= Depth of Volume (ft)
S= slope (ft/ft)

V= 0.01611 ac-ft
T_D= 40 hrs
H= 1.64
S= 0.02
A_o= 0.0713
# of columns= 1
area per hole in a row (in^2)= 0.0713
hole diameter (in)= 0.3013

USE 5/16" DIA. HOLES

Pinnacle Ridge | **Vortex Engineering, Inc.**
Detention Pond's | **February 10, 2014**
WQCV and Detention Volume Calculations | Rev. June 26, 2015
POND 4 | December 16, 2015

Elevation [ft.]	Area [ft²]	Stage Volume [cf]	Change in Elevation [ft]	Cumulative Volume [cf]	Cumulative Volume [acre-ft]
4739.00	0	0.00	0.0	0.0	0.000
4740.00	3373	1124.33	1.0	1124.3	0.026
4742.00	5394	8688.29	2.0	9812.6	0.225
4744.00	8104	13406.39	2.0	23219.0	0.533
4746.00	10902	18936.97	2.0	42156.0	0.968

$WQCV=K(a(0.91*I^3-1.19*I^2+0.78*I))$

Where:

K = adjustment to equation for Mesa County = $d_6/0.43$)= 0.65
a = Adjustment for BMP's drain Time (for 40hrs a=1.0)= 1.00
I = watershed Impreviousness in decimal = 0.49
d_6 = Depth of average producing storm d_6= 0.28
Watershed area (400 thru 403) = 22.94

WQCV= 0.133 in

		WSEL (ft)	Design Peak Discharge** (cfs)	Basin DD2 Design Peak Discharge (cfs)	Sum of Direct Discharge and Pond Design Discharge (cfs)	Adjusted Allowable Peak Discharge*** (cfs)
Req'd storage WQCV =	11,098 cf	4,742.19*	N/A	N/A	N/A	N/A
10 yr Runoff + WQCV =	14,737 cf	4742.73**	1.91	0.05	1.96	2.71
100 yr Runoff + WQCV =	36,969 cf	4745.13**	10.21	0.19	10.40	11.28

Pond 1 is designed to compensate for direct dicharge from Basin DD1 (SWMM Sec. 1407.3)
Allowable Discharge:

DD2 Q_{10}= 0.05 cfs
DD2 Q_{100}= 0.19 cfs

* Water surface elevation thru linear interpolation
** By hydrograph routing
*** Mesa Co. SWMM Table 1402.

Pinnacle Ridge
Detention Pond 4
WQ Orifice Plate

Vortex Engineering, Inc.
June 2, 2017

WQCV Orifice Plate Area

Per UDFCD Volume 2, SO-13a, pg SO-12

$$A_o = \frac{88V^{(0.95/H^{0.085})}}{T_D S^{0.09} H^{(2.6S0.8)}}$$

A_o= area per row of orifice spaced on 4" centers (in^2)
V= design volume (WQCV, ac-ft)
T_D= Time to drain the prescribed volume (hrs)
H= Depth of Volume (ft)
S= slope (ft/ft)

V= 0.14103 ac-ft
T_D= 40 hrs
H= 2.45
S= 0.02
A_o= 0.5374
# of columns= 1
area per hole in a row (in^2)= 0.5374
hole diameter (in)= 0.8272

USE 13/16" DIA. HOLES

Pinnacle Ridge Subdivision **Vortex Engineering, Inc.**
Time of Concentration - BASIN 202-C **October 9, 2017**

$t_c=t_i+t_t$

$t_i=1.8(1.1-C_5)L_o^{1/2}/S^{1/3}$

$t_t=d/V$

$L=L_o+d_1+d_2$

Overland Flow					Shallow Concentrated Flow			Channel Flow				Urbanized Area Tc	
Basin	Overland Flow (300' max) L_o (ft)	Rational Coeficient C_5	Average Slope S (%)	t_i (min)	Travel Distance d_1 (ft)	Velocity (ft/sec)	t_{t1} (min)	Travel Distance d_2 (ft)	Velocity (ft/sec)	t_{t2} (min)	$t_c=t_i+t_{t1}+t_{t2}$ (min)	t_c=L/180+10	**t_c (min)**
202-C CULVERT	160	0.4	6.5	8.5	0	2	0.0	824	5.1	2.7	**11.2**	15.5	11.2

Pinnacle Ridge
Basin Runoff Calculation

Vortex Engineering, Inc.
August 2, 2017
REVISED: 8/8/17
10/09/17

DRAINAGE AREA	INLET #	Area (ac)	'C_2' Weighted	'C_{100}' Weighted	T_c (min)	2-Yr. Storm Intensity (in/hr)	100-Yr. Storm Intensity (in/hr)	2-Yr. Q (cfs) Basin Runoff	100-Yr. Q (cfs) Basin Runoff	Inlet Type for Minor Storm
100	POND 1	3.78	0.30	0.41	5	1.2	4.68	1.36	7.24	
101	101	1.85	0.38	0.49	5	1.2	4.68	0.85	4.21	
102	102	1.24	0.42	0.52	5	1.2	4.68	0.62	3.00	
200	200	7.46	0.42	0.53	5	1.2	4.68	3.80	18.35	
201	POND 2	4.84	0.29	0.40	5	1.2	4.68	1.68	9.05	
202	202	1.94	0.29	0.40	5	1.2	4.68	0.67	3.62	
203	203	1.33	0.29	0.40	5	1.2	4.68	0.46	2.50	
300	POND 3	1.56	0.29	0.40	5	1.2	4.68	0.54	2.92	
400	POND 4	0.79	0.29	0.40	5	1.2	4.68	0.28	1.48	
401	401	7.18	0.40	0.50	5	1.2	4.68	3.44	16.86	
402	402	4.11	0.29	0.40	5	1.2	4.68	1.43	7.69	
403	403	0.59	0.29	0.40	5	1.2	4.68	0.21	1.11	
404	404	2.19	0.36	0.47	5	1.2	4.68	0.95	4.79	
405	405	3.81	0.33	0.44	5	1.2	4.68	1.52	7.82	
406	406	4.31	0.29	0.40	5	1.2	4.68	1.50	8.06	
DD1	offsite	1.93	0.29	0.40	5	1.2	4.68	0.67	3.60	
DD2	offsite	0.39	0.29	0.40	5	1.2	4.68	0.13	0.72	
Total on site basins =		36.67								

202-C	Culvert - Lot 18	5.37	0.34	0.60	11.2	0.8	3.4	1.46	10.96	Basin used for Drive Culvert Design

MAXIMUM PERMISSIBLE MEAN CHANNEL VELOCITY

MATERIAL / LINING	MAXIMUM PERMISSIBLE MEAN VELOCITY (FPS)
NATURAL AND IMPROVED UNLINED CHANNELS	
Erosive Soils:	
Loams, Sands, Noncolloidal Silts	3.0
Less Erosive Soils:	
Clays, Shales, Cobbles, Gravel	5.0
FULLY-LINED CHANNELS	
Unreinforced Vegetation	5.5
Loose Riprap	
Angular Rock	15.0
Semi-Angular Rock	12.0
Rounded Rock	See Note #4
Grouted Riprap	15.0
Gabions	15.0
Soil Cement	15.0
Concrete	20.0

NOTES:

1. For composite lined channels, us the lowest of the maximum mean velocities for the materials used in the composite lining.
2. Deviations from the above values are only allowed with appropriate engineering analysis and/or suitable agreements for maintenance responsibilities.
3. Maximum permissible velocities based upon non-clear water conditions.
4. Suitability of rounded rock as loose riprap material shall be determined by rock particle resistance to movement as a result of shear forces as calculated with a factor of safety of 1.5.

Revision	Date
ORIGINAL ISSUE	3/27/06

Title PINNACLE
Date 10/9/17 Job No. F04-006
By SSH

DIVERSION DITCH RIPRAP - SIZING

$D_{50} = Q^{0.56} S^{0.43} \times 5.23$ [in] [S.R. Abt, et al - UDFCD 8.1.2]

SECTION M

$S = 0.21$

$Q = 7.69$ cfs

$D_{50} = (7.69)^{0.56} (0.21)^{0.43} \times 5.23 = 8.73"$

USE $D_{50} = 6"$

SECTION J

$S = .25$

$Q = 3.62$

$D_{50} = (3.62)^{0.56} (0.25)^{0.43} \times 5.23 = 5.92"$

USE $D_{50} = 6"$

SECTION L

$S = 0.9$

$Q = 8.06$

$D_{50} = (8.06)^{0.56} (0.25)^{0.43} \times 5.23 = 9.27"$

USE $D_{50} = 6"$

(see following pages for references)

8.1 Riprap Sizing

Procedures for sizing rock to be used in soil riprap, void-filled riprap, and riprap over bedding are the same.

8.1.1 Mild Slope Conditions

When subcritical flow conditions occur and/or slopes are mild (less than 2 percent), UDFCD recommends the following equation (Hughes, et al, 1983):

$$d_{50} \geq \left[\frac{VS^{0.17}}{4.5(G_s - 1)^{0.66}} \right]^2 \qquad \text{Equation 8-11}$$

Where:

V = mean channel velocity (ft/sec)

S = longitudinal channel slope (ft/ft)

d_{50} = mean rock size (ft)

Gs = specific gravity of stone (minimum = 2.50, typically 2.5 to 2.7), Note: In this equation (Gs -1) considers the buoyancy of the water, in that the specific gravity of water is subtracted from the specific gravity of the rock.

Note that Equation 8-11 is applicable for sizing riprap for channel lining with a longitudinal slope of no more than 2%. This equation is not intended for use in sizing riprap for steep slopes (typically in excess of 2 percent), rundowns, or protection downstream of culverts. Information on rundowns is provided in Section 7.0 of the *Hydraulic Structures* chapter of the USDCM, and protection downstream of culverts is discussed in the *Culverts and Bridges* chapter. For channel slopes greater than 2% use one of the methods presented in 8.1.2.

Rock size does not need to be increased for steeper channel side slopes, provided the side slopes are no steeper than 2.5H:1V (UDFCD 1982). Channel side slopes steeper than 2.5H:1V are not recommended because of stability, safety, and maintenance considerations. See Figure 8-34 for riprap placement specifications. At the upstream and downstream termination of a riprap lining, the thickness should be increased 50% for at least 3 feet to prevent undercutting.

8.1.2 Steep Slope Conditions

Steep slope rock sizing equations are used for applications where the slope is greater than 2 percent and/or flows are in the supercritical flow regime. The following rock sizing equations may be referred to for riprap design analysis on steep slopes:

- CSU Equation, *Development of Riprap Design Criteria by Riprap Testing in Flumes: Phase II* (prepared by S.R. Abt, et al, Colorado State University, 1988). This method was developed for steep slopes from 2 to 20 percent.

- USDA- Agricultural Research Service Equations, *Design of Rock Chutes* (by K.M. Robinson, et al, USDA- ARS, 1998 Transactions of ASAE) and *An Excel Program to Design Rock Chutes for Grade*

NUREG/CR-4651
ORNL/TM-10100/V2
Vol. 2

Development of Riprap Design Criteria by Riprap Testing in Flumes: Phase II

Followup Investigations

Manuscript Completed: August 1988
Date Published: September 1988

Prepared by
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Office of Nuclear Material Safety and Safeguards
U.S. Nuclear Regulatory Commission
Washington, DC 20555
NRC FIN B0279

I

7. RECOMMENDED DESIGN PROCEDURE

The Phase I and Phase II studies report the findings of 90 laboratory tests that address the application of riprap for protecting embankment slopes from overtopping flows. Although the data base is limited, it is possible to provide the user with a design procedure for sizing riprap. This chapter will outline the assumptions, equations, and/or graphics necessary to apply the findings of the Phase I and Phase II studies.

7.1 DESIGN PROCEDURE

Step 1. Determine the design unit discharge

Determine the design embankment slope(s) and the peak unit discharge, q, resulting from the tributary runoff at a point near the toe-of-the-slope (Nelson et al. 1987), and determine the shape of available rock sources (angular or round). Define the initial design unit discharge by adjusting the tributary unit discharge with the flow concentration factor, C_f, as

$$q'_{design} = q \times C_f \quad , \tag{7.1}$$

where C_f = 1.0 for overland sheet flow,
2.0 for a high probability of concentrated flow, and
3.0 for a high probability of channelized flow.

The values of the flow concentration factor is based on data from Abt et al. (1987).

Step 2. Estimate the median stone size (D_{50}) of the riprap layer

To size the median stone and prevent stone movement, adjust the design unit discharge by

$$q^*_{design} = 1.35\ q'_{design} \quad . \tag{7.2}$$

Then, estimate the median stone size as

Angular stone

Apply Eq. 4.1, using the embankment slope from Step 1:

$$D_{50} = 5.23\ S^{0.43}\ (q^*_{design})^{0.56} \quad , \tag{7.3}$$

where D_{50} is expressed in inches.

Rounded rock

Compute a conditional value of the rock size, D_c, where

$$D_c = 5.23\ S^{0.43}\ (q^*_{design})^{0.56} \quad . \tag{7.4}$$

Then, from Fig. 4.10, obtain the median stone size for rounded-shape

movement between phases. Inclusion of the Phase I data with the Phase II data without rounded stone and soil cover yields an average unit discharge at a movement to unit discharge at failure ratio of 0.74.

4.6.2 Rock Sizing to Resist Movement

A relationship was presented in Eq. 4.1 for predicting the median stone size of the riprap layer on the bases of the embankment slope and the unit discharge at failure. Stone movement can be prevented by adjusting the unit discharge at failure. The adjusted unit discharge at failure, q_f^* is defined as the design unit discharge divided by the stone movement to stone failure ratio of 0.74 expressed as

$$q_f^* = \frac{q_{design}}{0.74} = 1.35\, q_{design} \tag{4.5}$$

Eq. 4.1 is modified to yield a median stone size that will resist stone movement at the design unit discharge where

$$D_{50} = 5.23\, S^{0.43}\, (q_f^*)^{0.56} \tag{4.6}$$

Eq. 4.6 is applicable to only angular-shaped riprap.

4.6.3 Channelization to Failure Relationship

Flow channelization was observed and documented in 15 failure tests during Phase II. The unit discharge at which flow channelization was observed in the riprap layer is presented in Table 4.3. Although an attempt to identify initial channelization was made during each test, documentation of initial channelization was verified from the videotape recordings. The unit discharges at channelization were normalized to the appropriate unit discharges at failure. A representation of the normalized unit discharge to time, normalized at failure, is shown in Fig. 4.11.

The average ratio of the unit discharge at channelization to the unit discharge at failure was 0.88 for angular-shaped riprap. The Phase I report indicated that the average ratio of unit discharge at channelization to unit discharge at failure was 0.90. The average Phase I and Phase II ratio of 0.89 shall be considered the critical channelization ratio. On the basis of these results, it is possible to predict the unit discharge at which channelization will occur on a riprap embankment.

4.7 SUMMARY

The Phase I and Phase II failure test data resulted in a composite relationship for angular shaped rock as presented in Fig. 4.2 and expressed in Eq. 4.1. The composite failure relationship related the median stone size to the embankment slope and unit discharge at failure for overtopping flow conditions.

Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

CONCRETE C&G ALONG WESTERN BOUNDRY - Steep - 2yr storm SECTION A

User-defined

Invert Elev (ft)	= 99.00
Slope (%)	= 4.00
N-Value	= 0.014

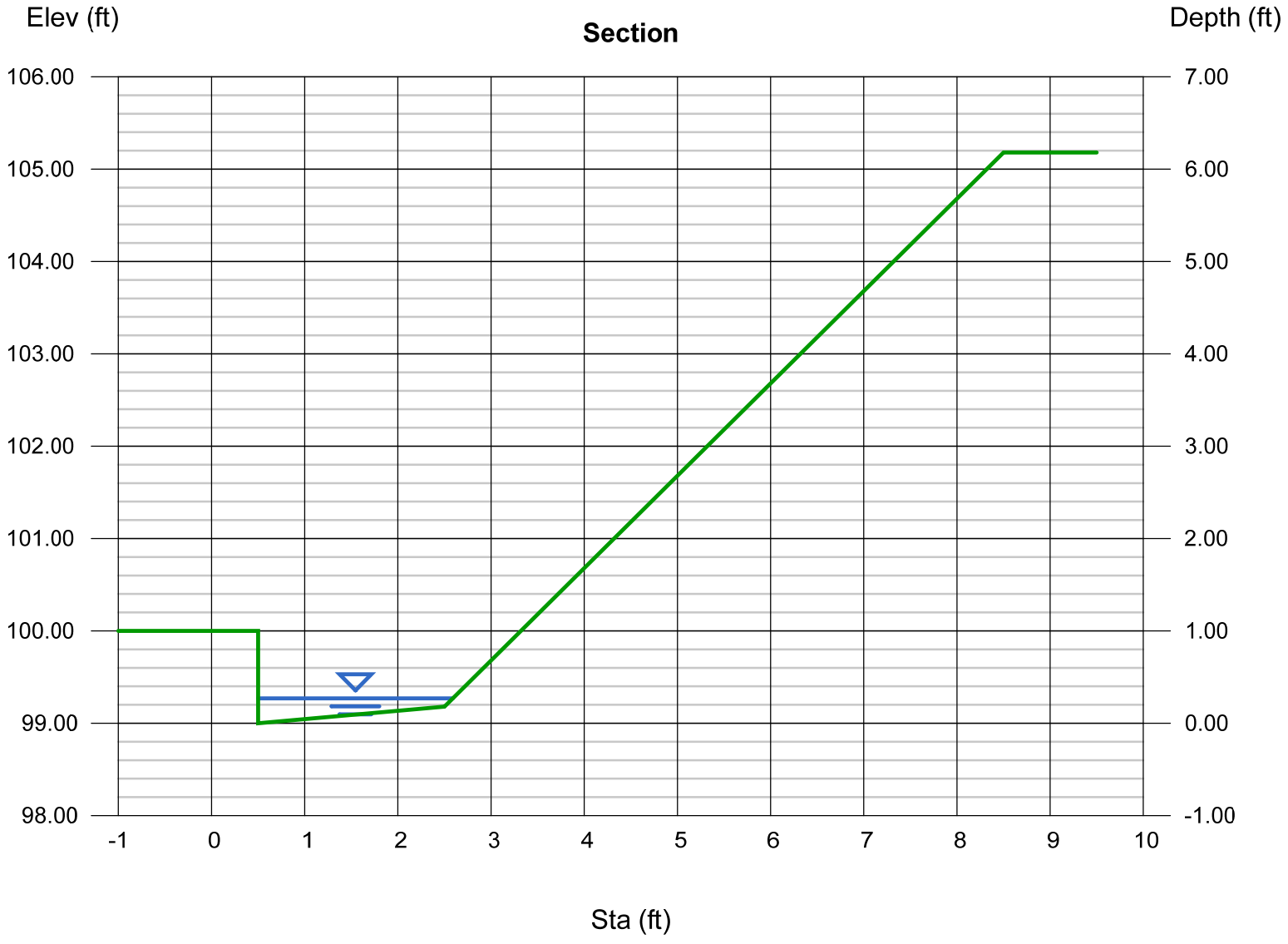
Calculations

Compute by:	Known Q
Known Q (cfs)	= 2.00

Highlighted

Depth (ft)	= 0.27
Q (cfs)	= 2.000
Area (sqft)	= 0.36
Velocity (ft/s)	= 5.49
Wetted Perim (ft)	= 2.41
Crit Depth, Yc (ft)	= 0.41
Top Width (ft)	= 2.09
EGL (ft)	= 0.74

(Sta, El, n)-(Sta, El, n)... (-0.00, 100.00)-(0.50, 100.00, 0.013)-(0.50, 99.00, 0.013)-(2.50, 99.18, 0.013)-(8.50, 105.18, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

CONCRETE C&G ALONG WESTERN BOUNDRY - Steep - 100yr storm SECTION A

User-defined

Invert Elev (ft)	= 99.00
Slope (%)	= 4.00
N-Value	= 0.018

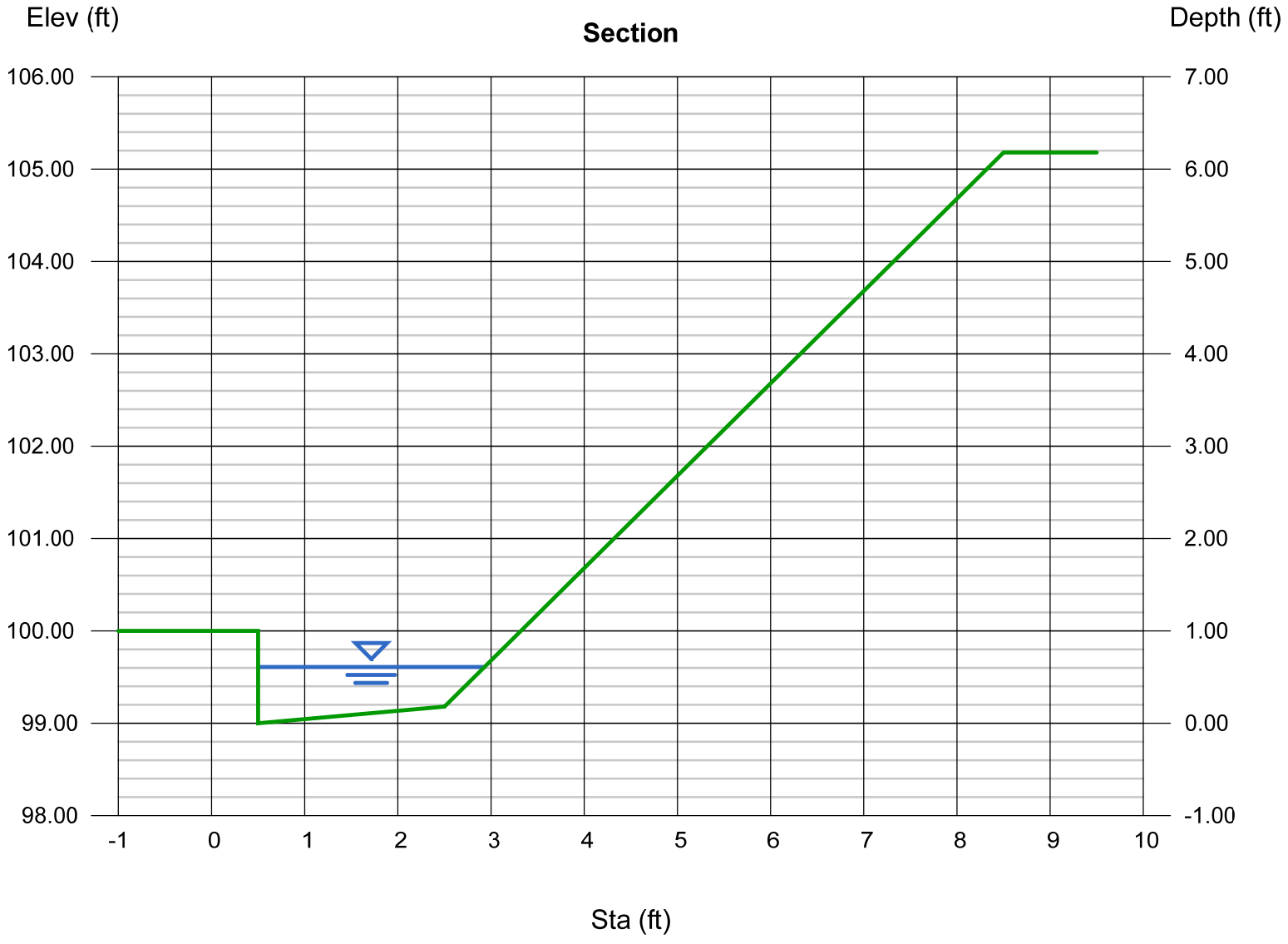
Calculations

Compute by:	Known Q
Known Q (cfs)	= 9.05

Highlighted

Depth (ft)	= 0.61
Q (cfs)	= 9.050
Area (sqft)	= 1.13
Velocity (ft/s)	= 7.99
Wetted Perim (ft)	= 3.23
Crit Depth, Yc (ft)	= 0.92
Top Width (ft)	= 2.43
EGL (ft)	= 1.60

(Sta, El, n)-(Sta, El, n)... (-0.00, 100.00)-(0.50, 100.00, 0.013)-(0.50, 99.00, 0.013)-(2.50, 99.18, 0.013)-(8.50, 105.18, 0.035)



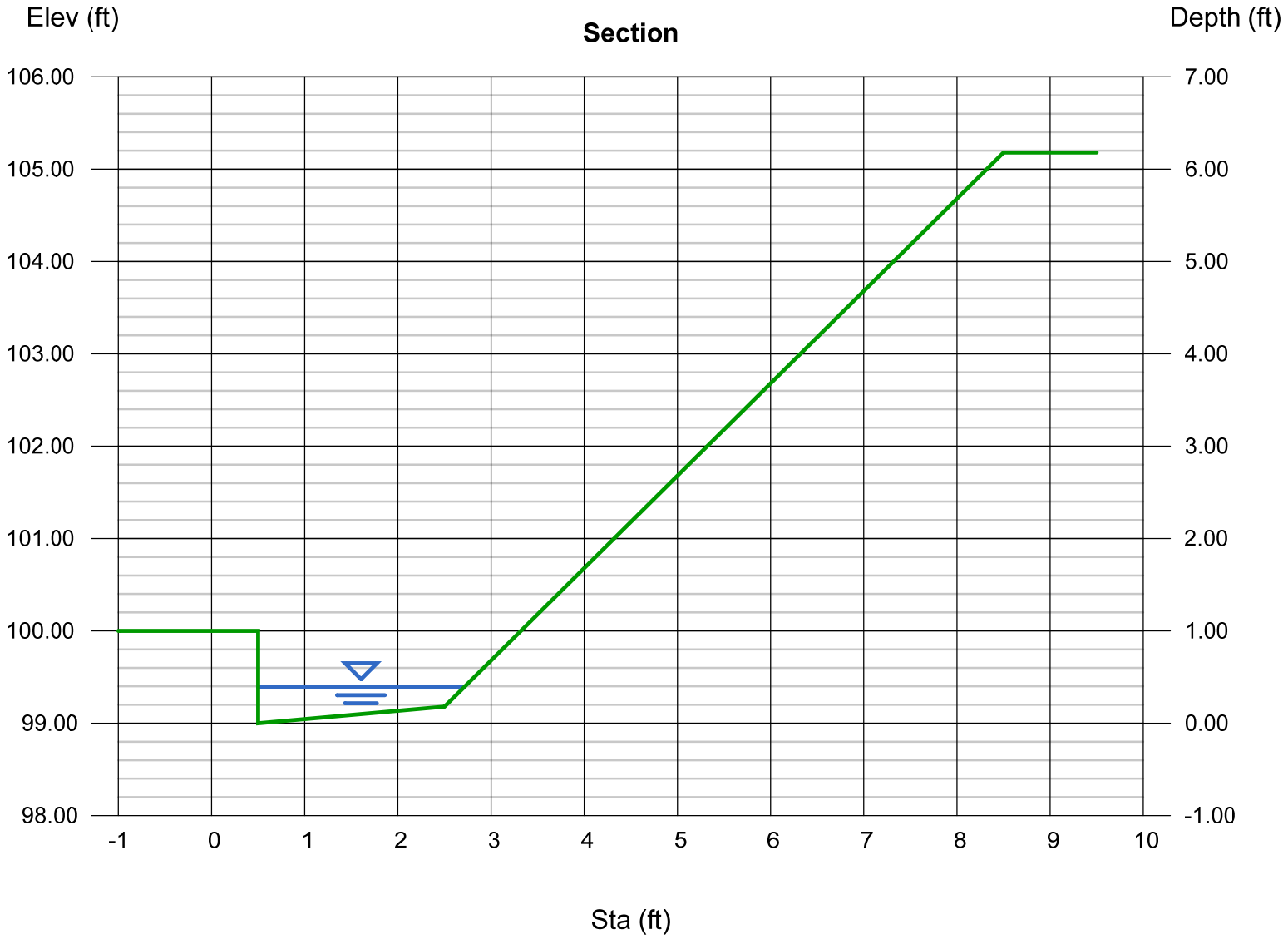
Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

CONCRETE C&G ALONG WESTERN BOUNDRY - FLAT - 2yr storm SECTION B

User-defined		Highlighted	
Invert Elev (ft)	= 99.00	Depth (ft)	= 0.39
Slope (%)	= 0.90	Q (cfs)	= 2.000
N-Value	= 0.016	Area (sqft)	= 0.62
		Velocity (ft/s)	= 3.22
Calculations		Wetted Perim (ft)	= 2.70
Compute by:	Known Q	Crit Depth, Yc (ft)	= 0.41
Known Q (cfs)	= 2.00	Top Width (ft)	= 2.21
		EGL (ft)	= 0.55

(Sta, El, n)-(Sta, El, n)... (-0.00, 100.00)-(0.50, 100.00, 0.013)-(0.50, 99.00, 0.013)-(2.50, 99.18, 0.013)-(8.50, 105.18, 0.035)



Channel Report

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CONCRETE C&G ALONG WESTERN BOUNDRY - FLAT - 100yr storm SECTION B

User-defined

Invert Elev (ft)	= 99.00
Slope (%)	= 0.90
N-Value	= 0.020

Calculations

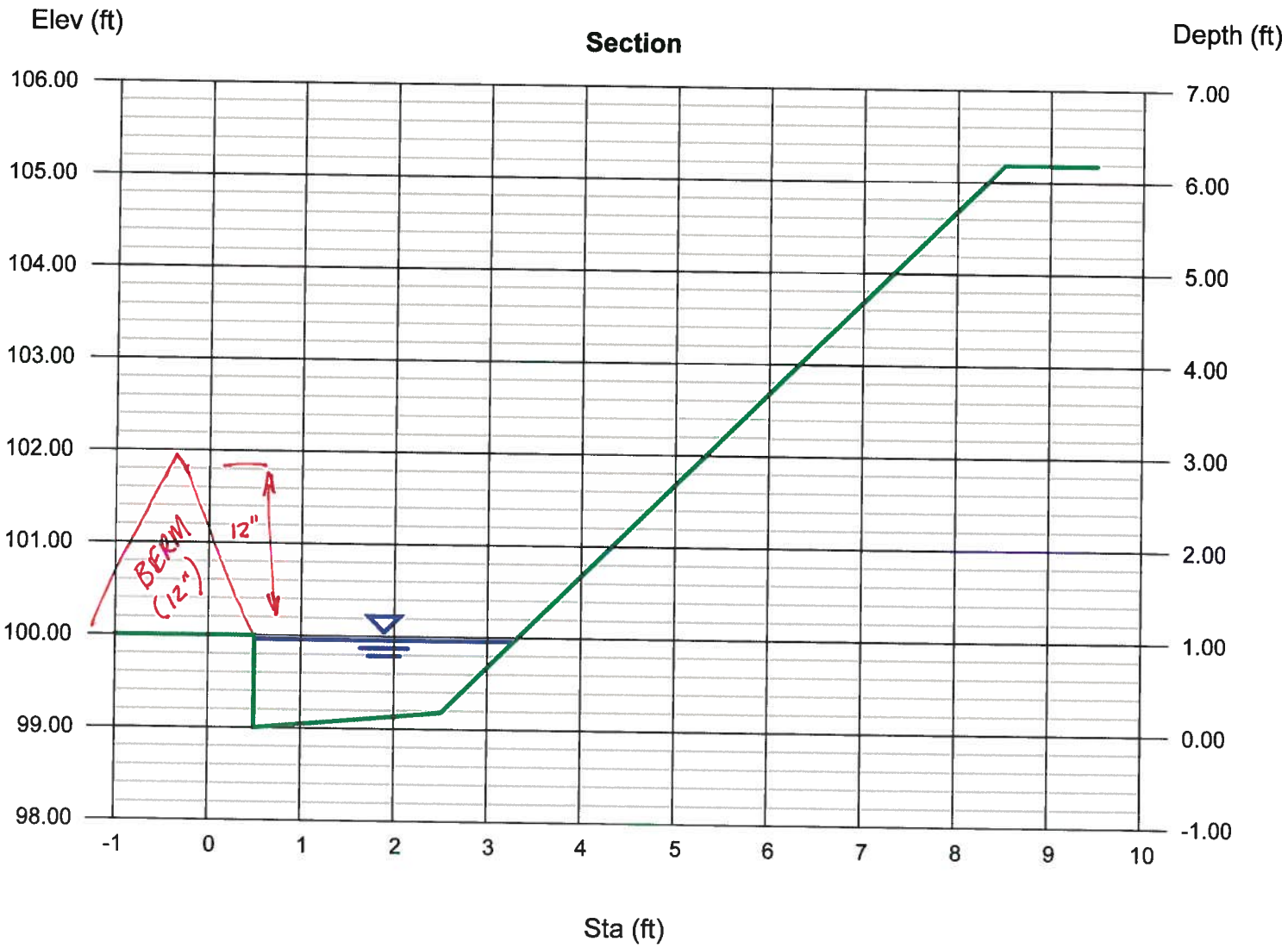
Compute by:	Known Q
Known Q (cfs)	= 9.05

Highlighted

Depth (ft)	= 0.96
Q (cfs)	= 9.050
Area (sqft)	= 2.04
Velocity (ft/s)	= 4.43
Wetted Perim (ft)	= 4.07
Crit Depth, Yc (ft)	= 0.92
Top Width (ft)	= 2.78
EGL (ft)	= 1.26

(Sta, El, n)-(Sta, El, n)...

(0.00, 100.00)-(0.50, 100.00, 0.013)-(0.50, 99.00, 0.013)-(2.50, 99.18, 0.013)-(8.50, 105.18, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

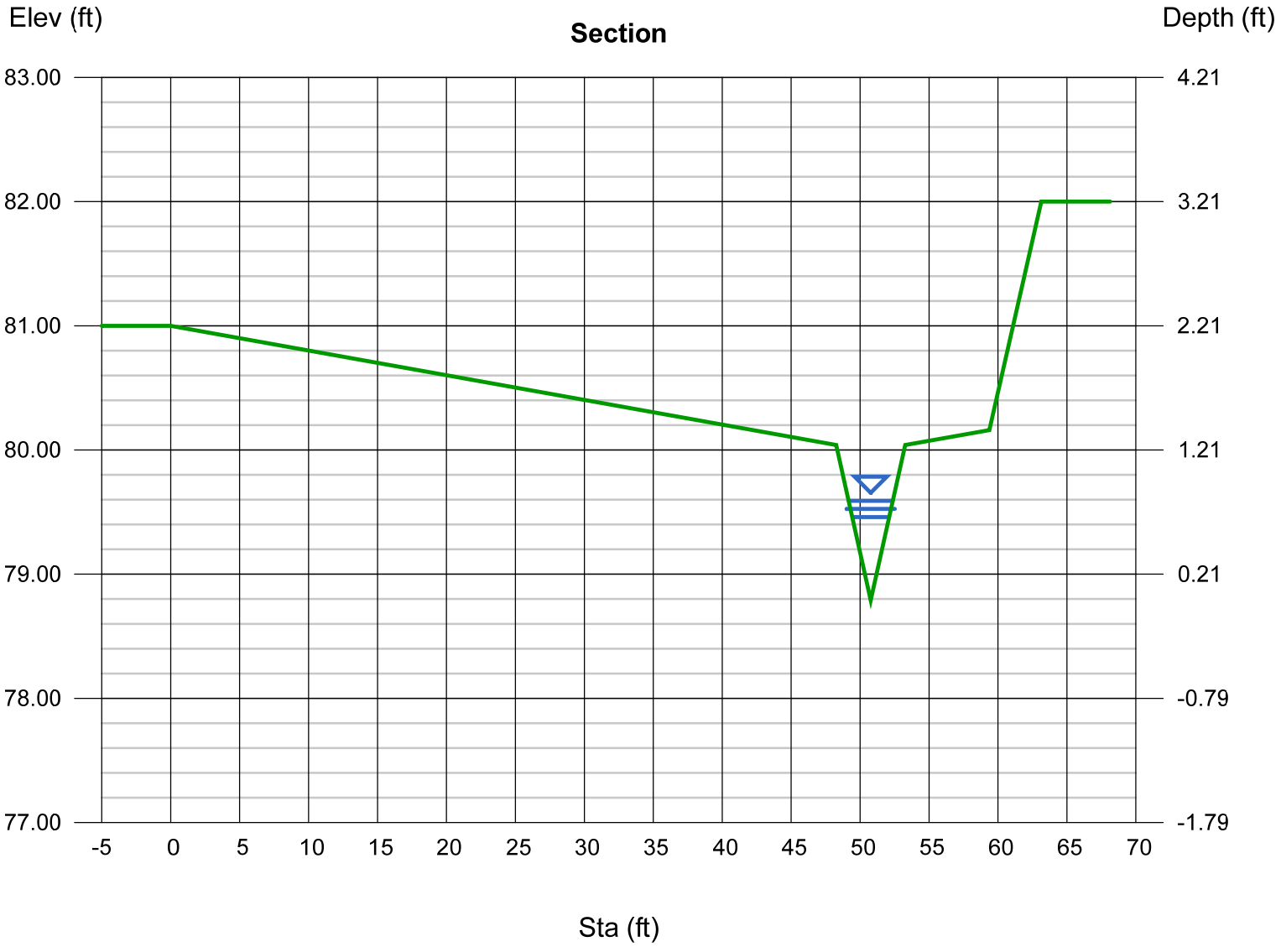
44' ROW Aiguille Drive - FLAT - 2yr storm SECTION C

User-defined	
Invert Elev (ft)	= 78.79
Slope (%)	= 3.50
N-Value	= 0.035

Calculations	
Compute by:	Known Q
Known Q (cfs)	= 5.00

Highlighted	
Depth (ft)	= 0.80
Q (cfs)	= 5.000
Area (sqft)	= 1.28
Velocity (ft/s)	= 3.91
Wetted Perim (ft)	= 3.58
Crit Depth, Yc (ft)	= 0.83
Top Width (ft)	= 3.20
EGL (ft)	= 1.04

(Sta, El, n)-(Sta, El, n)... (-5.00, 81.00)-(48.27, 80.04, 0.014)-(50.77, 78.79, 0.035)-(53.27, 80.04, 0.035)-(59.37, 80.16, 0.014)-(63.14, 82.00, 0.035)



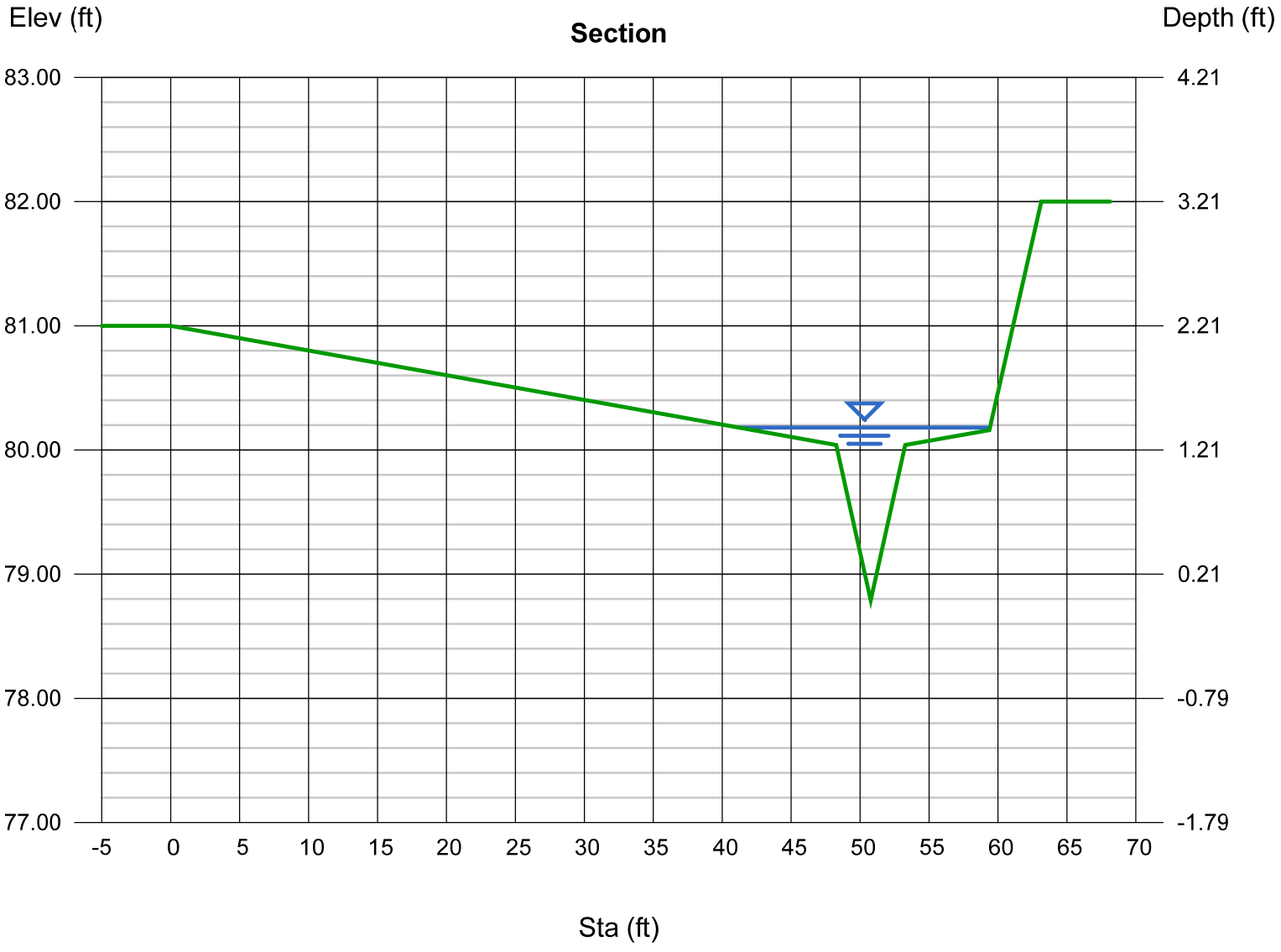
Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

44' ROW Aiguille Drive - FLAT - 100yr storm SECTION C

User-defined		Highlighted	
Invert Elev (ft)	= 78.79	Depth (ft)	= 1.39
Slope (%)	= 3.50	Q (cfs)	= 24.50
N-Value	= 0.021	Area (sqft)	= 4.81
		Velocity (ft/s)	= 5.10
Calculations		Wetted Perim (ft)	= 18.78
Compute by:	Known Q	Crit Depth, Yc (ft)	= 1.53
Known Q (cfs)	= 24.50	Top Width (ft)	= 18.18
		EGL (ft)	= 1.79

(Sta, El, n)-(Sta, El, n)... (-5.00, 81.00)-(48.27, 80.04, 0.014)-(50.77, 78.79, 0.035)-(53.27, 80.04, 0.035)-(59.37, 80.16, 0.014)-(63.14, 82.00, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

44' ROW Aiguille Drive - STEEP - 2yr storm SECTION D

User-defined

Invert Elev (ft)	= 72.87
Slope (%)	= 9.60
N-Value	= 0.026

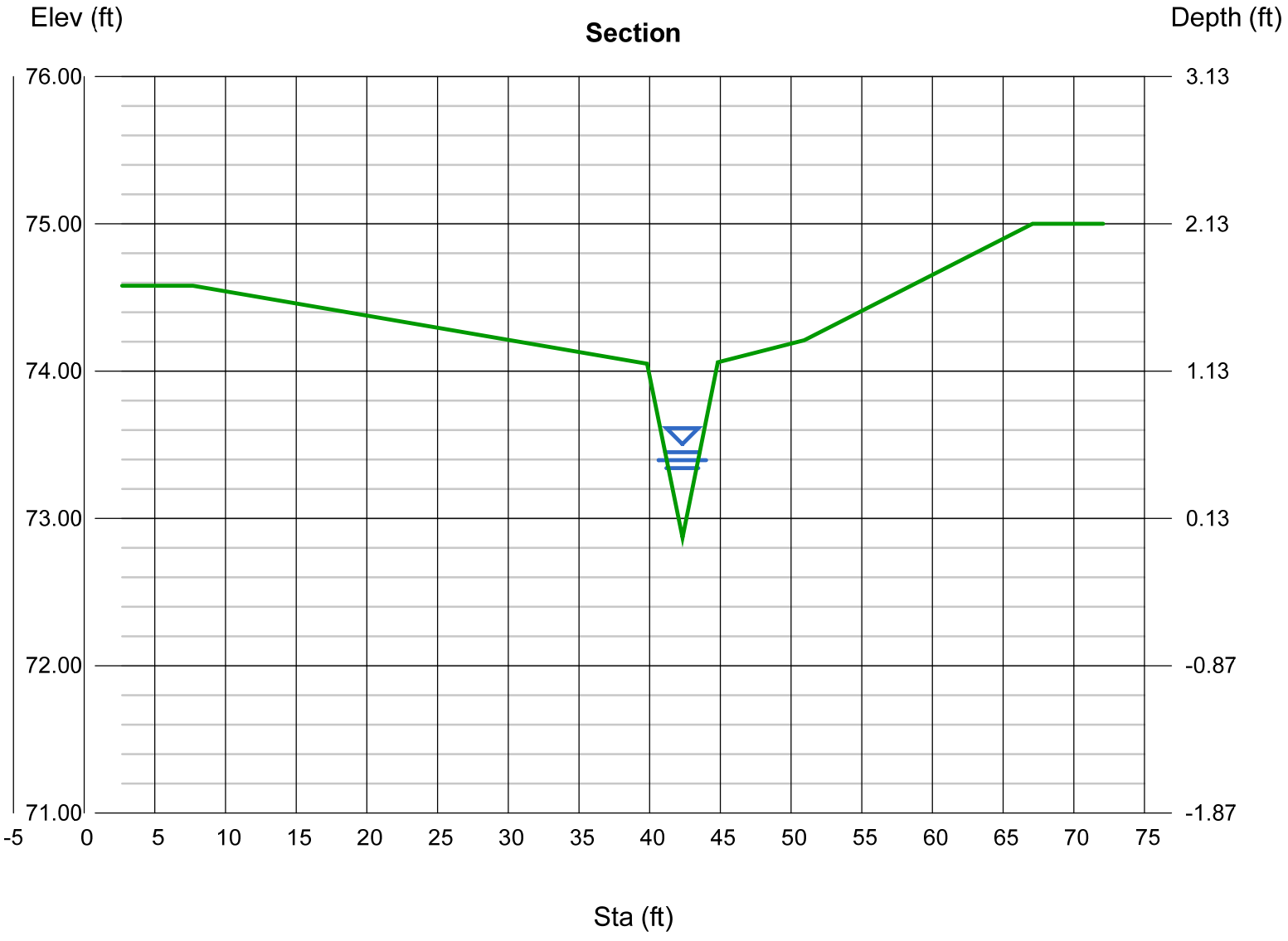
Calculations

Compute by:	Known Q
Known Q (cfs)	= 5.00

Highlighted

Depth (ft)	= 0.58
Q (cfs)	= 5.000
Area (sqft)	= 0.71
Velocity (ft/s)	= 7.05
Wetted Perim (ft)	= 2.71
Crit Depth, Yc (ft)	= 0.82
Top Width (ft)	= 2.45
EGL (ft)	= 1.35

(Sta, El, n)-(Sta, El, n)... (7.69, 75.58, 0.035)-(39.82, 74.05, 0.014)-(42.32, 72.87, 0.035)-(44.82, 74.06, 0.014)-(50.93, 74.21, 0.035)-(67.08, 75.00, 0.035)



Channel Report

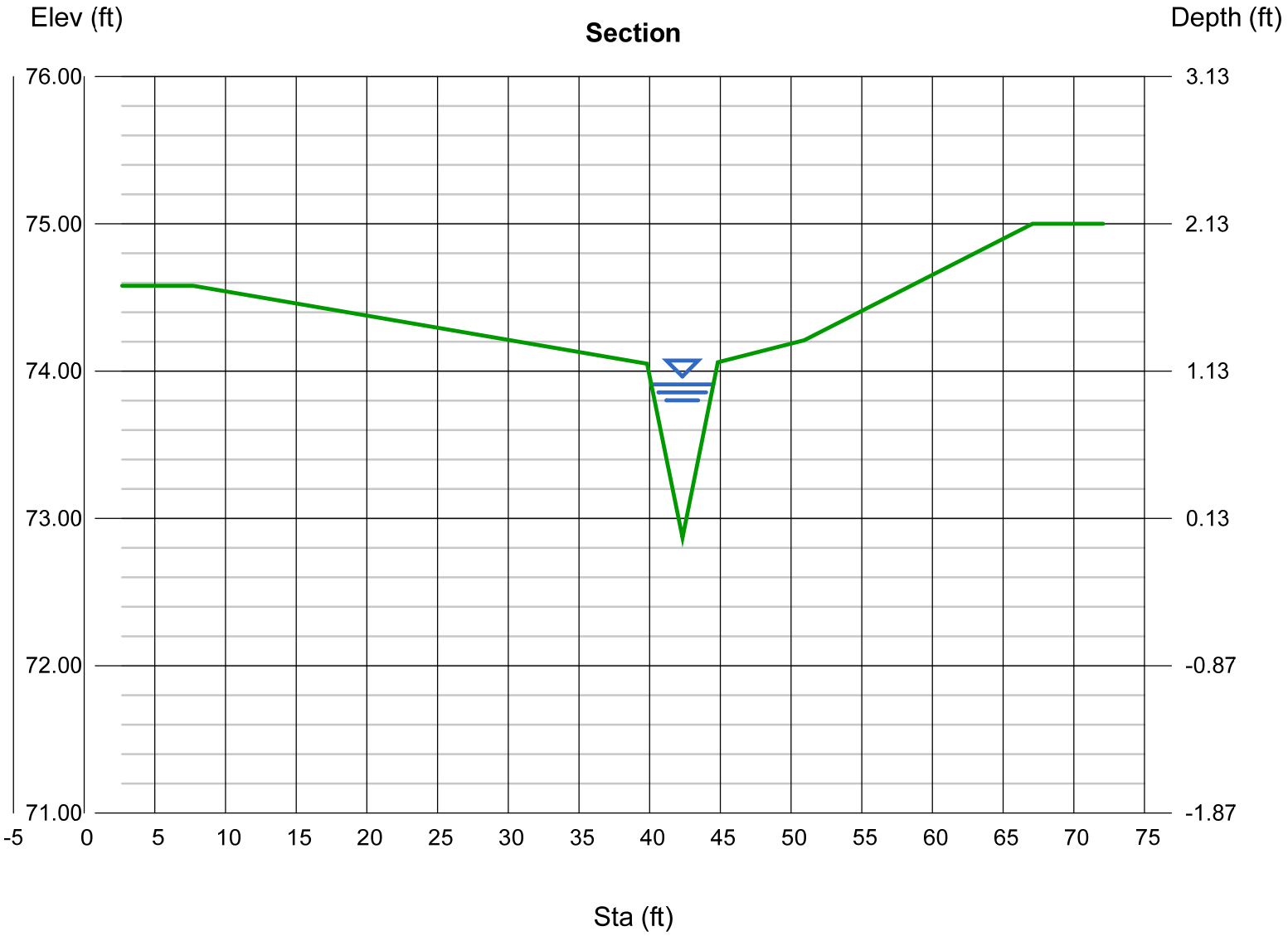
Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

44' ROW Aiguille Drive - STEEP - 100yr storm SECTION D

User-defined		**Highlighted**	
Invert Elev (ft)	= 72.87	Depth (ft)	= 1.04
Slope (%)	= 9.60	Q (cfs)	= 24.50
N-Value	= 0.026	Area (sqft)	= 2.28
		Velocity (ft/s)	= 10.74
Calculations		Wetted Perim (ft)	= 4.86
Compute by:	Known Q	Crit Depth, Yc (ft)	= 1.48
Known Q (cfs)	= 24.50	Top Width (ft)	= 4.39
		EGL (ft)	= 2.83

(Sta, El, n)-(Sta, El, n)...

(7.69, 71.58)-(39.82, 74.05, 0.014)-(42.32, 72.87, 0.035)-(44.82, 74.06, 0.014)-(50.93, 74.21, 0.035)-(67.08, 75.00, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

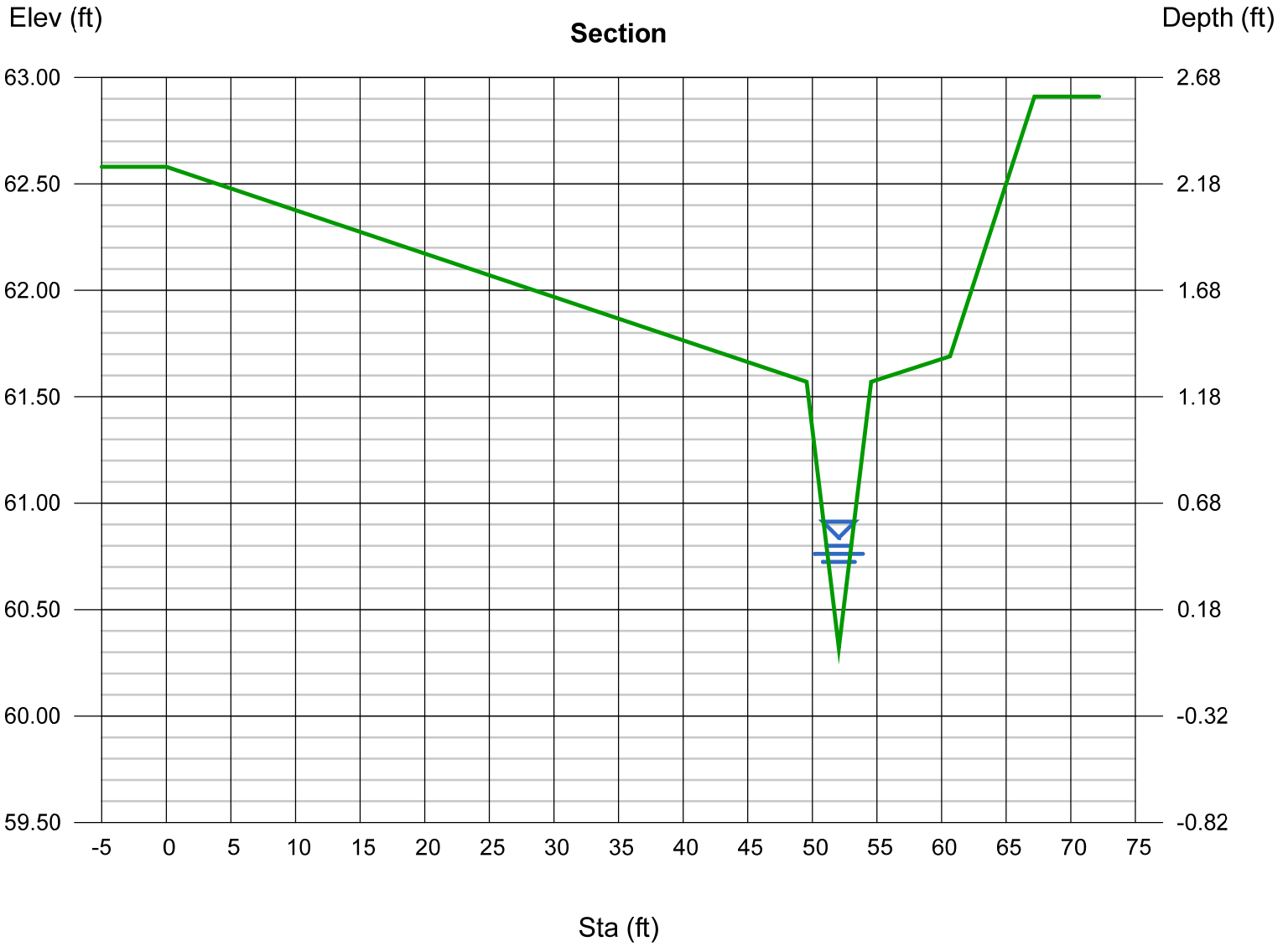
44' ROW - VERY STEEP HIDDEN COURT - 2yr storm SECTION E

User-defined	
Invert Elev (ft)	= 60.32
Slope (%)	= 13.00
N-Value	= 0.035

Calculations	
Compute by:	Known Q
Known Q (cfs)	= 2.50

Highlighted	
Depth (ft)	= 0.48
Q (cfs)	= 2.500
Area (sqft)	= 0.46
Velocity (ft/s)	= 5.43
Wetted Perim (ft)	= 2.15
Crit Depth, Yc (ft)	= 0.63
Top Width (ft)	= 1.92
EGL (ft)	= 0.94

(Sta, El, n)-(Sta, El, n)... (-5.00, 63.18, 0.035)-(49.55, 61.57, 0.014)-(52.05, 60.32, 0.035)-(54.55, 61.57, 0.035)-(60.65, 61.69, 0.014)-(67.19, 62.91, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

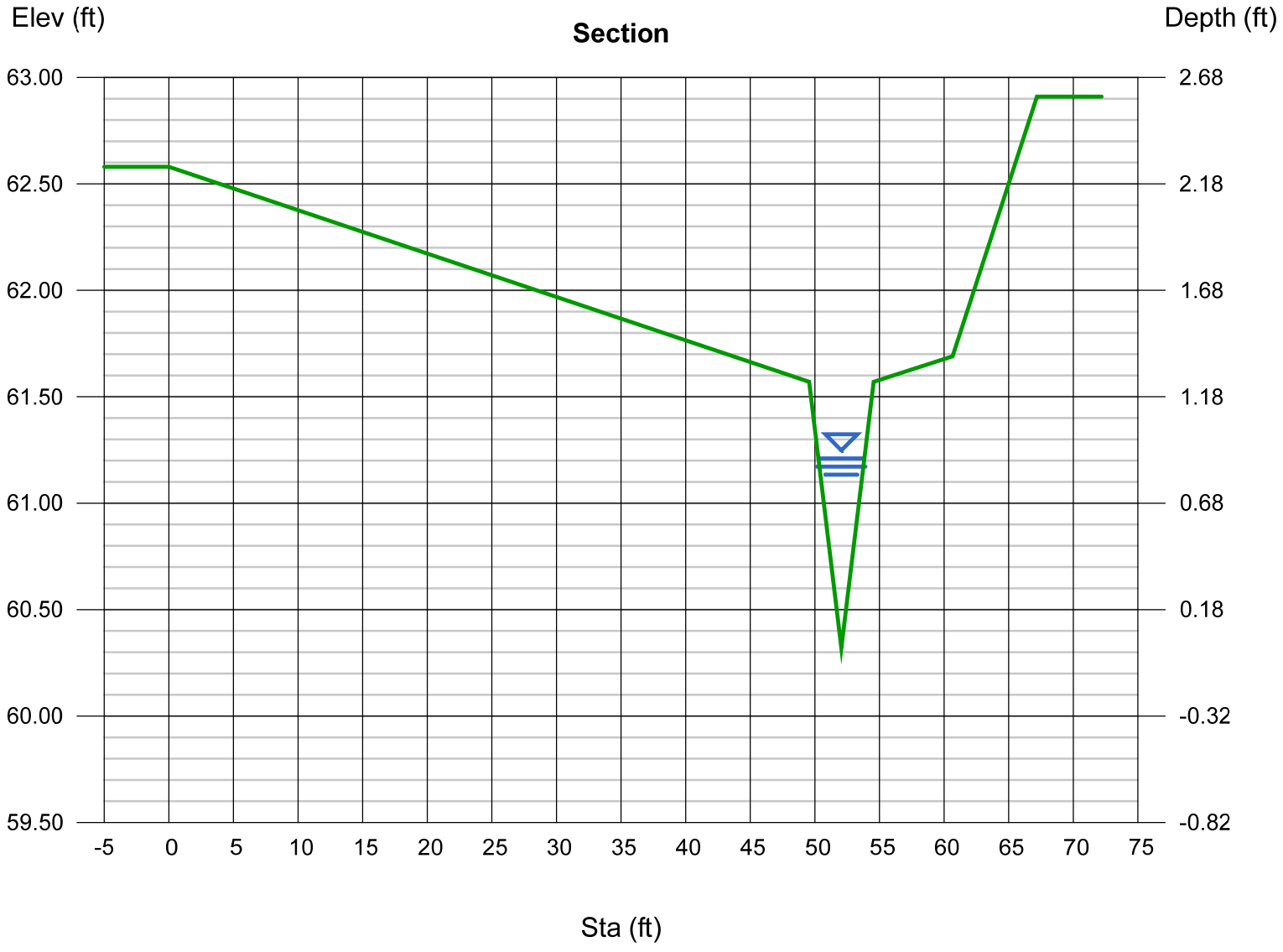
44' ROW - VERY STEEP HIDDEN COURT - 100yr storm SECTION E

User-defined	
Invert Elev (ft)	= 60.32
Slope (%)	= 13.00
N-Value	= 0.035

Calculations	
Compute by:	Known Q
Known Q (cfs)	= 12.79

Highlighted	
Depth (ft)	= 0.89
Q (cfs)	= 12.79
Area (sqft)	= 1.58
Velocity (ft/s)	= 8.07
Wetted Perim (ft)	= 3.98
Crit Depth, Yc (ft)	= 1.21
Top Width (ft)	= 3.56
EGL (ft)	= 1.90

(Sta, El, n)-(Sta, El, n)... (-5.00, 62.58, 0.035)-(49.55, 61.57, 0.014)-(52.05, 60.32, 0.035)-(54.55, 61.57, 0.035)-(60.65, 61.69, 0.014)-(67.19, 62.91, 0.035)



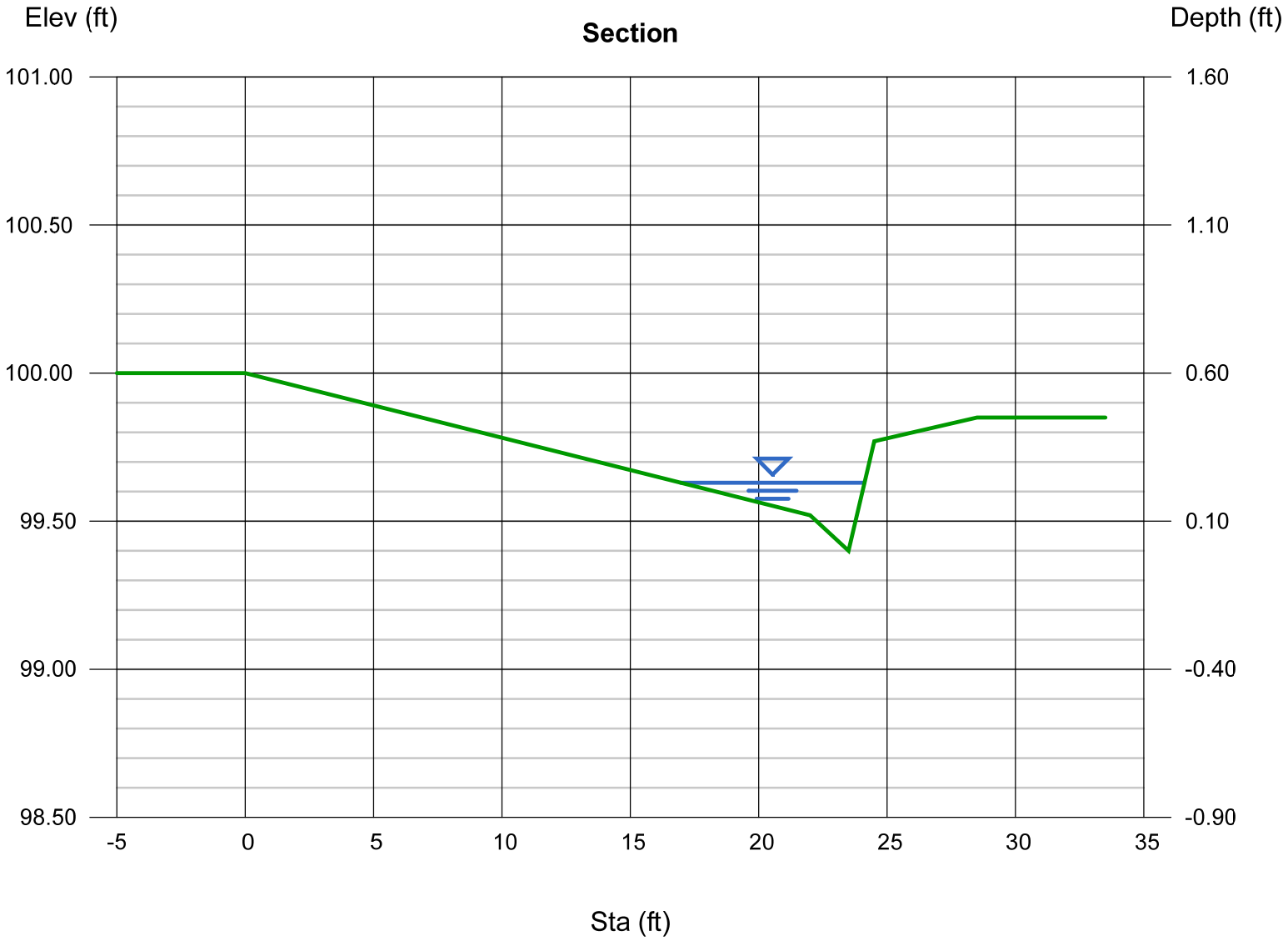
Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

44' ROW Elysium Drive - VERY STEEP - 2yr storm SECTION F

User-defined		Highlighted	
Invert Elev (ft)	= 99.40	Depth (ft)	= 0.23
Slope (%)	= 13.00	Q (cfs)	= 4.000
N-Value	= 0.014	Area (sqft)	= 0.60
		Velocity (ft/s)	= 6.62
Calculations		Wetted Perim (ft)	= 7.21
Compute by:	Known Q	Crit Depth, Yc (ft)	= 0.36
Known Q (cfs)	= 4.00	Top Width (ft)	= 7.16
		EGL (ft)	= 0.91

(Sta, El, n)-(Sta, El, n)... (-5.00, 100.00)-(22.50, 99.54, 0.014)-(23.50, 99.40, 0.014)-(24.50, 99.77, 0.014)-(28.50, 99.85, 0.014)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

44' ROW Elysium Drive - VERY STEEP - 100yr storm SECTION F

User-defined

Invert Elev (ft)	= 99.40
Slope (%)	= 13.00
N-Value	= 0.014

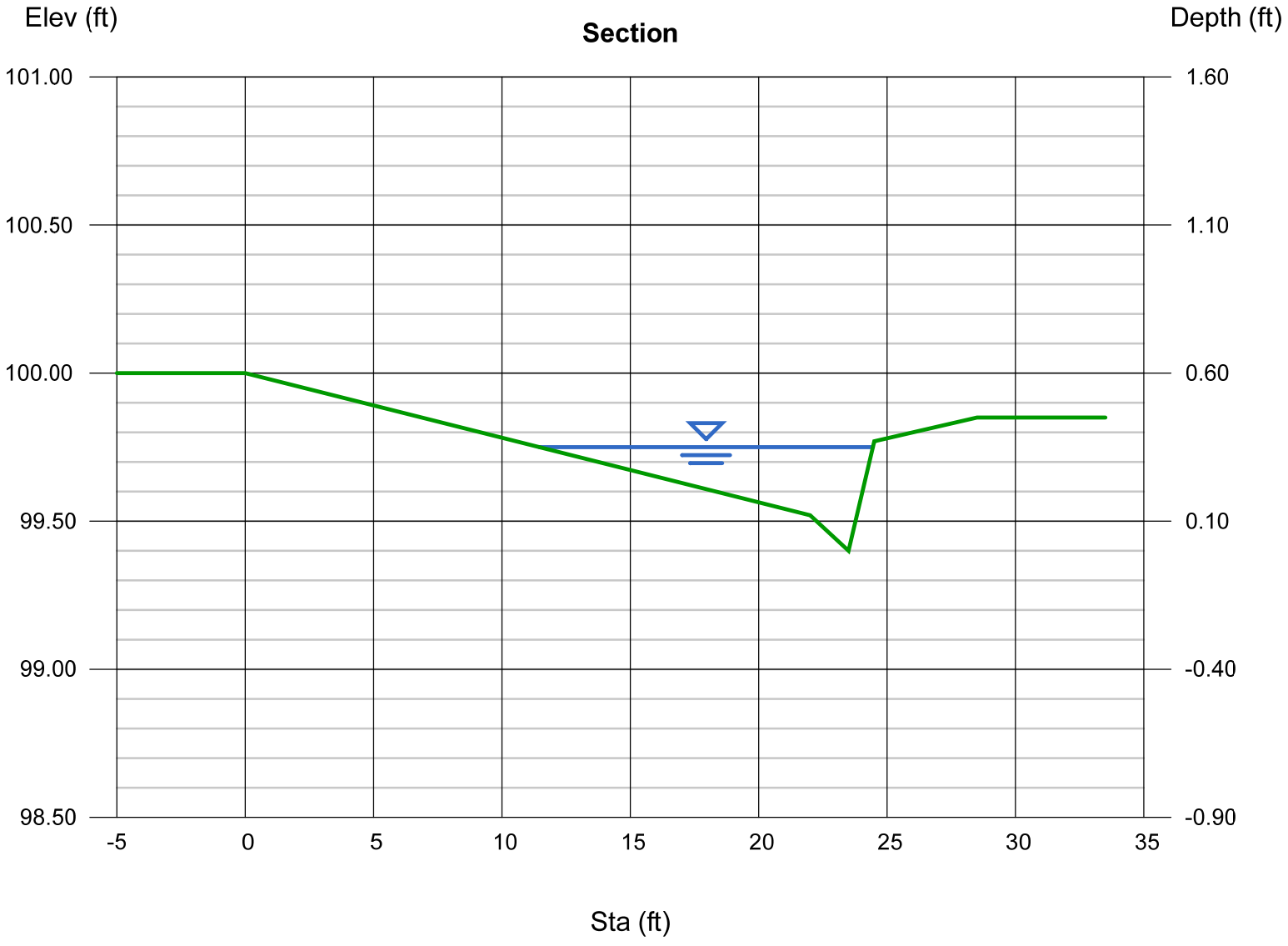
Calculations

Compute by:	Known Q
Known Q (cfs)	= 17.00

Highlighted

Depth (ft)	= 0.35
Q (cfs)	= 17.00
Area (sqft)	= 1.81
Velocity (ft/s)	= 9.38
Wetted Perim (ft)	= 13.06
Crit Depth, Yc (ft)	= 0.57
Top Width (ft)	= 12.99
EGL (ft)	= 1.72

(Sta, El, n)-(Sta, El, n)... (-5.00, 101.00)-(22.50, 99.54, 0.014)-(23.50, 99.40, 0.014)-(24.50, 99.77, 0.014)-(28.50, 99.85, 0.014)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

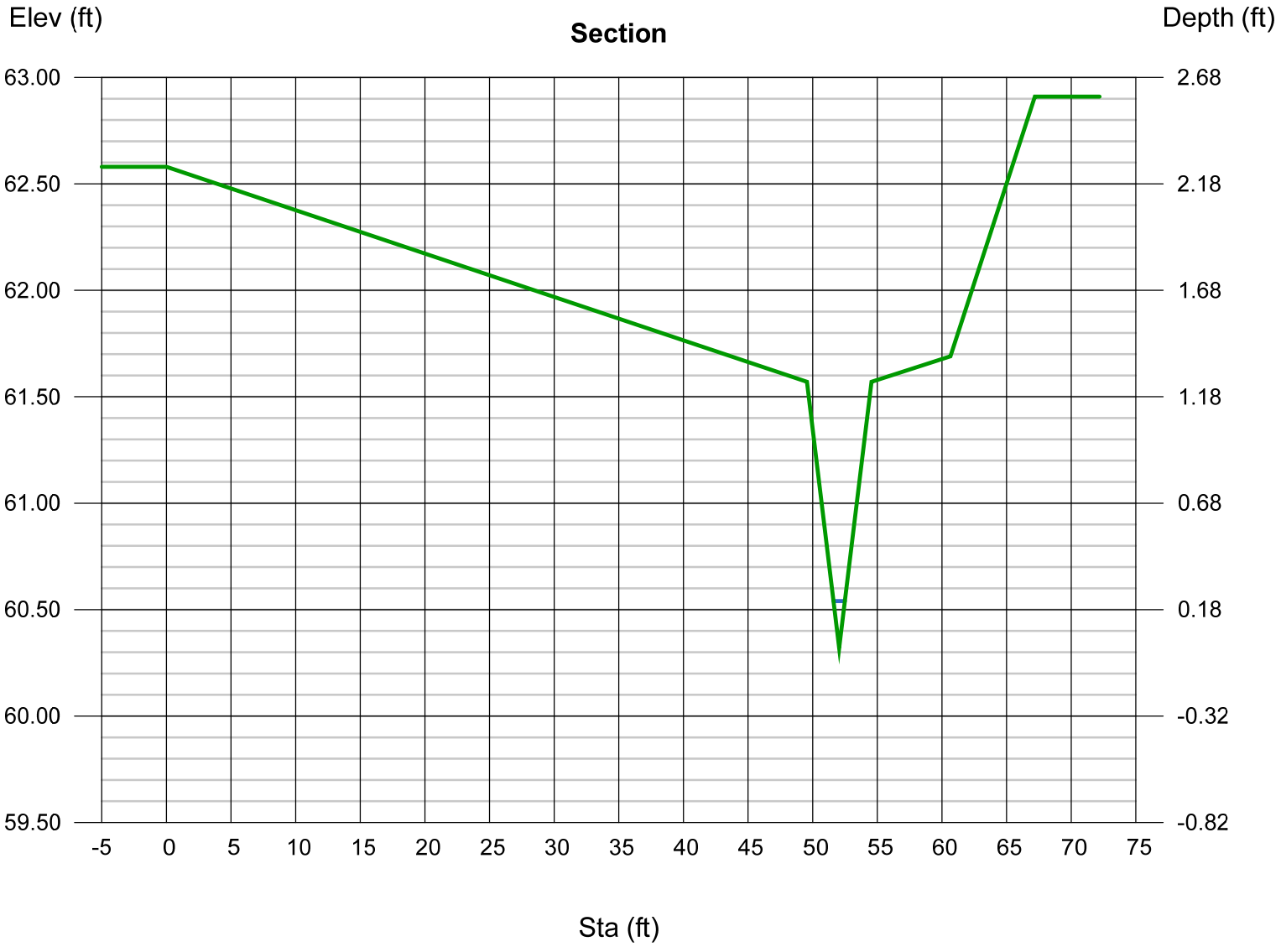
44' ROW - VERY STEEP - 2yr storm SECTION G

User-defined	
Invert Elev (ft)	= 60.32
Slope (%)	= 13.00
N-Value	= 0.035

Calculations	
Compute by:	Known Q
Known Q (cfs)	= 0.30

Highlighted	
Depth (ft)	= 0.22
Q (cfs)	= 0.300
Area (sqft)	= 0.10
Velocity (ft/s)	= 3.10
Wetted Perim (ft)	= 0.98
Crit Depth, Yc (ft)	= 0.27
Top Width (ft)	= 0.88
EGL (ft)	= 0.37

(Sta, El, n)-(Sta, El, n)... (-5.00, 63.18, 0.035)-(49.55, 61.57, 0.014)-(52.05, 60.32, 0.035)-(54.55, 61.57, 0.035)-(60.65, 61.69, 0.014)-(67.19, 62.91, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

44' ROW - VERY STEEP - 100yr storm SECTION G

User-defined

Invert Elev (ft)	= 60.32
Slope (%)	= 13.00
N-Value	= 0.035

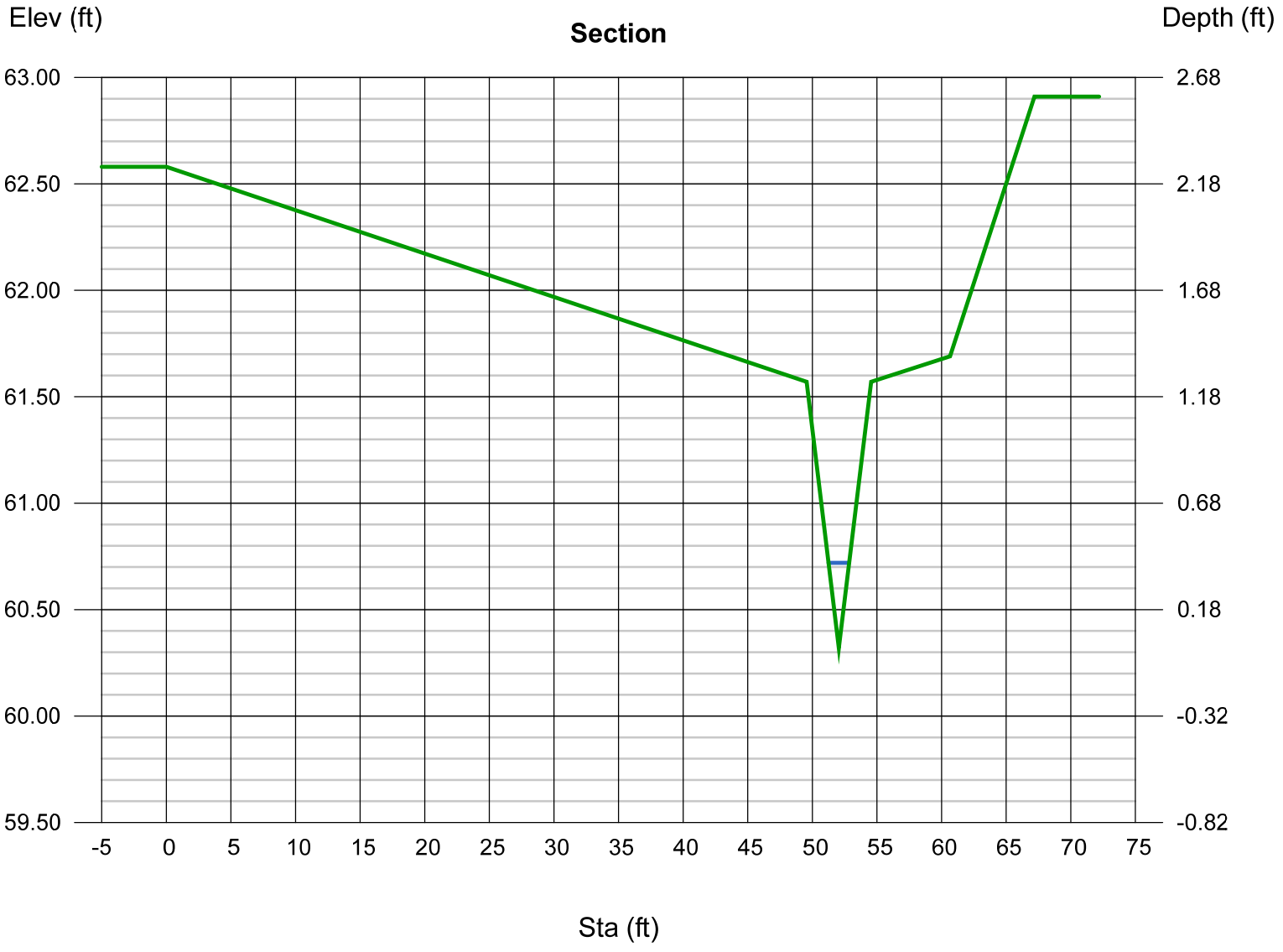
Calculations

Compute by:	Known Q
Known Q (cfs)	= 1.50

Highlighted

Depth (ft)	= 0.40
Q (cfs)	= 1.500
Area (sqft)	= 0.32
Velocity (ft/s)	= 4.69
Wetted Perim (ft)	= 1.79
Crit Depth, Yc (ft)	= 0.52
Top Width (ft)	= 1.60
EGL (ft)	= 0.74

(Sta, El, n)-(Sta, El, n)... (-5.00, 62.58, 0.035)-(49.55, 61.57, 0.014)-(52.05, 60.32, 0.035)-(54.55, 61.57, 0.035)-(60.65, 61.69, 0.014)-(67.19, 62.91, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

Diversion ditch - Basin 202 runoff 2 yr storm SECTION H

Triangular

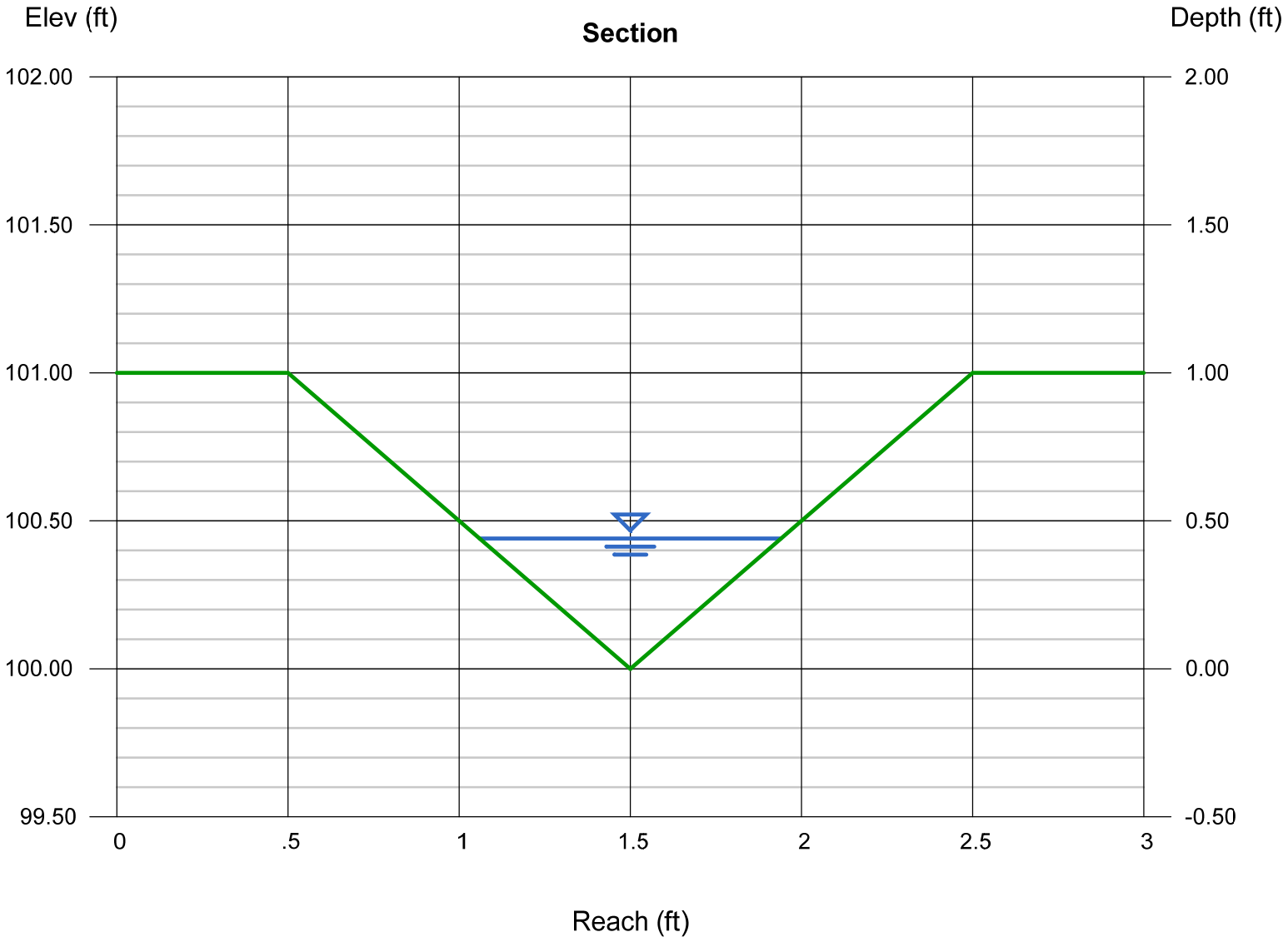
Side Slopes (z:1)	= 1.00, 1.00
Total Depth (ft)	= 1.00
Invert Elev (ft)	= 100.00
Slope (%)	= 3.78
N-Value	= 0.035

Calculations

Compute by:	Known Q
Known Q (cfs)	= 0.46

Highlighted

Depth (ft)	= 0.44
Q (cfs)	= 0.460
Area (sqft)	= 0.19
Velocity (ft/s)	= 2.38
Wetted Perim (ft)	= 1.24
Crit Depth, Yc (ft)	= 0.43
Top Width (ft)	= 0.88
EGL (ft)	= 0.53



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Aug 3 2017

Diversion ditch - Basin 202 runoff 100 yr storm SECTION H

Triangular

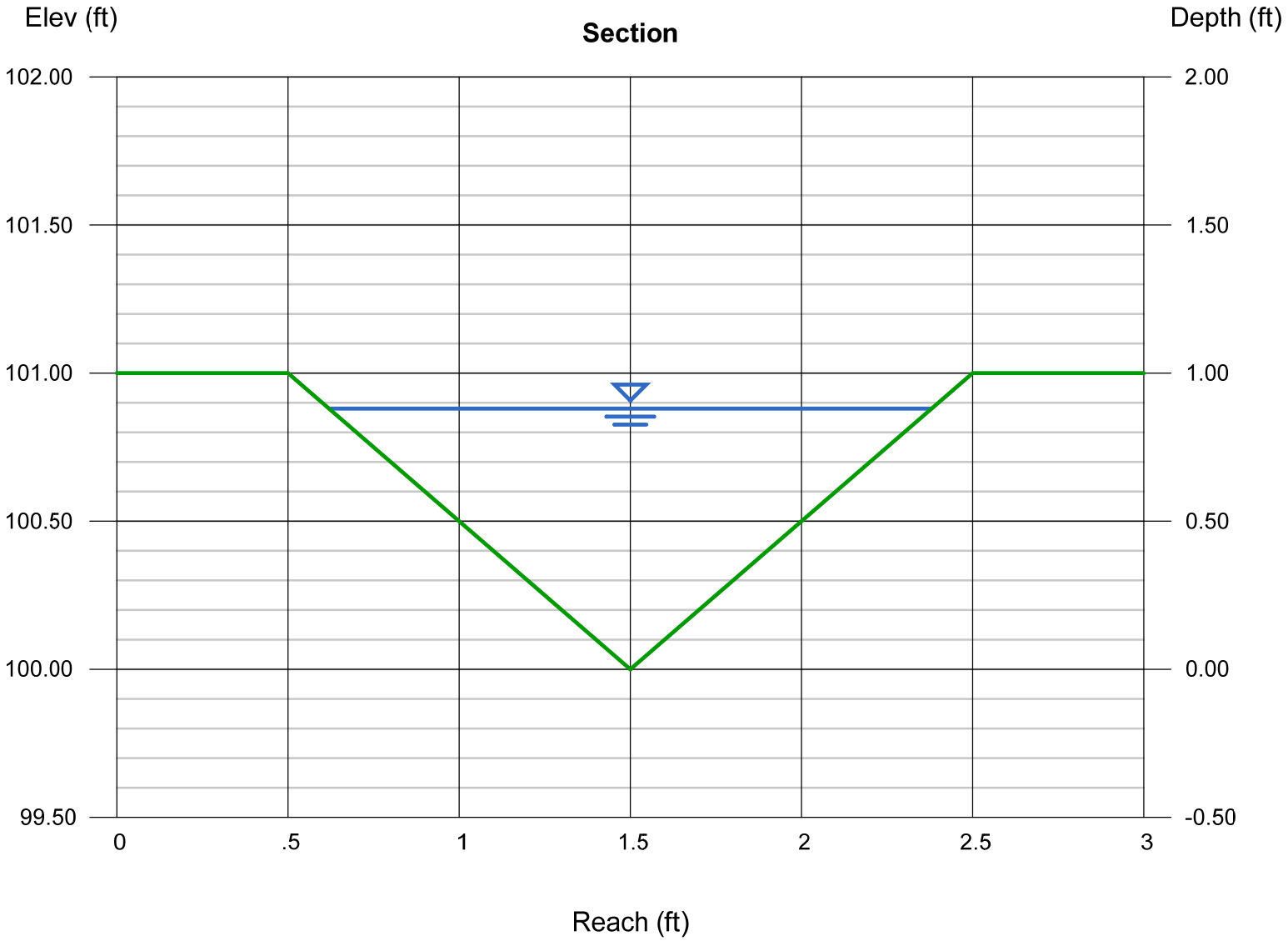
Side Slopes (z:1)	= 1.00, 1.00
Total Depth (ft)	= 1.00
Invert Elev (ft)	= 100.00
Slope (%)	= 5.88
N-Value	= 0.035

Calculations

Compute by:	Known Q
Known Q (cfs)	= 3.62

Highlighted

Depth (ft)	= 0.88
Q (cfs)	= 3.620
Area (sqft)	= 0.77
Velocity (ft/s)	= 4.67
Wetted Perim (ft)	= 2.49
Crit Depth, Yc (ft)	= 0.96
Top Width (ft)	= 1.76
EGL (ft)	= 1.22



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Friday, Sep 29 2017

Diversion Ditch - Section I (Basin 203 - 100 yr)

Triangular

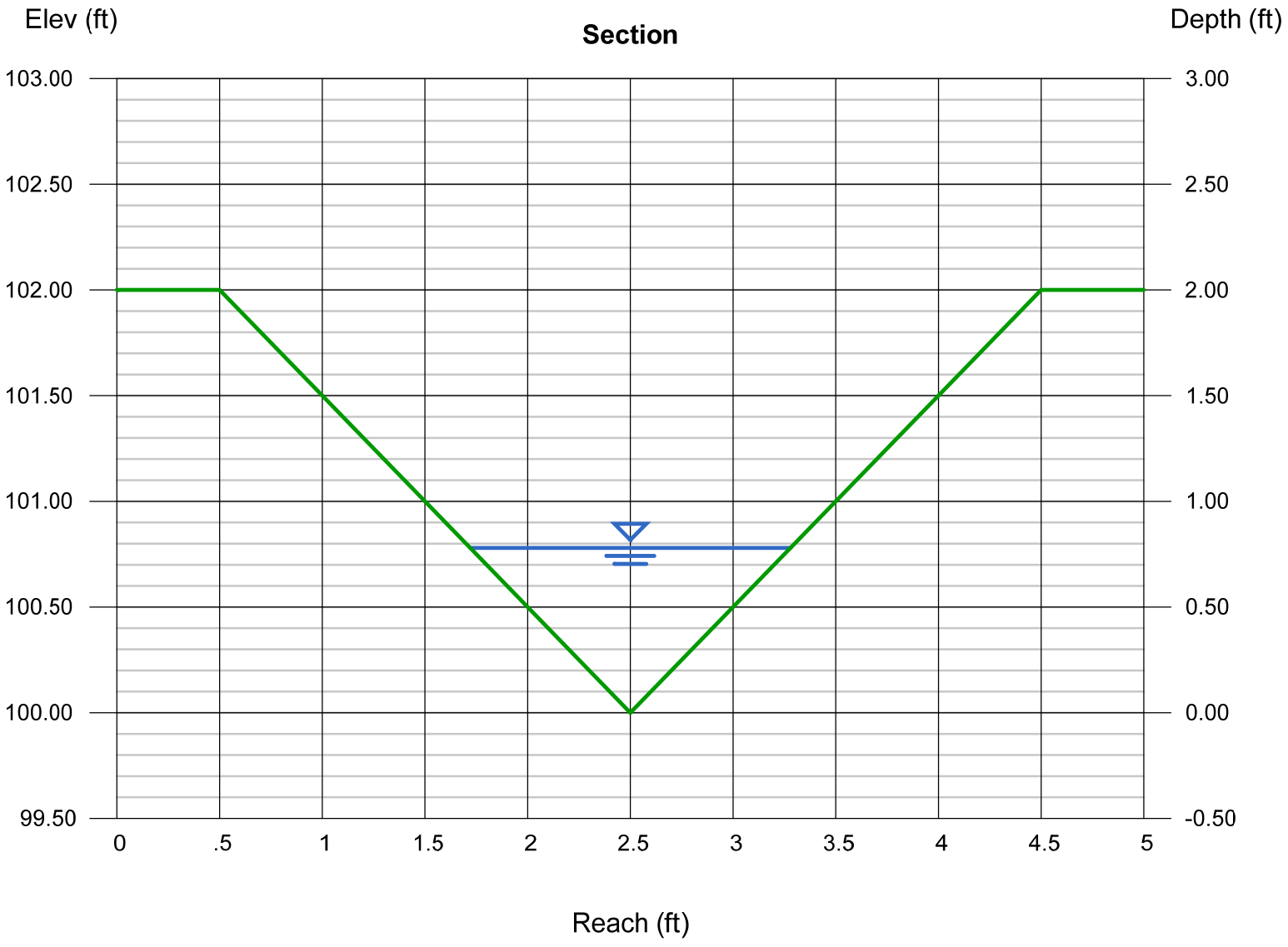
Side Slopes (z:1)	= 1.00, 1.00
Total Depth (ft)	= 2.00
Invert Elev (ft)	= 100.00
Slope (%)	= 7.27
N-Value	= 0.040

Calculations

Compute by:	Known Q
Known Q (cfs)	= 2.50

Highlighted

Depth (ft)	= 0.78
Q (cfs)	= 2.500
Area (sqft)	= 0.61
Velocity (ft/s)	= 4.11
Wetted Perim (ft)	= 2.21
Crit Depth, Yc (ft)	= 0.83
Top Width (ft)	= 1.56
EGL (ft)	= 1.04



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Friday, Sep 29 2017

Diversion Ditch - Section J FLAT (Basin 203 - 100 yr)

Triangular

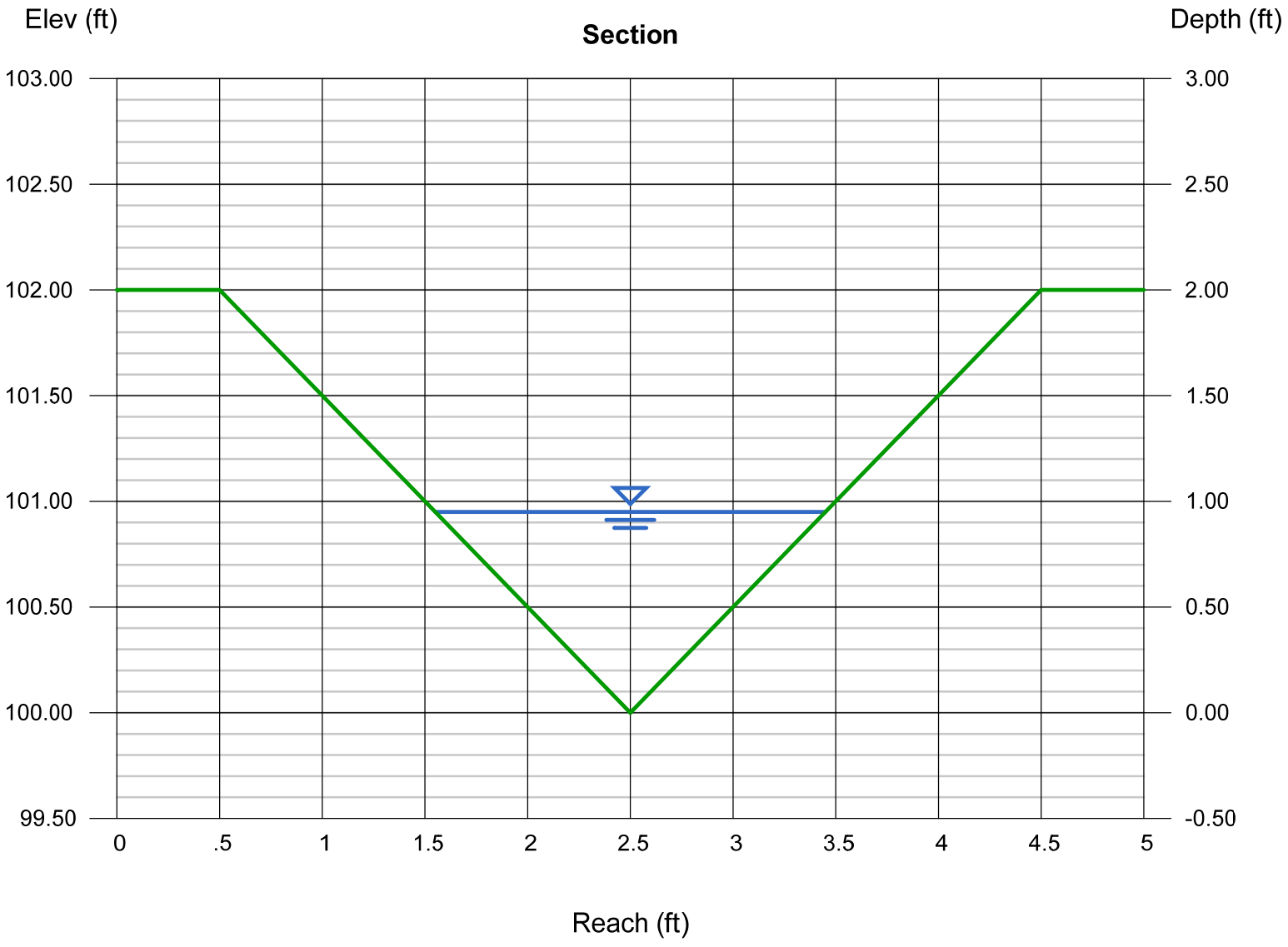
Side Slopes (z:1)	= 1.00, 1.00
Total Depth (ft)	= 2.00
Invert Elev (ft)	= 100.00
Slope (%)	= 2.50
N-Value	= 0.040

Calculations

Compute by:	Known Q
Known Q (cfs)	= 2.50

Highlighted

Depth (ft)	= 0.95
Q (cfs)	= 2.500
Area (sqft)	= 0.90
Velocity (ft/s)	= 2.77
Wetted Perim (ft)	= 2.69
Crit Depth, Yc (ft)	= 0.83
Top Width (ft)	= 1.90
EGL (ft)	= 1.07



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Friday, Sep 29 2017

Diversion Ditch - Section J STEEP (Basin 203 - 100 yr)

Triangular

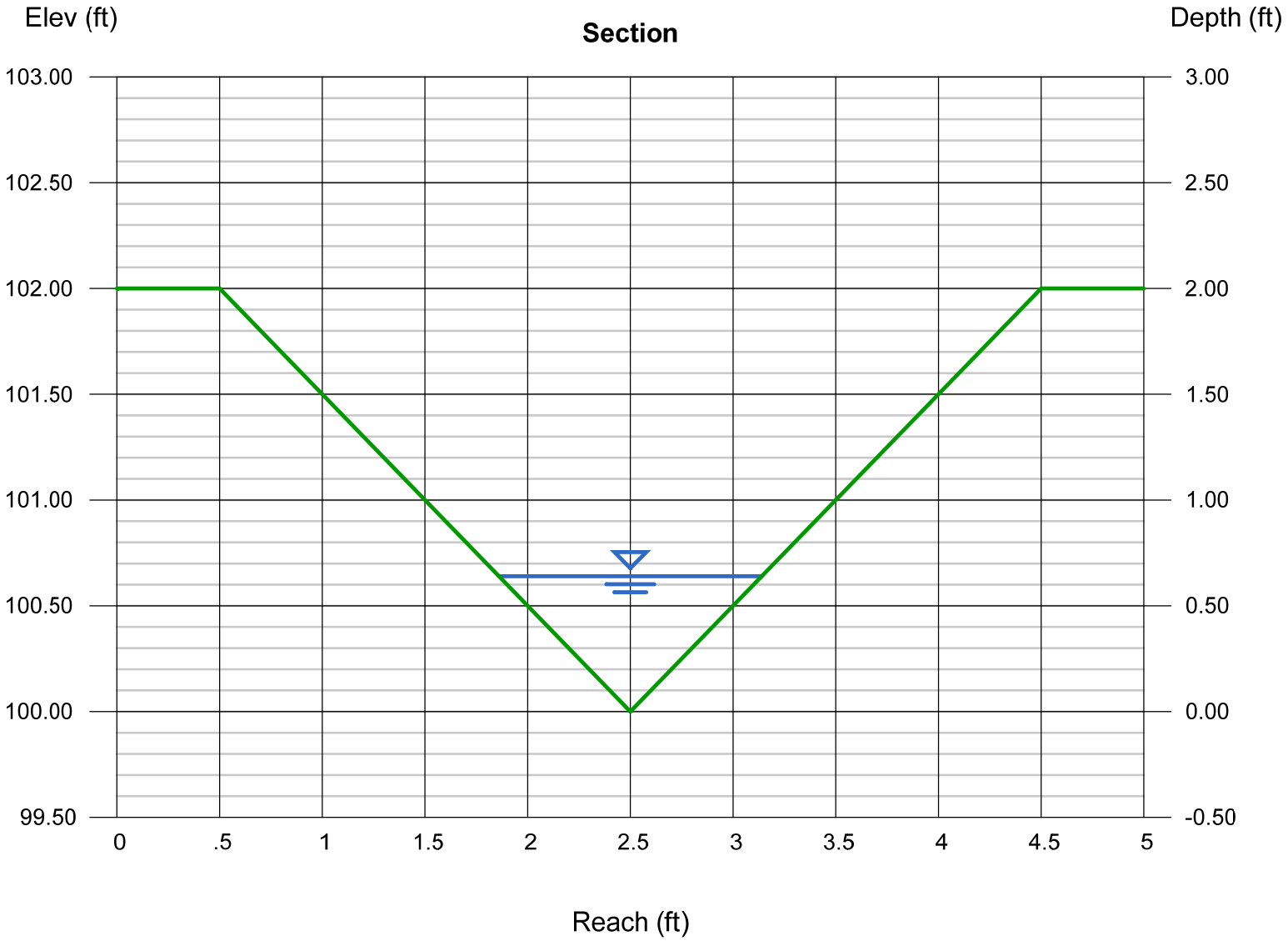
Side Slopes (z:1)	= 1.00, 1.00
Total Depth (ft)	= 2.00
Invert Elev (ft)	= 100.00
Slope (%)	= 25.00
N-Value	= 0.045

Calculations

Compute by:	Known Q
Known Q (cfs)	= 2.50

Highlighted

Depth (ft)	= 0.64
Q (cfs)	= 2.500
Area (sqft)	= 0.41
Velocity (ft/s)	= 6.10
Wetted Perim (ft)	= 1.81
Crit Depth, Yc (ft)	= 0.83
Top Width (ft)	= 1.28
EGL (ft)	= 1.22



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Friday, Sep 29 2017

Diversion Ditch - Section K (Basin 202 - 100 yr)

Triangular

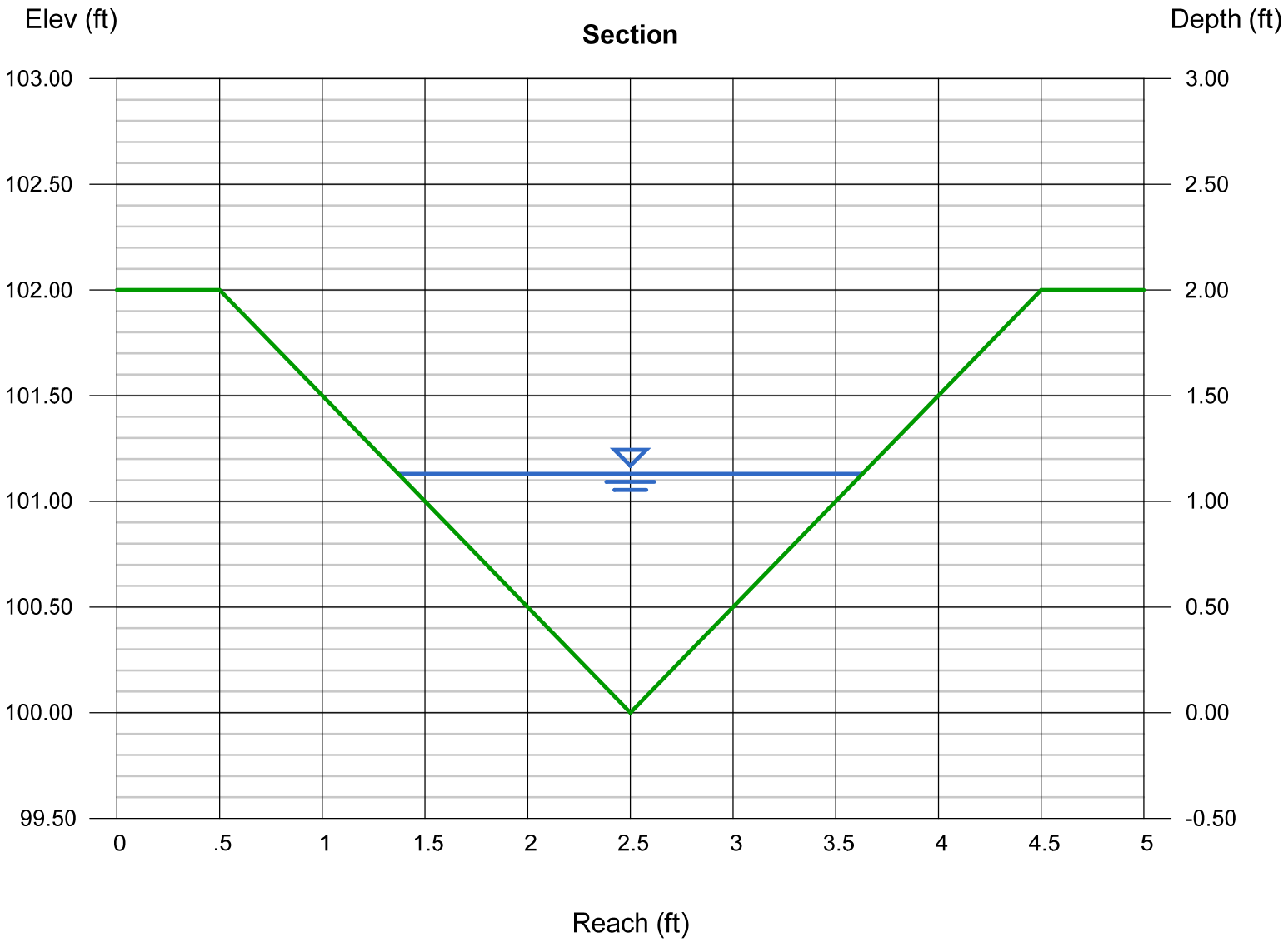
Side Slopes (z:1)	= 1.00, 1.00
Total Depth (ft)	= 2.00
Invert Elev (ft)	= 100.00
Slope (%)	= 2.60
N-Value	= 0.045

Calculations

Compute by:	Known Q
Known Q (cfs)	= 3.62

Highlighted

Depth (ft)	= 1.13
Q (cfs)	= 3.620
Area (sqft)	= 1.28
Velocity (ft/s)	= 2.83
Wetted Perim (ft)	= 3.20
Crit Depth, Yc (ft)	= 0.96
Top Width (ft)	= 2.26
EGL (ft)	= 1.25



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Friday, Sep 29 2017

Diversion Ditch - Section L FLAT (Basin 406 - 100 yr)

Triangular

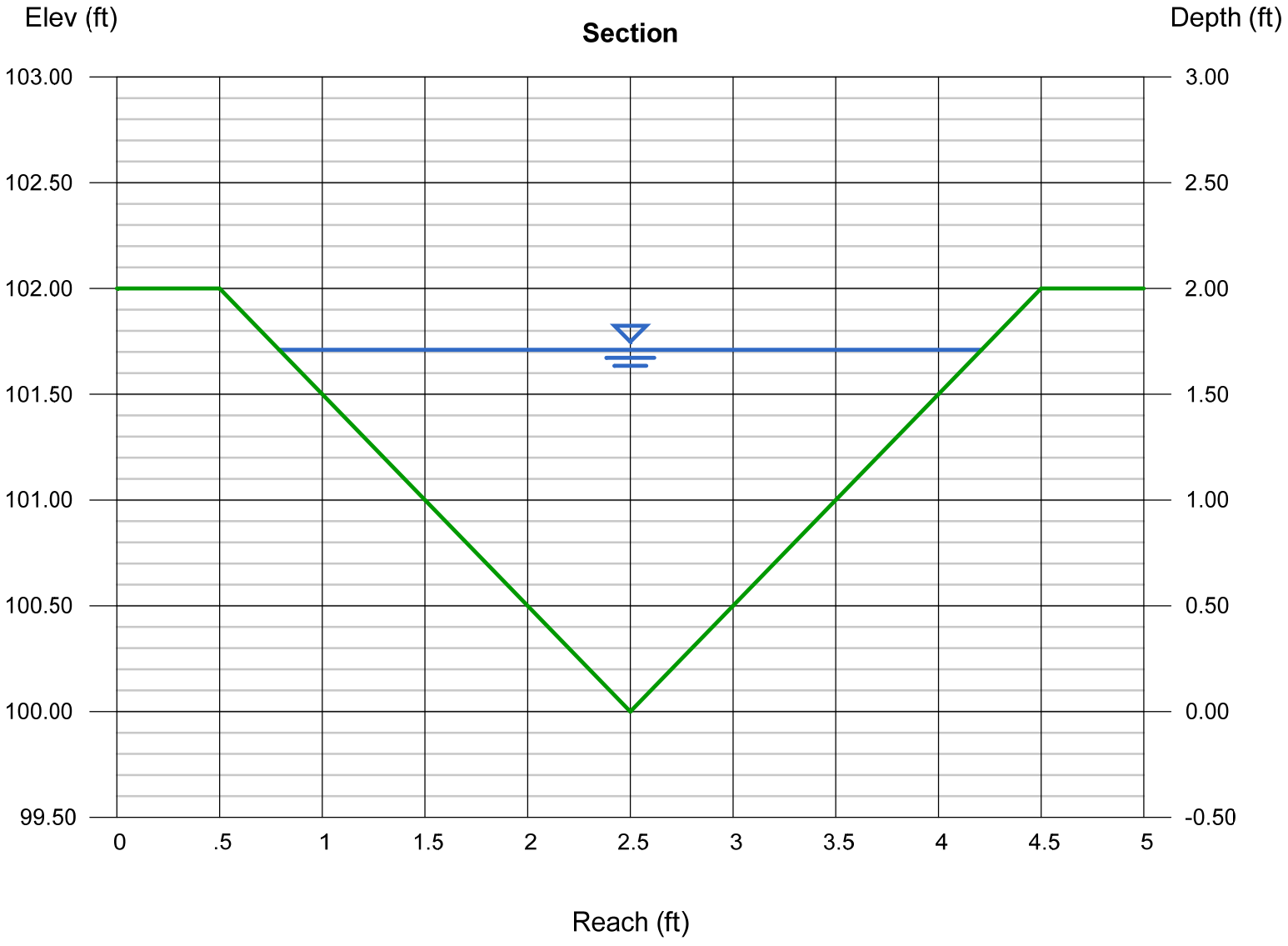
Side Slopes (z:1)	= 1.00, 1.00
Total Depth (ft)	= 2.00
Invert Elev (ft)	= 100.00
Slope (%)	= 0.85
N-Value	= 0.035

Calculations

Compute by:	Known Q
Known Q (cfs)	= 8.06

Highlighted

Depth (ft)	= 1.71
Q (cfs)	= 8.060
Area (sqft)	= 2.92
Velocity (ft/s)	= 2.76
Wetted Perim (ft)	= 4.84
Crit Depth, Yc (ft)	= 1.33
Top Width (ft)	= 3.42
EGL (ft)	= 1.83



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Friday, Sep 29 2017

Diversion Ditch - Section L STEEP (Basin 406 - 100 yr)

Triangular

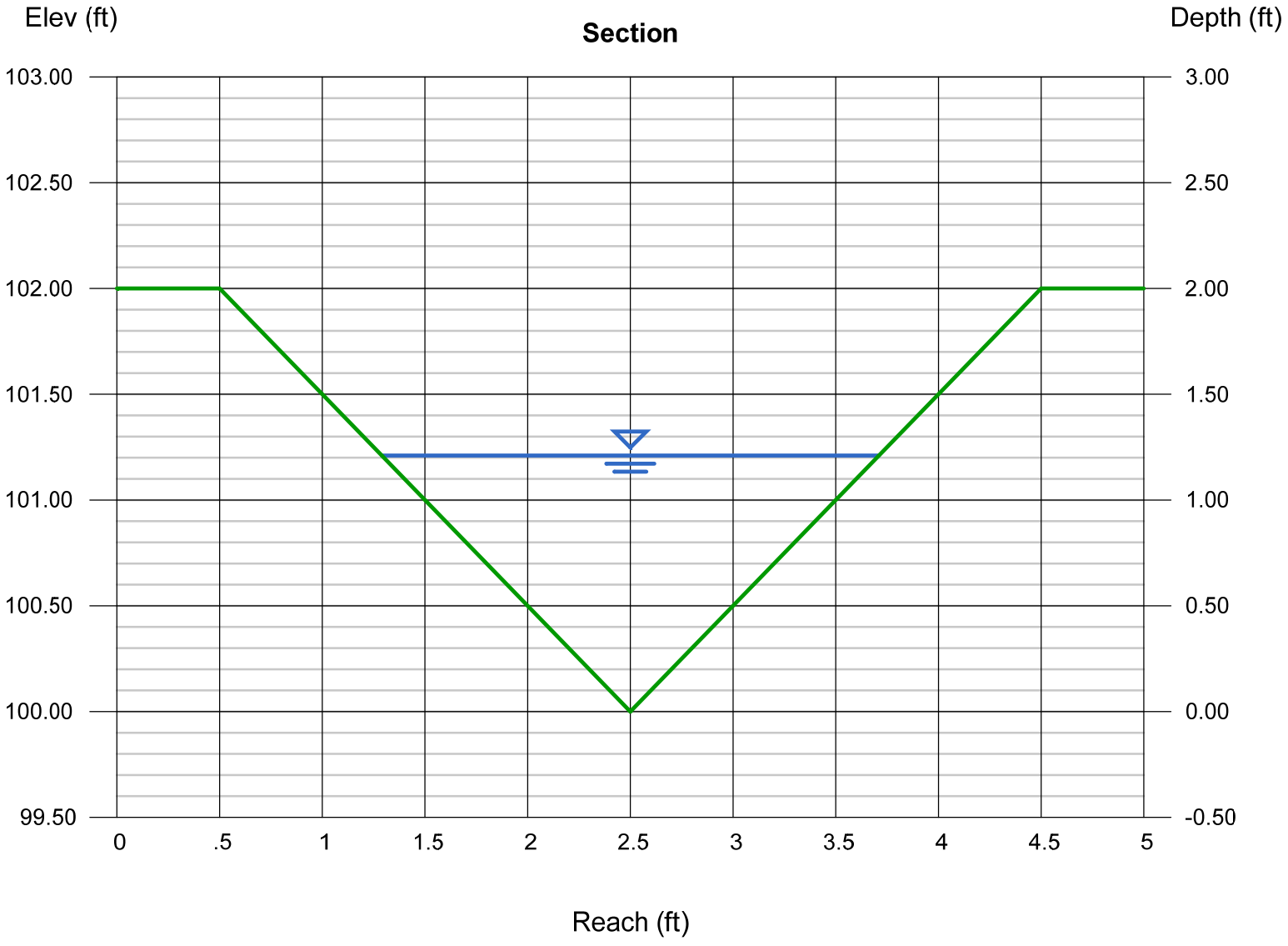
Side Slopes (z:1)	= 1.00, 1.00
Total Depth (ft)	= 2.00
Invert Elev (ft)	= 100.00
Slope (%)	= 9.00
N-Value	= 0.045

Calculations

Compute by:	Known Q
Known Q (cfs)	= 8.06

Highlighted

Depth (ft)	= 1.21
Q (cfs)	= 8.060
Area (sqft)	= 1.46
Velocity (ft/s)	= 5.51
Wetted Perim (ft)	= 3.42
Crit Depth, Yc (ft)	= 1.33
Top Width (ft)	= 2.42
EGL (ft)	= 1.68



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Friday, Sep 29 2017

Diversion Ditch - Section M STEEP (Basin 402 - 100 yr)

Triangular

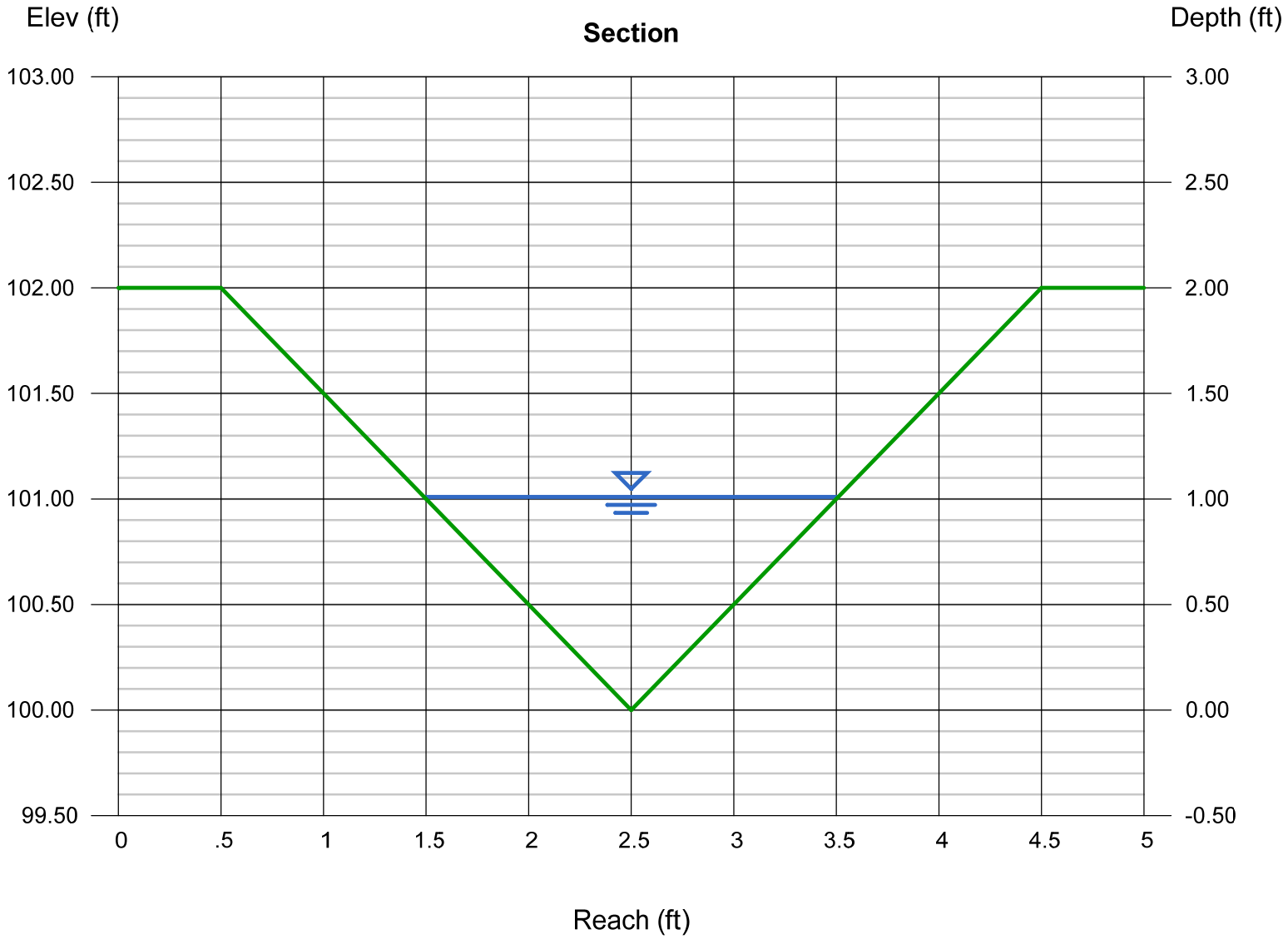
Side Slopes (z:1)	= 1.00, 1.00
Total Depth (ft)	= 2.00
Invert Elev (ft)	= 100.00
Slope (%)	= 21.00
N-Value	= 0.045

Calculations

Compute by:	Known Q
Known Q (cfs)	= 7.69

Highlighted

Depth (ft)	= 1.01
Q (cfs)	= 7.690
Area (sqft)	= 1.02
Velocity (ft/s)	= 7.54
Wetted Perim (ft)	= 2.86
Crit Depth, Yc (ft)	= 1.30
Top Width (ft)	= 2.02
EGL (ft)	= 1.89



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

CONCRETE C&G ALONG WESTERN BOUNDRY - Steep - 2yr storm

User-defined

Invert Elev (ft)	= 99.00
Slope (%)	= 8.00
N-Value	= 0.014

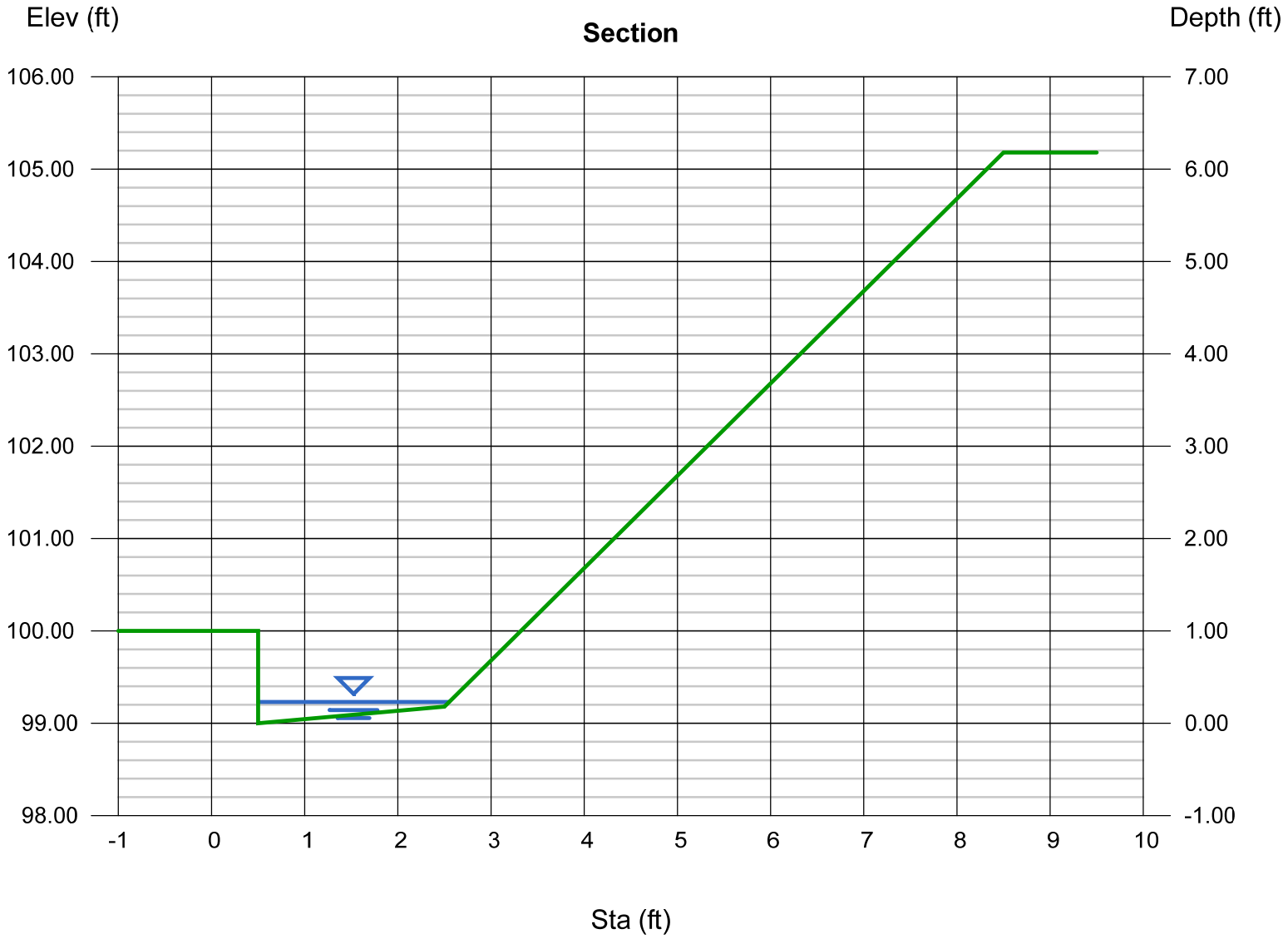
Calculations

Compute by:	Known Q
Known Q (cfs)	= 2.00

Highlighted

Depth (ft)	= 0.23
Q (cfs)	= 2.000
Area (sqft)	= 0.28
Velocity (ft/s)	= 7.11
Wetted Perim (ft)	= 2.31
Crit Depth, Yc (ft)	= 0.41
Top Width (ft)	= 2.05
EGL (ft)	= 1.02

(Sta, El, n)-(Sta, El, n)... (-0.00, 100.00)-(0.50, 100.00, 0.013)-(0.50, 99.00, 0.013)-(2.50, 99.18, 0.013)-(8.50, 105.18, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Tuesday, Aug 1 2017

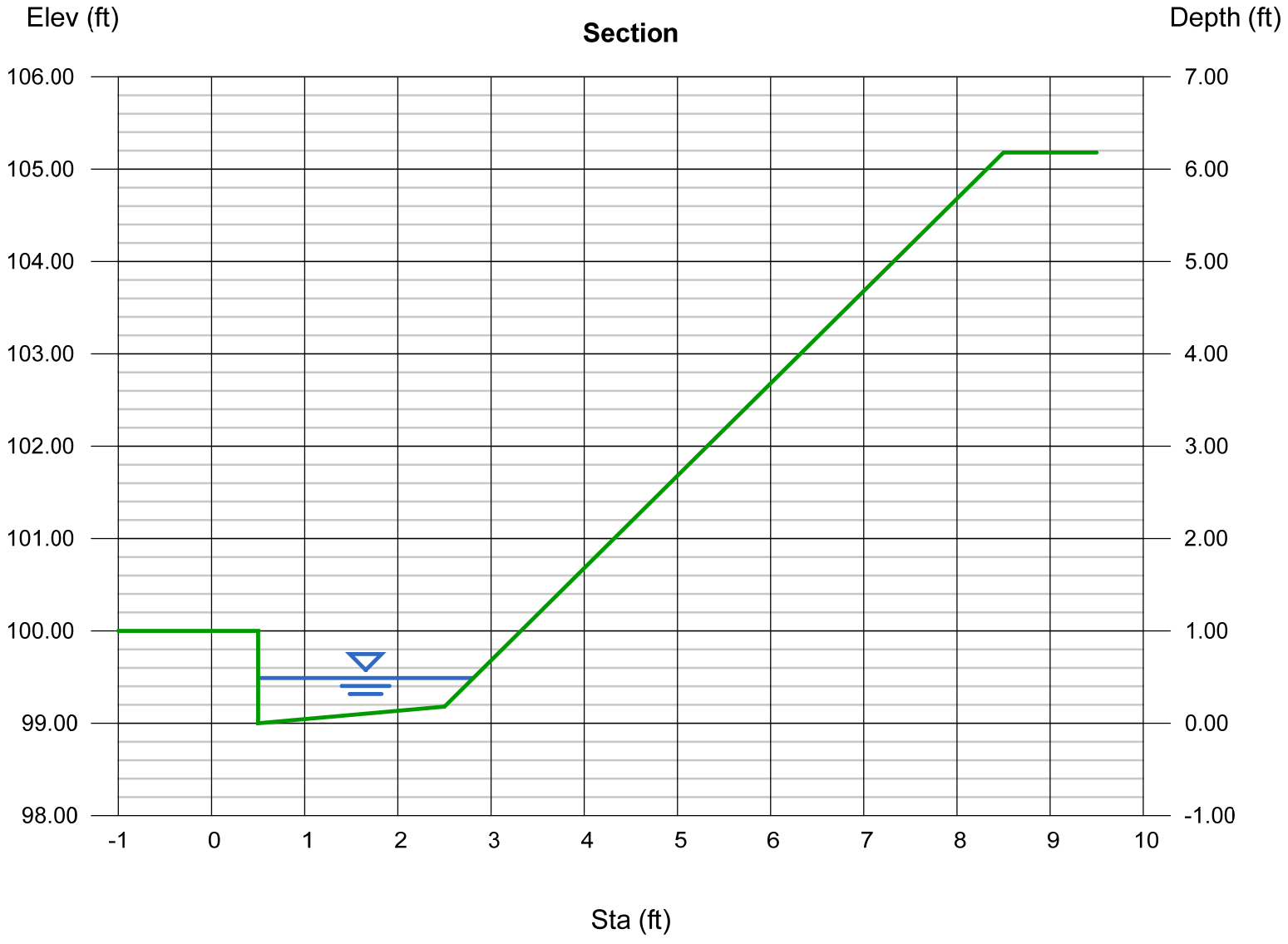
CONCRETE C&G ALONG WESTERN BOUNDRY - Steep - 100yr storm

User-defined	
Invert Elev (ft)	= 99.00
Slope (%)	= 8.00
N-Value	= 0.017

Calculations	
Compute by:	Known Q
Known Q (cfs)	= 9.05

Highlighted	
Depth (ft)	= 0.49
Q (cfs)	= 9.050
Area (sqft)	= 0.85
Velocity (ft/s)	= 10.67
Wetted Perim (ft)	= 2.94
Crit Depth, Yc (ft)	= 0.92
Top Width (ft)	= 2.31
EGL (ft)	= 2.26

(Sta, El, n)-(Sta, El, n)... (-1.00, 100.00)-(0.50, 100.00, 0.013)-(0.50, 99.00, 0.013)-(2.50, 99.18, 0.013)-(8.50, 105.18, 0.035)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Oct 5 2017

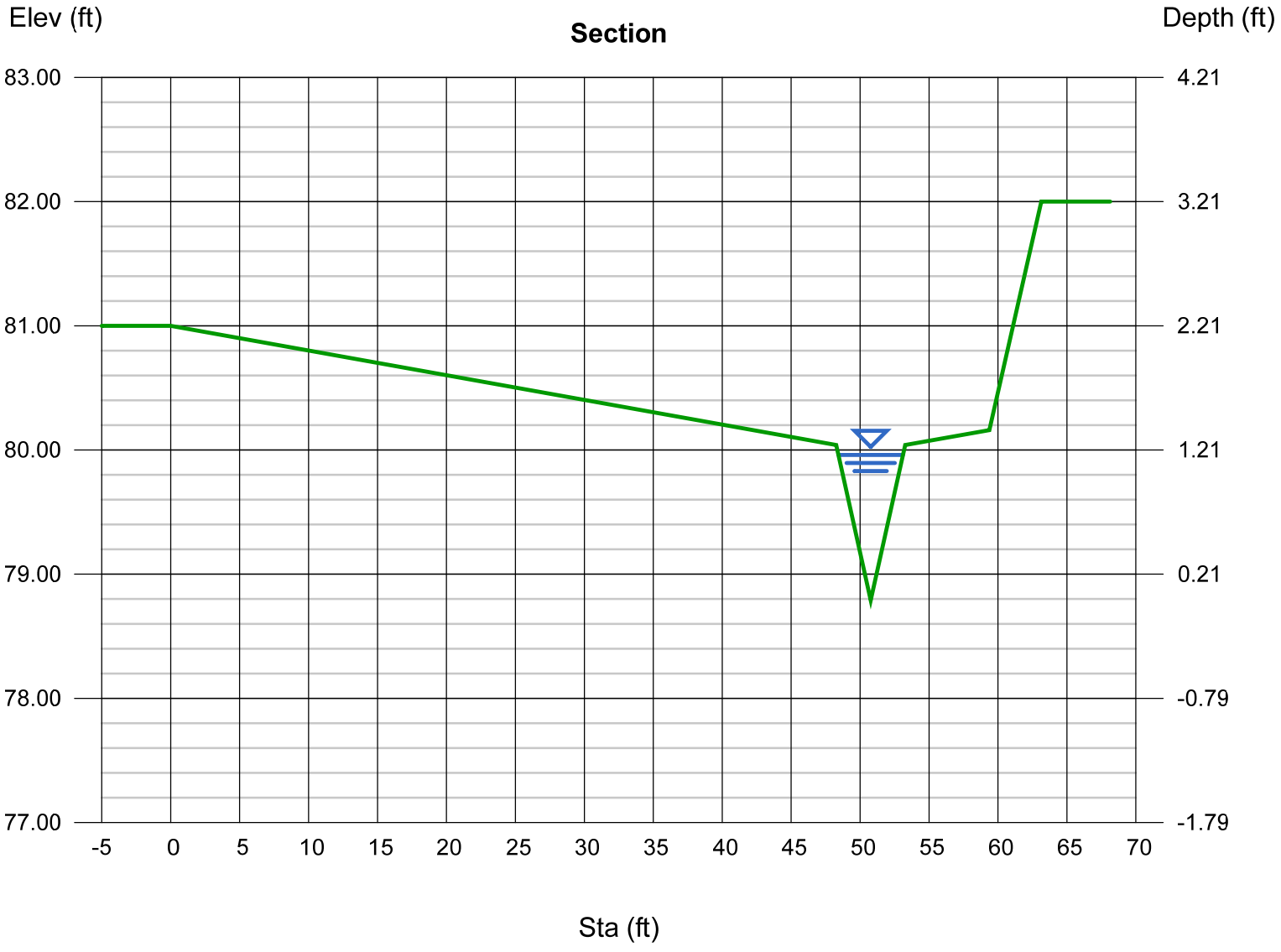
44' ROW Aiguille Drive - FLAT - 100yr storm SECTION C (BASIN 200-C)

User-defined	
Invert Elev (ft)	= 78.79
Slope (%)	= 3.50
N-Value	= 0.035

Calculations	
Compute by:	Known Q
Known Q (cfs)	= 14.00

Highlighted	
Depth (ft)	= 1.17
Q (cfs)	= 14.00
Area (sqft)	= 2.74
Velocity (ft/s)	= 5.11
Wetted Perim (ft)	= 5.23
Crit Depth, Yc (ft)	= 1.25
Top Width (ft)	= 4.68
EGL (ft)	= 1.58

(Sta, El, n)-(Sta, El, n)... (-5.00, 81.00)-(48.27, 80.04, 0.014)-(50.77, 78.79, 0.035)-(53.27, 80.04, 0.035)-(59.37, 80.16, 0.014)-(63.14, 82.00, 0.035)



Culvert Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Oct 5 2017

DRIVEWAY CULVERT

Invert Elev Dn (ft)	= 100.00
Pipe Length (ft)	= 20.00
Slope (%)	= 3.50
Invert Elev Up (ft)	= 100.70
Rise (in)	= 14.0
Shape	= Ell
Span (in)	= 23.0
No. Barrels	= 1
n-Value	= 0.012
Inlet Edge	= 0
Coeff. K,M,c,Y,k	= 0.021, 1.33, 0.0463, 0.77, 0.7

Embankment

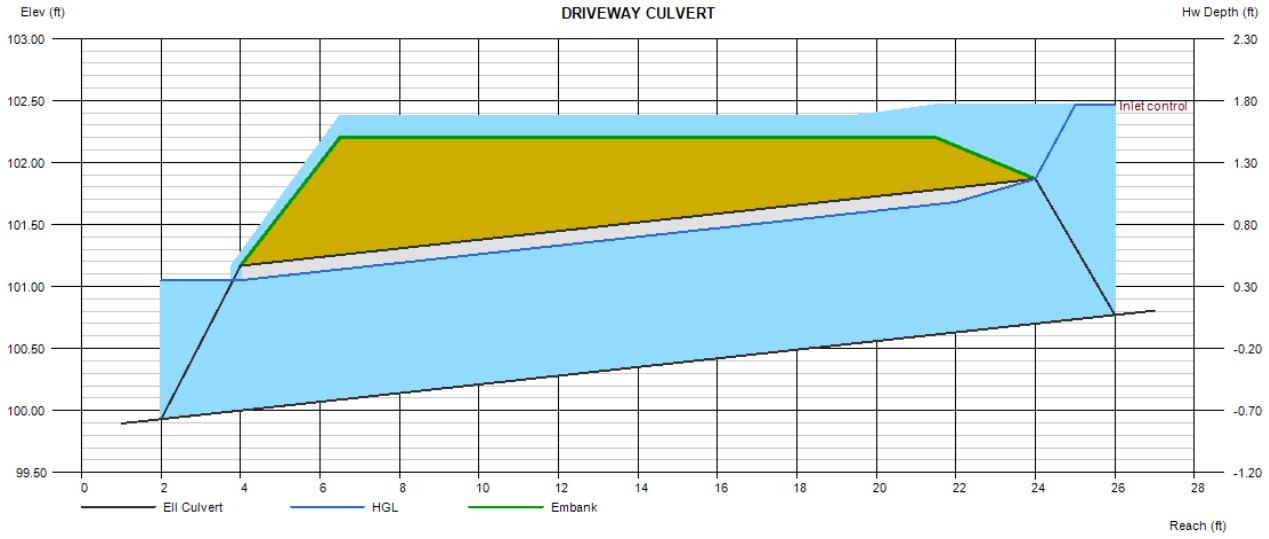
Top Elevation (ft)	= 102.20
Top Width (ft)	= 15.00
Crest Width (ft)	= 16.00

Calculations

Qmin (cfs)	= 3.00
Qmax (cfs)	= 14.00
Tailwater Elev (ft)	= 0

Highlighted

Qtotal (cfs)	= 14.00
Qpipe (cfs)	= 7.68
Qovertop (cfs)	= 6.32
Veloc Dn (ft/s)	= 4.46
Veloc Up (ft/s)	= 4.62
HGL Dn (ft)	= 101.05
HGL Up (ft)	= 101.75
Hw Elev (ft)	= 102.46
Hw/D (ft)	= 1.51
Flow Regime	= Inlet Control



Culvert Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Thursday, Oct 5 2017

DRIVEWAY CULVERT

Invert Elev Dn (ft)	= 100.00
Pipe Length (ft)	= 20.00
Slope (%)	= 3.50
Invert Elev Up (ft)	= 100.70
Rise (in)	= 14.0
Shape	= Ell
Span (in)	= 23.0
No. Barrels	= 1
n-Value	= 0.012
Inlet Edge	= 0
Coeff. K,M,c,Y,k	= 0.021, 1.33, 0.0463, 0.77, 0.7

Embankment

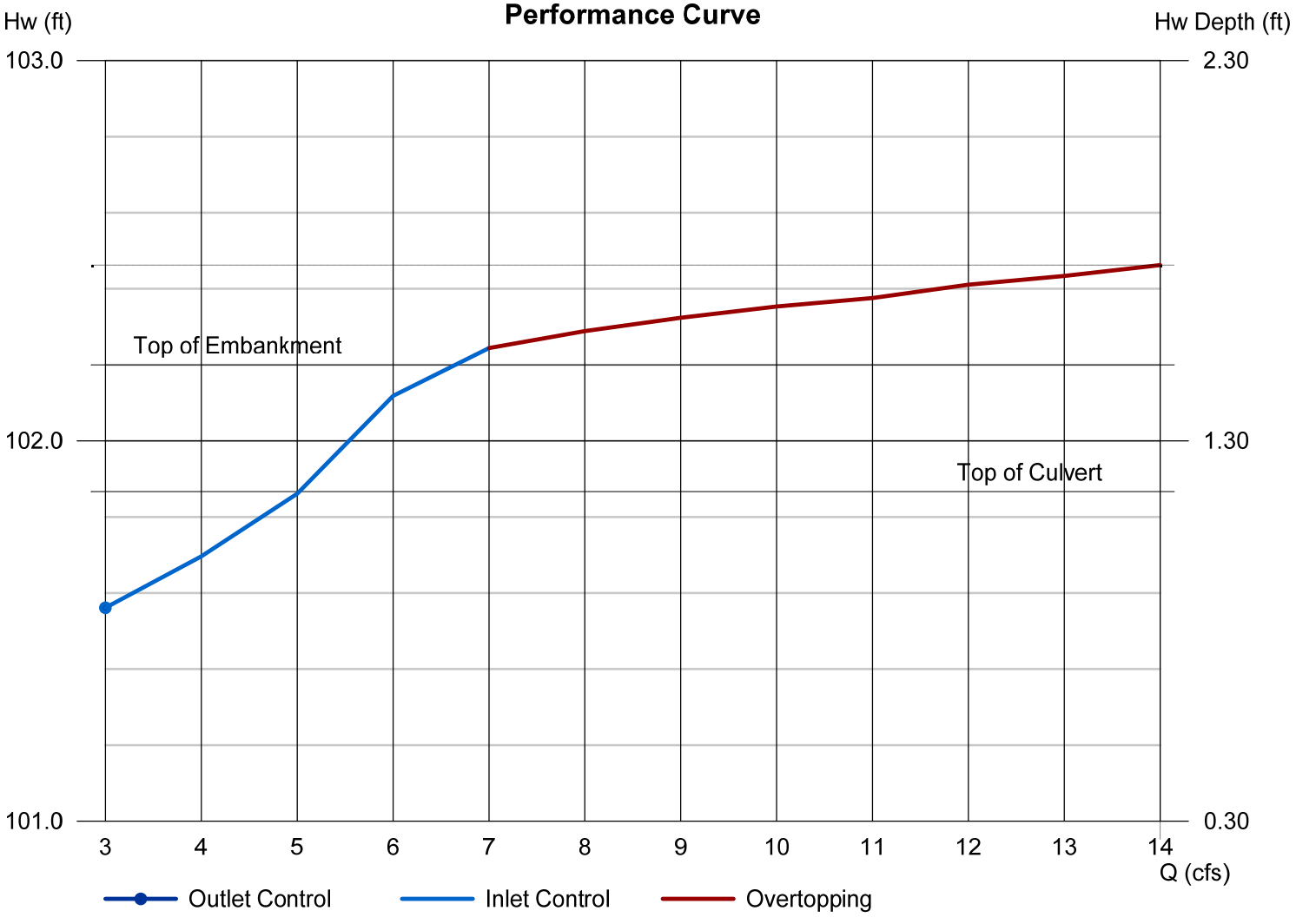
Top Elevation (ft)	= 102.20
Top Width (ft)	= 15.00
Crest Width (ft)	= 16.00

Calculations

Qmin (cfs)	= 3.00
Qmax (cfs)	= 14.00
Tailwater Elev (ft)	= 0

Highlighted

Qtotal (cfs)	= 14.00
Qpipe (cfs)	= 7.68
Qovertop (cfs)	= 6.32
Veloc Dn (ft/s)	= 4.46
Veloc Up (ft/s)	= 4.62
HGL Dn (ft)	= 101.05
HGL Up (ft)	= 101.75
Hw Elev (ft)	= 102.46
Hw/D (ft)	= 1.51
Flow Regime	= Inlet Control



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Friday, Oct 6 2017

FLOW OVER CULVERT AT LOT 18 - 100 YE STORM (BASIN 202-C)

User-defined

Invert Elev (ft)	= 71.04
Slope (%)	= 3.50
N-Value	= 0.013

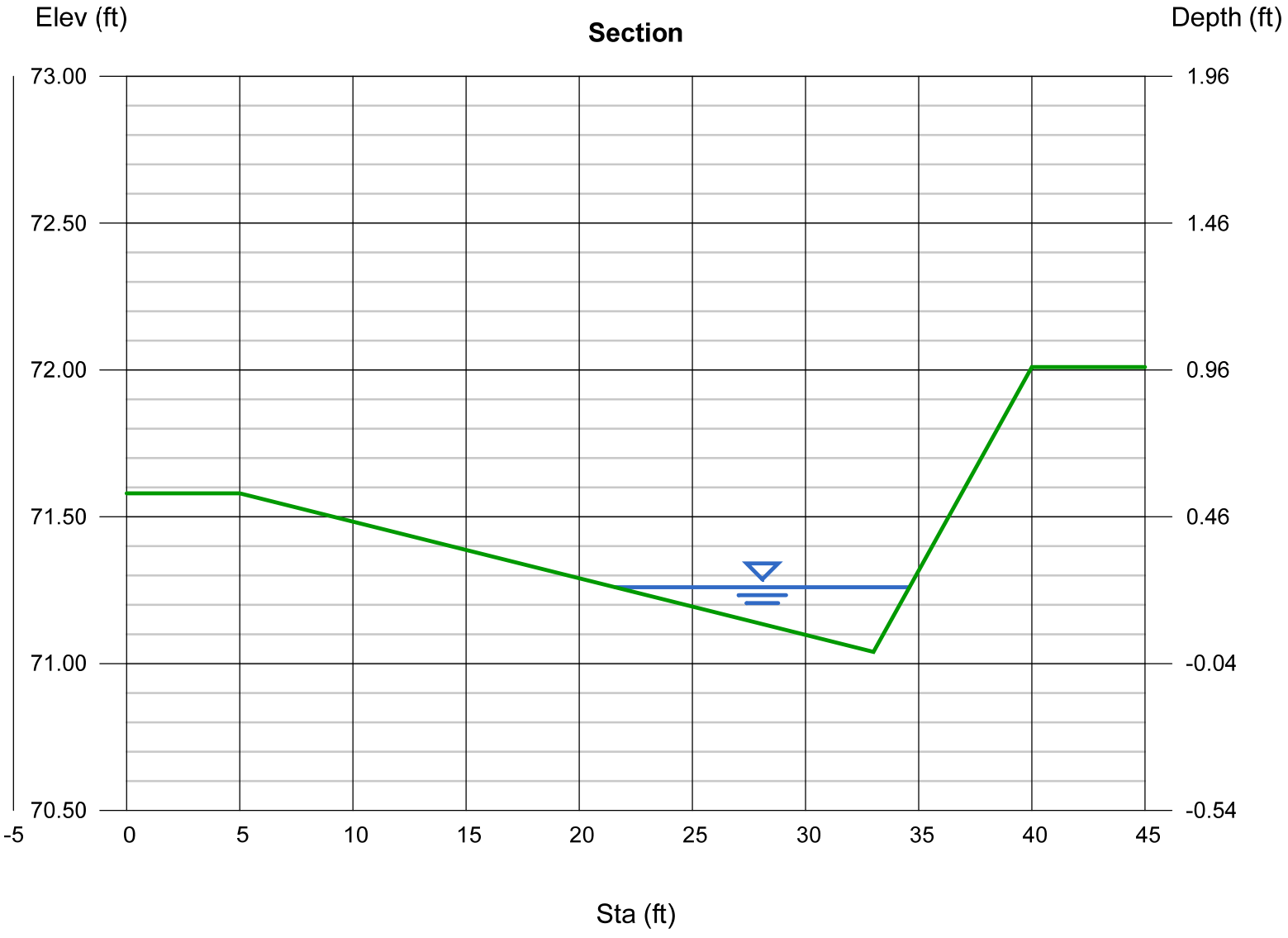
Calculations

Compute by:	Known Q
Known Q (cfs)	= 6.32

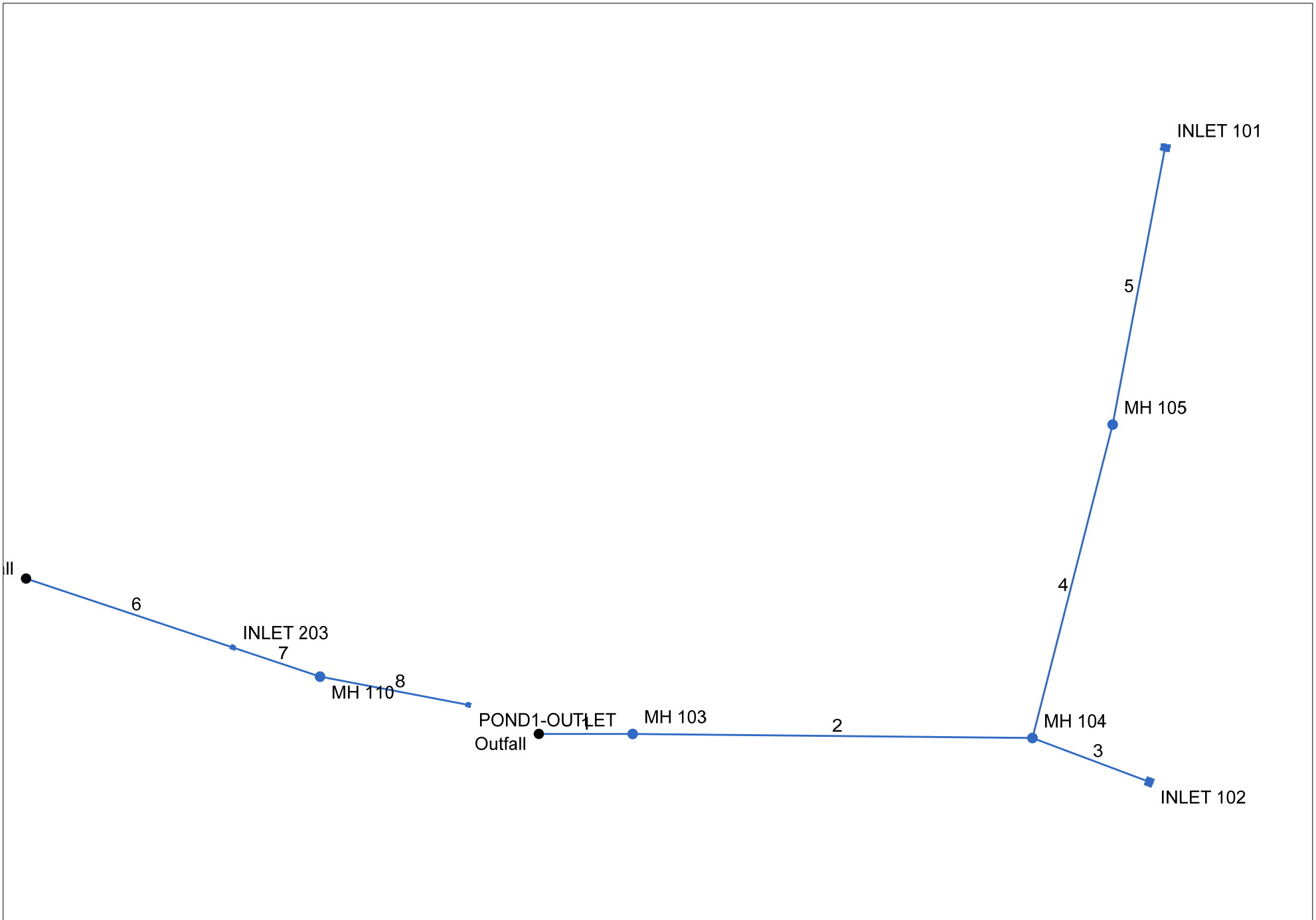
(Sta, El, n)-(Sta, El, n)... (-5.00, 71.58, 0.013)-(33.00, 71.04, 0.013)-(40.00, 72.01, 0.013)

Highlighted

Depth (ft)	= 0.22
Q (cfs)	= 6.320
Area (sqft)	= 1.43
Velocity (ft/s)	= 4.42
Wetted Perim (ft)	= 13.01
Crit Depth, Yc (ft)	= 0.31
Top Width (ft)	= 13.00
EGL (ft)	= 0.52

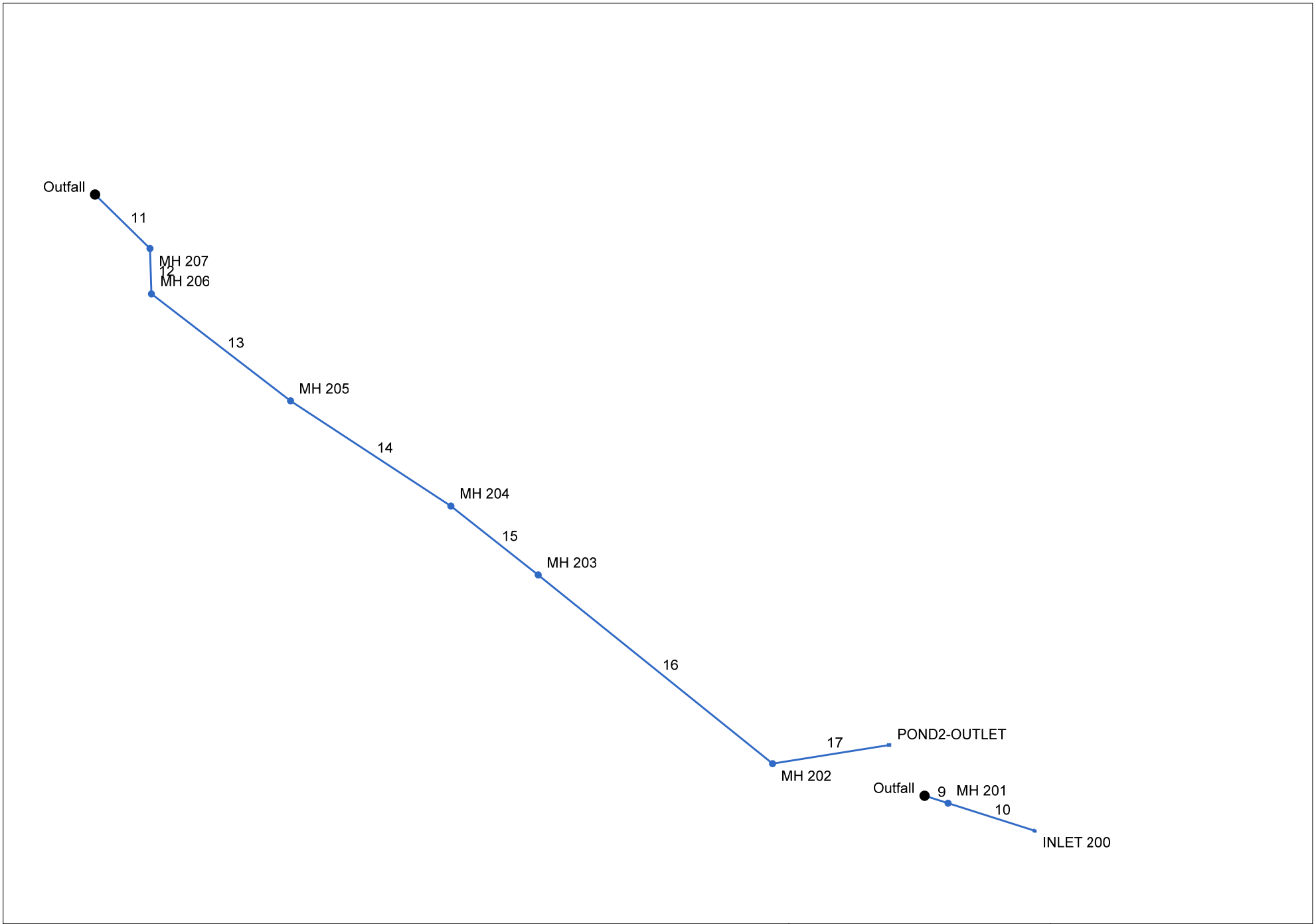


Hydraflow Storm Sewers Extension for AutoCAD® Civil 3D® 2010 Plan



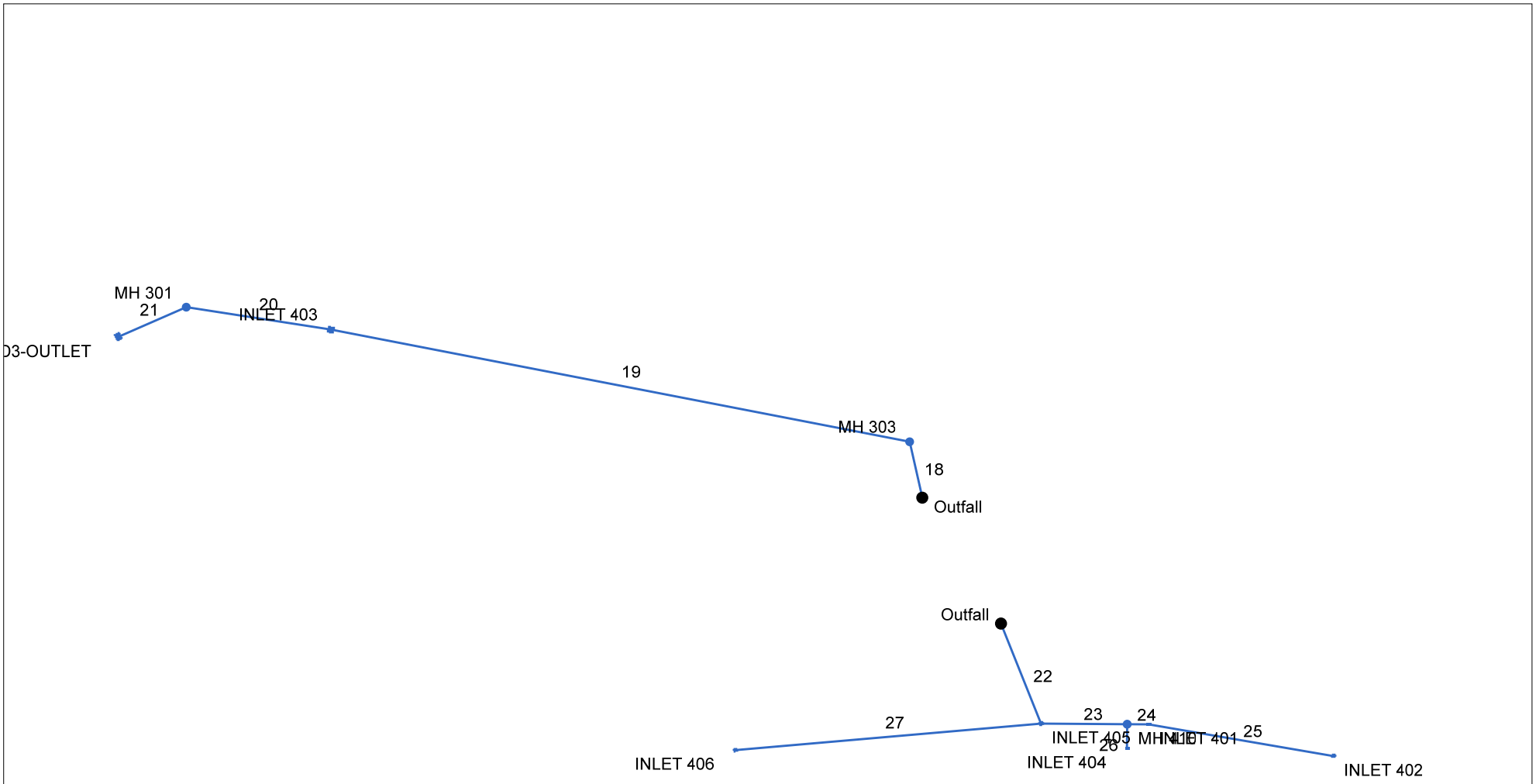
Project File: Pinnacle-AllFilings-2yr.stm	Number of lines: 27	Date: 8/1/2017

Hydraflow Storm Sewers Extension for AutoCAD® Civil 3D® 2010 Plan



Project File: Pinnacle-AllFilings-2yr.stm	Number of lines: 9	Date: 8/7/2017

Hydraflow Storm Sewers Extension for AutoCAD® Civil 3D® 2010 Plan



Project File: Pinnacle-AllFilings-2yr.stm	Number of lines: 10	Date: 8/7/2017

Hydraulic Grade Line Computations 2 YR STORM EVENT

Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
			Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf		Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf	Ave Sf	Enrgy loss		
	(in)	(cfs)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(ft)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(%)	(ft)	(K)	(ft)
1	18	1.47	4800.17	4800.63	0.46	0.46	3.17	0.16	4800.79	0.458	42.946	4801.04	4801.50	0.46**	0.46	3.17	0.16	4801.66	0.459	0.459	n/a	0.15	0.02
2	18	1.47	4808.50	4808.96	0.46*	0.46	3.17	0.16	4809.12	0.458	183.084	4848.05	4848.51	0.46**	0.46	3.17	0.16	4848.67	0.459	0.459	n/a	0.98	0.15
3	18	0.62	4856.50	4856.80	0.30*	0.25	2.46	0.09	4856.90	0.450	57.005	4870.50	4870.80	0.30**	0.25	2.46	0.09	4870.90	0.451	0.451	n/a	1.00	0.09
4	18	0.85	4848.05	4848.51	0.46	0.46	1.83	0.05	4848.57	0.153	147.712	4848.50	4848.87	0.36	0.33	2.56	0.10	4848.97	0.390	0.272	0.401	0.15	0.02
5	18	0.85	4848.50	4848.88	0.38	0.35	2.42	0.09	4848.97	0.332	128.557	4868.50	4868.85 j	0.35**	0.32	2.69	0.11	4868.97	0.450	0.391	n/a	1.00	0.11
6	12	0.98	4782.00	4782.42	0.42*	0.31	3.13	0.15	4782.57	0.559	99.621	4784.70	4785.12	0.42**	0.31	3.13	0.15	4785.27	0.559	0.559	n/a	0.50	0.08
7	12	0.52	4784.90	4785.21	0.31*	0.20	2.56	0.10	4785.31	0.517	42.274	4786.13	4786.44	0.31**	0.20	2.55	0.10	4786.54	0.516	0.517	n/a	0.16	n/a
8	12	0.52	4790.00	4790.31	0.31*	0.20	2.56	0.10	4790.41	0.517	69.031	4799.00	4799.31	0.31**	0.20	2.55	0.10	4799.41	0.516	0.517	n/a	1.00	n/a
9	18	4.93	4747.30	4748.15	0.85	1.03	4.77	0.35	4748.50	0.584	18.945	4747.44	4748.29	0.85**	1.03	4.76	0.35	4748.64	0.581	0.582	0.110	0.15	0.05
10	18	4.93	4748.73	4749.58	0.85*	1.03	4.79	0.36	4749.93	0.589	69.639	4761.66	4762.51	0.85**	1.03	4.79	0.36	4762.86	0.589	0.589	n/a	1.00	0.36
11	18	0.52	4704.25	4704.53	0.28	0.23	2.28	0.08	4704.61	0.425	59.389	4704.55	4704.83	0.28**	0.23	2.30	0.08	4704.91	0.435	0.430	0.255	0.74	0.06
12	18	0.52	4704.55	4704.89	0.34	0.30	1.73	0.05	4704.94	0.195	35.020	4704.72	4705.00	0.28**	0.23	2.30	0.08	4705.08	0.435	0.315	0.110	0.81	0.07
13	18	0.52	4704.72	4705.07	0.35	0.31	1.69	0.04	4705.11	0.182	135.283	4709.50	4709.78 j	0.28**	0.22	2.34	0.09	4709.86	0.454	0.318	n/a	0.15	0.01
14	18	0.52	4714.64	4714.92	0.28*	0.22	2.34	0.08	4715.00	0.453	147.888	4720.48	4720.76	0.28**	0.22	2.34	0.09	4720.84	0.454	0.454	n/a	0.15	0.01
15	18	0.52	4720.63	4720.91	0.28*	0.22	2.34	0.08	4720.99	0.453	85.726	4723.39	4723.67	0.28**	0.22	2.34	0.09	4723.75	0.454	0.454	n/a	0.15	0.01
16	18	0.52	4723.52	4723.80	0.28*	0.22	2.34	0.08	4723.88	0.453	232.048	4736.80	4737.08	0.28**	0.22	2.34	0.09	4737.16	0.454	0.454	n/a	0.78	0.07
17	18	0.52	4737.00	4737.28	0.28*	0.22	2.34	0.08	4737.36	0.453	90.649	4746.08	4746.36	0.28**	0.22	2.34	0.09	4746.44	0.454	0.454	n/a	1.00	0.09
18	18	0.38	4739.00	4739.24	0.24	0.18	2.08	0.07	4739.31	0.423	37.119	4739.63	4739.87 j	0.24**	0.18	2.14	0.07	4739.94	0.461	0.442	n/a	0.93	0.07
19	18	0.38	4739.63	4739.87	0.24*	0.18	2.14	0.07	4739.94	0.461	359.380	4742.28	4742.52	0.24**	0.18	2.14	0.07	4742.59	0.461	0.461	n/a	0.50	0.04
20	12	0.17	4742.28	4742.52	0.24	0.14	1.21	0.02	4742.54	0.154	88.573	4746.71	4746.89 j	0.17**	0.09	1.84	0.05	4746.94	0.514	0.334	n/a	0.63	n/a
21	12	0.17	4747.21	4747.39	0.17*	0.09	1.84	0.05	4747.44	0.514	45.886	4751.00	4751.18	0.17**	0.09	1.84	0.05	4751.23	0.514	0.514	n/a	1.00	n/a
22	18	8.84	4739.00	4740.14	1.14	1.44	6.13	0.58	4740.73	0.826	70.493	4741.90	4743.04 j	1.13**	1.43	6.16	0.59	4743.63	0.835	0.831	n/a	1.50	n/a

Project File: Pinnacle-AllFilings-2yr.stm | Number of lines: 27 | Run Date: 8/1/2017

Notes: * depth assumed.; ** Critical depth.; j-Line contains hyd. jump. ; c = cir e = ellip b = box

Hydraulic Grade Line Computations 2 YR STORM EVENT

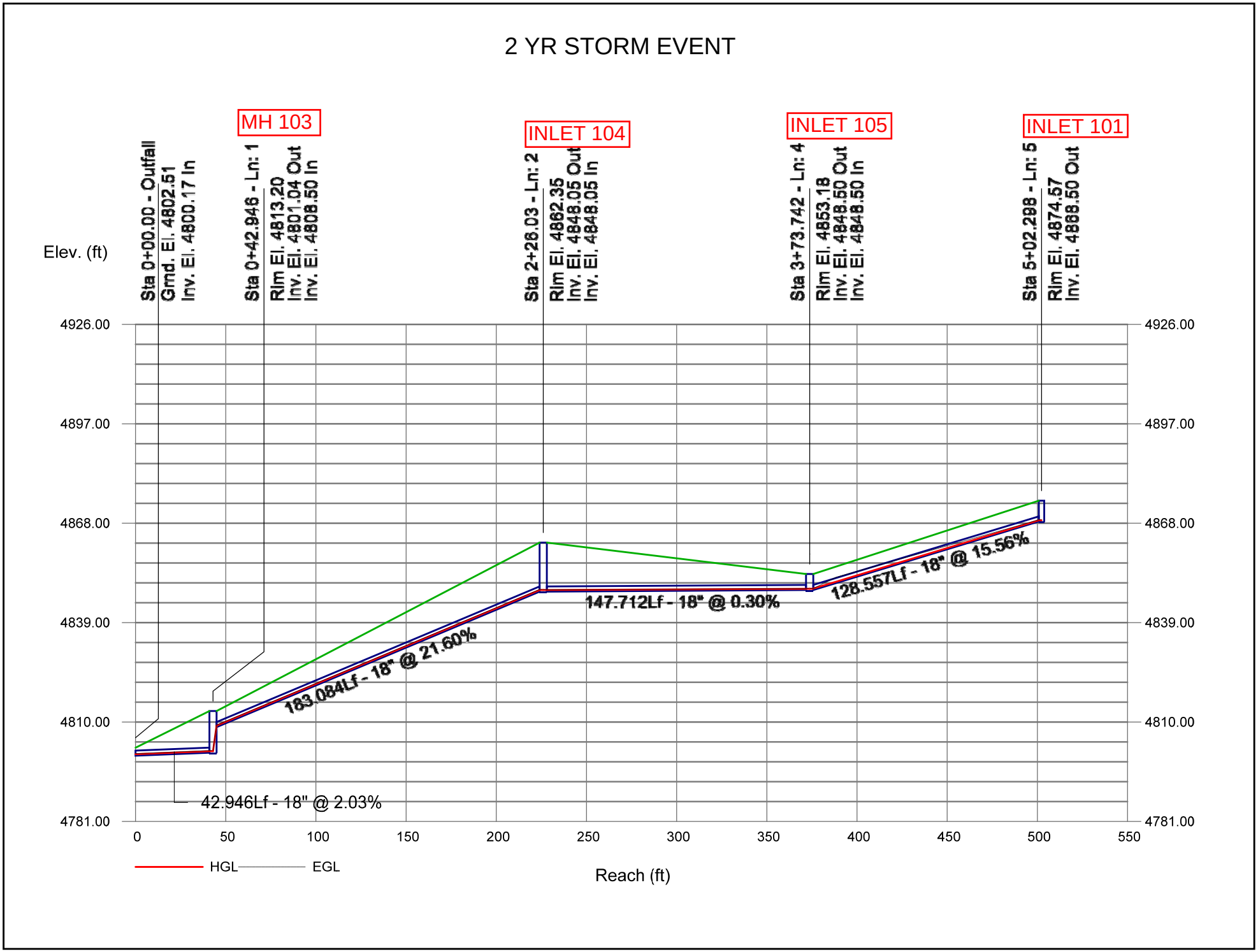
Line	Size	Q	Downstream								Len	Upstream								Check		JL coeff	Minor loss
			Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf		Invert elev	HGL elev	Depth	Area	Vel	Vel head	EGL elev	Sf	Ave Sf	Enrgy loss		
	(in)	(cfs)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(ft)	(ft)	(ft)	(ft)	(sqft)	(ft/s)	(ft)	(ft)	(%)	(%)	(ft)	(K)	(ft)
23	18	5.82	4741.90	4743.04	1.13	1.43	4.06	0.26	4743.29	0.362	52.274	4742.96	4743.88 j	0.92**	1.14	5.12	0.41	4744.29	0.635	0.498	n/a	1.00	0.41
24	18	4.87	4742.96	4743.88	0.92	1.14	4.28	0.28	4744.17	0.444	12.942	4743.22	4744.06 j	0.84**	1.02	4.77	0.35	4744.42	0.586	0.515	n/a	0.50	n/a
25	18	1.43	4743.22	4744.06	0.84	1.02	1.40	0.03	4744.09	0.051	113.583	4747.00	4747.46 j	0.46**	0.45	3.14	0.15	4747.61	0.458	0.254	n/a	1.00	0.15
26	12	0.95	4742.96	4743.88	0.92	0.76	1.26	0.02	4743.91	0.062	15.997	4744.56	4744.97 j	0.41**	0.31	3.10	0.15	4745.12	0.556	0.309	n/a	1.00	0.15
27	18	1.50	4741.90	4743.04	1.13	1.43	1.05	0.02	4743.05	0.024	186.210	4748.41	4748.88 j	0.47**	0.47	3.19	0.16	4749.04	0.459	0.242	n/a	1.00	n/a

Project File: Pinnacle-AllFilings-2yr.stm | Number of lines: 27 | Run Date: 8/1/2017

Notes: * depth assumed.; ** Critical depth.; j-Line contains hyd. jump. ; c = cir e = ellip b = box

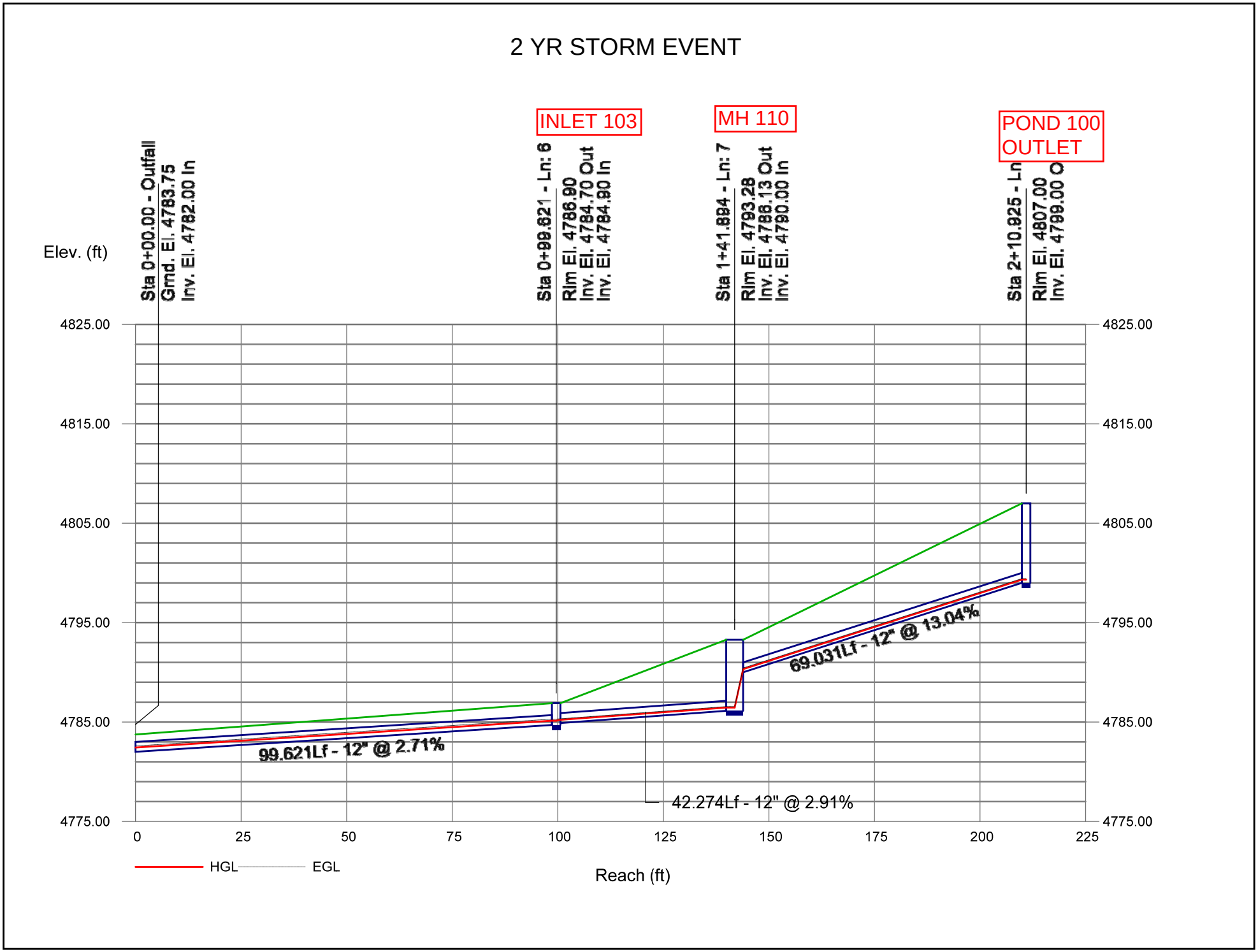
Storm Sewer Profile

Proj. file: Pinnacle-AllFilings-2yr.stm



Storm Sewer Profile

Proj. file: Pinnacle-AllFilings-2yr.stm



Storm Sewer Profile

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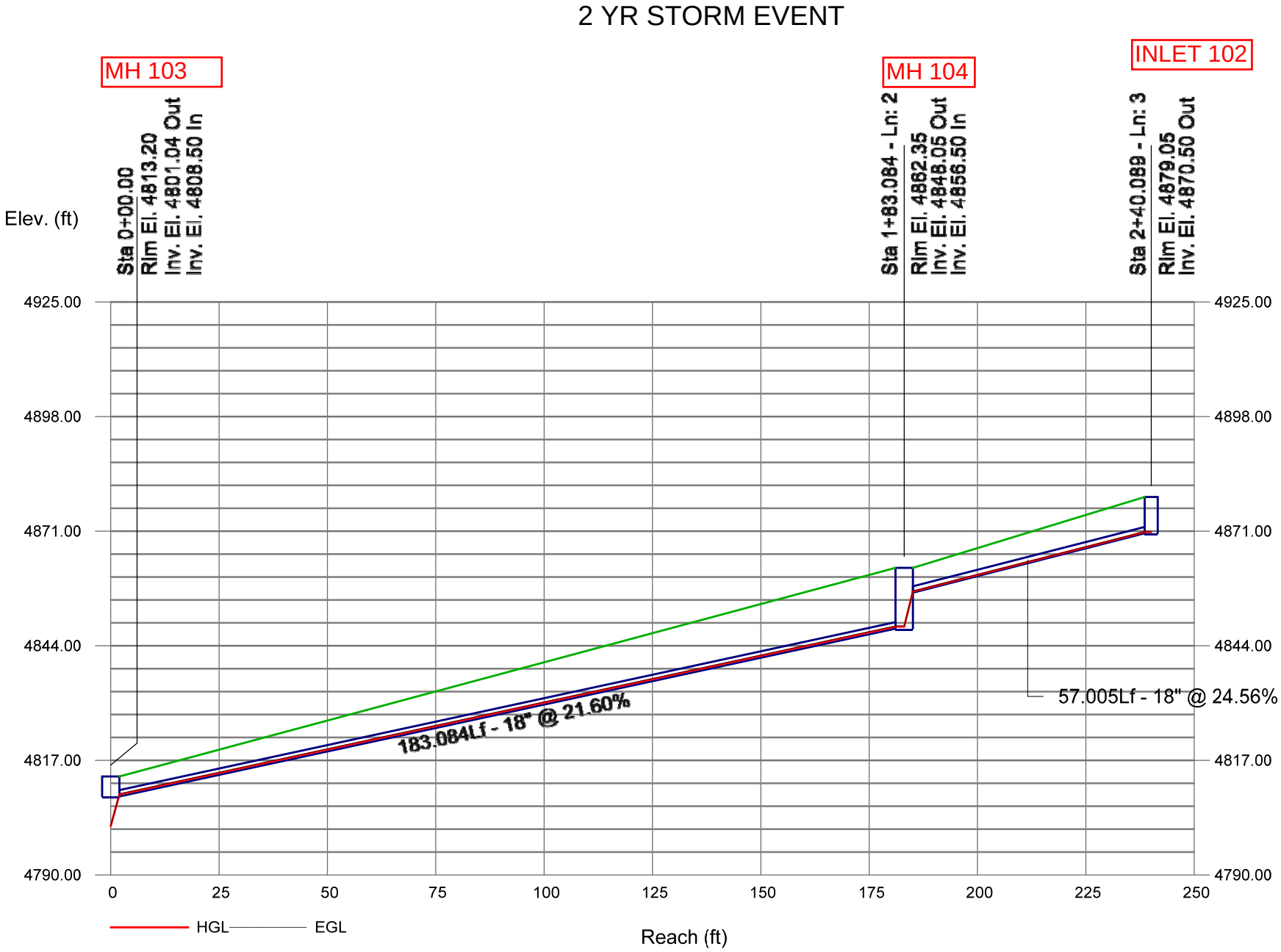

Storm Sewer Profile

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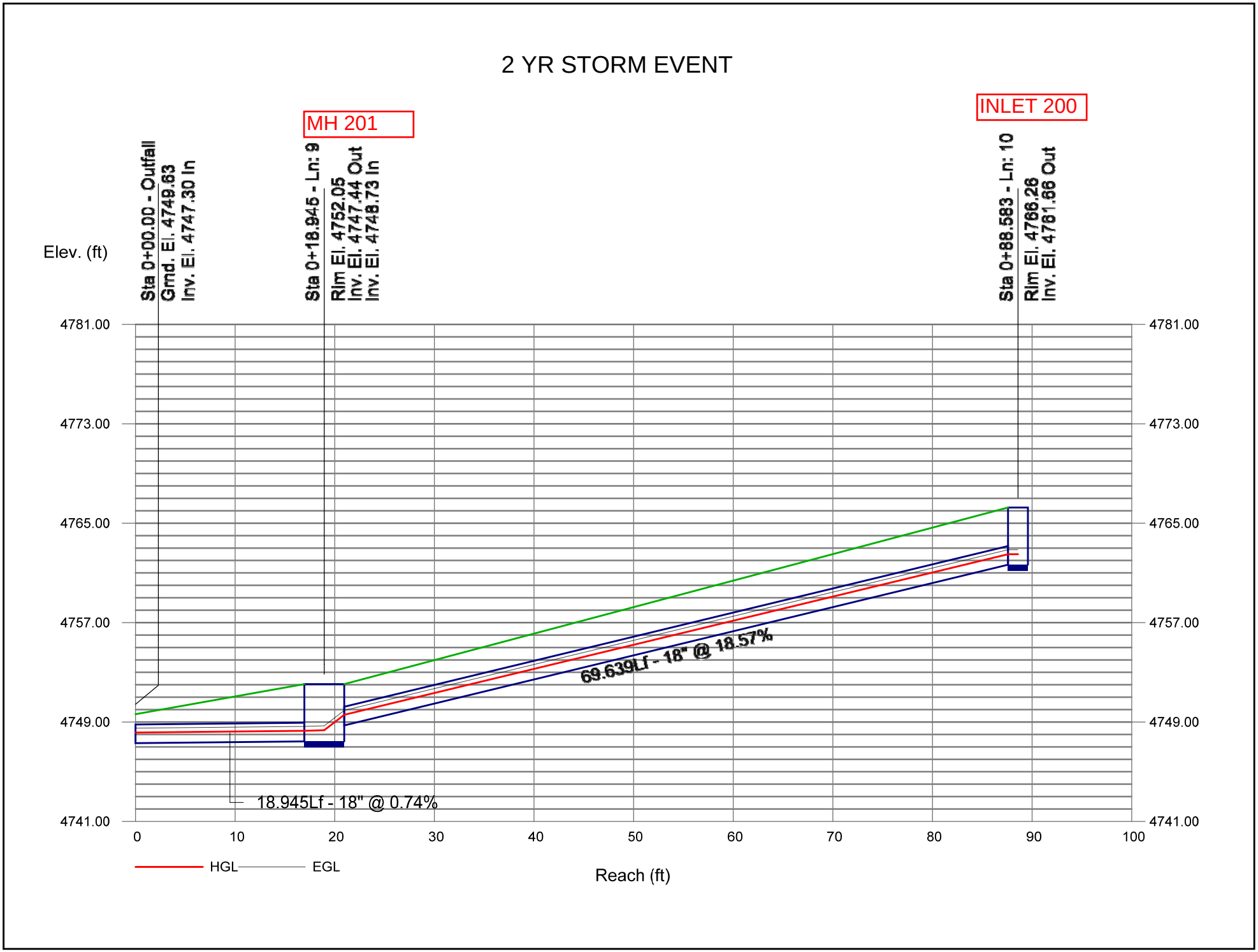

Storm Sewer Profile

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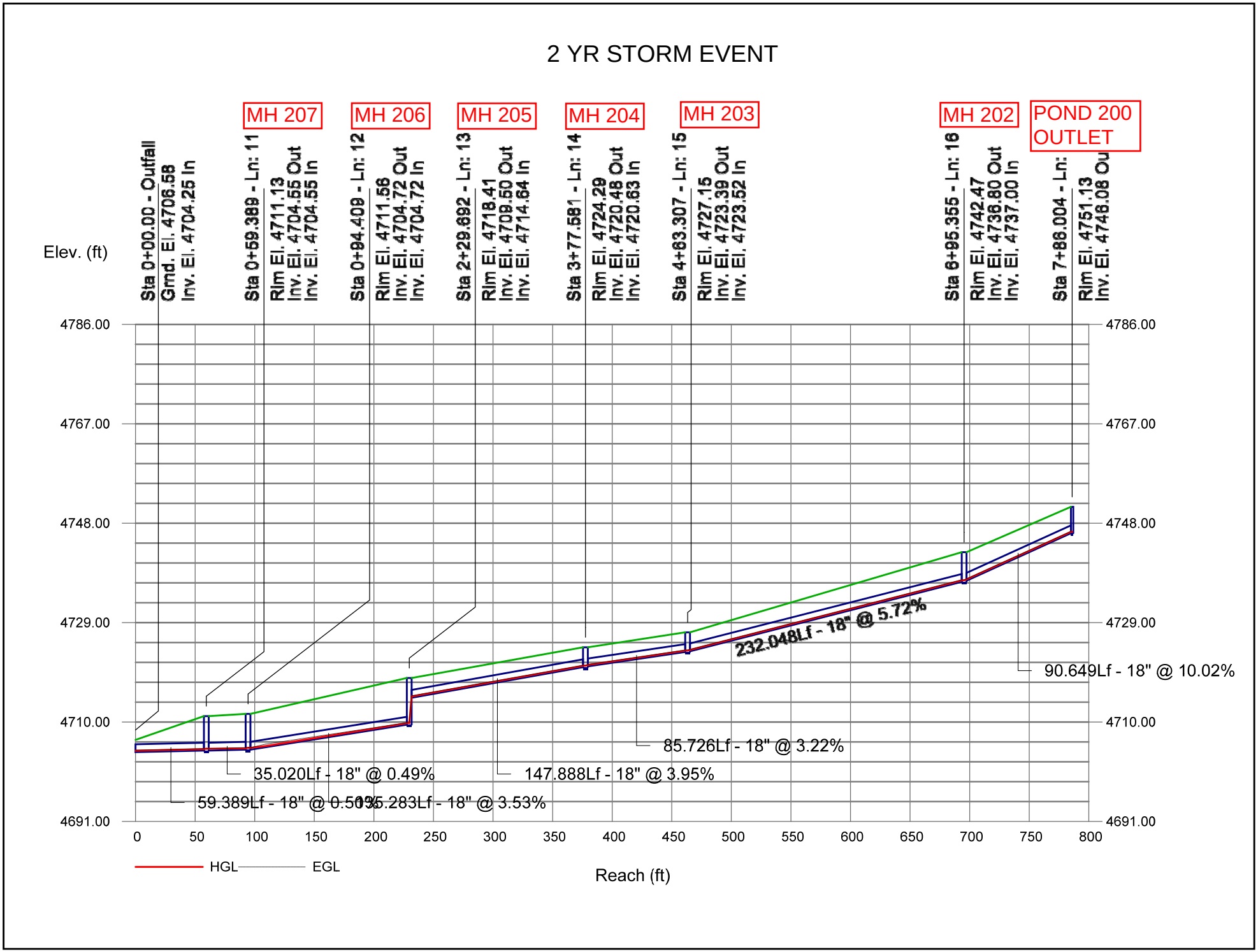

Storm Sewer Profile

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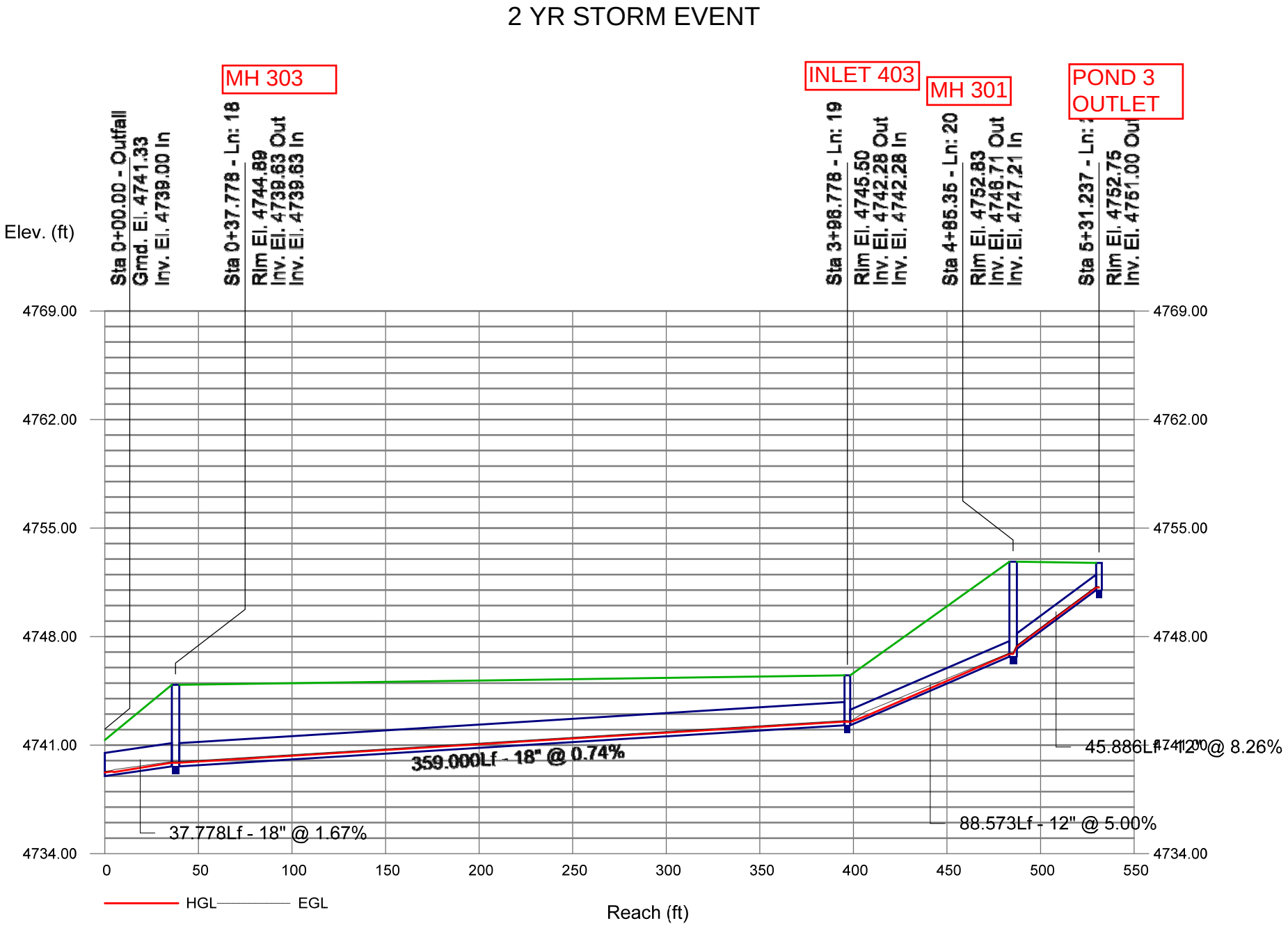

Storm Sewer Profile

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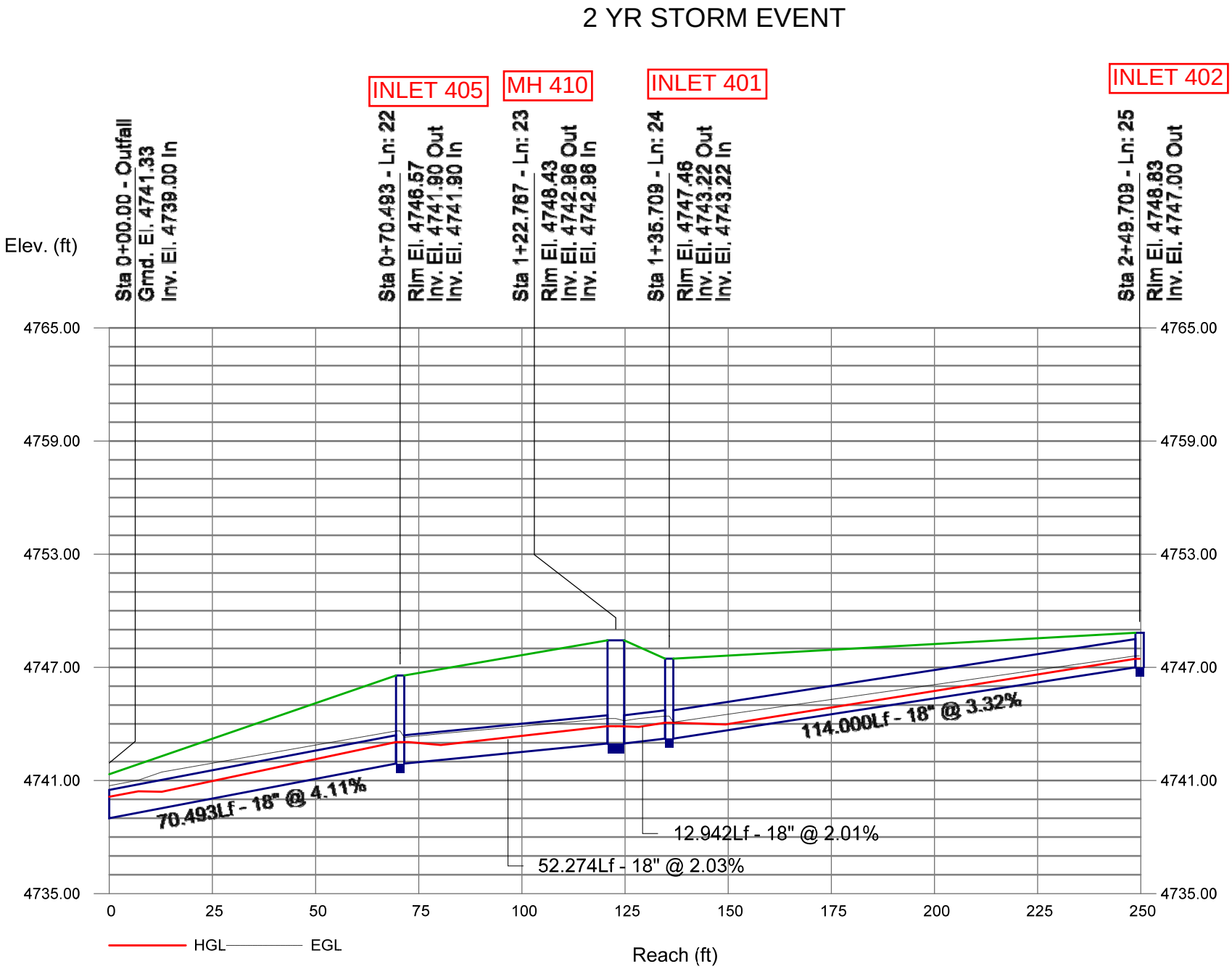

Storm Sewer Profile

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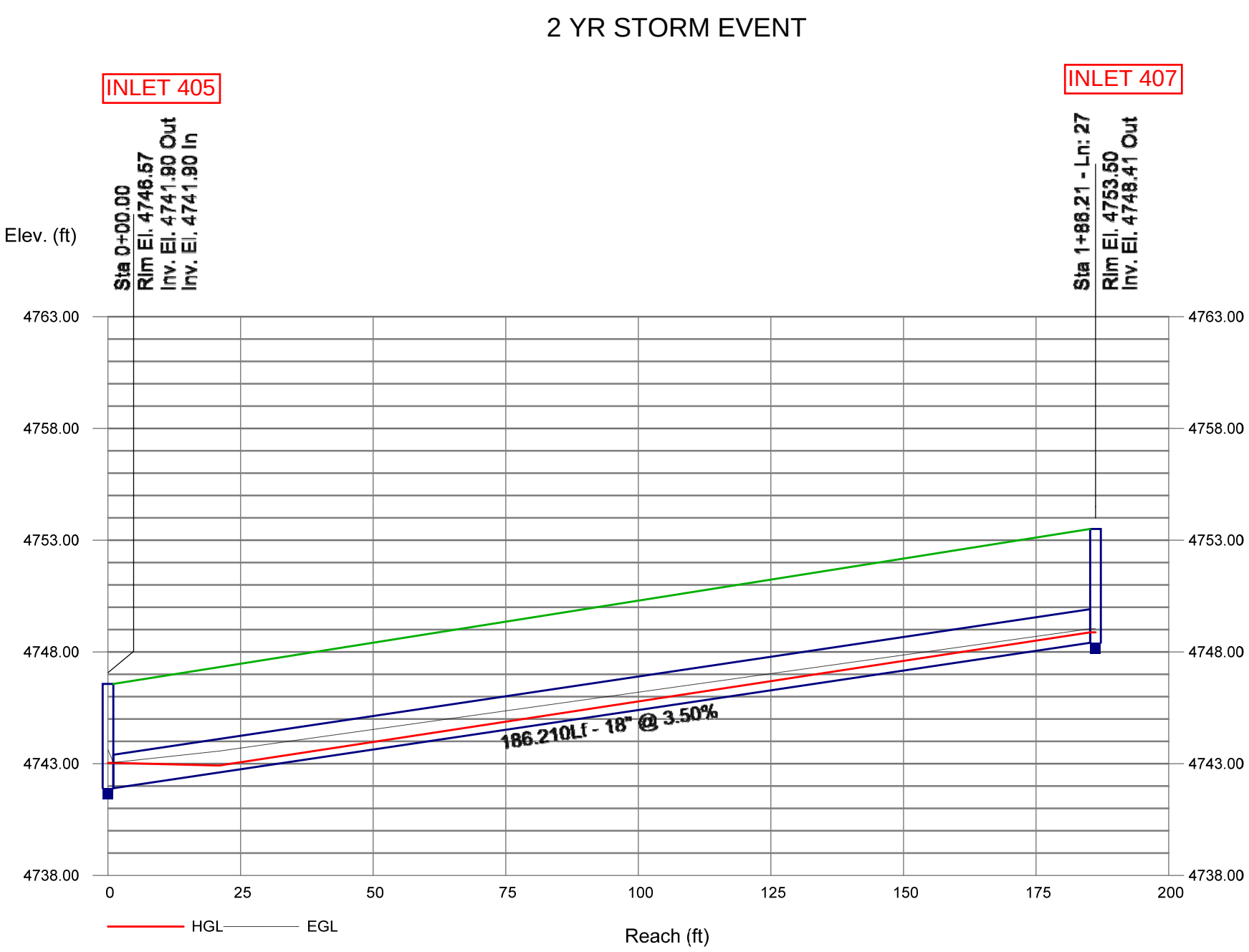

Storm Sewer Profile

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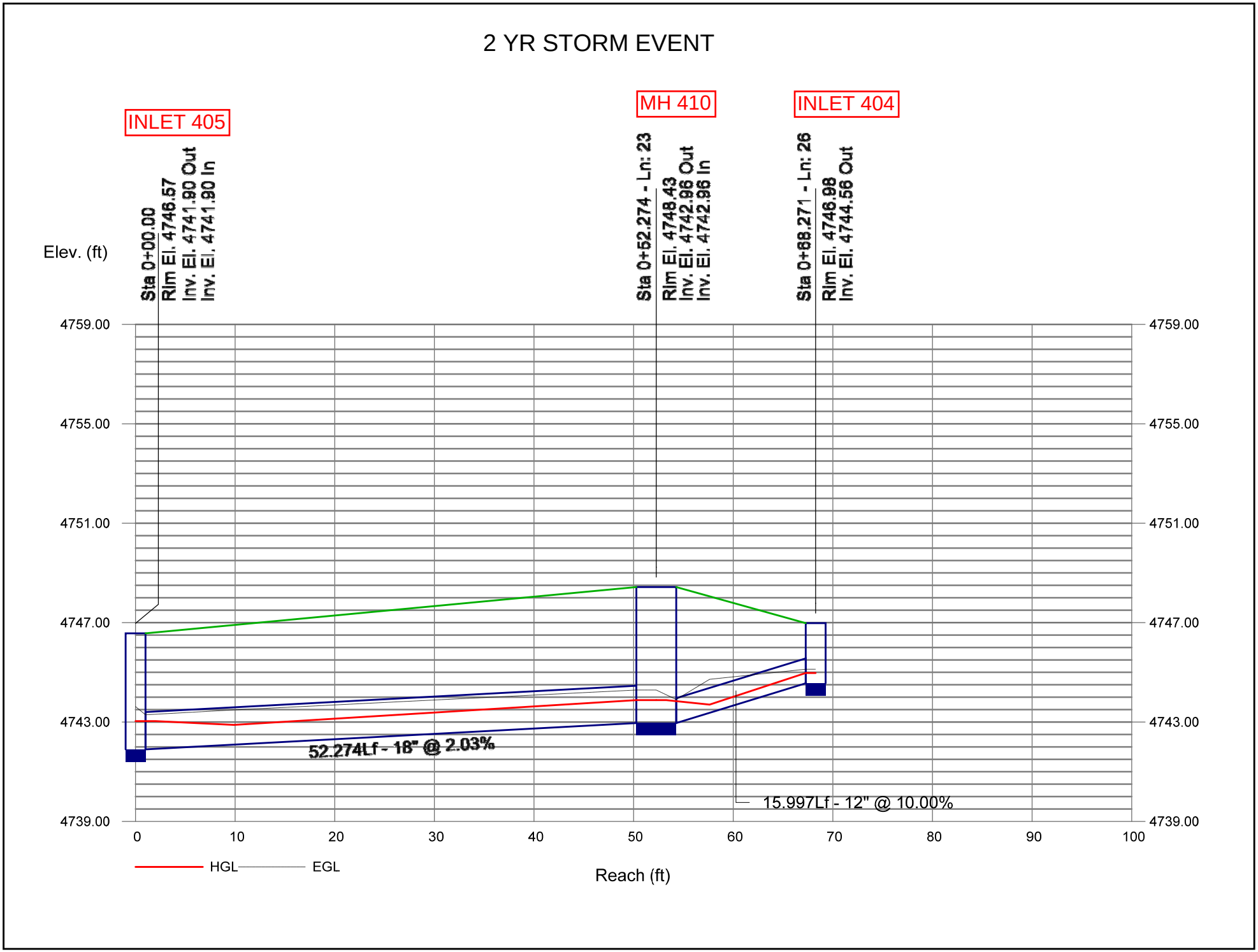
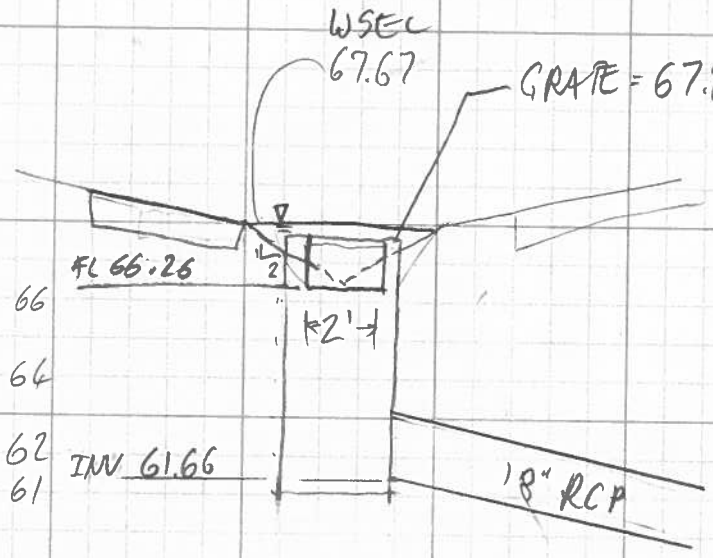


Title PINNACLE INLET 200 CAPACITY
Date 8/1/17 Job No. F04-006
By

SCALE
1' □ 1'



4' WEIR w/ 1.5' of HEAD

$Q = 3.33(4)(1.5)^{3/2}$

$Q = 24.47$ cfs

18" ORIFICE w/ 7' of HEAD

$Q = 0.67A(2gH)^{1/2}$

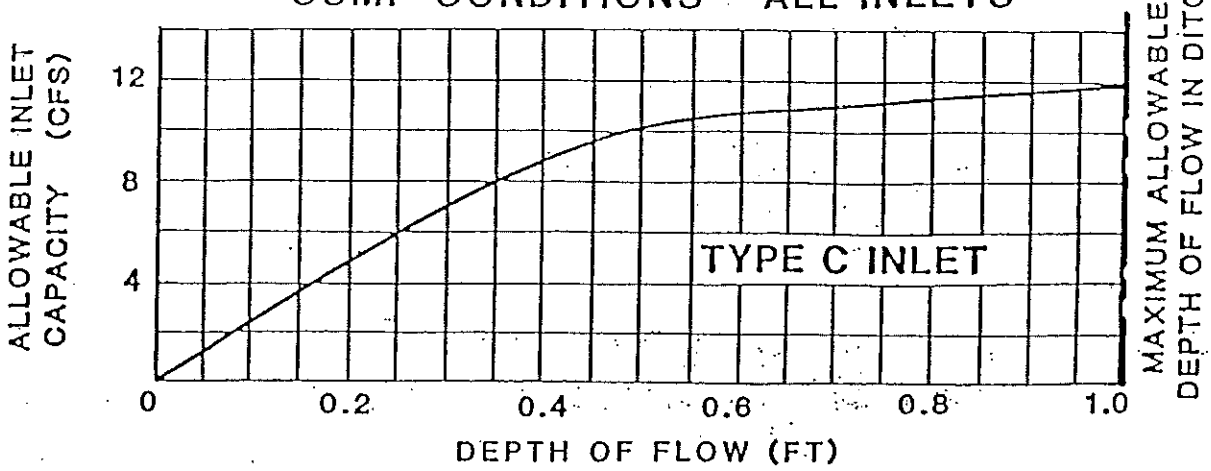
$Q = 0.67\left(\frac{\pi 1.5^2}{4}\right)(2(32.2)7)^{1/2} =$

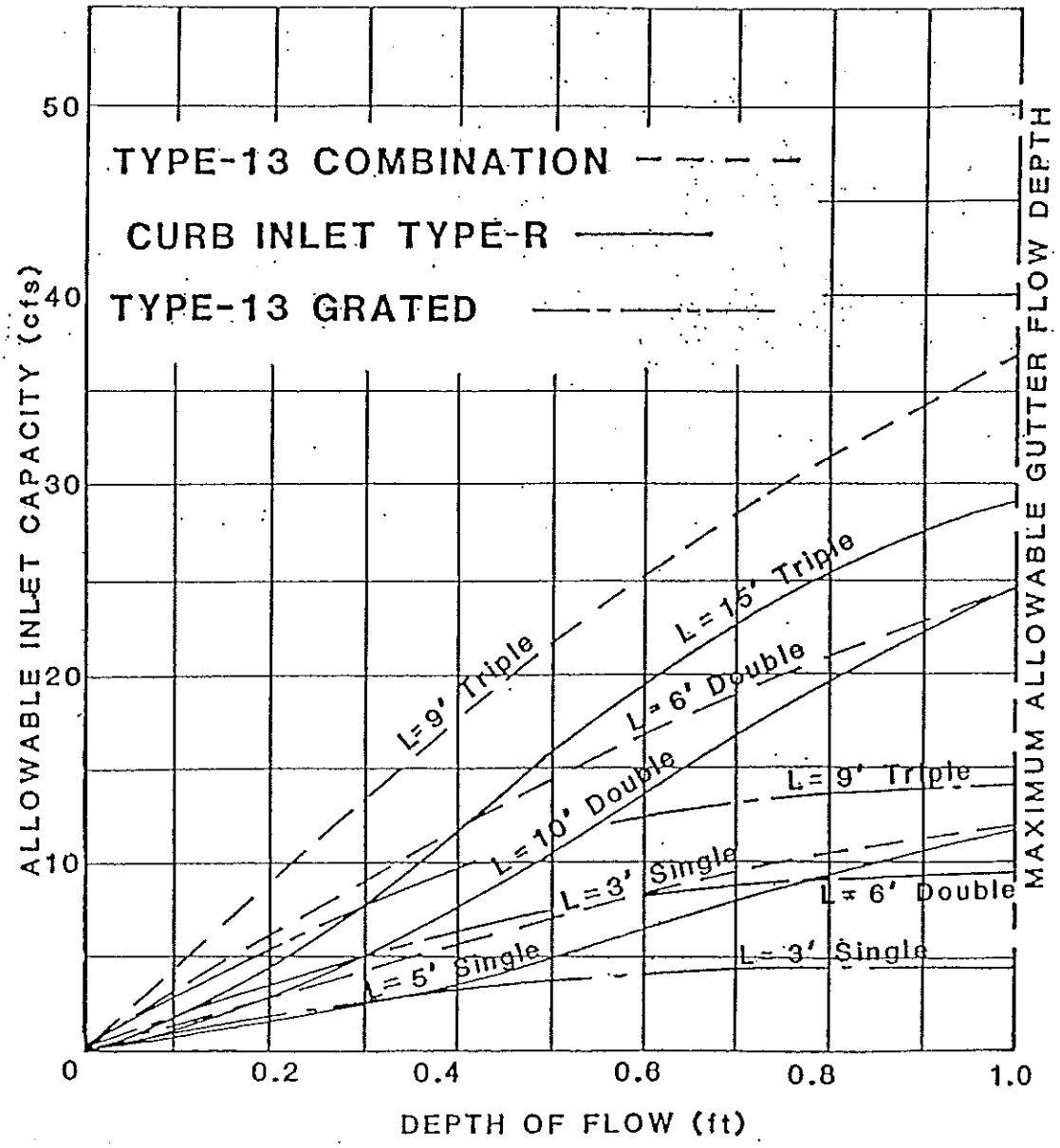
$Q = 25.13$ cfs

INLET CAPACITY Q = 24.5 CFS

ALLOWABLE INLET CAPACITY

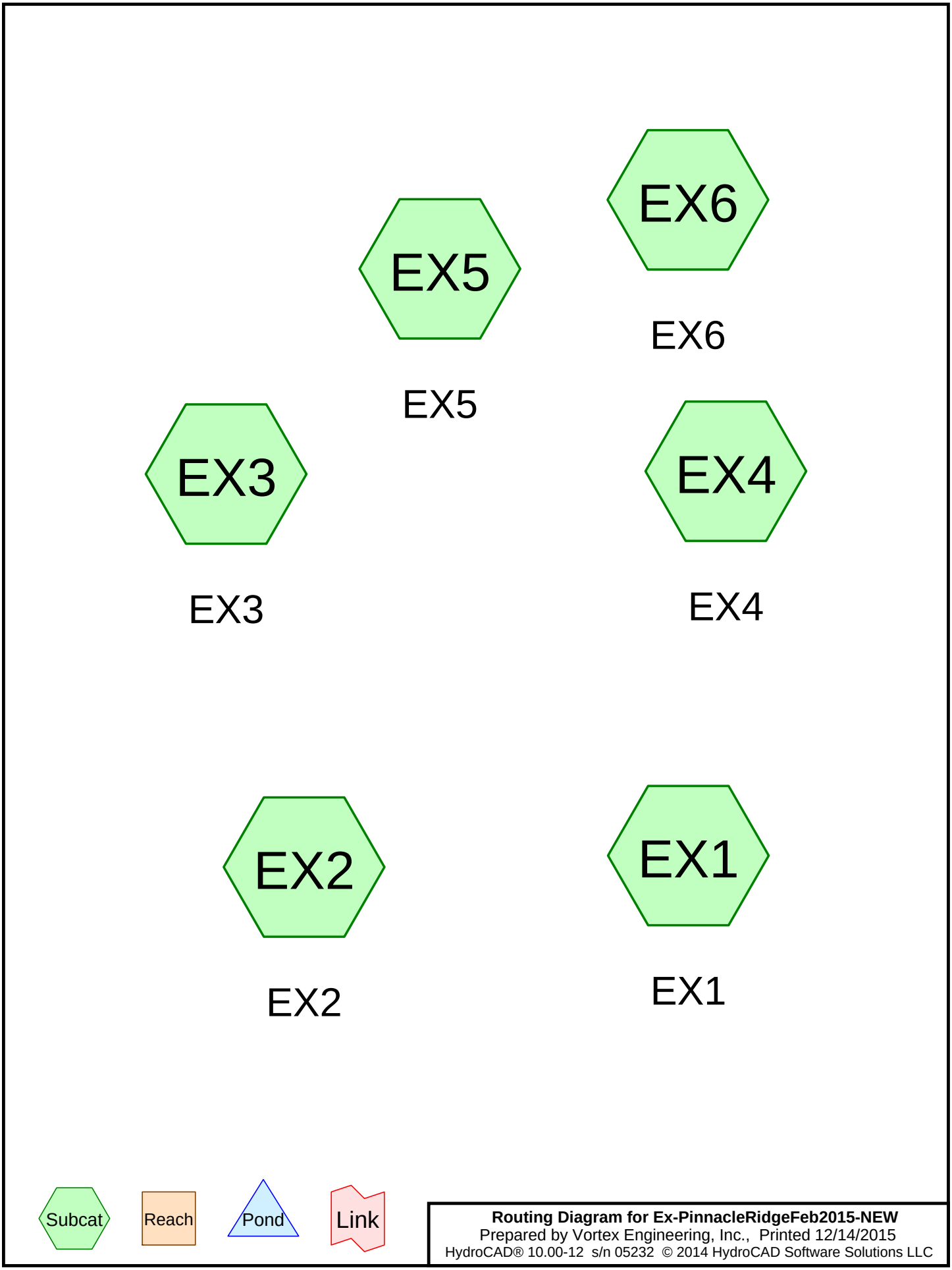
SUMP CONDITIONS - ALL INLETS





Date: Rev:	REFERENCE:

Appendix E – HYDROCAD Report



Routing Diagram for Ex-PinnacleRidgeFeb2015-NEW
Prepared by Vortex Engineering, Inc., Printed 12/14/2015
HydroCAD® 10.00-12 s/n 05232 © 2014 HydroCAD Software Solutions LLC

Summary for Subcatchment EX1: EX1

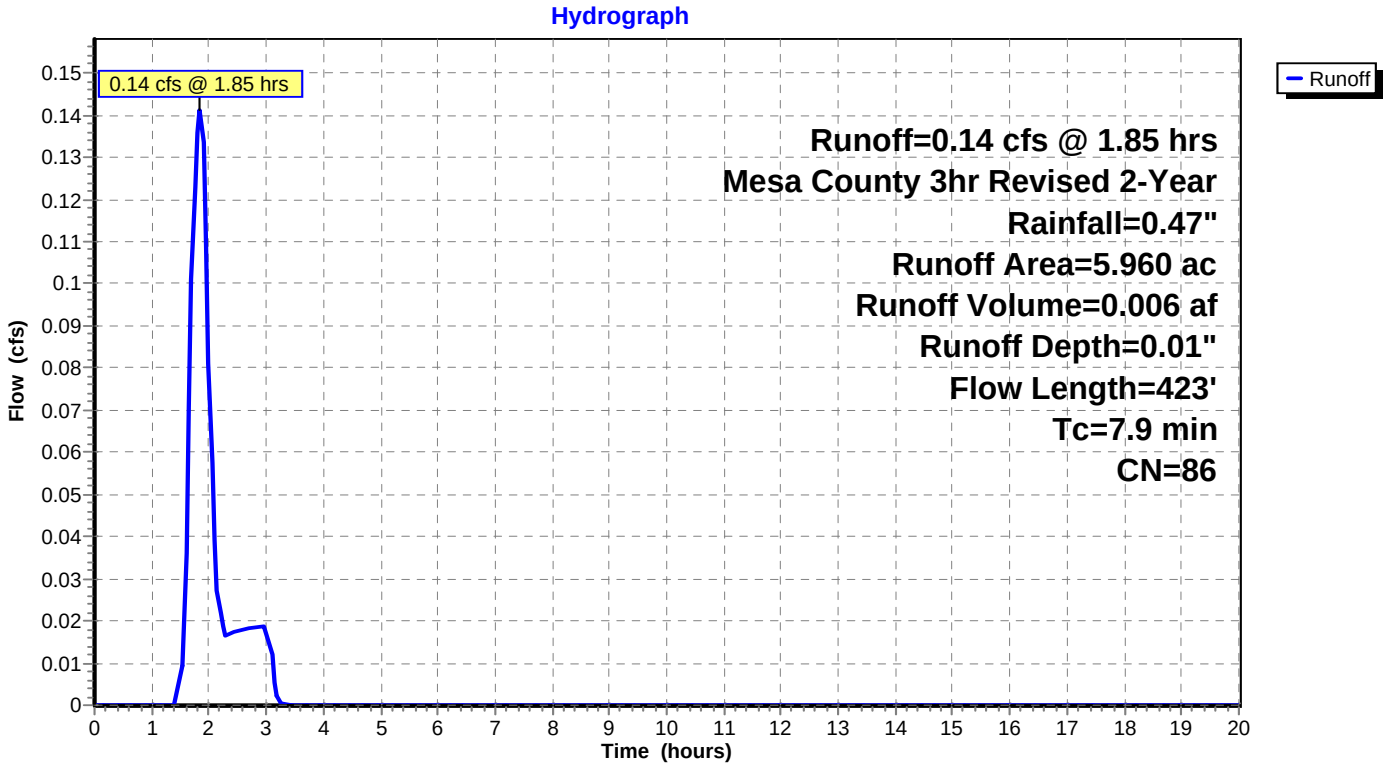
Runoff = 0.14 cfs @ 1.85 hrs, Volume= 0.006 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
5.960	86	Desert shrub range, Fair, HSG D
5.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0200	0.26		**Sheet Flow,** n= 0.026 P2= 0.46"
1.5	323	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
7.9	423	Total			

Subcatchment EX1: EX1



Summary for Subcatchment EX2: EX2

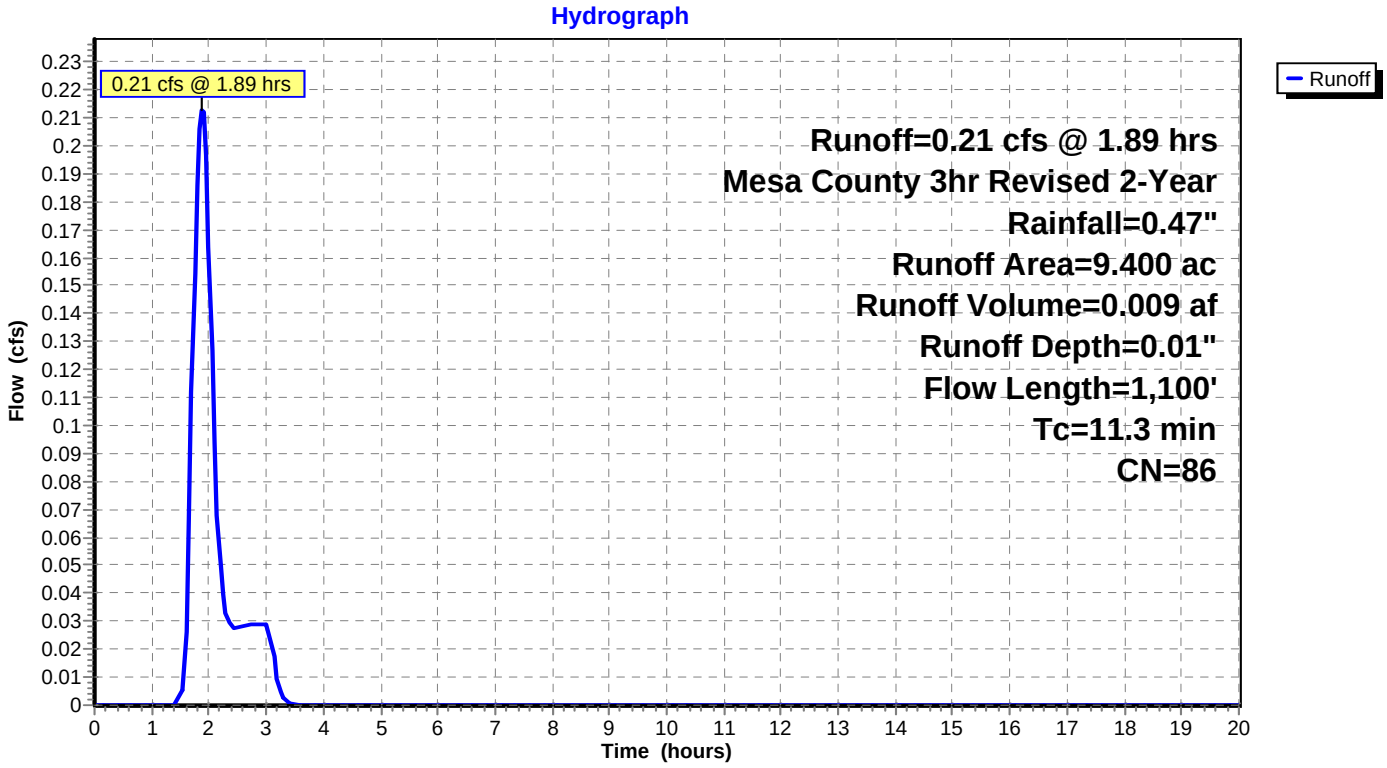
Runoff = 0.21 cfs @ 1.89 hrs, Volume= 0.009 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
9.400	86	Desert shrub range, Fair, HSG D
9.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	100	0.0200	0.25		**Sheet Flow,** n= 0.028 P2= 0.46"
4.6	1,000	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
11.3	1,100	Total			

Subcatchment EX2: EX2



Summary for Subcatchment EX3: EX3

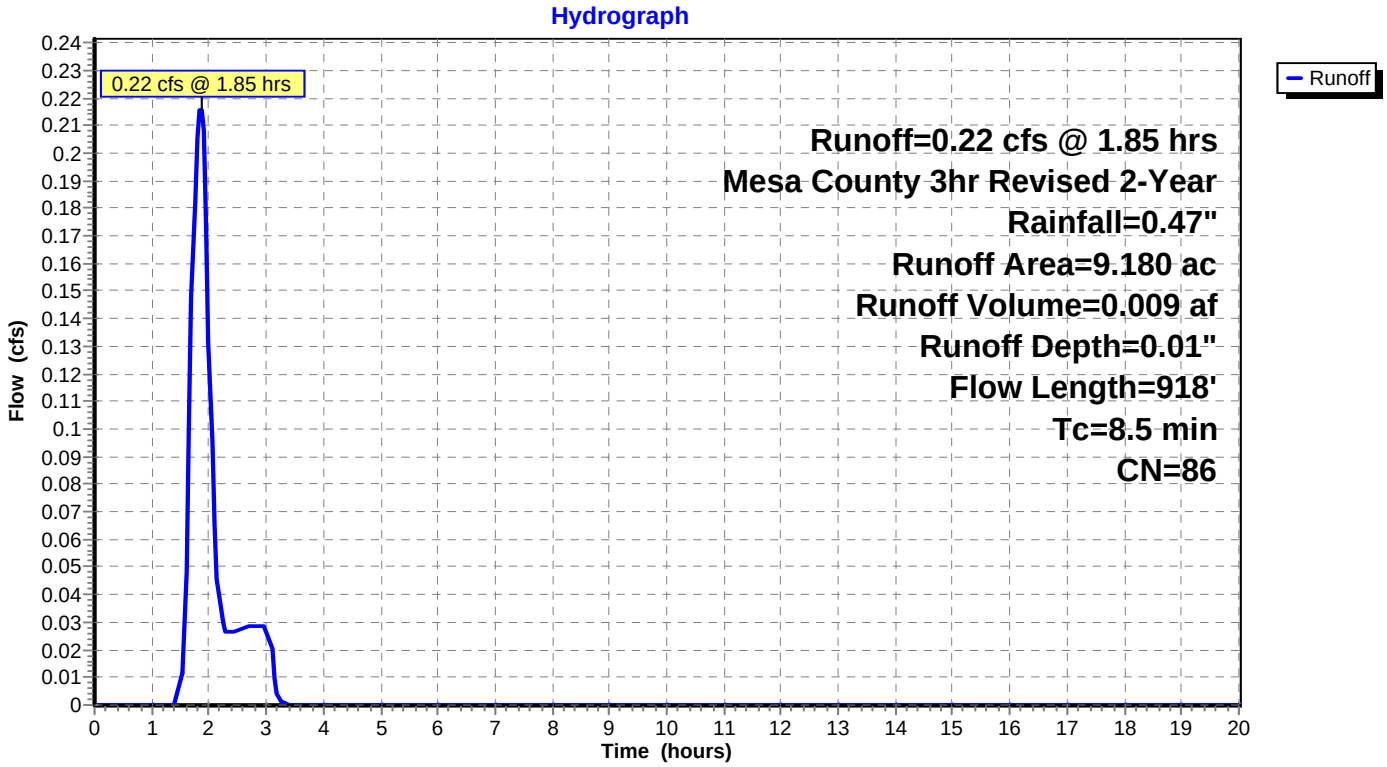
Runoff = 0.22 cfs @ 1.85 hrs, Volume= 0.009 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
9.180	86	Desert shrub range, Fair, HSG D
9.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	100	0.1600	0.57		**Sheet Flow,** n= 0.028 P2= 0.46"
2.6	466	0.1800	2.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.0	352	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	918	Total			

Subcatchment EX3: EX3



Summary for Subcatchment EX4: EX4

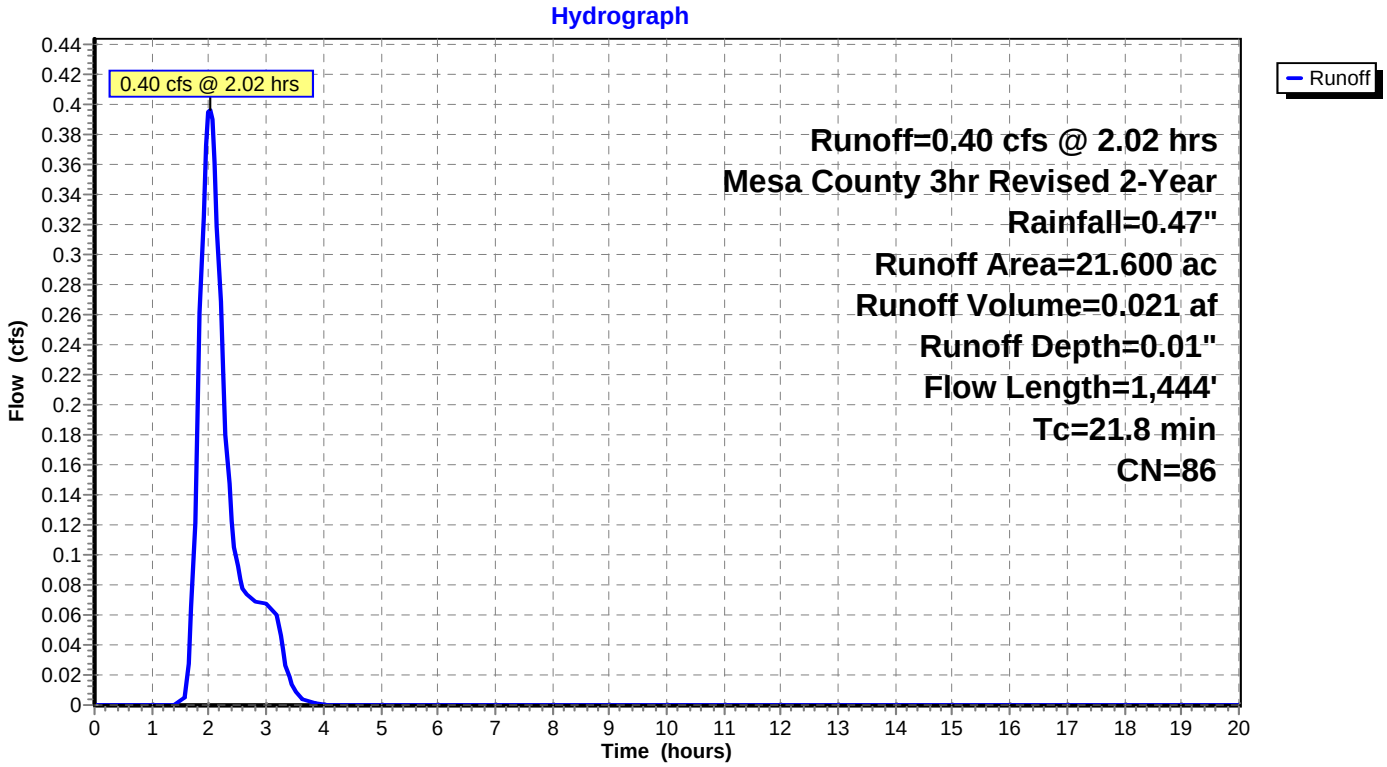
Runoff = 0.40 cfs @ 2.02 hrs, Volume= 0.021 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
21.600	86	Desert shrub range, Fair, HSG D
21.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0	192	0.0100	0.21		**Sheet Flow,** n= 0.028 P2= 0.46"
0.7	360	0.2900	8.67		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.1	892	0.0600	2.45		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
21.8	1,444	Total			

Subcatchment EX4: EX4



Summary for Subcatchment EX5: EX5

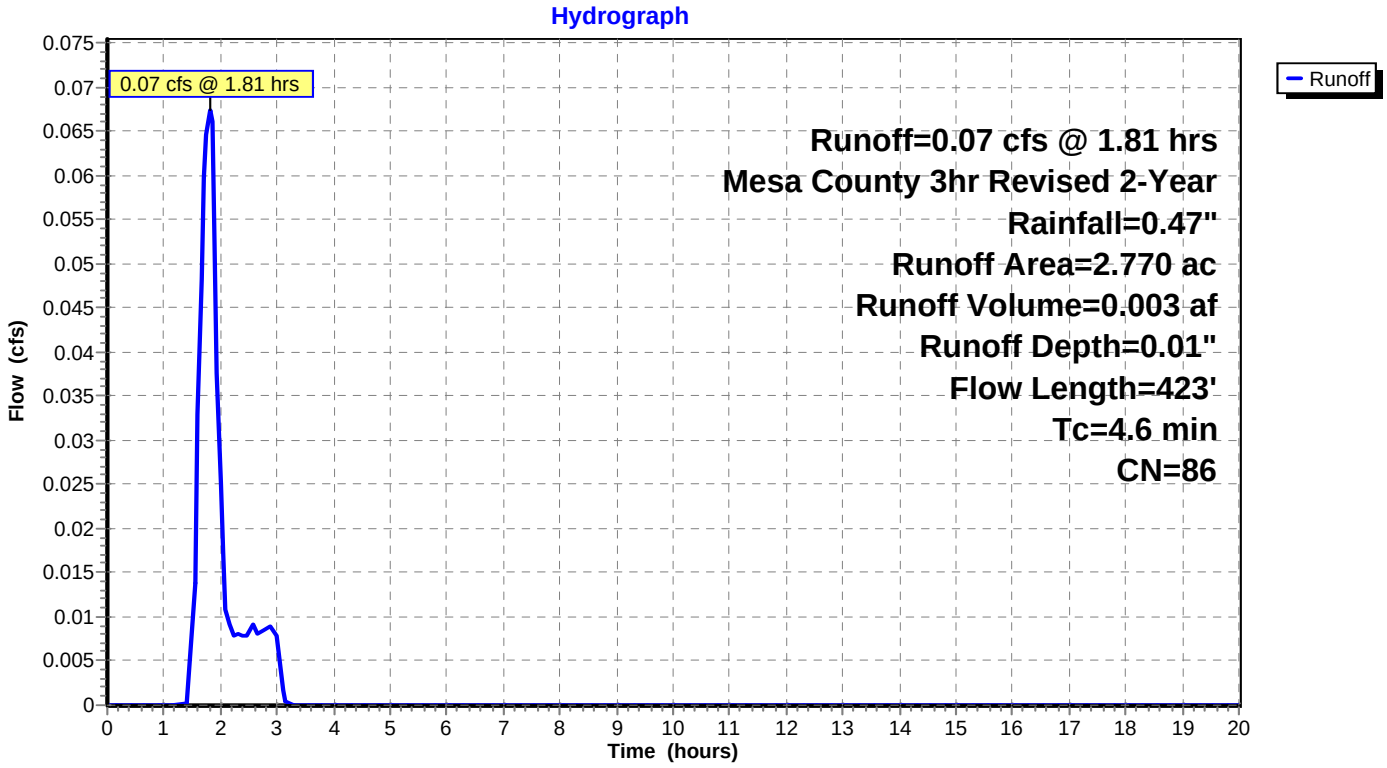
Runoff = 0.07 cfs @ 1.81 hrs, Volume= 0.003 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
2.770	86	Desert shrub range, Fair, HSG D
2.770		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.2500	0.68		**Sheet Flow,** n= 0.028 P2= 0.46"
2.1	323	0.1300	2.52		**Shallow Concentrated Flow,** Kv= 7.0 fps
4.6	423	Total			

Subcatchment EX5: EX5



Summary for Subcatchment EX6: EX6

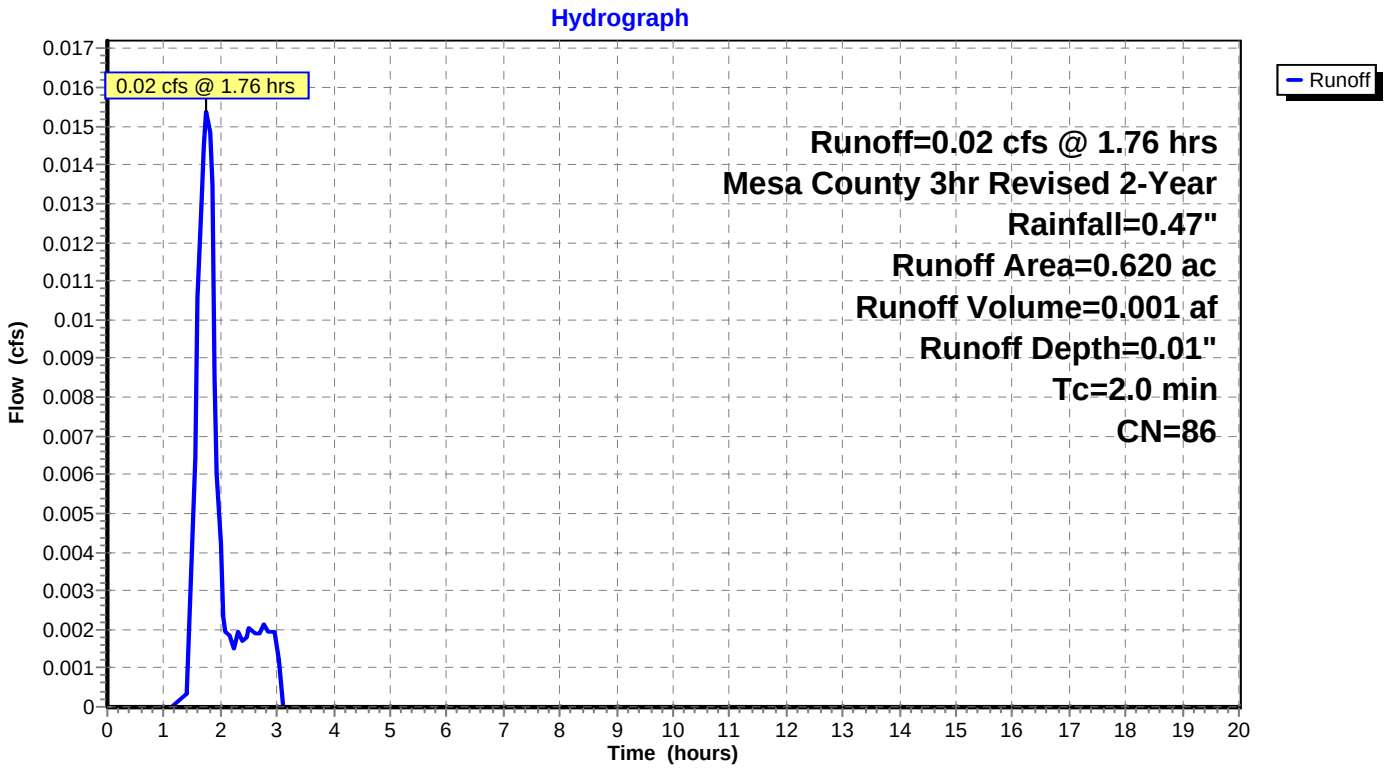
Runoff = 0.02 cfs @ 1.76 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
0.620	86	Desert shrub range, Fair, HSG D
0.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment EX6: EX6



Summary for Subcatchment EX1: EX1

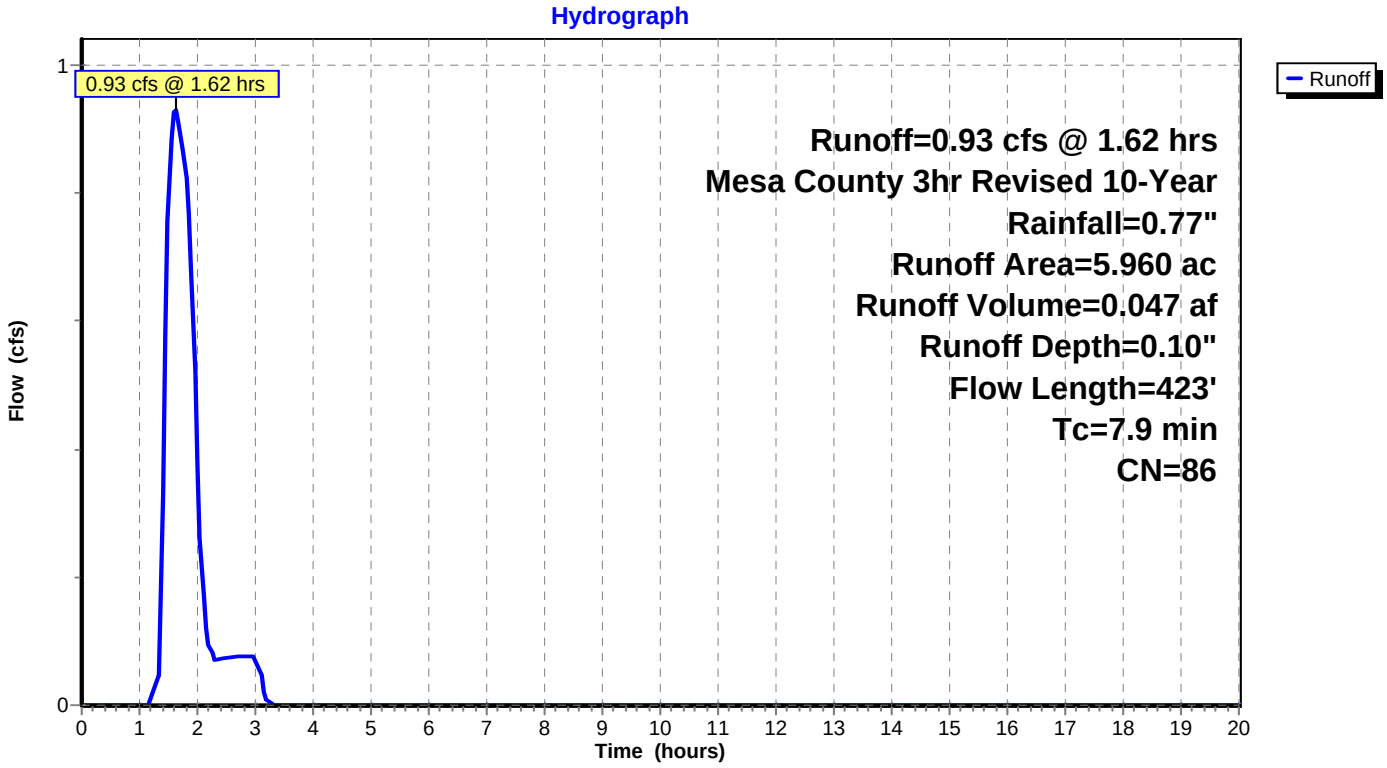
Runoff = 0.93 cfs @ 1.62 hrs, Volume= 0.047 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
5.960	86	Desert shrub range, Fair, HSG D
5.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0200	0.26		**Sheet Flow,** n= 0.026 P2= 0.46"
1.5	323	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
7.9	423	Total			

Subcatchment EX1: EX1



Summary for Subcatchment EX2: EX2

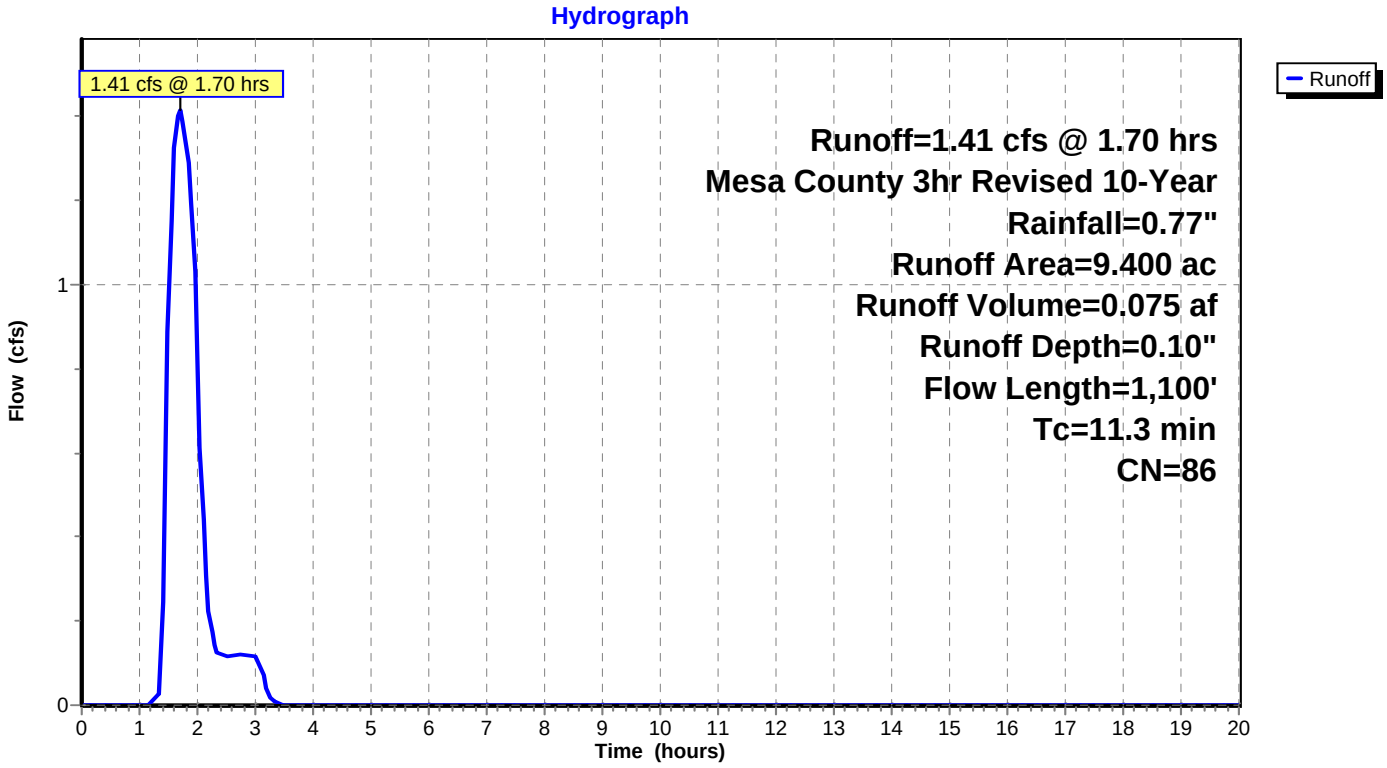
Runoff = 1.41 cfs @ 1.70 hrs, Volume= 0.075 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
9.400	86	Desert shrub range, Fair, HSG D
9.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	100	0.0200	0.25		**Sheet Flow,** n= 0.028 P2= 0.46"
4.6	1,000	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
11.3	1,100	Total			

Subcatchment EX2: EX2



Summary for Subcatchment EX3: EX3

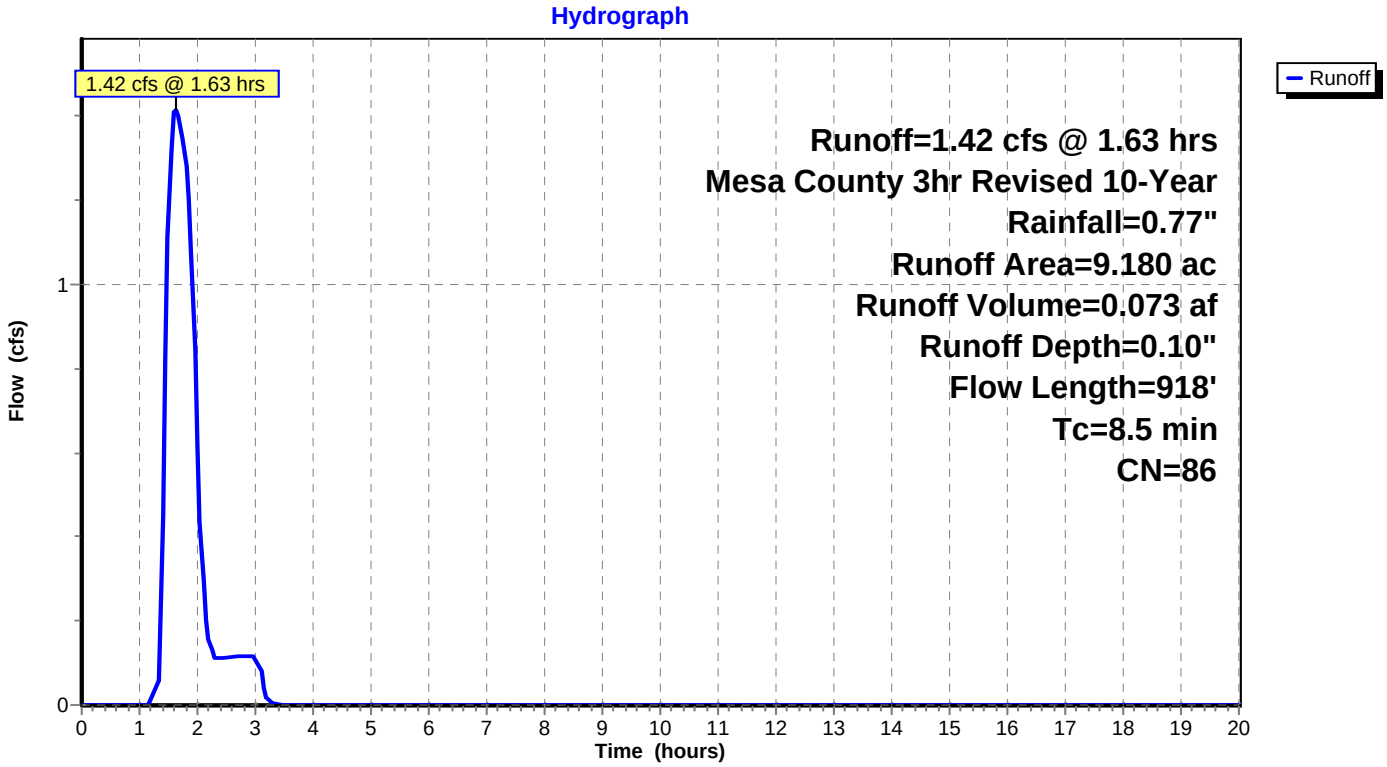
Runoff = 1.42 cfs @ 1.63 hrs, Volume= 0.073 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
9.180	86	Desert shrub range, Fair, HSG D
9.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	100	0.1600	0.57		**Sheet Flow,** n= 0.028 P2= 0.46"
2.6	466	0.1800	2.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.0	352	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	918	Total			

Subcatchment EX3: EX3



Summary for Subcatchment EX4: EX4

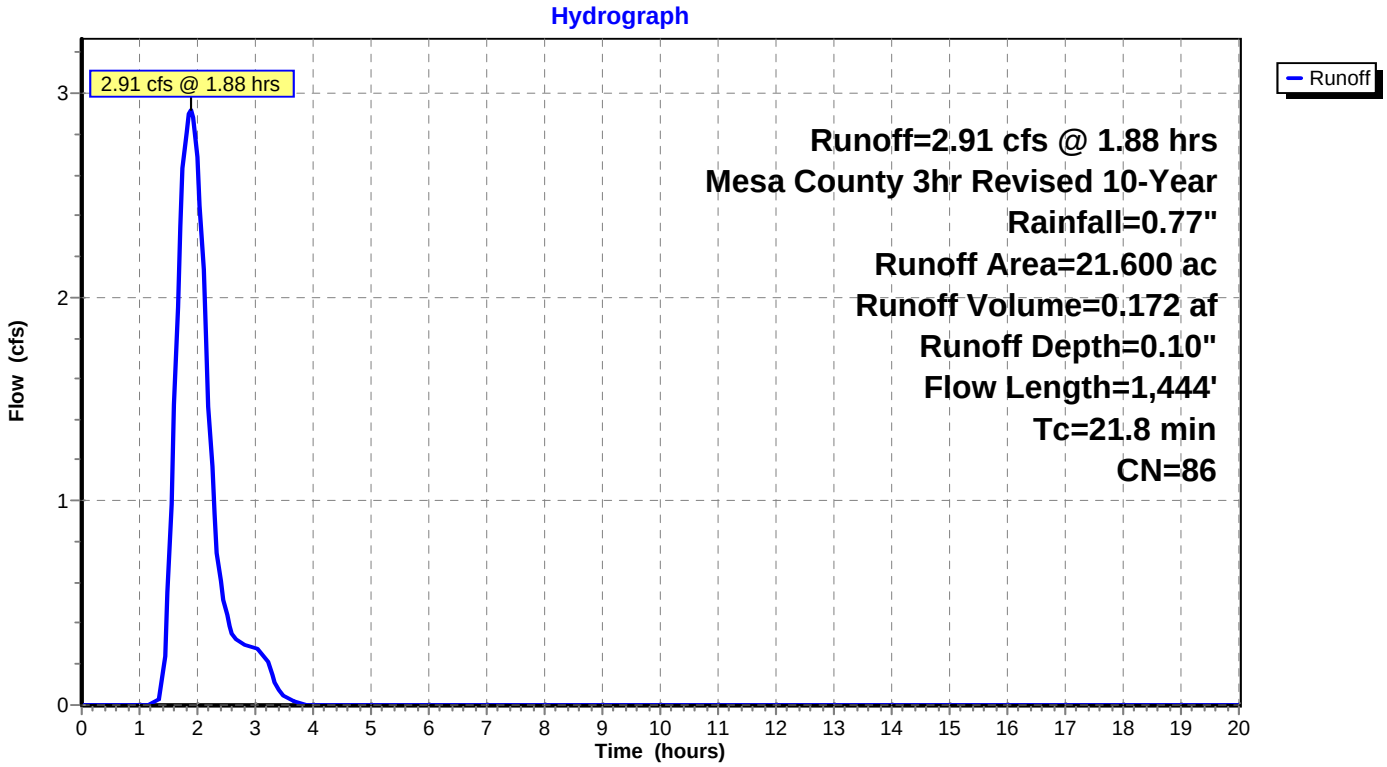
Runoff = 2.91 cfs @ 1.88 hrs, Volume= 0.172 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
21.600	86	Desert shrub range, Fair, HSG D
21.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0	192	0.0100	0.21		**Sheet Flow,** n= 0.028 P2= 0.46"
0.7	360	0.2900	8.67		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.1	892	0.0600	2.45		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
21.8	1,444	Total			

Subcatchment EX4: EX4



Summary for Subcatchment EX5: EX5

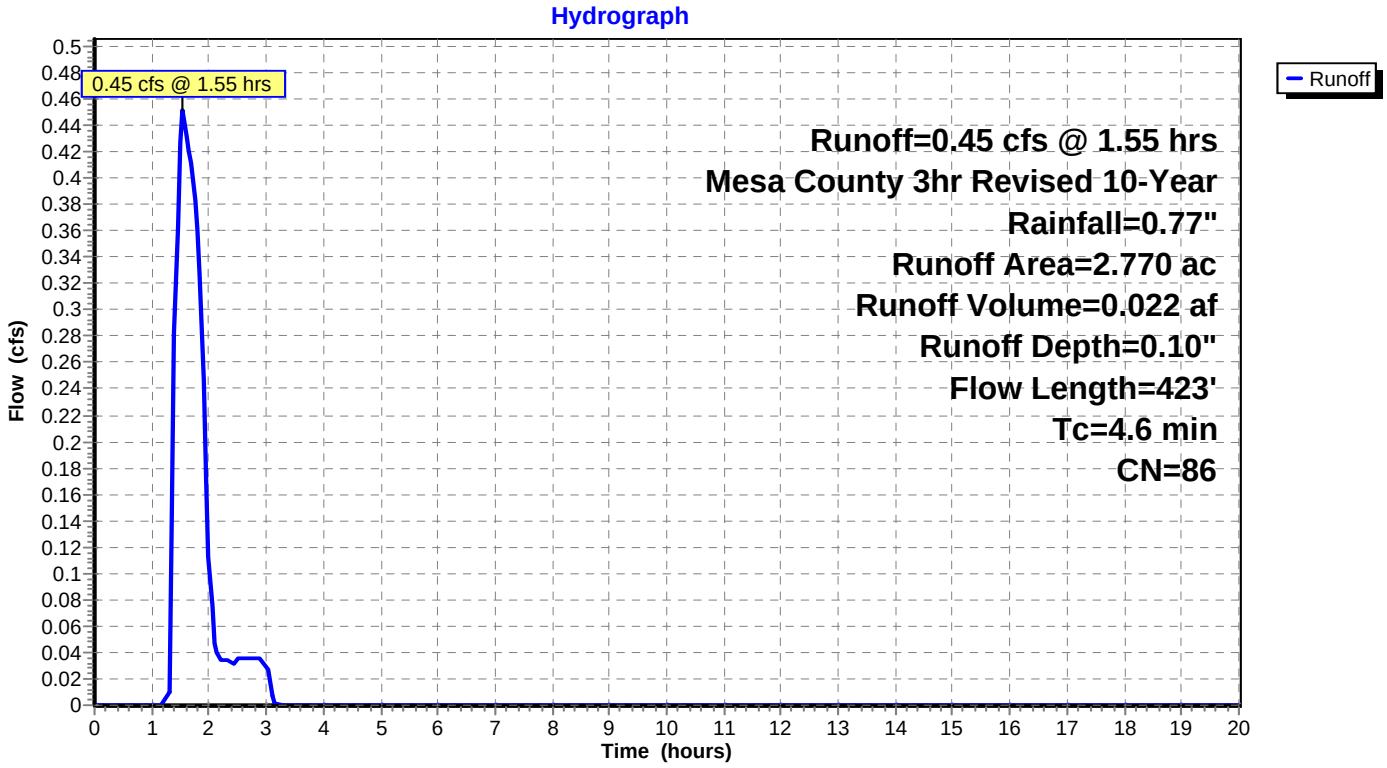
Runoff = 0.45 cfs @ 1.55 hrs, Volume= 0.022 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
2.770	86	Desert shrub range, Fair, HSG D
2.770		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.2500	0.68		**Sheet Flow,** n= 0.028 P2= 0.46"
2.1	323	0.1300	2.52		**Shallow Concentrated Flow,** Kv= 7.0 fps
4.6	423	Total			

Subcatchment EX5: EX5



Summary for Subcatchment EX6: EX6

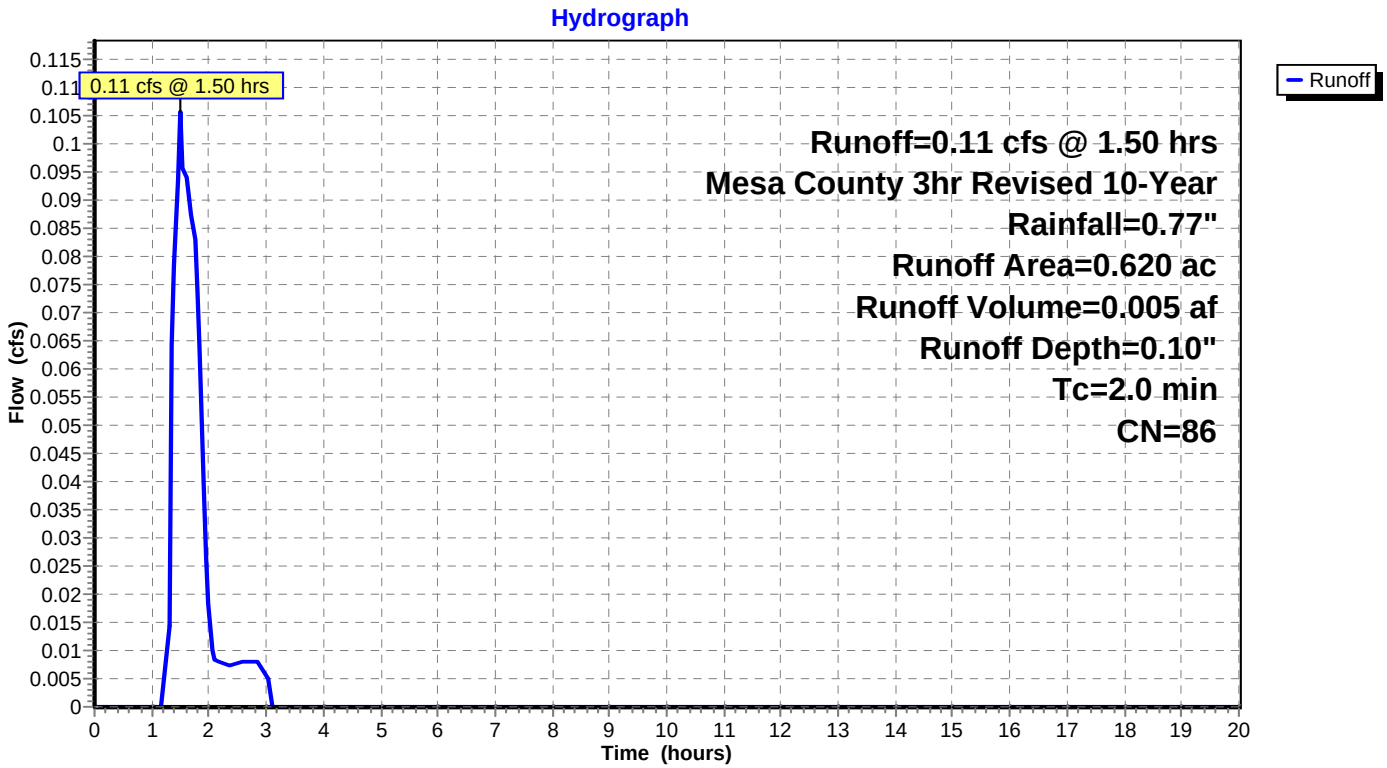
Runoff = 0.11 cfs @ 1.50 hrs, Volume= 0.005 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
0.620	86	Desert shrub range, Fair, HSG D
0.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment EX6: EX6



Summary for Subcatchment EX1: EX1

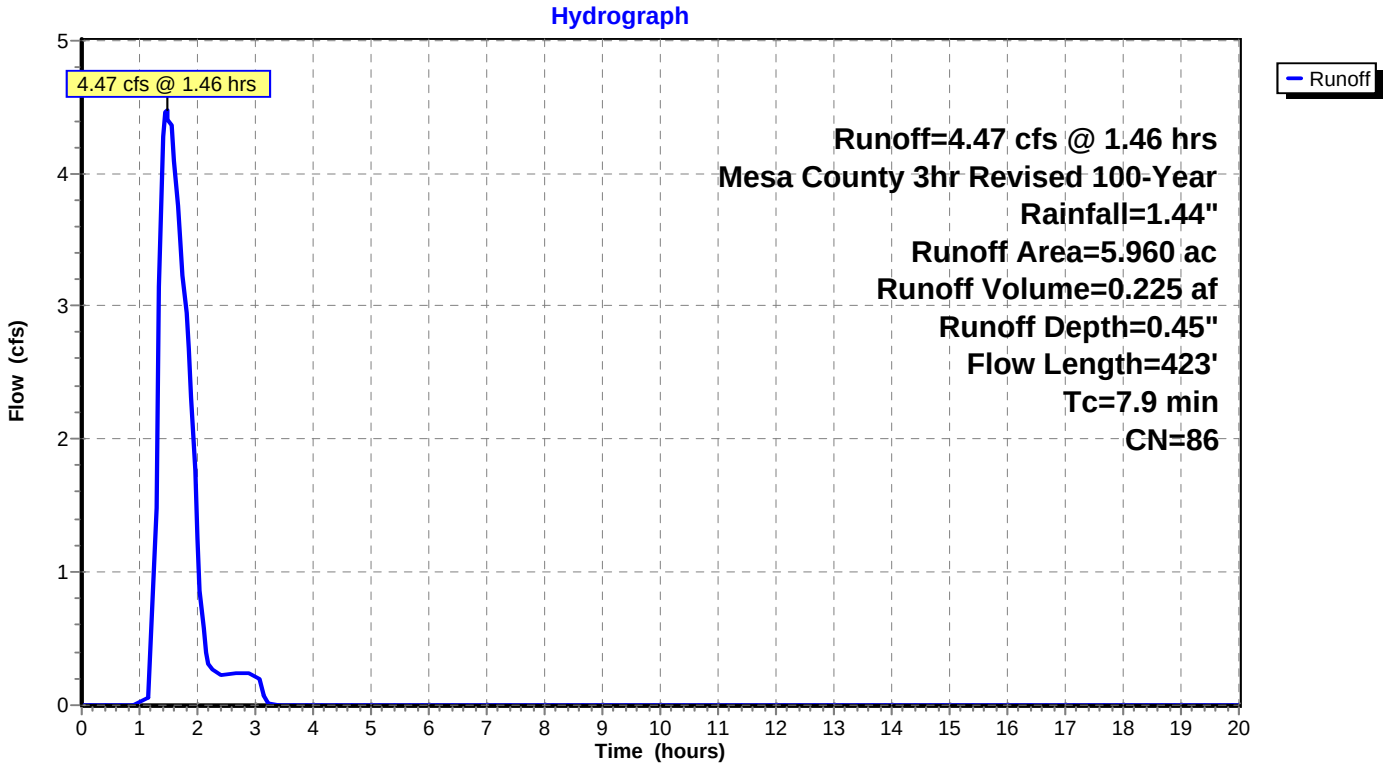
Runoff = 4.47 cfs @ 1.46 hrs, Volume= 0.225 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
5.960	86	Desert shrub range, Fair, HSG D
5.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0200	0.26		**Sheet Flow,** n= 0.026 P2= 0.46"
1.5	323	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
7.9	423	Total			

Subcatchment EX1: EX1



Summary for Subcatchment EX2: EX2

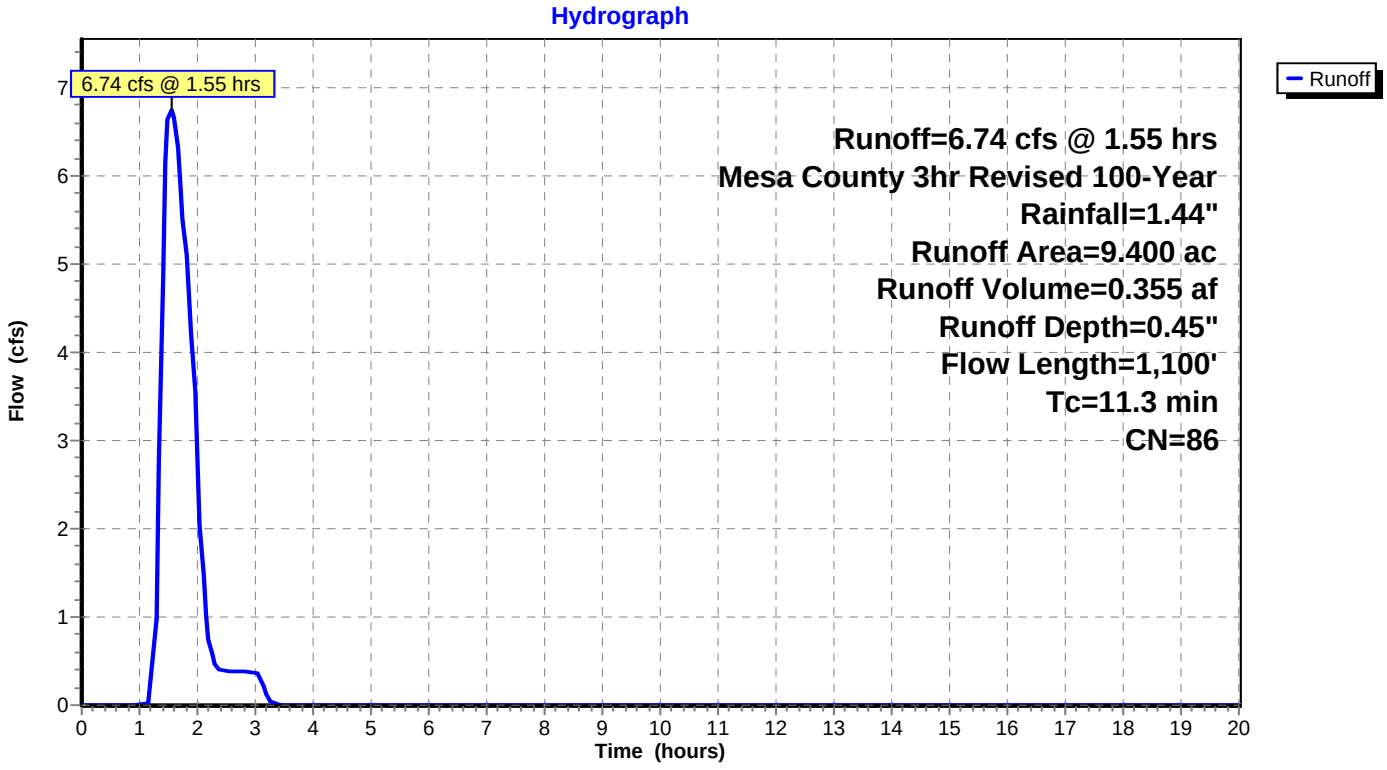
Runoff = 6.74 cfs @ 1.55 hrs, Volume= 0.355 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
9.400	86	Desert shrub range, Fair, HSG D
9.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	100	0.0200	0.25		**Sheet Flow,** n= 0.028 P2= 0.46"
4.6	1,000	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
11.3	1,100	Total			

Subcatchment EX2: EX2



Summary for Subcatchment EX3: EX3

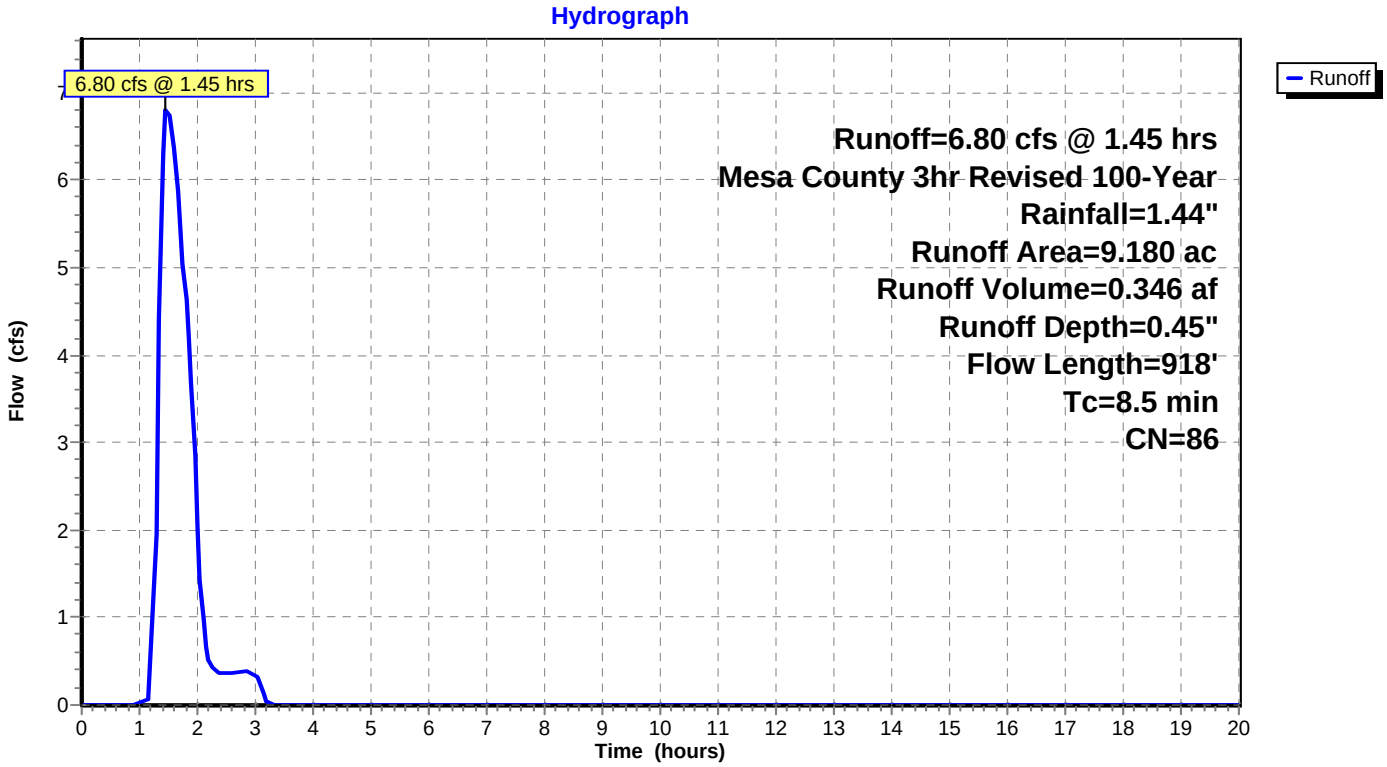
Runoff = 6.80 cfs @ 1.45 hrs, Volume= 0.346 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
9.180	86	Desert shrub range, Fair, HSG D
9.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	100	0.1600	0.57		**Sheet Flow,** n= 0.028 P2= 0.46"
2.6	466	0.1800	2.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.0	352	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	918	Total			

Subcatchment EX3: EX3



Summary for Subcatchment EX4: EX4

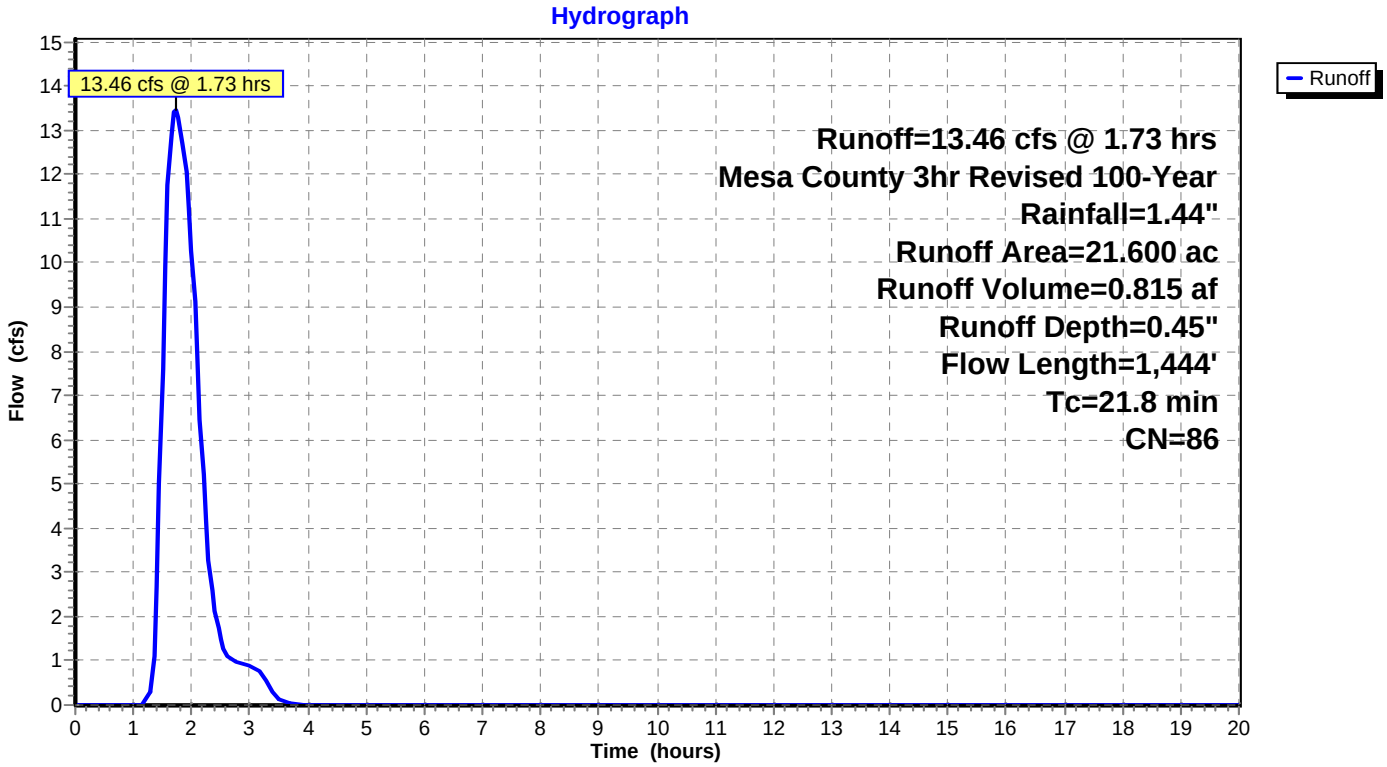
Runoff = 13.46 cfs @ 1.73 hrs, Volume= 0.815 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
21.600	86	Desert shrub range, Fair, HSG D
21.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0	192	0.0100	0.21		**Sheet Flow,** n= 0.028 P2= 0.46"
0.7	360	0.2900	8.67		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.1	892	0.0600	2.45		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
21.8	1,444	Total			

Subcatchment EX4: EX4



Summary for Subcatchment EX5: EX5

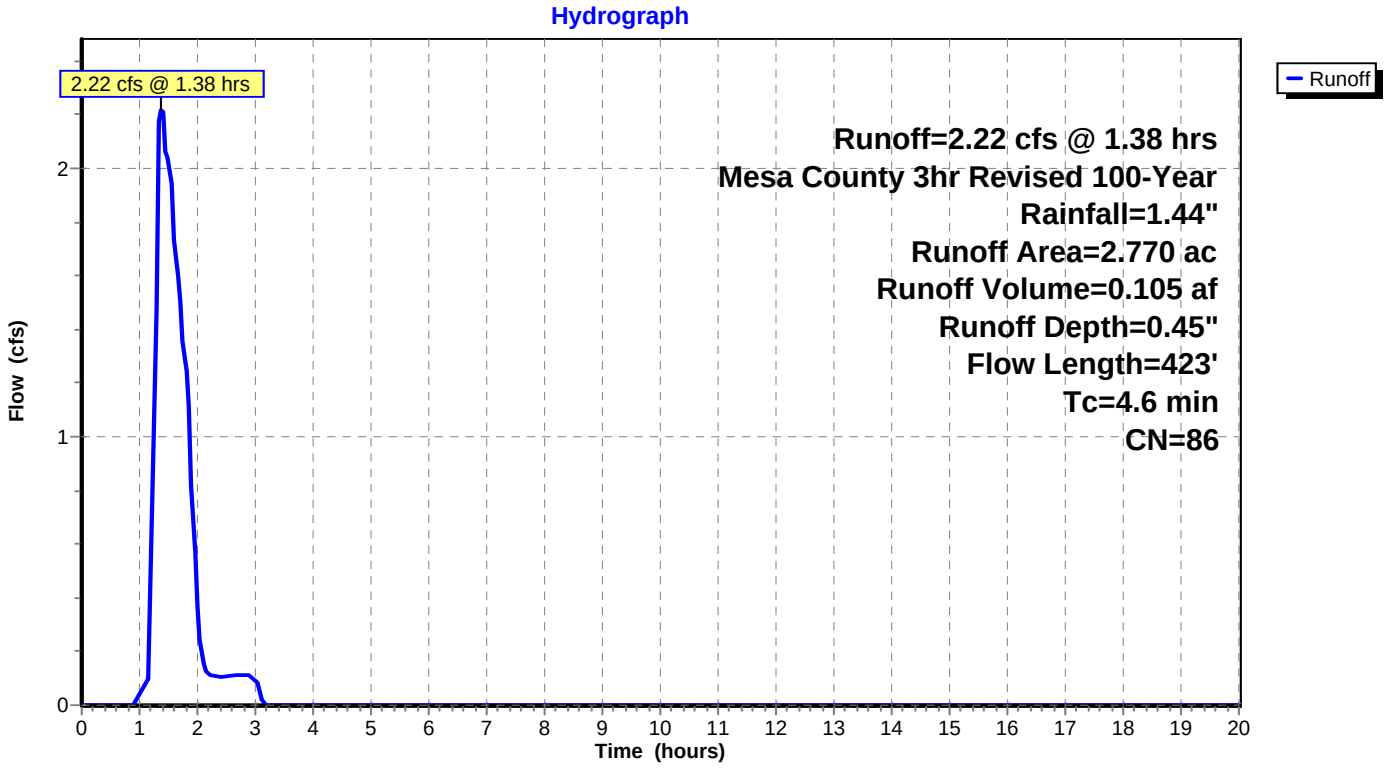
Runoff = 2.22 cfs @ 1.38 hrs, Volume= 0.105 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
2.770	86	Desert shrub range, Fair, HSG D
2.770		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.2500	0.68		**Sheet Flow,** n= 0.028 P2= 0.46"
2.1	323	0.1300	2.52		**Shallow Concentrated Flow,** Kv= 7.0 fps
4.6	423	Total			

Subcatchment EX5: EX5



Summary for Subcatchment EX6: EX6

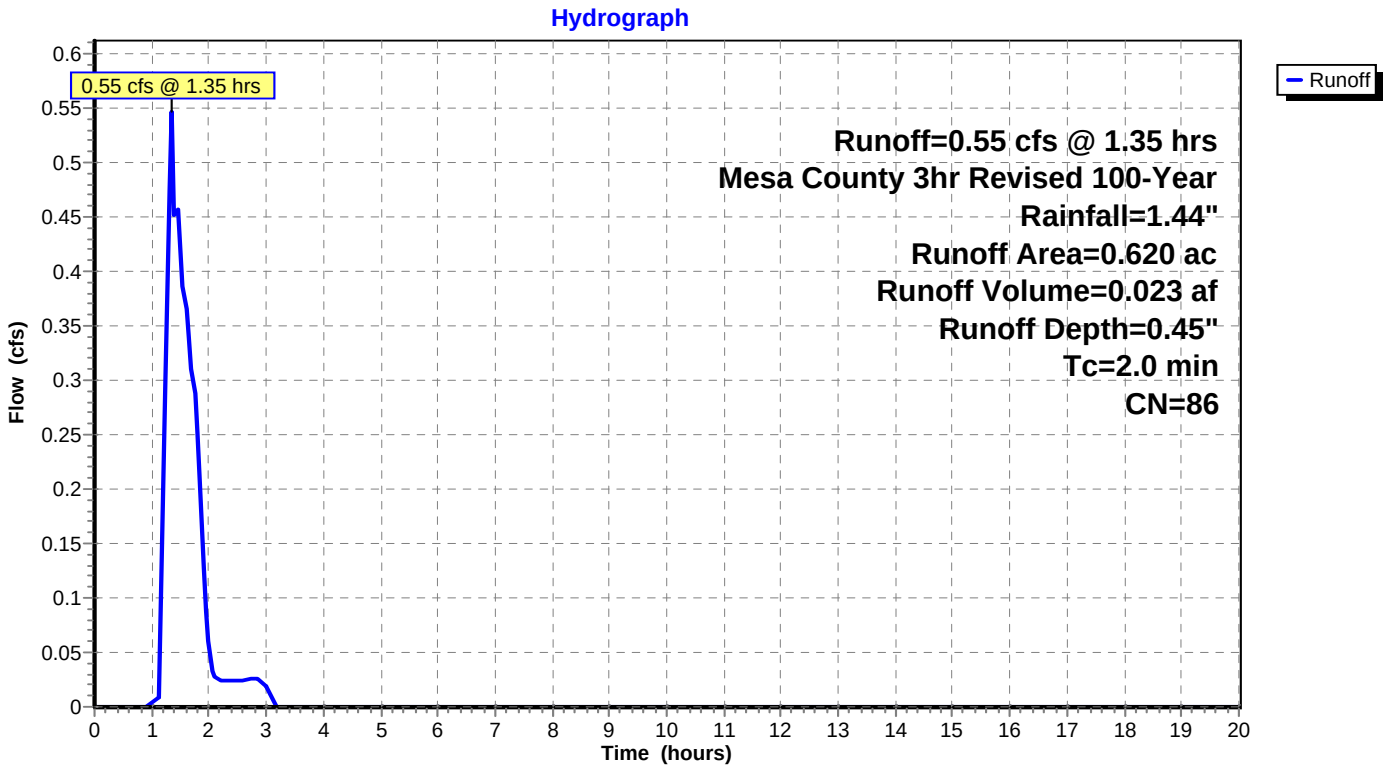
Runoff = 0.55 cfs @ 1.35 hrs, Volume= 0.023 af, Depth= 0.45"

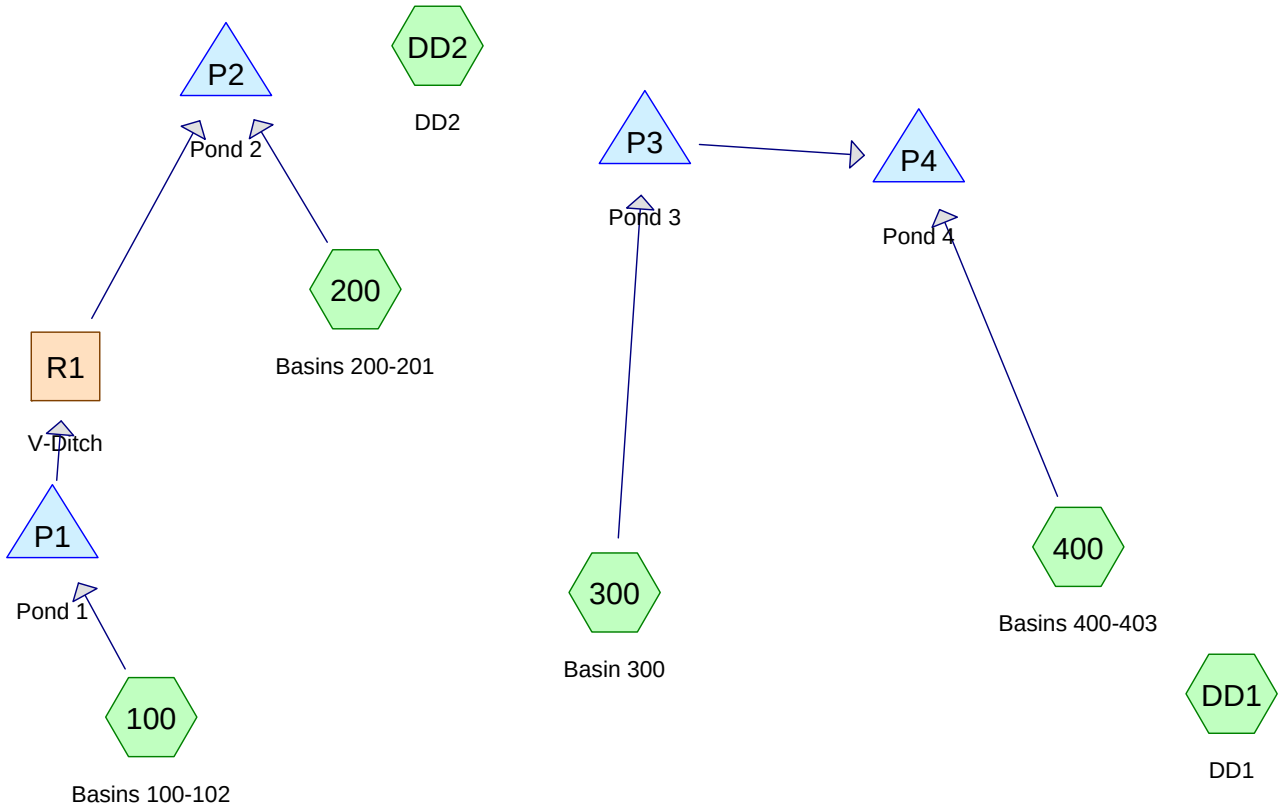
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
0.620	86	Desert shrub range, Fair, HSG D
0.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment EX6: EX6





Subcat Reach Pond Link

Routing Diagram for PinnacleRidgeFeb2015
Prepared by Vortex Engineering, Inc., Printed 6/2/2017
HydroCAD® 10.00-19 s/n 05232 © 2016 HydroCAD Software Solutions LLC

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 100: Basins 100-102 Runoff Area=6.870 ac Runoff Depth=0.16"
Flow Length=991' Tc=25.6 min CN=89 Runoff=1.41 cfs 0.089 af

Subcatchment 200: Basins 200-201 Runoff Area=15.580 ac Runoff Depth=0.16"
Tc=9.1 min CN=89 Runoff=3.93 cfs 0.202 af

Subcatchment 300: Basin 300 Runoff Area=1.560 ac Runoff Depth=0.13"
Tc=5.0 min CN=88 Runoff=0.36 cfs 0.017 af

Subcatchment 400: Basins 400-403 Runoff Area=22.940 ac Runoff Depth=0.16"
Flow Length=1,690' Tc=12.5 min CN=89 Runoff=5.52 cfs 0.297 af

Subcatchment DD1: DD1 Runoff Area=1.930 ac Runoff Depth=0.10"
Tc=5.0 min CN=86 Runoff=0.32 cfs 0.015 af

Subcatchment DD2: DD2 Runoff Area=0.390 ac Runoff Depth=0.10"
Tc=5.0 min CN=86 Runoff=0.06 cfs 0.003 af

Reach R1: V-Ditch Avg. Flow Depth=0.23' Max Vel=2.50 fps Inflow=0.26 cfs 0.170 af
n=0.025 L=815.0' S=0.0368 '/' Capacity=24.18 cfs Outflow=0.26 cfs 0.170 af

Pond P1: Pond 1 Peak Elev=4,802.31' Storage=6,082 cf Inflow=1.41 cfs 0.089 af
Outflow=0.26 cfs 0.170 af

Pond P2: Pond 2 Peak Elev=4,748.32' Storage=13,992 cf Inflow=3.98 cfs 0.372 af
Outflow=0.52 cfs 0.569 af

Pond P3: Pond 3 Peak Elev=4,752.88' Storage=820 cf Inflow=0.36 cfs 0.017 af
Outflow=0.17 cfs 0.032 af

Pond P4: Pond 4 Peak Elev=4,742.73' Storage=14,737 cf Inflow=5.59 cfs 0.329 af
Outflow=1.91 cfs 0.593 af

Total Runoff Area = 49.270 ac Runoff Volume = 0.624 af Average Runoff Depth = 0.15"

Summary for Subcatchment 100: Basins 100-102

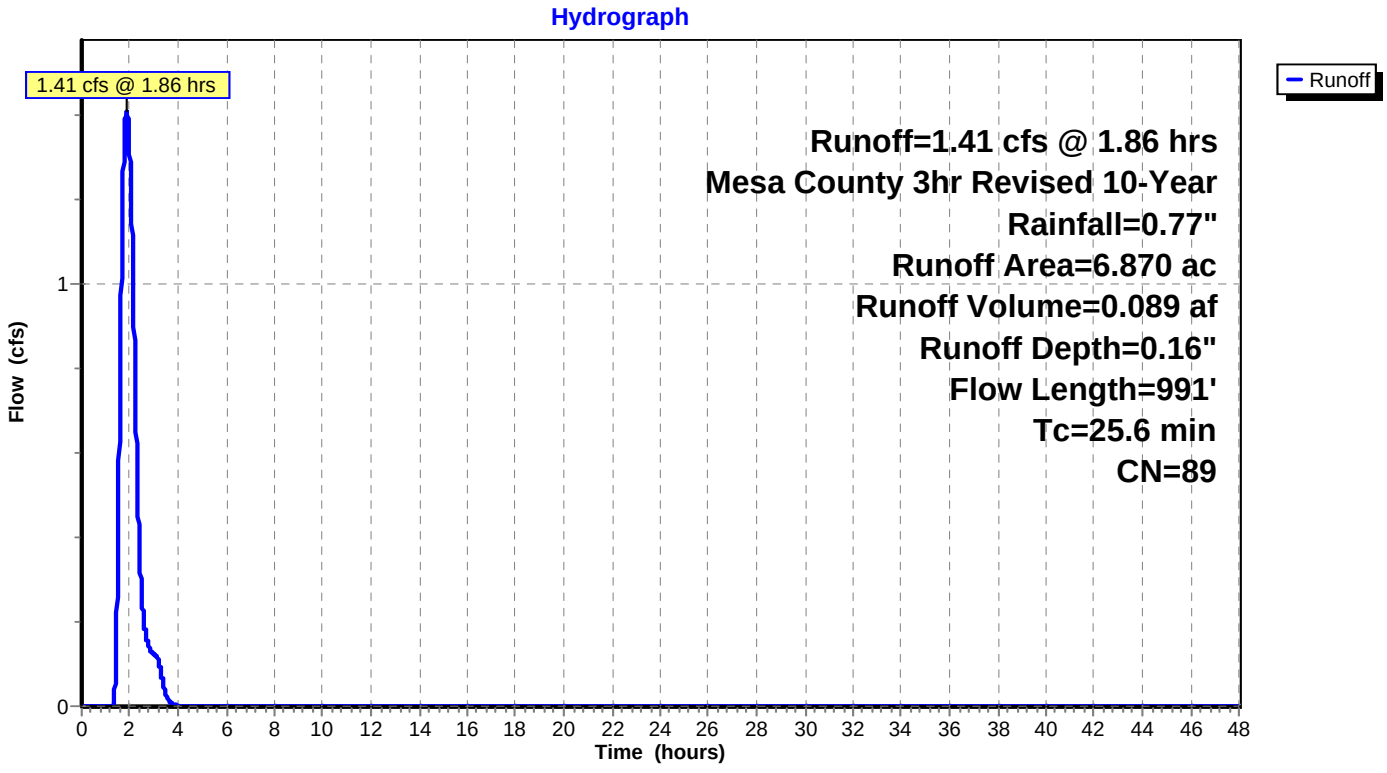
Runoff = 1.41 cfs @ 1.86 hrs, Volume= 0.089 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	6.870	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.9	136	0.0500	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 0.46"
2.7	855	0.1100	5.34		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
25.6	991	Total			

Subcatchment 100: Basins 100-102



Summary for Subcatchment 200: Basins 200-201

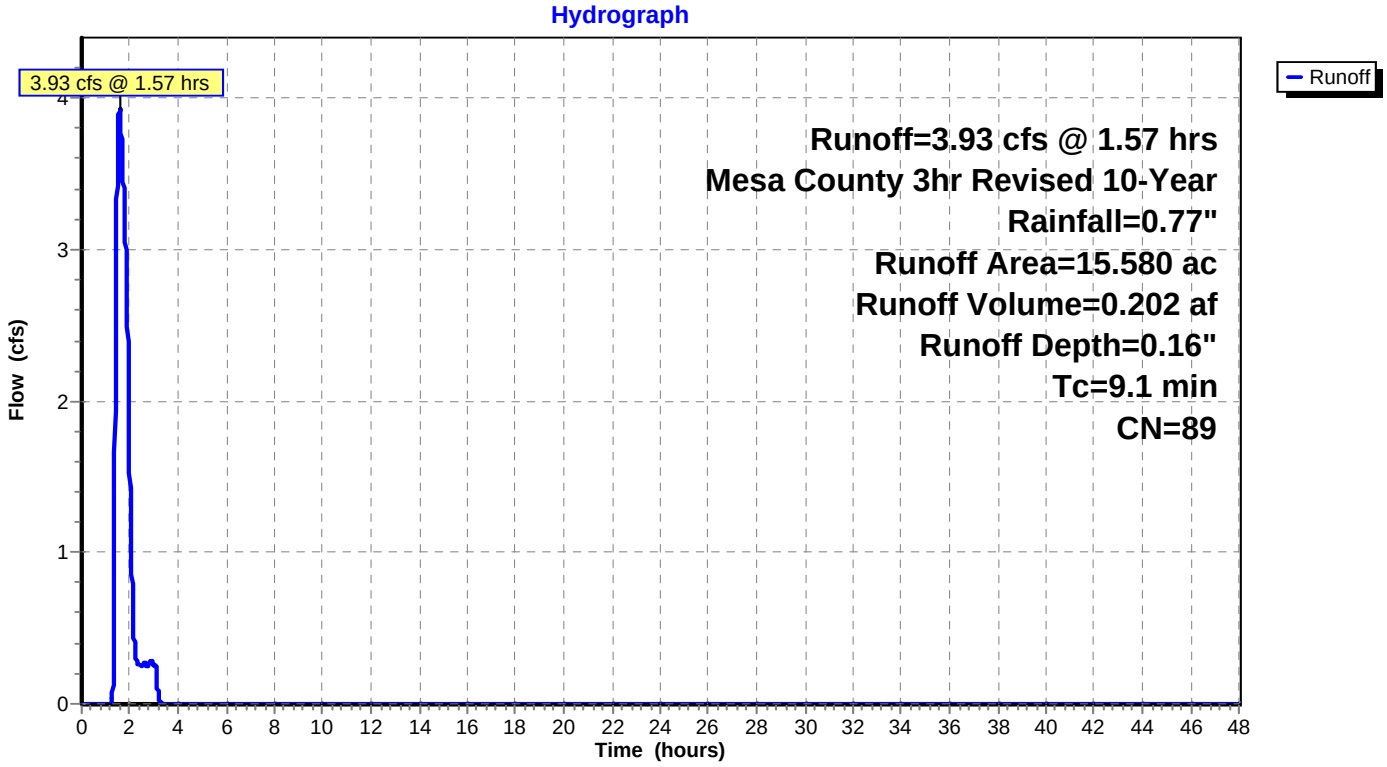
Runoff = 3.93 cfs @ 1.57 hrs, Volume= 0.202 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	15.580	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1					**Direct Entry, Tc to Pond #2**

Subcatchment 200: Basins 200-201



Summary for Subcatchment 300: Basin 300

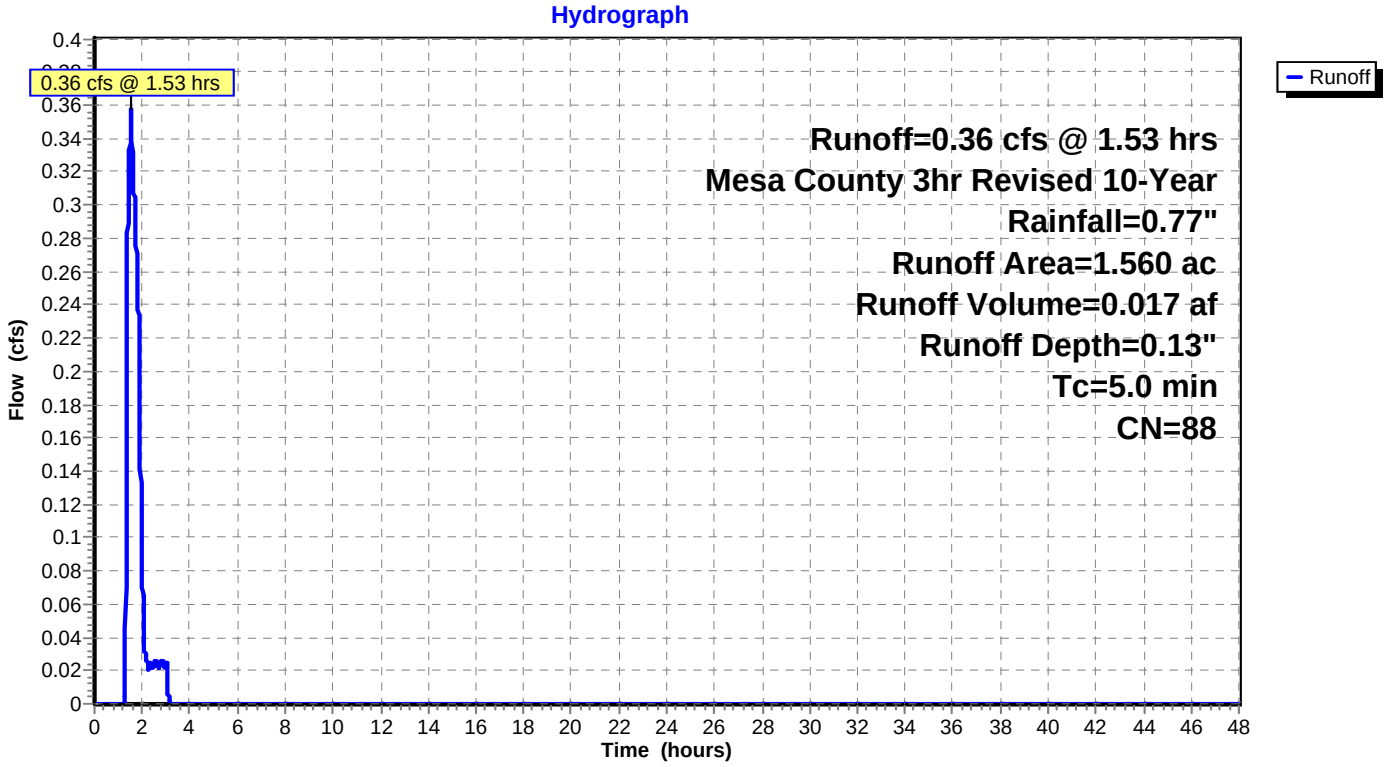
Runoff = 0.36 cfs @ 1.53 hrs, Volume= 0.017 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	1.560	88	LOTS W/ HOUSES 4000 SF

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 300: Basin 300



Summary for Subcatchment 400: Basins 400-403

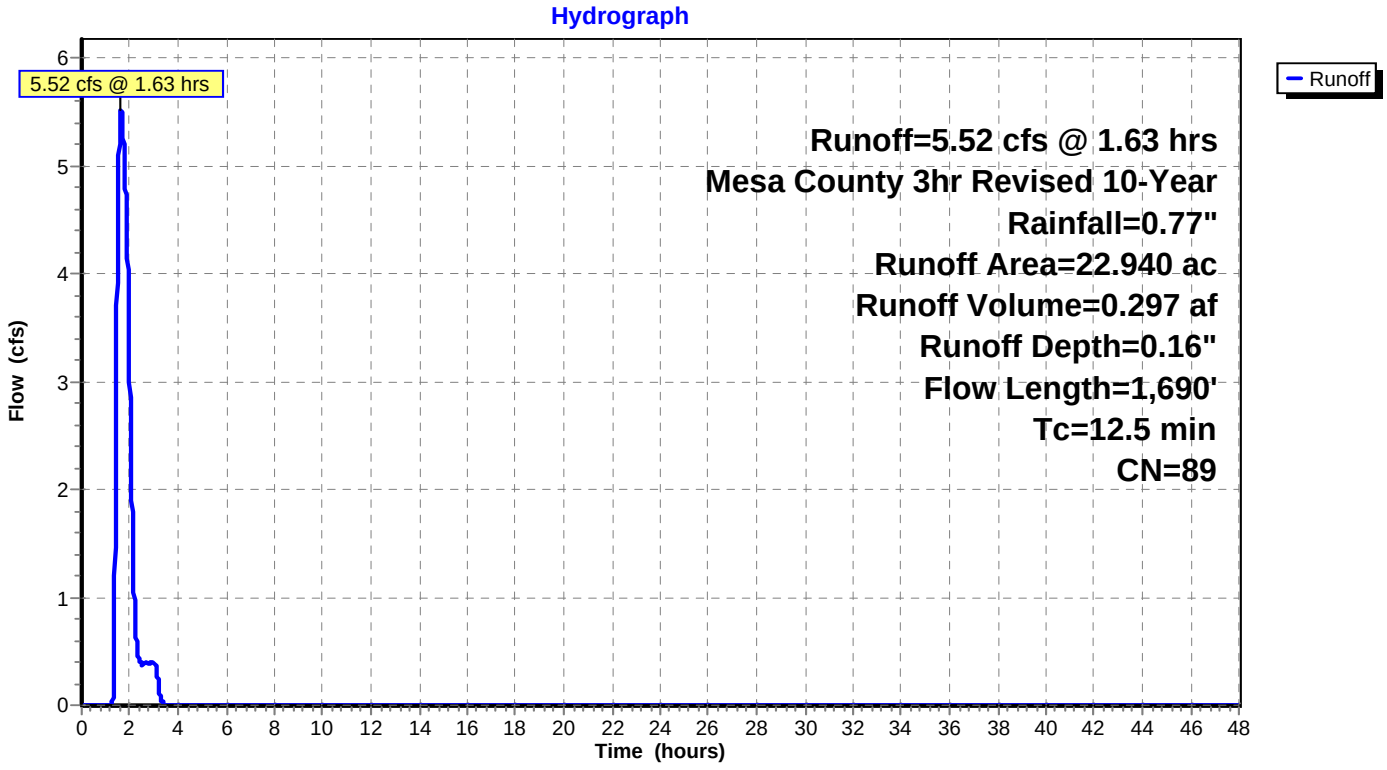
Runoff = 5.52 cfs @ 1.63 hrs, Volume= 0.297 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	22.940	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	190	0.0300	0.31		**Sheet Flow,** n= 0.030 P2= 0.46"
2.4	1,500	0.0933	10.27	32.09	**Trap/Vee/Rect Channel Flow,** Bot.W=0.00' D=1.25' Z= 2.0 '/' Top.W=5.00' n= 0.030
12.5	1,690	Total			

Subcatchment 400: Basins 400-403



Summary for Subcatchment DD1: DD1

Direct Discharge basin compensated in Pond 1

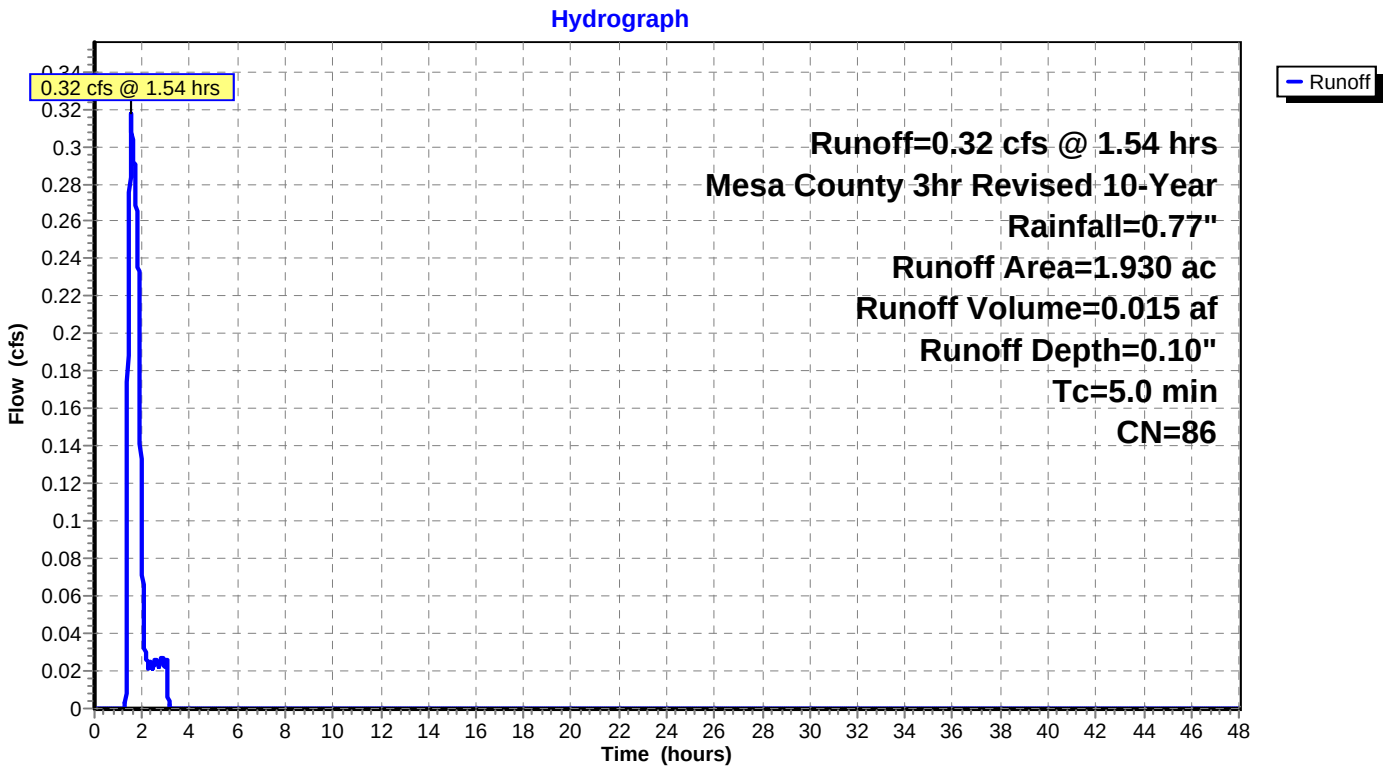
Runoff = 0.32 cfs @ 1.54 hrs, Volume= 0.015 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	1.930	86	Natural western desert, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DD1: DD1



Summary for Subcatchment DD2: DD2

Disrect discharge basin, compensated in Pond 4

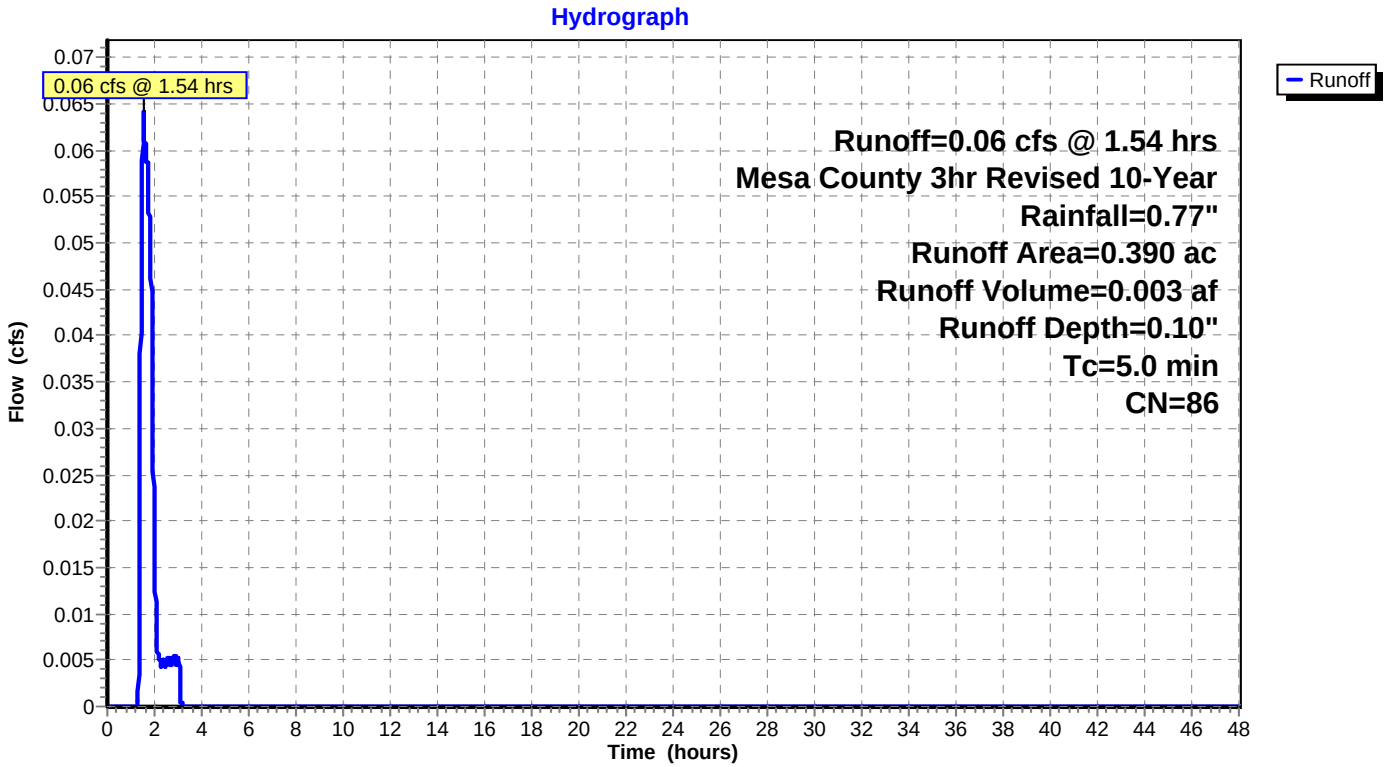
Runoff = 0.06 cfs @ 1.54 hrs, Volume= 0.003 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	0.390	86	Natural western desert, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DD2: DD2



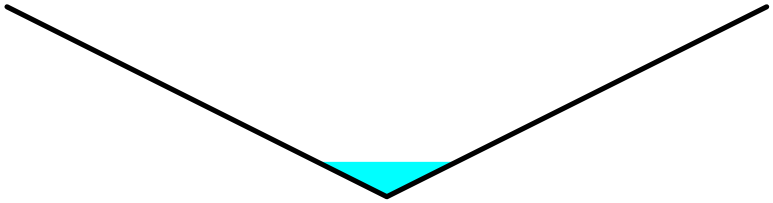
Summary for Reach R1: V-Ditch

Inflow Area = 6.870 ac, Inflow Depth > 0.30" for 10-Year event
Inflow = 0.26 cfs @ 2.49 hrs, Volume= 0.170 af
Outflow = 0.26 cfs @ 2.57 hrs, Volume= 0.170 af, Atten= 0%, Lag= 5.0 min

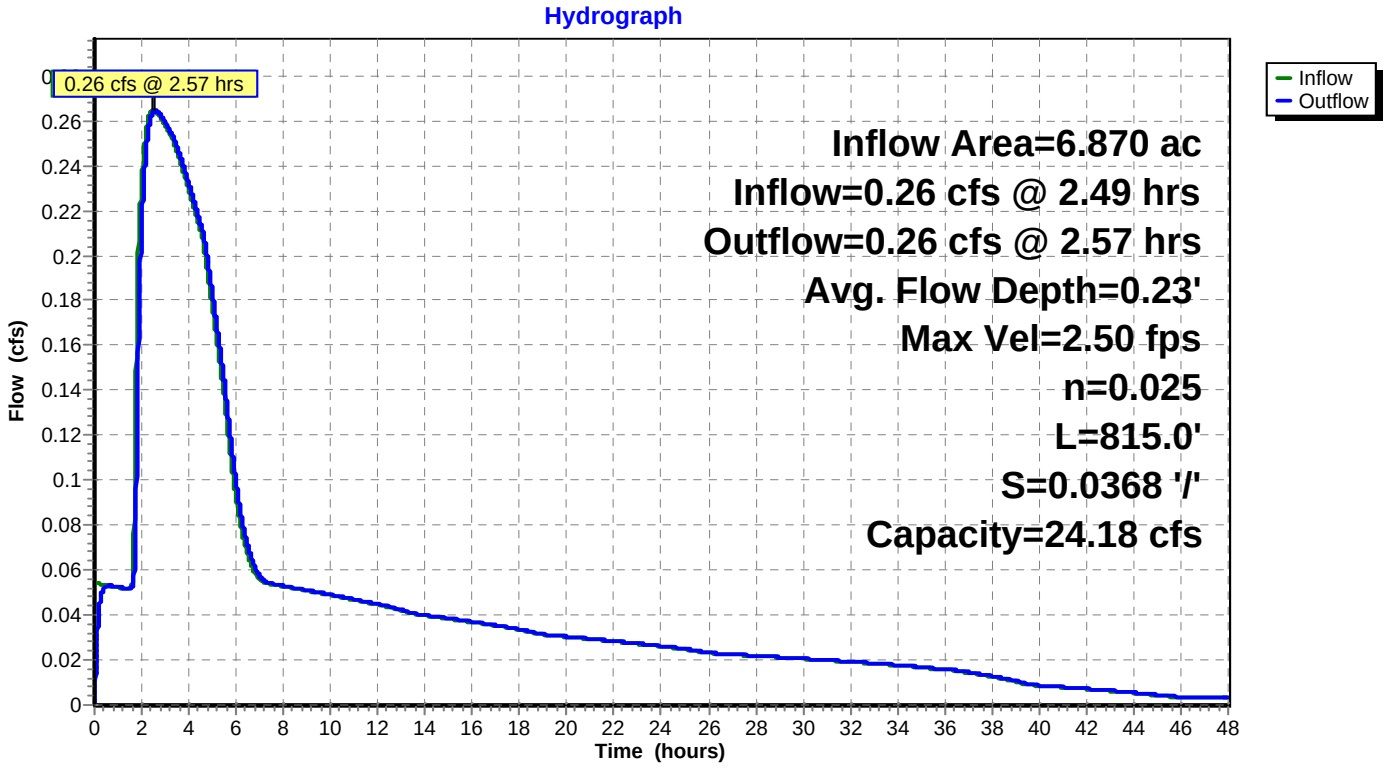
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.50 fps, Min. Travel Time= 5.4 min
Avg. Velocity = 1.44 fps, Avg. Travel Time= 9.4 min

Peak Storage= 86 cf @ 2.57 hrs
Average Depth at Peak Storage= 0.23'
Bank-Full Depth= 1.25' Flow Area= 3.1 sf, Capacity= 24.18 cfs

0.00' x 1.25' deep channel, n= 0.025
Side Slope Z-value= 2.0 '/' Top Width= 5.00'
Length= 815.0' Slope= 0.0368 '/'
Inlet Invert= 4,796.00', Outlet Invert= 4,766.00'



Reach R1: V-Ditch



Summary for Pond P1: Pond 1

Inflow Area = 6.870 ac, Inflow Depth = 0.16" for 10-Year event
Inflow = 1.41 cfs @ 1.86 hrs, Volume= 0.089 af
Outflow = 0.26 cfs @ 2.49 hrs, Volume= 0.170 af, Atten= 81%, Lag= 37.5 min
Primary = 0.26 cfs @ 2.49 hrs, Volume= 0.170 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,801.50' Surf.Area= 2,799 sf Storage= 3,655 cf
Peak Elev= 4,802.31' @ 2.49 hrs Surf.Area= 3,721 sf Storage= 6,082 cf (2,426 cf above start)

Plug-Flow detention time= 1,075.9 min calculated for 0.086 af (97% of inflow)
Center-of-Mass det. time= 585.6 min (708.3 - 122.7)

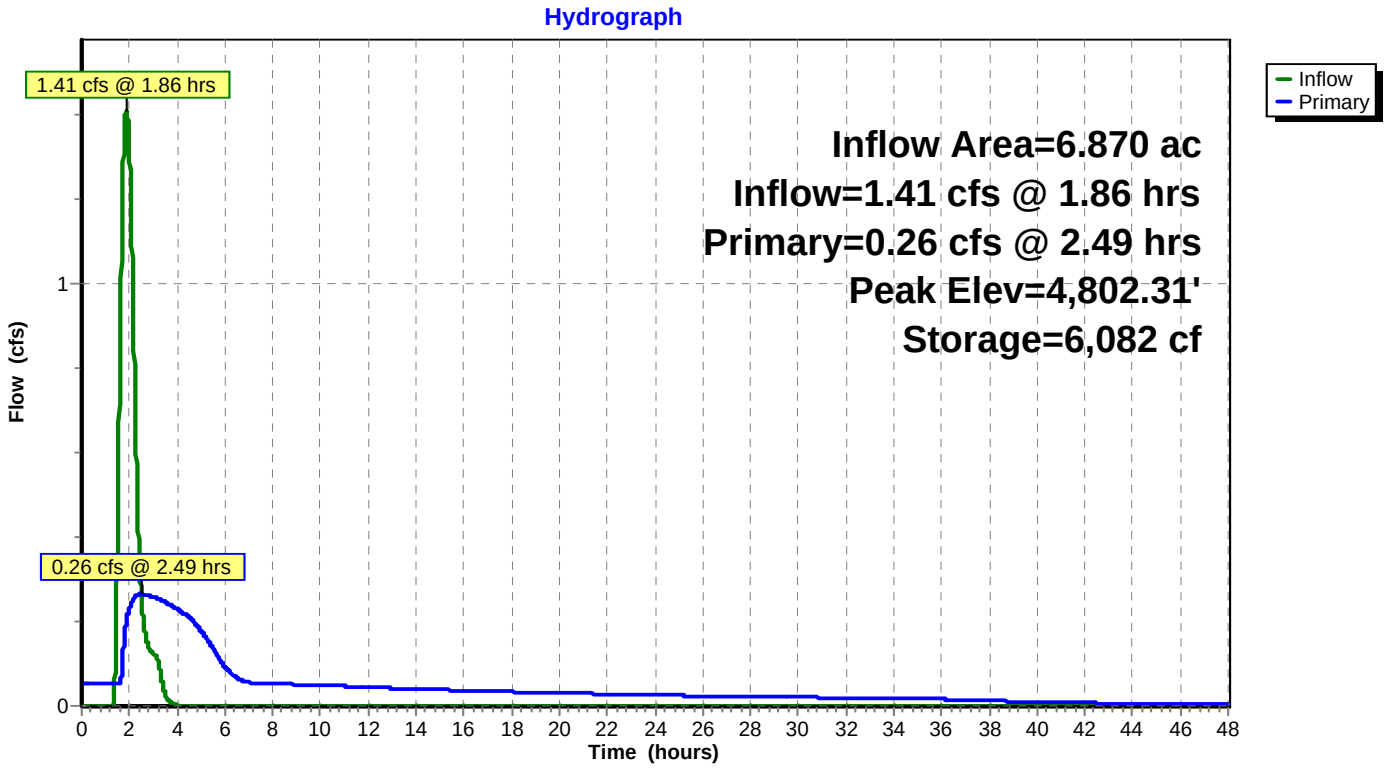
Volume	Invert	Avail.Storage	Storage Description
#1	4,799.00'	43,026 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,799.00	0	0	0
4,800.00	856	428	428
4,802.00	3,447	4,303	4,731
4,804.00	5,204	8,651	13,382
4,806.00	7,321	12,525	25,907
4,808.00	9,798	17,119	43,026

Device	Routing	Invert	Outlet Devices
#1	Primary	4,799.00'	**0.5" Vert. Orifice/Grate** X 7 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,801.50'	**3.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	4,804.50'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.26 cfs @ 2.49 hrs HW=4,802.31' TW=4,796.23' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.07 cfs @ 7.21 fps)
- **2=Orifice/Grate** (Orifice Controls 0.20 cfs @ 3.99 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P1: Pond 1



Summary for Pond P2: Pond 2

Inflow Area = 22.450 ac, Inflow Depth > 0.20" for 10-Year event
Inflow = 3.98 cfs @ 1.57 hrs, Volume= 0.372 af
Outflow = 0.52 cfs @ 2.94 hrs, Volume= 0.569 af, Atten= 87%, Lag= 82.0 min
Primary = 0.52 cfs @ 2.94 hrs, Volume= 0.569 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,747.71' Surf.Area= 8,172 sf Storage= 8,686 cf
Peak Elev= 4,748.32' @ 2.94 hrs Surf.Area= 9,255 sf Storage= 13,992 cf (5,306 cf above start)

Plug-Flow detention time= 475.5 min calculated for 0.369 af (99% of inflow)
Center-of-Mass det. time= 220.2 min (605.7 - 385.5)

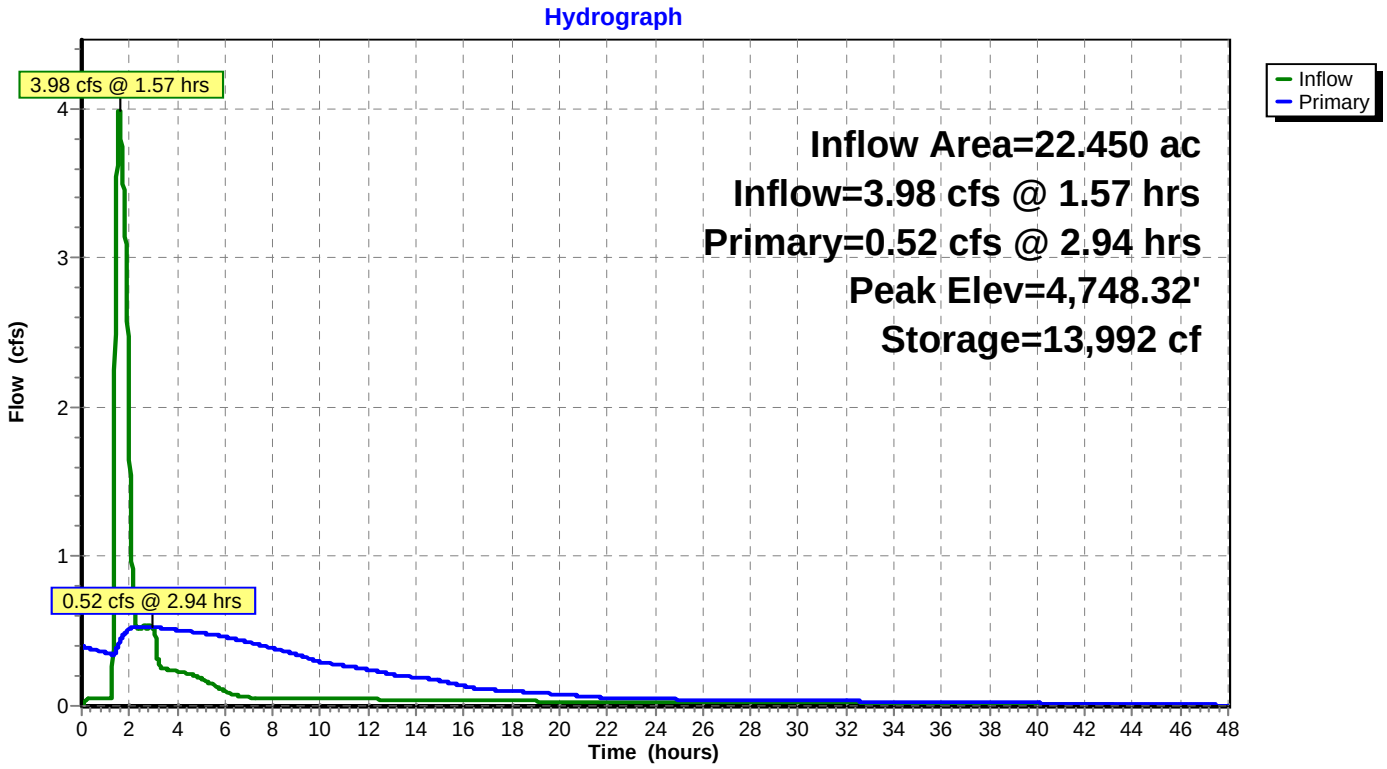
Volume	Invert	Avail.Storage	Storage Description
#1	4,746.06'	59,211 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,746.06	0	0	0
4,747.00	6,765	3,180	3,180
4,748.00	8,746	7,756	10,935
4,749.00	10,334	9,540	20,475
4,750.00	11,994	11,164	31,639
4,751.00	13,830	12,912	44,551
4,752.00	15,490	14,660	59,211

Device	Routing	Invert	Outlet Devices
#1	Primary	4,746.06'	**0.9" Vert. Orifice/Grate X 4.00 columns** X 5 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,748.32'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	4,751.00'	**14.0' long x 0.5' breadth emergency spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.52 cfs @ 2.94 hrs HW=4,748.32' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.52 cfs @ 5.93 fps)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.06 fps)
- **3=emergency spillway** (Controls 0.00 cfs)

Pond P2: Pond 2



Summary for Pond P3: Pond 3

Inflow Area = 1.560 ac, Inflow Depth = 0.13" for 10-Year event
Inflow = 0.36 cfs @ 1.53 hrs, Volume= 0.017 af
Outflow = 0.17 cfs @ 1.90 hrs, Volume= 0.032 af, Atten= 52%, Lag= 22.2 min
Primary = 0.17 cfs @ 1.90 hrs, Volume= 0.032 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,752.64' Surf.Area= 737 sf Storage= 632 cf
Peak Elev= 4,752.88' @ 1.90 hrs Surf.Area= 832 sf Storage= 820 cf (188 cf above start)

Plug-Flow detention time= 184.7 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 92.6 min (197.3 - 104.8)

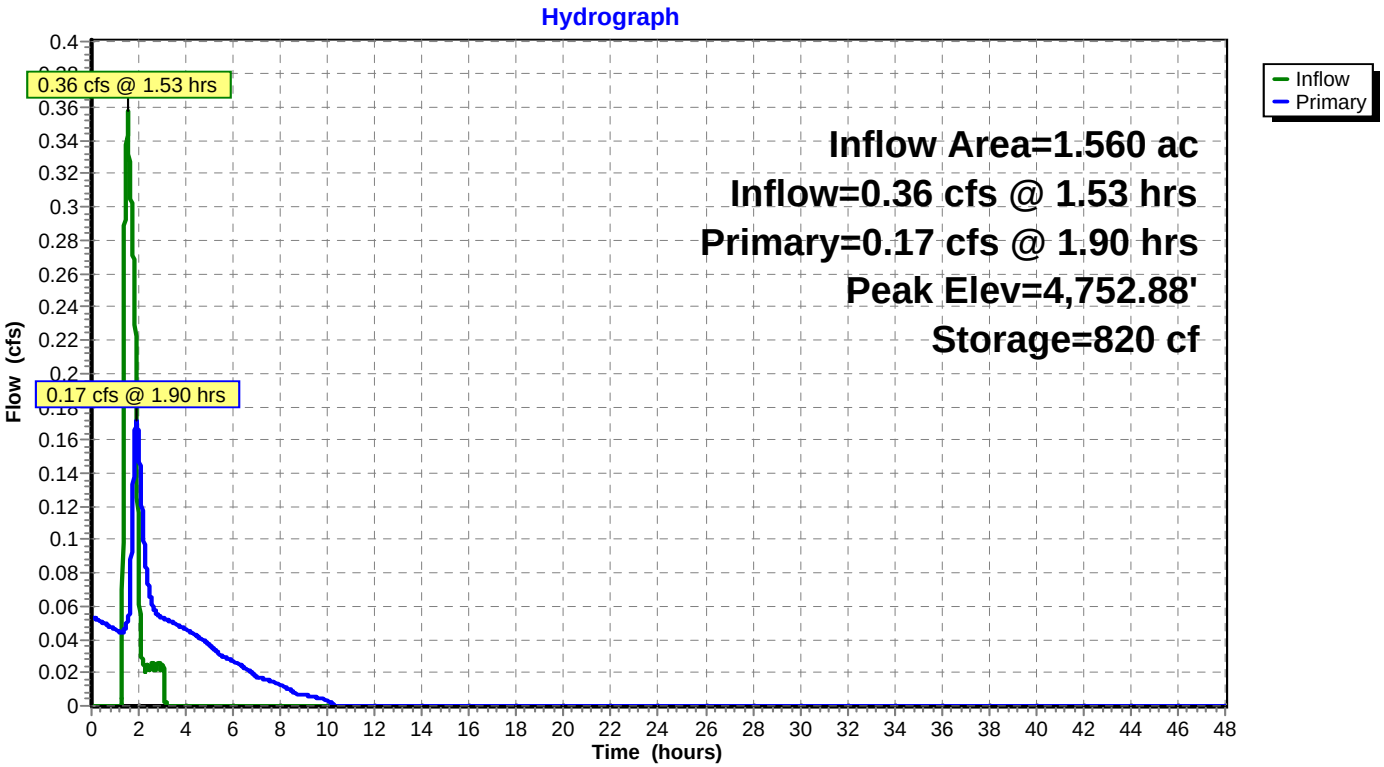
Volume	Invert	Avail.Storage	Storage Description
#1	4,751.00'	5,359 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,751.00	0	0	0
4,752.00	483	242	242
4,754.00	1,277	1,760	2,002
4,756.00	2,080	3,357	5,359

Device	Routing	Invert	Outlet Devices
#1	Primary	4,751.00'	**0.7" Vert. Orifice/Grate** X 4 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,752.64'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	4,754.06'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.17 cfs @ 1.90 hrs HW=4,752.88' TW=4,742.58' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.06 cfs @ 5.54 fps)
- **2=Orifice/Grate** (Orifice Controls 0.11 cfs @ 1.67 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P3: Pond 3



Summary for Pond P4: Pond 4

Inflow Area = 24.500 ac, Inflow Depth = 0.16" for 10-Year event
Inflow = 5.59 cfs @ 1.63 hrs, Volume= 0.329 af
Outflow = 1.91 cfs @ 2.09 hrs, Volume= 0.593 af, Atten= 66%, Lag= 27.4 min
Primary = 1.91 cfs @ 2.09 hrs, Volume= 0.593 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,742.19' Surf.Area= 5,651 sf Storage= 11,503 cf
Peak Elev= 4,742.73' @ 2.09 hrs Surf.Area= 6,380 sf Storage= 14,737 cf (3,234 cf above start)

Plug-Flow detention time= 185.7 min calculated for 0.329 af (100% of inflow)
Center-of-Mass det. time= 89.4 min (208.4 - 118.9)

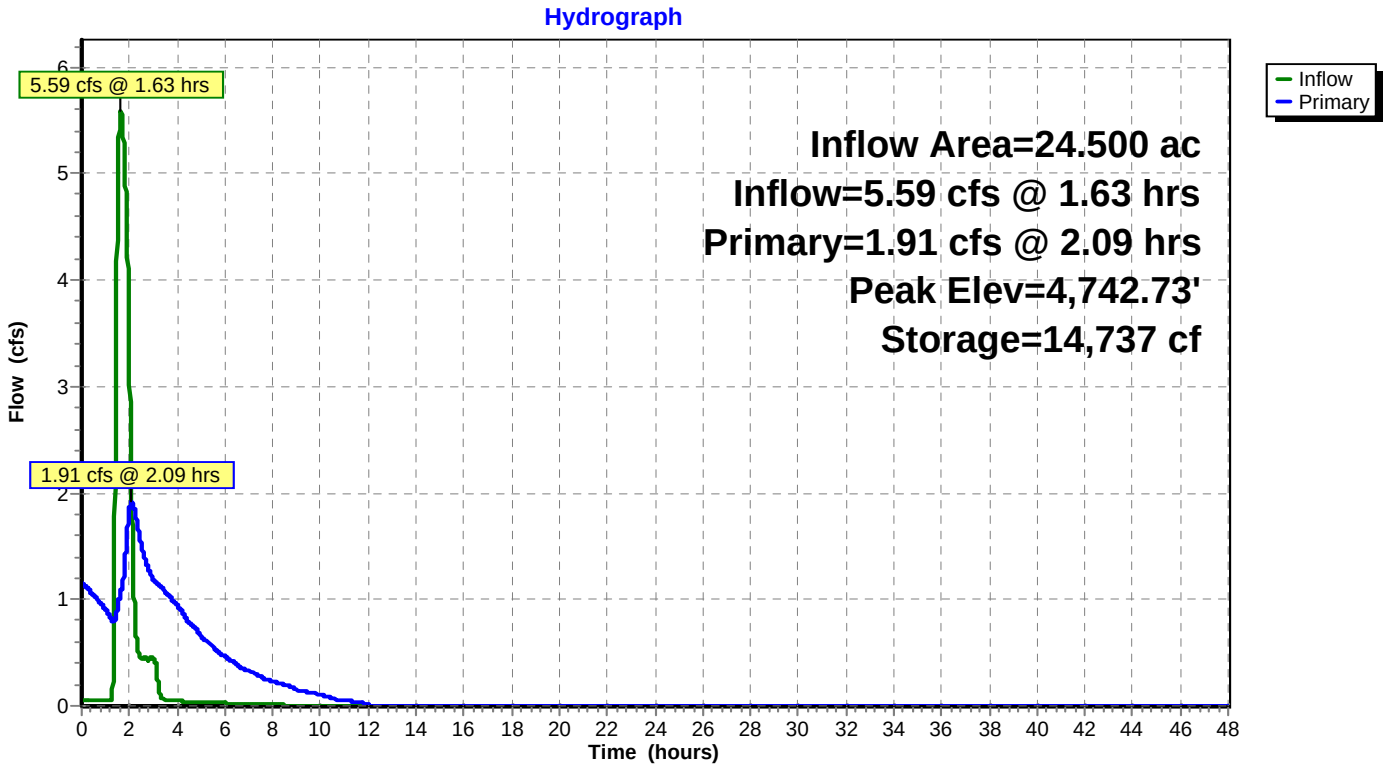
Volume	Invert	Avail.Storage	Storage Description
#1	4,739.00'	42,958 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,739.00	0	0	0
4,740.00	3,373	1,687	1,687
4,742.00	5,394	8,767	10,454
4,744.00	8,104	13,498	23,952
4,746.00	10,902	19,006	42,958

Device	Routing	Invert	Outlet Devices
#1	Primary	4,739.00'	**1.0" Vert. Orifice/Grate X 4.00 columns** X 8 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,742.19'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	4,745.13'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.91 cfs @ 2.09 hrs HW=4,742.73' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 1.32 cfs @ 7.55 fps)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 0.60 cfs @ 2.22 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P4: Pond 4



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 100: Basins 100-102 Runoff Area=6.870 ac Runoff Depth=0.59"
Flow Length=991' Tc=25.6 min CN=89 Runoff=5.32 cfs 0.335 af

Subcatchment 200: Basins 200-201 Runoff Area=15.580 ac Runoff Depth=0.59"
Tc=9.1 min CN=89 Runoff=15.76 cfs 0.761 af

Subcatchment 300: Basin 300 Runoff Area=1.560 ac Runoff Depth=0.54"
Tc=5.0 min CN=88 Runoff=1.63 cfs 0.070 af

Subcatchment 400: Basins 400-403 Runoff Area=22.940 ac Runoff Depth=0.59"
Flow Length=1,690' Tc=12.5 min CN=89 Runoff=21.55 cfs 1.120 af

Subcatchment DD1: DD1 Runoff Area=1.930 ac Runoff Depth=0.45"
Tc=5.0 min CN=86 Runoff=1.61 cfs 0.073 af

Subcatchment DD2: DD2 Runoff Area=0.390 ac Runoff Depth=0.45"
Tc=5.0 min CN=86 Runoff=0.33 cfs 0.015 af

Reach R1: V-Ditch Avg. Flow Depth=0.29' Max Vel=2.91 fps Inflow=0.48 cfs 0.414 af
n=0.025 L=815.0' S=0.0368 '/' Capacity=24.18 cfs Outflow=0.48 cfs 0.414 af

Pond P1: Pond 1 Peak Elev=4,804.31' Storage=15,335 cf Inflow=5.32 cfs 0.335 af
Outflow=0.48 cfs 0.414 af

Pond P2: Pond 2 Peak Elev=4,749.95' Storage=31,059 cf Inflow=15.82 cfs 1.174 af
Outflow=4.21 cfs 1.368 af

Pond P3: Pond 3 Peak Elev=4,754.06' Storage=2,077 cf Inflow=1.63 cfs 0.070 af
Outflow=0.55 cfs 0.085 af

Pond P4: Pond 4 Peak Elev=4,745.13' Storage=33,969 cf Inflow=21.99 cfs 1.204 af
Outflow=10.21 cfs 1.469 af

Total Runoff Area = 49.270 ac Runoff Volume = 2.373 af Average Runoff Depth = 0.58"

Summary for Subcatchment 100: Basins 100-102

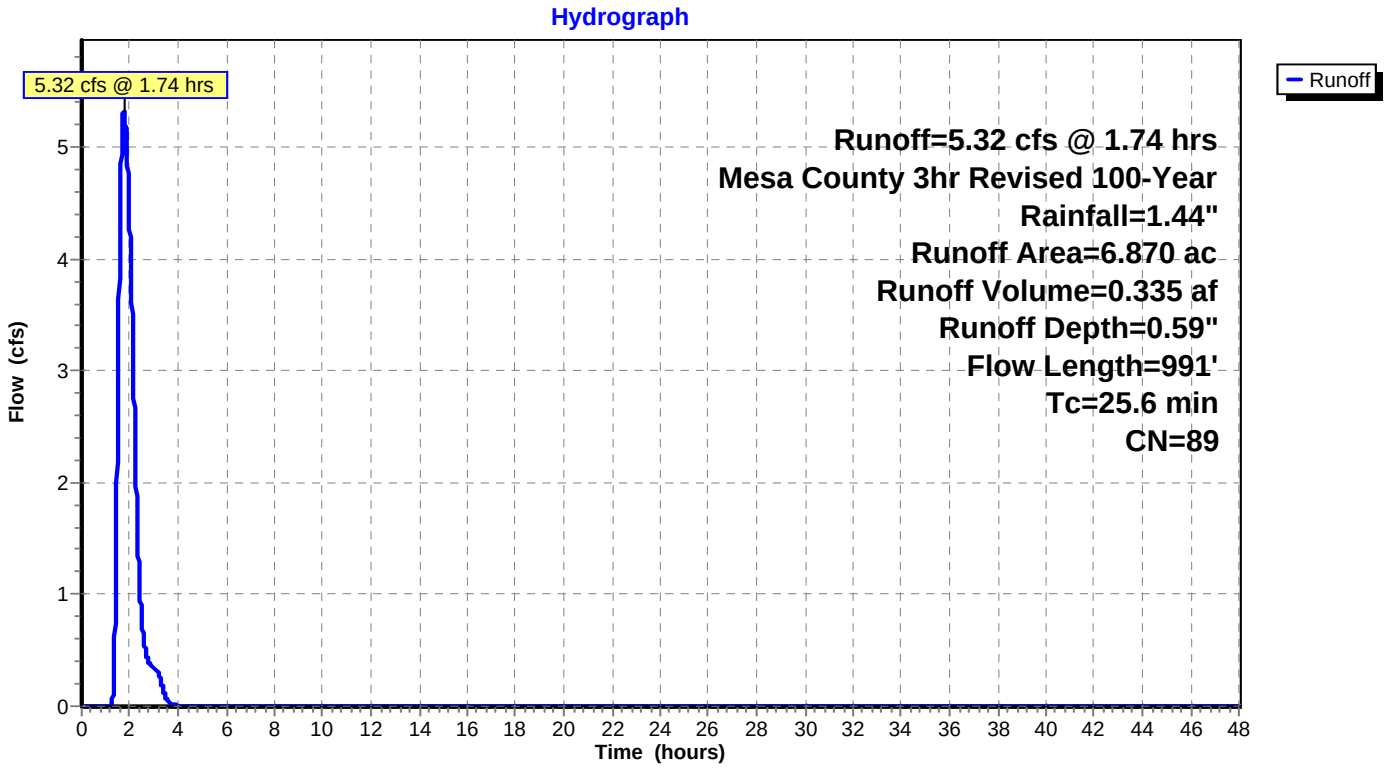
Runoff = 5.32 cfs @ 1.74 hrs, Volume= 0.335 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	6.870	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.9	136	0.0500	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 0.46"
2.7	855	0.1100	5.34		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
25.6	991	Total			

Subcatchment 100: Basins 100-102



Summary for Subcatchment 200: Basins 200-201

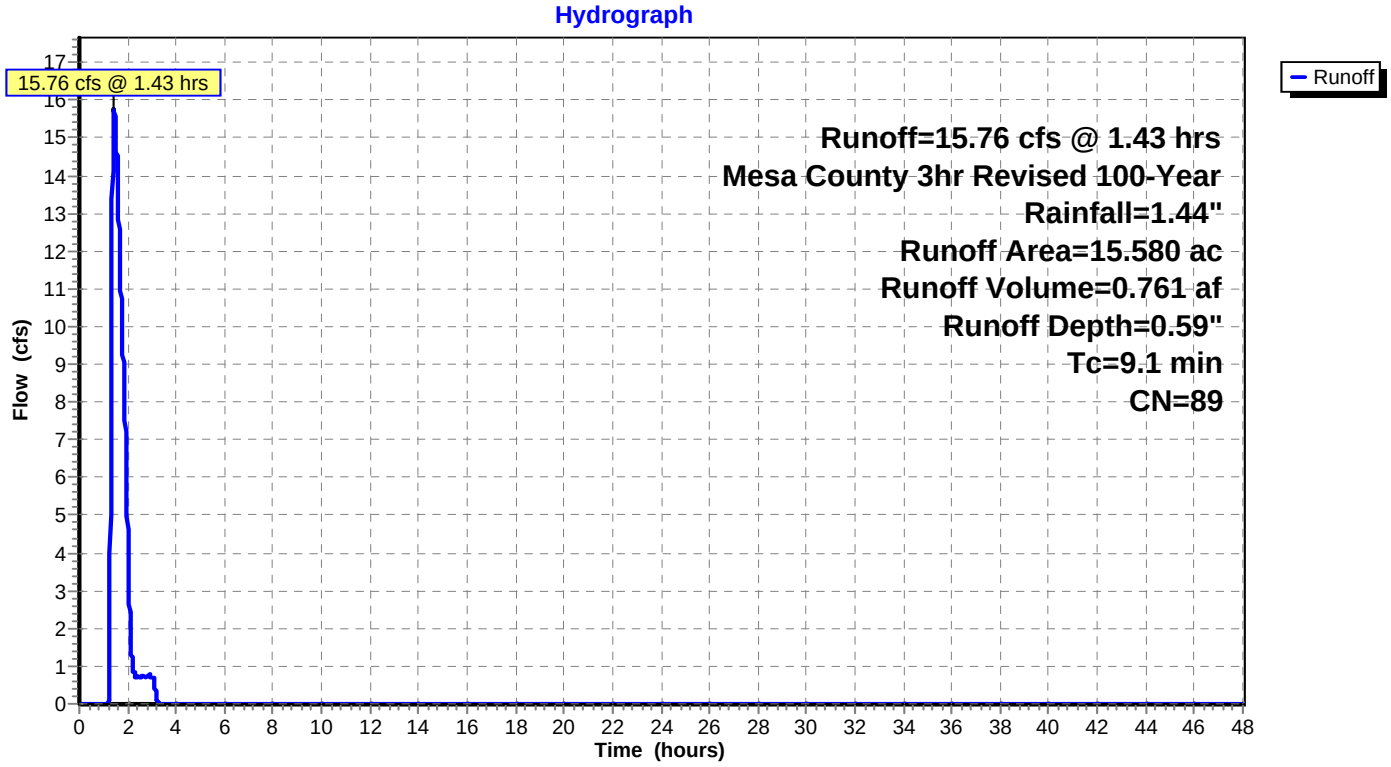
Runoff = 15.76 cfs @ 1.43 hrs, Volume= 0.761 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	15.580	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1					**Direct Entry, Tc to Pond #2**

Subcatchment 200: Basins 200-201



Summary for Subcatchment 300: Basin 300

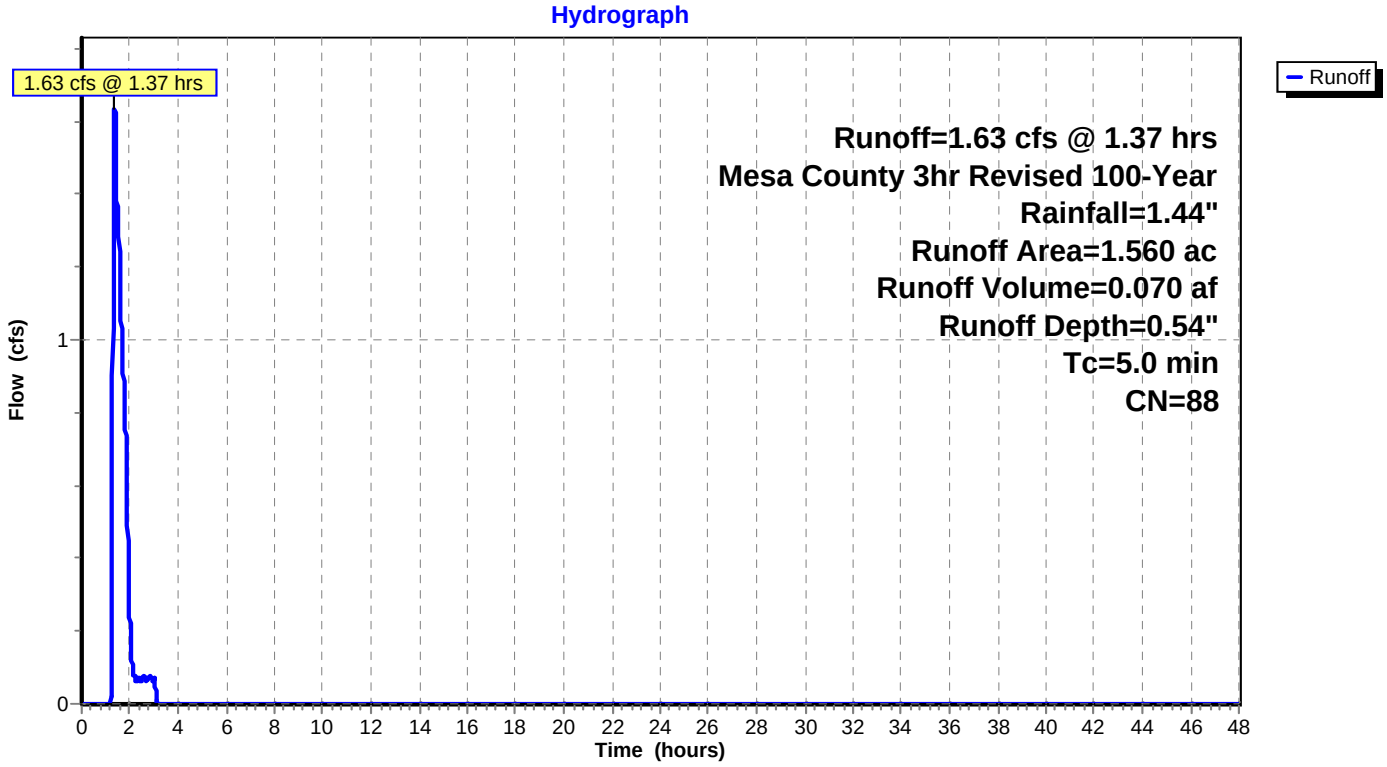
Runoff = 1.63 cfs @ 1.37 hrs, Volume= 0.070 af, Depth= 0.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	1.560	88	LOTS W/ HOUSES 4000 SF

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 300: Basin 300



Summary for Subcatchment 400: Basins 400-403

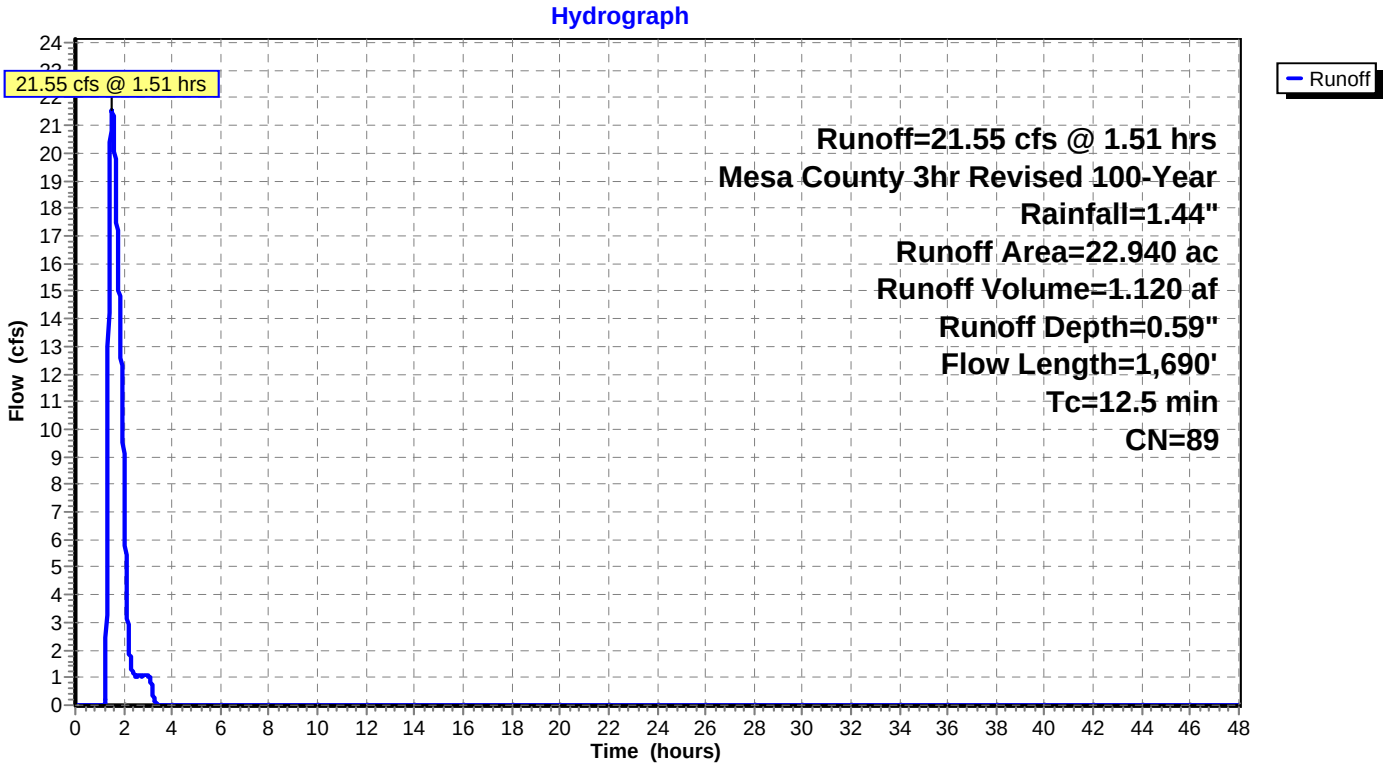
Runoff = 21.55 cfs @ 1.51 hrs, Volume= 1.120 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	22.940	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	190	0.0300	0.31		**Sheet Flow,** n= 0.030 P2= 0.46"
2.4	1,500	0.0933	10.27	32.09	**Trap/Vee/Rect Channel Flow,** Bot.W=0.00' D=1.25' Z= 2.0 '/' Top.W=5.00' n= 0.030
12.5	1,690	Total			

Subcatchment 400: Basins 400-403



Summary for Subcatchment DD1: DD1

Direct Discharge basin compensated in Pond 1

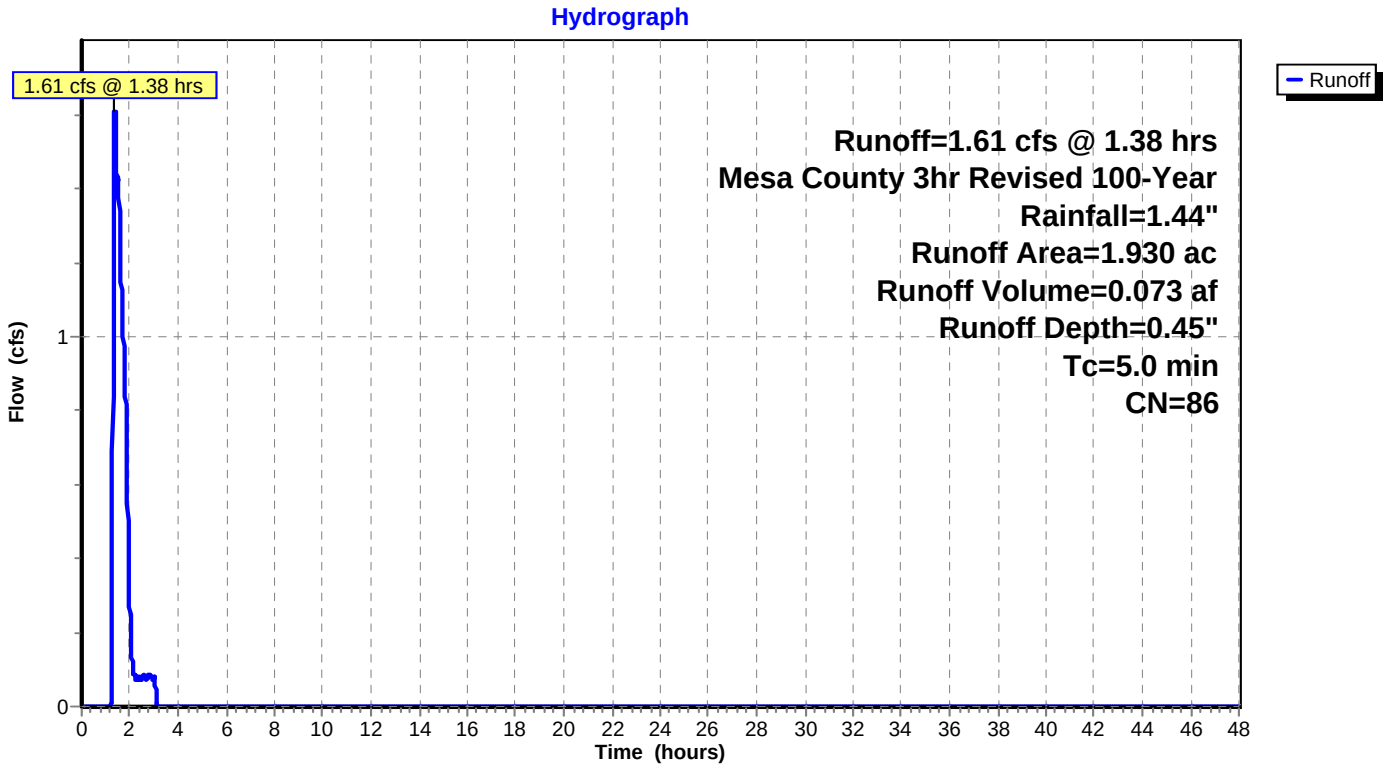
Runoff = 1.61 cfs @ 1.38 hrs, Volume= 0.073 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	1.930	86	Natural western desert, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DD1: DD1



Summary for Subcatchment DD2: DD2

Disrect discharge basin, compensated in Pond 4

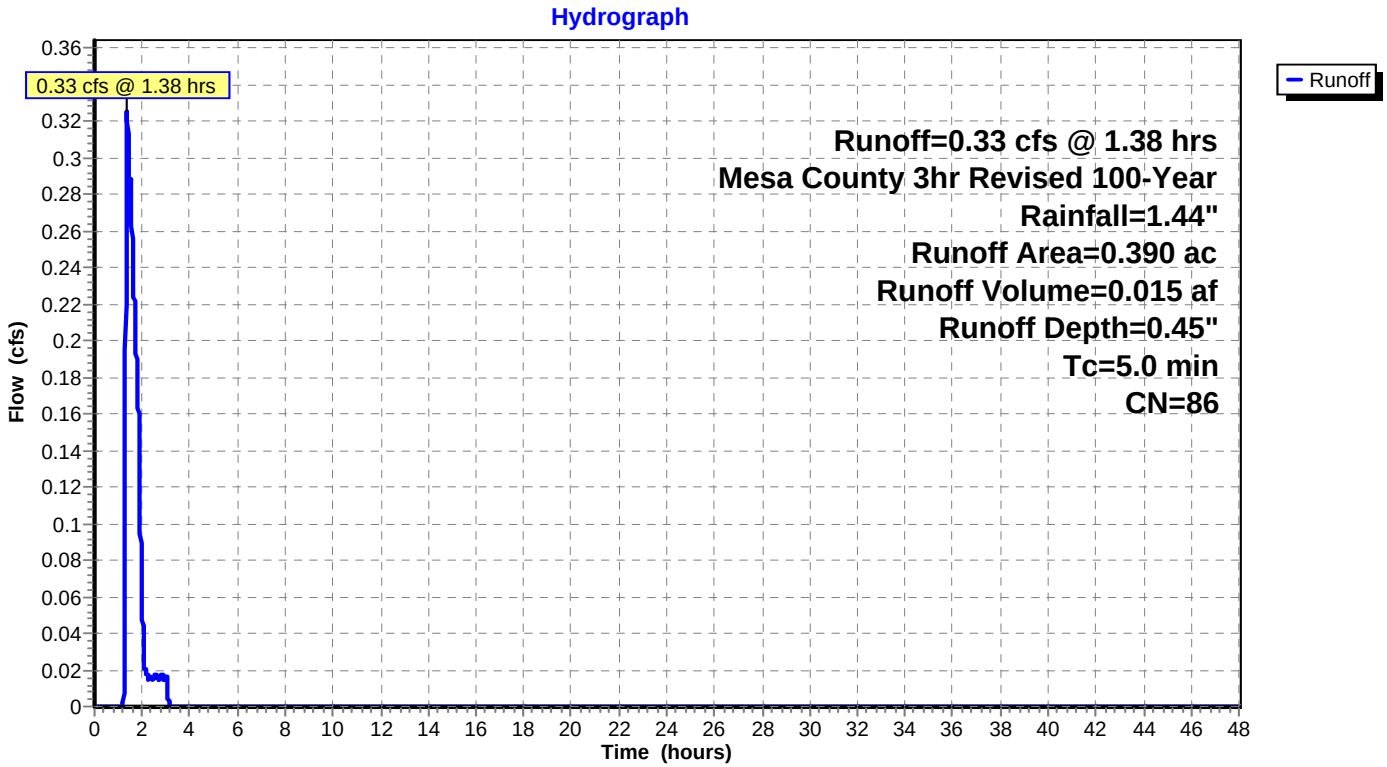
Runoff = 0.33 cfs @ 1.38 hrs, Volume= 0.015 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	0.390	86	Natural western desert, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DD2: DD2



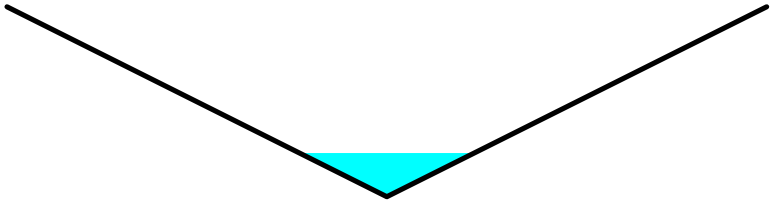
Summary for Reach R1: V-Ditch

Inflow Area = 6.870 ac, Inflow Depth > 0.72" for 100-Year event
Inflow = 0.48 cfs @ 2.66 hrs, Volume= 0.414 af
Outflow = 0.48 cfs @ 2.74 hrs, Volume= 0.414 af, Atten= 0%, Lag= 4.3 min

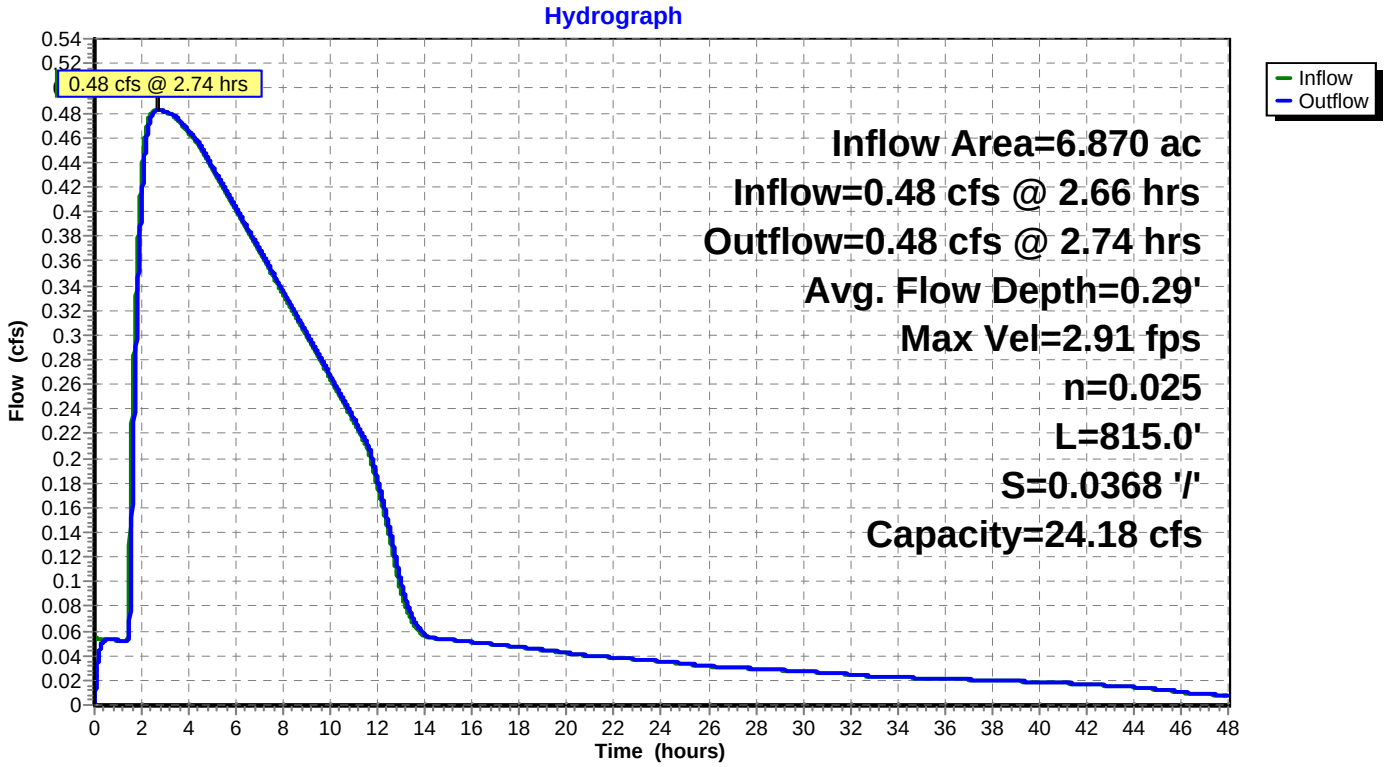
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.91 fps, Min. Travel Time= 4.7 min
Avg. Velocity = 1.72 fps, Avg. Travel Time= 7.9 min

Peak Storage= 135 cf @ 2.74 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 1.25' Flow Area= 3.1 sf, Capacity= 24.18 cfs

0.00' x 1.25' deep channel, n= 0.025
Side Slope Z-value= 2.0 '/' Top Width= 5.00'
Length= 815.0' Slope= 0.0368 '/'
Inlet Invert= 4,796.00', Outlet Invert= 4,766.00'



Reach R1: V-Ditch



Summary for Pond P1: Pond 1

Inflow Area = 6.870 ac, Inflow Depth = 0.59" for 100-Year event
Inflow = 5.32 cfs @ 1.74 hrs, Volume= 0.335 af
Outflow = 0.48 cfs @ 2.66 hrs, Volume= 0.414 af, Atten= 91%, Lag= 55.3 min
Primary = 0.48 cfs @ 2.66 hrs, Volume= 0.414 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,801.50' Surf.Area= 2,799 sf Storage= 3,655 cf
Peak Elev= 4,804.31' @ 2.66 hrs Surf.Area= 5,534 sf Storage= 15,335 cf (11,680 cf above start)

Plug-Flow detention time= 616.1 min calculated for 0.330 af (98% of inflow)
Center-of-Mass det. time= 496.5 min (613.9 - 117.5)

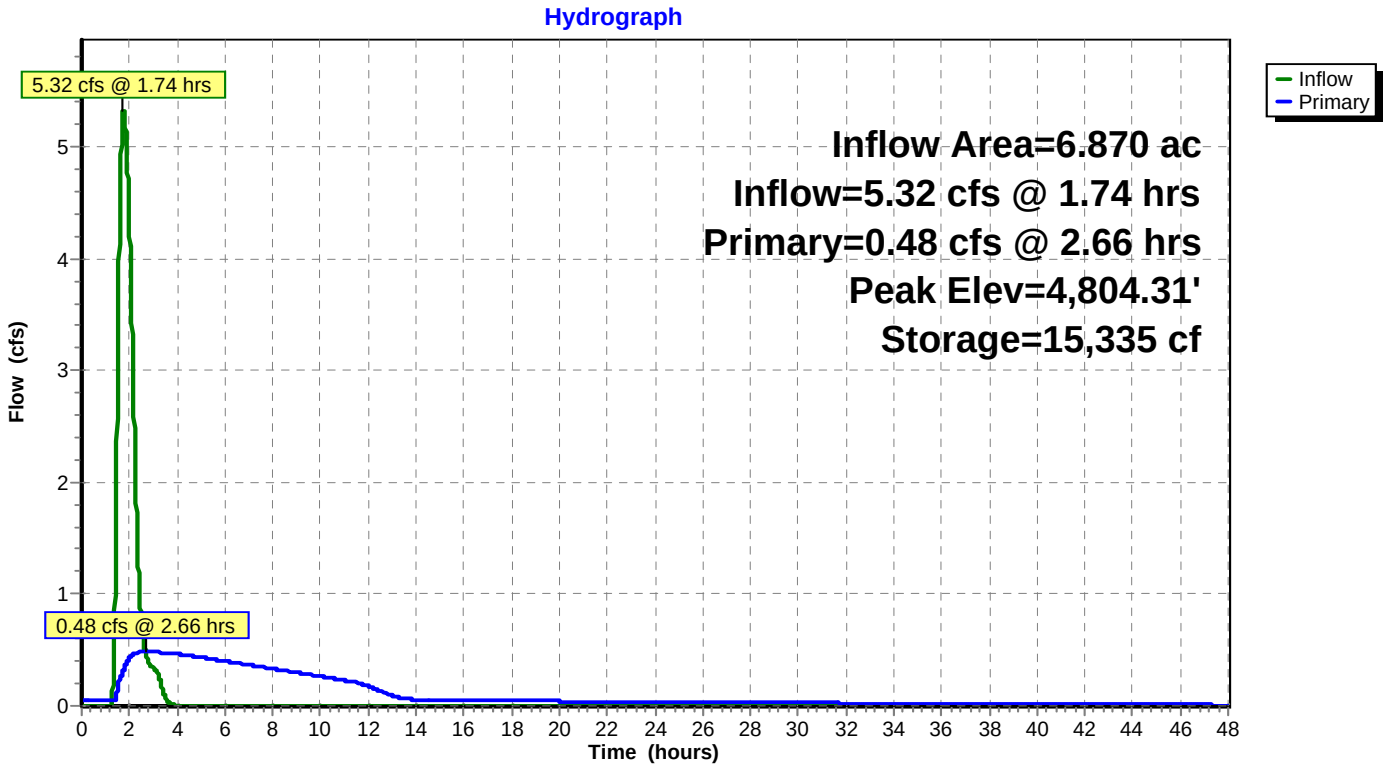
Volume	Invert	Avail.Storage	Storage Description
#1	4,799.00'	43,026 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,799.00	0	0	0
4,800.00	856	428	428
4,802.00	3,447	4,303	4,731
4,804.00	5,204	8,651	13,382
4,806.00	7,321	12,525	25,907
4,808.00	9,798	17,119	43,026

Device	Routing	Invert	Outlet Devices
#1	Primary	4,799.00'	**0.5" Vert. Orifice/Grate** X 7 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,801.50'	**3.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	4,804.50'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.48 cfs @ 2.66 hrs HW=4,804.31' TW=4,796.29' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.09 cfs @ 9.94 fps)
- **2=Orifice/Grate** (Orifice Controls 0.39 cfs @ 7.89 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P1: Pond 1



Summary for Pond P2: Pond 2

Inflow Area = 22.450 ac, Inflow Depth > 0.63" for 100-Year event
Inflow = 15.82 cfs @ 1.43 hrs, Volume= 1.174 af
Outflow = 4.21 cfs @ 2.02 hrs, Volume= 1.368 af, Atten= 73%, Lag= 35.1 min
Primary = 4.21 cfs @ 2.02 hrs, Volume= 1.368 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,747.71' Surf.Area= 8,172 sf Storage= 8,686 cf
Peak Elev= 4,749.95' @ 2.02 hrs Surf.Area= 11,908 sf Storage= 31,059 cf (22,373 cf above start)

Plug-Flow detention time= 309.8 min calculated for 1.168 af (100% of inflow)
Center-of-Mass det. time= 226.9 min (511.1 - 284.3)

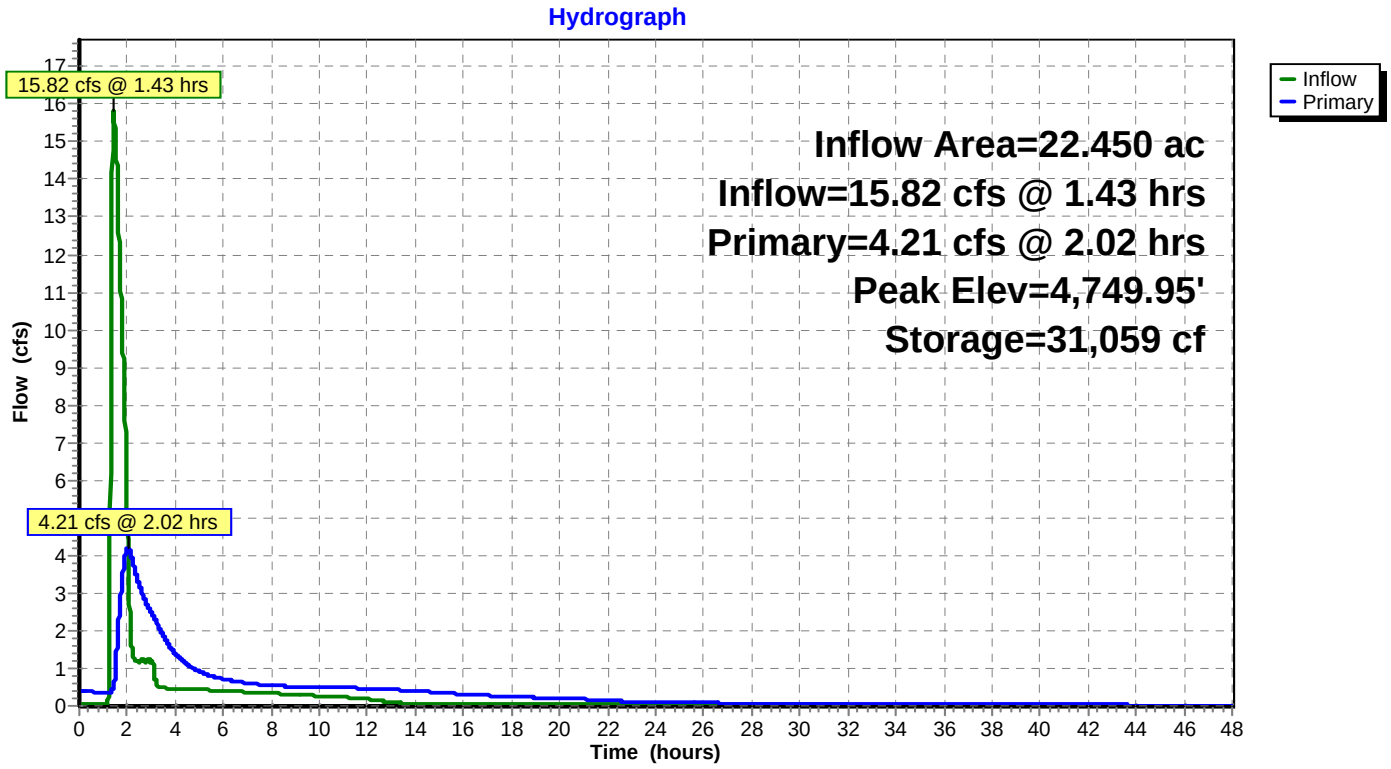
Volume	Invert	Avail.Storage	Storage Description
#1	4,746.06'	59,211 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,746.06	0	0	0
4,747.00	6,765	3,180	3,180
4,748.00	8,746	7,756	10,935
4,749.00	10,334	9,540	20,475
4,750.00	11,994	11,164	31,639
4,751.00	13,830	12,912	44,551
4,752.00	15,490	14,660	59,211

Device	Routing	Invert	Outlet Devices
#1	Primary	4,746.06'	**0.9" Vert. Orifice/Grate X 4.00 columns** X 5 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,748.32'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	4,751.00'	**14.0' long x 0.5' breadth emergency spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=4.21 cfs @ 2.02 hrs HW=4,749.95' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.76 cfs @ 8.57 fps)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 3.45 cfs @ 4.24 fps)
- **3=emergency spillway** (Controls 0.00 cfs)

Pond P2: Pond 2



Summary for Pond P3: Pond 3

Inflow Area = 1.560 ac, Inflow Depth = 0.54" for 100-Year event
Inflow = 1.63 cfs @ 1.37 hrs, Volume= 0.070 af
Outflow = 0.55 cfs @ 1.90 hrs, Volume= 0.085 af, Atten= 66%, Lag= 31.4 min
Primary = 0.55 cfs @ 1.90 hrs, Volume= 0.085 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,752.64' Surf.Area= 737 sf Storage= 632 cf
Peak Elev= 4,754.06' @ 1.90 hrs Surf.Area= 1,301 sf Storage= 2,077 cf (1,445 cf above start)

Plug-Flow detention time= 86.5 min calculated for 0.070 af (100% of inflow)
Center-of-Mass det. time= 67.0 min (166.0 - 99.0)

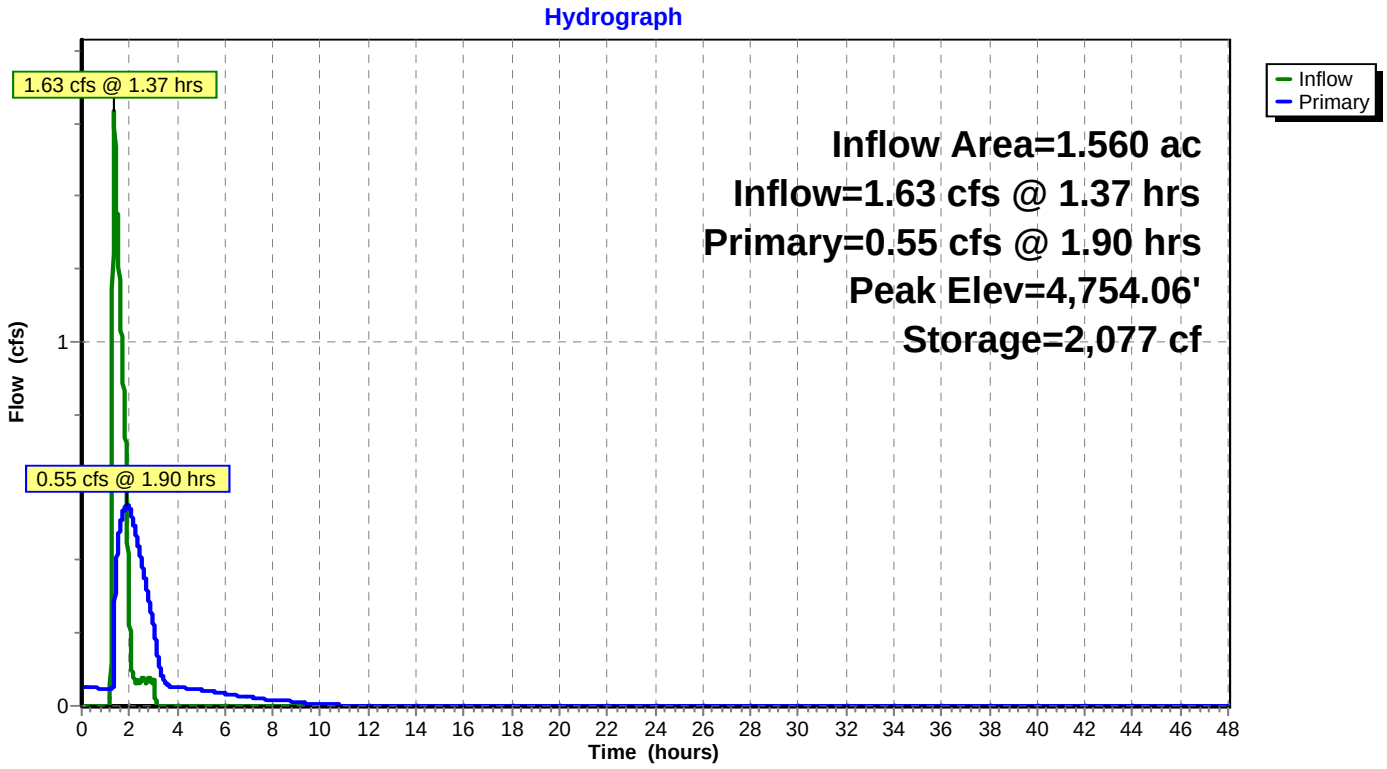
Volume	Invert	Avail.Storage	Storage Description
#1	4,751.00'	5,359 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,751.00	0	0	0
4,752.00	483	242	242
4,754.00	1,277	1,760	2,002
4,756.00	2,080	3,357	5,359

Device	Routing	Invert	Outlet Devices
#1	Primary	4,751.00'	**0.7" Vert. Orifice/Grate** X 4 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,752.64'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	4,754.06'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.55 cfs @ 1.90 hrs HW=4,754.06' TW=4,745.08' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.08 cfs @ 7.64 fps)
- **2=Orifice/Grate** (Orifice Controls 0.47 cfs @ 5.39 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P3: Pond 3



Summary for Pond P4: Pond 4

Inflow Area = 24.500 ac, Inflow Depth = 0.59" for 100-Year event
Inflow = 21.99 cfs @ 1.52 hrs, Volume= 1.204 af
Outflow = 10.21 cfs @ 1.98 hrs, Volume= 1.469 af, Atten= 54%, Lag= 27.6 min
Primary = 10.21 cfs @ 1.98 hrs, Volume= 1.469 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,742.19' Surf.Area= 5,651 sf Storage= 11,503 cf
Peak Elev= 4,745.13' @ 1.98 hrs Surf.Area= 9,680 sf Storage= 33,969 cf (22,467 cf above start)

Plug-Flow detention time= 97.0 min calculated for 1.204 af (100% of inflow)
Center-of-Mass det. time= 73.1 min (182.6 - 109.6)

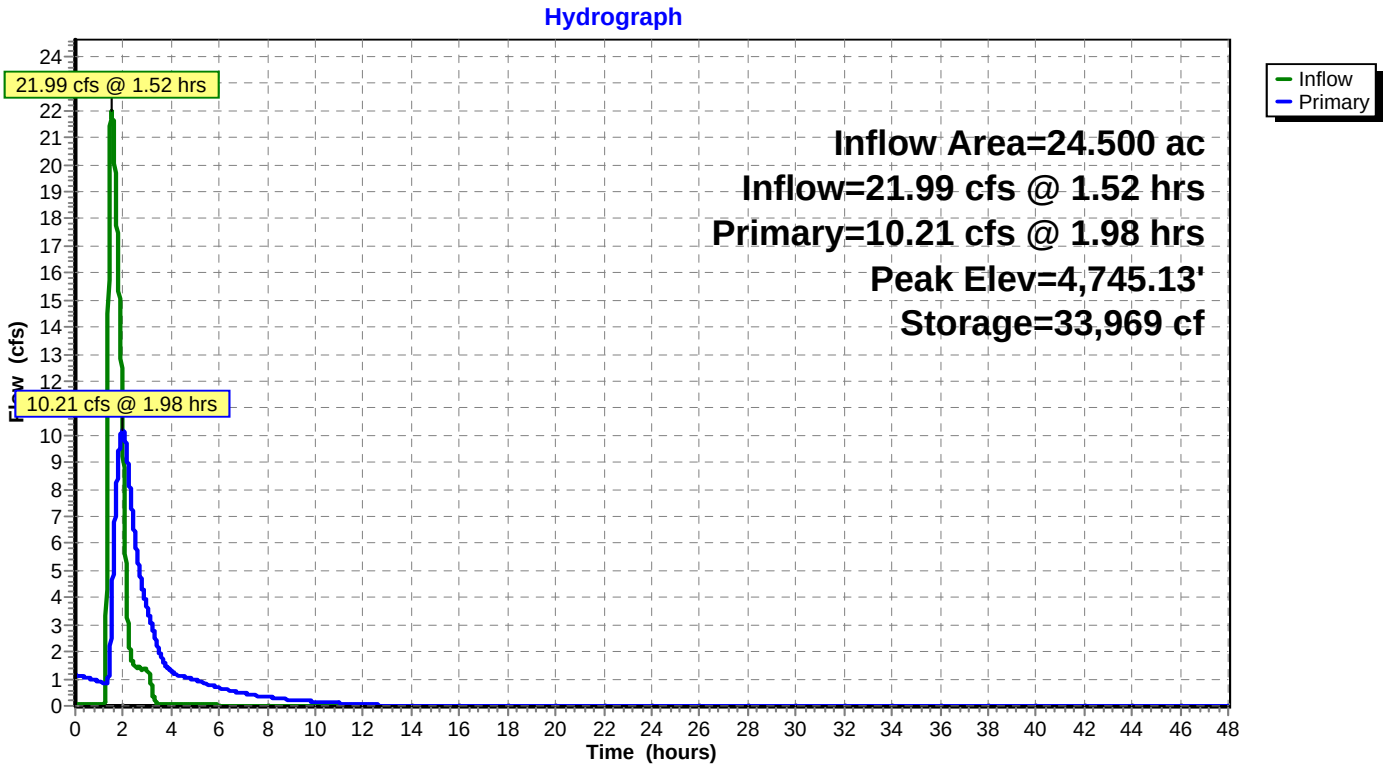
Volume	Invert	Avail.Storage	Storage Description
#1	4,739.00'	42,958 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,739.00	0	0	0
4,740.00	3,373	1,687	1,687
4,742.00	5,394	8,767	10,454
4,744.00	8,104	13,498	23,952
4,746.00	10,902	19,006	42,958

Device	Routing	Invert	Outlet Devices
#1	Primary	4,739.00'	**1.0" Vert. Orifice/Grate X 4.00 columns** X 8 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,742.19'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	4,745.13'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=10.21 cfs @ 1.98 hrs HW=4,745.13' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 1.86 cfs @ 10.65 fps)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 8.35 cfs @ 5.69 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P4: Pond 4



Appendix F – SWMM Checklist

Table 302
Stormwater Management Manual
Drainage Report Checklist

Instructions:
1. Applicant to identify with a "check-mark" if information is provided with report. If applicant believes information is not required, indicate with "n/a" and attach separate sheet with explanation
2. The reviewer will determine if information labeled "n/a" is required and whether information must be submitted.
3. Those items noted with an "asterisk" are not typically required for conceptual/ preliminary report. Applicant shall confirm this with local jurisdiction.
4. Submit three (3) copies of report and include copy of check list bound with report.

TITLE PAGE

A. Type of report (Conceptual/Preliminary or Final Drainage Report).
B. Project Name.
C. Preparer name, firm, address, number, and date.
D. Professional Engineer's seal of preparer.
E. Certifications (see SWMM Section 303.1)

I. INTRODUCTION

A. Background
- X 1. Identify report preparer and purpose.
- NA 2. Identify date of letter with previous County comments.

B. Project Location
- X 1. Identify Township, Range, and Section.
- X 2. Identify adjacent street and subdivision names.
- X 3. Reference to General Location Map.

C. Property Description
- X 1. Identify area in acres of entire contiguous ownership.
- X 2. Describe existing ground cover, vegetation, soils, topography and slopes.
- X 3. Describe existing drainage facilities, such as channels, detention areas, or structures.
- NA 4. Describe existing irrigation facilities, such as ditches, head-gates, or diversions.
- X 5. Identify proposed types of land use and encumbrances.

D. Previous Investigations
- X 1. Identify drainage master plans that include the project area, including floodplain studies.
- X 2. Identify drainage reports for adjacent development.

II. DRAINAGE SYSTEM DESCRIPTION

A. Existing Drainage Conditions
- X 1. Describe existing topography and provide map with contours extending a minimum of 100 feet beyond property limits.
- X 2. Identify major drainageway or outfall drainageway and describe map showing location of proposed development within the drainageways.
- X 3. Identify pre-developed drainage patterns and describe map showing pre-developed sub-basins and concentrated discharge locations. Provide calculations of pre-developed peak flows entering and leaving the site.

B. Master Drainage Plan
- X 1. Describe location of the project relative to a previously prepared master drainage plan, including drainage plans prepared for adjacent development.

C. Offsite Tributary Area

X 1. Identify all offsite drainage basins that are tributary to the project.
X 2. Identify assumptions regarding existing and future land use and effects of offsite detention on peak flows.

D. Proposed Drainage System Description

NA 1. Identify how offisite stormwater is collected and conveyed through the site and ultimately to the receiving water(s).
X 2. Identify sub-basins and describe, in general terms, how onsite stormwater is collected and conveyed through the site for each location where stormwater is discharged from the site.
X * 3. Describe detention volumes, release rates and pool elevations.
X * 4. Identify the difference in elevation between pond invert and the groundwater table.
X 5. Describe how stormwater is discharged from the site, including both concentrated and dispersed discharges and rates.
X 6. Describe stormwater quality facilities.
X * 7. Describe maintenance access aspects of design.
X * 8. Describe easements and tracts for drainage purposes, including limitation on use.

E. Drainage Facility Maintenance

NA * 1. Identify responsible parties for maintenance of each drainage and water quality facility.
NA * 2. Identify general maintenance activities and schedules.

III. DRAINAGE ANALYSIS AND DESIGN CRITERIA

A. Regulations

X 1. Identify that analysis and design was prepared in accordance with the provisions of the Manual.
X 2. Identify other regulations or criteria which have been used to prepare analysis and design.

B. Development Criteria

X 1. Identify drainage constraints placed on the project, such as by a major drainage study, floodplain study or other drainage reports relevant to the project.
X 2. Identify drainage constraints placed on the project, such as from major street alignments, utilities, existing structures, and other developments.

C. Hydrologic Criteria

(If Manual was followed without deviation, then a statement to that effect is all that is required. Otherwise provide the following information where the criteria used deviates from the Manual.)

X 1. Identify developed storm runoff peak flows and volumes and how they were determined, including rainfall intensity or design storm.
X 2. Identify which storm events were used for minor and major flood analysis and design.
X 3. Identify how and why any other deviations from the Manual occurred.

D. Hydraulic Criteria

(If Manual was followed without deviation, then a statement to that effect is all that is required. Otherwise provide the following information where the criteria used deviates from the Manual.)

NA * 1. Identify type(s) of streets within and adjacent to development and source for allowable street capacity.
NA * 2. Identify which type(s) of storm inlets were analyzed or designed and source for allowable capacity.
3. Identify which type of storm sewers which were analyzed or designed and

Manning's n-values used.

4. Identify which method was used to determine detention volume requirements and how allowable release rates were determined.
5. Identify how the capacity of open channels and culverts were determined.
6. Identify any special analysis or design requirements not contained with the Manual.
7. Identify how and why any other deviations from the Manual occurred.

E. Variance from Criteria

1. Identify any provisions of the Manual for which a variance is requested.
2. Identify pre-existing conditions which cause the variance request.

***IV. POST CONSTRUCTION STORMWATER MANAGEMENT. See Manual Section 1600 for requirements.**

Note: This section of the Final Drainage Report identifies additional information required by Mesa County's, City of Grand Junction's, and Town of Palisade's, Permit for Stormwater Discharges Associated with Municipal Separate Storm Sewer Systems (MS4s), permit No. COR-090000. The Final Drainage Plan and the Construction SWMP (see SWMM Section 1500) meets the requirements of the MS4s Permit. In general, this section identifies permanent BMP practices to control the discharge of pollutants after construction is complete.

*A. Stormwater Quality Control Measures

1. Describe the post-construction BMPs to control discharge of pollutants from the project site.
2. If compensating detention is provided, discuss practices to address water quality from area not tributary to detention area.
3. If underground detention is proposed, discuss how water quality facilities will be provided on the surface.
4. If proprietary BMPs are proposed, provide the justification and sizing requirements (see SWMM Section 1603.3).

*B. Calculations

1. Provide methods and calculations for WQCV, sediment storage, and water quality outlet structure.

V. CONCLUSIONS

A. Compliance with Manual

Compliance with Manual and other approved documents, such as drainage plans and floodplain studies.

B. Design Effectiveness

Effectiveness of drainage design to control impacts of storm runoff.

C. Areas in Flood Hazard Zone

Meet requirements of Floodplain Regulations: Mesa County Land Development Code, Section 7.13; City of Grand Junction Zoning and Development Code, Section 7.1.

D. Variances from Manual

Applicant shall identify any requested variances and provide basis for approving variance. If no variances are requested, applicant shall state that none are requested.

VII. REFERENCES

Provide a reference list of all criteria, master plans, drainage reports, and technical information used.

TABLES

Include copy of all tables prepared for report.

FIGURES

A. General Location Map (See Section 303.2a)

X B. Flood Plain Information
X C. Drainage Plan (See Section 303.2b)
X D. Other pertinent figures.

APPENDICIES

A. DESIGN CHARTS

X 1. Provide copy of all design charts (i.e.: tables, figures, charts from other criteria) used for the report.

B. HYDROLOGIC CALCULATIONS (see Manual Sections 600 and 700)

X 1. Land use assumptions for off-site runoff calculations.
X 2. Time of concentration and runoff coefficients for pre-existing and post development conditions.
X 3. Pre-developed hydrologic computations.
X 4. Developed conditions hydrologic computations.

C. HYDRAULIC CALCULATIONS

NA 1. Capacity of existing channels, streets, storm sewers, inlets, culverts and other facilities.
NA 2. Calculations for existing storm sewer and open channel.
NA 3. Irrigation ditch flows and ditch system capacity.
X * 4. Detention pond design (see Manual, Section 1400 for requirements).
X * a. Storage volume, release rates, and pool elevations for 10-year and 100-year storm.
X * b. Outlet structure dimensions, orifice diameter, weir lengths, pipe headwater and other data.
X * c. Outlet velocity and energy dissipation requirements.
X * d. Routing of outlet flows and emergency spillway flows.
X * 5. Street capacity calculations, if data in Manual not used (see Section 1100).
NA * 6. Storm inlet capacity calculations, if data in Manual not used (see Section 1100).
NA * 7. Storm sewer capacity calculations, if data in Manual not used (see Section 1000).
NA * 8. Channel capacity calculations, if data in Manual not used (see Section 800).
NA * 9. Culvert capacity calculations (see Manual, Section 1200).
NA * 10. Other hydraulic structure calculations (see Manual, Section 900).

D. STORMWATER QUALITY CALCULATIONS

X 1. Water Quality Capture Volume (WQCV).
X * 2. Storage volume for sediment volume and pool elevations for WQCV.
X * 3. Outlet calculations for required area per row, diameter of individual holes, number of holes per row, and number of holes per column.

X

CERTIFICATION – PROFESSIONAL ENGINEER'S SEAL AND SIGNATURE

ACKNOWLEDGEMENTS

Drainage Report checklist was prepared by: SSM

Table 303
Stormwater Management Manual

Drainage Plan Checklist

Instructions:
1. Applicant to identify with a "check-mark" if information is provided. If applicant believes information is not required, indicate with "n/a".
2. County will determine if information labeled "n/a" is required and whether information must be submitted.

I. EXISTING FACILITIES

- X A. Contours at two foot intervals, based on USGS datum. Contours to extend at least 50 feet past property line.
- X B. Location and elevation of USGS benchmarks or benchmarks referenced to USGS.
- X C. Property lines.
- X D. Drainage easements.
- X E. Street names.
- X F. Major and minor channels and floodplains.
- X G. A historic drainage plan including historic basin boundaries and flow paths.

II. PROPOSED FACILITIES

- X A. Contours at two-foot intervals, based on USGS datum.
- X B. Property lines.
- X C. Drainage easements.
- X D. Street names and grades.
- X E. Right of way and easement.
- X F. Finished floor elevations for protection from major storm run-off.
- X G. Detention pond information:
  1. X Location of each detention pond with site at 1"=50' scale or larger with 2-foot contour intervals.
  2. X Inlet and outlet structure, and trickle channel design details.
  3. X Details of emergency spillway and channel.
  4. X Landscape information, including side slopes, vegetation and planting requirements.
  5. X Details of water quality outlet structure.
- X H. Channel Information:
  1. X Profiles with existing and proposed grades.
  2. X Cross sections on 100-foot stations showing existing and proposed topography and required rights of way.
  3. X Locations and size of all existing and proposed structures.
  4. X Locations and profiles of adjacent utilities.
  5. X Typical channel section and lining details.
- X I. Storm sewer information:
  1. X Alignment and location of manholes, inlets, and outlet structures.
  2. X Profile of invert and pipe crown.
  3. X Invert elevations at manholes and inlets.
  4. X Lengths and grades between manholes and inlets.
  5. X Locations and elevations of utilities adjacent to and crossing storm sewer.
  6. X Easement and other O&M access geometry.
  7. X Outlet details, such as end sections, headwall and wingwalls, erosion control, and vegetation.
- N/A J. Street cross sections with design 100-year flood depth.
- N/A K. Other drainage related structures and facilities, including underdrains and sump pump discharge lines.
- N/A L. Other permanent BMP measures to control pollutant discharges to the County's MS4 system.

III. HYDRAULIC AND HYDROLOGIC INFORMATION

X A. Routing and accumulative runoff peaks at upstream and downstream ends of the site and at various critical points onsite for initial and major storms. Inflow and outflow from each subbasin shall be shown for both initial and major storms.

NA B. Street cross sections showing 100-year flood levels.

NA C. Major and minor channels and floodplains.

X D. Detention pond data:

X 1. Release rates for 10- and 100-year storm events.

X 2. Required and provided volumes for 10- and 100-year storm events.

X 3. Design depths for 10- and 100-year storm events.

X 4. Water quality capture volume and pool elevation.

NA E. Channel data:

NA 1. Water surface profiles.

NA 2. Representative 100-year flow velocity and Froude number.

NA F. Storm sewer data:

NA 1. Profile of water surface for design flow rate.

NA 2. Peak flows for design flow, 2-year and 100-year storm events.

IV. STANDARD NOTES

X A. No building, structure, or fill will be placed in the detention areas and no changes or alterations affecting the hydraulic characteristics of the detention areas will be made without the approval of the County.

X B. Maintenance and operation of the detention and water quality areas is the responsibility of property owner. If owner fails in this responsibility, the County has the right to enter the property, maintain the detention areas, and be reimbursed for costs incurred.

X C. Detention pond volumes, all drainage appurtenances, and basin boundaries shall be verified. As-built drawings shall be prepared by a registered professional engineer prior to issuance of certificate of occupancy for any structure within the development.

X D. Permission to reproduce these plans is hereby given to Mesa County for County purposes associated with plan review, approval, permitting, inspection and construction of work.

X **V. PROFESSIONAL ENGINEER'S SEAL AND SIGNATURE**

Y **VI. OTHER**

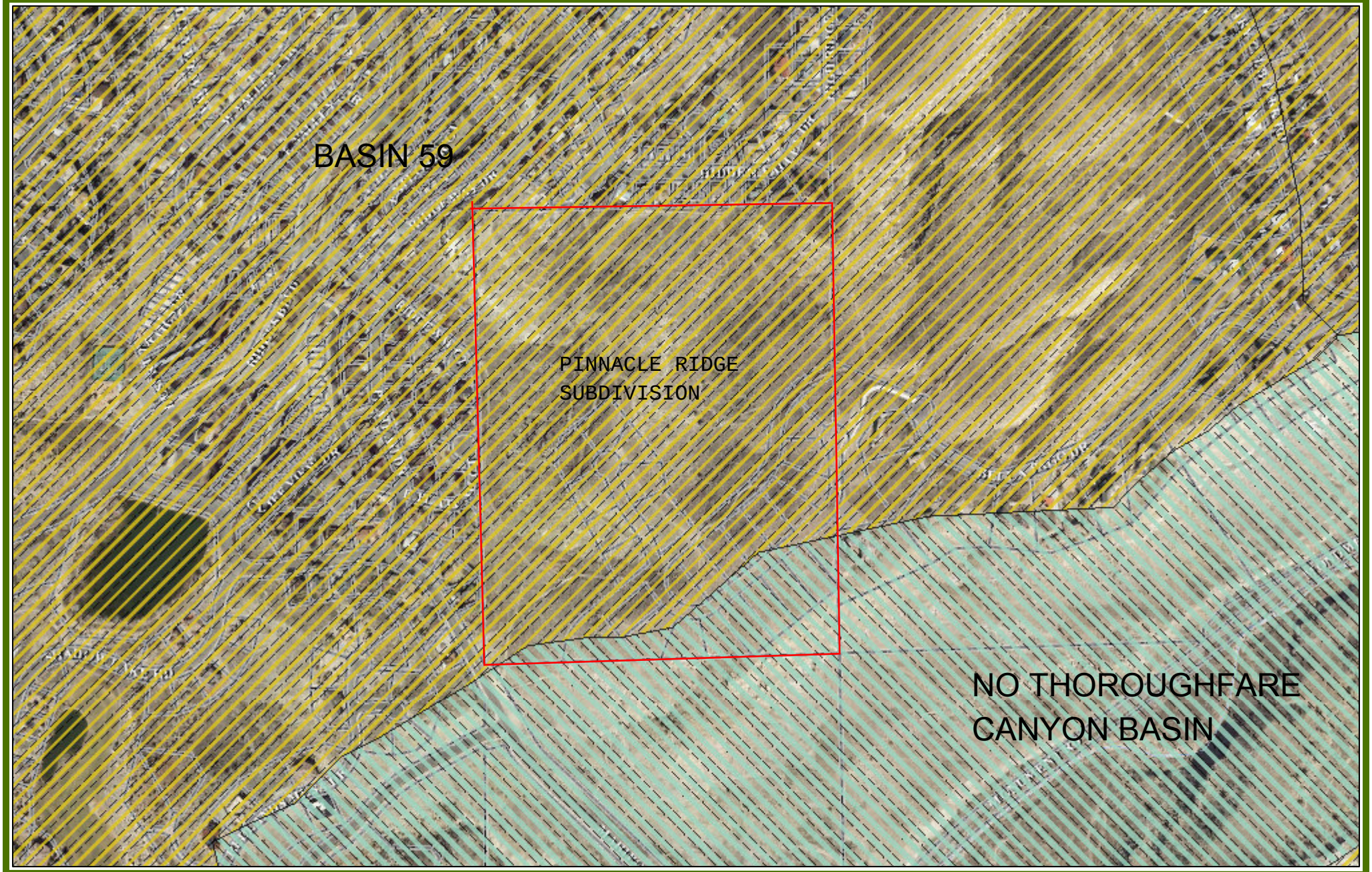
A. Horizontal and vertical control information and ties to existing and proposed features.

ACKNOWLEDGEMENTS

Drainage Plan checklist was prepared by: CSM

Appendix G – Major Basins Exhibit

City of Grand Junction



N

0 0.125 0.25 Miles

Printed: 6/23/2015

1 inch = 468 feet

CITY OF Grand Junction COLORADO GEOGRAPHIC INFORMATION SYSTEM

Appendix H – Variance Request Letter

VORTEX
ENGINEERING, INC.

December 22, 2015

City of Grand Junction
Attn: Rick Dorris, P.E.
250 N 5th Street
Grand Junction, CO 81501

RE: Pinnacle Ridge Subdivision
Drainage Variance Request
East of Mariposa Drive
Grand Junction, CO

VEI #: F04-006
PROJECT #: SUB-2015-120

Dear Mr. Dorris,

This letter is to request a variance from compliance with section 1407.3 of The Grand Junction Storm Water Management Manual, hereinafter SWMM, which requires that "The total of un-detained area shall not exceed 5% or 5000 square feet of total area whichever is less." This request shall be taken into consideration in conjunction with the data and narrative contained in the approved "Preliminary Drainage Report for Pinnacle Ridge Subdivision". The copy of this letter is found in Appendix H of the above mentioned report. The subject project has two (2) basins that do not meet the above requirement, and are the cause for this request; Basins DD1 and DD2.

The proposed basin DD1 is about 1.93 acres in size, located in the south east corner of the project site. In proposed conditions this basin shall remain mostly undisturbed. Historically, the runoff from this area is generated by the existing basin EX1, with an area of 5.96 acres and discharges 1.62 and 4.47 cfs runoff for the minor (10 year storm) and the major (100 year storm), respectively. The runoff during the proposed conditions from DD1 is estimated to be 0.32 cfs and 1.61 cfs for minor and major storm event, respectively. The reduction of the runoff in the proposed conditions is created by reducing the existing basin area, due to the onsite grading.

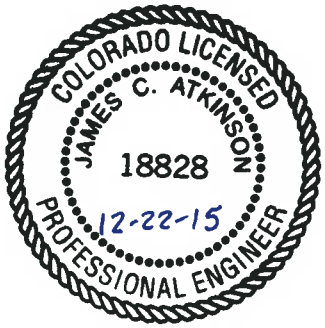
Basin DD2 is located in the north east corner of the site with an area of 0.39 acres. The proposed runoffs from this basin are 0.06 cfs and 0.33 cfs for minor and major storm, respectively. The existing runoff flows in this area are generated by the existing basin EX6 and are estimated to be 0.11 cfs and 0.55 cfs for minor and major storm, respectively. The area of the basin in proposed conditions is decreased by almost a half. The runoff from this basin is impossible to route via gravity through Pond 4 due to the basin elevations at low end are below the inverts of the designated ponds. The runoff from DD2 shall be concentrated in swales along the northern property boundary and diverted into the adjacent vacant lot owned by Genie Inc., and located between 2417 and 2419 Hidden Valley Drive, at the same point of discharge as the outfall from Pond 4. The sum of the flows into the vacant lot from Pond 4 outfall and DD2 runoff, in proposed conditions, is estimated to be 1.96 cfs and 10.40 cfs, for minor and major storm respectively, which is less than the adjusted allowable 2.71 cfs and 11.28 and also less than the historic runoff from basin EX4 = 2.91 cfs and 13.46 during the minor and major storm events, respectively.

In both cases of the direct discharge from basins DD1 and DD2, in the proposed conditions is less than in the existing conditions. In case of DD2 the runoff onto the north property shall be controlled with diversion ditches running along the boundary in the direction of the above mentioned vacant lot, thus reducing the cross lot drainage onto the developed lots located directly north of the basin.

In both cases the low points of DD1 and DD2 basins are well below inverts of their respective detention ponds, thus the hydraulic conditions in these basins cannot be adequately addressed to comply with the SWMM. Nevertheless, both basins DD1 and DD2 are over detained in Pond 1 and Pond 4, respectively.

Vortex Engineering, Inc. looks forward to successfully working with the City of Grand Junction to permit this project. Upon your review of this information, should you have any questions or require additional information, please do not hesitate to contact me at 970-245-9051. Thank you.

Sincerely,
Vortex Engineering, Inc



James C. Atkinson, P.E.

Cc: Two R&D
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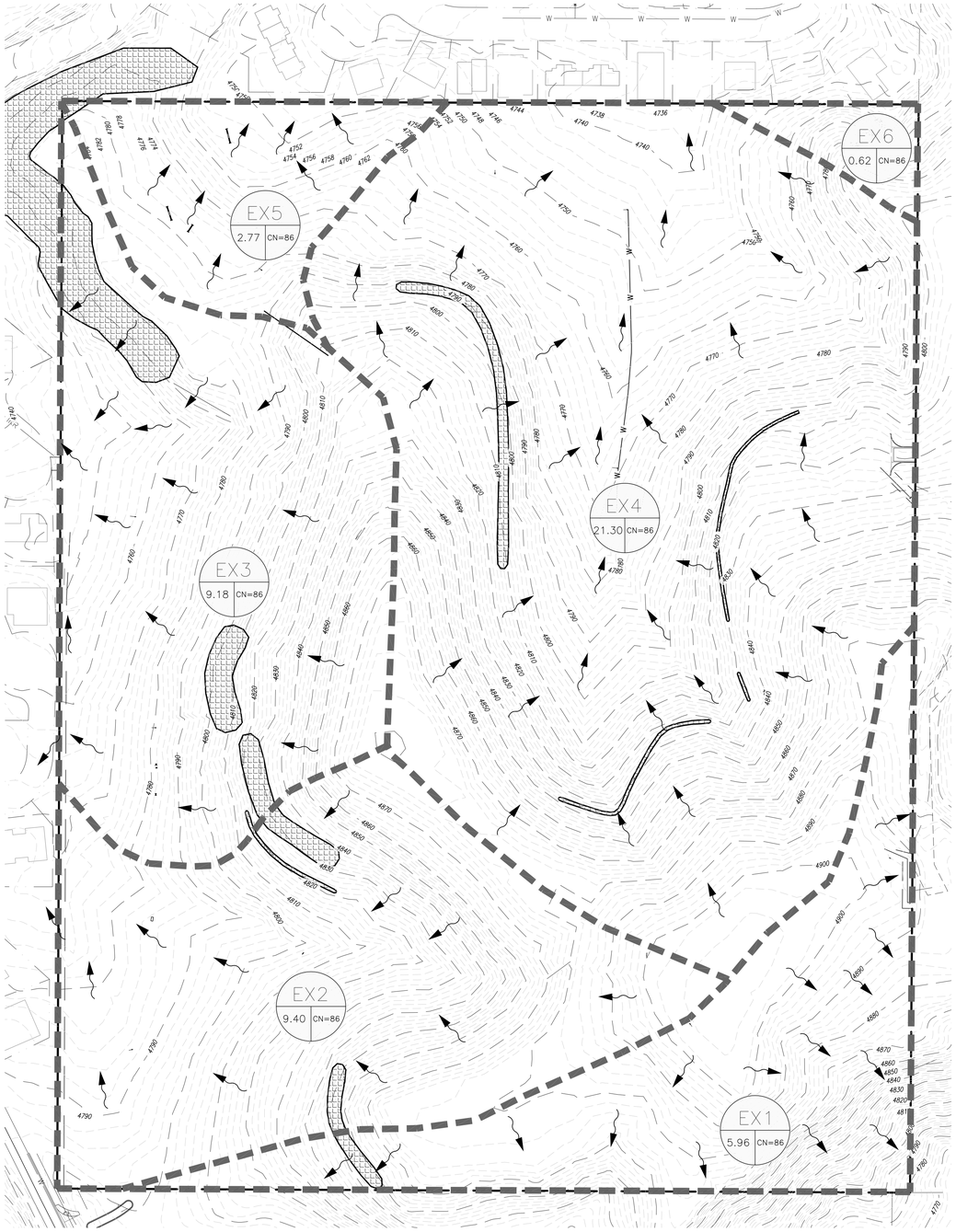
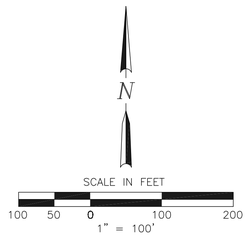
Appendix I – Drainage Maps





RUNOFF TABLE

BASIN	10 YEAR RUNOFF (CFS)	100 YEAR RUNOFF (CFS)
EX1	1.62	4.47
EX2	1.41	6.74
EX3	1.42	6.80
EX4	2.91	13.46
EX5	0.45	2.22
EX6	0.11	0.55

PROJECT BENCHMARK

PROJECT BENCHMARK #1 IS A SURVEY MONUMENT LOCATED AT THE SE1/16 CORNER OF SECTION 4, T1S, R1W, ON F 1/4 ROAD. ELEVATION IS BASED ON THE MESA COUNTY SURVEY INFORMATION MANAGEMENT SYSTEM.
ELEVATION=4571.298
PROJECT BENCHMARK #2 IS A SURVEY MONUMENT LOCATED AT THE C-E1/16 CORNER OF SECTION 4, T1S, R1W. ELEVATION IS BASED ON THE MESA COUNTY SURVEY INFORMATION MANAGEMENT SYSTEM.
ELEVATION=4580.794

VORTEX ENGINEERING, INC.
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FOR REVIEW

MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	08/08/17	REVISED PRE CITY COMMENTS DATED JULY 18, 2017	SSM

Drainage Map - Existing Conditions

-

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/07/17**
SCALE: **SEE PLAN**
CAD: **pinnacledrainagemap.dwg**

~SHEET~
1/2

PONDS' SUMMARY TABLES

POND 1	VOLUME (CF)	WSEL (FT)	DESIGN PEAK DISCHRGE FLOW (CFS)	SUM OF DD1 AND POND 1 PEAK FLOWS (CFS)	ADJUSTED ALLOWABLE PEAK DISCHARGE FLOW (CFS)
WQCV	3,296	4801.50	NA	NA	NA
10 YEAR	6,082	4802.31	0.26	.58	0.59
100 YEAR	15,335	4804.31	0.48	2.09	2.47

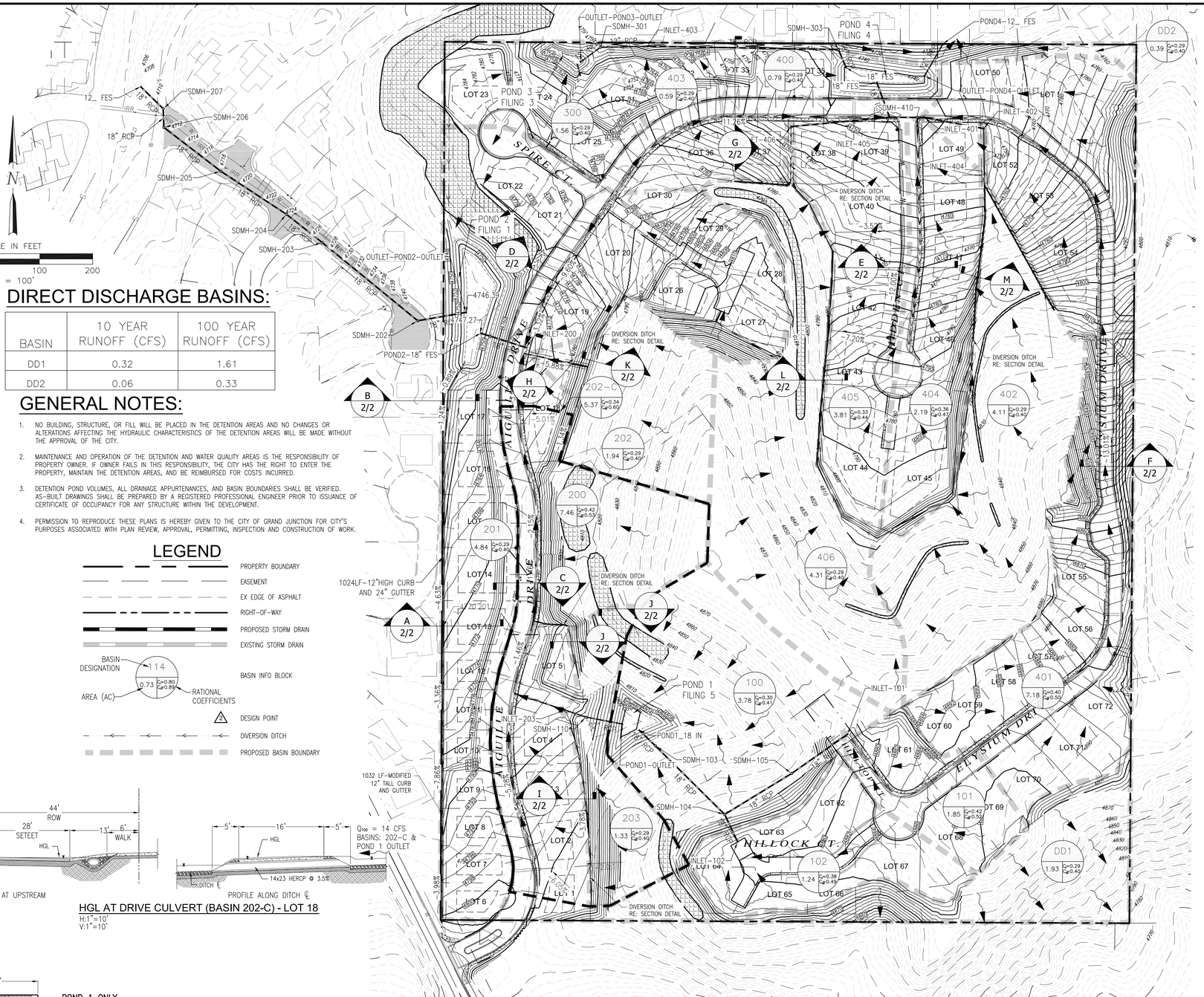
POND 2	VOLUME (CF)	WSEL (FT)	PEAK DISCHRGE FLOW (CFS)	ALLOWABLE PEAK DISCHRGE FLOW (CFS)
WQCV	7,575	4847.71	NA	NA
10 YEAR	13,992	4748.32	0.52	1.87
100 YEAR	31,059	4749.95	4.21	7.79

POND 3	VOLUME (CF)	WSEL (FT)	PEAK DISCHRGE FLOW (CFS)	ALLOWABLE PEAK DISCHRGE FLOW (CFS)
WQCV	720	4752.64	NA	NA
10 YEAR	820	4752.88	.17	0.19
100 YEAR	2,077	4754.06	.55	0.78

POND 4	VOLUME (CF)	WSEL (FT)	PEAK DISCHRGE FLOW (CFS)	SUM OF DD2 AND POND 4 PEAK FLOWS (CFS)	ADJUSTED ALLOWABLE PEAK DISCHARGE FLOW (CFS)
WQCV	11,098	4742.19	NA	NA	NA
10 YEAR	14,737	4742.73	1.91	1.96	2.71
100 YEAR	33,969	4745.13	10.21	10.40	11.28

OUTLET STRUCTURE TABLES

POND	A	B	C	D	E	F	G	H	I
POND 1	4799.00	4801.50	4802.31	4804.31	6"	32"	1	7	5/8"
POND 2	4746.06	4747.71	4748.32	4749.95	20"	21"	4	5	7/8"
POND 3	4751.00	4752.64	4752.88	4754.06	6"	21"	1	4	5/16"
POND 4	4739.00	4742.19	4742.73	4745.13	20"	35"	1	8	13/16"



DIRECT DISCHARGE BASINS:

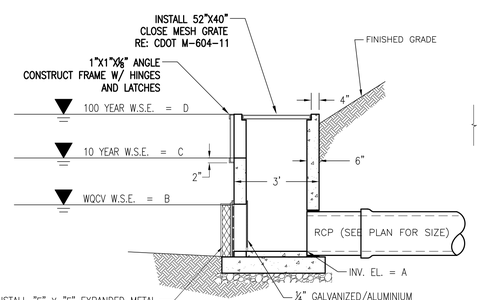
BASIN	10 YEAR RUNOFF (CFS)	100 YEAR RUNOFF (CFS)
DD1	0.32	1.61
DD2	0.06	0.33

GENERAL NOTES:

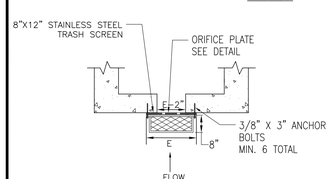
1. NO BUILDING, STRUCTURE, OR FILL WILL BE PLACED IN THE DETENTION AREAS AND NO CHANGES OR ALTERATIONS AFFECTING THE HYDRAULIC CHARACTERISTICS OF THE DETENTION AREAS WILL BE MADE WITHOUT THE APPROVAL OF THE CITY.
2. MAINTENANCE AND OPERATION OF THE DETENTION AND WATER QUALITY AREAS IS THE RESPONSIBILITY OF PROPERTY OWNER. IF OWNER FAILS IN THIS RESPONSIBILITY, THE CITY HAS THE RIGHT TO ENTER THE PROPERTY, MAINTAIN THE DETENTION AREAS, AND BE REIMBURSED FOR COSTS INCURRED.
3. DETENTION POND VOLUMES, ALL DRAINAGE APPURTENANCES, AND BASIN BOUNDARIES SHALL BE VERIFIED. AS-BUILT DRAWINGS SHALL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY FOR ANY STRUCTURE WITHIN THE DEVELOPMENT.
4. PERMISSION TO REPRODUCE THESE PLANS IS HEREBY GIVEN TO THE CITY OF GRAND JUNCTION FOR CITY'S PURPOSES ASSOCIATED WITH PLAN REVIEW, APPROVAL, PERMITTING, INSPECTION AND CONSTRUCTION OF WORK.

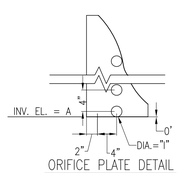
LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- BASIN INFO BLOCK (BASIN DESIGNATION, AREA (AC), RATIONAL COEFFICIENTS)
- DESIGN POINT
- DIVERSION DITCH
- PROPOSED BASIN BOUNDARY

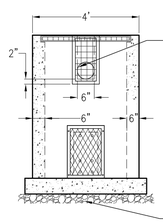


PROFILE





ORIFICE PLATE DETAIL
NTS



FRONT ELEVATION

POND OUTLET STRUCTURE DETAIL

N.T.S.

SECTION AT UPSTREAM

PROFILE ALONG DITCH ℄

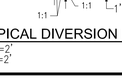
Q_{100} = 14 CFS
BASINS: 202-C & POND 1 OUTLET

HGL AT DRIVE CULVERT (BASIN 202-C) - LOT 18

H:1"=10'
V:1"=10'

DIVERSION DITCH SUMMARY TABLE

Section	Flow Line Grade (%)	100 yr Flow (csf)	Depth (ft)	Velocity (fps)
H	5.88	3.62	0.88	4.67
I	7.27	2.5	0.78	4.11
J	25	2.5	0.64	6.1
K	2.6	3.62	1.13	2.83
L	9	8.06	1.21	5.51
L	0.89	8.06	1.71	2.76
M	21	7.69	1.01	7.54



TYPICAL DIVERSION DITCH SECTION
H:1"=2'
V:1"=2'



Q_{100} = 9.05 CFS
V = 7.99 FPS
DEPTH = 0.61 FT
GRADE = 4%

SECTION - A
H:1"=20'
V:1"=2'



Q_{100} = 14 CFS
V = 5.11 FPS
DEPTH = 1.17 FT
GRADE = 3.5%

SECTION - C
H:1"=20'
V:1"=2'



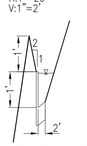
Q_{100} = 12.79 CFS
V = 8.07 FPS
DEPTH = 0.89 FT
GRADE = 13.0%

SECTION - E
H:1"=20'
V:1"=2'



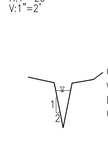
Q_{100} = 1.5 CFS
V = 4.69 FPS
DEPTH = 0.40 FT
GRADE = 13%

SECTION - G
H:1"=20'
V:1"=2'



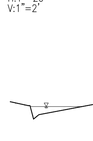
Q_{100} = 9.05 CFS
V = 4.43 FPS
DEPTH = 0.96 FT
GRADE = 0.9%

SECTION - B
H:1"=20'
V:1"=2'



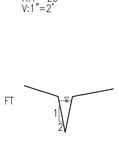
Q_{100} = 24.5 CFS
V = 10.74 FPS
DEPTH = 1.04 FT
GRADE = 9.60%

SECTION - D
H:1"=20'
V:1"=2'



Q_{100} = 17 CFS
V = 9.38 FPS
DEPTH = 0.35 FT
GRADE = 13%

SECTION - F
H:1"=20'
V:1"=2'



Q_2 = 3.62 CFS
V = 4.67 FPS
DEPTH = 0.88 FT
GRADE = 5.88%

SECTION - H
H:1"=20'
V:1"=2'

BASIN RUNOFF

DRAINAGE AREA	Area (ac)	2-Yr. Q (cfs) Basin Runoff	100-Yr. Q (cfs) Basin Runoff
100	3.78	1.36	7.24
101	1.85	0.85	4.21
102	1.24	0.62	3.00
200	7.46	3.80	18.35
201	4.84	1.68	9.05
202	1.94	0.67	3.62
203	1.33	0.46	2.50
300	1.56	0.54	2.92
400	0.79	0.28	1.48
401	7.18	3.44	16.86
402	4.11	1.43	7.69
403	0.59	0.21	1.11
404	2.19	0.95	4.79
405	3.81	1.52	7.82
406	4.31	1.50	8.06
DD1	1.93	0.67	3.60
DD2	0.39	0.13	0.72
202 -C	5.37	1.46	10.96

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	08/08/17	REVISED PRE CITY COMMENTS DATED JULY 18, 2017	SSM
1	10/09/17	REVISED PRE CITY COMMENTS DATED SEPTEMBER 13, 2017	SSM

Drainage Map - Proposed Conditions

PINNACLE RIDGE SUBDIVISION

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/07/17**
SCALE: **SEE PLAN**
CAD: **pinnacledrainagemap.dwg**

~SHEET~
2/2

K:\Pinnacle_F04-006\Drainage\PINNACLEDRAINAGEMAP.DWG, 10/5/2017 5:30:32 PM, 11

Huddleston-Berry
Engineering & Testing, LLC

640 White Avenue
Grand Junction, Colorado 81501
Phone: 970-255-8005
Fax: 970-255-6818
Info@huddlestonberry.com

September 26, 2017
Project#00545-0022

Vortex Engineering and Architecture, Inc.
2394 Patterson Road, Suite 201
Grand Junction, Colorado 81505

Attention: Mr. Robert Jones

Subject: Geotechnical Report Addendum #1
Pinnacle Ridge Subdivision
Grand Junction, Colorado

Reference: City of Grand Junction Review Comments, September 13, 2017.

Final Geotechnical Report, Pinnacle Ridge Subdivision, Filings 1, 2, and 3, Grand Junction, Colorado by Huddleston-Berry Engineering & Testing, LLC for Vortex Engineering and Architecture, Inc., June 7, 2017.

Dear Mr. Jones,

At your request, Huddleston-Berry Engineering & Testing, LLC (HBET) prepared this letter regarding the proposed Pinnacle Ridge Subdivision in Grand Junction, Colorado. The purpose of this letter is to amend the referenced *Final Geotechnical Report* based upon comments by the City of Grand Junction.

Trench Compaction

As discussed in the referenced report, testable structural and grading fill materials should be compacted to a minimum of 98% of the modified Proctor maximum dry density, within ±2% of optimum moisture content as determined in accordance with ASTM D1557. Non-testable materials should be moisture conditioned and proofrolled to the Engineer's satisfaction. In general, HBET recommends that the same compaction criteria be used for trench backfill materials.

Benching

As mentioned previously, the referenced report includes recommendations for structural and grading fill placement. However, in some areas of the site, fills may be proposed in areas of existing slopes. Where fill materials are to be placed on slopes, the existing slopes should be benched to ensure compaction against a flat surface and to limit the potential for developing an artificial shear plane between the native slope and fill materials. Specific recommendations for benching should be established by HBET during construction based upon the specific slope angles, slope heights, fill thicknesses, etc. at the site.

We are pleased to be of service to your project. Please contact us if you have any questions or comments regarding the contents of this letter.

Respectfully Submitted:
Huddleston-Berry Engineering and Testing, LLC



Michael A. Berry, P.E.
Vice President of Engineering

LANDSCAPE LEGEND

Evergreen Trees

Large Deciduous Shrubs

Small Deciduous Shrubs

Landscape Boulders
Optional

UTILITY NOTIFICATION
CENTER OF COLORADO
CALL 811
LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

PLANT LIST

No.	Sym.	Common Name/ Biological Name	Planting Size/ Remarks	Mature Size
Trees:				
20	JUN	Utah Juniper/ Juniperus osteosperma	4'-5' Tall/ #5	15' Ht. & 15' Spd.
10	PIN	Pinon Pine/ Pinus edulis	6'-8' Tall/ B&B	25' Ht. & 15' Spd.
Shrubs:				
8	BLT	Broom Lilac Time/ Cytisus x 'Lilac Time'	18" -24" Spread/ #5	3' Ht. & 3' Spd.
9	MOR	Mormon Tea/ Ephedra virdis	15"-18" Spread/ #5	3' Ht. & 3' Spd.
40	MMA	Mountain Mohogany/ Cercocapus montanus	15"-18" Spread/ #5	10' Ht. & 6' Spd.
40	SSK	Saskatoon Serviceberry/ Amelanchier alnifolia	18"-24" Spread/ #5	10' Ht. & 8' Spd.
39	RDW	Rabbitbrush/ Chrysothamnus nauseosus	18"-24" Spread/ #5	4' Ht. & 4' Spd.
14	RSA	Russian Sage/ Perovskia artiplicifolia	18"-24" Spread/ #5	4' Ht. & 4' Spd.
28	TWS	Tall Western Sage/ Artemisia tridentata	18"-24" Spread/ #5	4' Ht. & 4' Spd.
30	YUF	Yucca Filamenentosa	15"-18" Spread/ #5	3' Ht. & 3' Spd.

*ALL PLANT TOTALS ON THE PLANT LIST SHALL BE VERIFIED WITH PLANT NUMBERS ON THE LANDSCAPE PLANS.

LANDSCAPE AND TEMPORARY IRRIGATION NOTES

1. The goal of the landscape plan is to create a natural landscape around the proposed detention ponds. Native and xeric plant materials are to be used in the landscape.
2. During excavation place all topsoil into proposed landscape areas prior to planting.
3. Planting beds are to have 3" of crushed buff landscape rock over landscape fabric. All plant material shall have a planting ring at the base of each plant with 3" of western red cedar mulch over landscape fabric
4. A temporary drip irrigation system should be provided to all plant material. Irrigation water will need to be trucked to the site and a pump will pressurize the temporary irrigation system. Each irrigation zone will need a point of connection for the water truck to hook into and deliver the necessary water to each drip zone.
5. Steel edging is to be installed along the edge of the planting beds.
6. Landscape boulders shall be 2' to 4' moss rock boulders.
7. Detention Ponds and drainage swales are to be 3" of Western Sunrise Shale. The shale shall be between 2" and 4" in size.

SOIL PREPARATION AND PLANTING SPECIFICATIONS

1.1 PREPARATION - GENERAL
- A. Lay out individual tree and shrub locations and areas for multiple plantings. Stake locations and outline areas and secure Architect's acceptance before start of planting work. Make minor adjustments as may be required.

1.2 PREPARATION OF PLANTING SOIL
- A. Before mixing, clean topsoil of roots, plants, stones, clay lumps, and other extraneous materials harmful or toxic to plant growth.
- B. Mix soil amendments and fertilizers with topsoil as required based on existing soil conditions. Delay mixing of fertilizer if planting will not follow placing of planting soil within a few days.
- C. For pit and trench type backfill, mix planting soil prior to backfilling, and stockpile at site.
- D. For planting beds mix planting soil either prior to planting or apply on surface of topsoil and mix thoroughly before planting.

1.3 PREPARATION OF PLANTING BEDS
- A. Spread planting soil mixture to minimum depth required to meet lines, grades, and elevations shown, after light rolling and natural settlement. Place approximately 1/2 of total amount of planting soil required. Work into top of loosened subgrade to create a transition layer, then place remainder of the planting soil.
- B. Remove 8 inches to 10 inches of soil and replace with prepared planting soil mixture. Backfill for each bed with three parts topsoil and one part Cow Manure thoroughly mixed prior to placing.

1.4 EXCAVATION FOR TREES AND SHRUBS
- A. Excavate pits, beds, and trenches with vertical sides and with bottom of excavation slightly raised at center to provide proper drainage. Loosen hard subsoil in bottom of excavation.
  1. For balled and burlapped trees, make excavations at least half again as wide as the ball diameter and equal to the ball depth, plus following allowance for setting of ball on a layer of compacted backfill.
  2. Allow for 3 inch thick setting layer of planting soil mixture.
  3. For container grown stock, excavate as specified for balled and burlapped stock, adjusted to size of container width and depth.
- B. Dispose of subsoil removed from planting excavations. Do not mix with planting soil or use as backfill.
- C. Fill excavations for trees and shrubs with water and allow water to percolate out prior to planting.
- D. Backfill pits with three parts topsoil and one part A-1 Compost thoroughly mixed prior to placing.
- E. Place Agriform tablets in planting pit prior to backfilling at the following rate: three per each tree, one per each shrub.

1.5 PLANTING TREES AND SHRUBS
- A. Set balled and burlapped (B&B) stock on layer of compacted planting soil mixture, plumb and in center of pit or trench with top of ball at same elevation as adjacent finished landscape grades. Remove burlap from sides of balls; retain on bottoms. When set, place additional backfill around base and sides of ball, and work each layer to settle backfill and eliminate voids and air pockets. When excavation is approximately 2/3 full, water thoroughly before placing remainder of backfill. Repeat watering until no more is absorbed. Water again after placing final layer of backfill.
- B. Set container grown stock, as specified, for balled burlapped stock, except cut cans on 2 sides with an approved can cutter an from plantball so as not to damage root balls.
- C. Dish top of backfill to allow for mulching.
- D. Apply anti-desiccant, using power spray, to provide an adequate film over trunks, branches, stems, twigs and foliage.
  1. If deciduous trees or shrubs are moved when in full-leaf, spray with anti-desiccant at nursery before moving and spray again 2 weeks after planting.
- E. Remove and replace excessively pruned or misformed stock resulting from improper pruning.
- F. Wrap tree trunks of 2 inches caliper and larger. start at ground and cover trunk to height of first branches and securely attach. Inspect tree trunks for injury, improper pruning and insect infestation and take corrective measures before wrapping.
- G. Guy and stake trees immediately after planting, as indicated .

NATIVE SEED MIX - DETENTION PONDS AND DISTURBED AREA

%	Species/ Common Name
25%	Oryzopsis hymenoides/ Indian Ricegrass
25%	Elymus lanceolatus/ Streambank Wheatgrass
25%	Hilaria jamesii/ Galleta
25%	Atriplex canescens/ Four-wing Saltbush

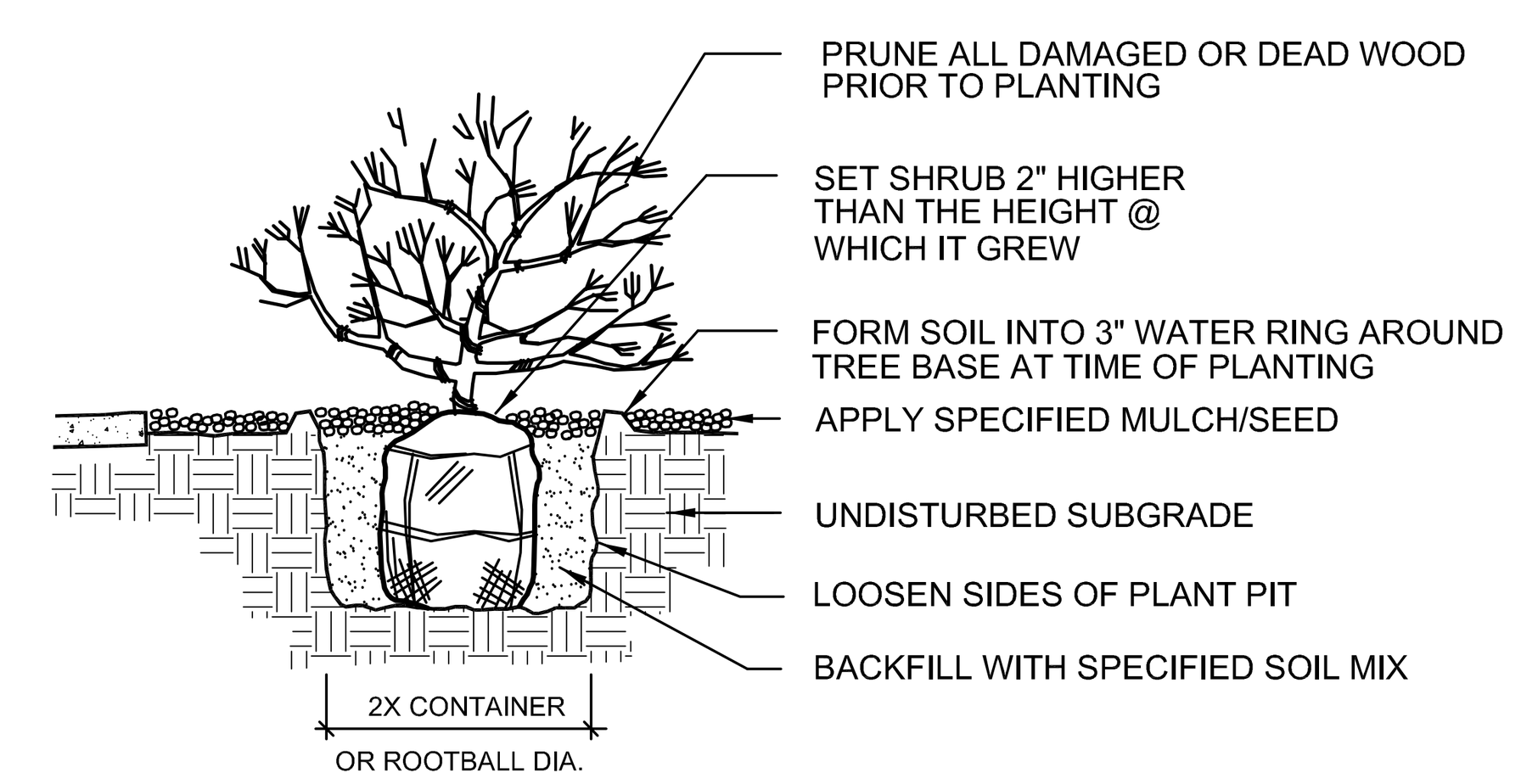
Seeding Rate: 1-2 lbs/ 1,000 sq. ft. or 25 lbs/ acre
Seed Mid-September to Mid-October or Mid-March to Mid-April

All seed needs to be well mixed, broadcast seeded, followed by hand raking to cover seed, and then an application of 800 pounds/acre of Biosol to improve germination. Hydromulch the seeded area with 2500 lbs/acre of virgin wood fiber hydromulch and 150 lbs/acre of organic tackifier. Do not hydroseed and do not seed if standing water or snow/frozen ground are present.

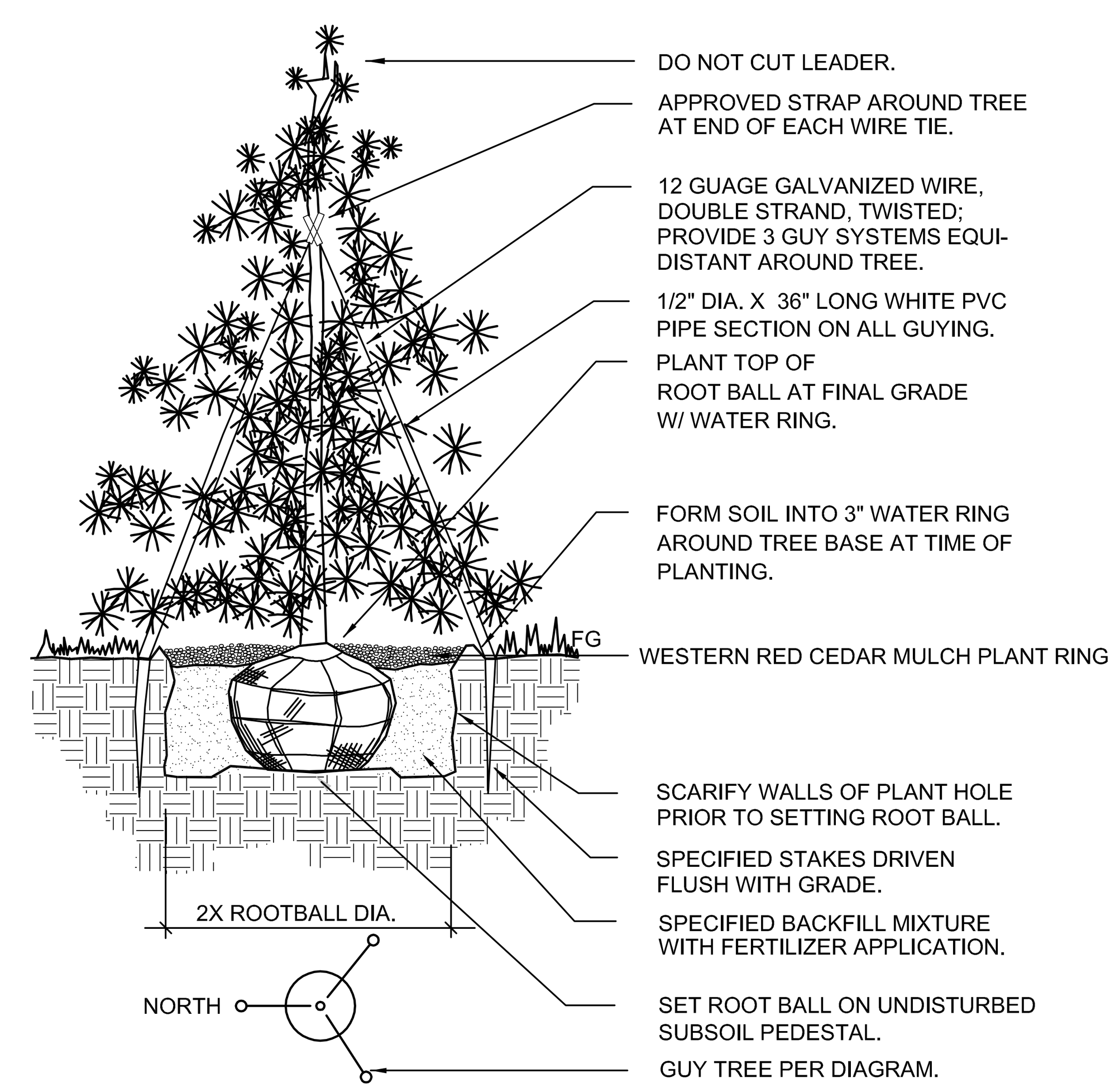
First year maintenance needed to establish good growth should include temporary irrigation and mowing to control annual weeds. Mowers should be rotary and the tractor small enough not to rut the soil and damage the vegetation. If needed, spot treat with approved herbicides to control noxious weeds. Reseed bare areas after the first growing season.

Following initial revegetation efforts, the revegetated area shall be maintained for a period of three years or until all vegetation is firmly established in the reclamation area.

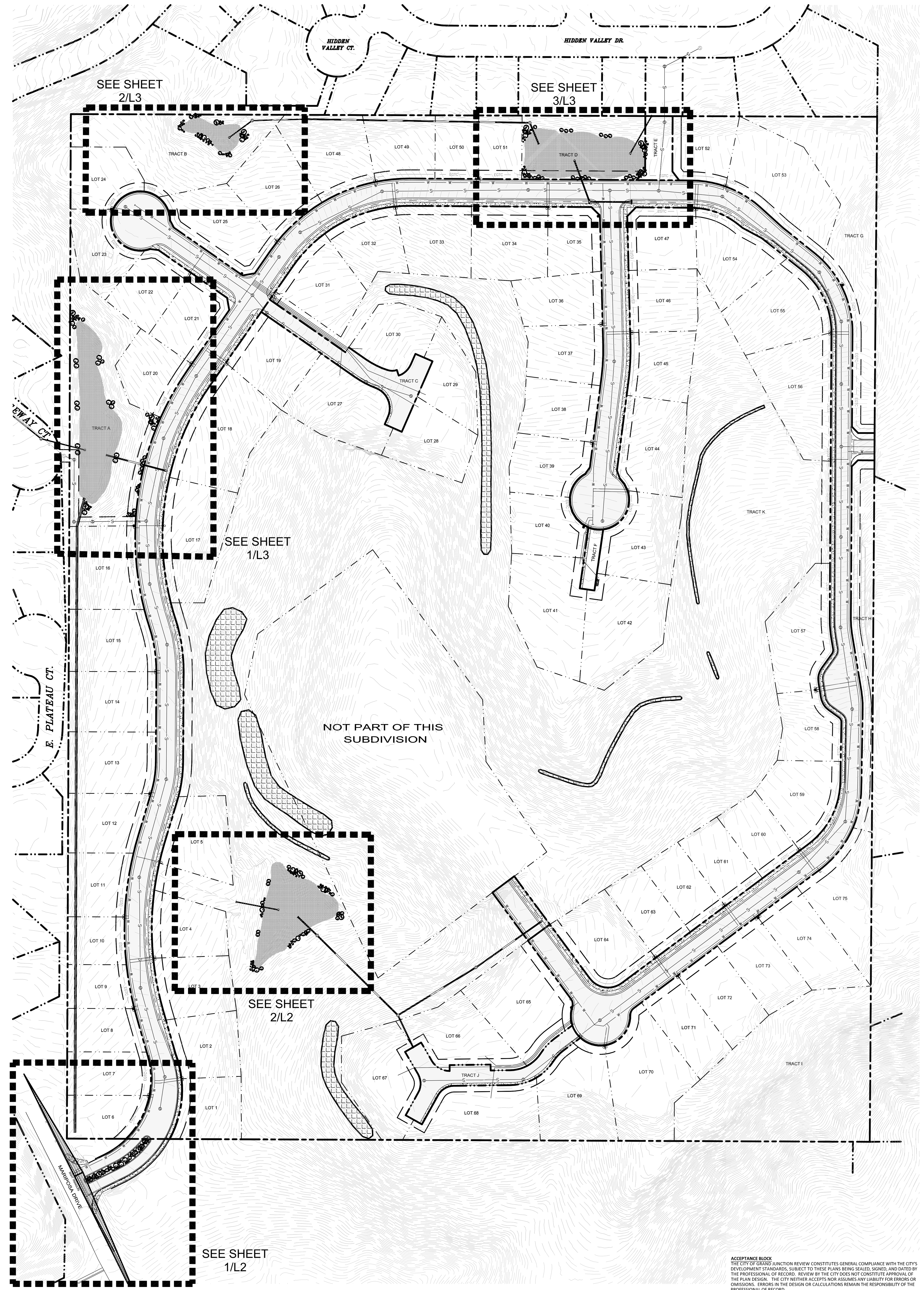
Irrigate with watering trucks as needed for the first two growing seasons.



2 Shrub Planting Detail
SCALE: NTS



3 Evergreen Tree Planting Detail
SCALE: NTS



1 Overall Landscape Key Plan
SCALE: 1" = 100'-0"

NORTH 0 100' 200'

ACCEPTANCE BLOCK
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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY PLANNER | DATE

VORTEX ENGINEERING, INC.
* CONSTRUCTION MANAGERS & SITE PLANNERS
* PROJECT MANAGERS
* CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

MRLA
MITCH REWOLD LANDSCAPE ARCHITECT
LANDSCAPE ARCHITECTURE AND LAND PLANNING
386 34 1/2 Road
Palisade, Colorado 81526 (970) 434-1155

MITCHELL L REWOLD 378
01/01/2008
Original Date of Licensure
STATE OF COLORADO
LICENSED LANDSCAPE ARCHITECT

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REV. DATE	COMMENT	BY

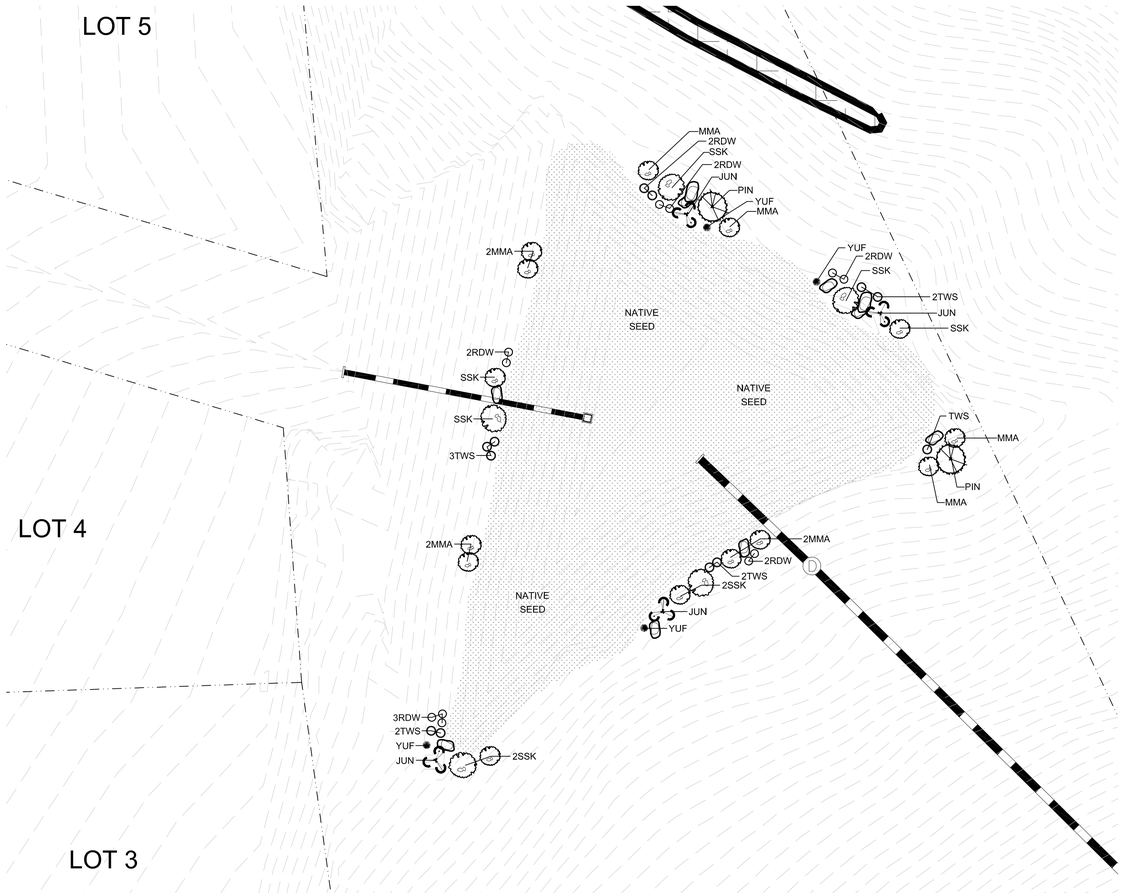
LANDSCAPE PLAN
PINNACLE RIDGE SUBDIVISION
Mariposa Drive
Grand Junction, Colorado

SCALE: 1"=20' | DATE: 09/26/17 | DRAWN BY: MLR
CHECKED BY: MLR | PROJECT NO: F04-006

LANDSCAPE LEGEND

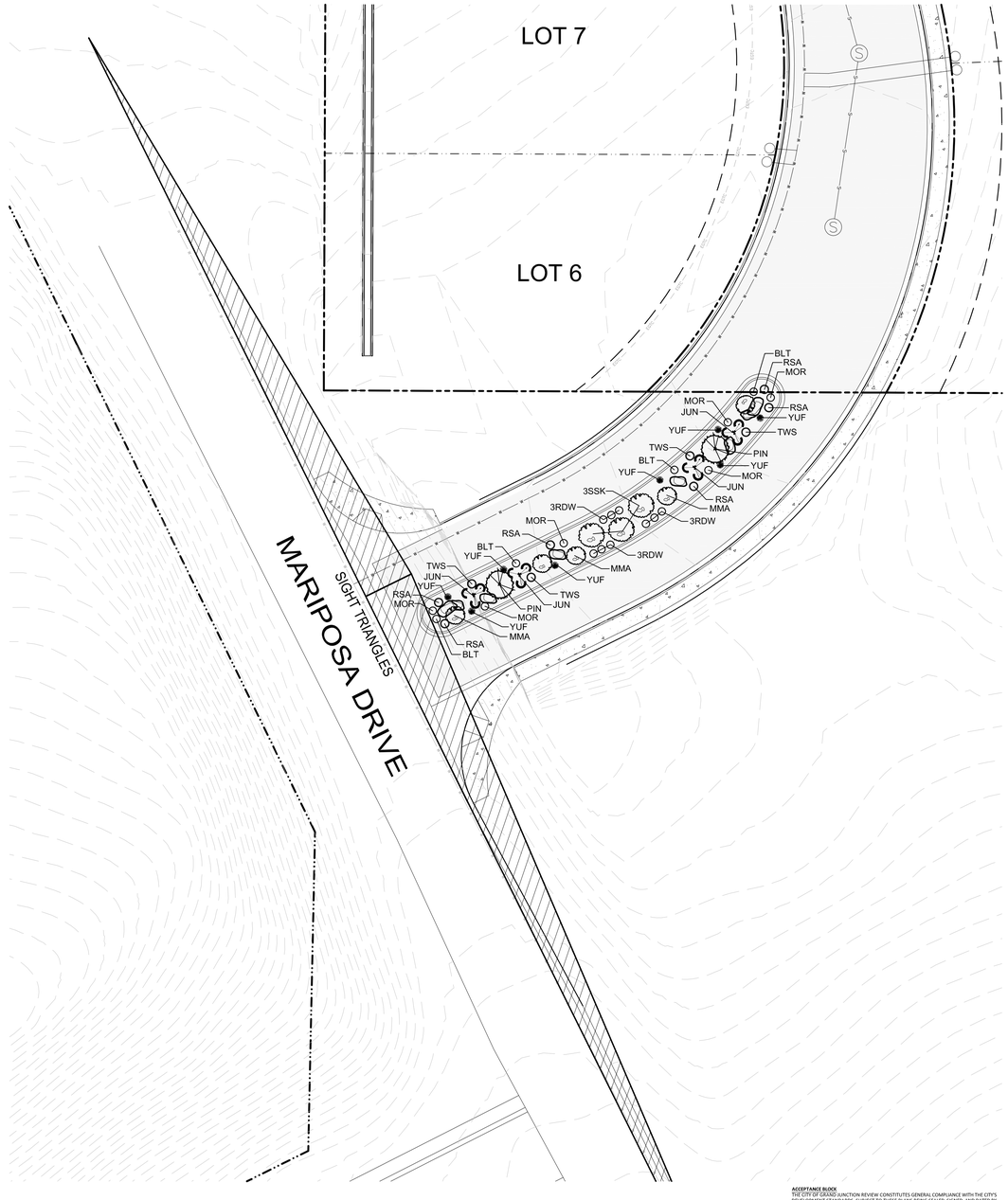
- Evergreen Trees
- Large Deciduous Shrubs
- Small Deciduous Shrubs
- Landscape Boulders Optional

UTILITY NOTIFICATION CENTER OF COLORADO
CALL 811
LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.



2 Landscape Plan - Detention Pond 1
SCALE: 1" = 20'-0"

NORTH 0 20' 40'



1 Landscape Plan - Entry
SCALE: 1" = 20'-0"

NORTH 0 20' 40'

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REV. DATE	COMMENT	BY

LANDSCAPE PLAN

PINNACLE RIDGE SUBDIVISION

Mariposa Drive
Grand Junction, Colorado

SCALE: 1"=20' DATE: 09/26/17 DRAWN BY: MLR
CHECKED BY: MLR PROJECT NO: F04-006

~SHEET~
L2 Of L3

LANDSCAPE LEGEND

- Evergreen Trees
- Large Deciduous Shrubs
- Small Deciduous Shrubs
- Landscape Boulders Optional

UTILITY NOTIFICATION CENTER OF COLORADO
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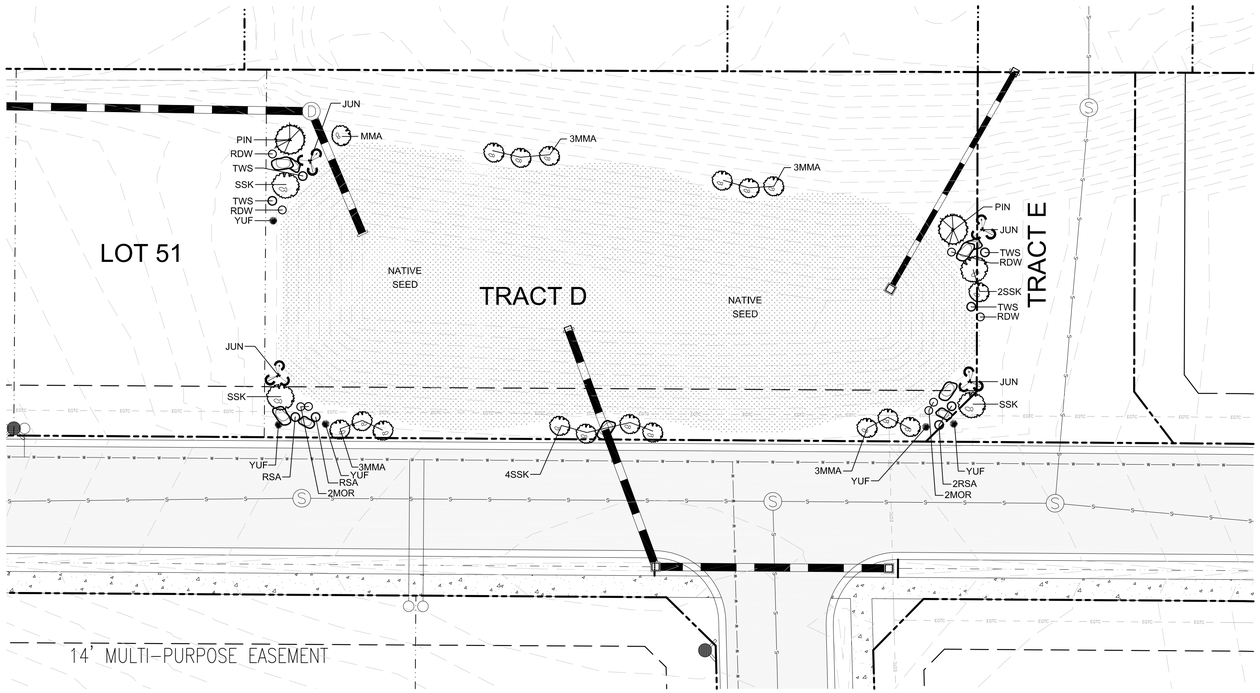

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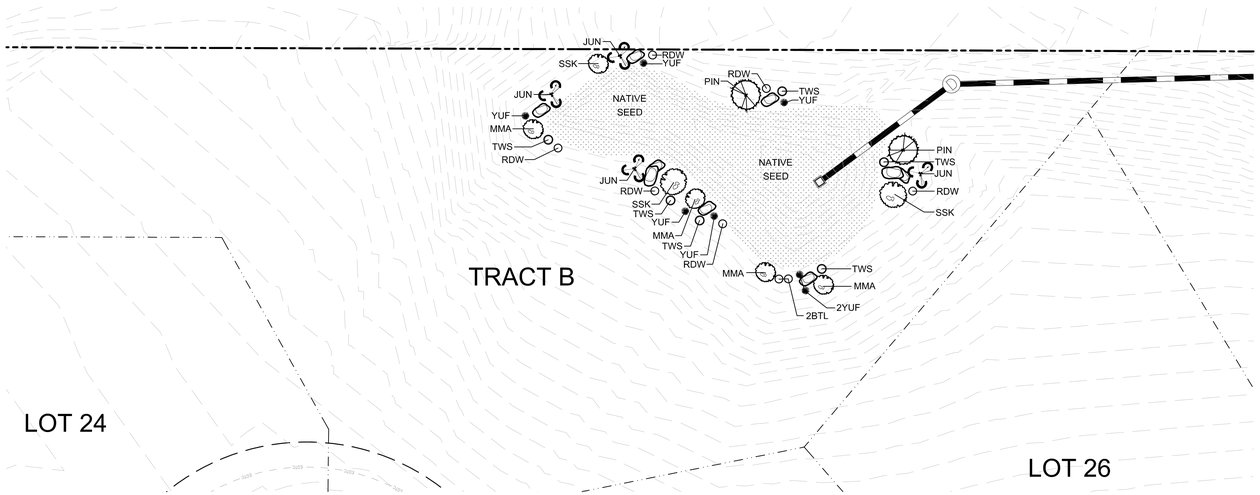
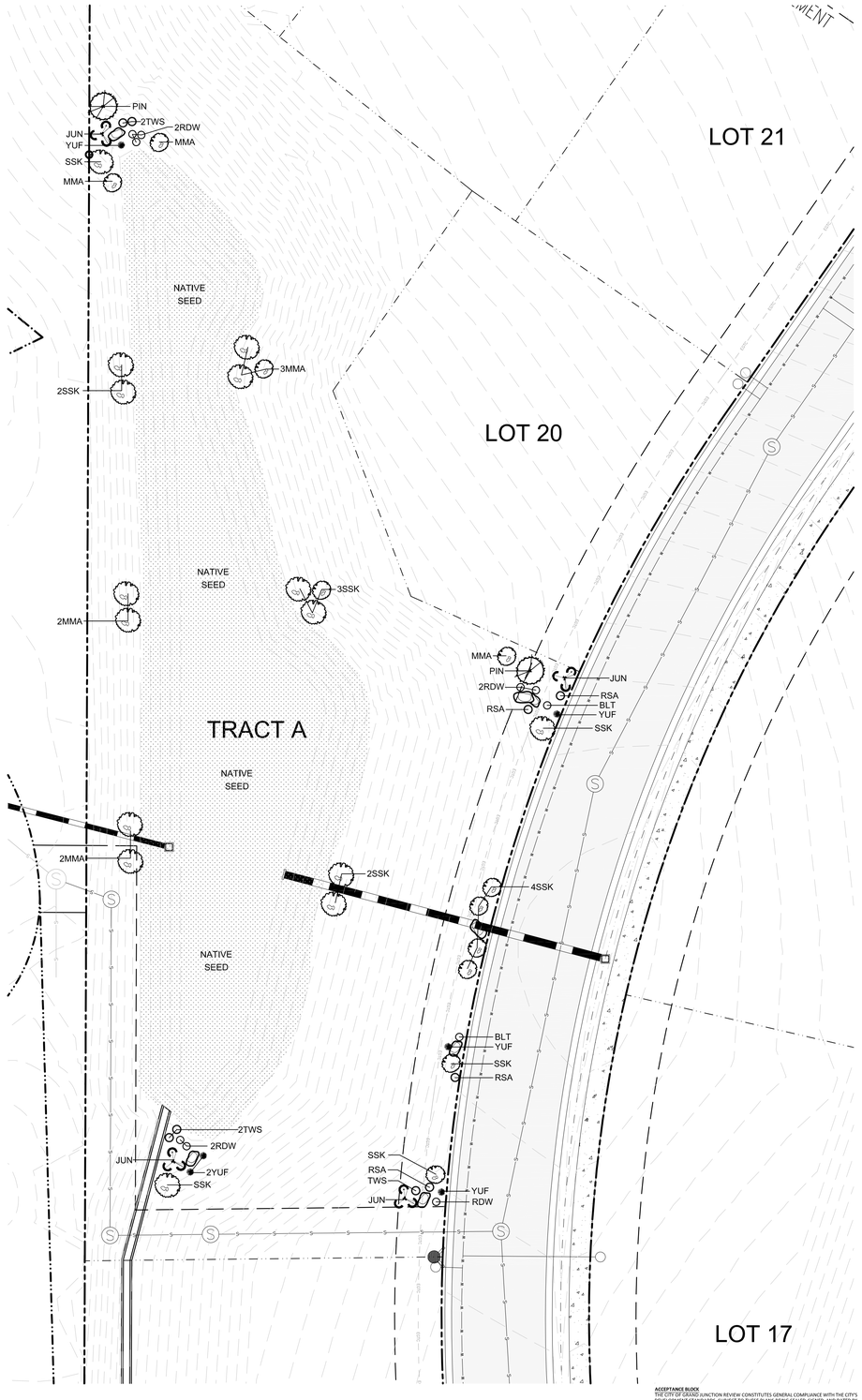
NORTH 0 20' 40'



2 Landscape Plan - Detention Pond 3
SCALE: 1" = 20'-0"
NORTH 0 20' 40'



1 Landscape Plan - Detention Pond 2
SCALE: 1" = 20'-0"
NORTH 0 20' 40'

ACCEPTANCE BLOCK
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REV. DATE	COMMENT	BY

LANDSCAPE PLAN
PINNACLE RIDGE SUBDIVISION
Mariposa Drive
Grand Junction, Colorado

SCALE: 1"=20' DATE: 09/26/17 DRAWN BY: MLR
CHECKED BY: MLR PROJECT NO: F04-006

~SHEET~
L3 Of L3

Huddleston-Berry
Engineering & Testing, LLC

CONSTRUCTION MATERIALS TESTING AND ENGINEERING OVERSIGHT PLAN PINNACLE RIDGE SUBDIVISION FILINGS 1, 2, AND 3 GRAND JUNCTION, COLORADO PROJECT#00545-0022

VORTEX ENGINERING & ARCHITECTURE, INC.
2394 PATTERSON ROAD, SUITE 201
GRAND JUNCTION, COLORADO 81505

SEPTEMBER 26, 2017

Huddleston-Berry Engineering and Testing, LLC
640 White Avenue
Grand Junction, Colorado 81501

TABLE OF CONTENTS

1.0 INTRODUCTION 2

1.1 Site Location and Description 2
1.2 Proposed Construction 2
1.3 Referenced Documents 2

2.0 CONSTRUCTION MATERIALS TESTING 3

2.1 Structural and Grading Fill Materials 3
2.2 Structural and Grading Fill Placement 3
2.3 Utility Trenches 3
2.4 Hot Mix Asphalt 4
2.5 Concrete 4

3.0 ENGINEERING OVERSIGHT 4

4.0 REPORTING 5

5.0 GENERAL 5

1.0 INTRODUCTION

As part of extensive development in Western Colorado, the new Pinnacle Ridge residential subdivision is proposed in Grand Junction, Colorado. As part of the development process, Huddleston-Berry Engineering and Testing, LLC (HBET) prepared a report titled *Final Geotechnical Report, Pinnacle Ridge Subdivision, Filings 1, 2, and 3, Grand Junction, Colorado*. The project will include significant grading and the referenced report recommended substantial engineering oversight during the construction. The purpose of this document is to outline the specific recommendations for construction materials testing and engineering oversight during the earthwork phases of the Pinnacle Ridge project.

1.1 Site Location and Description

The site encompasses approximately 45 acres north of Mariposa Drive and west of Monument Road in Grand Junction, Colorado. The project location is shown on Figure 1 – Site Location Map. A site plan is included as Figure 2.

At the time of the investigation, the site was open. The terrain was variable with the western portion of Filings 1 and 2 generally consisting of slightly sloping ground and the eastern portion rising moderately to the west to the top of a ridge. Filing 3 sat on the end of a ridge with moderate slopes falling to the north and south and slight to moderate slopes rising to the east.

1.2 Proposed Construction

Filings 1, 2, and 3 are anticipated to include residential structures on 30 lots. The development will also include approximately 2,150 linear feet of new roadways and utilities. Significant cuts and fills are anticipated as shown on the roadway profiles included as Figures 3 and 4.

1.3 Referenced Documents

The following documents were referenced in preparation of the CQA/CQC plan:

1. *Final Geotechnical Report, Pinnacle Ridge Subdivision, Filings 1, 2, and 3, Grand Junction, Colorado* by Huddleston-Berry Engineering & Testing, LLC for Vortex Engineering, Inc., June 7, 2017.
2. Plans titled *Pinnacle Ridge Subdivision, Grand Junction, Colorado* by Vortex Engineering, Inc., March 19, 2015.
3. City of Grand Junction, Colorado *Standard Specifications for Road and Bridge Construction,* July 2010.
4. City of Grand Junction, Colorado *Standard Specifications for Construction of Underground Utilities – Waterlines, Sanitary Sewers, Storm Drains, Underdrains, and Irrigation Systems* July 2010.

2.0 CONSTRUCTION MATERIALS TESTING

In general, construction materials testing will be conducted in accordance with the *City of Grand Junction Standard Specifications* referenced above. However, due to the significant earthwork on this project, the frequency of testing may be increased as outlined in the following sections.

2.1 Structural and Grading Fill Materials

As outlined in the referenced *Final Geotechnical Report*, some of the native materials may be suitable for reuse as structural and/or grading fill. However, due to the wide variability in materials across the site, individual materials proposed to be used as fill should be stockpiled separately for testing and evaluation by HBET. Testing on the proposed structural and grading fill materials will be conducted in accordance with the following table.

Testing	Frequency
Atterberg Limits	1 per material + 1 per 10,000 yd^3
Grain Size Distribution	1 per material + 1 per 10,000 yd^3
Proctor(1)	1 per material + 1 per 10,000 yd^3

(1) Proctor testing will only be completed on testable materials

2.2 Structural and Grading Fill Placement

Testing on all structural and grading fill during placement will be conducted in accordance with the following table.

Testing	Minimum Frequency
Compaction of Subgrade in Cut or Fill Areas	*Soil Subgrade* - 1 per 300 yd^2 + 1 per change in material *Bedrock Subgrade* - Proofroll to Engineer's satisfaction
Compaction of Structural and/or Grading Fill	1 per 300 yd^2 + 1 per change in material per 2 ft fill depth Proofroll non-testable materials to Engineer's satisfaction
Compaction of Base Course under Curb/Gutter/Sidewalk	1 per 200 LF + proofroll to verify subgrade stability
Compaction of Base Course under Fillets/Drain Pans	1 per fillet 1 per 50 LF drain pan
Compaction of Base Course under Roadways	1 per 400 yd^2 + proofroll to verify subgrade stability

2.3 Utility Trenches

Testing of utility trenches will be conducted in accordance with the following table.

Testing	Minimum Frequency
Compaction of Bedding, Haunch, and Initial Backfill	1 per 400 LF trench + 1 per change in material for each 2 feet vertical depth of backfill
Compaction of Trench Backfill	1 per 400 LF trench + 1 per change in material for each 2 feet vertical depth of backfill
Compaction of Base Course in Trench	1 per 200 yd^2
Compaction of Structural Fill within 2 Feet of Structures	1 per each 2 feet vertical depth per structure or 1 per 100 LF of structure perimeter

2.4 Hot Mix Asphalt

Testing of hot mix asphalt pavement will be conducted in accordance with the following table.

Testing	Minimum Frequency
Asphalt Content	1 per 1000 Ton (minimum 1 per day)
Gradation of Aggregate	1 per 1000 Ton
Air Voids	1 per 1000 Ton
Voids in Mineral Aggregate	1 per 1000 Ton
Relative Compaction	1 per 500 yd^2

2.5 Concrete

Testing of concrete will be conducted in accordance with the following table.

Testing	Minimum Frequency
Compressive Strength	1 set of 4 cylinders per 100 yd^3 (minimum 1 per day)
Air Content	1 per 100 yd^3 (minimum 1 per day)
Slump	1 per 100 yd^3 (minimum 1 per day)

3.0 ENGINEERING OVERSIGHT

As outlined in the referenced *Final Geotechnical Report*, the earthwork for the project will include significant grading. In addition, the subsurface materials across the site change. In general, HBET recommends engineering oversight/observation at the frequencies outlined below. However, additional oversight/observations may be necessary depending upon the pace of construction and/or information which suggests that additional oversight/observations are warranted.

Item	Observation/Frequency
General Earthwork Operations	During active earthwork operations, HBET should conduct site observation at a minimum of once per day.
Subgrade in Fill Areas	Prior to placement of any structural and/or grading fill, HBET should observe subgrade to determine if the subgrade is suitable for accepting fill.
Finished Pavement Subgrade in Cut/Fill Areas	Prior to placement of pavement section materials, HBET should observe finished subgrade to determine if the subgrade is suitable for pavement section construction. Proofrolling of base course will be required in accordance with City of Grand Junction specifications prior to pavement section construction.
Cut Slopes	HBET should observe cut slopes to verify assumptions used in slope stability analyses.
Grading Completion	Upon completion of grading, but prior to pavement construction, HBET should observe site conditions above and below roadways to verify that the grading work did not create new slope stability and/or rockfall hazards.
Pavement Construction	During pavement construction, HBET should observe pavement subgrade, underdrains, roadside ditches, etc. to verify conformance with design.
Additional Oversight	Additional observations/oversight will be completed where site conditions warrant and/or at the request of Owner, Contractor, and/or City of Grand Junction.

4.0 REPORTING

Upon completion of the development, HBET will prepare a report in accordance with City of Grand Junction requirements. The report will include:

a) Materials testing reports.

b) Laboratory testing reports.

c) Plot of testing locations.

d) Engineering oversight/observation reports.

e) Summary of site issues and mitigation.

f) Discussion of conformance with plans, specs, testing plan, and City of Grand Junction standards.

5.0 GENERAL

The testing and observation program above is based upon the referenced documents and upon our local experience. This document is valid only for the subject project.

Huddleston-Berry Engineering and Testing, LLC is pleased to be of service to your project. Please contact us if you have any questions or comments regarding the contents of this report.

Respectfully Submitted:
Huddleston-Berry Engineering and Testing, LLC



Michael A. Berry, P.E.
Vice President of Engineering

FIGURES

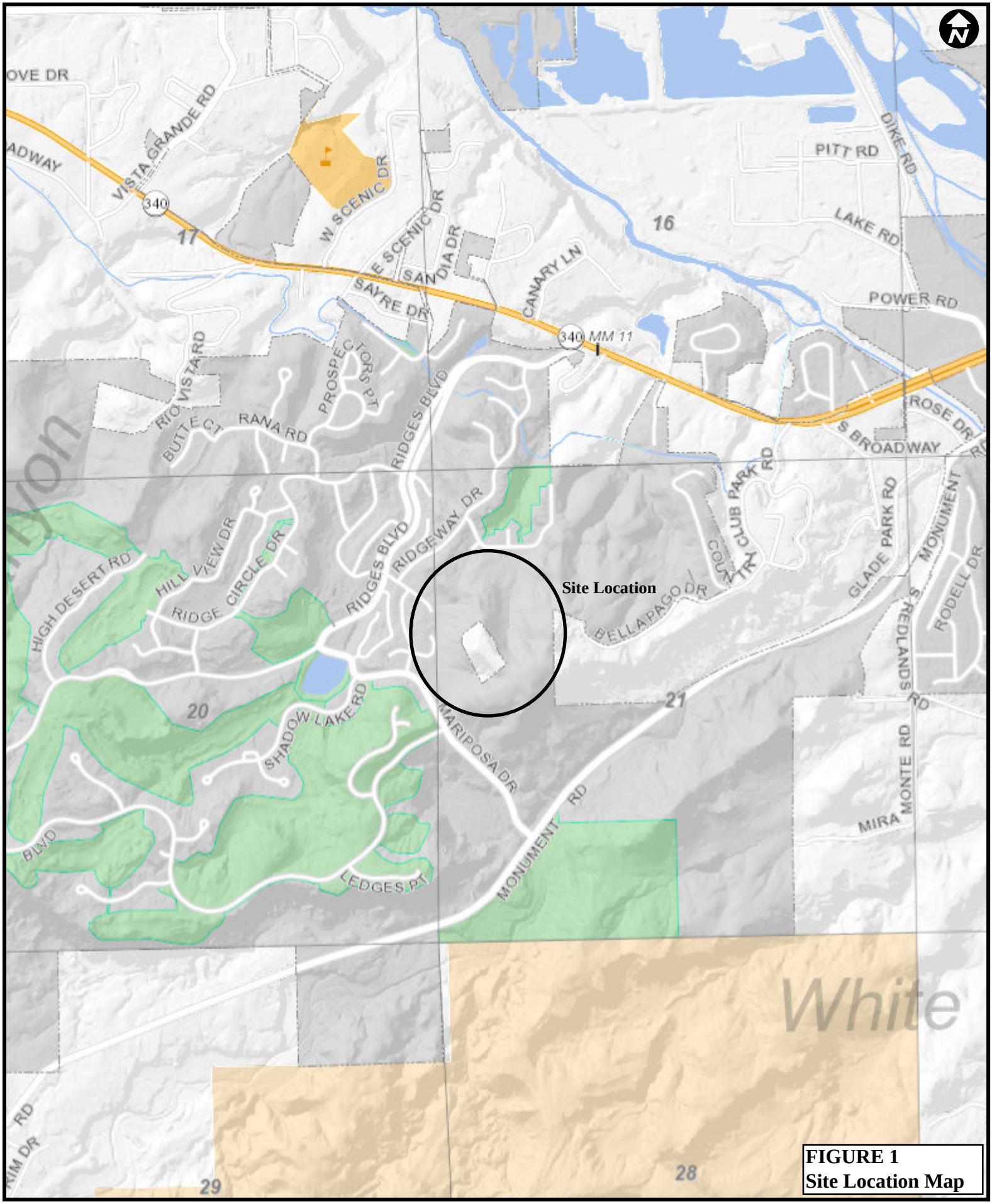

FIGURE 1
Site Location Map

Mesa County Map

The Geographic Information System (GIS) and its components are designed as a source of reference for answering inquiries, for planning and for modeling. GIS is not intended or does not replace legal description information in the chain of title and other information contained in official government records such as the County Clerk and Recorders office or the courts. In addition, the representations of location in this GIS cannot be substitute for actual legal surveys.
The information contained herein is believed accurate and suitable for the limited uses, and subject to the limitations, set forth above. Mesa County makes no warranty as to the accuracy or suitability of any information contained herein. Users assume all risk and responsibility for any and all damages, including consequential damages, which may flow from the user's use of this information.

0 0.125 0.25 0.5 mi
0 0.15 0.3 0.6 km

Print Date: May 19, 2017

Mesa County, Colorado
GIS/IT Department
gis.mesacounty.us

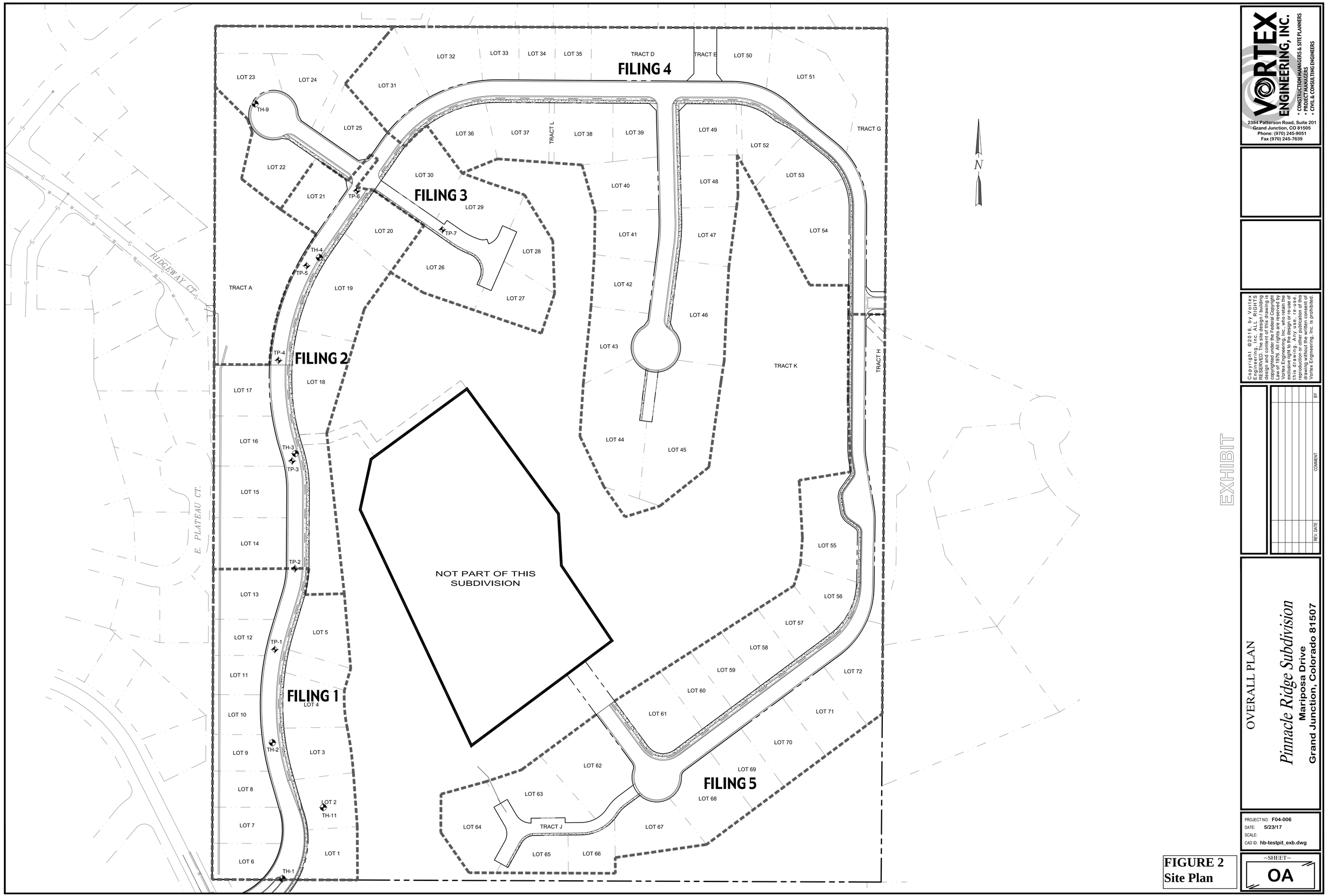

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EXHIBIT

REV. DATE	COMMENT	BY

OVERALL PLAN

Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **5/23/17**
SCALE:
CAD ID: **hb-testpit_exb.dwg**

~SHEET~
OA

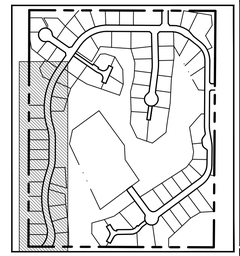
FIGURE 2
Site Plan

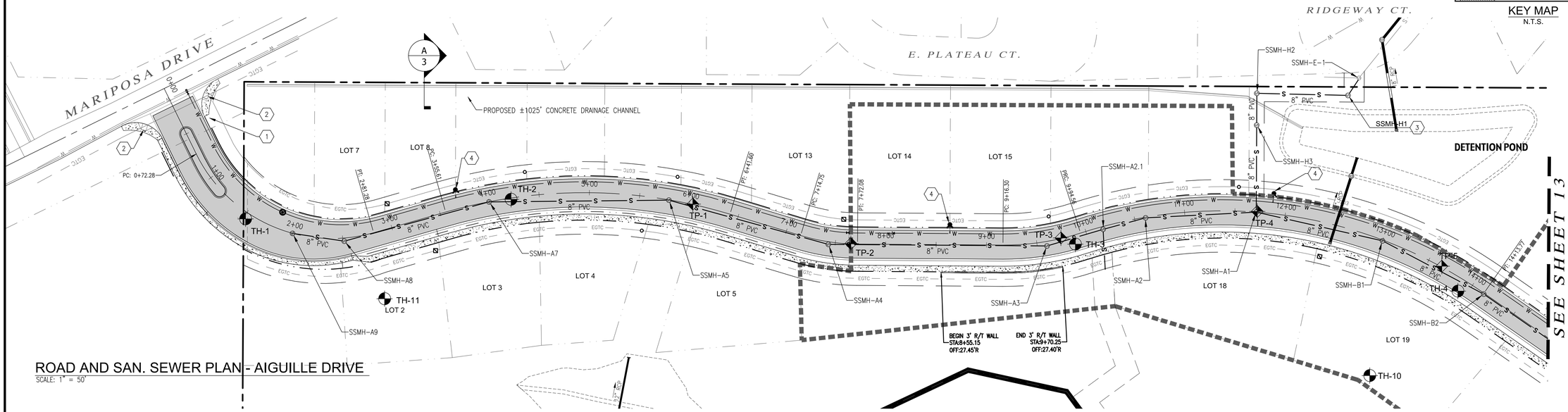
CONSTRUCTION NOTES:

1. INSTALL STOP SIGN & STREET SIGN RE: MUTCD
2. CONSTRUCT HANDICAPPED RAMP RE: CITY OF GJ DETAILS
3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT RE: UTE WATER DETAILS

GENERAL NOTES:

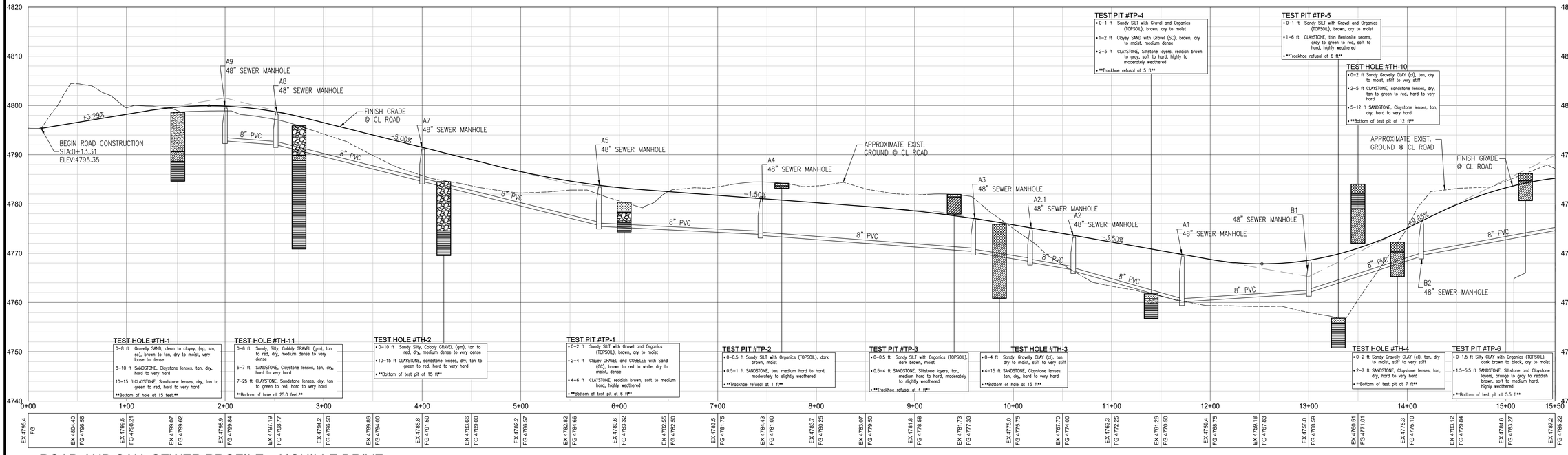
1. REFERENCE SHEET 2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET 3 FOR STREET SECTIONS
10. SEE SHEETS 4 & 5 FOR ALL EASEMENT INFORMATION





ROAD AND SAN. SEWER PLAN - AIGUILLE DRIVE

SCALE: 1" = 50'



ROAD AND SAN. SEWER PROFILE - AIGUILLE DRIVE

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

FIGURE 3

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• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
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REV	DATE	COMMENT	BY

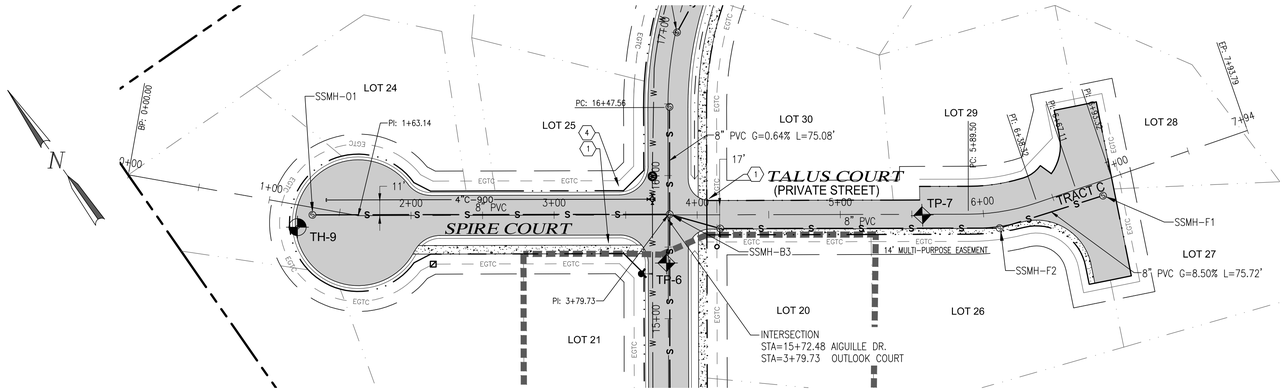
Pinnacle Ridge Subdivision

Road & Sanitary Sewer Plan & Profile
Aiguille Drive

Mariposa Drive
Grand Junction, Colorado 81507

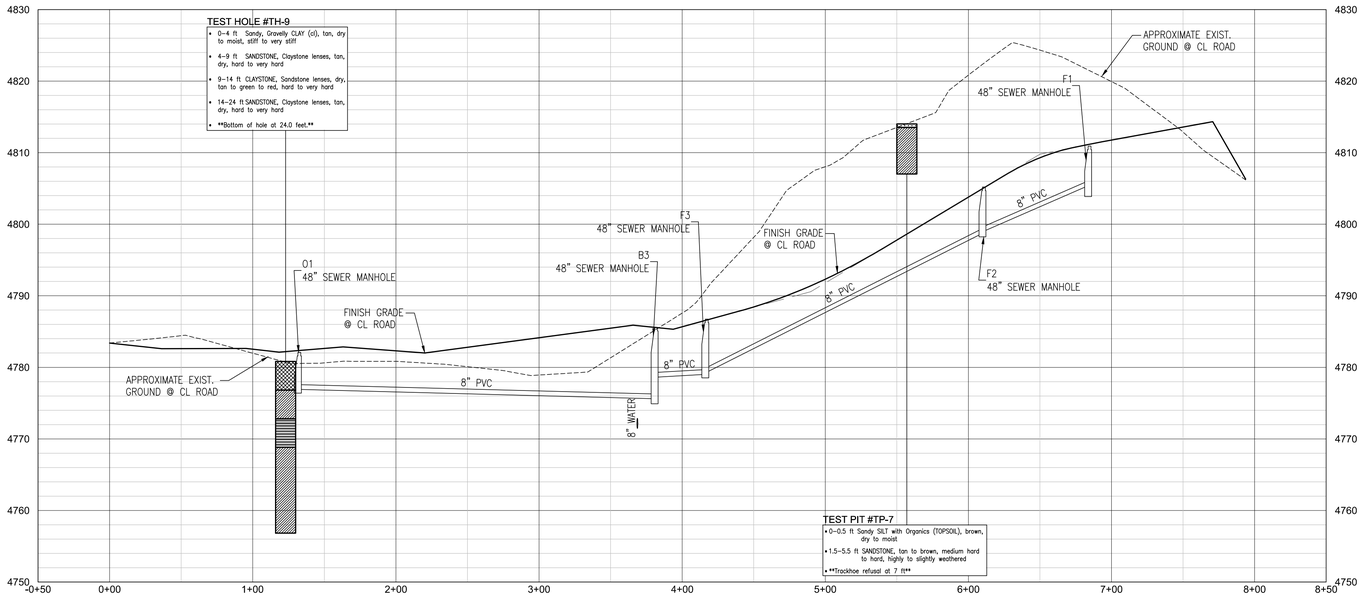
PROJECT NO: **F04-006**
DATE: **5/23/17**
SCALE: **1" = 50'**
CAD ID: **hb-testpit_exb.dwg**

~SHEET~
1 of 2



ROAD AND SAN. SEWER PLAN - SPIRE COURT □ TALUS COURT

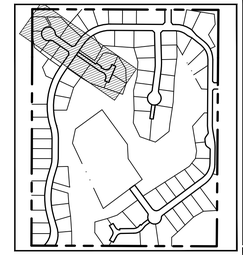
SCALE: 1" = 50'



ROAD AND SAN. SEWER PROFILE - SPIRE COURT □ TALUS COURT

HORIZONTAL SCALE: 1" = 50'

VERTICAL SCALE: 1" = 5'



KEY MAP

N.T.S.

CONSTRUCTION NOTES:

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EXHIBIT

FIGURE 4

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REV. DATE	COMMENT	BY

Road and Sanitary Sewer Plan and Profile
Spire Court & Talus Court

Pinnacle Ridge Subdivision

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **5/23/17**
SCALE: **1" = 50'**
CAD ID: **hb-testpit_exb.dwg**

~SHEET~

October 2, 2017

City of Grand Junction – Planning Department
Attn: Scott Peterson, Senior Planner
250 North 5th Street
Grand Junction, CO 81501

RE: Pinnacle Ridge Subdivision, Filing 1
Response to Comments – Round 2
East of Mariposa Drive
Grand Junction, CO
VEAI #: F04-006
FILE #: SUB-2017-271

Dear Mr. Peterson,

Pinnacle Ridge Subdivision Filing 1 is proposed at the above-referenced location in the City of Grand Junction. The following information is provided in response to Round 2 Review Comments dated September 13, 2017 from various City Departments and outside agencies.

CITY PLANNING –Scott Peterson

1. Subdivision Plat (Sheets 1 & 2):

a) See City Surveyor review comments and revise as applicable.

Applicant's Response:
Comments acknowledged.

b) Shouldn't the temporary turn-around easement be located at the end of Lot 13 on the chance that Filing 2 never gets developed?

Applicant's Response:
The roadway to the end of Filing 2 must be installed as gravel to accommodate Filing 1 sanitary sewer installation. This can be used as the temporary turn-around for Filing 1 in the interim.

c) Connect proposed private 10' Drainage Easement along the western property line of Filing 1 to proposed Tract A, across Lot 100.

Applicant's Response:
The drainage easement has been extended.

d) For the signature and notary blocks on Sheet 1, Robert W. Jones II, Managing Member will be signing the plat on behalf of Two R & D LLC in accordance with the submitted Statement of Authority document. Revise subdivision plat as necessary.

Applicant's Response:
Signature block and notary block have been revised.

e) As mentioned in the first round of review comments, in order for Section 21.06.060 (f) (1) of the Zoning and Development Code to not apply (Easements shall be used to access not more than one lot with no street frontage), City Project Manager suggests that the applicant combine proposed Lots 101 & 102 to be one platted lot in order to meet with this requirement since the proposed right-of-way dedication ends at Lot 13. Under this scenario, the proposed Ingress/Egress & Utility Easement could still be shown as the location of the future right-of-way and utility infrastructure.

Applicant's Response:
Lots 101 and 102 have been combined.

f) Submit separate legal description and map exhibit for proposed temporary turn-around easement located at the end of Filing 1. Identify easement on plat. Senior City Staff Attorney will prepare dedication document for property owner's signature to be recorded at time of final subdivision plan recording.

Applicant's Response:
We do not see the need for a temporary turn-around plus all the legal descriptions and exhibits. The plat dedicates the ingress/egress and the cul-de-sac allows for the turn-around of vehicles. Filing 2 work is to begin immediately and concurrent with Filing 1 work.

g) In the City of Grand Junction Use Block, add recording information for proposed dedication document for private Drainage Easement & Ingress & Egress Easement to the HOA.
Code Reference: V-15 of the SSIDS Manual.

Applicant's Response:
Wording has been added to the GJ use block.

2. Landscaping Plan:

a) What is proposed for the disturbed area around the detention ponds to prevent weed growth within Tracts A & B, for Filings 1 & 2? Native grass seed mix? Please address further.

Applicant's Response:
A native mix has been called out for the detention ponds and disturbed areas around the ponds.

b) Landscaping Plan will only be reviewed for Filings 1 & 2. Future filings as identified on this Landscaping Plan will need to be re-submitted for review at the appropriate time.

Applicant's Response:
Comments acknowledged.

c) In accordance with Section 21.06.040 (b) (19) of the Zoning and Development Code, only the Planning Director may approve xeric or low water use plants. City Project Manager will notify applicant of any requested changes once review is complete.

Applicant's Response:
Comments acknowledged.

d) See City Development Engineer review comment concerning the use of rocks within the detention basin and revise as applicable.
Code Reference: Section 21.06.060 (h) (9) of the Zoning and Development Code and V-10 of the SSIDS Manual.

Applicant's Response:
The rocks have been removed.

3. Covenants and Dedication Documents, etc.:

a) Senior City Staff Attorney is currently reviewing re-submitted CCR's. City Project Manager will email applicant with the requested changes once review is complete.

Applicant's Response:
Comments acknowledged.

b) Submit conveyance document for proposed private drainage easements (and proposed Ingress/Egress Easement) to the HOA, along with legal description and map exhibit for review prior to recording.

Applicant's Response:
All conveyance documents with legal descriptions and map exhibits will be submitted for review prior to recording. Said documents will be prepared after the City has determined whether or not it will accept Tract B. It doesn't make sense to prepare the documents prior to the City's decision because then the documents would have to be rewritten (to either include or exclude Tract B).

c) Senior City Staff Attorney has reviewed the submitted Special Warranty Deed for the dedication of the Tracts to the HOA and has requested changes. *This comment is a carry-over from the 1st Round of Review Comments as a reminder and will need to be addressed by the applicant prior to approval.*
Code Reference: IV-2 of the SSIDS Manual.

Applicant's Response:
The applicant is waiting for the City to determine whether or not they will accept Tract B before the conveyance documents are prepared for recordation. The appropriate documents can't be prepared until the City decides if it will accept Tract B. Please advise when a decision has been made and all appropriate conveyance documents, with legal descriptions and exhibits will be submitted for review prior to recording.

4. Fees:

a) Senior City Staff Attorney has reviewed and approved submitted appraisal report regarding the required payment of the 10% City Open Space Fee. However, applicant is requesting that this fee be waived in-lieu of the applicant proposing to dedicate 15.06 +/- acres of open space to the City of

Grand Junction for the use and enjoyment of the general public (Section 21.06.020 (b) of the Zoning and Development Code). City Project Manager will process applicants request and will keep applicant apprised as to status of request as the City Park's Board will need to make a recommendation with final review and approval by City Council.
Code Reference: Section 21.06.020 of the Zoning and Development Code.

Applicant's Response:
Comments acknowledged.

5. Revocable Permit – Sign/Landscaping:

a) City Project Manager will process proposed Revocable Permit for an upcoming City Council Meeting prior to installation and development.

Applicant's Response:
Comments acknowledged.

b) Submit legal description of proposed Revocable Permit area in a Word document for review and approval along with signed/sealed map exhibit for inclusion into permit document.
Code Reference: Section 21.02.180 of the Zoning and Development Code.

Applicant's Response:
Legal description in Word format, along with exhibit, is attached with this submittal.

CITY DEVELOPMENT ENGINEER

1. GENERAL:

a) When the grading plan is complete, provide a letter from the building department stating they have received hard copies of 1) the geotechnical report, 2) the final grading plan, and 3) a tabulation of the minimum and maximum finished floor elevations by lot. Also reference the individual lot specific grading and drainage plan requirement. This must be the final grading plan and tabulation after all revisions. Include the revision date for the grading plan on the letter: this date must match the revision date on the final plans to be approved by the City.

Applicant's Response:
Comments acknowledged.

b) Execute the easement for the offsite utilities in Ridgeway Court.

Applicant's Response:
City is to prepare the Easement. Please forward when complete so we can execute.

2. PLANS:

a) See redlined plans. Respond in different color ink next to each comment and return with written response.

Applicant's Response:
See attached "green line" responses.

b) See redlined site plan to be recorded. Show all filing 1 construction including the storm sewer outfall and any grading outside of phase I.

Applicant's Response:
Comments have been incorporated into the Site Plan for recording. The Ridgeway Ct. and grading improvements are not essential to the purpose of the Recorded Site Plan. The purpose is to outline important restrictions for future lot owners after improvements are constructed. Notes are on the plan that describes restriction and information to the Lot owners on HOA maintenance.

c) I suspect there will be a lot of sediment in the diversion ditches which will likely be deposited in the roadside ditches. The City will be maintaining the roadside ditches and all grading and ditches must be designed to minimize sedimentation and erosion. The drainage report must design these ditches including design flow velocity erosion and sedimentation. The revised drainage report did address hydraulics on the roadside ditches and shows rock lining but only included hydraulics on one diversion ditch and didn't address erosion, sedimentation, or revegetation. Include the necessary calculations and include a discussion in the body of the report how the ditches have been addressed and erosion and sedimentation controlled.

Applicant's Response:
Calculations have been added to Appendix D of the drainage report and discussion added to the narrative.

d) Provide a temporary turn around and easement at the end of filing 1 and/or filing 2.

Applicant's Response:
We do not see the need for a temporary turn-around plus all the legal descriptions and exhibits. The plat dedicates the ingress/egress and the cul-de-sac allows for the turn-around of vehicles. Filing 2 work is to begin immediately and concurrent with Filing 1 work.

3. LANDSCAPE PLAN:

a) Rock is not allowed in the detention basins per SWMM, must be seeded.

Applicant's Response:
Native seed mix has been shown on the Landscape Plan instead of rock.

b) Show sight triangles on the plan at Mariposa.

Applicant's Response:
Sight triangles are shown.

c) Provide the proper acceptance block.

Applicant's Response:
An updated approval block has been added.

d) How will landscape be irrigated?

Applicant's Response:
Water trucks will be used to irrigate until the native seed has been established. See original General Report for information regarding irrigation.

4. DRAINAGE REPORT:

a) See redlined report. Respond in different color ink next to each comment and return with written response.

Applicant's Response:
"Green" inked responses to redlined comments are included in this re-submittal.

b) In section D the pond 1 description needs to be revised to address piping the outfall instead of the ditch.

Applicant's Response:
The outfall is piped to the drainage ditch alongside the roadway. This is the ditch described in the report.

c) The drainage report doesn't design all the diversion ditches. The one it does design for section 202 has a 100-yr velocity of 4.75 fps which will be erosive. These ditches must all be designed and permanently stabilized with erosion control measures.

Applicant's Response:
Diversion ditch cross-sections with flows and velocities have been added to Appendix D and added to the drainage map.

d) The culverts under the driveways were not evaluated to ensure they pass the ditch flows. Be sure to look at inlet and outlet control.

Applicant's Response:
The culvert calculations have been added to Appendix D of the report.

e) One ditch section on Aiguille doesn't stay within the ditch. It is redlined in the report. What needs to happen on this?

Applicant's Response:
The 100 year flow only needs to be conveyed within the ditch and right-of-way. I don't believe the entire 100 year flow must be contained within the vertical confines of the ditch.

f) The plans call for D_{50} of 4" rip rap to line the ditches. This needs to be evaluated to demonstrate it will withstand the velocities identified in the ditch design.

Applicant's Response:
Table 805 of the SWMM Manual defines the allowable velocities based on channel types. Rock lined channel velocities up to 12 fps are allowed.

g) All detention basins and infiltration-based retention basins must be registered on the State of Colorado Stormwater Detention and Infiltration Facility portal. The design engineer must visit the website and follow the directions to register the new basin. The web portal address is: https://maperture.digitaldataservices.com/gvh/?viewer=cswdif
This must be complete and accepted prior to plan approval.

Applicant's Response:
The detention ponds will be registered on the website.

5. STORMWATER:

a) The 521 permit has been obtained.

Applicant's Response:
Comments acknowledged.

6. GEOTECHNICAL REPORT:

a) From Round 1: "Address the water quality and detention basins uphill of existing houses. The water quality component will keep water in the basins for up to 40 hours whenever it rains. Will this water infiltrate and cause problems for downhill structures? Do the ponds need to be lined up to the water quality capture volume elevation plus a little freeboard? Any other concerns about this situation?"

The response says the detention basins will be lined to the WQCV level but nothing is called out on the plans. Be sure to provide proper materials specifications and details to address how this liner shall be installed and not leak.

Applicant's Response:
The liner has been shown on the plans since the last round of comments. See Sheet C5.0 and C5.1.

b) From round 1: "Is there any value in bedding the utilities in low permeability materials similar to Summer Hill?"

The response says this will be evaluated in the field in coordination with the City. The City is agreeable to this approach.

Applicant's Response:
Comments acknowledged.

7. TESTING PLAN:

a) These are the comments from round 1. Revise the testing plan to incorporate these comments. Otherwise they will get lost in the shuffle.

Applicant's Response:
A revision to the Testing Plan is included in this re-submittal.

b) In the reporting section, The City will require a report from HBET stating construction was done in accordance with the geotechnical report, City standards, and the materials testing plan. It shall also summarize site issues encountered and how they were resolved.

Applicant's Response:
A listing of reports to be provided is included in the revised Testing Plan.

c) I didn't see subgrade proof rolling prior to base course placement. Shouldn't this be done?

Applicant's Response:
Subgrade proof-rolling is described as a requirement under Section 3 Engineering oversight.

d) Is trench compaction to be 98% of modified like fill placement?

Applicant's Response:
Yes. Reference the Supplemental Soils Report included with this re-submittal.

e) Reference benching if required.

Applicant's Response:
Benching recommendations are included in the Supplemental Soils Report.

f) Reference under drain construction.

Applicant's Response:
Under drain construction does not occur until Filing 4 and 5.

g) In section 2.2 where it identifies 1 test per 300 SY or fill, include a depth requirement. I.e. 1 test per 300 SY per 2' rise or whatever is appropriate.

Applicant's Response:
The fill depth has been included in the revised Testing Plan in Section 2.2.

8. DIA:

a) Include reconditioning for subgrade prep.

Applicant's Response:
Subgrade prep has been added.

b) The quantities in Section D3 need to cover all areas to be disturbed by overlot grading, not just filing 1. Money should be included for soil prep, mulching, other additives, etc. There is no way simply seeding will grow. Temporary irrigation may be required too.

Applicant's Response:
Money has been provided in the DIA for the Grading Permit and now in this Filing 1 DIA.

c) Include street repair for the storm sewer in the street. Also, there will likely be many services affected that will cost money. Some cost should be included for these.

Applicant's Response:
The street repair for Ridgeway Court is included in the estimate under C.1.

d) It seems the quality control testing number should be higher given they will be covering overlot grading for much of the site.

Applicant's Response:
Testing has been included at 2% of the project cost.

e) From round 1: "Include money for the Developer's inspection cost." This is for the developer's engineering onsite inspection.

Applicant's Response:
Line item has been included at 2%.

f) Include money for the dry utilities, not just the trenching.

Applicant's Response:
A separate agreement has already been signed and completed with the dry utility providers. Trenching is all that is required for Exhibit B.

g) Include money for the diversion ditches.

Applicant's Response:
Line item for diversion ditches has been added.

h) Include money for lining the detention basins.

Applicant's Response:
The cost of the liners has been added.

i) Sanitary sewer quantities don't include the outfall through filing two.

Applicant's Response:
The length of sewer has been double checked and is corrected.

CITY SURVEYOR – Peter Krick – peterk@gjcity.org (970) 256-4003

1. **Sheet 1 of 2:**
   a) The Description shall be revised to include a portion of the Energy Center Subdivision that is currently left out. A metes and bounds description is an alternative solution.

      Applicant's Response:
      The description has been revised.

2. **Sheet 2 of 2:**
   a) Provide dimensions for the 20' sewer easement lying adjacent to Block 3, Energy Center Subdivision.

      Applicant's Response:
      Dimensions have been provided.

   b) In all instances, the easements labeled as Sewer Easements should be Utility Easements.

      Applicant's Response:
      Easements have been revised.

   c) There is an additional curve that requires dimensioning immediately South of adjoining curve C23.

      Applicant's Response:
      Already shown for center line.

   d) Provide additional dimensions for the Temporary Turn-around Easement. Temporary Turn-around Easements are typically created by a separate instrument but this may not apply in this instance. Verify with the City Planner assigned to this project. If not created by separate instrument, proper and approved language is required within the Dedication.

      Applicant's Response:
      Separate Easements will not be provided. The turn-around will coincide with the Ingress/Egress easement dedicated on the Plat.

   e) Verify the centerline and sideline dimensions for the Temporary Turn-around Easement.

      Applicant's Response:
      The temporary turn-around is part of the Ingress/Egress easement on the Plat (see comment above).

CITY TRANSPORTATION ENGINEER – Sandy Mallory – sandym@gjcity.org (970) 244-1567

1. **Comments:**
   a) Filing 1 still not showing all traffic signs. Need to show No outlet sign (W14-2a) at intersection of Mariposa Dr. & Auguille Dr. and 20 MPH Speed Limit sign (R2-1) on Aiguille Dr.

      Applicant's Response:
      These signs were shown on Sheet C1.1 of the previous submittal, and revised with this re-submittal.

OUTSIDE REVIEW AGENCY COMMENTS
(Non-City Agencies)

5-2-1 Drainage Authority - Mark Barslund - markb@gjcity.org (970) 256-4106

1. **Comment:**
   a) All requirements have been met. A 521 D.A. permit may be issued.

      Applicant's Response:
      Comments acknowledged.

Ute Water Conservancy District - Jim Daugherty - jdaugherty@utewater.org (970) 242-7491

1. **Comments:**
   a) See redline drawing for further comment.

      Applicant's Response:
      Corrections have been added.

   b) ALL FEES AND POLICIES IN EFFECT AT TIME OF APPLICATION WILL APPLY.
      Applicant's Response:
      Comments acknowledged.

   c) If you have any questions concerning any of this, please feel free to contact Ute Water.

      Applicant's Response:
      Comments acknowledged.

REVIEW AGENCY
(Responding with "No Comment" or have not responded as of the due date)

The following Review Agencies have <u>not</u> responded as of the comment due date.

1. N/A

The Petitioner is required to submit electronic responses, labeled as "**Response to Comments**" for the following agencies:

1. **City Planning**
2. **City Development Engineer**
3. **City Surveyor**
4. **City Transportation Engineer**
5. **Ute Water Conservancy District**

Date due: **December 13, 2017**

Please provide a written response for each comment and, for any changes made to other plans or documents indicate specifically where the change was made.

Vortex Engineering, Inc. looks forward to working successfully with the City of Grand Junction to permit this project.

Upon your review of this information, should you have any questions or require additional information, please do not hesitate to contact me at 970-245-9051. Thank you.

Sincerely,
Vortex Engineering, Inc.



Robert W. Jones, II, P.E.

Cc: File

City of Grand Junction
Review Comments

Date: November 12, 2017 **Comment Round No.** 3 **Page No.** 1 of 5
Project Name: Pinnacle Ridge Subdivision, Filing 1 **File No:** SUB-2017-271
Project Location: East of Mariposa Drive

Check appropriate [X] **if comments were mailed, emailed, and/or picked up.**

Property Owner(s): Two R & D LLC – Attn: Robert Jones II
[ ] **Mailing Address:** P. O. Box 39, Fruita, CO 81521
[X] **Email:** rjones@vortexeng.us **Telephone:** (970) 245-9051
[ ] **Date Picked Up:** _____ **Signature:** _____

Representative(s): Vortex Engineering Inc. – Attn: Robert Jones II
[ ] **Mailing Address:** 2394 Patterson Road, Suite 201, Grand Junction, CO 81505
[X] **Email:** rjones@vortexeng.us **Telephone:** (970) 245-9051
[ ] **Date Picked Up:** _____ **Signature:** _____

Developer(s):
[ ] **Mailing Address:**
[ ] **Email:** **Telephone:**
[ ] **Date Picked Up:** _____ **Signature:** _____

CITY CONTACTS

Project Manager: Scott D. Peterson, Senior Planner
Email: scottp@gjcity.org **Telephone:** (970) 244-1447

Dev. Engineer: Rick Dorris
Email: rickdo@gjcity.org **Telephone:** (970) 256-4034

City of Grand Junction
REQUIREMENTS
(with appropriate Code citations)

CITY PLANNING

1. Landscaping Plan:

FYI. The Community Development Director, in accordance with Section 21.06.040 (b) (19) of the Zoning and Development Code, has approved the submitted landscaping plan for Pinnacle Ridge for the use of xeric and low water plants with no long term water supply being provided. Applicant has stated that they will install a temporary drip irrigation system with irrigation water being provided by trucking it to the site and a pump will pressurize the system. The Plan includes the provision that watering will continue to occur until all vegetation is firmly established. This landscaping plan was prepared and designed by a Licensed Landscape Architect. As such, based on staff's review and that of the Licensed Landscape Architect that this plan meets the intent of the City's landscaping code and is approved.

Code Reference: Section 21.06.060 (h) (9) of the Zoning and Development Code and V-10 of the SSIDS Manual.

Applicant's Response:

Document Reference:

2. Covenants and Dedication Documents, etc.:
a. Senior City Staff Attorney has reviewed submitted CCR's and has one additional comment. See attached document and revise CCR's as applicable.
b. Submit conveyance document(s) for proposed private drainage easements, proposed Ingress/Egress Easement and Warranty Deed for the dedication of Tracts to the HOA, along with legal description and map exhibits, if applicable, for review prior to recording.
Code Reference: IV-2 of the SSIDS Manual.
Applicant's Response:
Document Reference:

3. Tract B Land Dedication to City:
City Project Manager has scheduled request for the December 7, 2017 City Parks Board Meeting and will request that the applicant attend meeting as well in case the Board has any additional questions, etc. The meeting will begin at Noon at the City Parks Department in Lincoln Park. Their recommendation will tentatively be scheduled for the December 20, 2017 City Council meeting.
Code Reference: Section 21.06.020 (b) of the Zoning and Development Code.
Applicant's Response:
Document Reference:

4. Revocable Permit – Sign/Landscaping:
City Project Manager will process proposed Revocable Permit for the December 6, 2017 City Council Meeting.
Code Reference: Section 21.02.180 of the Zoning and Development Code.
Applicant's Response:
Document Reference:

5. Site Plan for Recording (Sheet 1):
Label Aiguille Drive.
Code Reference: V-22 of the SSIDS Manual.
Applicant's Response:
Document Reference:

6. Off-Site Utility Easement (adjacent to Ridgeway Court):
Senior City Staff Attorney will prepare dedication document once review of legal description and map exhibit has been reviewed and approved by City Surveyor. City Project Manager will let applicant know of any requested changes. Applicant will be responsible for all recording fees.
Code Reference: IV-2 of the SSIDS Manual.
Applicant's Response:
Document Reference:

CITY DEVELOPMENT ENGINEER

GENERAL

Review Comment: When the grading plan is complete, provide a letter from the building department stating they have received hard copies of 1) the geotechnical report, 2) the final grading plan, and 3) a tabulation of the minimum and maximum finished floor elevations by lot. Also reference the individual lot specific grading and drainage plan requirement. This must be the final grading plan and tabulation after all revisions. Include the revision date for the grading plan on the letter: this date must match the revision date on the final plans to be approved by the City.

Applicant's Response:
Document Reference:

Review Comment: Execute the easement for the offsite utilities in Ridgeway Court.

Applicant's Response:
Document Reference:

Review Comment: Erosion control and revegetation are key elements to the successful development of this project. The City and Developer have agreed to be flexible to add/delete or change the plans as appropriate during construction to achieve necessary results.

Applicant's Response:
Document Reference:

PLANS

Review Comment: How will the pond liners be installed? I assume there will be joints. If so, they will need to be glued or welded. Specify how this will happen and make sure it is inspected.

Applicant's Response:
Document Reference:

Review Comment: The openings on the trash rack in front of the water quality plate need to be much smaller than the orifice size of the water quality plate. The ¾" will allow too much debris to pass. Engineers have been specifying perforated steel plates. A Google search turns up options.

Applicant's Response:
Document Reference:

DRAINAGE REPORT

Review Comment: All detention basins and infiltration-based retention basins must be registered on the State of Colorado Stormwater Detention and Infiltration Facility portal. The design engineer must visit the website and follow the directions to register the new basin. The web portal address is: https://maperture.digitaldataservices.com/gvh/?viewer=cswdif This must be complete and accepted prior to plan approval.

Applicant's Response:

Document Reference:

DIA

Review Comment: Provide evidence of payment to the dry utility companies or include in the DIA.
Applicant's Response:
Document Reference:

CITY SURVEYOR – Peter Krick – peterk@gjcity.org (970) 256-4003

Sheet 1 of 2

1. No additional comments or suggestions.
Applicant's Response:
Document Reference:

Sheet 2 of 2

1. No additional comments or suggestions.
Applicant's Response:
Document Reference:

OUTSIDE REVIEW AGENCY COMMENTS

(Non-City Agencies)

Review Agency: Ute Water Conservancy District
Contact Name: Jim Daugherty
Email / Telephone Number: jdaugherty@utewater.org (970) 242-7491

• Ck bending radius at the entrance for the subdivision (should be no more than 75% mfg recommended deflection) show fittings as they may be needed to correct the degree of deflection.
• Remove the line work that reflects the PR and Vault, as the developer has agreed to purchase regulated yokes in lieu of a regulated main.
• As the water main is ten-inch the stub at the filing line should be changed to 63-feet as opposed to the indicated 43-feet, to include a four-inch BO at the line terminus.
See redline for change in water line note three.
Applicant's Response:

REVIEW AGENCIES

(Responding with "No Comment" or have not responded as of the due date)

The following Review Agencies have not responded as of the comment due date.

1. N/A.

The Petitioner is required to submit electronic responses, labeled as "**Response to Comments**" for the following agencies:

1. **City Planning**
2. **City Development Engineer**
3. **Ute Water Conservancy District**

Date due: **February 12, 2018**

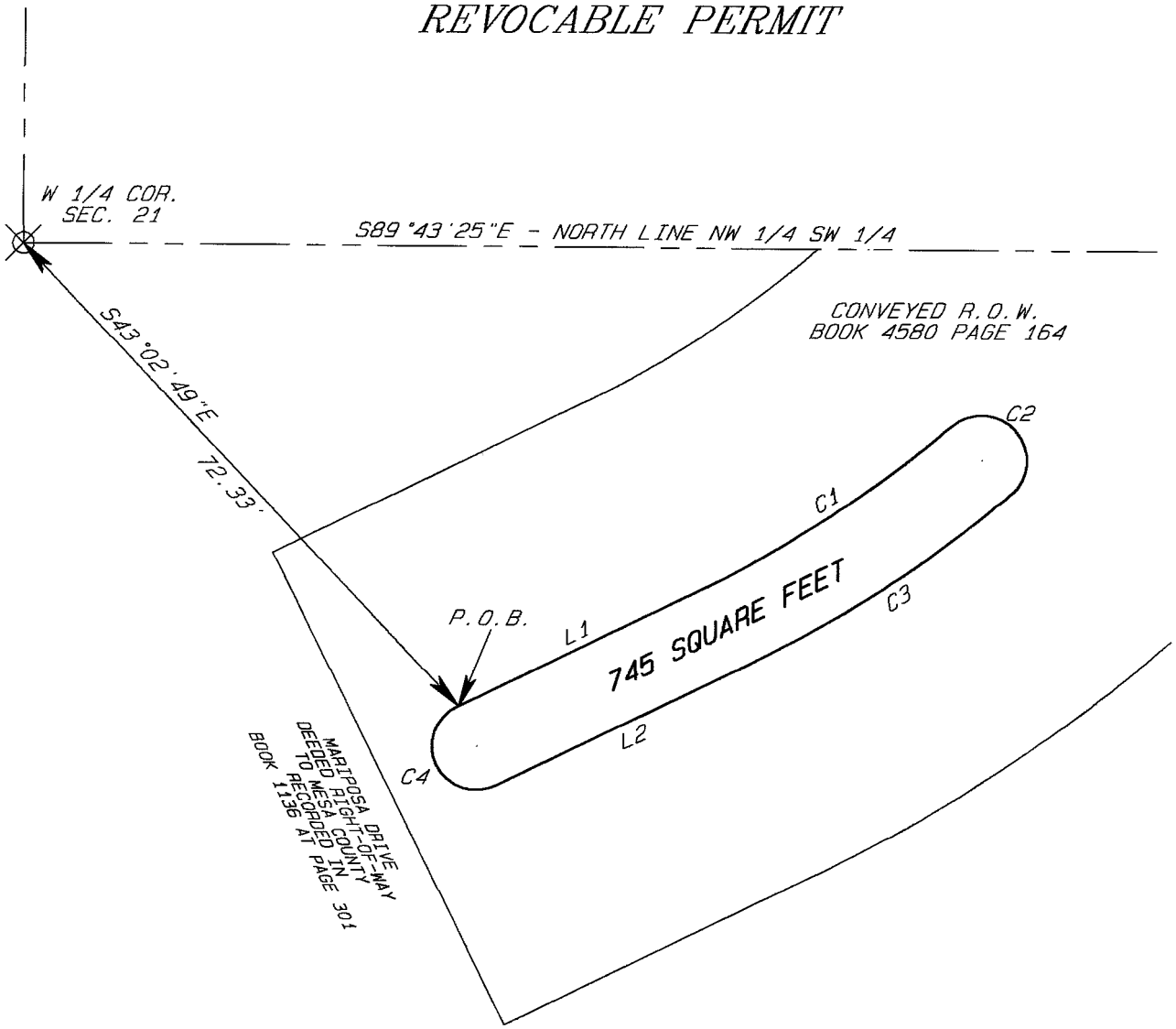
Please provide a written response for each comment and, for any changes made to other plans or documents indicate specifically where the change was made.

I certify that all of the changes noted above have been made to the appropriate documents and plans and there are no other changes other than those noted in the response.

Applicant's Signature	**Date**

EXHIBIT A

REVOCABLE PERMIT



L/C	DELTA	ARC	RADIUS	CHORD	CHORD BEARING
L1		30.94'			N63°50'42"E
C1	13°47'00"	33.52'	139.33'	33.44'	N56°12'39"E
C2	179°51'16"	16.08'	5.12'	10.24'	S40°45'13"E
C3	14°29'27"	35.00'	138.39'	34.91'	S56°25'09"W
L2		32.05'			S63°50'37"W
C4	184°22'37"	16.08'	5.00'	10.20'	N72°13'48"W

N

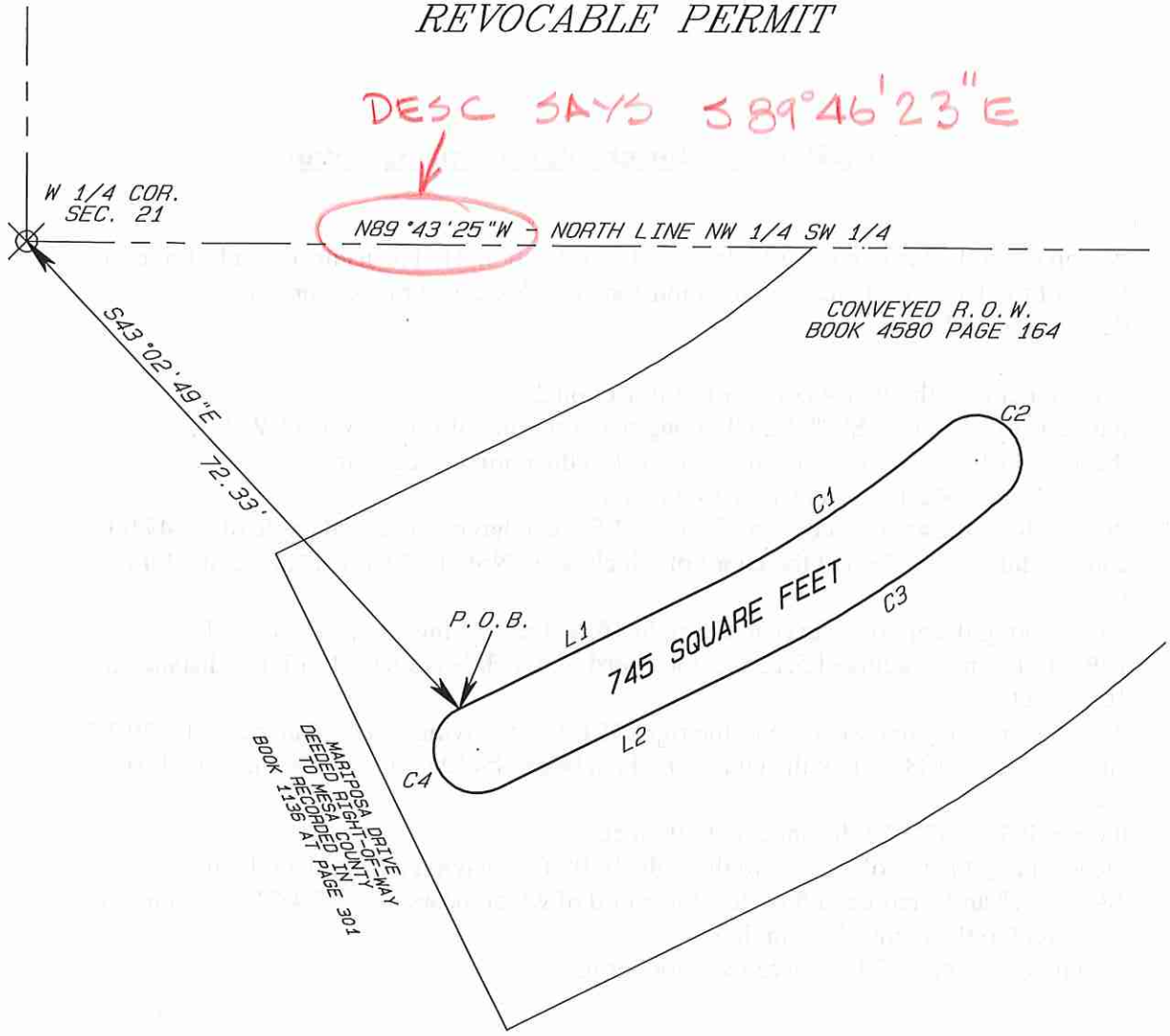
SCALE 1" = 20'
LINEAR UNITS = U.S. SURVEY FEET
P.O.B. = POINT OF BEGINNING

COLORADO REGISTERED
MICHAEL W. DRISSEL
20677
11-09-17
PROFESSIONAL LAND SURVEYOR

D H SURVEYS, INC.
970-245-8749
JOB #129-04-03

EXHIBIT A

REVOCABLE PERMIT



L/C	DELTA	ARC	RADIUS	CHORD	CHORD BEARING
L1		30.94'			N63°50'42"E
C1	13°47'00"	33.52'	139.33'	33.44'	N56°12'39"E
C2	179°51'16"	16.08'	5.12'	10.24'	S40°45'13"E
C3	14°29'27"	35.00'	138.39'	34.91'	S56°25'09"W
L2		32.05'			S63°50'37"W
C4	184°22'37"	16.08'	5.00'	14.20'	N72°13'48"W

N

SCALE 1" = 20'
LINEAR UNITS = U.S. SURVEY FEET
P.O.B. = POINT OF BEGINNING

D H SURVEYS, INC.
970-245-8749
JOB #129-04-03

REVOCABLE PERMIT DESCRIPTION

See EXHIBIT A for graphical representation.

A strip of land situate in the NW 1/4 SW 1/4 of Section 21, Township 1 South, Range 1 West of the Ute Meridian, City of Grand Junction, Mesa County, Colorado, being described as follows:

MAP = N 89°43'25"W

Commencing at the W 1/4 corner of said Section 21;
the basis of bearing is S89°46'23"E along the north line of said NW 1/4 SW 1/4;
thence S43°02'49"E a distance of 72.33 feet to the point of beginning;
thence N63°50'42"E a distance of 30.94 feet;
thence along the arc of a curve to the left 33.52 feet, having a central angle of 13°47'00" and a radius of 139.33 feet the chord of which bears N56°12'39"E a distance of 33.44 feet;
thence along the arc of a curve to the right 16.08 feet, having a central angle of 179°51'16" and a radius of 5.12 feet the chord of which bears S40°45'13"E a distance of 10.12 feet;
thence along the arc of a curve to the right 35.00 feet, having a central angle of 14°29'27" and a radius of 138.39 feet the chord of which bears S56°25'09"W a distance of 34.91 feet;
thence S63°50'37"W a distance of 32.05 feet;
thence along the arc of a curve to the right 16.08 feet, having a central angle of 184°22'37" and a radius of 5.00 feet the chord of which bears N72°13'48"W a distance of 14.20 feet to the point of beginning.
Said parcel contains 745 square feet more or less.

These descriptions were written by:
Michael W. Drissel PLS
118 Ouray Ave.
Grand Junction, CO. 81501

REVOCABLE PERMIT DESCRIPTION

See EXHIBIT A for graphical representation.

A strip of land situate in the NW 1/4 SW 1/4 of Section 21, Township 1 South, Range 1 West of the Ute Meridian, City of Grand Junction, Mesa County, Colorado, being described as follows:

Commencing at the W 1/4 corner of said Section 21;
the basis of bearing is S89º46'23"E along the north line of said NW 1/4 SW 1/4;
thence S43°02'49"E a distance of 72.33 feet to the point of beginning;
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thence along the arc of a curve to the right 16.08 feet, having a central angle of 179°51'16" and a radius of 5.12 feet the chord of which bears S40°45'13"E a distance of 10.12 feet;
thence along the arc of a curve to the right 35.00 feet, having a central angle of 14°29'27" and a radius of 138.39 feet the chord of which bears S56°25'09"W a distance of 34.91 feet;
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Said parcel contains 745 square feet more or less.

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Michael W. Drissel PLS
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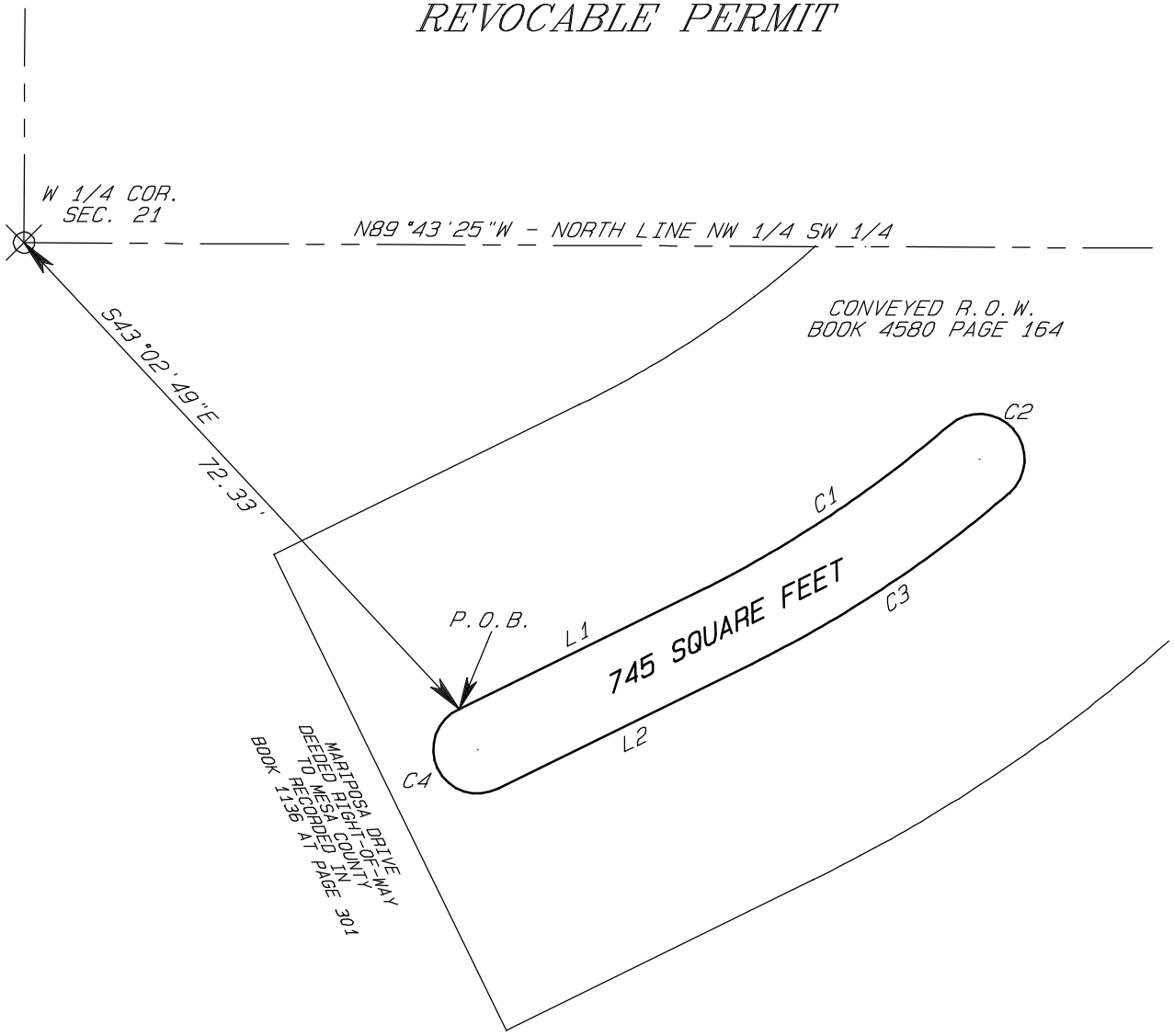
EXHIBIT A

REVOCABLE PERMIT



L/C	DELTA	ARC	RADIUS	CHORD	CHORD BEARING
L1		30.94'			N63°50'42"E
C1	13°47'00"	33.52'	139.33'	33.44'	N56°12'39"E
C2	179°51'16"	16.08'	5.12'	10.24'	S40°45'13"E
C3	14°29'27"	35.00'	138.39'	34.91'	S56°25'09"W
L2		32.05'			S63°50'37"W
C4	184°22'37"	16.08'	5.00'	14.20'	N72°13'48"W

N

SCALE 1" = 20'
LINEAR UNITS = U.S. SURVEY FEET
P.O.B. = POINT OF BEGINNING

D H SURVEYS, INC.
970-245-8749
JOB #129-04-03

REVOCABLE PERMIT

Recitals.

A. Two R & D LLC, hereinafter referred to as the Petitioner, represents it is the owner of the following described real property in the City of Grand Junction, County of Mesa, State of Colorado, to wit:

PINNACLE RIDGE PROPERTY LEGAL DESCRIPTION

A parcel of land situated in the W ½ NW ¼ of Section 21, Township 1 South, Range 1 West of the Ute Meridian, Mesa County, Colorado, being described as follows:

The south 10 acres of the NW ¼ NW ¼ and the SW ¼ NW ¼ of said Section 21.

EXCEPTING THEREFROM: Lots 1-9, Block 3 and the adjoining dedicated right-of-way know as Spur Drive and Lot 2, Block 2, Energy Center Subdivision, Phase I as platted and recorded in Plat Book 8 at Page 55 with a Reception Number 644620 of the Mesa County records.

Said parcels contains 45.11 +/- acres, more or less, as described.

B. The Petitioner has requested that the City Council of the City of Grand Junction issue a Revocable Permit to allow the Petitioner to install a Center Median that would include Landscaping and Subdivision Monument Signage within the following described public right-of-way as identified on Exhibit A:

A strip of land situate in the NW 1/4 SW 1/4 of Section 21, Township 1 South, Range 1 West of the Ute Meridian, City of Grand Junction, Mesa County, Colorado, being described as follows:

Commencing at the W 1/4 corner of said Section 21;
the basis of bearing is S89°43'25"E along the north line of said NW 1/4 SW 1/4;
thence S43°02'49"E a distance of 72.33 feet to the point of beginning;
thence N63°50'42"E a distance of 30.94 feet;
thence along the arc of a curve to the left 33.52 feet, having a central angle of 13°47'00" and a radius of 139.33 feet the chord of which bears N56°12'39"E a distance of 33.44 feet;
thence along the arc of a curve to the right 16.08 feet, having a central angle of 179°51'16" and a radius of 5.12 feet the chord of which bears S40°45'13"E a distance of 10.12 feet;
thence along the arc of a curve to the right 35.00 feet, having a central angle of 14°29'27" and a radius of 138.39 feet the chord of which bears S56°25'09"W a distance of 34.91 feet;
thence S63°50'37"W a distance of 32.05 feet;

thence along the arc of a curve to the right 16.08 feet, having a central angle of 184°22'37" and a radius of 5.00 feet the chord of which bears N72°13'48"W a distance of 14.20 feet to the point of beginning.
Said parcel contains 745 square feet more or less.

These descriptions were written by:
Michael W. Drissel PLS
118 Ouray Ave.
Grand Junction, CO. 81501

C. Relying on the information supplied by the Petitioner and contained in File No. SUB-2017-271 in the office of the City's Community Development Department, the City Council has determined that such action would not at this time be detrimental to the inhabitants of the City of Grand Junction.

NOW, THEREFORE, IN ACCORDANCE WITH THE ACTION OF THE CITY COUNCIL OF THE CITY OF GRAND JUNCTION, COLORADO:

There is hereby issued to the above-named Petitioner a Revocable Permit for the purpose aforedescribed and within the limits of the public right-of-way aforedescribed; provided, however, that the issuance of this Revocable Permit shall be conditioned upon the following terms and conditions:

1. The Petitioner's use and occupancy of the public right-of-way as authorized pursuant to this Permit shall be performed with due care or any other higher standard of care as may be required to avoid creating hazardous or dangerous situations and to avoid damaging public improvements and public utilities or any other facilities presently existing or which may in the future exist in said right-of-way.

2. The City hereby reserves and retains a perpetual right to utilize all or any portion of the aforedescribed public right-of-way for any purpose whatsoever. The City further reserves and retains the right to revoke this Permit at any time and for any reason.

3. The Petitioner, for itself and for its successors, assigns and for all persons claiming through the Petitioner, agrees that it shall defend all efforts and claims to hold, or attempt to hold, the City of Grand Junction, its officers, employees and agents, liable for damages caused to any property of the Petitioner or any other party, as a result of the Petitioner's occupancy, possession or use of said public right-of-way or as a result of any City activity or use thereof or as a result of the installation, operation, maintenance, repair and replacement of public improvements.

4. The Petitioner agrees that it shall at all times keep the above described public right-of-way in good condition and repair.

5. This Revocable Permit shall be issued only upon the concurrent execution by the Petitioner of an agreement that the Petitioner and the Petitioner's successors and assigns

shall save and hold the City of Grand Junction, its officers, employees and agents harmless from, and indemnify the City, its officers, employees and agents, with respect to any claim or cause of action however stated arising out of, or in any way related to, the encroachment or use permitted, and that upon revocation of this Permit by the City the Petitioner shall, at the sole cost and expense of the Petitioner, within thirty (30) days of notice of revocation (which may occur by mailing a first class letter to the last known address), peaceably surrender said public right-of-way and, at its own expense, remove any encroachment so as to make the aforedescribed public right-of-way available for use by the City or the general public. The provisions concerning holding harmless and indemnity shall survive the expiration, revocation, termination or other ending of this Permit.

6. This Revocable Permit, the foregoing Resolution and the following Agreement shall be recorded by the Petitioner, at the Petitioner's expense, in the office of the Mesa County Clerk and Recorder.

7. Permitee shall obtain all applicable Planning Clearance's from City Planning and Mesa County Building Department.

Dated this _____ day of _____, 2017.

The City of Grand Junction,
a Colorado home rule municipality

Attest:

_____ _____

City Clerk City Manager

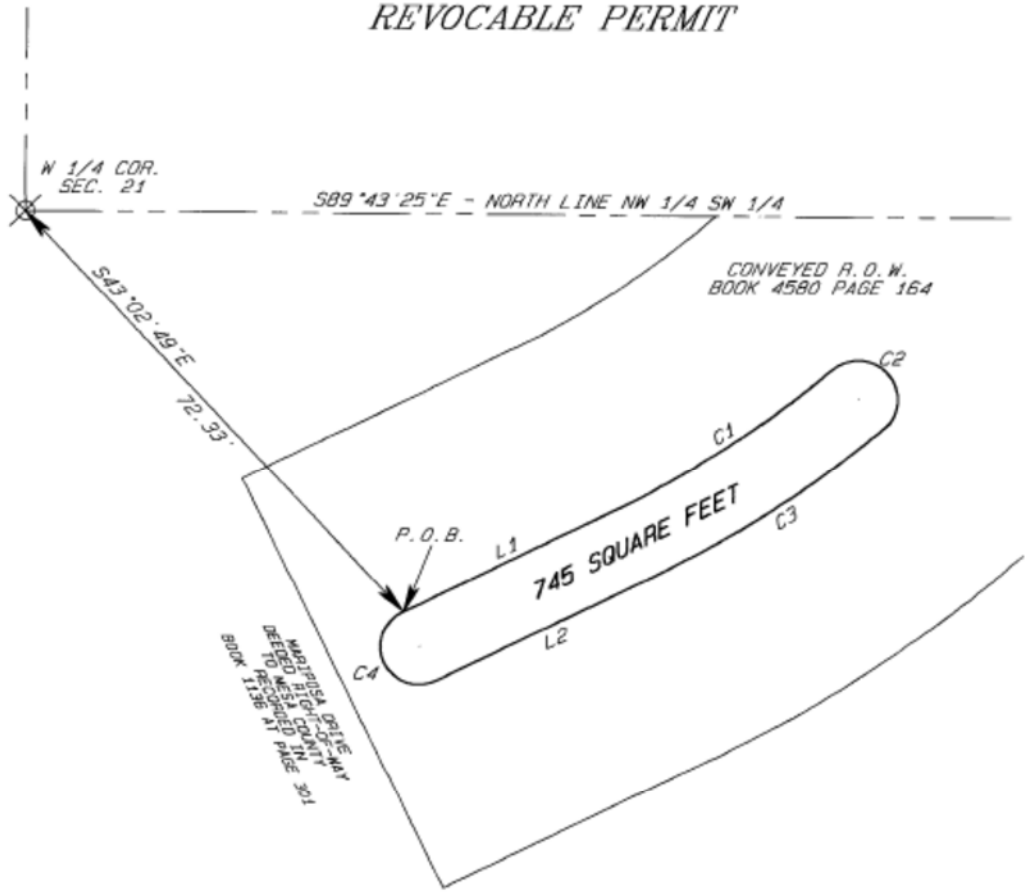
Acceptance by the Petitioner:

_____

Two R & D LLC
Robert W. Jones II, Managing Member

EXHIBIT A

REVOCABLE PERMIT



L/C	DELTA	ARC	RADIUS	CHORD	CHORD BEARING
L1		30.94'			N83°50'42"E
C1	13°47'00"	33.52'	139.33'	33.44'	N56°12'39"E
C2	179°51'16"	16.08'	5.12'	10.24'	S40°45'13"E
C3	14°29'27"	35.00'	138.39'	34.91'	S56°25'09"W
L2		32.05'			S63°50'37"W
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N

SCALE 1" = 20'
LINEAR UNITS = U.S. SURVEY FEET
P.O.B. = POINT OF BEGINNING

D H SURVEYS, INC.
970-245-8749
JOB #129-04-03

AGREEMENT

Two R & D LLC, for itself and for its successors and assigns, does hereby agree to:

(a) Abide by each and every term and condition contained in the foregoing Revocable Permit;

(b) Indemnify and hold harmless the City of Grand Junction, its officers, employees and agents with respect to all claims and causes of action, as provided for in the approving Resolution and Revocable Permit;

(c) Within thirty (30) days of revocation of said Permit by the City Council, peaceably surrender said public right-of-way to the City of Grand Junction;

(d) At the sole cost and expense of the Petitioner, remove any encroachment so as to make said public right-of-way fully available for use by the City of Grand Junction or the general public.

Dated this _____ day of _____, 2017.

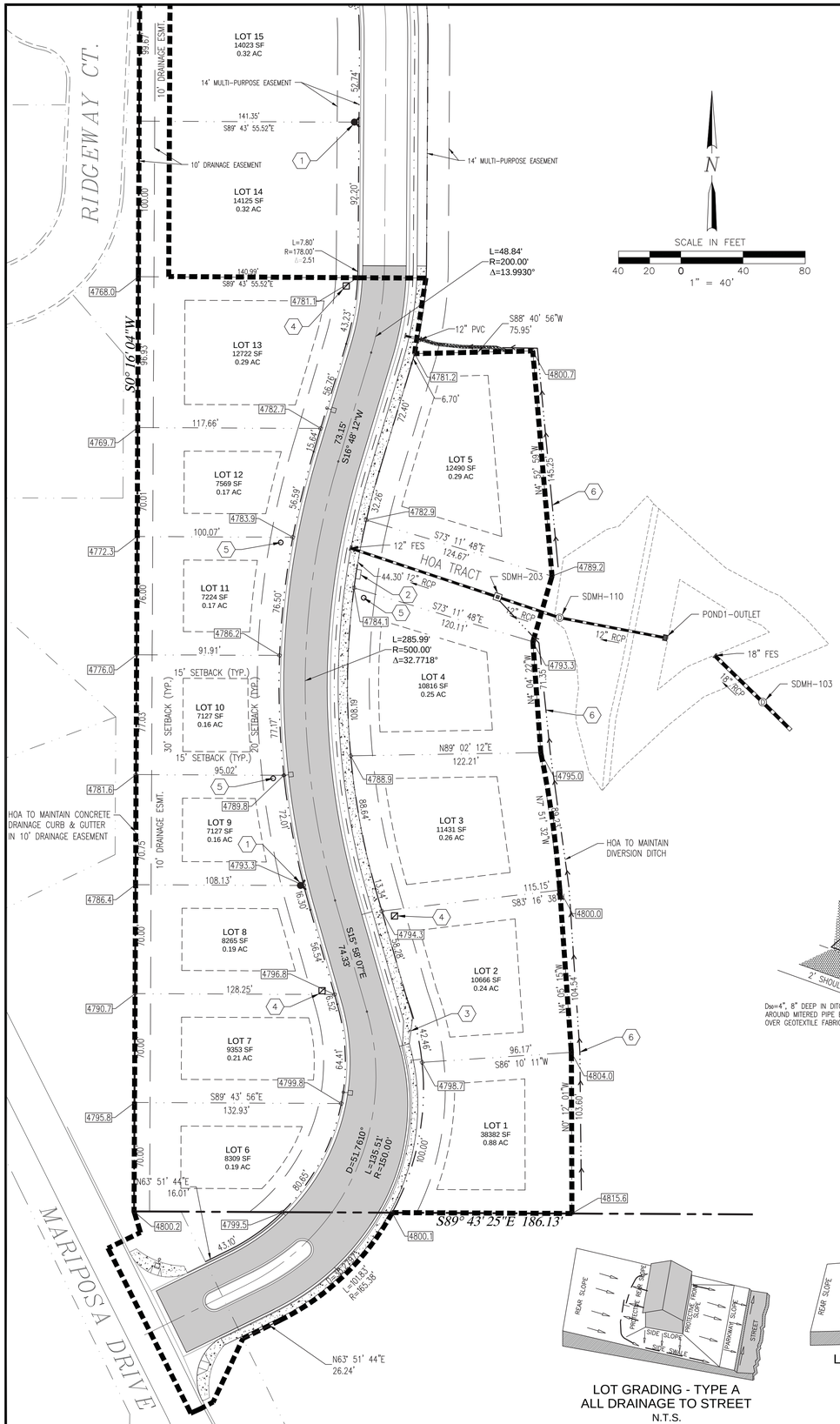
_____
Two R & D LLC
Robert W. Jones II, Managing Member

State of Colorado)
) ss.
County of Mesa)

The foregoing Agreement was acknowledged before me this_____ day of _____, 2017, by Robert W. Jones II, Managing Member, Two R & D LLC.

My Commission expires:_____
Witness my hand and official seal.

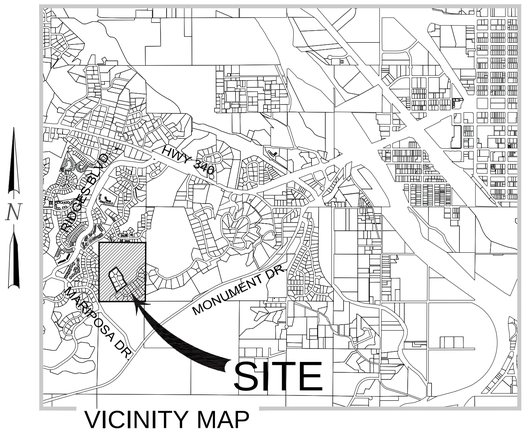
_____
Notary Public



CONSTRUCTION NOTES:

1. PROPOSED FIRE HYDRANT
2. PROPOSED MAILBOX PAD
3. 15' TRANSITION FROM ATTACHED SIDEWALK TO DETACHED SIDEWALK
4. PROPOSED ELECTRIC TRANSFORMER BY XCEL ENERGY
5. PROPOSED ELECTRIC PEDESTAL BY XCEL ENERGY
6. PROPOSED DIVERSION DITCHES DO NOT DISTURB

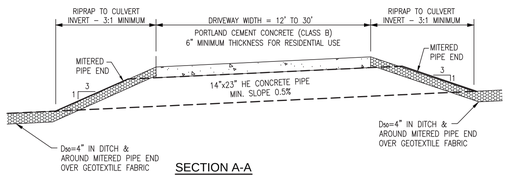
FILING 1 TOF TABLE			
Lot	*Grading*	*Min. TOF*	*Max. TOF*
1	Type A	4801.00	4801.50
2	Type A	4798.70	4799.20
3	Type A	4793.30	4793.80
4	Type A	4787.90	4788.40
5	Type A	4783.60	4784.10
6	Type C	4801.60	4802.10
7	Type C	4799.30	4799.80
8	Type C	4796.00	4796.50
9	Type C	4792.50	4793.00
10	Type C	4789.00	4789.50
11	Type C	4786.00	4786.50
12	Type C	4784.30	4784.80
13	Type C	4783.10	4783.60



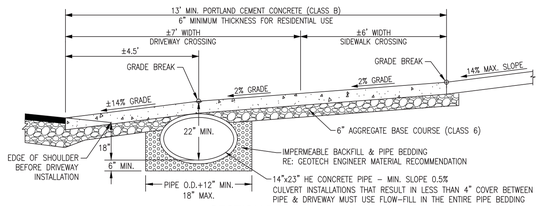
VICINITY MAP

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. ALL LOTS MUST HAVE AN INDIVIDUAL GEOTECHNICAL INVESTIGATION PERFORMED AND A SITE SPECIFIC ENGINEERING FOUNDATION.
3. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL.
4. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
5. ALL WATER SERVICES SHALL HAVE A PRESSURE REGULATED YOKE INSTALLED BASED ON PRESSURE LIMITS AS DETERMINED IN THE HYDRAULIC ANALYSIS.
6. DIVERSION DITCHES SHOWN ON THIS PLAN SHALL NOT BE DISTURBED AT ANY TIME.
7. DRIVEWAYS SHALL CONFORM TO THE DETAIL SHOWN ON THIS PLAN.
8. HOA SHALL MAINTAIN ALL CONCRETE CURBS, DETENTION PONDS, OUTLET STRUCTURES, RIPRAP, CULVERTS, DRAINAGE DITCHES, EASEMENTS AND TRACTS LOCATED OUTSIDE OF PUBLIC RIGHTS-OF-WAY. IMPROVEMENTS LOCATED WITHIN PUBLIC RIGHTS-OF-WAY ARE TO BE MAINTAINED BY THE CITY OF GRAND JUNCTION.



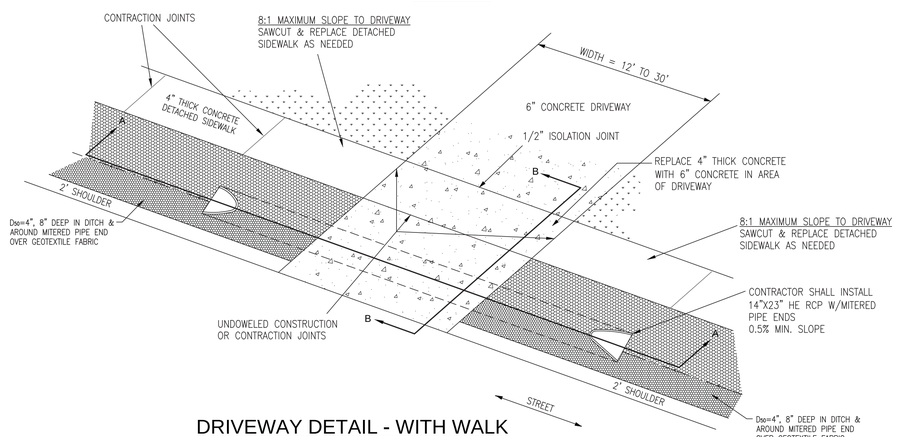
SECTION A-A



SECTION B-B

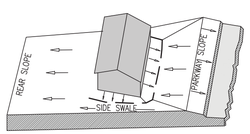
LEGEND

- PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- 4550.00 LOT CORNER SPOT ELEVATION
- PROPOSED FIRE HYDRANT



DRIVEWAY DETAIL - WITH WALK
N.T.S.

LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.



LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.

PROPOSED LAND USE TABLE				
USE	*AREA*	*AC*	*% OF TOTAL*	*OWNER*
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. - 45.11 AC			

CLERK AND RECORDER'S CERTIFICATE

STATE OF COLORADO } ss
COUNTY OF MESA }

I hereby certify that this instrument was filed in my office at _____ o'clock__M., this _____ day of _____ A.D. 2017, and is duly recorded in Book No. _____, at page _____, Reception No. _____, Drawer No. _____ Fees $ _____

_____
Clerk and Recorder

By:_____
Deputy

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS & CIVIL ENGINEERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 PROFESSIONAL ENGINEER
18-9-17

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/09/17	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017	DLS
2	10/09/17	REVISED PER CITY COMMENT ROUND 2 DATED SEPT 13, 2017	DLS

Site Plan for Recording
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 60'**
CAD ID: **pinnacle-sfr.dwg**

~SHEET~
1

PINNACLE RIDGE SUBDIVISION, FILING 1

W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.
City of Grand Junction, Mesa County, Colorado

DEDICATION

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, TWO R & D, LLC a Colorado limited liability company is the owner of that real property situate in the SW 1/4 NW 1/4, the south 10 acres of the NW 1/4 NW 1/4, Section 21, Township 1 South, Range 1 West of the Ute Meridian and a portion of the Energy Center Subdivision recorded under Reception No. 644620, City of Grand Junction, Mesa County, Colorado; being more particularly described as follows:

Beginning at the W 1/4 corner of said Section 21;
thence N00°16'04"E, being the basis of bearing, a distance of 1317.18 feet to the N 1/16 corner of said Section 21;
thence N00°15'21"E a distance of 334.95 feet along the west line of said south 10 acres;
thence S89°46'08"E a distance of 1300.69 feet along the north line of said south 10 acres;
thence S00°32'00"W a distance of 335.15 feet to the NW 1/16 corner of said Section 21;
thence S00°25'55"W a distance of 240.76 feet along the east line of said SW 1/4 NW 1/4;
thence S61°16'33"W a distance of 124.51 feet;
thence along the arc of a curve to the left 266.66 feet, having a central angle of 61°00'00" and a radius of 250.47 feet, the chord of which bears S30°46'33"W a distance of 254.25 feet;
thence along the arc of a curve to the right 208.13 feet, having a central angle of 53°00'00" and a radius of 225.00 feet, the chord of which bears S26°46'33"W a distance of 200.79 feet;
thence S53°16'33"W a distance of 249.38 feet;
thence N33°55'49"W a distance of 175.52 feet;
thence N03°09'01"W a distance of 100.00 feet;
thence N36°13'28"W a distance of 300.00 feet;
thence S53°46'33"W a distance of 230.00 feet;
thence S12°16'33"W a distance of 100.00 feet;
thence S25°13'27"E a distance of 505.16 feet;
thence S53°16'33"W a distance of 157.53 feet;
thence along the arc of a curve to the left 195.51 feet, having a central angle of 53°00'29" and a radius of 211.33 feet, the chord of which bears S26°46'23"W a distance of 188.61 feet to the south line of said SW 1/4 NW 1/4;
thence N89°43'25"W a distance of 290.18 feet to the point of beginning.
Said parcel contains 32.70 acres more or less.

Said Owner has by these presents laid out, platted and subdivided the above-described real property into Lots, and Tracts as shown hereon, and designated the same as PINNACLE RIDGE SUBDIVISION, FILING 1 in the City of Grand Junction, County of Mesa, State of Colorado, and does hereby offer the following dedications and grants:

All streets, roads and Rights-of-Way are dedicated to the City of Grand Junction for the use of the public forever.

All Multipurpose Easements are dedicated to the City of Grand Junction as perpetual easements for City approved utilities including the installation, operation, maintenance and repair of said utilities and appurtenances which may include but are not limited to, electric lines, cable TV lines, natural gas pipelines, sanitary sewer lines, storm sewers, water lines, telephone lines, traffic control facilities, street lighting, landscaping, trees and grade structures.

All Utility Easements are dedicated to the City of Grand Junction as perpetual easements for City approved utilities including the installation, operation, maintenance and repair of said utilities and appurtenances which may include but are not limited to, electric lines, cable TV lines, natural gas pipelines, sanitary sewer lines, storm sewers, water lines, telephone lines, equivalent other public utility providers and appurtenant facilities.

A Drainage Easement over Tract A is dedicated to the City of Grand Junction as a perpetual easement for the inspection, installation, operation, maintenance and repair of detention and drainage facilities and appurtenants thereto. The City of Grand Junction is dedicated reasonable ingress/egress access to the drainage/detention easement areas. The owner(s) and/or the property owners' association, if one exists, is not relieved of its responsibility to inspect, install, operate, maintain and repair the detention and drainage facilities.

All other Drainage easement are granted to the Homeowner's Association by separate instrument.

_____
Robert W. Jones II, Managing Member

STATE OF COLORADO)
)ss
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____ 2017 A.D. by TWO R & D, LLC, Robert W. Jones II, Managing Member.

Witness my hand and official seal: _____
Notary Public

My commission expires: _____

CITY APPROVAL

This plat of PINNACLE RIDGE SUBDIVISION, FILING 1, a subdivision of the City of Grand Junction, County of Mesa, State of Colorado, is approved and accepted on the ____ day of _____, 2017 A.D.

_____ _____
City Manager City Mayor

NOTICE: According to Colorado law you must commence any legal action based upon any defect in the survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of this certification/statement shown hereon.

TITLE CERTIFICATION

State of Colorado
County of Mesa

We, Heritage Title Company, a title insurance company, as duly licensed in the State of Colorado, hereby certify that we have examined the title to the hereon described property, that we find the title to the property is vested to Two R & D, LLC, a Colorado limited liability company ; that the current taxes have been paid; that all mortgages not satisfied or released of record or otherwise terminated by law are shown hereon and that there are no other encumbrances of record; that all easements, reservations and right-of-ways of record are shown hereon.

Date: _____ By: _____

LIENHOLDERS RATIFICATION OF PLAT

The undersigned, hereby certifies that it is a holder of a security interest upon the property hereon described and does hereby join in and consent to the dedication of the land described in said dedication by the owners thereof and agree that its security interest which is recorded under Reception No. 2236040, 2310515, 2422221, 2422230, 2439195, 2488454, 2654494, 2351449, 2351450, 2439196, 2488467, 2654493 of the public records of Mesa County, Colorado shall be subordinated to the dedications shown hereon.

BY: _____ FOR: Alpine Bank

STATE OF COLORADO)
)ss
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____ 2017 A.D. by

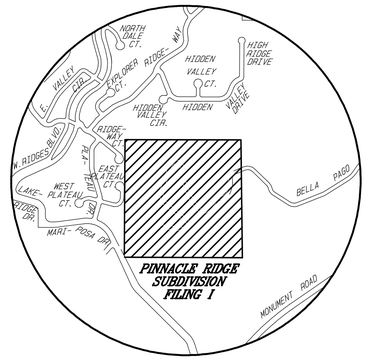
Witness my hand and official seal: _____
Notary Public

My commission expires: _____

CLERK AND RECORDER'S CERTIFICATE

This plat was accepted for filing in the office of the Clerk and Recorder of Mesa County, Colorado at _____ o'clock__M., on this ____ day of _____ 2017 A.D., and was recorded at Reception No. _____, Drawer No. _____, and Fees _____.

_____ _____
Clerk and Recorder Deputy



VICINITY MAP
N.T.S.

To be completed by the City of Grand Junction personnel. The accuracy of this information is the responsibility of the City of Grand Junction.

Declaration of Covenants, Restrictions and Conditions of the Pinnacle Ridge Homeowner's Association, Inc.

recorded under Reception No. _____.

Tracts A and B are conveyed to the Pinnacle Ridge Homeowner's Association, Inc.

recorded under Reception No. _____.

Drainage and Ingress & Egress Easements are conveyed to the Pinnacle Ridge Homeowner's Association

recorded under Reception No. _____.

SURVEYOR'S STATEMENT

I, Michael W. Drissel, a registered Professional Land Surveyor in the State of Colorado, do hereby state that this survey was performed by me or under my direct responsibility, supervision, and checking. It is based upon my professional knowledge, information and belief according to applicable standards of practice. This is not a guarantee or warranty, either expressed or implied. Title research was supplied by Heritage Title Company under FILE NUMBER: 598-H0502023-900-GTO.

FOR REVIEW

REVISED 07/27/17
REVISED 08/24/17
REVISED 09/27/17

PINNACLE RIDGE SUBDIVISION
FILING 1
LOCATED IN THE
W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.

D H SURVEYS INC.
118 OURAY AVE. - GRAND JUNCTION, CO.
(970) 245-8749

Designed By M.W.D.	Checked By E.E.B.	Job No. 129-04-03
Drawn By TMODEL	Date MAY 2017	Sheet 1 OF 2

PINNACLE RIDGE SUBDIVISION, FILING 1

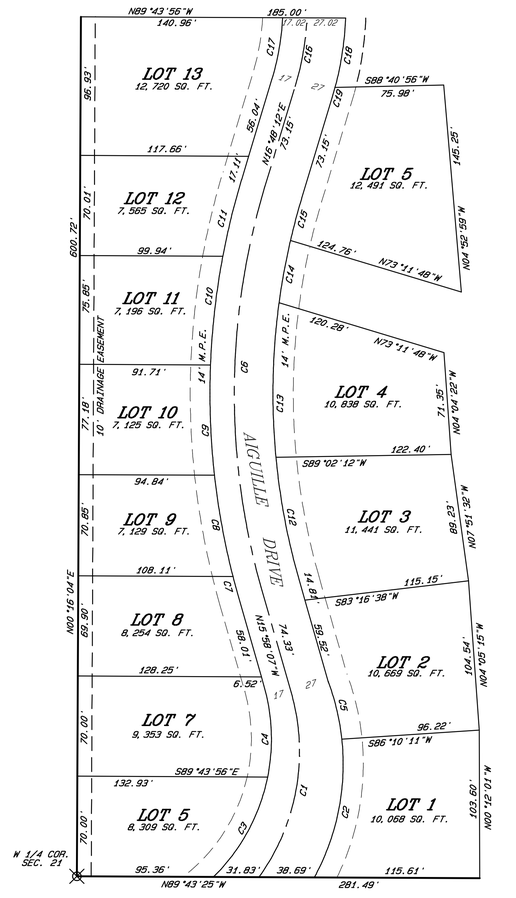
W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M., City of Grand Junction, Mesa County, Colorado



L	DELTA	ARC	RADIUS	CHORD	CHORD BEARING
L1	2°25'50"	8.48'	200.00'	8.48'	N01°35'42"E
L2		144.22'			S00°22'47"W
L3	18°18'09"	78.26'	244.98'	77.93'	S08°46'17"E
L4	52°47'22"	419.21'	455.00'	404.54'	S08°28'20"W
L5		233.78'			N34°52'00"E
L6	55°33'35"	247.27'	255.00'	237.70'	S62°38'48"W
L7		453.94'			S89°34'24"E
L8	38°23'02"	100.49'	150.00'	98.62'	N70°22'53"W
L9		125.09'			S51°11'22"E
L10	51°34'09"	134.11'	149.00'	129.63'	N25°24'18"W
L11		255.63'			S00°22'47"W

R	DELTA	ARC	RADIUS	CHORD	CHORD BEARING	
R1	33°48'13"	106.20'	180.00'	104.66'	S46°55'03"W	NON-TANGENT
R2	15°24'56"	32.29'	120.00'	32.19'	N56°06'42"E	NON-TANGENT

B	DELTA	ARC	RADIUS	CHORD	CHORD BEARING
B1	61°00'00"	266.66'	250.47'	254.25'	S30°46'33"W
B2	53°00'00"	208.13'	225.00'	200.79'	S26°46'33"W
B3	53°00'20"	195.51'	211.33'	188.61'	S26°46'23"W



SCALE 1" = 50'

LOT & CENTER LINE DIMENSIONS

L/C	DELTA	ARC	RADIUS	CHORD	CHORD BEARING	
C1	51°45'39"	135.51	150.00'	130.95'	S09°54'43"W	
C2	34°44'09"	100.03'	165.00'	98.51'	S11°15'38"W	NON-TANGENT
C3	34°13'41"	80.65'	135.00'	79.45'	N28°28'58"E	
C4	27°20'14"	64.41'	135.00'	63.80'	N02°18'00"W	
C5	14°18'25"	41.20'	165.00'	41.09'	S13°15'41"E	NON-TANGENT
C6	32°46'18"	285.99'	500.00'	282.11'	S00°25'03"W	
C7	1°38'41"	14.84'	517.00'	14.84'	N15°08'46"W	
C8	7°59'00"	72.04'	517.00'	71.98'	N10°19'55"W	
C9	8°33'07"	77.17'	517.00'	77.10'	N02°03'52"W	
C10	8°28'47"	76.51'	517.00'	76.44'	N06°27'05"E	
C11	6°06'43"	55.15'	517.00'	55.12'	N13°44'50"E	
C12	10°33'49"	87.21'	473.00'	87.08'	S10°41'12"E	
C13	13°06'47"	108.25'	473.00'	108.02'	S01°09'06"W	
C14	5°21'55"	44.29'	473.00'	44.28'	S10°23'27"W	
C15	3°43'47"	30.79'	473.00'	30.79'	S14°56'18"W	
C16	13°59'35"	48.84'	200.00'	48.72'	S09°48'24"W	
C17	13°45'24"	43.94'	183.00'	43.83'	N09°55'30"E	
C18	12°25'26"	49.22'	227.00'	49.13'	S08°43'11"W	
C19	1°52'18"	7.42'	227.00'	7.42'	N15°52'03"E	
C20	18°18'09"	86.88'	271.98'	86.51'	S08°46'17"E	
C21	31°36'19"	260.36'	472.00'	257.07'	S19°03'51"W	
L2		53.58'			S86°44'38"W	
C22	31°33'47"	26.44'	48.00'	26.11'	N24°00'53"W	
L3		11.70'			N34°52'00"E	
C23	14°45'44"	58.74'	228.00'	58.58'	S46°08'11"W	
C25	03°11'16"	23.81'	428.00'	23.81'	S16°19'43"E	

INGRESS/EGRESS EASEMENT (varied width)

#	DELTA	ARC	RADIUS	CHORD	CHORD BEARING
EC1	2°25'50"	8.48'	200.00'	8.48'	N01°35'42"E
E1		144.22'			S00°22'47"W
EC2	18°18'09"	78.26'	244.98'	77.93'	S08°46'17"E
EC3	52°47'22"	419.21'	455.00'	404.54'	S08°28'20"W
E2		233.78'			N34°52'00"E
EC4	55°33'35"	247.27'	255.00'	237.70'	S62°38'48"W
E3		453.94'			S89°34'24"E
EC5	38°23'02"	100.49'	150.00'	98.62'	N70°22'53"W
E4		125.09'			S51°11'22"E
EC6	51°34'09"	134.11'	149.00'	129.63'	N25°24'18"W
E9		255.63'			S00°22'47"W

LEGEND & ABBREVIATIONS

- FD MESA COUNTY SURVEY MARKER
- FD 3.25" ALUMINUM CAP STAMPED THOMPSON LANGFORD CORP LS 18480
- FD #5 REBAR W/1.5" ALUMINUM CAP STAMPED LS 5933
- SET #5 REBAR W/2" ALUM. CAP STAMPED D H SURVEYS LS 20677

M.C.S.M. = MESA COUNTY SURVEY MARKER
G.V.A.L.C.S. = GRAND VALLEY AREA LOCAL COORDINATE SYSTEM
SEC. = SECTION
SQ.FT. = SQUARE FEET
M.P.E. = MULTIPUAPOSE EASEMENT

AREA SUMMARY

LOTS	= 20.92 AC./64%
TRACTS	= 11.12 AC./34%
DED. ROADS	= 00.65 AC./02%
TOTAL	= 32.70 AC./100%

GRAPHIC SCALE 1"=100'

0 100 200 300

LINEAR UNITS = U.S. SURVEY FEET

FOR REVIEW

PINNACLE RIDGE SUBDIVISION FILING 1

LOCATED IN THE

W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.

D H SURVEYS INC.
118 OURAY AVE. - GRAND JUNCTION, CO.
(970) 245-8749

Designed By M.W.D.	Checked By E.E.B.	Job No. 129-04-03
Drawn By TMODEL	Date MAY 2017	Sheet 2 OF 2

REVISED 07/27/17
REVISED 09/27/17

LOCAL CONTACT INFORMATION
GRAND JUNCTION DEVELOPMENT INSPECTOR: MARK BARSLUND 970-201-1362

GENERAL NOTES:

1. THESE GENERAL NOTES SHALL BE APPLICABLE TO ALL SHEETS WITHIN THIS SET OF DRAWINGS.
2. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE GOVERNING AGENCY. CONTRACTOR MUST CONTACT THE APPROPRIATE AGENCY PRIOR TO CONSTRUCTION IN THE RIGHT-OF-WAY.
3. PLANNING PERMIT APPROVAL MUST BE OBTAINED BY INDIVIDUAL LOT OWNERS PRIOR TO CONSTRUCTION. THE LOT OWNER MUST SUBMIT A PROPOSED DRAINAGE PLAN OF EACH SITE TO THE GOVERNING AGENCY FOR REVIEW.
4. EXISTING WATER, SANITARY, AND STORM SEWER LINES ARE SHOWN BASED ON BEST AVAILABLE INFORMATION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS SPECIFICALLY AT CONNECTION POINTS AND AT POTENTIAL POINTS OF CONFLICT. ALL INFORMATION SHALL BE SUPPLIED TO THE ENGINEER PRIOR TO CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR:
   (A) CONTACTING THE APPROPRIATE AGENCY TO ARRANGE A PRE-CONSTRUCTION MEETING AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
   (B) OBTAINING ALL PERMITS FOR STREET CUTS, UTILITIES CONSTRUCTION AND GRADING. THE COST OF ALL PERMITS SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S BID.
   (C) COORDINATING WITH ALL UTILITY COMPANIES INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. ADVANCE COORDINATION BY THE CONTRACTOR TO ALL UTILITY COMPANIES INVOLVED SHALL BE REQUIRED FOR ANY SERVICE INTERRUPTIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER, PROJECT MANAGER AND THE UTILITY COMPANY 48 HOURS PRIOR TO START OF CONSTRUCTION. NO UTILITY TAPS SHALL BE MADE WITHOUT WRITTEN AUTHORIZATION BY THE UTILITY COMPANY AND THE CITY.
   (D) VERIFICATION OF ALL OTHER UNDERGROUND FACILITIES WHICH MAY BE AFFECTED BY THIS PROJECT AND REPAIR THEREOF IN CASE OF DAMAGE.
   (E) CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO OBTAIN TEMPORARY POWER AND TELEPHONE SERVICE DURING CONSTRUCTION. ALL COST FOR TEMPORARY SERVICES SHALL BE THE CONTRACTORS RESPONSIBILITY.
   (F) RESTORATION OF DISTURBED STREET PAVEMENT AS REQUIRED BY THE CITY AND THE STATE'S DEPARTMENT OF TRANSPORTATION.
   (G) ALL PROJECT SAFETY INCLUDING, BUT NOT LIMITED TO, TRENCH EXCAVATION AND SHORINGS, TRAFFIC CONTROL, AND SECURITY.
   (H) COORDINATING ALL WORK AND INSPECTIONS AS REQUIRED BY THE CITY OR THE STATE.
   (I) OBTAINING NECESSARY PERMITS FROM THE DEPARTMENT OF TRANSPORTATION FOR ALL WORK IN AND ADJACENT TO STATE RIGHT-OF-WAY.
   (J) RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE. AS-BUILTS SHALL INCLUDE UNDERGROUND UTILITIES AS WELL AS ANY FIELD MODIFICATIONS OF THE PLANS.
   (K) KEEPING ADJACENT STREETS FREE AND CLEAN OF ALL DEBRIS AND DIRT FROM THE JOB SITE.
   (L) THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED AT THE JOB SITE AT ALL TIMES. EACH SUBCONTRACTOR (INCLUDING THE SURVEYOR) SHALL HAVE A SIGNED COPY OF THE PLANS AND THE APPROPRIATE STANDARDS AND SPECIFICATIONS IN HIS POSSESSION AT ALL TIMES WHEN IMPROVEMENTS ARE BEING INSTALLED.
   (M) THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR COMPLETION OF INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED BY NOTE TO BE "PROVIDED," "INSTALLED" OR "CONSTRUCTED" UNLESS SPECIFICALLY NOTED OTHERWISE.
   (N) CONTRACTOR WILL HAVE A COPY OF APPROVED SOILS REPORTS FOR PAVEMENT DESIGN AND COMPACTION REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL RECOMMENDATIONS CONTAINED WITHIN THE SOILS REPORT.
   (O) VERIFYING THE ACCURACY OF THE VERTICAL BENCHMARK INFORMATION. CONTRACTOR SHALL USE BENCHMARKS AND DATUMS SHOWN HEREON TO SET PROJECT BENCHMARK(S), BY RUNNING A LEVEL LOOP BETWEEN AT LEAST TWO BENCHMARKS, AND SHALL PROVIDE SURVEY NOTES OF SUCH TO PROJECT ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
6. IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
7. TWO WORKING DAYS BEFORE YOU DIG, GRADE, OR EXCAVATE, CALL THE APPROPRIATE UTILITY NOTIFICATION CENTER FOR THE MARKING OF MEMBER UNDERGROUND UTILITIES. THE UTILITIES SHOWN ON THESE PLANS ARE PLOTTED BASED ON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION, AND REPAIR OF ANY EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. ANY UTILITY DAMAGED BY CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
8. THIS PLAN WAS PREPARED BASED ON SURVEY INFORMATION PROVIDED BY A LICENSED SURVEYOR. VORTEX ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR ERRORS DUE TO INCOMPLETE OR INACCURATE SURVEY INFORMATION.
9. SUBGRADE DENSITY SHALL BE TESTED BY A PRIVATE SOILS TESTING FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING BASE COURSE OR CONCRETE. BASE COURSE DENSITY SHALL ALSO BE TESTED BY THE PRIVATE GEOTECHNICAL FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING PAVEMENT.
10. THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM ALL UTILITY COMPANIES PRIOR TO ANY DEMOLITION WORK OR DISCONNECTION OF ANY SERVICE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANIES.
2. ALL UTILITIES INCLUDING STORM SEWER, SANITARY SEWER AND WATER MAINS SHALL BE COMPLETELY REMOVED FROM THE GROUND UNLESS OTHERWISE SPECIFIED. NO EXISTING UTILITY, STRUCTURE OR UNDERGROUND IMPROVEMENT SHALL BE ABANDONED IN PLACE WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER, OWNER AND GOVERNING AGENCY.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES WHICH ARE TO REMAIN IN SERVICE. INCLUDING BUT NOT LIMITED TO GAS, ELECTRIC, CABLE AND TELEPHONE SERVICES.
4. ALL STRUCTURE INCLUDING BASEMENT WALLS AND FLOOR SLABS SHALL BE COMPLETELY REMOVED FROM THE SITE.
5. ALL DEMOLITION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS INCLUDING BUT NOT LIMITED TO HAZARDOUS MATERIALS, DISPOSAL, HOURS OF OPERATION.
6. ALL EROSION CONTROL MEASURES DESIGNED FOR THE SITE PERIMETER OR TO PROTECT EXISTING IMPROVEMENTS SHALL BE IN PLACE PRIOR TO THE START OF ANY DEMOLITION ACTIVITIES.
7. THE CONTRACTOR SHALL OBTAIN AND REVIEW THE ENVIRONMENTAL STUDIES PROVIDED BY THE OWNER AND TAKE ALL NECESSARY PRECAUTIONS FOR ENVIRONMENTAL SAFETY DURING DEMOLITION ACTIVITIES. IT SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE EXISTING STRUCTURES FOR ANY OTHER CONDITIONS WHICH MAY AFFECT THE DEMOLITION PROCEDURES.
8. ANY CONDITIONS WHICH MAY BE UNCOVERED DURING THE PROCESS OF DEMOLITION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER IMMEDIATELY. ADDITIONAL EXPENSES INCURRED BY UNFORESEEN CONDITIONS SHALL BE APPROVED BY THE OWNER PRIOR TO THE ADDITIONAL WORK.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE PROPERTY FOR THE TYPE AND QUANTITY OF DEMOLITION REQUIRED, PRIOR TO SUBMISSION OF A BID.
10. THE CONTRACTOR SHALL HAVE WATER ON SITE FOR DUST ABATEMENT AT ALL TIMES DURING DEMOLITION ACTIVITIES.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF ALL DEBRIS. BURNING ON SITE SHALL NOT BE PERMITTED. NO DEBRIS INCLUDING CONCRETE OR ASPHALT MAY BE PLACED IN ANY FILL AREA.
12. ANY DAMAGE TO PUBLIC UTILITIES OR ADJACENT PROPERTIES AS A RESULT OF THE DEMOLITION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. REPAIRS SHALL BE MADE IN A TIMELY MANNER TO THE SATISFACTION OF THE DAMAGED PARTY.
13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH DOCUMENTATION OF THE CONDITION OF EXISTING IMPROVEMENTS TO REMAIN IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS NOT DOCUMENTED AS PRE-EXISTING. DOCUMENTATION SHALL BE PROVIDED PRIOR TO COMMENCEMENT OF WORK.
14. ALL EXISTING UTILITY SERVICES SHALL BE COMPLETELY REMOVED FROM THE SITE. SERVICE SHALL BE CUT AND PLUGGED AT THE PROPERTY LINE IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS. THE DEMOLITION CONTRACTOR SHALL CLEARLY MARK ALL STUBS AT THE PROPERTY LINE WITH A 4 X 4 WOOD POST (MINIMUM 4' ABOVE GRADE, 4' BELOW GRADE) MARKED WITH THE SERVICE TYPE.
15. ALL EXISTING WELLS SHALL BE CAPPED AND ABANDONED IN ACCORDANCE WITH ALL STATE REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL REQUIRED PROCEDURES, FILE ALL REQUIRED FORMS, APPLICATIONS AND REPORTS, AND OBTAIN ALL REQUIRED APPROVALS FROM THE STATE ENGINEER'S OFFICE.
16. DURING THE COURSE OF DEMOLITION, CONTRACTOR SHALL PROVIDE SECURITY FENCING AND OTHER PRECAUTIONARY SAFETY MEASURE AS NECESSARY.

EROSION CONTROL NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL FACILITIES SHOWN.
3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORESEEN PROBLEMS OR IF THE PLAN DOES NOT FUNCTION AS INTENDED. A JURISDICTION REPRESENTATIVE MAY REQUIRE ADDITIONAL CONTROL DEVICES UPON INSPECTION OF PROPOSED FACILITIES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED, STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM TRAFFIC FROM THE SITE.
5. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE PAVED, SEEDED WITH NATIVE VEGETATION OR LANDSCAPED. REFER TO LANDSCAPE PLANS FOR SEED MIX AND PLANTING SPECIFICATIONS.
6. EROSION CONTROL STRUCTURES BELOW SODDED AREAS MAY BE REMOVED ONCE SOD AND FINAL LANDSCAPING IS IN PLACE. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION. EROSION CONTROL IN PROPOSED PAVED AREAS SHALL REMAIN IN PLACE UNTIL PAVEMENT IS COMPLETE.
7. THIS PLAN IS ONLY TO BE USED FOR INSTALLATION OF EROSION CONTROL FACILITIES. DO NOT USE THIS PLAN FOR GRADING OR STORM SEWER CONSTRUCTION.
8. CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLE WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES WILL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS, MOVED WHEN NECESSARY AND REMOVED WHEN THE SITE IS PAVED.
9. INLET PROTECTION DEVICES SHALL BE INSTALLED IMMEDIATELY UPON INDIVIDUAL INLET'S BECOMING FUNCTIONAL.
10. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH GRADING AND/OR UTILITY CONSTRUCTION SHALL OBTAIN A COPY OF THE STORM WATER MANAGEMENT PLAN (SWMP) AND ANY OTHER DOCUMENTATION REGARDING "STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY" AND BECOME FAMILIAR WITH THEIR CONTENTS.
11. THE TEMPORARY PARKING AND STORAGE AREA SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AREA, EQUIPMENT CLEANING AREA. EMPLOYEE BREAK AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
12. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, ETC.) SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT WITH STORM WATER DISCHARGES FROM THE SITE.
13. MAINTAIN ON THE SITE OR HAVE READILY AVAILABLE SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
14. FUGITIVE DUST BLOWING FROM THE SITE SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS ABSOLUTELY PROHIBITED.
15. NO RUBBISH, TRASH, GARBAGE, OR OTHER SUCH MATERIALS SHALL BE DISCHARGED INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
16. ALL MEASURES PRESENTED IN THE SWMP SHALL BE INITIATED AS SOON AS PRACTICABLE.
17. IF THE GRAVEL CONSTRUCTION ENTRANCES ARE NOT EFFECTIVE IN REMOVING THE MAJORITY OF DIRT OR MUD FROM THE TIRES OF THE CONSTRUCTION VEHICLES, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP AND THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.
18. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
19. IF SOIL STOCKPILING IS EMPLOYED ON THE SITE, SILT FENCES SHALL BE USED TO HELP CONTAIN THE SEDIMENT.
20. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
21. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN 30 DAYS AFTER FINAL STABILIZATION. FINAL STABILIZATION HAS OCCURRED WHEN ALL SOIL DISTURBING ACTIVITIES ARE COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OF THE COVER FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES HAS BEEN EMPLOYED.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) DUE TO GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT.
23. ALL OFF-SITE CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR STORM DRAIN CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.

EROSION CONTROL MAINTENANCE NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL MEASURES CONTAINED IN THIS PLAN SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT, AND SHOULD BE CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:
3. STRAW BALE INLET PROTECTION DEVICES AND BARRIERS SHALL BE FIXED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR SHALL BE REPLACED IF THEY SHOW SIGNS OF DETERIORATION.
4. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, RE-SEEDED, AND WATERED AS NEEDED.
5. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-THIRD TO ONE-HALF THE HEIGHT OF THE SILT FENCE.
6. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
7. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
8. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES, SEDIMENT IN THE SEDIMENTATION BASINS SHALL NOT EXCEED THE SEDIMENTATION CLEANOUT LEVEL.
9. IF THE STONES IN THE GRAVEL CURB INLET SEDIMENT FILTERS BECOME CLOGGED WITH SEDIMENT, THE STONES MUST BE PULLED AWAY, CLEANED AND REPLACED.
10. THE EMBANKMENT OF THE SEDIMENTATION BASIN SHALL BE CHECKED REGULARLY TO INSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
11. THE TEMPORARY SEDIMENT TRAP AND SEDIMENTATION BASIN STRUCTURES SHALL BE CHECKED REGULARLY TO INSURE THAT THEY ARE STRUCTURALLY SOUND AND HAVE NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. SEDIMENT DEPOSITION SHALL BE REMOVED PERIODICALLY TO ENSURE FULL VOLUME IS AVAILABLE IN THE POND.

GRADING NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. CONTOURS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY. CONTOUR INTERVAL = 1 FOOT UNLESS OTHERWISE NOTED ON PLANS.
3. ALL DISTURBED AREAS THAT ARE UNSURFACED OR ARE NOT DESIGNATED AS LANDSCAPE AREAS ARE TO BE RE-SEEDED WITH DRY NATIVE GRASS SEED MIX.
4. IF DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE SOILS ENGINEER SHALL BE CONTACTED FOR RECOMMENDATIONS.
5. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND STANDARDS OF THE GOVERNING AGENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED AS SPECIFIED BY THE GEOTECH REPORT. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED, LICENSED, SOILS ENGINEER, CERTIFYING THAT THE SUBBASE WITHIN THE AREAS TO BE PAVED HAS BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECS.
6. NO PROPOSED SLOPE SHALL EXCEED TWO (2) HORIZONTAL TO ONE (1) VERTICAL, EXCEPT FOR DIVERSION DITCHES. ALL SLOPED AREAS MUST BE PROTECTED FROM EROSION.
7. IF STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS ARE STOCKPILED ON THE SITE, TOPSOIL MAY BE PLACED TO A HEIGHT OF FIVE FEET. SILT FENCE SHALL BE PLACED AROUND THE BASE OF THE STOCKPILE AND THE STOCKPILE SHALL BE SEEDED WITH NATIVE SEED MIX IMMEDIATELY AFTER STRIPING OPERATIONS ARE COMPLETE.
8. ON-SITE MATERIALS SUITABLE FOR FILL BENEATH DRIVES, AND PARKING AREAS BEYOND 5' OF THE BUILDING SHALL BE COMPACTED IN ACCORDANCE WITH THE GUIDELINES PRESENTED IN THE SOILS REPORT.
9. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHY AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO ENSURE 0.75% MIN. SLOPE AGAINST ALL GUTTERS TO PREVENT PUDDLING. ANY DISCREPANCIES SHALL BE PROVIDED TO THE ENGINEER IN WRITING IMMEDIATELY.
10. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED AS SPECIFIED IN THE GEOTECH REPORT.
11. SPOT ELEVATIONS REPRESENT FLOWLINE OR TOP OF ASPHALT UNLESS OTHERWISE NOTED.
12. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS WHICH DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB AND GUTTER AND UTILITIES.
13. ALL UTILITIES (MANHOLES, VALVE COVERS, CLEANOUTS, VAULTS, BOXES, ETC.) SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
14. ALL EARTH MOVING AND PLACEMENT OPERATIONS SHALL BE IN CONFORMANCE WITH THE RECOMMENDATIONS IDENTIFIED IN THE SOILS REPORT. THE CONTRACTOR SHALL HAVE A SIGNED AND SEALED COPY OF THE SOILS REPORT ON THE SITE AT ALL TIMES.
15. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.
16. WHERE NEW CURB AND GUTTER IS BEING CONSTRUCTED ADJACENT TO EXISTING ASPHALT, THE FOLLOWING SHALL APPLY: PRIOR TO PLACEMENT OF ANY CONCRETE THE CONTRACTOR SHALL HAVE A LICENSED SURVEYOR VERIFY GRADE AND CROSS SLOPE OF THE CURB AND GUTTER FORMS. THE CONTRACTOR SHALL SUBMIT THE SLOPES AND GRADES TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY SECTION WHICH DOES NOT CONFORM TO THE DESIGN OR TYPICAL CROSS SECTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CURB AND GUTTER POURS WITHOUT APPROVAL OF THE ENGINEER.
17. MAINTENANCE OF ANY STORMWATER MANAGEMENT FACILITY SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL GUIDELINES FOR PRIVATE STORMWATER MANAGEMENT FACILITIES AND SHALL BE THE RESPONSIBILITY OF THE OWNER AND THE ASSIGNEES.
18. SURFACE RESTORATION SHALL BE AS FOLLOWS:
   (A) FINE GRADE ALL AREAS DISTURBED BY THE CONSTRUCTION OPERATIONS AFTER COMPLETION OF BACKFILLING AND COMPACTING. AREAS WHICH ARE TO RECEIVE PAVEMENTS, SURFACING, TOPSOIL OR LANDSCAPING SHALL BE GRADED AS REQUIRED TO ALLOW INSTALLATION OF THE SPECIFIC SURFACE TREATMENT. GRADE ALL OTHER AREAS TO MATCH THE EXISTING GROUND LINE.
   (B) REPLACE AND REPAIR ANY SURFACE IMPROVEMENTS DAMAGED OR REMOVED. CONFORM TO CITY STANDARDS & SPECIFICATIONS.
19. BITUMINOUS PAVEMENT
   (A) BITUMINOUS PAVEMENT SHALL BE REMOVED TO CLEAN STRAIGHT LINES AT THE LOCATIONS INDICATED ON PLANS. WIDTH OF REMOVAL FOR PIPELINES SHALL BE KEPT TO A MINIMUM AS DICTATED BY TRENCHING OPERATIONS, BUT SHALL EXTEND AT LEAST 6 INCHES BEYOND THE LIMITS OF TRENCH EXCAVATION.
   (B) THE CUT SHALL BE MADE WITH PAVEMENT CUTTING WHEEL, SAW OR OTHER APPROVED METHOD, SO AS TO PROVIDE A REASONABLY STRAIGHT AND SQUARE EDGE.

SANITARY SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL GRAVITY SANITARY SEWER LINES SHALL BE POLYVINYL CHLORIDE PIPE (PVC), ASTM D-3034 SDR.35, SEWER LINE MATERIALS AND CONSTRUCTION SHALL CONFORM TO ASTM STANDARDS AND SPECIFICATIONS.
3. DISTANCES FOR SANITARY SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. THEREFORE, DISTANCES SHOWN ON PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT.
4. RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATION. PIPELINE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT AND STEEL SHIMS TO ADJUST THE MANHOLE FRAME TO THE REQUIRED FINAL GRADE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS. ALL FRAMES SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
5. ALL SANITARY SEWER MAINS TESTING SHALL BE IN ACCORDANCE WITH LOCAL SPECIFICATIONS. COPIES OF ALL TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER, THE OWNER AND THE GOVERNING AUTHORITY PRIOR TO THE START OF THE WARRANTY PERIOD.
6. COMPACTION OF ALL TRENCHES WITHIN THE PROJECT SITE MUST BE ATTAINED AND COMPACTION RESULTS SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE. .
7. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING STRUCTURES AND IMPROVEMENTS DURING INSTALLATION OF THE SANITARY SEWER LINE.
8. THE CONTRACTOR SHALL POTHOLE THE EXISTING SEWER MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
9. SANITARY SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.

STORM SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING:
   (A) OBTAINING ALL REQUIRED PERMITS FROM THE CITY, THE DOT, OR ANY REGULATORY AUTHORITY AT THE CONTRACTOR'S COST INCLUDING PERMITS REQUIRED FOR WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
   (B) RESTORATION OF ANY EXISTING IMPROVEMENTS INCLUDING (BUT NOT LIMITED TO) FENCES, SOD, LANDSCAPING, PAVEMENT, SPRINKLER SYSTEMS.
   (C) VERIFICATION AND PROTECTION OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF THE PROJECT.
   (D) PROVIDING AS-BUILT DRAWINGS TO THE CITY AND ENGINEER.
   (E) ALL PERMITTING, DEVELOPMENT, CONNECTION, LOCATION INSPECTION AND TESTING FEES REQUIRED FOR STORM SEWER CONSTRUCTION.
   (F) VERIFYING ALL STANDARD DETAILS CONFORM TO CURRENT CITY/COUNTY STANDARDS AND SPECIFICATIONS.
   (G) FOR OBTAINING AND UNDERSTANDING ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THE CONSTRUCTION OF THE STORM SEWER IMPROVEMENTS.
   (H) FOR SCHEDULING ALL REQUIRED INSPECTIONS.
3. THE CONTRACTOR SHALL POTHOLE THE EXISTING STORM MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
4. STORM SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.
5. THE CONTRACTOR SHALL COORDINATE HIS WORK SCHEDULE WITH THE DITCH COMPANY TO ENSURE ALL DITCH FACILITIES ARE CONSTRUCTED WITHOUT DISRUPTION TO DITCH COMPANY OPERATIONS.
6. ALL STORM SEWER CONSTRUCTION SHALL BE IN CONFORMANCE WITH LOCAL STANDARDS AND SPECIFICATIONS.
7. DISTANCES FOR STORM SEWER ARE THE HORIZONTAL DISTANCES FROM CEN

DECLARATION OF
COVENANTS, CONDITIONS AND RESTRICTIONS OF
PINNACLE RIDGE SUBDIVISION

THIS DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS OF PINNACLE RIDGE SUBDIVISON (the "Declaration"), is hereby declared effective this _____day of _____, 201__ by **Two R&D, LLC,** a Colorado limited liability company, hereafter referred to as "Declarant".

RECITALS

A. Declarant is the owner of that certain real property situated in the City of Grand Junction, Mesa County, Colorado, described as follows:

Tax Parcel No. – 2945-212-00-011, 2945-212-08-001-010, 2945-212-10-001-009

A parcel of land situated in the W ½ NW ½ of Section 21, Township 1 South, Range 1 West of the Ute Meridian, Mesa County, Colorado. The South 10 acres of the NW ¼ NW ¼ and the SW ¼ NW ¼ of said Section 21.

EXCEPTING THEREFROM:

Lots 1-9, Block 3 and the adjoining dedicated right-of-way known as Spur Drive and Lot 2, Block 2, Energy Center Subdivision, Phase I as platted and recorded in Plat Book 8 at Page 55 with a Reception Number 644620 of the Mesa County records.

Hereinafter referred to as the Property, the Property will be platted as Pinnacle Ridge Subdivision, Filing 1 (referred to as the Plat).

B. The Common Interest Community has been approved for development pursuant to a Preliminary Plan for Pinnacle Ridge adopted by the City of Grand Junction, Colorado.

C. Declarant desires to develop and improve the Property as a Common Interest Community as defined in Section 38-33.3-103(22), C.R.S., under the name and style of Pinnacle Ridge Subdivision and subject the same to the covenants, conditions and restrictions hereinafter set forth. Such development shall be in phases or filings for a total number of lots not to exceed seventy-two 72 residential lots.

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D. Pinnacle Ridge Home Owners Association, a Colorado non-profit corporation, has been formed as a Home Owners Association to exercise the functions set forth herein and to own, lease, hold, operate, care for and manage certain property for the common benefit of Owners and Occupants of Lots within, and of any other person acquiring an interest in, the Common Interest Community.

E. Declarant desires to establish covenants, conditions and restrictions upon the Common Interest Community and all properties that may hereafter be included thereto, and certain mutually beneficial restrictions and limitations with respect to the proper use, occupancy, improvement and enjoyment thereof, all for the purposes of enhancing and protecting the value, desirability and attractiveness of the Common Interest Community and enhancing the quality of life within the Common Interest Community.

NOW, THEREFORE, for the purposes set forth above and herein, Declarant for itself and its successors and assigns hereby declares that the Common Interest Community and all other property which becomes subject to this Declaration in the manner hereinafter provided, and each part thereof, shall be owned, held, transferred, conveyed, sold, leased, rented, improved, altered, maintained and enjoyed subject to the covenants, conditions, restrictions, assessments, charges, liens, easements, privileges, rights and other provisions hereinafter set forth, for the duration hereof, all of which are declared to be pursuant to, and in furtherance of a common and general plan of development, improvement, enhancement, use, occupancy and enjoyment of the Common Interest Community, and all of which shall run with the land and be binding upon and inure to the benefit of the Common Interest Community and every part thereof. Provided always, that to the extent this Declaration provides that Declarant shall not be bound by or is exempt from the application of certain covenants, conditions and restrictions contained herein, Declarant shall not be considered subject to such covenants, conditions or restrictions.

This Declaration shall be recorded in Mesa County, Colorado and shall be indexed in the Grantee's index in the name of Pinnacle Ridge and the Home Owners Association and in the Grantor's Index in the name of Two R&D, LLC.

ARTICLE I
DEFINITIONS

Unless otherwise expressly provided herein, the following words and phrases when used in this Declaration shall have the meanings hereafter specified.

1.1 **Act** - shall mean the Colorado Common Interest Ownership Act, section 38-33.3-101, et seq., C.R.S., as presently existing or subsequently amended from time to time.

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1.2 **Allocated Interests** - shall mean and refer to the common expense liability and the ownership interest and votes in the Home Owners Association as allocated to each Lot, which interests are allocated as follows:

(a) The Common Expenses liability for each Lot is calculated on the basis of a fraction, the numerator of which is one (1) and the denominator of which is the total number of Lots in the Common Interest Community as of the date of the calculation. The denominator may be increased from time to time upon the addition of Lots to the Common Interest Community, which can be conveyed to third parties. Such fraction is then multiplied by the Common Expense or the Assessment in question to determine that Lot's share. The Common Expense liability of a Lot is determined without reference to the size, location, value or use of the Lot.

(b) One (1) vote in the Home Owners Association is allocated to each Lot in the Common Interest Community.

1.3 **Article of Incorporation** - or "Articles" means the Articles of Incorporation of Pinnacle Ridge Home Owners Association, which have been or will be filed with the Office of the Secretary of State of the State of Colorado, as the same may be amended from time to time.

1.4 **Assessment** - shall mean a Regular Assessment, Special Assessment or Reimbursement Assessment.

1.5 **Association** - shall mean and refer to Pinnacle Ridge Home Owners Association, a Colorado nonprofit corporation, formed for the purpose of being and constituting the entity for the furtherance of the interests of the owners of property in Pinnacle Ridge and performing duties and responsibilities and exercising the powers set forth in this Declaration.

1.6 **Budget** - shall mean a written itemized estimate of the Common Expenses to be incurred by the Association in performing its functions under this Declaration and adopted by the Executive Board pursuant to this Declaration.

1.7 **Building Envelope** - shall mean that portion of a Lot which may be depicted and designated as the "Building Envelope" on any Plat of all or part of the Property. If a Lot contains a platted Building Envelope, all Improvements on that Lot must be located entirely within the Building Envelope, including but not limited to dwellings, attached patios and decks, garages, swimming pools and storage building, but excluding roof overhangs, access driveways, underground utilities, and irrigation and drainage systems. The Design Review Committee may approve the location of certain Improvements outside the Building Envelope, such as landscaping and fences.

1.8 **Bylaws** - shall mean the Bylaws of the Association which have been or will be adopted by the Executive Board of the Association, and may be amended from time to time.

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1.9 **City** - shall mean the City of Grand Junction, Colorado.

1.10 **Common Elements** - shall mean and refer to that portion of the Property that is not a Lot, to wit that designated as Tracts A and B on the Plat, or on any subsequent replat of a future development lot, to be owned by the Association for the benefit of the Owners, including any Improvements and all easements and facilities for the benefit of the Property, as well as any common elements created in future subdivision filings.

1.11 **Common Expenses** - shall mean any expenditures made or liabilities incurred by or on behalf of the Association, together with any allocations to reserves, including, but not limited to the costs of maintenance, management, operation, repair and replacement of the Association Property, and of all other parts of the Common Interest Community which are managed or maintained by the Association, but excluding any areas being managed or maintained at the expense of a Sub association.

1.12 **Declarant** - shall mean Two R&D, LLC a Colorado limited liability company, its successors, assigns, and affiliates. A Person shall be deemed to be a "successor and assign" of Declarant if specifically designated in a duly Recorded instrument as a successor or assign of Declarant under this Declaration and shall be deemed a successor and assign of Declarant only as to the particular rights or interests of Declarant under this Declaration which are specifically designated in that written instrument. The term "affiliate of Declarant" shall have the meaning set forth in Section 38-33.3-103(1) of the Act.

1.13 **Declaration** - shall mean and refer to this Declaration of Covenants, Conditions and Restrictions for Pinnacle Ridge Subdivision, and any duly adopted amendments hereto.

1.14 **Design Guidelines** - shall mean the rules, procedures, standards, guidelines and requirements promulgated from time to time by the Design Review Committee, and all amendments thereto, governing the review and approval or disapproval of proposed Improvements within the Common Interest Community, the registration of Builders, and such other matters as the Design Review Committee considers necessary or appropriate.

1.15 **Design Review Committee** - shall mean the Committee provided for in this Declaration.

1.16 **Executive Board or Board** - shall mean the Executive Board of the Association.

1.17 **Household Pets** - shall mean generally recognized household pets such as dogs, cats, fish, birds, rodents, and non-poisonous reptiles.

1.18 **Improvements** - shall mean and refer to any and all buildings, parking areas, fences screening fences, retaining walls, stairs, decks, hedges, windbreaks, plants, trees, shrubs, berms, ponds, signs, objects of art, mailboxes, drainage facilities (including pumps, pipelines, drip lines and sprinklers),

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diversion ditches and other structures or landscaping of every type and kind situated on the property, and future lots created in subsequent replats.

1.19 **Lease** - shall mean and refers to any agreement for the leasing, rental, use or occupancy of a Unit, or of a residential dwelling located on a Lot, within the Common Interest Community.

1.20 **Limited Common Areas** - shall mean a Common area that is designated by this Declaration, by a Supplemental Declaration, on the Plat or on any Supplemental Replat, for the exclusive use of one or more Lots in the Common Interest Community but fewer than all of the Lots.

1.21 **Lot** - shall mean and refer to that part of the Property shown on the Plat as a Lot, as well as any lots created by future subdivision filings.

1.22 **Map** - shall mean any map that is incorporated in a Supplemental Declaration or amendment and that depicts a portion of the Common Interest Community in three dimensions. A Map is required for any portion of the Common Interest Community with Units having a horizontal boundary. A Map and a Plat may be combined in one instrument.

1.23 **Master Declaration** - shall mean this instrument and all Supplemental Declaration, as this instrument and such Supplemental Declarations may be amended from time to time.

1.24 **Master Rules and Regulations** - shall mean rules and regulations adopted from time to time by the Executive Board.

1.25 **Member** - shall mean the owner of each Lot and also the Declarant. Membership in the Home Owners Association shall be appurtenant to, and may not be separated from, ownership of a Lot.

1.26 **Mortgage** - shall mean any mortgage, deed of trust or other security instrument, given voluntarily by the Owner of a Lot, creating a real property security interest in a Lot and Recorded in the real property records of the Clerk and Recorder if Mesa County. "First Mortgage," means a mortgage, which are the first and most senior of the Mortgages on the same Lot. The term "Mortgage" does not mean a statutory, tax or judicial lien. The term "Deed of Trust" when used herein shall be synonymous with the term "Mortgage."

1.27 **Mortgagee** - shall mean a mortgagee under a Mortgage or a beneficiary under a Deed of Trust, as the case may be, and the assignees of such Mortgagee.

1.28 **Mortgagor** - shall mean the maker, obligator or grantor of a Mortgage. The term "Mortgagor" includes a trustor or grantor under a Deed of Trust.

1.29 **Notice and Hearing** - shall mean a written notice and public hearing before the Executive Board, or a panel appointed by the Executive Board, as set forth in the Bylaws.

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1.30 **Occupant** - shall mean any Person who is a tenant in a residence on a Lot, pursuant to a Lease with the Owner thereof. "Occupant" also means any Person who is present within the Common Interest Community as a family member, guest or invitee of an Owner, an Occupant, the Declarant, or the Association.

1.31 **Owner** - shall mean the Person, including Declarant, or, if more than one, all Persons collectively, who hold fee simple title of Record to a Lot, including sellers under executor contracts of sale and excluding buyers there under. The term "Owner" shall be analogous to the term "Unit Owner", as that term is defined in the Act.

1.32 **Permitted Exceptions** - shall mean all liens, encumbrances, reservations, restrictions, conditions, easements and other matters of record which encumber the title to all or any part of the Common Interest Community, as of the date this Declaration or a Supplemental Declaration or Map is recorded. This Declaration and any Supplemental Declaration or Map shall be subject to such Permitted Exceptions.

1.33 **Persons** - shall mean a natural person, a corporation, a partnership, a limited liability company, a trust, or any other entity capable of holding title to real property pursuant to the laws of the State of Colorado.

1.34 **Plat** - shall mean and refer to that certain plat of the property or plat(s) upon future subdivision filings recorded (or to be recorded) in the Mesa County Clerk and Recorder's official records. The Plat is incorporated herein by this reference.

1.35 **Property** - shall mean and refer to all of the real estate situated and described in the recitals and any future additions of property to the Subdivision.

1.36 **Registered Builder** - shall mean a general contractor that has been registered to perform work within Pinnacle Ridge with the Design Review Committee pursuant to the guidelines and procedures set forth herein and in the Design Guidelines.

1.37 **Record or Recorded** - shall mean an instrument of record in, or the act of recording an instrument with, the office of the Clerk and Recorder of Mesa County.

1.38 **Regular Assessment** - shall mean a charge against an Owner and the Owner's Lot for purposes of covering the annual costs of operating and administering the Association and all other Common Expenses. Regular Assessments are based on a Budget adopted by the Executive Board and are allocated to the Lots in accordance with the Allocated Interests, except that Common Expenses that in the judgment of the Executive Board benefit fewer than all of the Lots shall be allocated exclusively to the Lots benefited.

1.39 **Reimbursement Assessment** - shall mean a charge against a particular Owner and the Owner's Lot for purpose of reimbursing the Association for costs and expenses incurred by the

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Association in connection with the enforcement of any provision hereof or the remedying of any violation by the Owner or an Occupant of this Declaration or any amendment hereto or any Supplemental Declaration, the Articles, Bylaws, Master Rules and Regulations, or Design Guidelines, or any approvals granted by the Design Review Committee, or for other purposes set forth in the Declaration, pursuant to Section 10.9 hereof, together with late charges and interest as provided for herein. Reimbursement Assessment shall include without limitation any Common Expense cause by the misconduct of any Lot Owner or of such Owner's Occupants.

1.40 **Special Assessment** - shall means a charge against an Owner and the Owner's Lot for purpose of reimbursing the Association for costs and expenses incurred or to be incurred by the Association for the purpose of paying for the construction, reconstruction, repair, maintenance or replacement of capital improvements to or upon serving the Common Interest Community, the costs of which were not included in a Regular Assessment, or for excess reconstruction costs or other extraordinary expenses, or to acquire Association Property, or for funding any operating deficit of the Association, as authorized by the Executive Board from time to time as provided herein. Special Assessment shall be based on a Budget adopted by the Executive Board in accordance with below.

1.41 **Sub Association** - shall mean any Colorado nonprofit corporation, and its successors and assigns, organized and established by Declarant pursuant to or in connection with any supplemental Declaration.

1.42 **Sub Association Common Areas** - shall mean all real property interests (not just fee title and leasehold interests) and the Improvements or amenities and personal property thereon which may from time to time be owned, leased or maintained by a Sub Association or otherwise held by a Sub Association for the use, enjoyment and benefit of the members of such Sub Association or some of them.

1.43 **Subdivision** - shall mean and refer to Pinnacle Ridge a residential subdivision in the City of Grand Junction, Mesa County, Colorado.

1.44 **Supplemental Declaration** - shall mean an amendment to this Declaration which adds real property to the Common Interest Community, subjects such real property to this Declaration, and sets forth such amendments to the Declaration and such additional covenants, conditions uses and restrictions as may be applicable to the acquired property, executed by Declarant and Recorded in the Office of the Clerk and Recorder of Mesa County, and any Recorded amendments thereto.

1.45 **Supplemental Plat**- shall mean any land survey plat of the Property or any part thereof which is Recorded by Declarant. Supplemental Plats shall include, without limitation, those City-approved Plats or subsequent filings of Pinnacle Ridge.

ARTICLE II
GENERAL DECLARATION

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2.1 **Intent** It is the intention of this Declarant is to enhance, perfect and preserve the value, desirability and attractiveness of the Property and the Common Elements, Improvements and Buildings thereon in a manner beneficial to all Owner and to subject the Subdivision to the Act as a Common Interest Community.

2.2 **Estate Subject to Declaration** Declarant does hereby subject the Property to the provisions of the Declaration. All easements, restrictions, conditions, covenants, reservations, liens, charges, right, benefits, and privileges which are granted, created, reserved or declared by this Declaration shall be deemed to be covenants appurtenant to, touching and concerning and running with the land and shall at tall times inure to the benefit of and be binding upon any Person having at any time any interest or estate in the Property, and their respective heirs, successors, representatives or assigns. All of the easements, restrictions, conditions, covenants, reservations, liens, charges, rights, benefits and privileges which are granted, created, reserved or declared herein shall be fully and completely set forth in their entirety in any document or instrument filed for record in the Mesa County Clerk and Recorder's office subsequent to the recording of this Declaration or Supplemental Declaration.

2.3 **Owners' Rights to Common Elements** Every Owner, Mortgagee, Occupant and all other persons hereafter acquiring any interest in the Common Interest Community shall have a right and easement of enjoyment in and to the Common Elements which shall be appurtenant to and shall pass with the title to every Lot subject to the provisions of this Declaration, Supplemental Declaration, the Articles and Bylaws of the Association and any rules and regulations promulgated by the Association. Any Owner may delegate, in accordance with the Bylaws, his right of enjoyment to the Common Elements and facilities for the members of his family, his tenants, or occupants who reside on his Lot.

ARTICLE III
GENERAL RESTRICTIONS

3.1 **Master Development Control** Except as otherwise expressed in this Declaration or in any Supplemental Declaration, no residence, building, structure, fence, wall, landscaping or other Improvement shall be commenced, erected, improved, altered, made, done, permitted, located or removed within the Common Interest Community without the prior written approval of the Design Review Committee, and all subsequent additions to or changes or alterations in any residence, building structure, fence, wall, landscaping or other Improvement, including without limitation exterior color scheme, and all changes in the grade of Lots, shall also be subject to the prior written approval of the Design Review Committee.

No modifications from the approvals granted by the Design Review Committee shall be made without the prior written approval of the Design Review Committee. Notwithstanding the foregoing, in the event of an emergency or the sudden occurrence of unanticipated conditions which threaten the health, safety or physical well-being of Persons or property within the Common Interest Community,

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the Executive Board and/or the Design Review Committee shall have the authority (without the prior approvals described above), to take whatever remedial action may be necessary anywhere in the Common Interest Community to protect Persons and property until such time as applicable notice and/or approval procedures can reasonably be utilized. Further notwithstanding the foregoing, Design Review Committee approval shall not be required for Improvements made by Declarant in the exercise of any development rights or special Declarant rights reserved by Declarant in this Declaration or in any Supplemental Declaration.

3.2 **Residential Use and Occupancy** All Lots shall be improved, occupied and used only for private single-family residential purposes. Only single-family dwellings, including a private garage which holds a minimum of two (2) automobiles, which garage shall be an enclosed structure, and other outbuildings directly incidental to single-family residential use shall be erected, altered, placed or permitted to remain on any Lot. No structures shall be permitted unless they meet the Pinnacle Ridge Design Guidelines and the requirements of these Covenants and which are constructed in accordance with City of Grand Junction zoning regulations .

3.3 **Vehicle Parking, Storage, Operation and Repair** Passenger automobiles and pick-up trucks not exceeding one ton owned by the Owner or occupant of a Lot shall be parked within the garage situate on the Lot or on the driveway of the Lot. No other portion of the Lot may be used by the Owner or the occupant for the parking or storage of automobiles or pick-ups except to the extent permitted under section 38-33.3-106.5(l)(d), C.R.S.

Recreational vehicles, boats, trailers, buses, motor homes, mobile homes, campers (on or off supporting vehicles), motorcycles, snowmobiles, recreational vehicles, all terrain vehicles, golf carts, trucks, industrial or commercial vehicles (both cabs or trailers), abandoned or inoperable vehicles (as defined), or any other similar vehicles (excepting passenger automobiles and one ton or smaller pick-up trucks) may be stored on a Lot only if placed within a garage or placed in a Design Review committee approved outbuilding or screened storage facility. All recreation vehicle shall be behind fences and behind the front of the Residential Building on the Lot.

Notwithstanding the forgoing, vehicles may be temporarily parked on driveways on Lots within the Common Interest Community for loading, delivery, services or emergency purposes, but only for the time required to accomplish such purpose, and as necessary on a daily basis for the construction, maintenance or servicing of Improvement within the Common Interest Community.

If Executive Board determines that a vehicle is abandoned, inoperable or improperly parked, a written notice of violation describing the vehicle shall be personally delivered to the vehicle owner, or notice may be sent by registered or certified mail or by email or facsimile, and shall be conspicuously placed upon the vehicle. If the offending vehicle is not removed within seventy-two (72) hours thereafter, the Executive Board or its agent shall have the right to remove and store the offending vehicle, or cause the vehicle to be removed and stored, at the sole expense of the owner of the vehicle.

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The Executive Board or its agent shall have the authority to enter upon an Owner's Lot for such purposes without liability on the part of the Executive Board .

Snowmobiles, motorcycles, trail bikes, mini bikes, dirt bikes, all-terrain vehicles, and similar motorized vehicles shall not be used or operated within the Common Interest Community.

3.4 **New Construction Required: No Temporary Buildings or Occupancy** Only new I.R.C. (International Residential Code) residential buildings shall be permitted within the Common Interest Community. Furthermore, no pre-fabricated or manufactured housing, no mobile homes (single or double wide), and no used or temporary house, structure, or non-permanent out-buildings (specifically including mobile homes and trailers) shall ever be placed, erected or allowed to remain within the Common Interest Community except temporary structures or construction trailers approved in advance by the Design Review Committee which are used for construction purpose during the construction of a residence. Such temporary facilities shall be removed immediately following completion of construction or 18 months following commencement of construction, whichever first occurs, unless a written extension is granted by the Design Review Committee. No completed residence on a Lot shall be occupied in any manner until all provisions of the Declaration and the Design Guidelines and all conditions of development approval have been complied with and a Certificate of Compliance has been issued.

3.5 **House Size Regulations** Single-family residences in the Common Interest Community shall contain a minimum of 2,000 square feet and a maximum of 6,000 square feet of interior living space measured from the interior surfaces of the walls, excluding garages, patios, covered porches, and any walkouts that may be approved by the Design Review Committee.

3.6 **Structure Sprinkler Systems** Structures on Lots 26 through 29, 55 through 72 must have sprinkler systems installed for fire protection of the units. The sprinkler system shall be an approved fire sprinkler system designed to meet the minimum design standards of NFPA 13D and the International Fire Code, 2006 edition, as amended by the City of Grand Junction. The amendment prohibits the use of separate water supplies (such as tanks and pumps) when the home is served by a public water purveyor.

3.7 **Setbacks** The Subdivision is located in the City of Grand Junction, Colorado. All buildings shall meet or exceed setbacks established by the applicable zoning authority.

3.8 **Re-subdivision, Re-Platting, Rezoning or Combining** Except for future development lots shown on the Plat or on any Supplemental Plat, no Lot shall be subdivided or re-platted by an Owner into smaller lots or parcels, no Owner shall seek to change the zoning of such Owner's Lot, and no Lot may be combined with other Lots, except as related to the declarant's future development rights. There shall be no boundary line adjustment between any Lots, such that the original configuration is modified or altered; provided, however, underlying adjustment shall be permitted in the event there is

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an error in surveying the Plat, or error in the construction of the home such that a boundary line adjustment shall be reasonable and necessary to accommodate such error.

(a) Declarant reserves the right to subdivide a Lot, or to combine two (2) lots owned by Declarant, or to adjust or remove boundary lines between Lots owned by Declarant, provided any necessary City approvals are obtained, all Declaration and Plat amendments required by the Act and/or local land use laws are prepared, executed and Recorded, and any necessary reallocation of Allocated Interests of the Owners is accomplished. In the case of the combination of two or more Lots, no change in Allocated Interest shall occur. In other words, if two Lots are combined, the resulting Lot shall continue to constitute two (2) Lots for assessment and voting purposes. All costs relating to the foregoing activities shall be the sole responsibility and obligation of Declarant, or of the Owner performing the same. Declarant's rights under this subsection (a) shall terminate upon the first to occur of (i) the date which is 10 years after the Recording of this Declaration, or (ii) Declarant's relinquishing of these rights by a Recorded instrument.

(b) No further covenants, conditions, restrictions or easements shall be Recorded by any Owner (except Declarant in the exercise of its reserved rights) or other Person against any Lot without the provisions thereof having been first approved in writing by the Executive Board for consistency with the Declaration, any applicable Supplement Declaration, and the general plan of development for the Common Interest Community. Any covenants, conditions, restrictions or easements Recorded without such approvals being evidenced thereon shall be null and void. This provision does not apply to Mortgages.

3.9 **Fences Prohibited or Restricted** Perimeter fencing shall be limited to fences not exceeding six (6) feet in height and shall not extend beyond the front of the residential Building as approved by the Design Review Committee. Front yard perimeter fencing shall be as approved by the Design Review Committee and shall not exceed thirty inches in height. Fencing shall not block drainage easements or drainage facilities. Owner shall be responsible for obtaining a permit prior to construction of perimeter fencing from the City of Grand Junction.

3.10 **Annoying Light, Sound or Odor** All exterior lighting installed or maintained on a Lot is limited to six (6) feet or lower and placed so that the light source is screened or shielded from the residence on any other Lots. No light shall be emitted from any part of the Common Interest Community, which is unreasonably bright or causes unreasonable glare. Without limiting the generality of the foregoing, no spotlights, floodlights or other high-intensity lights shall be permitted within the Common Interest Community and will meet the City of Grand Junction lighting standards.

No sound shall be emitted from any part of the Common Interest Community which is unreasonably loud or annoying to others, and no odor shall be emitted from any part of the Common Interest Community which is noxious or unreasonably offensive to others. Again without limiting the generality of the foregoing, no exterior speakers, horns, whistles, bells, or other sound devices, other than security devices used exclusively for security purposes, shall be located or used within the Common Interest Community.

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3.11 **Violation of Law, Insurance, Etc** No Owner or Occupant or Person shall do any act or cause or permit anything to be done or kept in or upon a Lot, Buildings or Improvements constructed thereon, or the Association Property which would result in the increase of, or cancellation of, insurance maintained by the Association or would be in violation of any federal, state, city or other law, ordinance, regulation or code of any governmental body having jurisdiction, or of any Master Rule and Regulation promulgated by the Association, or of any provisions of this Declaration.

3.12 **General Maintenance of Lots, Buildings and Improvements**

(a) Maintenance The Owners shall keep, maintain and repair their Lots, Buildings and Improvements situated thereon, including any fencing or landscape Improvements installed by the Declarant in a neat, clean, cultivated, attractive and well maintained condition, free from the accumulation of trash or debris or visual deterioration. The Owners shall repair and maintain any fencing on the common boundary with other Owners, including fencing installed by the Declarant, and the costs and expenses therefore shall be shared equally between the Owners sharing the common boundary.

(b) Trash No Lot shall be used as a dumping ground for rubbish. No garbage, rubbish or trash shall be allowed to accumulate on any Lot. All garbage, rubbish and trash shall be placed and kept in covered containers. All containers shall be kept within garages or enclosed backyards so as to not be visible from neighboring property, except to make the same available for collection during regular trash collection days.

(d) Association Authority In the event any Owner fails to keep, maintain or repair such Owner's Lot or the Building(s) or Improvement(s) situated thereon, including landscape and fence Improvements installed by the Declarant, in accordance with this section, a written notice will be issued. If an Owner fails to perform any of such obligations within ten (10) days following the receipt of a written notice from the Association then the Association shall be authorized to conduct such maintenance, repairs or restoration and assess the cost thereof to Owners on whose Lot or for whose benefit such maintenance or repairs were conducted as a reimbursement assessment.

3.13 **Duty to Maintain: Erosion and Sediment Control** Each Lot owner shall be responsible for making certain that any builder who performs any construction on such Lot adheres to and regularly notifies suppliers and subcontractors of their obligation by virtue of this Declaration to adhere to the Stormwater Best Management Practices during construction activities.

The Owner or its contractor shall install silt fences or straw bales around the site at the beginning of construction as needed to prevent sediment from leaving or entering the Lot in any direction, and shall comply with the Subdivision drainage plans. Backfill and rough grade of the Lots shall be completed as soon as possible in the construction process and final grade shall be established as soon as practical.

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Permanent erosion and sediment control measures shall be installed and functioning within 6 months of the issuance of the certificate of occupancy on a residential building.

3.14 **Design Guidelines** All excavation and other land disturbance, construction, landscaping and irrigation activities within the Common Interest Community shall be governed by the procedures, standards, guidelines, restrictions and requirements set forth in the Design Guidelines. A violation of the Design Guidelines shall constitute a violation of this Declaration and may be enforced in accordance with the terms thereof.

3.15 **Noxious or Offensive Activities; Nuisances; Construction Activities** No noxious or offensive activity shall occur or be allowed at anytime on any property within the Common Interest Community, nor shall anything be done or placed thereon which is or may become a nuisance or cause an unreasonable embarrassment, disturbance, or annoyance to Owners, Occupants, Declarant, or the Association, or which interferes with the peaceful enjoyment or possession and proper use of the Common Interest Community, or any part thereof, by Owners or Occupants. As used herein, the term "nuisance" shall not apply to any activities of Declarant, which are reasonable necessary or appropriate to the development, improvement, maintenance, marketing and/or sale of the Common Interest Community or any part thereof. The Executive Board, in its sole discretion, shall have the right and authority to determine the existence of any nuisance or unreasonable annoyance.

Each Owner shall comply with the Master Rules and Regulations and the requirements of all health authorities and other governmental authorities having jurisdiction over the Common Interest Community. Normal construction activities and parking, during normal working hours, in connection with the building of Improvements on a Lot shall not be considered a nuisance or otherwise prohibited by the Master Declaration unless they are in violation of the Design Guidelines or other requirements of the Design Review Committee, but Lots and Association Property shall be kept in a neat and tidy condition during construction periods, trash, and debris shall not be permitted to accumulate, and supplies of brick, block, lumber and other building materials shall be neatly piled. In addition, construction equipment and building materials may only be stored or kept within the Common Interest Community during and in connection with the construction of Improvements thereon. All such equipment and materials and equipment shall be removed immediately following completion of construction.

3.16 **No Hazardous or Unsafe Activities** No activity shall be conducted on, and no Improvement shall be constructed on, any property within the Common Interest Community, which is or might be unsafe or hazardous to any Person or property. Without limiting the generality of the foregoing, and except as allowed below, no explosives, gasoline, or other volatile and/or incendiary materials or devices or any materials deemed hazardous or toxic substances under applicable environmental laws, or regulations shall ever be used, kept, stored, permitted to remain or be released or disposed of on any Lot or elsewhere within the Common Interest Community. Gasoline or fuel for the Owner's lawn

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mower, snow blower, and the like may be maintained on an incidental basis in an enclosed structure on a Lot in an amount not to exceed 10 gallons, except for construction purposes.

3.17 **Outside Burning; Fire Hazards** No exterior fires shall be lighted or permitted on any property within the Common Interest Community except in a contained barbeque unit while attended and in use for cooking purposes, or in a landscaped exterior fire pit, so long as such burning complies with local, state and federal laws. Notwithstanding the foregoing, the Declarant shall have the right to perform burning activities in connection with the development and marketing of the Common Interest Community.

3.18 **No Firearms or Hunting** The discharge of firearms and hunting on any part of the Common Interest Community is expressly prohibited.

3.19 **No Unsightliness** All unsightly structures, facilities, equipment, objects, and conditions sporting equipment (e.g., skis, snowboards, bikes, mountain bikes, kayaks, etc.) and snow removal, garden or maintenance equipment except when in actual use, shall be kept in an enclosed structure or in a screened area approved by the Design Review Committee. No laundry or wash shall be dried or hung outside any residence.

3.20 **Animals** Except as specifically permitted below or by the Master Rules and Regulations, no animals, reptiles, primates, fish, fowl or insects of any kind shall be kept, raised, bred, maintained or boarded within or upon any part of the Common Interest Community.

Each Lot shall be entitled to a Maximum of no more than two (2) dogs or cats (or one of each) and a reasonable number of other household Pets, so long as such dogs, cats and other Household Pets are not kept for any commercial purpose, are not kept in unreasonable numbers, do not cause an unreasonable amount of noise or odor, or do not otherwise become a nuisance or threat to other Lot Owners or Occupants. Permitted dogs, cats, and other Household Pets must be fenced or restrained at all times within the Owner's or Occupant's Lot and shall not be permitted outside such Lot except when leashed and accompanied by the pet's owner or the owner's representative. All Household Pets shall be properly immunized and otherwise maintained and cared for as a required by applicable laws.

The Owner of Lot where a Household Pet is kept, as well as the legal owner of the pet (if not such Owner), shall be jointly and severally liable for any and all damage and destruction caused by the pet, and for any clean-up on the Owner's Lot and of streets, sidewalks, Association Property or other Lots necessitated by such pet.

The Executive Board shall be responsible for enforcing the restrictions set forth in this Section, and shall have, and is hereby given, the right and authority to determine in its sole discretion that dogs, cats and other Household Pets are being kept for commercial purposes, or are being kept in unreasonable numbers, or are causing an unreasonable amount of noise or odor, or are a nuisance or threat to other Lot Owners or Occupants, or that a Lot Owner or Occupant is otherwise in violation of

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this Section, and to take such action or actions as it deems reasonably necessary to remedy the violation, including without limitation the levying of fines and/or Reimbursement Assessments as provided in hereof. Also, without limiting the generality of the foregoing, the Executive Board may require the owner or custodian of a dog that barks or howls excessively, or of a dog, cat or other Household Pet with other offensive habits or threatening behavior, to confine such animal indoors, or to permanently remove such animal from the Common Interest Community, and may adopt Master Rules and Regulations governing pets.

3.21 **Restriction on Equipment, Tanks, Antennae, Satellite Dishes, Etc.** Air movement, air conditioning (including swamp coolers), heating, wind collection, or refrigeration equipment must be screened from the view of neighboring properties. Solar power units meeting all governmental guidelines for residential uses may be incorporated into a residence if the solar power unit meets the same architectural criteria as are applied to other Improvements within the Common Interest Community, and the solar power unit is approved in advance by the Design Review Committee. No tanks of any kind, whether elevated or buried, shall be erected, placed or permitted to remain upon any Lot or Association Property except in compliance with applicable federal and state regulations, and then only with the prior written consent of the Design Review Committee.

Satellite dishes that exceed one meter in diameter, and MDS antennas that exceed one meter in diameter or diagonal measurement, shall not be allowed within the Common Interest Community. Mast antennas that are extended higher than 12 feet above the roof line and antennas that are not used to receive video programming shall only be permitted within the Common Interest Community if they receive the prior written approval of the Design Review Committee as to design, location and screening from neighboring Lots, Units, and the Association Property.

3.22 **Restrictions on Mining or Drilling** No Lot within the Subdivision shall be used for any exploration or extraction of oil, gas or other minerals, including but not limited to, the drilling mining, quarrying, boring or developing water, geothermal resources, hydrocarbons, minerals, rocks, stones, gravel, or underground water.

3.23 **Excavation; Natural Rock Features** No excavation or other earth disturbances shall be performed or permitted within the Subdivision except in connection with the construction of Improvements. Whenever possible significant natural rock features shall be preserved, and shall not in any event be disturbed unless the written approval of the Design Review Committee is first obtained. Upon completion of construction, openings in the ground shall be backfilled and compacted and all disturbed ground shall be graded and landscaped in accordance with the Design Guidelines and the requirements of the Design Review Committee.

3.24 **No Interference with Waterways or Drainage Systems** All runoff shall be properly channeled into a storm drain, storage area, or other storm water management facility in conformance with the drainage portion of the approved site plan. All elements of the drainage control system shall be constructed and maintained in accordance with the approved site plan.

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No Owner or Lessee shall construct, install, maintain or permit any fence or other improvement or obstruction or plant trees or take any other action which damages or interrupts or interferes in any way with the normal flow of water through and along waterways and water features within the Subdivision, any ditch, lateral, pond or other water collection, storage or distribution system within or serving the Subdivision, or normal drainage patterns within the Subdivision, subject always to the rights of owners of ditches and other water rights and the requirements of the Design Review Committee.

The Association shall have the authority to take such action as may be necessary to abate any such damage or interference, and shall have the right to enter upon a Lot or Common Element for purposes of correcting or removing obstructions, and any costs incurred by the Association in connection with such abatement, injunctive or corrective activities shall be assessed to the responsible Lot Owner in the form of a Reimbursements Assessment.

3.25 **Ponds** No swimming or boating or ice-skating activities shall be conducted on any ponds within the Subdivision.

3.26 **Tree and Natural Shrub Preservation** All Improvements within the Subdivision shall be located, designed, and constructed so as to preserve and protect trees and natural shrubs. In order to conserve the natural shrubs (e.g., pine, cedar, pinon, other evergreens, and gamble oak or sage brush) may be removed or trimmed except with the prior written approval of the Design Review Committee. This restriction shall not apply to the removal or trimming of dead or diseased vegetation, or essential clearing by a Lot Owner in connection with the construction of a residence on a site previously approved by the Design Review Committee. Any violation of this Section shall subject the offending Lot Owner to such penalties, fines and/or other conditions as the Design Review Committee considers appropriate, including without limitation the withdrawal or modification of previously granted development approvals, or the requirement that replacement trees or shrubs or equivalent or different size and type be planted and maintained by the Lot Owner.

3.27 **Use of Easement Areas; Utility Installation** All easements shown on a Plat or Supplemental Plat covering any portion of the Subdivision have been created or reserved for the purposes indicated on such Plat and/or Article. No Lot Owner may erect any structure in such easement areas, nor may an Owner or Occupant use the surface of such easement areas for any private use, other than landscaping which will not interfere with the use of said easement by the Persons or entities for whose benefit it has been created or reserved and which received the prior written approval of the Design Review Committee.

With respect to easements created for access and/or utility purposes either by the terms of this Master Declaration or any other Recorded agreement or on a Plat, any and all bona fide public and private utility service companies, including special districts, shall have the right of access, ingress, egress, and use of such easement areas for the installation, operation and maintenance of utility facilities service the Subdivision.

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3.28 **Landscaping and Irrigation Regulations** No landscaping shall be performed on any Lot or Common Element or on Association Property unless a landscaping plan has received prior written approval of the Design Review Committee, and all landscaping shall comply with the Design Guidelines. A landscaping plan for each Lot must be approved by the Design Review Committee before construction is commenced on the residence on that Lot. Any substantial change in the type or location of approved landscaping vegetation shall require the further approval of the Design Review Committee.

The only type of Turf Grass permitted to be installed in the Subdivision is low-maintenance turf. A maximum of fifteen percent (15%) green space of the Lot may be planted with turf grass configured and shall have a permanent irrigation system installed. Green space is defined as the entire parcel less any Improvement footprints, driveways, vehicle use areas, and other impervious areas. Storm water management system areas are excluded in the calculation of green space area.

The Planting of low water requirement plants, trees and shrubs shall be regulated by the Design Review Committee, and shall be limited in accordance with Design Guidelines. The preservation of the natural high desert look of Pinnacle Ridge and the views of each Lot owner shall be respected.

Subsurface and soils conditions may vary substantially from Lot to Lot in Pinnacle Ridge, ranging from sand to clay to rock. Over-watering under some soil conditions has the potential of causing damage to the Lot Owners' Improvements as well as to neighboring properties. Each Lot Owner shall obtain a soil and subsurface conditions report from an independent qualified geotechnical firm before constructing any improvements on his Lot. The Lot Owner shall comply with all restrictions and recommendations contained in the report with respect to construction and methods and practices appropriate for the specific soils and subsurface conditions encountered on the Lot. Irrigation plans and systems proposed within each Lot shall also be in compliance with the Design Guidelines and approved by the Design Review Committee. By virtue of the fact that neither the Declarant nor the Association shall have the means to monitor irrigation systems installed or actual irrigation practices, the assumption of risk, waiver and release provisions of Section below shall in all cases apply notwithstanding approval of a landscaping plan by the Design Review Committee.

Each Owner shall diligently maintain, trim, weed, cultivate, husbandry, protect, preserve and otherwise keep in a healthy and attractive condition of the low maintenance shrubs, trees, hedges, grass, planters, gardens and other landscaping upon the Owner's Lot, including, without limitation, the removal of dead and diseased branches and brush and the performance of other tasks necessary to remove or eliminate material which constitutes or creates a fire hazard or nuisance, and shall keep the Owner's Lot free of noxious weeds. Each Owner shall also maintain all paved, concrete and other synthetically surfaced areas within the Owner's Lot, including but not limited to, driveway and parking areas, in good condition and repair.

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3.29 **Tennis Courts and Basketball Hoops** Tennis courts, and basketball hoops, backboards and nets shall not be allowed unless they comply with the Design Guidelines and the approval of the Design Review Committee is first obtained.

3.30 **Swimming Pools, Spas, and Related Equipment** Pools, spas or hot tubs may be erected, constructed or installed on Lots or Common Elements within the Subdivision, provided they comply with the Design Guidelines and that have received the prior written consent of the Design and Review Committee. If a pool, spa or hot tub is approved, all service equipment shall be fenced and located in either a side yard between the front and rear boundaries of the residence, or in the rear yard adjacent to the residence, and shall be adequately screened from any neighboring Lot, the Association Property, and all streets in the Common Interest Community.

3.31 **Signs and Advertising** With the exception of one entry/identification sign per Lot during the period of actual construction on the Lot, which sign shall comply with the Design Guidelines, no sign, poster, billboard or advertising device of any kind shall be allowed or displayed upon any Lot or any Association Property within the Common Interest Community except:

(a) Such signs as may be used by the Declarant or builders approved by Declarant in connection with the development, marketing and sale of Lots in the subdivision;

(b) Such signs as may be required for traffic control and regulation of Association Property;

(d) Neighborhood monuments (e.g., entrance and directional signs) which are compatible with the architecture of the area;

(e) One security company sign;

(f) One "For Sale" or "For Rent" sign on any Lot,

(g) One "Private Residence" sign on any Lot. All such signs must comply with the Design Guidelines.

3.32 **Camping and Picnicking** No camping or picnicking shall be allowed on Association Property except in areas, designated for such purpose by the Association.

3.33 **No Individual Water Wells or Individual Sewage Disposal Systems** No individual water wells, and no cesspools, septic tanks or other individual sewage disposal systems, shall be drilled, constructed, maintained or permitted to remain within the Common Interest Community, except such water and/or septic systems as may be installed by Declarant or Declarant's successor, assign or agent or the Association to serve the Common Interest Community.

3.34 **Regulation of Pesticides** The Design Review Committee may adopt reasonable rules and regulations governing the use and application of pesticides, herbicides, fertilizers and fungicides within the subdivision.

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3.36 **Restoration of Improvements in the Event of Damage or Destruction** In the event of damage to or destruction of any Improvement on any Lot, the Owner thereof shall cause the damaged or destroyed Improvement to be restored or replaced to its original condition or such other conditions as may be approved in writing by the Design Review Committee, or the Owner shall cause the damaged or destroyed Improvement to be demolished and the Lot to be suitably landscaped, subject to the approval of the Design Review Committee, so as to present a pleasing and attractive appearance. Such Improvements shall be repaired, restored, or otherwise demolished and suitably landscaped within such reasonable time frame as may be established by the Design Review committee.

3.37 **Leases** Any Owner shall have the right to Lease his Lot including the Improvements under the following conditions.

(a) All Leases shall be in writing.

(b) All Leases shall provide the terms of the lease and the tenant's (Occupant's) use of the Lot shall be subject in all respects to the provisions of this Declaration or any pertinent Supplemental Declaration, and the Articles, the Bylaws, and the Master Rules and Regulations, and the Design Guidelines, that the Occupant has received and reviewed copies of said documents, and any failure by the Occupant to comply with any of the aforesaid documents, in any respect, shall be a default by Occupant under the Lease and a default by Occupant and Owner under said documents which may be enforced against Occupant and/or Owner by the Executive Board.

(c) Each Owner who leases a Lot shall be responsible for assuring compliance by the Occupant with all of the provisions of this Declaration, any pertinent Supplemental Declaration, the Articles, the Bylaws, the Master Rules and Regulations, and the Design Guidelines, and shall be jointly and severally responsible with the Occupant of any violations thereof by the occupant.

(d) Each Lease shall expressly provide that the Association (via the Executive Board) shall have the right to give the Occupant written notice that the Occupant is in violation of one or more of the documents listed in subsection above, which notice shall specify a period of time (at least 5 days) in which the Occupant may cure the violation.

(e) All legal fees and costs incurred by the Association in connection with a Lease shall be the joint and several liabilities of the Lot Owner and the Occupant and may be collected by legal action in which the prevailing party shall be entitled to an award of its reasonable costs and attorney's fees.

3.38 **Right of Entry** During reasonable hours and upon notice to the Owner and Occupant of a Lot, any member of the Executive Board, shall have the right to enter upon and inspect any Lot, and the Improvements thereon, except for the interior portions of any occupied dwelling (which shall require the permission of the Owner or Occupant, except in case of emergency, when no notice or permission shall be required), for the purpose of ascertaining or not the provisions of the Declaration and of the Design Guidelines have been or are being complied with, or for the purpose of exercising any rights or performing any responsibilities (maintenance, repair, etc.) provided for in this Declaration or in any

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Supplemental Declaration, and such individuals shall not be deemed guilty of trespass by reason of entry.

3.39 **Damage by Owners During Construction** Each owner is responsible for any damage caused to roads, streets, ditches, fences, trails, natural drainage courses, utilities, Association Property, or to other Lots, Units, or Improvements thereon, during the construction or alteration of Improvements upon the Owner's Lot, including without limitation damage caused by any construction vehicles using the roads or streets within the Common Interest Community. Damage shall include any degradation in the appearance or condition of such roads, streets, Association Property, or other Lots, Units, or Improvements. The responsible Owner shall promptly repair and clean up any such damage, at its sole expense. Each Owner shall also be responsible for any damage caused by utility cuts in roads, washouts and runoff damage caused by failure to properly install culverts, and to promptly repair any such damage. If the Owner fails to repair any such damage within 5 days following receipt of a written notice from the Executive Board requesting the same, the Executive Board shall have the right to perform such repairs on behalf of the Owner, and to levy a Reimbursement Assessment upon the Owner and its Lots to recover the costs thereof. All construction activity must maintain the integrity of the City's Stormwater Management Manual. All violations are subject to penalty under the City's ordinance.

3.40 **Health, Safety, and Welfare** In the event any uses, activities, and facilities within the Subdivision are deemed by the Executive Board to be an unreasonable annoyance or nuisance, or to adversely affect the health, safety or welfare of Owners or Occupants, the Executive Board may amend the Master Rules and Regulations In order to appropriately restrict and regulate such uses, activities or facilities within the Subdivision. Such rules shall be consistent with the purposes and provisions of this Declarations.

3.41 **Implementation and Variances** The Executive Board is charged with implementing and enforcing the restrictions in this Article, or otherwise restrict and regulate the use and occupancy of the Subdivision and the Lots by reasonable Master Rules and Regulations of general application adopted by the Executive Board from time to time. The Executive Board may, in its sole discretion and in extenuating circumstances, grant variances from any of the restrictions set forth in Article 3 (excepting any such restrictions with respect to which the Design Review Committee has the authority to grant variances under Article IV), if the Executive Board determines, in its discretion, (a) either (i) that a particular restriction a substantial hardship or burden on an Owner or Occupant, which hardship or burden was not caused by said Owner or Occupant, or (ii) that a change of circumstances since the Recordation of this Declaration has rendered such restriction obsolete, and (b) that the activity permitted under the variance, in the judgment of the Executive Board will not have any material adverse effect on the Owners and Occupants of the Subdivision (including neighboring Lots) and is consistent with the high quality of living intended to be promoted hereby throughout the Subdivision. When an Owner applies for a variance, the Board must give at least ten (10) days advance written notice of the variance hearing and the nature of the variance requested, postage paid, by certified mail,

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return receipt requested, to all Owners of Lots that are situated within a radius of 300 feet of the Lot for which the variance is sought, at current addresses for such Owner reflected in the Association files. The applying Owner must provide the Committee with an accurate list of the Owners to be so notified. If the foregoing notice requirements are complied with, it is not necessary that the Owners actually receive the notice that is mailed to them, such notices being deemed received upon mailing.

No variance shall conflict with the Master Subdivision Plan for Pinnacle Ridge or with ordinances or regulations of the City. If a variance from the Master Subdivision Plan or City laws or regulations is also required in connection with a matter for which a variance is desired, it shall be the Owner's responsibility to obtain such City variance before submitting a variance application to the Executive Board.

3.42 **Declarant Activities** Nothing contained in this Declaration is intended or shall be interpreted to prevent, regulate or delay or to restrict Declarant's right and ability to develop, improve, maintain, repair, regulate, operate, administer, manage, market, sell, lease, encumber or dispose of the Common Interest Community, the Lots, the Association Property, additional unspecified real estate, or any part thereof, including the right to construct Improvements, place a construction office, construction trailers, and install signs thereon, all in the discretion of Declarant.

ARTICLE IV
DESIGN REVIEW COMMITTEE

4.1 **Establishment of Design Review Committee** The Association shall establish and maintain the Design Review Committee, consisting of three (3) members, each of whom shall be appointed and removed by the Executive Board of the Association from time to time in its discretion. The qualifications for members of the DRC shall be set forth in the bylaws. The Design Review Committee and the members thereof shall not be liable for damage to any Person submitting requests for approval or to any Owner within the Property by reason of any act, omission, approval, disapproval or failure to approve or disapprove with regard to any request. The actions of the Design Review Committee shall be deemed conclusively binding upon the Owners.

4.2 **Meetings and Action of Committee** The Design Review Committee shall meet as often as necessary to review applications. The meetings shall be held at locations, times and dates determined by the Design Review Committee. Such meetings shall be conducted according to the procedures adopted by the Design Review Committee. The applicant may attend the meetings, and address the Committee or answer questions in the Design Review Committee's discretion. The majority vote of the Design Review Committee members shall be required to take any action on behalf of the Committee.

4.4 **Compensation of Committee Members** The Design Review Committee may be compensated for services performed pursuant to this Declaration within the discretion of the Executive Board.

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4.5 **Records of Actions** The Design Review Committee shall keep a permanent record of all actions of the Design Review Committee.

4.6 **Design Guidelines** The Design Review Committee shall establish the initial set of rules, procedures, standards, guidelines and requirements, including without limitation architectural, design and development standards and guidelines, governing the review and approval or disapproval of all Improvements proposed for new construction or the restoration or modification of existing, roof construction within the Common Interest Community consistent with this Declaration. The design standards and guidelines may be amended from time to time as the Design Review Committee deems reasonable or necessary.

4.7 **Submission of Plan** Prior to commencement of any work to accomplish any proposed Improvements, the Owner proposing such Improvements shall submit three (3) sets of plans, designs, drawings, specifications and samples as the Design Review Committee shall require pursuant to its design and development standards and guidelines, which may include, but are not necessarily limited to the following: construction plans and specifications, including floor plan and exterior elevations, site plan of house to be built on the Lot, sample of exterior colors; sample of trim and soffit colors, sample of roof shingle, landscape plan, including sprinkler system, drainage and grading, and application for Design Review Committee approval form required by the Design Review Committee.

From and after the day on which the Design Review Committee receives all required information and materials in connection with the proposed Improvements and Builder, The Design Review Committee shall have 30 calendar days in which to approve, approve with conditions, or deny the application. In the discretion of the Committee, one or more meetings may be held with the Owner during that period. If the Design Review Committee fails to approve or deny the application within said 30-day period, the final plans and specifications submitted to the Committee by the Owner shall be deemed approved.

4.8 **Design Review Fee** The Design Review Committee shall adopt a design review fee schedule for processing requests for the original construction of a residential improvement, and for subsequent requests for approval of Improvements on a Lot including remodels, renovations or other alterations of the original approval. No fee shall be charged for any proposed alteration or addition to an approved landscaping plan. The design review fee schedule may be modified from time to time and shall be set forth in the Design Guidelines.

4.10 **Design Review and Construction Process** Every owner proposing to make Improvements on its Lot must comply with the design review and construction procedures that are set forth in the Design Guidelines. The Declarant is exempt from this requirement.

4.11 **Approval of Plans** The Design Review Committee shall approve any plans submitted if it determines in its discretion that such plans comply with the Committee rules and procedures, the design and development standards and guidelines, and the requirements of the Plat and the Declaration. Upon

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approval of any plans, the Design Review Committee shall stamp both sets of the plans accordingly and return one set to the applicant. The other set shall be retained by the Design Review Committee, along with the application form. In the event of any later discrepancies between the set of plans given to the applicant and the set retained, the set of plans on file with the Design Review Committee shall control.

Approval by the Committee on any Improvement shall not imply or require that such approval will be granted again in the future for the same or similar Improvements, and the Committee shall have complete discretion, consistent with the standards and criteria contained herein and in the Design Guidelines, to grant or deny such approval in each instance on the merits of the particular application or proposal and considering the circumstances surrounding the same.

4.12 **Decisions of Committee** Decisions of the Design Review Committee shall be made in accordance with the procedures established in the Design Guidelines and shall be binding on all parties.

4.14 **Completion of Work After Approval** Following the approval of any proposed Improvements by the Design Review Committee, the proposed Improvements shall be completed by the Lot Owner: (a) as promptly and diligently as possible but in no event in excess of the time periods set forth below; (b) in compliance with the Design Guidelines and with all applicable laws, regulations and codes, (c) in strict conformance with all plans and specifications and other materials furnished to and approved by the Design Review Committee and with the Certificate of Approval; and (d) in accordance with any and all conditions imposed by the Design Review Committee. All Improvements approved be the Design Review Committee shall be completed, a Certificate of Compliance shall be obtained in accordance with Section 4.15 below, and all construction equipment, materials and debris shall be removed, (i) within 18 months from the date of approval of such Improvements by the Design Review Committee, or (ii) within such other time period as the Design Review Committee may prescribe. Provided, however, that any and all landscaping and/or gardening approved by the Design Review Committee which is related to the initial construction of a residence on a Lot shall be completed no later than 180 days immediately following the issuance of the Certificate of Occupancy for such residence. Failure to comply with the terms and conditions of this Section 4.14shall constitute noncompliance with the terms and provisions of this Declaration and the Design Review Committee and/or the Executive Board shall have the right to invoke all rights and remedies provided to them hereunder, including but not limited to, the right to seek injunctive relief and/or to impose fines and penalties.

4.13 **Right to Inspect** Designated members or authorized consultants of the Design Review Committee or of the Executive Board, or any authorized officer, agent of the Association, may with notice at any reasonable time enter upon any Lot without being deemed guilty of trespass, in order to inspect Improvements constructed or being constructed on such Lot, to ascertain whether such Improvements have been or are being built or changed in compliance with the Design Guidelines, the approvals granted by the Design Review Committee, and this Declaration.

4.14 **Notice of Completion; Inspection of Work; Correction of Defects**

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(a) Upon completion of any Improvements (excepting the related landscaping) for which plans and specifications have been approved by the Design Review Committee, the Owner shall submit to the Committee a written Notice of Completion, on a one page form to be provided by the Committee, which Notice shall certify that the Improvements have been completed in accordance with all plans, specifications and other materials furnished to and approved by the Committee, the Certificate of Approval, any conditions imposed by the Committee, and with the Design Guidelines. Until receipt of such Notice, the Committee shall not be deemed to have any notice regarding completion of the Improvements.

(b) Within seven (7) days following the receipt of the Notice of Completion, the Design Review Committee or its duly authorized representative shall inspect the Improvements. If the Committee finds that the Improvements have not been completed at set forth in the Notice of Completion, it shall notify the Lot Owner in writing of such noncompliance within said seven (7) day period, specifying the particulars of noncompliance, and shall require the Owner to remedy the same. If for any reason other than the Lot Owner's act or neglect, the Committee fails to notify the Owner of any noncompliance or to issue the Owner a Certificate of Compliance pursuant to Section4.15 below prior to the expiration of said seven (7) day period, the Improvements shall be deemed in compliance if the Improvements were, in fact, completed as of the date of the Notice of Completion and the Owner or Registered Builder may proceed to request a Certificate of Occupancy from the City.

(c) If upon the expiration of thirty (30) days from the date of such notification of noncompliance the Lot Owner shall have failed to remedy such noncompliance, the Design Review Committee shall notify the Executive Board in writing of such failure. The right of the Home Owners Association to remedy or remove any noncompliance shall be in addition to all other rights ad remedies which the Association may have at law, in equity, or under this Declaration or any Supplemental Declaration, and the Lot shall have no claim for damages or otherwise on account of the entry upon the property and remedying or removal of the non-complying Improvement.

4.15 **Certificate of Compliance** When the Design Review Committee is satisfied that the Improvements have completed in accordance with all plans, specifications and other materials furnished to the Design Review Committee, the Certificate of Approval, any conditions imposed by the Committee, and with the Design Guidelines, it shall issue within seven (7) days to the Owner a Certificate of Compliance with respect to said Improvements. Upon receipt of such Certificate, but not before, the Owner or Registered Builder may apply to the City for a Certificate of Occupancy. No newly-constructed residence on a Lot shall be occupied until a Certificate of Occupancy has been issued therefore by Mesa County.

4.16 **Improvements Must Conform to Approvals** No building, fence, landscaping, wall, structure or other Improvement shall be commenced, constructed, erected, placed, installed, located, maintained or removed within the Common Interest Community, nor shall there be any additions or changes to the exterior of any residence or other structure or Improvement upon a Lot or the

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landscaping, grading or drainage thereof, including without limitation, the painting or staining (other than painting or staining with the same color and type of paint or stain as previously existed) of exterior walls, patio covers and fences, except in accordance with plans and specifications therefore which have been submitted to and approved by the Design Review Committee and in compliance with the Design Guidelines.

4.17 **Committee Power to Grant Variances** The Design Review Committee may grant variances from any of the restrictions in this Declaration or any Supplemental Declaration or the Design Guidelines including restrictions upon height, size, floor area, setbacks, location or placement of structures, or similar restrictions, when unique circumstances not created by the Lot Owner, such as topography, natural obstructions, or aesthetic or environmental considerations would otherwise result in substantial hardship or burden which is not suffered by other similarly-situated Lots, or when a change of circumstances since the Recording of this Declaration has rendered such restriction obsolete. In granting a variance the Design Review Committee shall determine that the activity allowed by the variance will not have any material adverse effect on the Owners and Occupants of the Common Interest Community (including neighboring Lots) and is consistent with the quality of living intended to be promoted throughout the Common Interest Community. When an Owner applies for a variance, the Committee must give at least seven (7) days written notice of the variance hearing, and of the nature of the variance requested, postage prepaid by certified mail, return receipt requested, or by other means provided for in the Bylaws, to all Owners of Lots that are situated within a radius of 300 feet of the Lot for which the variance is sought, at the current addresses for such Owners reflected in the Association files. The applying Owner must provide the Committee with an accurate list of the Owners to be so notified. If the foregoing notice requirements are complied with, it is not necessary that the Owners actually receive the notice that is mailed to them, such notices being deemed received upon mailing.

All variances granted by the Design Review Committee must be evidenced in writing, must specify the Lot for which the variance, and must be signed by at least the majority of the members of the Committee. If any such variance is granted, no violation of the covenants, conditions and restrictions contained in this Declaration or any Supplemental Declaration or the Design Guidelines shall be deemed to have occurred with respect to the matter for which the variance was granted. The granting of such a variance shall not operate to waive any of the terms and provisions of this Declaration or of any Supplemental Declaration or the Design Guidelines for any purpose except as to the particular property and particular provision hereof covered by the variance. A copy of each variance request and approval, or denial, will be kept on file at the Association offices.

The granting of a variance in a particular instance shall in no event imply or require that such a variance will be granted again in the future in a similar situation, and the Committee shall have complete discretion, consistent with the standards and criteria contained herein and in the Design Guidelines, to grant or deny a variance in each instance on the merits of the particular application and considering the circumstances surrounding the same.

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No variance shall conflict with the Master Subdivision Plan for Pinnacle Ridge or with ordinances or regulations of the City. If a variance from the Master Subdivision Plan or City laws or regulations is also required in connection with a matter for which a variance is desired hereunder, it shall be the Owner's responsibility to obtain such City variance before submitting a variance application to the Design Review Committee.

4.18 **Non-liability for Approval or Disapproval of Plans and Specifications, for Issuance of Certificates of Approval or Compliance, or Restriction of Builders** The Design Review Committee shall not be responsible for reviewing plans and specifications with respect to engineering design or for compliance with zoning, building ordinances, environmental laws, or any other applicable laws or regulations. By its approval of any such plans and specifications, and by its issuance of a Certificate of Approval, neither the Design Review Committee, the members thereof, the Association, any member, the Executive Board not the Declarant assumes or shall have any liability or responsibility with respect to engineering design or for compliance with zoning, building ordinances, environmental laws, or any other applicable laws or regulations, or for any defect in any Improvement constructed from such plans and specifications.

Likewise, Builders shall register with Design Review Committee in the manner set forth in the Design Guidelines. By registering a Builder, the Design Review Committee does not represent or warrant, either expressly or by implication, and hereby disclaims any representations or warranties, that the Registered Builder will in fact complete the Improvements on schedule, within the Owner's budget, or in a competent and workmanlike manner, or that the Registered Builder is or will remain financially sound, and the Lot Owner's assume all risks regarding such matters.

4.19 **Registration of Builders** The construction or renovation of Units or of residential improvements on Lots within the Common Interest Community shall be accomplished only by licensed general contractors.

ARTICLE V
THE ASSOCIATION

5.1 **General Powers** The Association's general purpose is to be and constitute the entity to further the mutual interests of the Declarant and the Owners pursuant to this Declaration, the Articles and Bylaws and the Act, including without limitation, enforcement of the Master Declaration; Owning, repairing and maintaining the Common Elements; Maintenance and use of any Lots, Buildings and Improvements as authorized in the Declaration; Levying and enforcing assessments to defray the cost and expenses of the Association's duties and responsibilities in this Declaration; and, providing other utilities and services pursuant to the Articles and Bylaws. The Association shall have and may exercise all of the powers and duties of the Colorado corporation formed under the Colorado Revised Nonprofit Corporation Act.

5.2 **Association Executive Board** The affairs of the Association shall be managed by an Executive Board of three (3) directors (the "Board") initially. When Declarant relinquishes control of

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the Board to the Owners pursuant to Section 5.5 below, the Board shall be managed by at least three (3) directors. Directors shall meet the qualifications described in the Articles of Incorporation and Bylaws of the Association.

A quorum shall be present throughout any meeting of the Executive Board, and all regular and special meetings of the Executive Board or any committee thereof shall be open to attendance by all members of the Association or their representatives. Without limiting the generality of the foregoing, no Master Rule or Regulation may be adopted during an executive session. Agendas for meetings of the Executive Board shall be made reasonably available for examination by all Members of the Association or their representatives.

The Executive Board may not act on behalf of the Association to amend this Declaration, terminate the Common Interest Community, elect members of the Executive Board or determine the qualifications, powers and duties, or terms of office of Executive Board members, but the Executive Board may fill vacancies in its membership for the unexpired portion of any term.

5.3 **Membership in Home Owners Association** By acceptance of a deed to a Lot within the Subdivision, each Owner shall be a Member of the Association. A membership shall be appurtenant to and may not be separated from ownership of any Lot. Declarant shall hold a Membership in the Association for each Lot owned by Declarant. Membership in the Association shall not be assignable separate and apart from fee simple title to a Lot, and may not otherwise be separated from ownership of a Lot.

5.4 **Voting Rights of Member** The Association shall have one class of voting membership, each Owner being entitled to vote one (1) vote for each Lot owned upon matters subject to vote by the Members as provided in the Articles and Bylaws of the Association. A vote for each Lot shall be exercised as the Owner or Owners may determine, but in no event shall more than one (1) vote be cast with respect to any Lot.

Provided a quorum of Members entitled to vote is present in person or by proxy, the affirmative vote of a majority of the Members so present shall constitute approval of any matter voted upon unless a different number is required on a particular matter by the Act, this Declaration, any Supplemental Declaration, the Articles, or the Bylaws.

The Lot Owners, by a vote of sixty-seven percent (67%) of all Members present and entitled to vote at any meeting of the Lot Owners at which a quorum is present, may remove any member of the Executive Board with or without cause, other than a member appointed by Declarant.

5.5 **Declarant Control of Association** From the date of the formation of the Association until termination of Declarant's control as provided below, Declarant shall have and hereby reserves the power to appoint and remove, in its sole discretion, the members of the Executive Board and the officers of the Association during the period commencing upon the Recording of this Declaration and

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terminating upon the first to occur of either sixty (60) days after conveyance of seventy-five percent (75%) of the Lots to Owners other than Declarant or two (2) years after the last conveyance of a Lot by Declarant in the ordinary course of business.

Declarant may voluntarily surrender the right to appoint and remove officers of the Association and members of the Board before termination of the period of Declarant's control, but in that event Declarant may require, for the duration of the period of Declarant's control, that specified actions of the Association or Board, as described in a recorded instrument executed by Declarant, be approved by Declarant before they become effective. Not later than sixty (60) days after conveyance of twenty-five percent (25%) of the Lots to Owners other than Declarant, at least one (1) member and not less than twenty-five percent (25%) of the members of the Executive Board must be elected by Lot Owners other than Declarant. Not later than sixty (60) days after conveyance of fifty percent (50%) of the Lots to Owners other than Declarant, not less than thirty-three and one-third percent (33%) of the members of the Executive Board must be elected by Lot Owners other than Declarant.

Within sixty (60) days after Lot Owners other than Declarant elect a majority of the members of the Executive Board, Declarant shall deliver to the Association all property of the Lot Owners and of the Association held or controlled by Declarant, including, without limitation, those items specified in the Act.

5.6 **Termination of Contracts and Leases of Declarant** The following contracts and leases, if entered into before the Executive Board elected by the Lot Owners pursuant to Section 38-33.3-303(7) takes Office, may be terminated without penalty by the Association at any time after the Executive Board elected by the Lot Owners pursuant to said Section 38-33.3-303(7) takes office, upon not less than ninety (90) days notice to other party; (i) Any management contract, employment contract or lease of recreational or parking areas or facilities; (ii) Any other contract or lease between the Association and Declarant or an affiliate of Declarant; or (iii) Any contract or lease that is not bona fide or was unconscionable to the Lot Owners at the time entered into under the circumstances then prevailing.

ARTICLE VI
ASSOCIATION PROPERTY

6.1 **Use and Enjoyment of Association Property** With the exception of Limited Common Areas, and except as otherwise provided in the Declaration, in any Supplemental Declaration, or in the Master Rules and Regulations, each Owner shall have the non-exclusive right to use and enjoy Association Property in common with all other Owners. This right to use and enjoy Association Property shall extend to each Owner, Occupant, and the family members, guests and invitees of each Owner, and to such other users as may be authorized by this Declaration or by the Executive Board from time to time, and shall be appurtenant to each Lot, subject at all time to the provisions of the Declaration, the Articles, Bylaws, and the Master Rules and Regulations. No Owner or Occupant shall place any structure or store or leave any materials or personal property upon Association Property, nor shall any Owner or Occupant engage in any activity, which will temporarily or permanently impair free

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and unobstructed access to all parts of the Association Property by all Owners. Use of the Association Property is also subject to any applicable terms of the Declaration of Easements, and may not interfere with any of the purposes of the easements. Use is also subject to duly adopted rules and regulations of the Association.

6.2 **Home Owners Association May Regulate Use of Association Property** The Association, acting through the Executive Board, shall have the right and authority to regulate the use of Association Property by the promulgation, enforcement and interpretation from time to time of such Master Rules and Regulations relating thereto as the Association considers necessary or appropriate for the protection and preservation of Association Property and the enhancement of the use and enjoyment thereof by Owners and Occupants and other authorized users.

The Association, acting through the Executive Board, may for good cause suspend the right of any person to use and enjoy the Association Property, including the right of a Member who or which is delinquent in the payment of any Assessments, and the right of any Member or other authorized user who is in violation of the terms and provisions of this Declaration or any Supplemental Declaration, the Articles, Bylaws, Master Rules and Regulations, Design Guidelines or the terms and provisions of any approvals granted by the Design Review Committee.

6.3 **Association to Maintain and Improve Association Property** The Association, its agents and employees, shall maintain and repair, snowplow as necessary, and otherwise manage the Association Property (including the Limited Common Area), including, but not limited to, any Improvements, landscaping, paths, trails, parking areas, drives, and recreational and other facilities located thereon. The Association may construct, alter and remove such Improvements and landscaping upon Association Property as the Association in its discretion considers necessary, desirable or appropriate from time to time, and may do all such other and further acts which the Executive Board deems necessary or appropriate to preserve, protect and enhance the Association Property and the beauty thereof in accordance with the general objectives for the Common Interest Community reflected in the Declaration. Separate bids shall be let for the maintenance of Limited Common Areas so that the costs thereof can be assessed exclusively to the Lots benefited thereby.

The Association shall take title to, own, manage and maintain the Common Areas, particularly the private streets, recreational areas, open space, and areas for storm water management, erosion and sediment control. The Association shall maintain the private streets, the parking areas included within the same tracts as the private streets and maintain a vegetation-free zone along the private streets that is 20 feet in width (10 feet each side from the center of the private street).

The Association shall grant the City of Grand Junction Police Department the right and power to enter the private streets for the purpose of enforcing parking restrictions.

6.4 **No Partition of Association Property** No Owner or other Person shall have any right to partition or to seek the partition of Association Property thereof.

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6.5 **Owner Liability for Owner or Occupant Damage to Association Property** Each Owner shall be liable to the Association for any damage to Association Property of for any expense, loss or liability suffered or incurred by the Association in connection with Association Property arising from the negligence or willful misconduct of such Owner or of any Occupant, agent, employee, family member, guest or invitee of such Owner, or any violation by such Owner or any Occupant, agent, employee, family member, guest or invite of such Owner of any law, regulation, or code, including without limitation any environmental law, or of any provisions of this Declaration, and Supplemental Declaration, or the Master Rules and Regulations, relating to Association Property. Each Owner shall indemnify, defend and hold the Association harmless from any loss, damage, expense or liability arising from the circumstances described above. The Association shall have the power to levy and collect a Reimbursement Assessment against a Lot Owner to recover the costs, expenses, damages, losses or liabilities incurred by the Association as a consequence of any such negligence, willful misconduct or violations.

6.6 **Damage or Destruction to Association Property** In the event of damage to or destruction of Association Property, including Improvements thereon, by fire or other casualty, the Association shall repair or replace the same in accordance with the provisions in the Declaration. Repair, reconstruction, or replacement of Association Property shall be accomplished under such contacting and bidding procedures as the Association shall determine are appropriate. If insurance proceeds available to the Association on account of damage or destruction exceed the maintenance, repair, improvement, and operation of Association Property or for any other use deemed appropriate by the Executive Board.

6.7 **Condemnation of Association Property** If any Association Property or part thereof or interest therein is taken under exercise of the power of eminent domain or by purchase in lieu thereof, the portion of any award in condemnation or the price payable for the deed in lieu that is attributable to the Association Property taken or purchased shall be paid to the Association. The Association shall have the exclusive right to participate in such condemnation proceedings and to represent the interest of all Owners and Occupants and other Persons therein. Any award or funds received by the Association shall be held by the Association for the purposes stated above or as a reserve for future maintenance, repair, reconstruction, or replacement of Association Property or may be used for Improvements or additions to or operation of Association Property or for such other uses as may be deemed appropriate by the Executive Board. Except as may otherwise be provided by the Act, no Owner or other Person shall be entitled to participate as a party or otherwise in any condemnation proceedings nor to receive any proceeds therefore.

6.8 **Title of Association Property Upon Dissolution of Association** In the event of dissolution of the Association, the Association Property shall, to the extent permitted by law and reasonably possible, be conveyed or transferred to an appropriate public, government or quasi-governmental agency or organization or to a nonprofit corporation, association, trust, or other organization, to be used, in any such event, for the common benefit of Owners for the purposes for which the Association

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Property was held by the Association. If the foregoing is not possible, the Association Property shall be sold or disposed of and the proceeds from the sale or disposition shall be distributed to Owners in proportion to each Owner's Allocated Interest in the Common Expense of the Association.

6.9 **Mechanic's Liens on Association Property** Declarant shall be responsible for the release of mechanics' liens filed with respect to Association Property, or any part thereof, if such liens arise from labor performed or materials furnished at the instance of Declarant, its agents, contractors or subcontractors. Likewise, the Association shall be responsible for the release of mechanics' liens filed with respect to Association Property, or any part thereof, is such liens arise from labor performed or material furnished at the instance of the Association, its directors, officers, agents, contractors or subcontractors. No labor performed or materials furnished with respect to Association Property at the instance of the Executive Board shall be the basis for filing a lien against any Lot.

ARTICLE VII
DECLARATION'S RESERVED RIGHTS

7.1 **Statement of Interest** Declarant hereby expressly reserves to itself and its successors and assigns the Development Rights set forth herein, any one or more of which rights may be exercised, in the sole and absolute discretion of Declarant, at any time and from time to time during the period commencing upon the recording of this Declaration or in any Supplemental Declaration and ending on the date of termination of such rights established under Section below. It is expressly understood that Declarant shall not be obligated to exercise any of these Development Rights, and that no consent be required from any Owner, Mortgagee, or the Association for the effective exercise of any of the Development Rights. Declarant reserves the right to create up to 72 single family residential lots in one or more phasing's of the subdivision.

The Developer Rights hereinafter set forth shall be prior and superior to any other provisions of this Declaration and may not be amended, modified, terminated or otherwise altered in any way without the express prior written consent of Declarant. All conveyances of Lots, whether by Declarant or otherwise, shall be deemed and construed to reserve to Declarant and/or to grant to Declarant all of the Development Rights reserved by and to Declarant in this Article VI and elsewhere in this Declaration or in any Supplemental Declaration, even though no specific reference to such rights appears in the conveying instruments.

7.2 **Construction of Improvements** The Declarant reserves the right, but not obligation, to construct additional Improvements on the Common Elements at any time and from time to time for the improvement and enhancement thereof for the benefit of the Association and Lot Owners. The right to complete Improvements indicated on the Plat or this Declaration or in any Supplemental Declaration may be amended from time to time. The right to construct and complete Improvements required by the terms of any development improvements agreement with applicable governmental entity may be amended from time to time. The Declarant shall have the right to create, grant and/or use and enjoy additional nonexclusive easements, and to relocate existing platted or other easements, upon or across

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any portion of the Property (including Lots and Common Elements), as may be reasonably required for the construction by Declarant of Improvements to the Common Elements or the effective exercise by Declarant of any of the other Development Rights described in this Article.

7.3 **Sales, Marketing and Management** The Declarant shall have the right to construct, locate or operate, and to maintain upon, and to remove from any part of the Property, in the discretion of Declarant, and in such number, size and location as may be reasonably required by Declarant in connection with the completion of Improvements, the management of the development, and/or the promotion, marketing, sale or rental of Lots, the following:

(a) Sales offices, management offices, and/or construction offices, and structures containing or relating to the same, including without limitation mobile homes, office trailers and construction trailers. Such offices, to the extent they are not situated on a Lot, are hereby declared to be personal property of the Declarant and shall in any case be successors or assigns ceasing to be a Lot Owner;

(b) Signs identifying, advertising the Common Interest Community and the Lots therein, or relating to development or construction thereon;

(c) Model residences constructed or to be constructed on Lots;

(d) Parking areas and facilities and lighting necessary or desirable in the marking of the Property and the Lots; and

(e) Employees, equipment, vehicles and marketing and construction materials.

7.4 **Declarant Control of Association** Declarant shall have the right to appoint or remove any Executive Board member or officer of the Association as more specifically set forth in Article 5.5 above consistent with the Act.

7.5 **Other Reserved Development Rights** Subject to compliance with the requirements of the applicable governmental authority, the Declarant may as to all or any portion of the Declarant Owner Property; (a) create additional Lots; (b) subdivide Lots; (c) combine Lots; (d) create Common Elements; ~~and~~ (e) reconfigure Lots, or streets; ~~,~~ and (f) annex Lots 1-9 Block 1 and Lots 1-10 Block 2 of the Energy Center Subdivision Phase 1 into the Association. Additionally, in order to effectively exercise the Development Rights reserved to Declarant under this Article VI, the Declarant may amend this Declaration or in any Supplemental Declaration and the Plat (without the consent of Owners, Mortgagees or the Association being required) for purposes of complying with or qualifying for any required federal or state registration of the project, satisfying title insurance requirements, bringing any provision or provisions of the Declaration or in any Supplemental Declaration or the Plat into compliance with the Act, or cure technical errors, typographical errors or deficiencies in the Declaration or Plat.

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7.6 **Transfer of Declarant's Reserved Rights** Any one or more rights created or reserved for the benefit of Declarant under this Article VII or elsewhere in this Declaration or in any Supplemental Declaration may be transferred to any Person by an instrument describing the rights or rights transferred and recorded in Mesa County records. Such instrument shall be executed by the Declarant and the transferee. The provisions of Section 38-33.3-304 of the Act shall apply to any transfer of special Declarant reserved rights.

7.7 **Termination of Declarant's Reserved Rights** With the exception of Declarant's right to appoint or remove Executive Board members and officers of the Association, the rights reserved by Declarant in this Article VII shall automatically terminate and expire upon the first to occur of the date which is thirty (30) years after the recording of this Declaration or in any Supplemental Declaration, or Declarant's relinquishment and surrender of such rights by recorded instrument. The Association is authorized and empowered to extend the time period for Declarant's exercise of the Development Rights, or reinstate a lapsed Development Right, without requiring Lot Owner or Mortgagee approval thereof. The extension or renewal of a Development right shall be made as an amendment to the Declaration or in any Supplemental Declaration or Plat, as the circumstances require, and shall be executed by Declarant and the Association.

7.8 **Owner Acceptance and Waiver of Rights Regarding Declarant's Reserved Rights** Each Owner, by his/her acceptance of a deed to a Lot, acknowledges that the Owner has carefully read and understands the Declarant's reserved Development Rights as set forth in this Article VII or elsewhere in this Declaration or in any Supplemental Declaration, that the Owner accepts, approves and understands the Declarant's reserved Development Rights and waives and releases any rights the Owner may have to object to or to interfere with the implementation or the exercise of the Development Rights reserved by the Declarant.

7.9 **Withdrawal Rights and Procedure** The right at any time and from time to time to withdraw from the Subdivision (and any additions thereto) any Declarant-owned Lot or Lots, or Association Property. Withdrawal may only be accomplished be the recording by Declarant of an amendment to this Declaration or any Supplemental Declaration affected by the withdrawal, and an amendment to the Plat or any Supplemental Plat affected by the withdrawal. Upon the recording of such amendments, the withdrawn Lots or Association Property shall no longer be part of the Subdivision or subject to this Declaration or any applicable Supplemental Declaration in any way.

Each Declarant-owned Lot, and each Declarant-owned Association Property, is hereby described and declared to be a separate portion of real estate that is subject to this right of withdrawal, and Declarant expressly reserves the right to withdraw one or more Declarant-owned Lots and/or portion of any Declarant-owned Association Property from the Subdivision. Once a Lot has been conveyed to a Lot Owner other than Declarant, that portion of the real estate is no longer subject to this right to withdrawal. Likewise, once an Association Property has been conveyed to the Association, that portion of the real estate is no longer subject to this right of withdrawal.

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7.10 **Subdivision of Blocks or Lots** Declarant shall have and hereby reserves the right to subdivide any Declarant-owned Block or Lot located within the Subdivision to create additional Lots, Association Property, and/or streets, subject to the maximum number of Lots set forth in the Recitals to this Declaration; provided, however, that such subdivision is consistent with the Declaration Plan for Pinnacle Ridge or that said Master Subdivision Plan is amended if necessary, and that the subdivision of any Block or Lot in compliance with City subdivision requirements. Upon the subdivision of any Block, or Lot in accordance with the terms and conditions contained herein, the Allocated Interest contained in this Master Declaration.

7.11 **Declarant as Attorney-In-Face For Owners** Each Owner, by its acceptance of a deed or other conveyance vesting in the Owner on interest Lot in the Subdivision, does hereby irrevocably constitute and appoint Declarant (with full power of substitution) as said Owner's attorney-in-fact, in said Owner's name, place and stead, to take any and all actions and to execute and deliver any and all instruments as may be necessary or appropriate to Declarant's exercise of the various rights reserved Declarant under this Article VII or elsewhere in this Declaration or in any Supplemental Declaration specifically including without limitation Declarant's reserved right to use all existing easements within the Subdivision or to create, grant, use and/or replat and relocate additional or existing easements across any portion of the Subdivision excepting platted Building Envelopes.

ARTICLE VIII
GENERAL PROVISIONS

8.1 **Duration of Master Declaration** The term of this Declaration shall be perpetual.

8.2 **Enforcement** The provisions of the Declaration or in any Supplemental Declaration may be enforced by the Association or any Owner against any Person, including any Owner or the Association, as a result of any failure to comply with the terms of the Declaration or in any Supplemental Declaration, the Bylaws or the Act to the fullest extent permitted under the Act including the recovery of costs and attorney's fees with or without commencing legal proceedings. The failure by the Association or by any Owner to enforce any covenant or restriction herein contained shall in no event be deemed an estoppels or waiver of the right to enforce this Declaration, or a waiver of any other or subsequent breach of any covenant, condition or restriction herein contained.

(a) Acceleration The Association may elect to accelerate and declare immediately due and payable the remaining balance of any assessment payable in installments for such fiscal year.

(b) Collection The Association may bring a suit at law to collect delinquent assessments, including any accelerated assessment. Any judgment rendered in such action shall include a sum for costs of suite, including a reasonable attorney's fees.

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(c) Lien All delinquent assessments shall be and constitute a lien upon the Owner's Lot in addition to being the personal obligation of the Owner. Such lien shall have the priority and shall be enforced in accordance with section 38-33.3-316 of the Act.

(d) Penalty Beginning with second month of delinquency, a five percent (5%) penalty will be added to all delinquent amounts each month until payments are current.

8.3 **Interpretation of Master Declaration and Supplemental Declaration; Conflicts with Act** The provisions of this Declaration and of all Supplemental Declaration shall be liberally construed to effectuate their purpose of creating a common and general plan for the development, improvement, enhancement, protection and enjoyment of the Common Interest Community, and to the extent possible, shall be construed so as to be consistent with the Act. In the event that any of the terms and conditions of this Declaration or of any Supplemental Declaration is determined to be inconsistent with the Act, the Act shall control. Notwithstanding anything to the contrary in this Declaration or in any Supplemental Declaration, no rights or powers reserved to Declarant hereunder or in any Supplemental Declaration shall exceed the time limitations upon or the permissible under the Act, and in the event any of such reserved rights or powers are determined to be inconsistent with the Act, the related provisions shall not be invalidated but shall be modified to the extent required to comply with the Act.

8.4 **Conflict With Plats** In the event of any conflict or inconsistency between the provisions of this Declaration or any Supplemental Declaration and the Plat, or any Supplemental Plat, including the Plat notes thereon, the provisions of said Plat or Supplemental Plat or Plat notes, as the case may be, shall govern and control and this Declaration or any Supplemental Declaration shall automatically be amended, but only to the extent necessary to conform the conflicting provisions hereof with the provisions of said Plat or Plat notes.

8.5 **Costs and Attorneys' Fees** In any action or proceeding involving the interpretation or enforcement or any provision of the Declaration or of any Supplemental Declaration, the prevailing party shall be entitled to recover its reasonable attorneys' fees and costs incurred in connection therewith.

8.6 **No City Liability** Notwithstanding any other provisions therein to the contrary, no obligation, duty or liability including a duty to pay money, interest, attorneys' fees or other costs, shall be assumed by, transferred to, or imposed on the City of Grand Junction pursuant to this Declaration, or by virtue of the City's ownership of any Tract within Pinnacle Ridge.

8.7 **Disclaimer Regarding Safety** Declarant and the Association hereby disclaim any obligation regarding the security of any persons or property within the Common Interest Community. Any owner of property within the Common Interest Community acknowledges that Declarant and the Association are only obligated to do those acts specifically enumerated herein, or in the Articles of

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Incorporation and Bylaws, and are not obligated to do any other acts with respect to the safety or protection of persons or property within the Common Interest Community.

8.8 **Amendment of Master Declaration and Plat** The Declaration and/or the Plat may be amended by Declarant at any time and for any purpose to the conveyance of the first Lot to an Owner. Subsequent to the conveyance of the first Lot to an Owner, the Declarant may amend the Declaration or the Plat: (i) to correct any clerical, typographical or technical errors, (ii) to comply with the requirements, standards or guidelines of recognized secondary markets, the Department of Housing and Urban Development, the Federal Housing Administration, the Veterans Administration, the Federal Home Loan Mortgage Corporation, the Government National Mortgage Association, or the Federal National Mortgage Association, (iii) to exercise any of the reserved Development Rights as set forth in Article above or (iv) to effect the Declarant's intent as expressed in the Declaration or the Plat. This Declaration may also be amended at any time and for any purpose and in such manner as is provided in the Act.

This Declaration and any Supplemental Declaration may be amended by the vote or agreement of Owners of Lots to which at least fifty-one percent (51%) of the votes in the Association are allocated, provided such amendment does not impair, restrict or modify any of the reserved Development Rights of the Declarant, or conflicts with any provision of the Act. Any amendment must be recorded. The Declaration, Supplemental Declaration and Plat may not be amended without the approval of the City of Grand Junction in regard to amendments that relate to the Common Elements

8.9 **Governing Law; Jurisdiction** This Declaration shall control and govern over any conflicting provision of the Act, except to the extent that such conflicting provision in the Act is mandatory according to the terms of Sections -105, -106, and -107 of the Act. This Declaration shall further control any conflicting term in the Articles, Bylaws or any rule or regulation promulgated by the Association or the Design Board.

8.10 **Resolution Procedures**

(a) Dispute Resolution All actions, disputes, claims or controversy between any Owner, the Design Review Board, the Association, the Declarant, and their respective agents, contractors, successors and assigns, whether in contract, tort or otherwise, shall be resolved by the procedures as set forth in this Section or as set forth in any limited warranty (if any), or any applicable agreement between Declarant and any Owner or his/her heirs, successors or assigns.

(b) Initial Notification; Negotiation For each claim governed by this section (a "Claim"), the claimant ("Claimant") shall give notice to the other party(ies) against whom the claim is asserted ("Respondent"), setting forth; the nature of the Claim; the basis or reason for the Claim; any other material information regarding the Claim; the specific relief and/or proposed remedy sought; and the intent to invoke this Section (the "Notice of Claim"). Claimant and Respondent shall use good faith

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efforts to resolve the Claim through negotiations following delivery of the notice, pending mediation pursuant to Section 7.2(c).

(c) Mediation The Claim shall first be mediated before a mediator jointly selected by the parties. Mediation is a process in which the parties meet with an impartial person who helps to resolve the dispute formally and confidentially. Mediators cannot impose binding decisions. The parties to the dispute must agree before any settlement is binding. The mediation shall occur within thirty (30) days following delivery of the Notice of Claim (the "Mediation Period"). Mediation shall be a condition precedent to arbitrating any dispute. In the event Claimant does not appear for mediation, Claimant shall be deemed to have irrevocably waived the Claim, and Respondent shall be released from any and all liability to Claimant on account of such Claim. The costs of the mediation shall be borne by Claimant and Respondent. In the event mediation is successful, the resolution shall be documented in writing and signed by the parties. Thereafter, if either party violates the resolution, the other party may apply immediately to a court for relief. The mediation, unless otherwise agreed, shall terminate in the event that the entire dispute is not resolved before the expiration of the Mediation Period. In the event the mediation is unsuccessful, then the Claimant may make written demand for arbitration pursuant to Section 7.2(d) within sixty (60) days following the expiration of the Mediation Period. If no written demand for arbitration is made within the specified time, Claimant shall irrevocably waiver the Claim and any and all right to proceed to arbitration regarding the Claim.

(d) Arbitration Following the Mediation Period and a written demand for arbitration, the Claim shall be resolved by binding arbitration administered by the American Arbitration Association (or any successor to such association) in accordance with the current American Arbitration Association Construction Industry Arbitration Rules in effect at the time of submission to arbitration, and as provided for in this subsection. In the event of any inconsistency between such rules and these arbitration provisions, these provisions shall supersede such rules. Should an action, dispute, claim or controversy be brought against Declarant and or any builder by a third party who is not bound by a binding arbitration provision similar to the arbitration provision contained herein, the terms of this subsection shall apply to such action, dispute, claim or controversy. The Arbitrator shall be selected from a panel of Arbitrators from Mesa County, Colorado (or if such panel is available, from Denver County, Colorado), with an Arbiter mutually acceptable to the parties. If the parties are unable to jointly agree upon the Arbiter, then each party shall select an arbiter and the two arbiters shall select a third person to serve as the sole Arbiter. The parties agree that the Arbiter shall have substantial experience in the real estate field. The parties shall share equally in the arbitrator's fees and the costs of the arbitration. All parties shall have the right to be represented by legal, counsel. In determining any question, matter, or dispute before them, the Arbiter shall apply the provisions of the Declaration or in any Supplemental Declaration, and Articles and Bylaws, without varying from them in any respect, and they shall not have the power to add to, modify or change any of the provisions hereof. Any arbitration award may be enforced through entry of judgment by any court having jurisdiction there over. Exclusive venue for any arbitration proceeding shall be in Mesa County, Colorado. Except

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as may be required by law or for enforcement, neither a party nor the arbiter may disclose the existence, content, or results of any arbitration without the prior written consent of all parties to the Claim.

The Arbiter's decision may contain findings of fact and conclusions of law to the extent applicable and the Arbiter shall have the authority to rule on all post-hearing motions in the same manner as a trial judge. The statement of decision of the Arbiter upon all of the issues considered by the arbitrator is conclusive, final and binding upon the parties. Judgment upon any award rendered by the Arbiter may be entered by any State or Federal Court, as appropriate.

(e) Standards of Construction If any claim regarding defects in construction is made, each claim shall be specified with particularity. Each location of any claimed defect must be identified and all evidence supporting each claim, along with all repair methodologies and costs of repair, must be provided by the claimant in advance of any mediation hereunder. In any arbitration or other proceedings, it shall be rebuttably presumed that any construction done by the builder or Declarant was not defective, that the builder or Declarant adequately performed its obligations under its contract, and that the builder or Declarant was not negligent if the builder or Declarant's performance was substantially in accordance with any of the following: (A) the standards of trade in the Grand Junction Area on the date hereof or (B) Any applicable building code in Grand Junction on the date hereof; or (C) any applicable national association of home builders residential construction guidelines. In any such proceedings, evidence of any scientific, engineering, or technical advancements or other knowledge or techniques, where such advancements were discovered subsequent to the date hereof, shall not be admissible for any purpose. If any of Claimant's claims relate, in any way, to any work completed by any of Declarant's or builder's subcontractors or any materials and/or equipment provided by any suppliers, Declarant or builder, as applicable, in its sole discretion, may join such subcontractors and/or suppliers to any arbitration proceeding with Claimant. The sole manner which may be used to establish breach of any obligations under this Declaration, any obligations which may exist by law or reason of any statute, any applicable industry standards, and/or Claimant's damages, including, but not limited to, appropriate repair costs, shall be through the testimony of a homebuilder with experience in Mesa County, Colorado. The Arbiter shall completely exclude the testimony of any tendered expert who does not meet the foregoing qualifications.

(f) Limitation of Remedies Each party hereby disclaims and waives any claims for the following remedies and damages for any matters related to any Claim, whether a Claim is made on the basis of contract, tort or any other theory or basis at law or in equity; (i) punitive or exemplary damages, (ii) claims for emotional distress or pain and suffering and/or (iii) claims for incidental and/or consequential damages (except as otherwise provided herein). Claimant further agrees that, subject to the other limitations contained herein, Respondent's total liability to Claimant shall be limited to, and in no event exceed, the amount of any insurance proceeds actually available with respect to any and all Claims, whether in contract, tort or otherwise.

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(g) Acknowledge of Waivers of Rights to Jury Trail Each party understands that by using binding arbitration to resolve disputes they are voluntarily waiving and giving up any right that they may have to a judge or jury trial with regard to all issues concerning the Lot, Home, Common Elements, the Property, Improvements, and matters related thereto.

8.11 **Severability** Invalidation of any one of these covenants or restrictions by judgment or court order shall not affect any other provisions which shall remain in full force and effect.

8.12 **Limitation on Association** Any action, resolution or attempted action of the Association in conflict with any term or provision of this Declaration shall be void and of no force and effect whatsoever.

ARTICLE IX
POWERS AND DUTIES OF HOME OWNERS ASSOCIATION

9.1 **General Powers & Duties of the Home Owners Association** The Association shall have and may exercise all of the powers and rights and duties of a Colorado corporation formed under the Colorado Revised Nonprofit Corporation Act, and all of the powers and duties provided for in the Act including those enumerated in Section 38-33.3-302 of the Act, as such laws may be amended from time to time, subject only to the limitations upon such powers as are contained in this Declaration. More specifically, and without limiting the generality of the foregoing, the Association shall have all of the powers and duties necessary (i) for the administration, management, governance and operation of the Common Interest Community and the Association, (ii) to own, operate, improve, maintain, repair, manage, lease, encumber, and otherwise deal with Association Property, (iii) to improve, maintain and repair the Limited Common Areas, and (iv) to do any and all lawful things that may be authorized, required or permitted to be done by the Association under the Act and/or under the provisions of this Declaration and of any Supplemental Declarations.

9.2 **Power to Grant Easements** The Association shall have the power to grant access, utility, drainage, irrigation, and such other easements upon, over, across or under Association Property as it deems necessary or desirable for the benefit of the Common Interest Community or parts thereof, or for the benefit of all or less than all of the Lot Owners, or for the benefit of lands situated outside the Common Interest Community.

9.3 **Power to Convey or Encumber Association Property** The Association shall have the power to convey, or subject to a security interest, portion of the Association Property if Owners entitled to cast at least sixty-seven percent (67%) of the votes in the Association, including sixty-seven percent (67%) of the votes allocated to Lots not owned by the Declarant, agree to that action, except that all Owner(s) of Lots to which any Limited Common Area is allocated must agree in order to convey that Limited Common Area or to subject it to a security interest. Proceeds of the sale are an asset of the Association.

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An agreement to convey, or subject to a security interest, Association Property must be evidenced by the execution of an agreement, in the same manner as a deed, by the Association. The agreement must specify a date after which the agreement will be void unless approve by the required percentage of Lot Owners. Any grant, conveyance or deed executed by the Association must be recorded in the County, and is effective only upon Recordation. The Association, on behalf of the Lot Owners, may contract to convey an interest in at Association Property, but the contract is not enforceable against the Association until approved, executed and ratified pursuant to this Section.

Thereafter, the Association shall have all the powers necessary and appropriate to affect the conveyance or encumbrance, including the power to execute deeds or other instruments. Unless in compliance with this Section, any purported conveyance, encumbrance, judicial sale, or other transfer of Association Property is void. A conveyance or encumbrance of Association Property pursuant to this Section shall not deprive any Lot of its rights of (i) access, ingress and egress to the Lot, and (ii) support of the Lot. A conveyance or encumbrance of Association Property pursuant to this Section shall not affect the priority or validity of pre-existing encumbrance.

9.4 **General Power to Provide Services and Facilities to Owners** The Association shall have the power, but not the obligation, to acquire, construct, operate, manage, maintain, repair and administer services and facilities for the benefit of the Owners, or some of them, including, without limitation, security, animal control, vegetation control, insect and pest control, television service, parking facilities, transportation facilities, snow removal, signage, (including entry monuments), lighting, (including seasonal lighting), interior and perimeter fencing, landscape walls, landscaping services and facilities, drainage facilities, including retention and detention pods, irrigation facilities, water features, trash and sold waste disposal services, including recycling programs, utility services, recreational facilities and services, maintenance, and such other service, functions and facilities as are deemed appropriate by the Executive Board. The foregoing list shall not be deemed to be a representation by Declarant of services or facilities that will in fact be available for use by the Owners. The Association may enter into such agreements and arrangements as it may deem appropriate with any provider of utilities or services to the Common Interest Community or any portion thereof, including any special district that provides such services, and may form or join any districts created to provide such services.

9.5 **Power to Provide Special Services to Owners** The Association shall have the power to provide services to an Owner or group of Owners. Any service or services to an Owner or group of Owners shall be provided pursuant to an agreement in writing, or through one (1) or more Supplemental Declarations, which shall provide for payment to the Association by such Owner or group of Owners of the costs and expenses of the Association in providing such services, including a fair share of the overhead expenses of the Association, and shall contain reasonable provisions assuring that the obligation to pay for such services shall be binding upon any heirs, personal representatives, successors and assigns of the Owner or group of Owners and that the payment for such service shall be secured by a lien on the Lot(s) of the Owner or group of Owners.

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9.6 **Power to Charge for Special Association Property Uses and Special Association Services** The Association shall have to power to establish reasonable admission or other fees or charges for any special or extraordinary Association Property uses or Association services such as special parking privileges, special recreation facilities, conference rooms, instruction, or similar uses beyond the ordinary use of Association Property and ordinary Association services. Such charges or fees shall be set forth-in schedules of charges and fees adopted from time to time by the Executive Board.

9.7 **Power to Adopt Master Rules and Regulations** The Association may adopt, amend, repeal, and enforce such reasonable Master Rules and Regulations as the Executive Board may consider necessary, desirable or appropriate from time to time with respect to the interpretation and implementation of this Declaration, the operation of the Association, the use and enjoyment of Association Property (including Limited Common Areas), and the use of any other property within the Common Interest Community, including Lots. Any such Master Rules and Regulations shall be effective only upon adoption by resolution at an open meeting of the Executive Board. Notice of the adoption, amendment, or repeal of any Master Rule or Regulation shall be given in writing to each Owner, and copies of the currently effective Master Rules and Regulations shall be made available to each Owner and Occupant upon request and payment of the reasonable expense of copying the same. Each Owner and Occupant (and all other Persons who are authorized users of Association Property) shall comply with such Master Rules and Regulations, and each Owner shall see that Occupant claiming through such Owner comply with such Master Rules and Regulations. Such Master Rules and Regulations shall have the same force and affect as if they were set forth in and were part of this Declaration. In the event of conflict between the Master Rules and Regulations and the provisions of this Declaration, the provisions of this Master Declaration shall govern. Such Master Rules and Regulations may establish reasonable and uniformly applied penalties (including the levying and collection of fines) for the violation of such Master Rules and Regulations or of any provisions of this Declaration, the Articles, or the Bylaws.

9.8 **Power to Contract with Employees, Agents, Contractors, Districts, Consultants and Managers** The Association shall have the power to contract with, and/or to employ and discharge employees, agents, independent contractors and consultants, including lawyers and accountants, and special districts, to perform any of the responsibilities of the Association under this Declaration, including without limitation maintenance responsibilities. The Association shall also have the power to retain and pay for the services of a manager or managers, which may be an affiliate of Declarant, to undertake any of the administrative or managerial responsibilities for which the Association may have responsibility under this Declaration, to the extent deemed advisable by the Association, and may delegate any of its duties, powers, or functions to any such manager. Notwithstanding and delegation to a manager of any duties, powers, or functions of the Association, the Association and its Executive Board shall remain ultimately responsible for the performance and exercise of such duties, powers, and functions.

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9.9 **Power to Assign Future Income** The Association shall have the power to assign its right to future income, including the right to receive Regular Assessments, but only following the affirmative vote of the Owners Lots to which at least fifty-one percent (51%) of the votes in the Home Owners Association are allocated, at a dully-called meeting of the Members of the Association.

9.10 **Duty to Accept Property and Facilities Transferred by Declarant** The Association shall accept title to any real property, or interests in real property, including any Improvements and personal property thereon, and including water rights and related facilities, transferred to the Association by Declarant, or Declarant's successors or assigns. Property interests transferred to the Association by Declarant or its successors or assigns may include fee simple title, undivided interests, easements, leasehold interest and licenses to use. Except as may otherwise be approved by the Executive Board, any property or interest in property transferred to the Association by Declarant to its successors or assigns shall be within the boundaries of the Common Interest Community. Provided, however, the Declarant shall be entitled to transfer and convey the beneficial use of an easement, subject to any obligations there under, located outside of the Common Interest Community but which benefits the Association and the Owners.

Any property or interest in property transferred to the Association by Declarant shall, except to the extent otherwise specifically approved by resolution of the Executive Board, be transferred to the Association free and clear of all monetary obligations, liens and encumbrances (other than the lien of property taxes and assessments not then due and payable), but shall be subject to the terms of this Declaration, and easements, covenants, conditions, restrictions, and equitable servitudes or other encumbrances of record or otherwise in existence. Except as otherwise specifically approved by resolution of the Executive Board, no property or interest in property transferred to the Association by Declarant shall impose upon the Association any obligation to make monetary payments to Declarant or any affiliate of Declarant, including but not limited to, any purchase price, rent, charge, or fee.

Any Improvements or personal property transferred to the Association by Declarant shall be in good working order, ordinary wear and tear excepted, and at the time of transfer Declarant shall make any repairs reasonably required to bring the transferred property into good working order. Subject only to the foregoing, the Association shall accept all properties transferred to it by Declarant in their "Where is, As is" condition, without recourse of any kind, and Declarant disclaims and shall not be deemed to make or have made any representations or warranties, express or implied, by fact or law, with respect to the transferred properties or any aspect or element thereof, including without limitation warranties of merchantability, fitness for a particular purpose, or workman like construction.

9.11 **Duty to Mange and Care for Association Property** The Association shall manage, care for, operate, maintain, repair and replace all Association Property and keep the same in a functional, clean and attractive condition for the benefit and enjoyment of the Owners.

9.12 **Duty to Provide Winter Snow Removal for a portion of Elysium Drive** The Association shall be responsible for snow removal along the north facing slope on Elysium Drive generally located

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between lots 54 and 55. The Association shall maintain signage along this portion of Elysium Drive stating that the Association is responsible for snow removal and not the City of Grand Junction.

9.13 **Duty to Pay Taxes** The Association shall pay any taxes and assessments levied upon Association Property (excepting Limited Common Area) and any other taxes and assessments payable by the Association before they become delinquent. The Association shall have the right to contest any such taxes or assessments by appropriate legal proceedings provided no sale or foreclosure of any lien for such tax or assessment occurs and provided further that the Association shall keep and hold sufficient funds to pay and discharge the taxes and assessments, together with any other interest and penalties which may accrue with respect thereto, if the contest of such taxes in unsuccessful.

9.14 **Duty to Keep Association Records** The Association shall keep financial records in sufficient detail to enable the Association to carry out its responsibilities under this Declaration and to comply with the requirements of the Act, including, but not limited to, current records of paid and unpaid Assessments for each Lot. All financial and other records of the Association shall be made reasonably available for examination by the Owners and the authorized agents of the Owners.

9.15 **Duty to Support the Design Review Committee** The Association shall take such actions, provide such funds, and do such other things as may be necessary or appropriate from time to time to support and assist the Design Review Committee in the performance of its responsibilities under this Declaration, and shall cooperate with said Committee to the fullest extent possible in such matters.

9.16 **Insurance** Commencing not later than the time of the first conveyance of a Lot to a Person other than Declarant, the Home Owners Association shall maintain and keep in effect at all times the following types of insurance, and the cost of said coverage shall be paid by the Association as a Common Expense:

(a) *Casualty Insurance*. To the extent reasonably available, property insurance on all Association Property, including but limited to Improvements and personality, owned or lease by the Association, and on all property that must become Association Property. Such insurance shall be for broad form covered causes of loss, including casualty, fire, and extended insurance including, if available at reasonable cost, coverage for vandalism and malicious mischief and, if available and if deemed appropriate, coverage for flood, earthquake, and war risk. Such insurance shall, to the extent reasonably, obtainable, be for the full insurable replacement cost of the insured property, less applicable deductibles at the time the insurance is purchased and at each renewal date, exclusive of land, excavation, foundations and other items normally excluded from property policies.

(b) *Liability Insurance*. Comprehensive general liability insurance against claims and liabilities arising in connection with the ownership, existence, use, maintenance or management of the Association Property (including the Limited Common Areas), and covering public liability or clams of liability for injury to persons and/or property, and death of any person or persons, and, if the Association owns or operates motor vehicles, public liability or claims of liability for bodily injury

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(including death) and property damage arising as a result of the ownership and operation of motor vehicles. Such liability insurance shall be in such amounts as deemed advisable by the Executive Committee and shall (a) insure the Executive Board, the Design Review Committee, the Association and its officers, the manager, if any, and their respective employees, agents and all Persons acting as agents; (b) include the Declarant as an additional insured as its interest may appear; (c) include the Owners as insured's, but only for claims and liabilities arising in connection with the ownership, existence, use, maintenance or management of Association Property; (d) cover claims of one or more insured parties against other insured parties; (e) be written on an occurrence basis; and (f) shall name as additional insured's such other parties as may be required by specific agreements.

(c) *Contractual Liability Insurance*. To the extent reasonably available, contractual liability insurance covering such contractual obligations and liabilities, indemnifications, hold harmless agreements, and agreements to defend, and the Association may have or be party to from time to time, with coverage in amounts determined by the Executive Committee.

(d) *Fidelity Bonds.* To the extent reasonably available, fidelity bond coverage against dishonest act on the part of directors, officers, managers, trustees, agents, employees or volunteers responsible for handling funds belonging to or administered by the Association. If funds of the Home Owners Association are handled by a management agent, then fidelity bond coverage may also be obtained for the officers, employees, or agents thereof handling or responsible for Association funds. The fidelity bond or insurance must name the Association as the named insured and shall be written to provide protection in an amount no less than the lesser of (a) fifty thousand dollars, (b) a sum equal to two (2) months aggregate Regular Assessments, plus reserves, as calculated from the current Budget of the Association; or (c) the estimated maximum amount of funds, including reserves, in the custody of the Association (and its management agent) at any one time. In connection with such coverage, an appropriate endorsement to the policy to cover any person who serves without compensation shall be added if the policy would not otherwise cover volunteers.

(e) *Worker's Compensation*. A Worker's Compensation policy, if necessary, to meet the requirements of law.

(f) *Directors and Officers Liability Insurance*. Directors and officers liability insurance with coverage as the Executive Board shall approve for all Association, Executive Board and Design Review Committee directors, officers, members and managers, for any and all errors and/or omissions and other covered actions that occur during their tenure in office or employment. This insurance coverage shall be mandatory.

(g) *Other Insurance*. Such other insurance in such amounts as the Executive Board shall determine, from time to time, to be appropriate to protect the Association or the Lot Owners, or as may be required by the Act.

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(h) *General Provisions Respecting Insurance*. Insurance obtained by the Association may contain such deductible provisions as good business practice may dictate. If the insurance described is not reasonably available, or if any policy of such insurance is canceled or not renewed without a replacement policy therefore having been obtained by it, the Association shall promptly cause notice of that fact to be delivered or sent prepaid by U.S. Mail to all Owners.

Insurance policies carried pursuant to Sections 9.16(a) and 9.16(b) above shall provide that each Owner is an insured Person under the policy with respect to liability arising out of such Owner's interest in the Association Property or membership in the Association; the insurer waives its rights of subrogation under the policy against the Association, each Owner, and any Person claiming by, through, or under such Owner or any other director, agent, or employee of the foregoing; no act or omission by any Owner, unless acting within the scope of such Owner's authority on behalf of the Association, will void the policy or be a condition to recovery under the policy; if at the time of a loss under the policy, there is other insurance in the name of an Owner covering the same risk covered by the policy, the Association's policy shall be the primary insurance. An insurer that has issued an insurance policy for the insurance described above shall issue certificates or memoranda of insurance to the Association and, upon request, to any Lot Owner or holder of a security interest. Unless otherwise provided by statute, the insurer issuing the policy may not cancel or refuse to renew it until thirty (30) days after the notice of the proposed cancellation or nonrenewal has been mailed to the Association, and each Lot Owner and holder of a security interest to whom a certificate or memorandum of insurance has been issued, at their respective last-known addresses.

Any loss covered by the property insurance policy described above must be adjusted with the Association, but the insurance proceeds for that loss shall be payable to any insurance trustee designated for that purpose, or otherwise to the Association, and not to any holder of security interest. The insurance trustee or the Association shall hold any insurance proceeds in trust for the Association Lot Owners and lien holders as their interests may appear. Subject to the provisions of Section 38.33.3-313(9) of the Act, the proceeds must be disbursed first for the repair or restoration of the damage property, and the Association, Lot Owners, and lien holders are not entitled to receive payment of any portion of the proceeds unless there is a surplus of proceeds after the property has been completely repaired or restored or the Common Interest Community is terminated.

The Association may adopt and establish written nondiscriminatory policies and procedures relating to the submittal of claims, responsibility for deductibles, and any other matters of claims adjustment. To the extent of the Association settles claims for damages to real property, it shall have the authority to assess negligent Owners causing such loss or benefiting from such repair or restoration for all deductibles paid by the Association. In the event more than on Lot is damaged by loss, the Association in its reasonable discretion may assess each Lot Owner a pro rata share of any deductible paid by the Association. Insurance obtained by the Association shall, to the extent reasonably possible, and provided Declarant reimburses the Association for any additional premium payable on account

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thereof, name Declarant as an additional insured and shall contain a waiver or rights of subrogation as against Declarant.

Insurance policies and insurance coverage shall be reviewed at least annually by the Executive Board to ascertain whether coverage under the policies is sufficient in light of the current values of the Association Property and in light of the possible or potential liabilities of the Association and other insured parties. The aforementioned insurance may be provided under blanket policies covering the Association Property and property of Declarant.

In no event shall insurance coverage obtained or maintained by the Association obviate the need for Owners and Occupants to obtain insurance for their own benefit.

Furthermore, to the extent reasonable available, insurance policies obtained by the Association shall contain the following provisions:

(a) The coverage afforded by such policies shall not be brought into contribution or proration with any insurance which may be purchased by a Lot Owner, Occupant or Mortgagee.

(b) The conduct of any one or more Lot Owners or Occupants shall not constitute grounds for avoiding liability on any such policies.

(c) Each policy must contain a waiver of any defenses based on co-insurance or on invalidity arising from the acts of the insured.

(d) A "severability if interest" endorsement shall be obtained which shall prelude the insurer from denying the claim of a Lot Owner or Occupant because of the conduct or negligent acts of the Association and its agents or other Lot Owners or Occupants.

(e) Any "no other insurance" clause shall exclude insurance purchased by Lot Owners, Occupants or Mortgagees.

(f) Coverage must not be prejudice by any act or neglect of Lot Owners or Occupants when such act or neglect is not within the control of the Association, or any failure of the Association to comply with any warranty or condition regarding any portion of the Common Interest Community over which the Association had no control.

(g) Coverage may not be canceled or substantially modified without at least thirty (30) days (or such lesser period as the Association may reasonably deem appropriate) prior written notice to the Association.

(h) Any policy of property insurance which give the carrier the right to elect to restore damage in lieu of a cash settlement must provide that such election is not exercisable without

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the prior written approval of the Association, or when in conflict with the insurance trust provisions contained herein, or any requirement of law.

(i) A recognition of any insurance trust agreement entered into by the Association.

(j) Each hazard insurance policy shall be written by a hazard insurance carrier, which has a financial rating as designated in *Best's Key Rating Guide* of Class VI or better, or if such rating service be discontinued, an equivalent rating by a successor thereto or a similar such rating service. Each insurance carrier must be specifically licensed or authorized by law to transact business within the State of Colorado.

(k) *Nonliability of Association or Executive Board.* Notwithstanding the duty of the Association to obtain insurance coverage, as stated herein, neither the Association nor Executive Board member, nor the Declarant, shall be liable to any Lot Owner, Occupant, Mortgagee or other Person, if any risks or hazards are not covered by insurance, or if the appropriate insurance is not obtained because such insurance coverage is not reasonably obtainable on the Association's behalf, or if the amount of insurance is not adequate, and it shall be the responsibility of each Lot Owner and Occupant to ascertain the coverage and protection afforded by the Association's insurance and to procure and pay for such additional insurance coverage and protection as the Lot Owner or Occupant may desire.

(j) *Master Premiums*. Premiums for insurance policies purchased by the Association and other expenses connected with acquiring such insurance shall be paid by the Association as a Common Expense, except that (i) liability insurance on Limited Common Areas shall be separately bid and the cost thereof shall only be included in the Regular Assessments of the Lots entitled to use such Limited Common Areas, and (ii) the amount of increase over any annual or other premium occasioned by the use, misuse, occupancy or abandonment of a Lot or its appurtenances, or Association Property, by a Lot Owner or Occupant, may at the Executive Board's election, be assessed against that particular Lot Owner and its Lot as a Reimbursement Assessment.

(l) *Insurance Claims*. The Association is hereby irrevocably appointed and authorized, subject to the provisions contained herein, to adjust all claims arising under insurance policies purchased by the Association and to executive and deliver releases upon the payment of claims, and to do all other acts reasonable necessary to accomplish any of the foregoing. The Executive Board has full and complete power to act for the Association in this regard, and may, in its discretion, appoint an authorized representative, or enter into an insurance trust agreement, wherein the trustee shall have the authority to negotiate losses under any policy purchased by the Association.

(m) *Benefit***.** Except as otherwise provided herein, all insurance policies purchased by the Association shall be for the benefit of, and any proceeds of insurance received by the Association or any insurance trustee shall be held or disposed of in trust for the Association, the Lot Owners, or the Occupants, as their interest may appear.

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(n) *Other Insurance to be Carried by Lot Owners*. Insurance coverage on the furnishings and other personal property owned by a Lot Owner or Occupant, public liability insurance coverage upon each Lot, and casualty insurance coverage on the Improvements constructed on Lots, shall be the responsibility of the Owner or Occupant of the Lot. No Lot Owner or Occupant shall maintain any insurance, whether on its Lot or otherwise, which would limit or reduce the insurance proceeds payable under casualty insurance maintained by the Association in the event damage to the Improvements or fixtures on Association Property.

9.17 **Damage to Common Interest Community** Any portion of the Common Interest Community for which insurance is required under Section 39-33.3-313 of the Act (except any portion on which insurance is carried by a Sub association) which is damaged or destroyed must be repaired or replaced promptly by the Association unless; repair or replacement is the responsibility of a Sub association under a Supplemental Declaration, the Common Interest Community is terminated; repair or replacement would be illegal under any state or local statue or ordinance governing health or safety; seventy-six percent (76%) of the Lot Owners, including owners of every Lot that will not be rebuilt, vote not to rebuild; or prior to the conveyance of any Lot to a person other than Declarant, a Mortgagee on the damaged portion of the Common Interest Community rightfully demands all or substantial part of the insurance proceeds.

The cost of repair or replacement in excess of insurance proceeds and reserves is a Common Expense. If the entire Common Interest Community is not repaired or replaced, the insurance proceeds attributable to the damaged Association Property must be used to restore the damaged area to a condition compatible with the remainder of the Common Interest Community, and, except to the extent that other Persons will be distributes, the insurance proceeds attributable to Lots that are not rebuilt must be distributed to the Owners of those Lots, or to lien holders, as their interests may appear, and the remainder of the proceeds must be distributed to all Lot Owners or lien holders as their interest may appear in proportion to the Common Expense liabilities of all the Lots.

In the event of damage to or destruction of all or a portion of the Association Property due to fire or other adversity or disaster, the insurance proceeds, if sufficient to reconstruct or repair the damage, shall be applied by the Association to such reconstruction and repair. If the insurance proceeds with respect to such Association Property damage or destruction area insufficient to repair and reconstruct the damage or destruction, the Association may levy a Special Assessment in the aggregate amount of such deficiency, or if any Owner group of Owners responsible therefore, and shall proceed to make such repairs or reconstruction. Such Assessment shall be due and payable as provided by resolution of the Executive Board, but no sooner than sixty (60) days after written notice thereof. The Assessment provided for herein shall be a debt of each Lot Owner assessed and a lien on his Lot, and may be enforced and collected in the same manner as any Assessment Lien provided for in this Declaration. In the entire damaged Association Property is not repaired or replaced, the insurance proceeds attributable to the damaged Association Property must be used to restore the damaged area to a condition compatible with the remainder of the Common Interest Community. No distributions of

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insurance proceeds shall be made unless made jointly payable to the Lot Owner and first Mortgagees of their respective Lots.

9.18 **Limited Liability** Neither the Association nor its past, present or future officers or directors, nor any other employee, agent or committee member or the Association shall be liable to any Owners or Occupant or to any other Person for actions taken or omissions made in the course of Association business except for wanton and willful acts or omissions. Without limiting the generality of the foregoing, the Association, the Executive Board and the Design Review Committee shall not be liable to any Owner or Occupant or other Person for any action or for any failure to act with respect to any matter related to Association business where the action taken or failure to act, was in good faith and without malice. Acts taken upon the advice of legal counsel, certified public accountants, registered or licensed engineers, architects or surveyors shall conclusively be deemed to be in good faith without malice. To the extent insurance carried by the Association for such purposes shall not be adequate, the Owners severally agree to indemnify and to defend the Association, the Executive Board and the Design Review Committee against claims, damages or other liabilities resulting from such good faith action or failure to act in relation to Association business.

ARTICLE X
ASSESSMENTS

10.1 **Owner's Obligation** By accepting a deed to any Lot, each Owner agrees to pay to the Association all the assessments, to be fixed and levied from time to time as provided in the Declaration, the Articles and Bylaws. Such assessments, together with interest accruing thereon and the costs of collection in the event of delinquency of payment, shall be the personal obligation of the person who is the Owner, or the Persons who are jointly and severally the Owner, at the time the assessment was made.

10.2 **Regular Assessments**

(a) At least thirty (30) days prior to the commencement of each fiscal year, the Executive Board shall estimate the cost and expenses to be incurred by the Association during such fiscal year in performing its functions, and shall subtract from such estimate an amount equal to the anticipated balance (exclusive of any reserves) in the operating fund at the state of such fiscal year which is attributable to the operation and maintenance assessments for the prior fiscal year. The annual assessments made or common expense shall be based upon the advance estimate of the cash requirements by the Association to provide for the payment of all common expenses growing out of or connected with the maintenance and operation of the Common Elements, or the other duties and obligations of the Association as provided in the Declaration, Articles or Bylaws, which sums may include, among other things, expenses of management, taxes and special assessments, premiums for all insurance which the Association is required or permitted to maintain, care of grounds, landscape improvements, common lighting and heating, repairs and renovations, legal and accounting fees, management fees, expenses and liabilities incurred by the Association under or by reasons of this

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Declaration, the Articles of Incorporation and the Bylaws of the Association, any deficit remaining from a previous assessment, the creation of a reasonable contingency or other reserve or surplus fund and any other expenses and liabilities which may be incurred by the Association for the benefit of the Owners. Subject to Section 10.2(b) hereof, the sum or net estimate so determined shall be allocated to the Owners by dividing the total estimate by the total number of single family residential Lots and assessing the resulting amount to the Owner of each Lot equally. Assessment shall be paid in one (1) or more installments and be due on such date(s) as the Association shall determine.

(b) Within ninety days after adoption of any proposed budget for the Association, the executive board shall mail, by ordinary first-class mail, or otherwise deliver a summary of the budget to all the unit owners and shall set a date for a meeting of the unit owners to consider the budget not less than fourteen (14) days nor more than sixty (60) days after the mailing or other delivery of the summary. Such meeting shall occur within a reasonable time after mailing or other delivery of the summary, or as allowed for in the bylaws. The executive board shall give notice to the unit owners of the meeting as allowed for in the bylaws. The budget proposed by the executive board does not require approval from the unit owners and it will be deemed approved by the unit owners in the absence of a veto at the noticed meeting by a majority of all unit owners. If the proposed budget is vetoed, the periodic budget last proposed by the executive board and not vetoed by the unit owners must be continued until a subsequent budget proposed by the executive board is not vetoed by the unit owners.

10.3 **Special Assessments** If at any time during the fiscal year the regular assessment proves inadequate for any reason, including nonpayment of any Owner's share thereof, the Board may levy a special assessment in the amount of such actual or estimated inadequacy. The special assessment shall be assessed to the Owners by dividing the total estimate by the total number of residential Lots and assessing the resulting amount equally to the Owner of each Lot, such assessment to be paid either in equal monthly installments over the balance of the remaining fiscal year, or in a lump sum upon billing as the Board shall determine.

10.4 **Reimbursement Assessments** The Association may levy an assessment against any Owner or Owners as a result of such Owner's failure to landscape such Owner's Lot, or failure to repair, maintain or restore the Improvements and Buildings situated on such Owner's Lot including landscape or fence Improvements installed by the Declarant or as is otherwise authorized by this Declaration. Such assessment shall be for the purpose of reimbursing the Association for its actual costs and expenses paid or incurred for such purposes and shall be due and payable to the Association when levied, or at such time or times as the Association shall determine.

10.5 **Reserve Fund** The Association may establish a reserve fund for the maintenance, repair and replacement of the Common Elements. The amount of such fund shall be determined by the Association and shall be funded through annual payments of the common assessments and shall be held by the Association in a separate account, which may be an interest-bearing account, to be held in trust for the Owners for such purposes.

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10.6 **Capital Improvements** In addition to regular and special assessments, the Association may levy, in any assessment year, a special assessment for the purposes of defraying in whole or in part the cost of any capital improvement upon the Common Elements, including fixtures, landscape improvements, personal property related thereto or the Irrigation Facilities, provided that such assessment shall have the affirmative vote of a majority of the Members of the Association approving the assessment.

10.8 **Out-of-State Owners Who Are Not Occupants** If an Owner does not occupy the residence and maintains his or her principal residence outside of the State of Colorado, the Board may at its discretion require a guarantee of payment of the assessments by (a) posting a surety bond with the Association indemnifying the Association against the default of such Owner in the payment of assessment the amount of two times the amount of the regular assessment for the preceding fiscal year, or (b) payment of the regular assessment pursuant in advance by the 10th days of the first month of the fiscal year.

ARTICLE XI
EMINENT DOMAIN

11.1 **Definition of Taking** The term "taking" shall mean condemnation by eminent domain or sale under threat of condemnation.

11.2 **Representation in Condemnation Proceeding of Association Property** In the event of a threatened taking of all or any portion of the Association Property, the Lot Owners hereby appoint the Association through such persons as the Executive Board may designate to represent the Association and all of the Lot Owners in connection therewith. The Association shall act in its sole discretion with respect to any awards being made in connection with the taking and shall be entitled to make voluntary sale to the condemner in lieu of engaging in a condemnation action. Service of process on the Association shall constitute sufficient notice to all Lot Owners, and service of process on each individual Lot Owner shall not be necessary.

11.3 **Award for Association Property** Any awards received by the Association on account of taking of Association Property shall be paid to the Association. The Association may, in its sole discretion, retain any award in the general funds of the Association or distribute all or any portion thereof to the Lot Owners as their interest may appear. The Rights of a Lot Owner and the Mortgagee of a Lot as to any such distribution shall be governed by the provisions of the Mortgage encumbering the Lot.

11.4 **Taking Of Lots** If a Lot is acquired by eminent domain or part of a Lot is acquired by eminent domain leaving the Lot Owner with a remnant which may not practically or lawfully be used for any purpose permitted by this Declaration, the award must include compensation to the Lot Owner for that Lot and its Allocated Interests whether or not any Association Property was acquired. Upon acquisition, unless the decree otherwise provides, that Lots in proportion to the respective Allocated

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Interests of those Lots before the taking. Any remnant of a Lot remaining after part of the Lot is taken is thereafter Association Property. Otherwise, if part of a Lot is acquired by eminent domain, the award must compensate the Lot Owner for the reduction in value of the Lot and its interest in the Association Property whether or not any Association Property was acquired. Upon acquisition, unless the decree otherwise provides:

(a) That Lot's Allocated Interests are reduce in proportion to the reduction in the size of the Lot; and

(b) The portion of Allocated Interests divested from the partially acquired Lot is automatically reallocated to that Lot and to the remaining Lots (as appropriate) in proportion to the respective interest of those Lots before taking, with the partially acquired Lot participating in the reallocation on the basis of its reduced Allocated Interests.

11.5 **Governing Clause** This Declaration shall control and govern over any conflicting provision of the Act, except to the extent that such conflicting provisions in the Act is mandatory according to the terms of Sections -105, -106, -106.5 and -107 of the Act. This Declaration shall further control any conflicting term in the Articles, Bylaws or any rule or regulation promulgated by the Association or the Design Review Board.

IN WITNESS WHEREOF, Declarant sets its hand and seal the _____ day of _____, 2017.

Two R&D, LLC

By: _____

Title: _____

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STATE OF COLORADO)
) ss.
COUNTY OF MESA)

The foregoing Declaration was acknowledged before me this _____ day of _____,

2017 by _____the_____

of Two R&D, LLC a Colorado limited liability company.

Witness my hand and official seal.

_____
Notary Public

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Final Plan of Subdivision

Pinnacle Ridge Subdivision

Filing 1

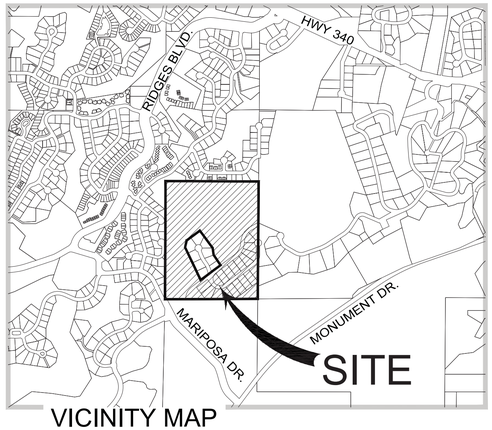
Grand Junction, Colorado

LEGEND

- EXISTING CONTOUR (4560)
- PROPERTY BOUNDARY
- OLD PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE (W)
- EXISTING WATER LINE (W)
- PROPOSED IRRIGATION (IRR)
- EXISTING FENCE (X)
- PROPOSED DRY UTILITIES (BY OTHERS) (EGTC)
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- LOT CORNER SPOT ELEVATION (4550.00)
- PROPOSED SWALE/BERM ELEVATION. (G 4550.00)
- PROPOSED FL CURB/V-PAN (FL 4550.00)
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER METER
- PROPOSED IRRIGATION RISER (I)
- PROPOSED IRRIGATION VALVE (V)
- PROPOSED IRRIGATION CLEANOUT (CO)
- EXISTING CONTOUR LABEL (4550.00)
- PROPOSED CONTOUR LABEL (4550.00)

UTILITY PROVIDERS INFORMATION

UTILITY	PROVIDER	PHONE NUMBER
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626



VICINITY MAP

ABBREVIATION LEGEND

&	AND	MCSM	MESA COUNTY SURVEY MONUMENT
℄	CENTERLINE	MFG'S	MANUFACTURER'S
Ø	DIAMETER	M.P.E.	MULTI-PURPOSE EASEMENT
'	FEET	MPH	MILES PER HOUR
"	INCHES	NE COR	NORTHEAST CORNER
±	PLUS OR MINUS	N&S&E	NORTH AND SOUTH AND EAST
APPROX.	APPROXIMATELY	NO.	NUMBER
BRL	BUILDING RESTRICTION LINE	N.T.S.	NOT TO SCALE
BVCS	BEGIN VERTICAL CURVE STATION	PROP.	PROPOSED
BVCE	BEGIN VERTICAL CURVE ELEVATION	PRV	PRESSURE REDUCING VALVE
CB	CATCH BASIN	PSI	POUNDS PER SQUARE INCH
CL. III	CLASS 3	PVC	POLYVINYL CHLORIDE
CMP	CORRUGATED METAL PIPE	PVI	POINT OF VERTICAL INTERSECTION
CR	CURB RETURN	PVMT	PAVEMENT
CT.	COURT	O.C. E.W.	ON CENTER EACH WAY
DR.	DRIVE	RCP	REINFORCED CONCRETE PIPE
EL.	ELEVATION	RD	ROAD
ELEV	ELEVATION	RET. WALL	RETAINING WALL
EX.	EXISTING	R.O.W.	RIGHT-OF-WAY
EXIST.	EXISTING	RT	RIGHT
EVCS	END VERTICAL CURVE STATION	SCH	SCHEDULE
EVCE	END VERTICAL CURVE ELEVATION	SD	STORM DRAIN
FL	FLOWLINE	SEC	SECTION
FH	FIRE HYDRANT	SF	SQUARE FEET
FT	FEET	SQ. FT.	SQUARE FEET
GPM	GALLONS PER MINUTE	SS	SANITARY SEWER
GV	GAS VALVE	ST.	STREET
G.V.A.L.C.S.	GRAND VALLEY ALIQUOT LOCAL COORDINATE SYSTEM	STA	STATION
		THRU	THROUGH
HGL	HYDRAULIC GRADE LINE	TYP.	TYPICAL
HI PT	HIGH POINT	TW	TOP OF WALL
HP	HORSE POWER	U.W.C.D.	UTE WATER CONSERVANCY DISTRICT
INV	INVERT	VC	VERTICAL CURVE
LT	LEFT	VCP	VITRIFIED CLAY PIPE
MAX	MAXIMUM	W/	WITH
MIN	MINIMUM	WM	WATER METER
MH	MANHOLE	WV	WATER VALVE

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

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SHEET NUMBER	SHEET TITLE
C0.0	COVER
C0.1	PROJECT NOTES
C0.2	OVERALL SITE PLAN AND FILING PLAN
C1.0	COMPOSITE SITE PLAN - LAYOUT AND GEOMETRY PLAN
C1.1	COMPOSITE SITE PLAN - SIGNAGE & LIGHTING PLAN
C2.0 - C2.2	COMPOSITE SITE PLAN - GRADING PLAN, ROAD CROSS SECTIONS
C3.0	COMPOSITE SITE PLAN - OVERALL UTILITY AND WATER PLAN
C4.0	ROAD AND SEWER PLAN AND PROFILE - AIGUILLE DRIVE
C4.1	ROAD AND SEWER PLAN AND PROFILE - SPIRE CT. & TALUS CT.
C5.0 - C5.2	STORM SEWER PLAN & PROFILE
C6.0 - 6.2	CONSTRUCTION STORM WATER MANAGEMENT PLAN

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21. TOWNSHIP 1 SOUTH. RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM. LOTS 1 – 9. BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK 8 AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = R-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'/25'
   REAR = 30'/5'
   SIDE = 15'/3'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS • LAND SURVEYORS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 11-20-17 PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
2	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	JSY

Cover
Pinnacle Ridge Subdivision Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE:
CAD ID: **0.0cover-f1.dwg**

~SHEET~
C0.0

LOCAL CONTACT INFORMATION
GRAND JUNCTION DEVELOPMENT INSPECTOR: MARK BARSLUND 970-201-1362

GENERAL NOTES:

1. THESE GENERAL NOTES SHALL BE APPLICABLE TO ALL SHEETS WITHIN THIS SET OF DRAWINGS.
2. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE GOVERNING AGENCY. CONTRACTOR MUST CONTACT THE APPROPRIATE AGENCY PRIOR TO CONSTRUCTION IN THE RIGHT-OF-WAY.
3. PLANNING PERMIT APPROVAL MUST BE OBTAINED BY INDIVIDUAL LOT OWNERS PRIOR TO CONSTRUCTION. THE LOT OWNER MUST SUBMIT A PROPOSED DRAINAGE PLAN OF EACH SITE TO THE GOVERNING AGENCY FOR REVIEW.
4. EXISTING WATER, SANITARY, AND STORM SEWER LINES ARE SHOWN BASED ON BEST AVAILABLE INFORMATION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS SPECIFICALLY AT CONNECTION POINTS AND AT POTENTIAL POINTS OF CONFLICT. ALL INFORMATION SHALL BE SUPPLIED TO THE ENGINEER PRIOR TO CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR:
   (A) CONTACTING THE APPROPRIATE AGENCY TO ARRANGE A PRE-CONSTRUCTION MEETING AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
   (B) OBTAINING ALL PERMITS FOR STREET CUTS, UTILITIES CONSTRUCTION AND GRADING. THE COST OF ALL PERMITS SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S BID.
   (C) COORDINATING WITH ALL UTILITY COMPANIES INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. ADVANCE COORDINATION BY THE CONTRACTOR TO ALL UTILITY COMPANIES INVOLVED SHALL BE REQUIRED FOR ANY SERVICE INTERRUPTIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER, PROJECT MANAGER AND THE UTILITY COMPANY 48 HOURS PRIOR TO START OF CONSTRUCTION. NO UTILITY TAPS SHALL BE MADE WITHOUT WRITTEN AUTHORIZATION BY THE UTILITY COMPANY AND THE CITY.
   (D) VERIFICATION OF ALL OTHER UNDERGROUND FACILITIES WHICH MAY BE AFFECTED BY THIS PROJECT AND REPAIR THEREOF IN CASE OF DAMAGE.
   (E) CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO OBTAIN TEMPORARY POWER AND TELEPHONE SERVICE DURING CONSTRUCTION. ALL COST FOR TEMPORARY SERVICES SHALL BE THE CONTRACTORS RESPONSIBILITY.
   (F) RESTORATION OF DISTURBED STREET PAVEMENT AS REQUIRED BY THE CITY AND THE STATE'S DEPARTMENT OF TRANSPORTATION.
   (G) ALL PROJECT SAFETY INCLUDING, BUT NOT LIMITED TO, TRENCH EXCAVATION AND SHORINGS, TRAFFIC CONTROL, AND SECURITY.
   (H) COORDINATING ALL WORK AND INSPECTIONS AS REQUIRED BY THE CITY OR THE STATE.
   (I) OBTAINING NECESSARY PERMITS FROM THE DEPARTMENT OF TRANSPORTATION FOR ALL WORK IN AND ADJACENT TO STATE RIGHT-OF-WAY.
   (J) RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE. AS-BUILTS SHALL INCLUDE UNDERGROUND UTILITIES AS WELL AS ANY FIELD MODIFICATIONS OF THE PLANS.
   (K) KEEPING ADJACENT STREETS FREE AND CLEAN OF ALL DEBRIS AND DIRT FROM THE JOB SITE.
   (L) THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED AT THE JOB SITE AT ALL TIMES. EACH SUBCONTRACTOR (INCLUDING THE SURVEYOR) SHALL HAVE A SIGNED COPY OF THE PLANS AND THE APPROPRIATE STANDARDS AND SPECIFICATIONS IN HIS POSSESSION AT ALL TIMES WHEN IMPROVEMENTS ARE BEING INSTALLED.
   (M) THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR COMPLETION OF INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED BY NOTE TO BE "PROVIDED," "INSTALLED" OR "CONSTRUCTED" UNLESS SPECIFICALLY NOTED OTHERWISE.
   (N) CONTRACTOR WILL HAVE A COPY OF APPROVED SOILS REPORTS FOR PAVEMENT DESIGN AND COMPACTION REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL RECOMMENDATIONS CONTAINED WITHIN THE SOILS REPORT.
   (O) VERIFYING THE ACCURACY OF THE VERTICAL BENCHMARK INFORMATION. CONTRACTOR SHALL USE BENCHMARKS AND DATUMS SHOWN HEREON TO SET PROJECT BENCHMARK(S), BY RUNNING A LEVEL LOOP BETWEEN AT LEAST TWO BENCHMARKS, AND SHALL PROVIDE SURVEY NOTES OF SUCH TO PROJECT ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
6. IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
7. TWO WORKING DAYS BEFORE YOU DIG, GRADE, OR EXCAVATE, CALL THE APPROPRIATE UTILITY NOTIFICATION CENTER FOR THE MARKING OF MEMBER UNDERGROUND UTILITIES. THE UTILITIES SHOWN ON THESE PLANS ARE PLOTTED BASED ON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION, AND REPAIR OF ANY EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. ANY UTILITY DAMAGED BY CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
8. THIS PLAN WAS PREPARED BASED ON SURVEY INFORMATION PROVIDED BY A LICENSED SURVEYOR. VORTEX ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR ERRORS DUE TO INCOMPLETE OR INACCURATE SURVEY INFORMATION.
9. SUBGRADE DENSITY SHALL BE TESTED BY A PRIVATE SOILS TESTING FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING BASE COURSE OR CONCRETE. BASE COURSE DENSITY SHALL ALSO BE TESTED BY THE PRIVATE GEOTECHNICAL FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING PAVEMENT.
10. THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM ALL UTILITY COMPANIES PRIOR TO ANY DEMOLITION WORK OR DISCONNECTION OF ANY SERVICE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANIES.
2. ALL UTILITIES INCLUDING STORM SEWER, SANITARY SEWER AND WATER MAINS SHALL BE COMPLETELY REMOVED FROM THE GROUND UNLESS OTHERWISE SPECIFIED. NO EXISTING UTILITY, STRUCTURES OR UNDERGROUND IMPROVEMENT SHALL BE ABANDONED IN PLACE WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER, OWNER AND GOVERNING AGENCY.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES WHICH ARE TO REMAIN IN SERVICE. INCLUDING BUT NOT LIMITED TO GAS, ELECTRIC, CABLE AND TELEPHONE SERVICES.
4. ALL STRUCTURE INCLUDING BASEMENT WALLS AND FLOOR SLABS SHALL BE COMPLETELY REMOVED FROM THE SITE.
5. ALL DEMOLITION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS INCLUDING BUT NOT LIMITED TO HAZARDOUS MATERIALS, DISPOSAL, HOURS OF OPERATION.
6. ALL EROSION CONTROL MEASURES DESIGNED FOR THE SITE PERIMETER OR TO PROTECT EXISTING IMPROVEMENTS SHALL BE IN PLACE PRIOR TO THE START OF ANY DEMOLITION ACTIVITIES.
7. THE CONTRACTOR SHALL OBTAIN AND REVIEW THE ENVIRONMENTAL STUDIES PROVIDED BY THE OWNER AND TAKE ALL NECESSARY PRECAUTIONS FOR ENVIRONMENTAL SAFETY DURING DEMOLITION ACTIVITIES. IT SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE EXISTING STRUCTURES FOR ANY OTHER CONDITIONS WHICH MAY AFFECT THE DEMOLITION PROCEDURES.
8. ANY CONDITIONS WHICH MAY BE UNCOVERED DURING THE PROCESS OF DEMOLITION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER IMMEDIATELY. ADDITIONAL EXPENSES INCURRED BY UNFORESEEN CONDITIONS SHALL BE APPROVED BY THE OWNER PRIOR TO THE ADDITIONAL WORK.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE PROPERTY FOR THE TYPE AND QUANTITY OF DEMOLITION REQUIRED, PRIOR TO SUBMISSION OF A BID.
10. THE CONTRACTOR SHALL HAVE WATER ON SITE FOR DUST ABATEMENT AT ALL TIMES DURING DEMOLITION ACTIVITIES.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF ALL DEBRIS. BURNING ON SITE SHALL NOT BE PERMITTED. NO DEBRIS INCLUDING CONCRETE OR ASPHALT MAY BE PLACED IN ANY FILL AREA.
12. ANY DAMAGE TO PUBLIC UTILITIES OR ADJACENT PROPERTIES AS A RESULT OF THE DEMOLITION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. REPAIRS SHALL BE MADE IN A TIMELY MANNER TO THE SATISFACTION OF THE DAMAGED PARTY.
13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH DOCUMENTATION OF THE CONDITION OF EXISTING IMPROVEMENTS TO REMAIN IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS NOT DOCUMENTED AS PRE-EXISTING. DOCUMENTATION SHALL BE PROVIDED PRIOR TO COMMENCEMENT OF WORK.
14. ALL EXISTING UTILITY SERVICES SHALL BE COMPLETELY REMOVED FROM THE SITE. SERVICE SHALL BE CUT AND PLUGGED AT THE PROPERTY LINE IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS. THE DEMOLITION CONTRACTOR SHALL CLEARLY MARK ALL STUBS AT THE PROPERTY LINE WITH A 4 X 4 WOOD POST (MINIMUM 4' ABOVE GRADE, 4' BELOW GRADE) MARKED WITH THE SERVICE TYPE.
15. ALL EXISTING WELLS SHALL BE CAPPED AND ABANDONED IN ACCORDANCE WITH ALL STATE REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL REQUIRED PROCEDURES, FILE ALL REQUIRED FORMS, APPLICATIONS AND REPORTS, AND OBTAIN ALL REQUIRED APPROVALS FROM THE STATE ENGINEER'S OFFICE.
16. DURING THE COURSE OF DEMOLITION, CONTRACTOR SHALL PROVIDE SECURITY FENCING AND OTHER PRECAUTIONARY SAFETY MEASURE AS NECESSARY.

EROSION CONTROL NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL FACILITIES SHOWN.
3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORESEEN PROBLEMS OR IF THE PLAN DOES NOT FUNCTION AS INTENDED. A JURISDICTION REPRESENTATIVE MAY REQUIRE ADDITIONAL CONTROL DEVICES UPON INSPECTION OF PROPOSED FACILITIES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED, STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM TRAFFIC FROM THE SITE.
5. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE PAVED, SEEDED WITH NATIVE VEGETATION OR LANDSCAPED. REFER TO LANDSCAPE PLANS FOR SEED MIX AND PLANTING SPECIFICATIONS.
6. EROSION CONTROL STRUCTURES BELOW SODDED AREAS MAY BE REMOVED ONCE SOD AND FINAL LANDSCAPING IS IN PLACE. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION. EROSION CONTROL IN PROPOSED PAVED AREAS SHALL REMAIN IN PLACE UNTIL PAVEMENT IS COMPLETE.
7. THIS PLAN IS ONLY TO BE USED FOR INSTALLATION OF EROSION CONTROL FACILITIES. DO NOT USE THIS PLAN FOR GRADING OR STORM SEWER CONSTRUCTION.
8. CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLE WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES WILL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS, MOVED WHEN NECESSARY AND REMOVED WHEN THE SITE IS PAVED.
9. INLET PROTECTION DEVICES SHALL BE INSTALLED IMMEDIATELY UPON INDIVIDUAL INLET'S BECOMING FUNCTIONAL.
10. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH GRADING AND/OR UTILITY CONSTRUCTION SHALL OBTAIN A COPY OF THE STORM WATER MANAGEMENT PLAN (SWMP) AND ANY OTHER DOCUMENTATION REGARDING "STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY" AND BECOME FAMILIAR WITH THEIR CONTENTS.
11. THE TEMPORARY PARKING AND STORAGE AREA SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AREA, EQUIPMENT CLEANING AREA. EMPLOYEE BREAK AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
12. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, ETC.) SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT WITH STORM WATER DISCHARGES FROM THE SITE.
13. MAINTAIN ON THE SITE OR HAVE READILY AVAILABLE SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
14. FUGITIVE DUST BLOWING FROM THE SITE SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS ABSOLUTELY PROHIBITED.
15. NO RUBBISH, TRASH, GARBAGE, OR OTHER SUCH MATERIALS SHALL BE DISCHARGED INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
16. ALL MEASURES PRESENTED IN THE SWMP SHALL BE INITIATED AS SOON AS PRACTICABLE.
17. IF THE GRAVEL CONSTRUCTION ENTRANCES ARE NOT EFFECTIVE IN REMOVING THE MAJORITY OF DIRT OR MUD FROM THE TIRES OF THE CONSTRUCTION VEHICLES, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP AND THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.
18. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
19. IF SOIL STOCKPILING IS EMPLOYED ON THE SITE, SILT FENCES SHALL BE USED TO HELP CONTAIN THE SEDIMENT.
20. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
21. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN 30 DAYS AFTER FINAL STABILIZATION. FINAL STABILIZATION HAS OCCURRED WHEN ALL SOIL DISTURBING ACTIVITIES ARE COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OF THE COVER FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES HAS BEEN EMPLOYED.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) DUE TO GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT.
23. ALL OFF-SITE CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR STORM DRAIN CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.

EROSION CONTROL MAINTENANCE NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL MEASURES CONTAINED IN THIS PLAN SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT, AND SHOULD BE CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:
3. STRAW BALE INLET PROTECTION DEVICES AND BARRIERS SHALL BE FIXED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR SHALL BE REPLACED IF THEY SHOW SIGNS OF DETERIORATION.
4. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, RE-SEEDED, AND WATERED AS NEEDED.
5. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-THIRD TO ONE-HALF THE HEIGHT OF THE SILT FENCE.
6. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
7. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
8. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES, SEDIMENT IN THE SEDIMENTATION BASINS SHALL NOT EXCEED THE SEDIMENTATION CLEANOUT LEVEL.
9. IF THE STONES IN THE GRAVEL CURB INLET SEDIMENT FILTERS BECOME CLOGGED WITH SEDIMENT, THE STONES MUST BE PULLED AWAY, CLEANED AND REPLACED.
10. THE EMBANKMENT OF THE SEDIMENTATION BASIN SHALL BE CHECKED REGULARLY TO INSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
11. THE TEMPORARY SEDIMENT TRAP AND SEDIMENTATION BASIN STRUCTURES SHALL BE CHECKED REGULARLY TO INSURE THAT THEY ARE STRUCTURALLY SOUND AND HAVE NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. SEDIMENT DEPOSITION SHALL BE REMOVED PERIODICALLY TO ENSURE FULL VOLUME IS AVAILABLE IN THE POND.

GRADING NOTES:

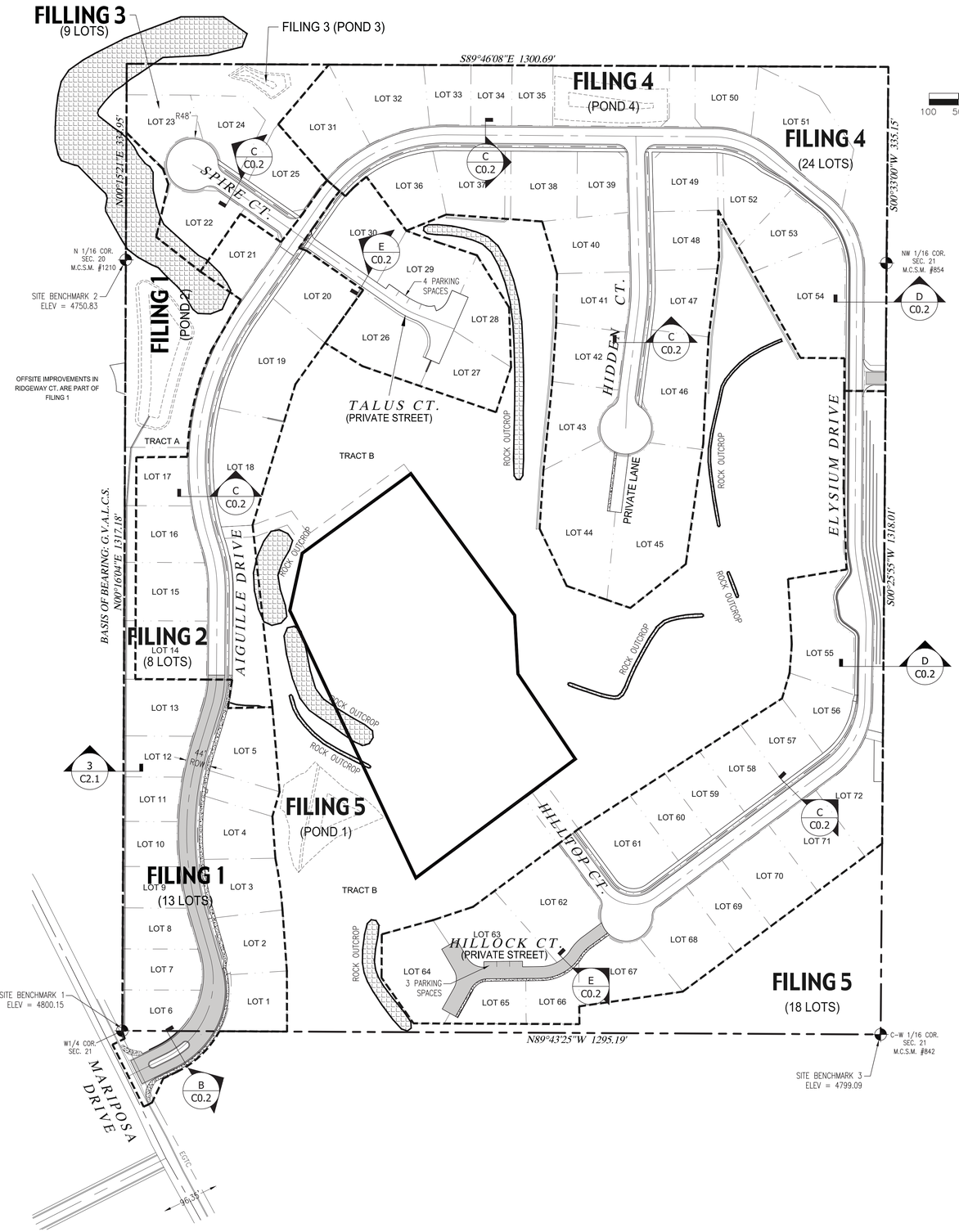
1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. CONTOURS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY. CONTOUR INTERVAL = 1 FOOT UNLESS OTHERWISE NOTED ON PLANS.
3. ALL DISTURBED AREAS THAT ARE UNSURFACED OR ARE NOT DESIGNATED AS LANDSCAPE AREAS ARE TO BE RE-SEEDED WITH DRY NATIVE GRASS SEED MIX.
4. IF DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE SOILS ENGINEER SHALL BE CONTACTED FOR RECOMMENDATIONS.
5. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND STANDARDS OF THE GOVERNING AGENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED AS SPECIFIED BY THE GEOTECH REPORT. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED, LICENSED, SOILS ENGINEER, CERTIFYING THAT THE SUBBASE WITHIN THE AREAS TO BE PAVED HAS BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECS.
6. NO PROPOSED SLOPE SHALL EXCEED TWO (2) HORIZONTAL TO ONE (1) VERTICAL, EXCEPT FOR DIVERSION DITCHES. ALL SLOPED AREAS MUST BE PROTECTED FROM EROSION.
7. IF STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS ARE STOCKPILED ON THE SITE, TOPSOIL MAY BE PLACED TO A HEIGHT OF FIVE FEET. SILT FENCE SHALL BE PLACED AROUND THE BASE OF THE STOCKPILE AND THE STOCKPILE SHALL BE SEEDED WITH NATIVE SEED MIX IMMEDIATELY AFTER STRIPING OPERATIONS ARE COMPLETE.
8. ON-SITE MATERIALS SUITABLE FOR FILL BENEATH DRIVES, AND PARKING AREAS BEYOND 5' OF THE BUILDING SHALL BE COMPACTED IN ACCORDANCE WITH THE GUIDELINES PRESENTED IN THE SOILS REPORT.
9. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHY AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO ENSURE 0.75% MIN. SLOPE AGAINST ALL GUTTERS TO PREVENT PUDDLING. ANY DISCREPANCIES SHALL BE PROVIDED TO THE ENGINEER IN WRITING IMMEDIATELY.
10. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED AS SPECIFIED IN THE GEOTECH REPORT.
11. SPOT ELEVATIONS REPRESENT FLOWLINE OR TOP OF ASPHALT UNLESS OTHERWISE NOTED.
12. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS WHICH DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB AND GUTTER AND UTILITIES.
13. ALL UTILITIES (MANHOLES, VALVE COVERS, CLEANOUTS, VAULTS, BOXES, ETC.) SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
14. ALL EARTH MOVING AND PLACEMENT OPERATIONS SHALL BE IN CONFORMANCE WITH THE RECOMMENDATIONS IDENTIFIED IN THE SOILS REPORT. THE CONTRACTOR SHALL HAVE A SIGNED AND SEALED COPY OF THE SOILS REPORT ON THE SITE AT ALL TIMES.
15. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.
16. WHERE NEW CURB AND GUTTER IS BEING CONSTRUCTED ADJACENT TO EXISTING ASPHALT, THE FOLLOWING SHALL APPLY: PRIOR TO PLACEMENT OF ANY CONCRETE THE CONTRACTOR SHALL HAVE A LICENSED SURVEYOR VERIFY GRADE AND CROSS SLOPE OF THE CURB AND GUTTER FORMS. THE CONTRACTOR SHALL SUBMIT THE SLOPES AND GRADES TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY SECTION WHICH DOES NOT CONFORM TO THE DESIGN OR TYPICAL CROSS SECTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CURB AND GUTTER POURS WITHOUT APPROVAL OF THE ENGINEER.
17. MAINTENANCE OF ANY STORMWATER MANAGEMENT FACILITY SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL GUIDELINES FOR PRIVATE STORMWATER MANAGEMENT FACILITIES AND SHALL BE THE RESPONSIBILITY OF THE OWNER AND THE ASSIGNEES.
18. SURFACE RESTORATION SHALL BE AS FOLLOWS:
   (A) FINE GRADE ALL AREAS DISTURBED BY THE CONSTRUCTION OPERATIONS AFTER COMPLETION OF BACKFILLING AND COMPACTING. AREAS WHICH ARE TO RECEIVE PAVEMENTS, SURFACING, TOPSOIL OR LANDSCAPING SHALL BE GRADED AS REQUIRED TO ALLOW INSTALLATION OF THE SPECIFIC SURFACE TREATMENT. GRADE ALL OTHER AREAS TO MATCH THE EXISTING GROUND LINE.
   (B) REPLACE AND REPAIR ANY SURFACE IMPROVEMENTS DAMAGED OR REMOVED. CONFORM TO CITY STANDARDS & SPECIFICATIONS.
19. BITUMINOUS PAVEMENT
   (A) BITUMINOUS PAVEMENT SHALL BE REMOVED TO CLEAN STRAIGHT LINES AT THE LOCATIONS INDICATED ON PLANS. WIDTH OF REMOVAL FOR PIPELINES SHALL BE KEPT TO A MINIMUM AS DICTATED BY TRENCHING OPERATIONS, BUT SHALL EXTEND AT LEAST 6 INCHES BEYOND THE LIMITS OF TRENCH EXCAVATION.
   (B) THE CUT SHALL BE MADE WITH PAVEMENT CUTTING WHEEL, SAW OR OTHER APPROVED METHOD, SO AS TO PROVIDE A REASONABLY STRAIGHT AND SQUARE EDGE.

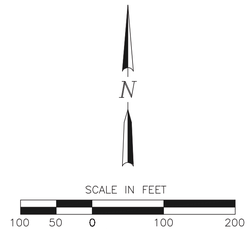
SANITARY SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL GRAVITY SANITARY SEWER LINES SHALL BE POLYVINYL CHLORIDE PIPE (PVC), ASTM D-3034 SDR.35, SEWER LINE MATERIALS AND CONSTRUCTION SHALL CONFORM TO ASTM STANDARDS AND SPECIFICATIONS.
3. DISTANCES FOR SANITARY SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. THEREFORE, DISTANCES SHOWN ON PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT.
4. RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATION. PIPELINE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT AND STEEL SHIMS TO ADJUST THE MANHOLE FRAME TO THE REQUIRED FINAL GRADE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS. ALL FRAMES SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
5. ALL SANITARY SEWER MAINS TESTING SHALL BE IN ACCORDANCE WITH LOCAL SPECIFICATIONS. COPIES OF ALL TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER, THE OWNER AND THE GOVERNING AUTHORITY PRIOR TO THE START OF THE WARRANTY PERIOD.
6. COMPACTION OF ALL TRENCHES WITHIN THE PROJECT SITE MUST BE ATTAINED AND COMPACTION RESULTS SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE. .
7. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING STRUCTURES AND IMPROVEMENTS DURING INSTALLATION OF THE SANITARY SEWER LINE.
8. THE CONTRACTOR SHALL POTHOLE THE EXISTING SEWER MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
9. SANITARY SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.

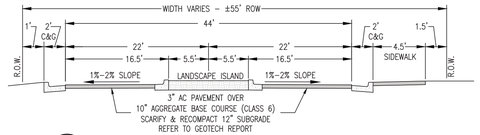
STORM SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING:
   (A) OBTAINING ALL REQUIRED PERMITS FROM THE CITY, THE DOT, OR ANY REGULATORY AUTHORITY AT THE CONTRACTOR'S COST INCLUDING PERMITS REQUIRED FOR WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
   (B) RESTORATION OF ANY EXISTING IMPROVEMENTS INCLUDING (BUT NOT LIMITED TO) FENCES, SOD, LANDSCAPING, PAVEMENT, SPRINKLER SYSTEMS.
   (C) VERIFICATION AND PROTECTION OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF THE PROJECT.
   (D) PROVIDING AS-BUILT DRAWINGS TO THE CITY AND ENGINEER.
   (E) ALL PERMITTING, DEVELOPMENT, CONNECTION, LOCATION INSPECTION AND TESTING FEES REQUIRED FOR STORM SEWER CONSTRUCTION.
   (F) VERIFYING ALL STANDARD DETAILS CONFORM TO CURRENT CITY/COUNTY STANDARDS AND SPECIFICATIONS.
   (G) FOR OBTAINING AND UNDERSTANDING ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THE CONSTRUCTION OF THE STORM SEWER IMPROVEMENTS.
   (H) FOR SCHEDULING ALL REQUIRED INSPECTIONS.
3. THE CONTRACTOR SHALL POTHOLE THE EXISTING STORM MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
4. STORM SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.
5. THE CONTRACTOR SHALL COORDINATE HIS WORK SCHEDULE WITH THE DITCH COMPANY TO ENSURE ALL DITCH FACILITIES ARE CONSTRUCTED WITHOUT DISRUPTION TO DITCH COMPANY OPERATIONS.
6. ALL STORM SEWER CONSTRUCTION SHALL BE IN CONFORMANCE WITH LOCAL STANDARDS AND SPECIFICATIONS.
7. DISTANCES FOR STORM SEWER ARE THE HORIZONTAL DISTANCES FROM CEN

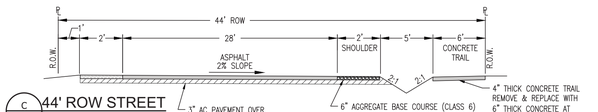




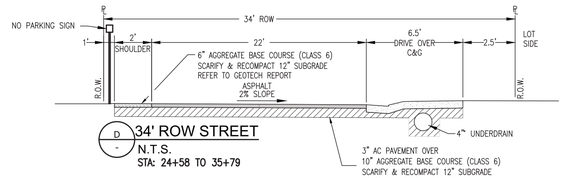
PROPOSED LAND USE TABLE			
SINGLE FAMILY LOTS (72 TOTAL)	934,944 S.F. – 21.46 AC	47.58%	OWNER: PRIVATE
TRACT A:	57,533 S.F. – 1.32 AC	2.93%	OWNER: HOA
TRACT B: OPEN SPACE	658,275 S.F. – 15.11 AC	33.50%	OWNER: HOA
FUTURE TRACTS	122,687 S.F. – 2.82 AC	6.24%	OWNER: HOA
RIGHT-OF-WAY:	191,434 S.F. – 4.39 AC	9.74%	OWNER: PUBLIC
TOTAL SITE AREA:	1,964,873 S.F. – 45.11 AC		



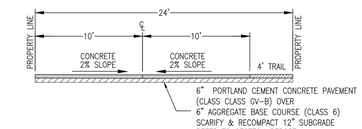
B – MARIPOSA DRIVE ENTRANCE
N.T.S.
STA: 0+24 TO STA: 2+56.85
(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 3+42)



C – 44' ROW STREET
N.T.S.
STA: 2+56.85 TO 24+58
STA: 35+79 TO 41+50



D – 34' ROW STREET
N.T.S.
STA: 24+58 TO 35+79



E – PRIVATE STREET & LANE DETAIL
N.T.S.
TRACTS C,F,J

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21. TOWNSHIP 1 SOUTH. RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM: LOTS 1 – 9. BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK B AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = R–2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'/25'
   REAR = 30'/5'
   SIDE = 15'/3'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON–BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON–SITE PARKING REQUIREMENT.

LEGEND

FILING & LIMITS OF DEVELOPMENT DESIGNATION

PROJECT BENCHMARK

PROJECT BENCHMARK #1
LOCATED AT THE SOUTHWEST CORNER OF THE SITE.
MONUMENT ID: PLS 18480, THE W1/4 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31563.18 EASTING: 78944.74 ELEV: 4800.15 (NAVD88)

PROJECT BENCHMARK #2
LOCATED AT THE WEST PROPERTY LINE, NEAR OUTLOOK COURT.
MONUMENT ID: NCSN #1210, THE N1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 32880.35 EASTING: 78949.85 ELEV: 4750.83 (NAVD88)

PROJECT BENCHMARK #3
LOCATED AT THE SOUTHEAST CORNER OF THE SITE.
MONUMENT ID: NCSN #842, THE W1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31558.05 EASTING: 80239.95 ELEV: 4799.09 (NAVD88)

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 11-20-17 PROFESSIONAL ENGINEER

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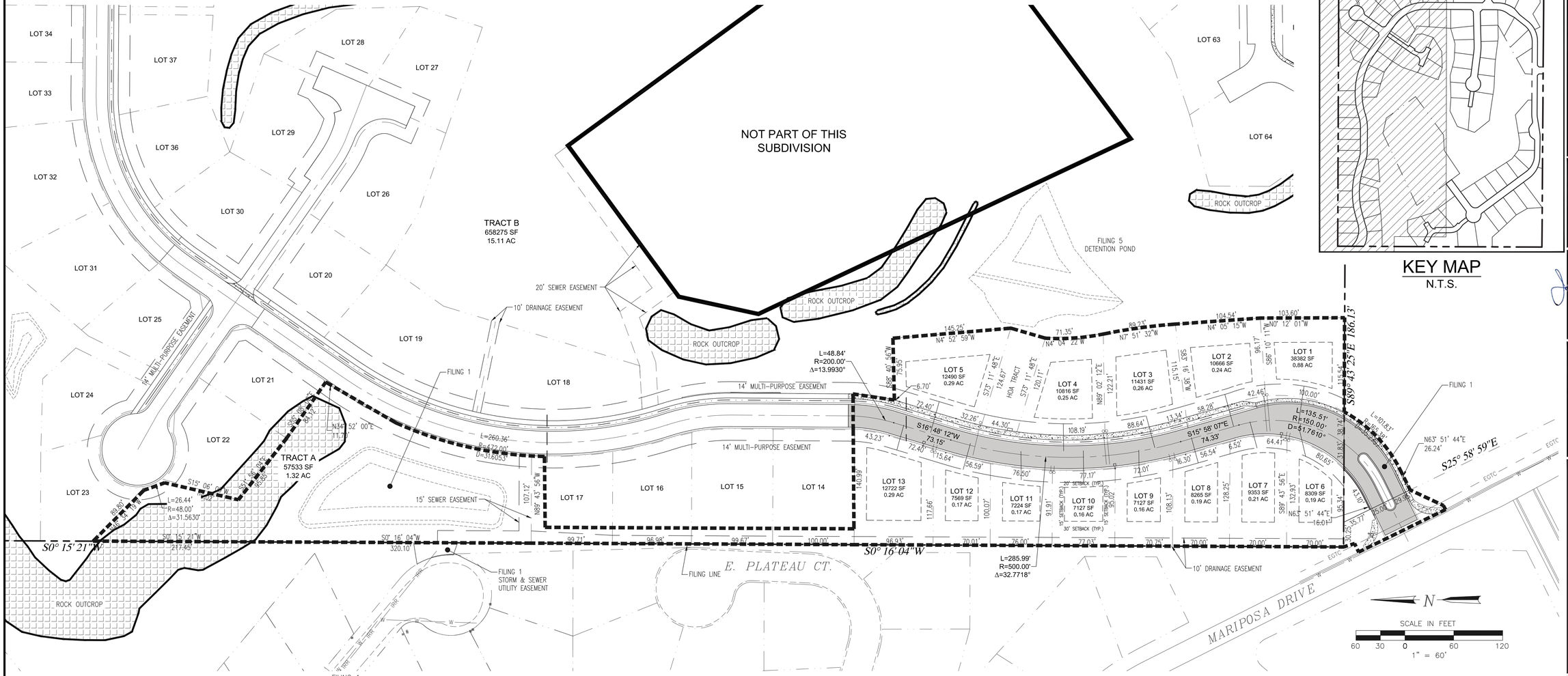
MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/08/17	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017	DLS
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	JSY

Filing Plan
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 100'**
CAD ID: **0.0cover-f1.dwg**

~SHEET~
C0.2



KEY MAP
N.T.S.

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

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PROPOSED LAND USE TABLE

USE	AREA	AC	% OF TOTAL	OWNER
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. - 45.11 AC			

UTILITY PROVIDERS INFORMATION

UTILITY	PROVIDER	PHONE NUMBER
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

GENERAL NOTES

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2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET C0.2

ACCEPTANCE BLOCK

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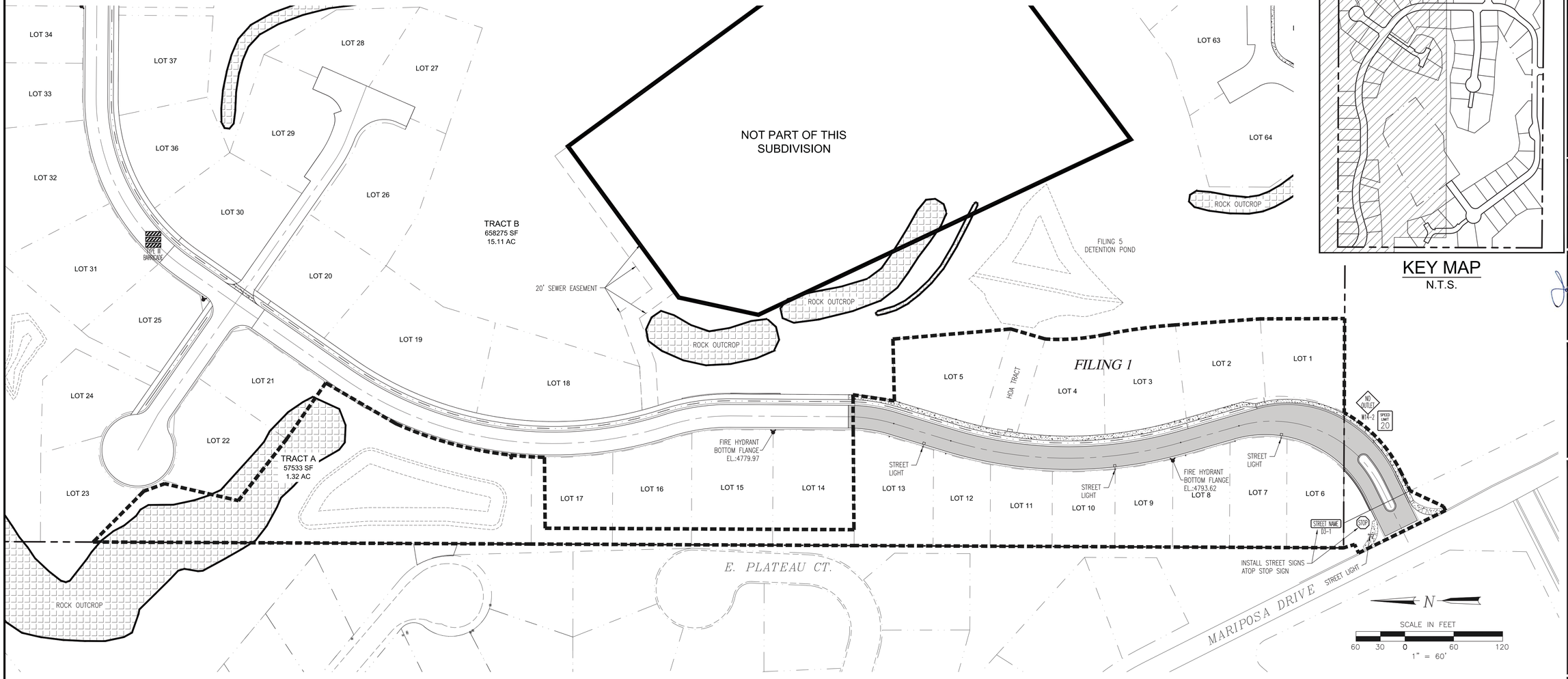
Composite Site Plan - Layout and Geometry Plan

Pinnacle Ridge Subdivision Filing 1

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 60'**
CAD ID: **1.0layout-f1.dwg**

~SHEET~
C1.0



KEY MAP
N.T.S.

SIGN SCHEDULE

- STOP SIGN (30"x30")
- STREET NAME SIGN D3-1
- NO OUTLET SIGN W14-2
- FIXED TYPE III CDOT ROAD BARRICADES (3' x 8' SECTIONS, SEE STD. S-630-2)
- NO TRESPASSING SIGN
- SPEED LIMIT SIGN R2-1

ALL SIGN POST MOUNTING AND PLACEMENT SHALL BE PER MUTCD OR MESA COUNTY SPECIFICATIONS. CONTRACTOR TO CONTACT MESA COUNTY TRAFFIC PRIOR TO INSTALLATION OF SIGNS. (ph. 970-244-1817)

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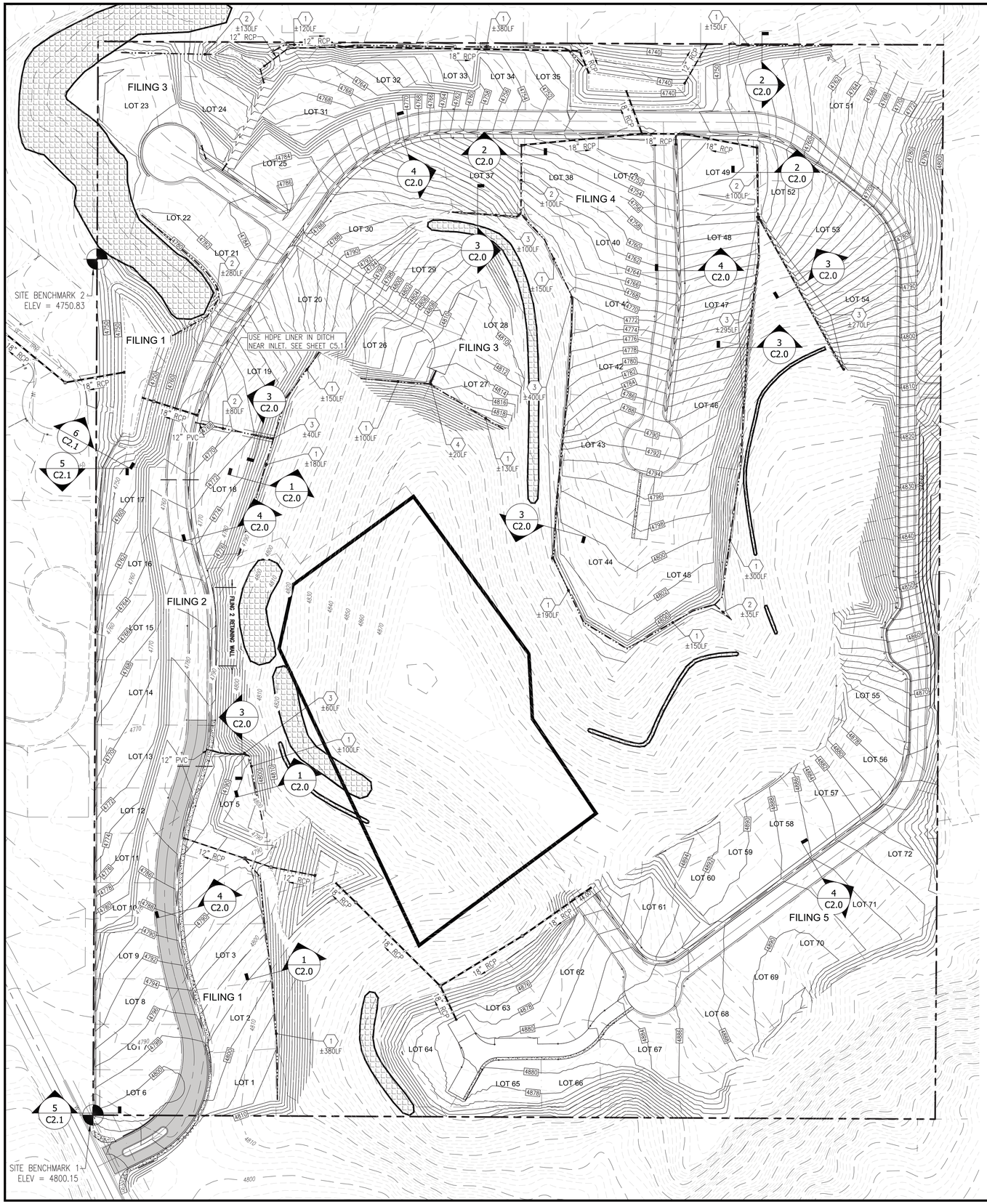
MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	JSY
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
1	8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

Signage & Lighting Plan
Pinnacle Ridge Subdivision Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1" = 60'
CAD ID: 1.0layout-f1.dwg

~SHEET~
C1.1



N

SCALE IN FEET

80 40 0 80 160

1" = 80'

CONTOUR INTERVAL = 2'

CONSTRUCTION NOTES:

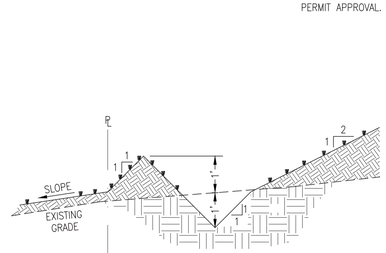
1. CONSTRUCT DIVERSION DITCH W/ BERM SEE DETAIL 1 THIS SHEET
2. CONSTRUCT DIVERSION DITCH SEE DETAIL 2 THIS SHEET
3. CONSTRUCT ROCK LINED DIVERSION DITCH SEE DETAIL 3 THIS SHEET
4. CONSTRUCT 2' CONCRETE V-PAN (FILING 3)

GRADING NOTE:

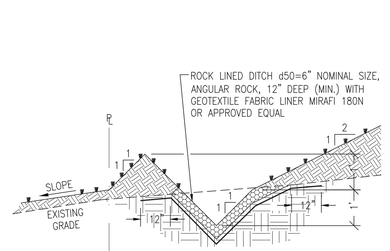
FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

GENERAL NOTES

1. ALL CONSTRUCTION TO CONFORM TO THE CURRENT CITY OF GRAND JUNCTION DEPARTMENT OF PUBLIC WORKS AND PLANNING STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR MUST CONTACT CITY OF GRAND JUNCTION TRAFFIC OPERATIONS SUPERVISOR PRIOR TO CONSTRUCTION OR PLACEMENT OF TRAFFIC CONTROL DEVICES/FEATURES (STRIPING, SIGNALS, MEDIANS, ETC.) FOR CONSTRUCTION IN THE RIGHT-OF-WAY ONLY.
3. REFER TO THE GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE STORM SEWER, SEE SHEET C5.0 & C5.1.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE FILING PLAN.
8. REFER TO SHEETS C0.1, C6.0, THRU C6.2 FOR STORMWATER MANAGEMENT CONTROL PLANS AND EROSION CONTROL NOTES.
9. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
10. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL.



1 / C2.0 DIVERSION DITCH SECTION W/ BERM
N.T.S.



3 / C2.0 ROCK LINED DIVERSION DITCH SECTION
N.T.S.



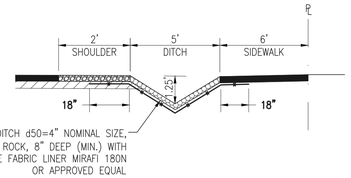
2 / C2.0 DIVERSION DITCH SECTION
N.T.S.

PROJECT BENCHMARK

PROJECT BENCHMARK #1
LOCATED AT THE SOUTHWEST CORNER OF THE SITE.
MONUMENT ID: PLS 18480, THE W1/4 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31563.18 EASTING: 78944.74 ELEV: 4800.15 (NAVD88)

PROJECT BENCHMARK #2
LOCATED AT THE WEST PROPERTY LINE, NEAR OUTLOOK COURT.
MONUMENT ID: NCSN #1210, THE N1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 32880.35 EASTING: 78949.85 ELEV: 4750.83 (NAVD88)

PROJECT BENCHMARK #3
LOCATED AT THE SOUTHEAST CORNER OF THE SITE.
MONUMENT ID: NCSN #842, THE W1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31558.05 EASTING: 80239.95 ELEV: 4799.09 (NAVD88)



4 / C2.0 ROCK LINED ROADSIDE DITCH
N.T.S.

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED
JAMES C. ATKINSON
18828
11-20-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV.	JSY
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT.	DLS
1	8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY	DLS

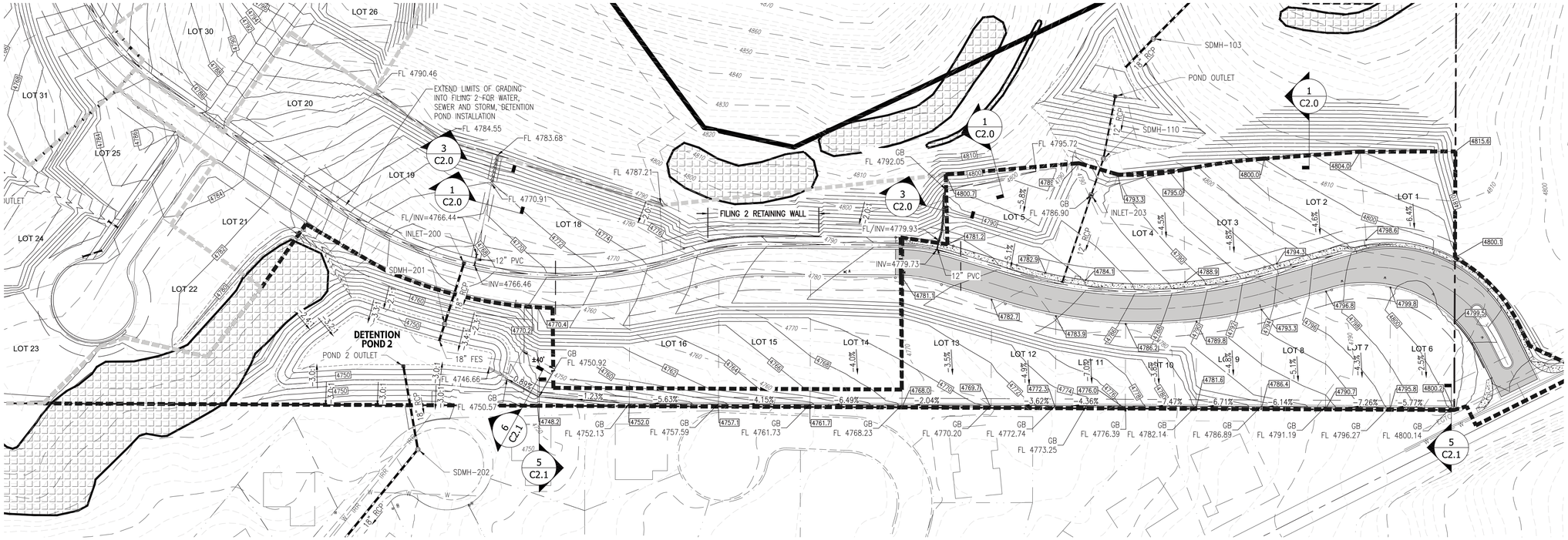
Overall Grading Plan Filings 1 - 5

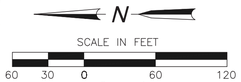
Pinnacle Ridge Subdivision
Filing 1

Mariposa Drive
Grand Junction, Colorado

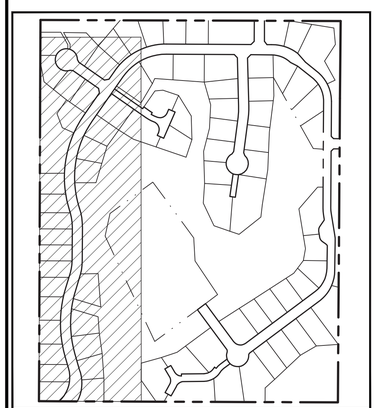
PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1"= 80'**
CAD ID: **2.0grad-f1.dwg**

~SHEET~
C2.0

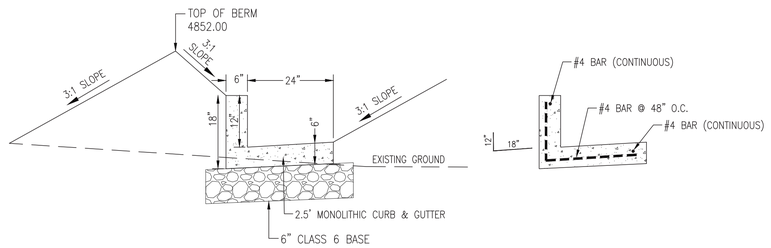




FILING 1 TOF TABLE			
Lot	*Grading*	*Min. TOF*	*Max. TOF*
1	Type A	4801.00	4801.50
2	Type A	4798.70	4799.20
3	Type A	4793.30	4793.80
4	Type A	4787.90	4788.40
5	Type A	4783.60	4784.10
6	Type C	4801.60	4802.10
7	Type C	4799.30	4799.80
8	Type C	4796.00	4796.50
9	Type C	4792.50	4793.00
10	Type C	4789.00	4789.50
11	Type C	4786.00	4786.50
12	Type C	4784.30	4784.80
13	Type C	4783.10	4783.60

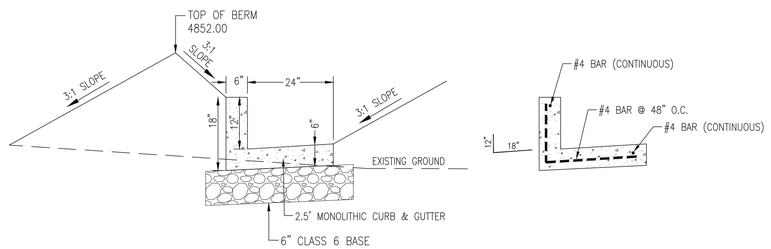


KEY MAP
N.T.S.



WEST PROPERTY LINE SECTION - FINAL 45 LF TO DETENTION POND

5 C2.1 CONCRETE CURB & GUTTER DETAIL
N.T.S.



WEST PROPERTY LINE SECTION - FINAL 45 LF TO DETENTION POND

6 C2.1 CONCRETE CURB & GUTTER DETAIL
N.T.S.

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4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE SANITARY SEWER, SEE SANITARY SEWER PLAN & PROFILE.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE FILING PLAN.
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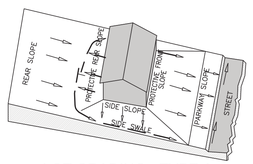
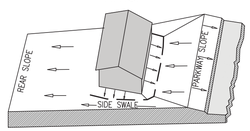


LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.



LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

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• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED
JAMES C. ATKINSON
18828
11-20-17
PROFESSIONAL ENGINEER

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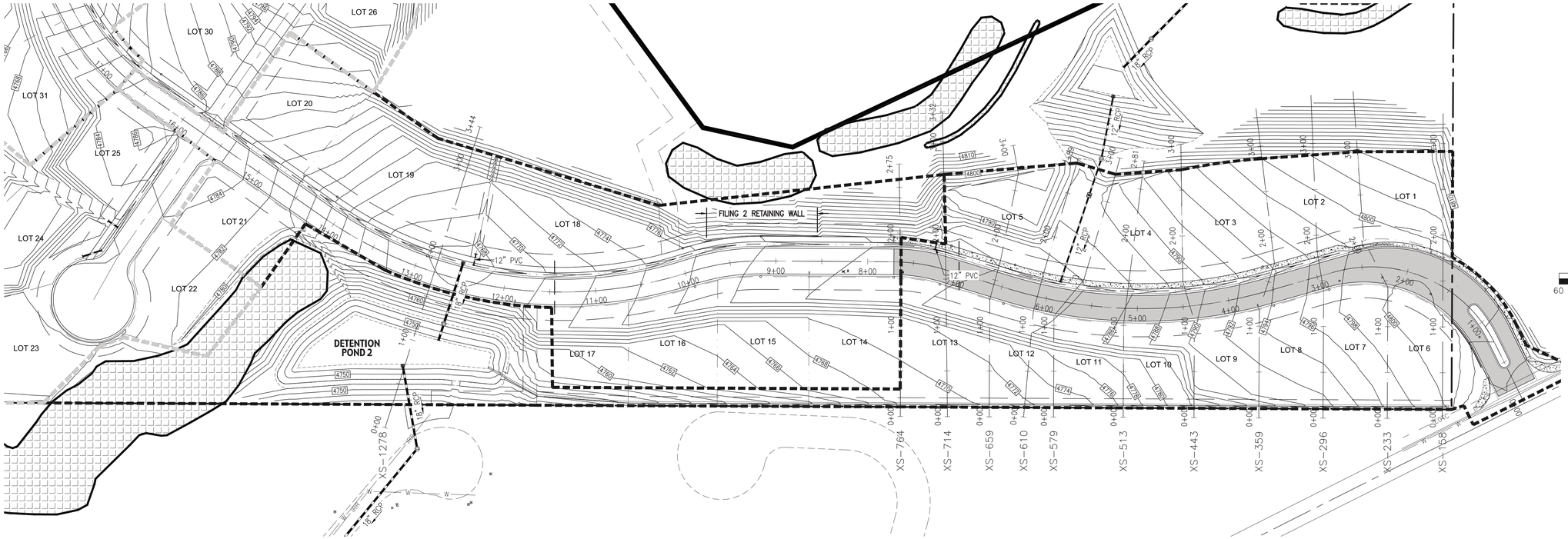
MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS
2	10/08/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	JSY

Grading Plan Filing 1
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **SEE PLAN**
CAD ID: **2.0grad-f1.dwg**

~SHEET~
C2.1



N

SCALE IN FEET

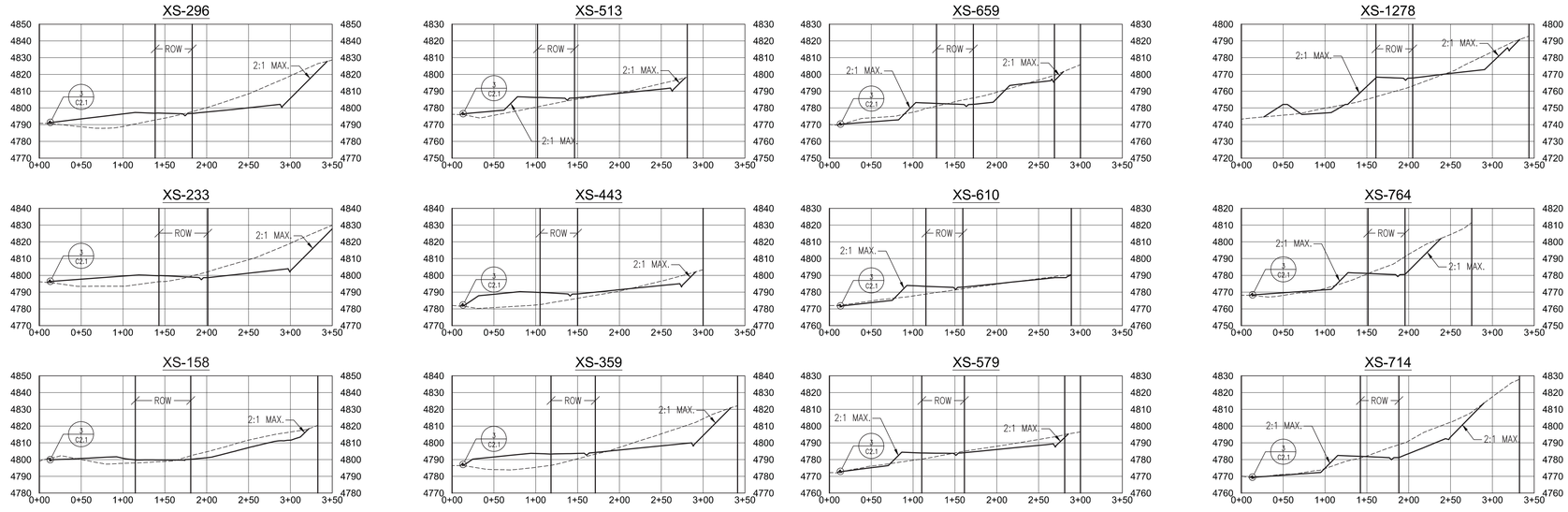
60 30 0 60 120

1" = 60'

CONTOUR INTERVAL = 2'

SECTIONS ALONG LOT LINES

SCALE: 1" = 80' HORIZONTAL
1" = 40' VERTICAL



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CITY DEVELOPMENT ENGINEER DATE

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• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 11-20-17 PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017
1	8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017

Grading Plan Filing 1 - Road Cross Sections

Pinnacle Ridge Subdivision
Filing 1

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/08/17
SCALE: SEE PLAN
CAD ID: 2.0grad-f1.dwg

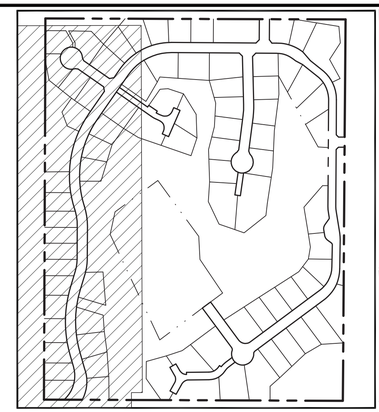
~SHEET~
C2.2

GENERAL NOTES

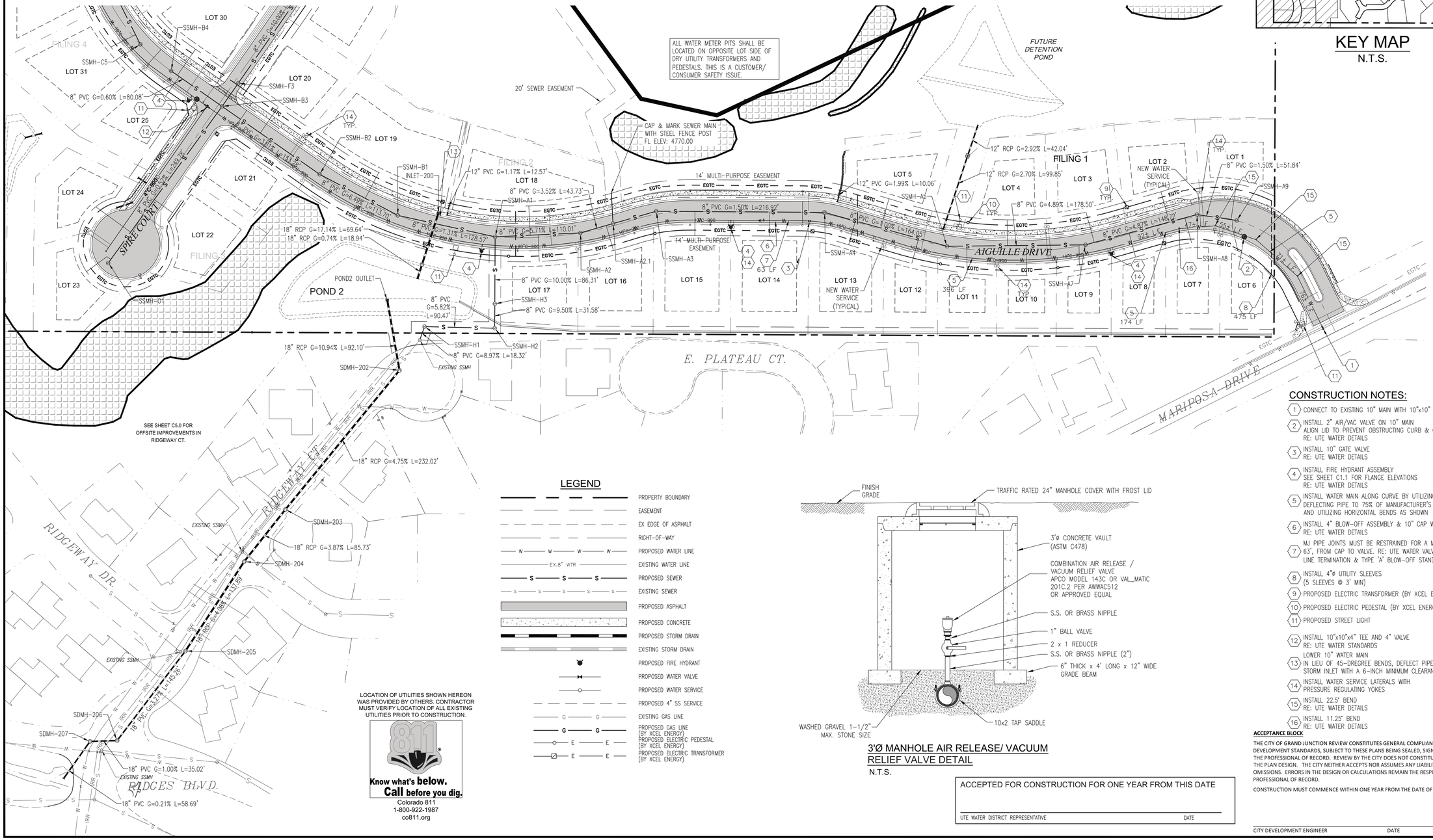
1. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET 3
6. HOUSES CONSTRUCTED ON LOTS 26-29 AND LOTS 55-72 SHALL HAVE SPRINKLER SYSTEMS INSTALLED. A 1" CUSTOMER WATER SERVICE LINE AND ¾" WATER METER WILL BE UTILIZED IN ACCORDANCE WITH UTE WATER CONSERVANCY DISTRICT STANDARDS & SPECIFICATIONS.
7. ALL WATER SERVICES SHALL HAVE A PRESSURE REGULATED YOKE INSTALLED BASED ON PRESSURE LIMITS AS DETERMINED IN THE HYDRAULIC ANALYSIS.

FILING NOTES

1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
2. INSTALL SANITARY SEWER FROM SSMH-A9 TO EXISTING MAN-HOLE IN RIDGEWAY COURT AS SHOWN INCLUDING LINE TO MAN-HOLE B-1.
3. END WATER LINE CONSTRUCTION AT THE MIDDLE OF LOT 14 AS SHOWN.
4. ASPHALT PAVEMENT TO END AT THE NORTH END OF LOT 13 FOR FILING 1.
5. ROAD ALIGNMENT TO BE GRADED AND BASE COURSE INSTALLED TO THE NORTH END OF LOTS 20 & 21.



KEY MAP
N.T.S.



SEE SHEET C5.0 FOR OFFSITE IMPROVEMENTS IN RIDGEWAY CT.

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.
Colorado 811
1-800-922-1987
co811.org

LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE
- EXISTING WATER LINE
- PROPOSED SEWER
- EXISTING SEWER
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER SERVICE
- PROPOSED 4" SS SERVICE
- EXISTING GAS LINE
- PROPOSED GAS LINE (BY XCEL ENERGY)
- PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
- PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)

3'Ø MANHOLE AIR RELEASE/ VACUUM RELIEF VALVE DETAIL
N.T.S.

ACCEPTED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE

UTE WATER DISTRICT REPRESENTATIVE DATE

CONSTRUCTION NOTES:

1. CONNECT TO EXISTING 10" MAIN WITH 10"x10" WET TAP
2. INSTALL 2" AIR/VAC VALVE ON 10" MAIN ALIGN LID TO PREVENT OBSTRUCTING CURB & GUTTER RE: UTE WATER DETAILS
3. INSTALL 10" GATE VALVE RE: UTE WATER DETAILS
4. INSTALL FIRE HYDRANT ASSEMBLY SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL WATER MAIN ALONG CURVE BY UTILIZING FITTINGS & DEFLECTING PIPE TO 75% OF MANUFACTURER'S RECOMMENDATIONS AND UTILIZING HORIZONTAL BENDS AS SHOWN
6. INSTALL 4" BLOW-OFF ASSEMBLY & 10" CAP W/ THRUSTBLOCK RE: UTE WATER DETAILS
7. MJ PIPE JOINTS MUST BE RESTRAINED FOR A MINIMUM OF 63', FROM CAP TO VALVE. RE: UTE WATER VALVE INSTALLATION, LINE TERMINATION & TYPE 'A' BLOW-OFF STANDARD
8. INSTALL 4"ø UTILITY SLEEVES (5 SLEEVES @ 3' MIN)
9. PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)
10. PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
11. PROPOSED STREET LIGHT
12. INSTALL 10"x10"x4" TEE AND 4" VALVE RE: UTE WATER STANDARDS
13. LOWER 10" WATER MAIN IN LIEU OF 45-DREGREE BENDS, DEFLECT PIPE TO DIP UNDER STORM INLET WITH A 6-INCH MINIMUM CLEARANCE BETWEEN PIPES.
14. INSTALL WATER SERVICE LATERALS WITH PRESSURE REGULATING YOKES
15. INSTALL 22.5° BEND RE: UTE WATER DETAILS
16. INSTALL 11.25° BEND RE: UTE WATER DETAILS

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

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COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 11-20-17 PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

	REV/ DATE	COMMENT	BY
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	JSY
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
1	9/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

Composite Site Plan - Utility and Water Plan

Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1"= 60'**
CAD ID: **3.0utility-f1.dwg**

~SHEET~
C3.0

FILING NOTES

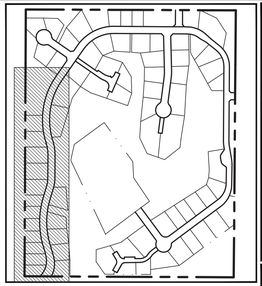
1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
2. INSTALL SANITARY SEWER FROM SSMH-A9 TO EXISTING MAN-HOLE IN RIDGEWAY COURT AS SHOWN INCLUDING LINE TO MAN-HOLE B-1.
3. END WATER LINE CONSTRUCTION AT THE MIDDLE OF LOT 14 AS SHOWN.
4. ASPHALT PAVEMENT TO END AT THE NORTH END OF LOT 13 FOR FILING 1.
5. ROAD ALIGNMENT TO BE GRADED AND BASE COURSE INSTALLED TO THE NORTH END OF LOTS 20 & 21.

CONSTRUCTION NOTES:

1. INSTALL STOP SIGN & STREET SIGN RE: MUTCD
2. CONSTRUCT HANDICAPPED RAMP RE: CITY OF GJ DETAILS
3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL 6" STANDARD CURB & GUTTER W/ATTACHED SIDEWALK – 87 LF
6. INSTALL 6" DRIVE-OVER CURB & GUTTER W/ATTACHED SIDEWALK – 158 LF
7. INSTALL 6" STANDARD CURB & GUTTER 74 LF
8. SAWCUT & REMOVE ±106 LF EXISTING CONCRETE CURB USE CARE TO ENSURE PAVEMENT EDGE PROVIDES A CLEAN JOIN FOR INSTALL OF NEW CONCRETE VALLEY PAN
9. 15' SIDEWALK TRANSITION FROM ATTACHED TO DETACHED

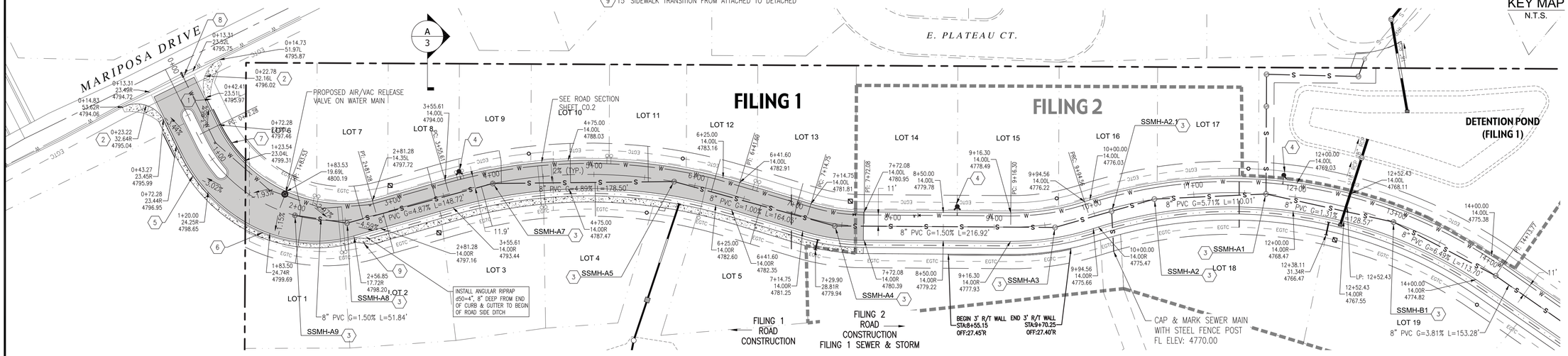
GENERAL NOTES:

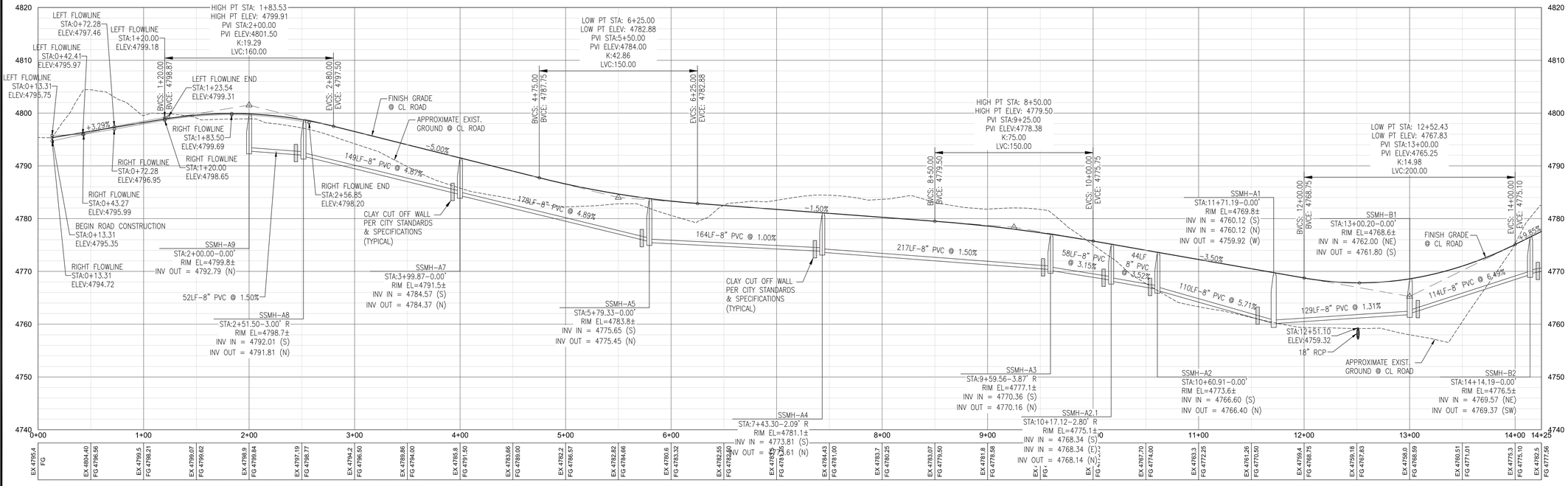
1. REFERENCE SHEET C0.1 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET C0.2 FOR STREET SECTIONS
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION



ROAD AND SAN. SEWER PLAN - AIGUILLE DRIVE

SCALE: 1" = 50'





ROAD AND SAN. SEWER PROFILE - AIGUILLE DRIVE

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	JSY
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

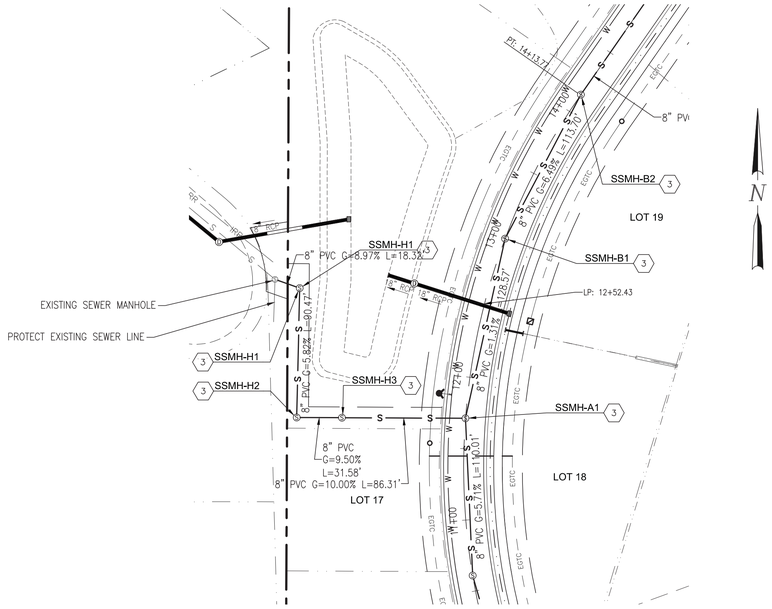
Road & Sanitary Sewer Plan & Profile

Aiguille Drive
Pinnacle Ridge Subdivision Filing 1

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/02/17**
SCALE: **1" = 50'**
CAD ID: **4.0ss-road-f1.dwg**

~SHEET~
C4.0



ROAD AND SAN. SEWER PLAN - RIDGEWAY CT. CONNECTION

SCALE: 1" = 50'

FILING NOTES

1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
2. INSTALL SANITARY SEWER FROM SSMH-A9 TO EXISTING MAN-HOLE IN RIDGEWAY COURT AS SHOWN INCLUDING LINE TO MAN-HOLE B-1.
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CONSTRUCTION NOTES:

1. INSTALL STOP SIGN & STREET SIGN RE: MUTCD
2. CONSTRUCT HANDICAPPED RAMP RE: CITY OF GJ DETAILS
3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL 6" STANDARD CURB & GUTTER W/ATTACHED SIDEWALK – 87 LF
6. INSTALL 6" DRIVE-OVER CURB & GUTTER W/ATTACHED SIDEWALK – 158 LF
7. INSTALL 6" STANDARD CURB & GUTTER 74 LF
8. SAWCUT & REMOVE ±106 LF EXISTING CONCRETE CURB USE CARE TO ENSURE PAVEMENT EDGE PROVIDES A CLEAN JOIN FOR INSTALL OF NEW CONCRETE VALLEY PAN

GENERAL NOTES:

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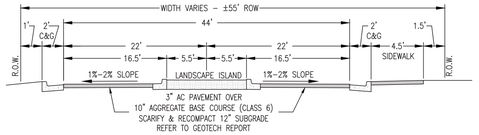
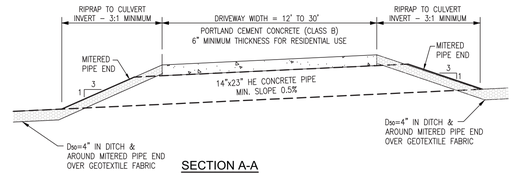
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET C0.2 FOR STREET SECTIONS
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION



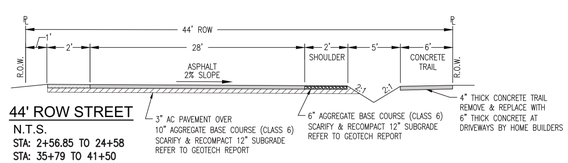
MARIPOSA DRIVE ENTRANCE

N.T.S.

STA: 0+24 TO STA: 2+56.85
(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 3+42)



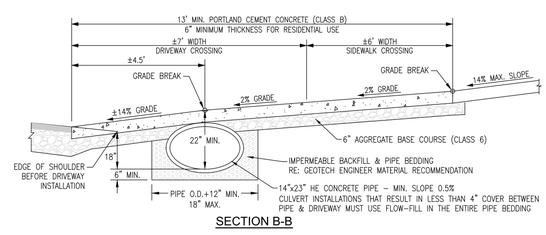
SECTION A-A



44' ROW STREET

N.T.S.

STA: 2+56.85 TO 24+58
STA: 35+79 TO 41+50



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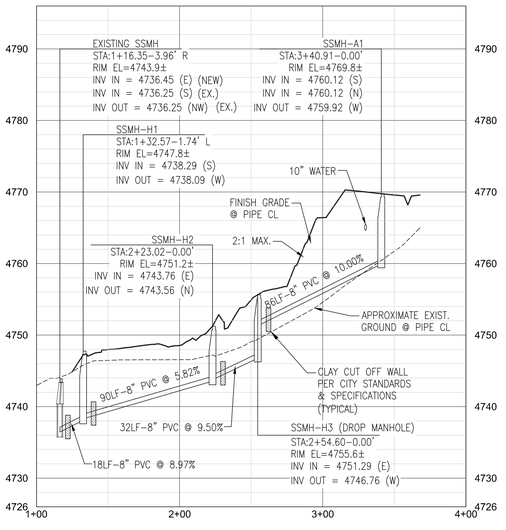
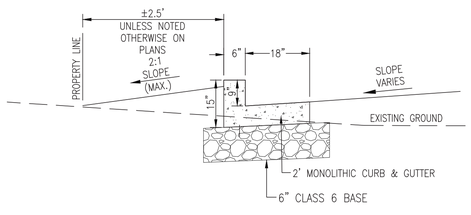


ROAD AND SAN. SEWER PROFILE - RIDGEWAY CT. CONNECTION

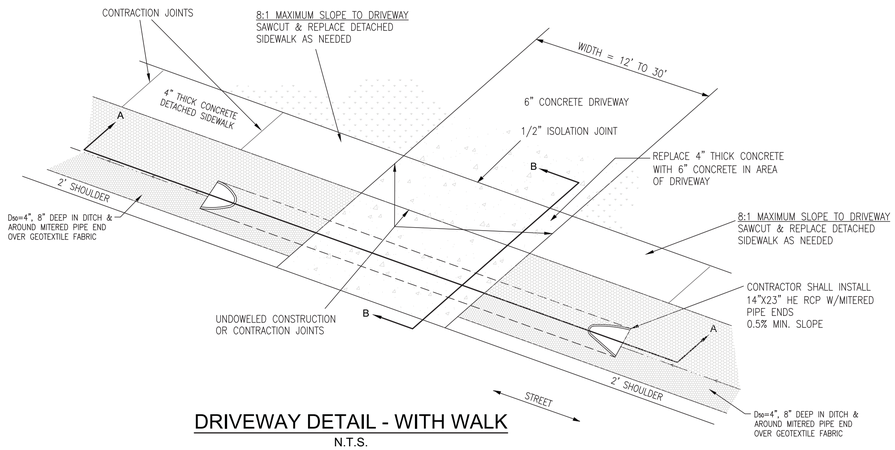
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

CONCRETE CURB DETAIL

N.T.S.



DRIVEWAY DETAIL - WITH WALK

N.T.S.

NOTE:

CARE SHALL BE TAKEN TO REMOVE EXISTING ROCK LINING AND GEOTEXTILE FABRIC PRIOR TO NEW CULVERT INSTALLATION. FABRIC AND ROCK TO BE CAREFULLY REPLACED AROUND NEW CULVERT.

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER _____ DATE _____

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18828
11-20-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	JSY

Road & Sanitary Sewer Plan & Profile

Ridgeway Court Sewer Connection
Pinnacle Ridge Subdivision Filing 1

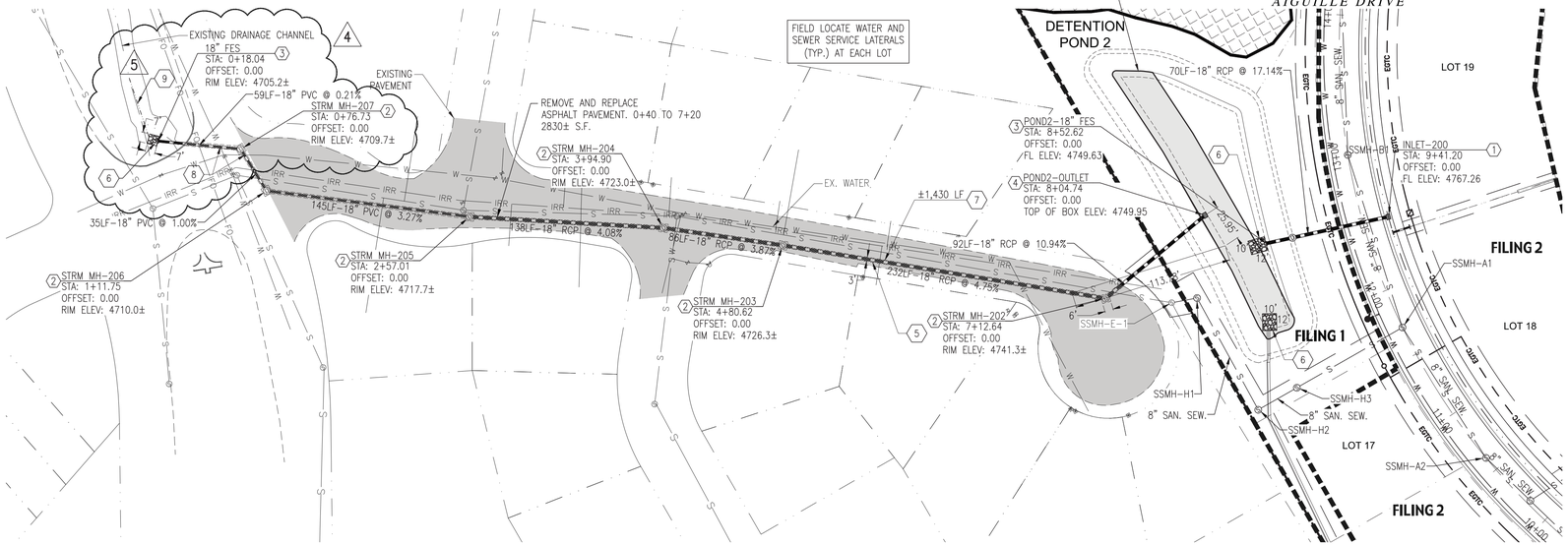
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/02/17**
SCALE: **1" = 50'**
CAD ID: **4.0ss-road-f1.dwg**

~SHEET~
C4.1

GENERAL NOTES:

1. REFERENCE SHEET C0.1 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. STATIONS ARE IN REFERENCE TO CENTER LINE OF ROAD, UNLESS OTHERWISE INDICATED.
4. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.

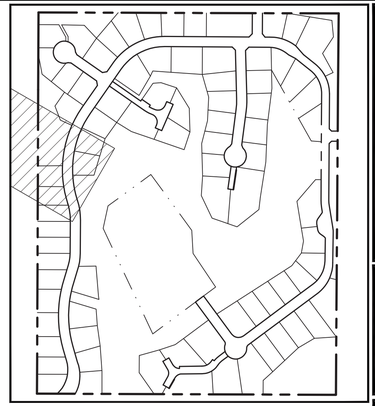


CONSTRUCTION NOTES:

1. INSTALL/MODIFY 2'x3' AREA INLET RE: CITY STD. DETAILS, & THIS SHEET
2. INSTALL 48"ø MANHOLE RE: CITY STD. DETAILS
3. INSTALL FES WITH RIP RAP AT SHOWN SIZE RE: CITY STD. DETAILS
4. INSTALL POND OUTLET STRUCTURE RE: SEE DETAIL ON SHEET 21
5. PAVEMENT PATCH BACK AT SHOWN DIMENSIONS RE: CITY OF GJ DETAILS
6. INSTALL D_{50}=6", 12" DEEP RIPRAP BASIN OVER GEOFABRIC AT SHOWN DIMENSIONS RE: DETAIL THIS SHEET. (4)
7. SAWCUT LINE
8. WATER CROSSING. COORDINATE WITH UTE WATER FOR ENCASEMENT REQUIREMENTS
9. TIE TO EX. DITCH INVERT WITH POSITIVE GRADE (5)

NOTE:

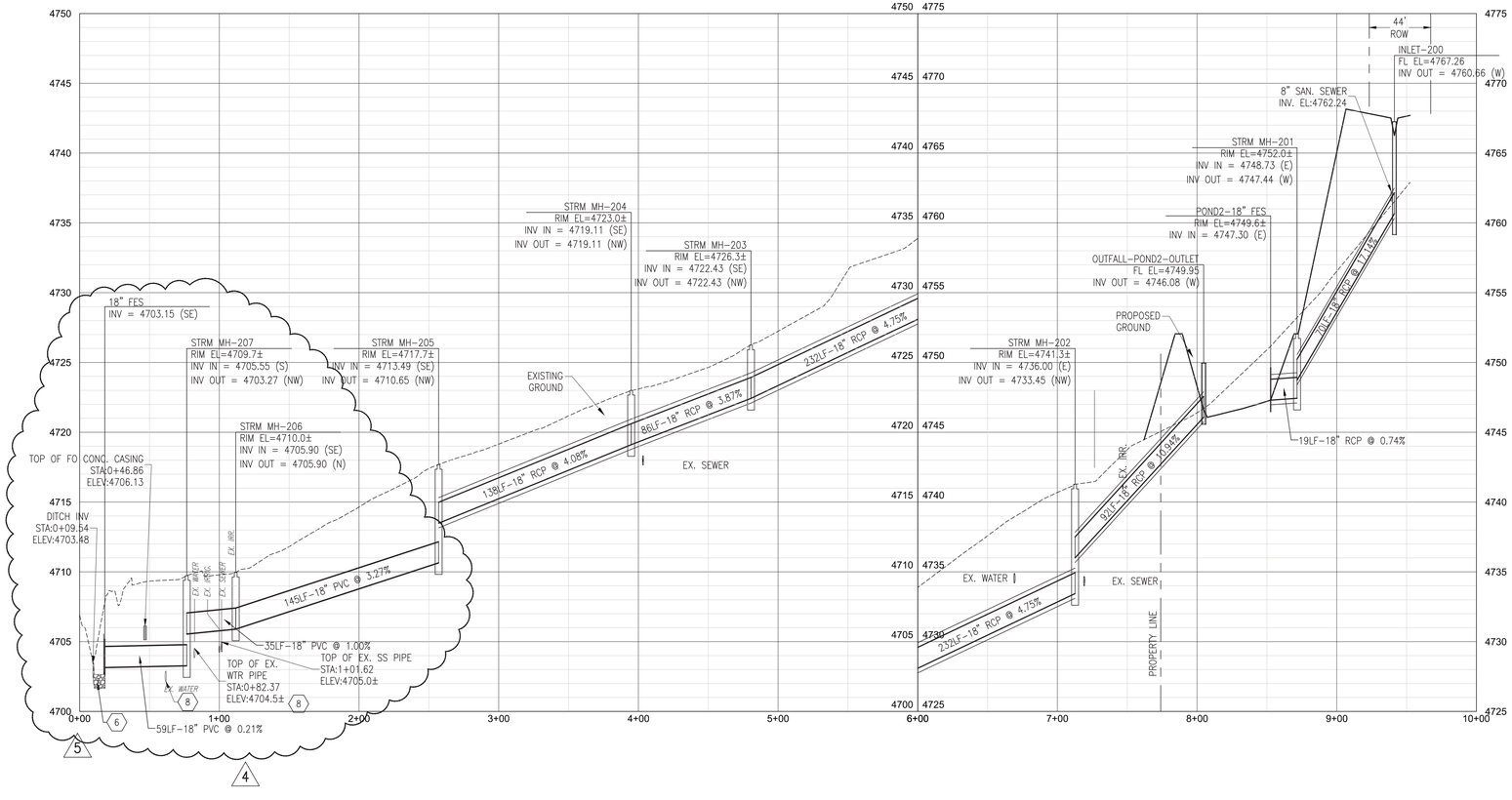
CONTRACTOR TO LOCATE INDIVIDUAL WATER AND SANITARY SEWER LATERALS TO EACH HOUSE PRIOR TO BEGINNING CONSTRUCTION. NOTIFY ENGINEER IF CONFLICTS ARE FOUND.

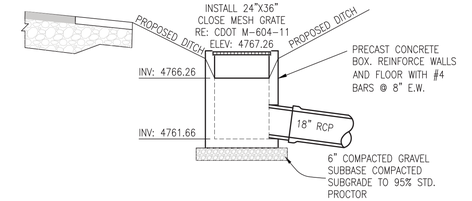


KEY MAP
N.T.S.

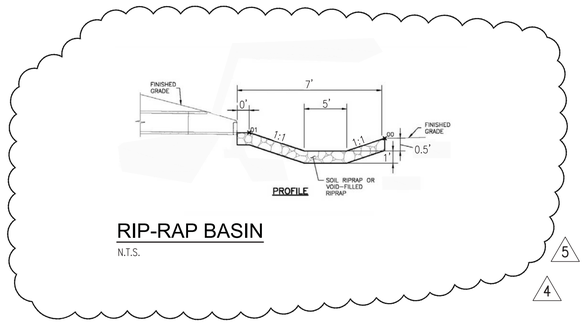
STORM SEWER PLAN AND PROFILE - POND 2 OUTFALL

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'





MODIFIED STORM DRAIN AREA INLET-200
N.T.S.



RIP-RAP BASIN
N.T.S.

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
6	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	JSV
5	11/09/17	REVISE PIPE TYPE DS FROM MH 205	BBS
4	11/08/17	REVISED MH 207 TO AVOID FO CONFLICTS	BBS
3	10/24/17	REVD MH 205, 206 AND 207 TO AVOID CONFLICTS	DLS
2	10/09/17	REVISED PER CITY COMMENT ROUND 2 DATED SEPT. 13, 2017	DLS
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	BY

Storm Sewer Plan and Profile
Pond 2 Outfall

Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

ACCEPTANCE BLOCK

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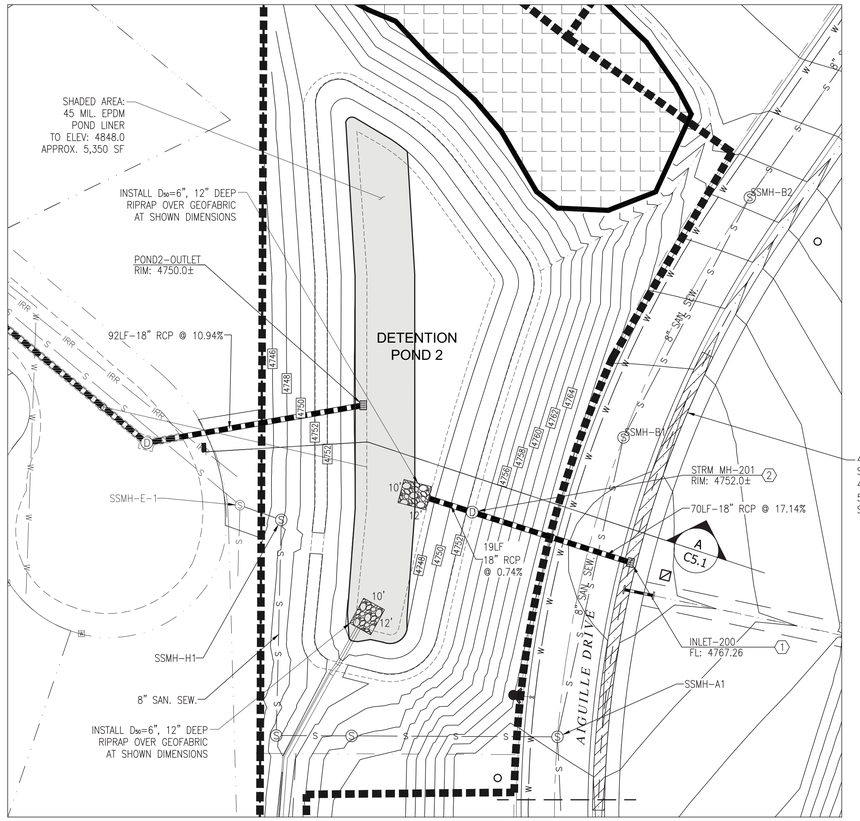
CITY DEVELOPMENT ENGINEER DATE

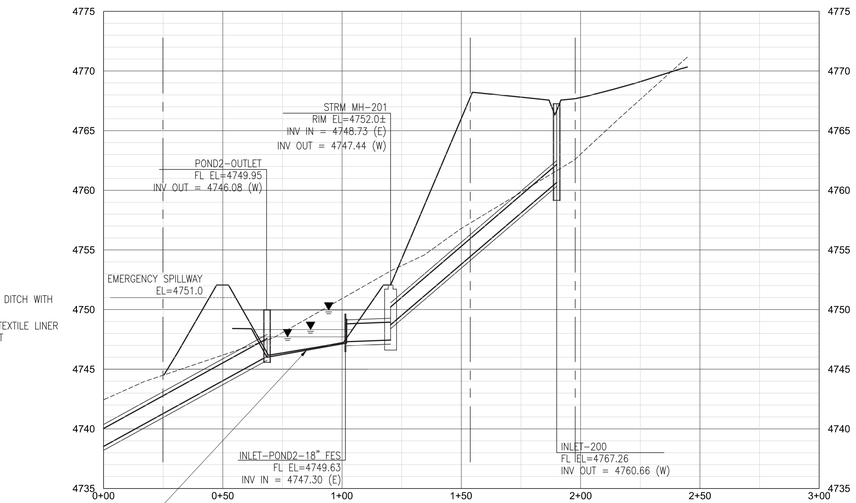
PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1" = 50'
CAD ID: 5.0storm-f1.dwg

~SHEET~
C5.0



POND 2 - PLAN

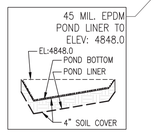
SCALE: 1" = 30'

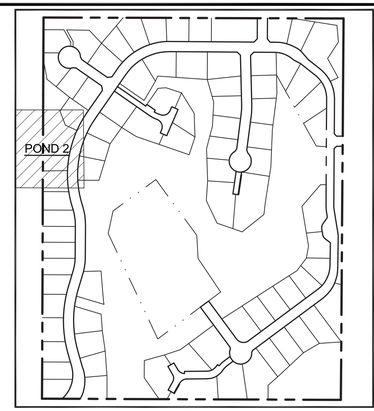


A
C5.1

POND 2 SECTION

H: 1"=30'
V: 1"=1.5'



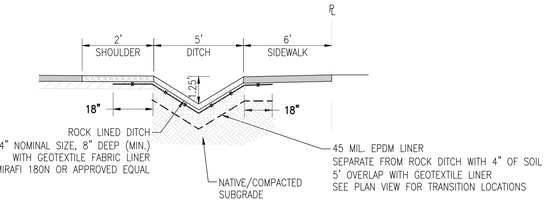


KEY MAP

N.T.S.

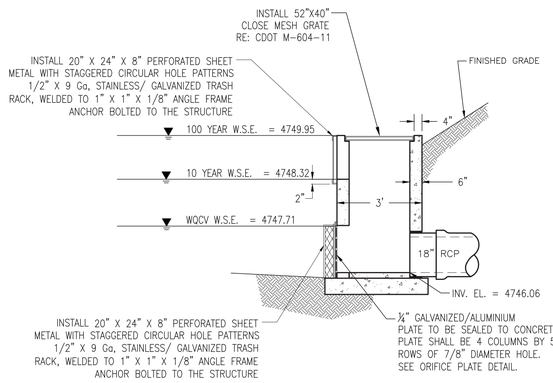
CONSTRUCTION NOTES:

1. INSTALL/MODIFIY 3'X4' AREA INLET
   RE: CITY STD. DETAILS, & THIS SHEET
2. INSTALL 48"ø MANHOLE
   RE: CITY STD. DETAILS

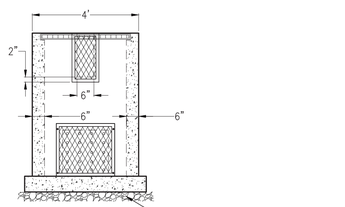


ROCK LINED ROADSIDE DITCH
WITH EPDM LINER

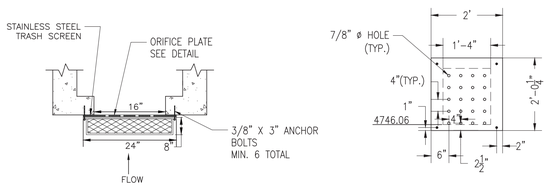
N.T.S.



PROFILE



FRONT ELEVATION



POND OUTLET STRUCTURE DETAIL

N.T.S.

POND 2 - SUMMARY TABLES

POND 2	VOLUME (CF)	WSEL (FT)	PEAK DISCHARGE FLOW (CFS)	ALLOWABLE PEAK DISCHARGE FLOW (CFS)
WQCV	7,575	4747.71	NA	NA
10 YEAR	13,992	4748.32	0.52	1.87
100 YEAR	31,059	4749.95	4.21	7.79

GENERAL NOTES:

1. REFERENCE SHEET C0.2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. STATIONS ARE IN REFERENCE TO CENTER LINE OF ROAD, UNLESS OTHERWISE INDICATED.
4. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
5. REFER TO SHEET C5.0 FOR CONSTRUCTION KEY NOTES.
6. POND LINER TO BE INSTALLED PER MANUFACTURES RECOMMENDATIONS BY APPROVED INSTALL CONTRACTOR AIRTEST SEAMS. ENGINEER TO INSPECT SEAMS & INSTALLATION OPERATION.

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

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• PROJECT MANAGERS
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Phone: (970) 245-9051
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James C. Atkinson
PROFESSIONAL ENGINEER
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COLORADO LICENSED
JAMES C. ATKINSON
18828
11-20-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

BY	REV. DATE	COMMENT
DLS	1.	9/06/17 REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017
DLS	2.	10/09/17 REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017
JSY	3.	11/20/17 REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017

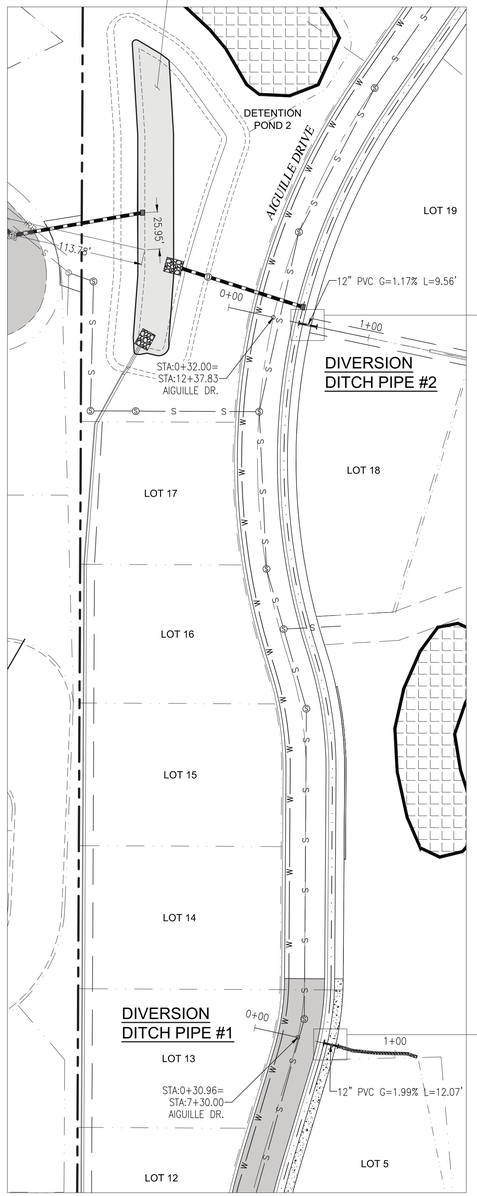
Storm Sewer Plan
Pond 1 and 2 Details

Pinnacle Ridge Subdivision

Mariposa Drive
Grand Junction, Colorado 81507

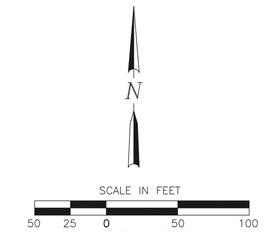
PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1" = 30'
CAD ID: 5.0storm-f1.dwg

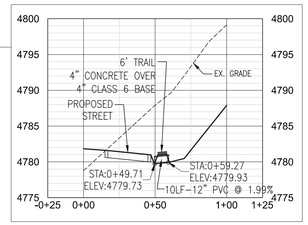
~SHEET~
C5.1



STORM SEWER PLAN - DIVERSION DITCH PIPES

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'





DIVERSION DITCH PIPE #2

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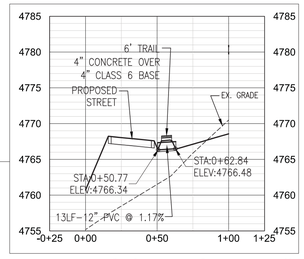
VERTICAL SCALE: 1" = 10'



DIVERSION DITCH PIPE #1

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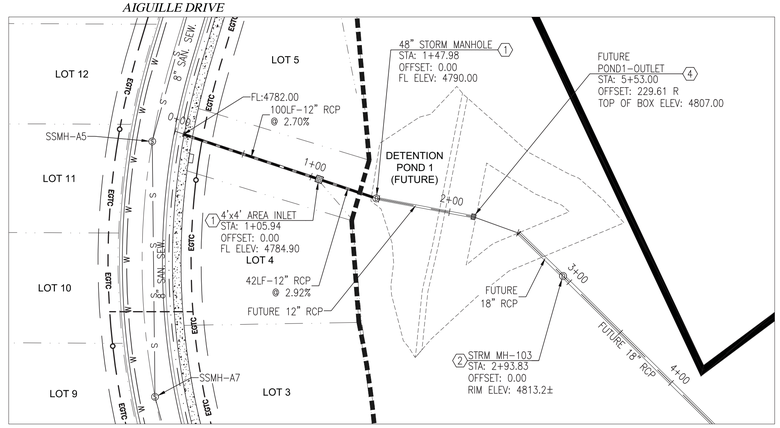
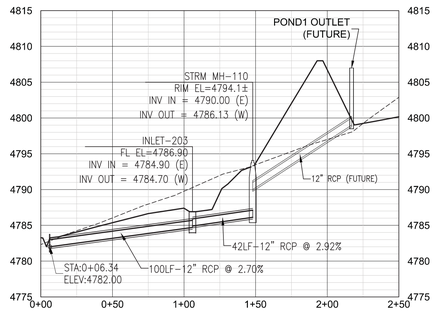
VERTICAL SCALE: 1" = 10'



STORM SEWER PLAN - POND 1 OUTLET

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



STORM SEWER PROFILE - POND 1 OUTLET

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 10'

CONSTRUCTION NOTES:

1. INSTALL 4'x4' AREA INLET
   RE: CITY STD. DETAILS
2. INSTALL 48"ø MANHOLE
   RE: CITY STD. DETAILS
3. MITER PIPE END
   RE: CITY STD. DETAILS
4. INSTALL POND OUTLET STRUCTURE.
   RE: SEE DETAIL ON SHEET 21

GENERAL NOTES:

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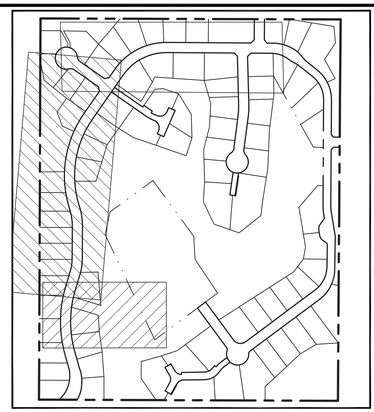
5. POND LINER TO BE INSTALLED PER MANUFACTURES RECOMMENDATIONS BY APPROVED INSTALL CONTRACTOR AIRTEST SEAMS. ENGINEER TO INSPECT SEAMS & INSTALLATION OPERATION.



KEY MAP

N.T.S.

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James C. Atkinson
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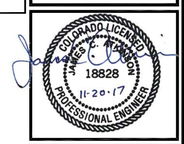

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MAJOR SUBDIVISION
FINAL PLAN

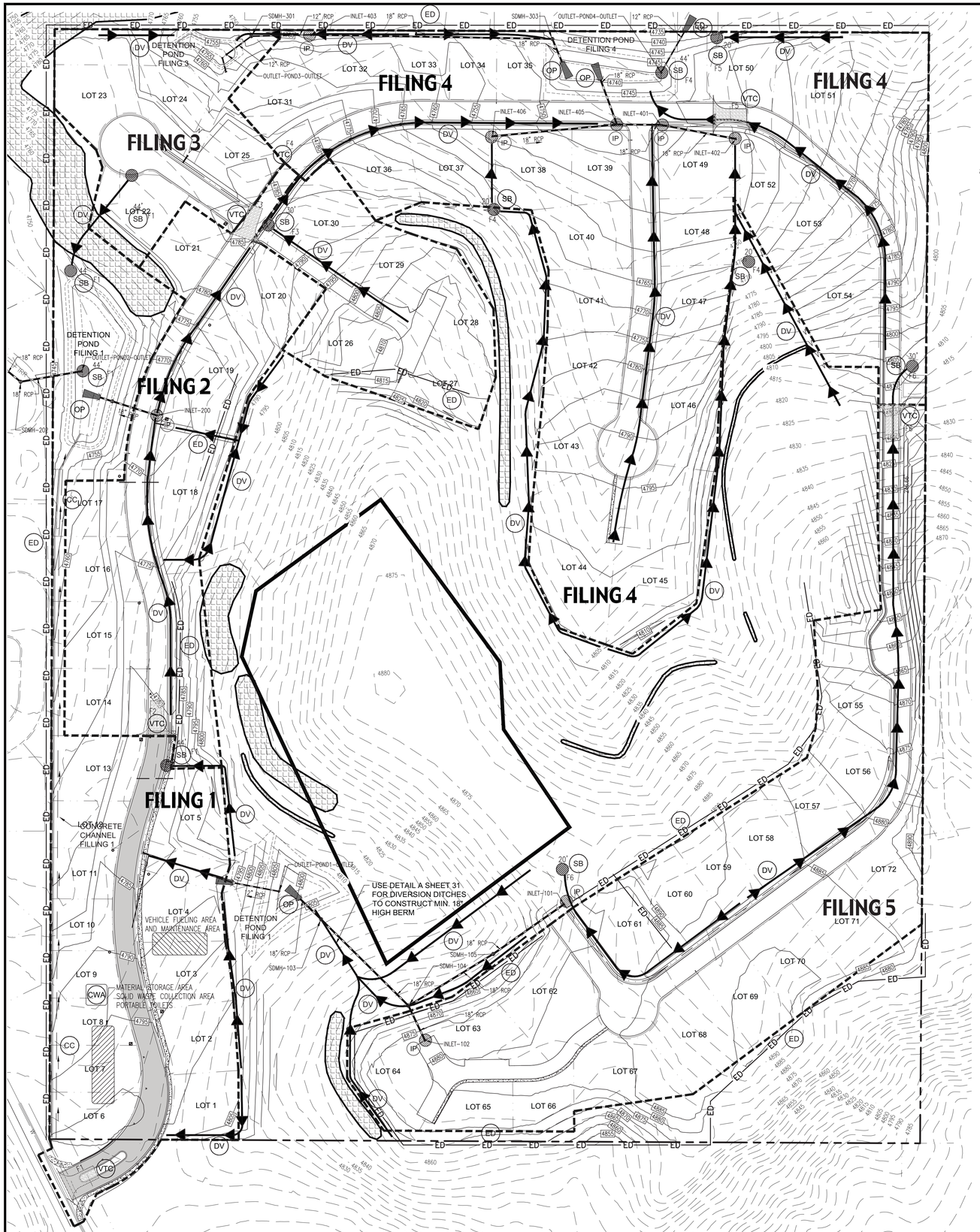
REV.	DATE	COMMENT	BY
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	JSY
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
1	8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

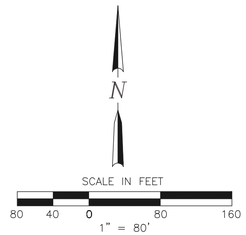
Storm Sewer Plan and Profile
Pond 3 & 4 Outlet

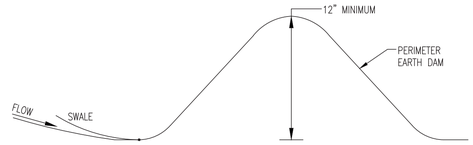
Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 50'**
CAD ID: **5.0storm-f1.dwg**

~SHEET~
C5.2







EARTH DAM SECTION
SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
EARTHEN DAM	ED	ED
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
SEDIMENT BASIN	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

GRADING NOTE:

FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

GENERAL NOTES:

1. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL REQUIRED EASEMENTS, RIGHT AND/OR RIGHTS-OF-WAY PURSUANT TO THE DISCHARGE FROM THE SEDIMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS AND GRADING OR OTHER WORK TO BE PERFORMED ON ADJACENT OR DOWNSTREAM PROPERTIES AFFECTED BY THE PLAN.
2. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1); FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE, THE IN-PLACE SEDIMENT CONTROL MEASURES WILL BE MAINTAINED ON A CONTINUING BASIS UNTIL THE SITE IS PERMANENTLY STABILIZED AND ALL PERMIT REQUIREMENTS ARE MET.
3. REFER TO CITY OF GRAND JUNCTION STANDARD DRAWINGS AND SPECIFICATIONS.
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE 5-2-1 DRAINAGE AUTHORITY. CONTACT MARK BARSLUND 970-201-1362

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

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COLORADO LICENSE No. 18828

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	JSY

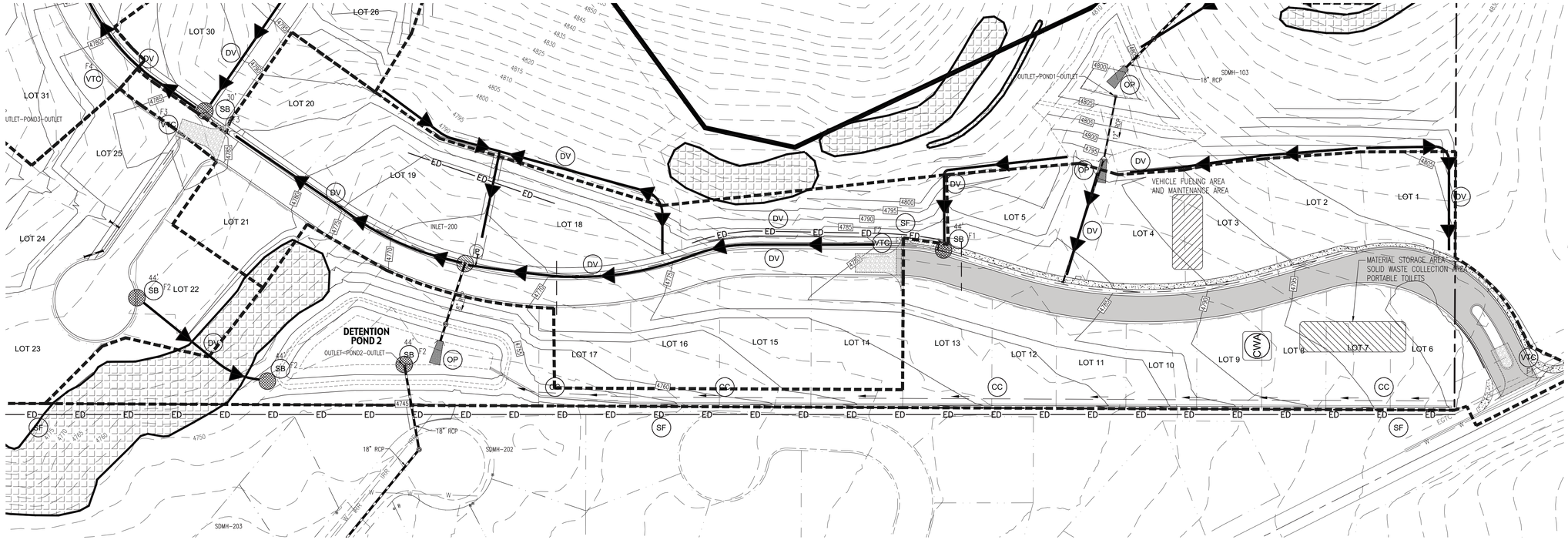
Overall Construction Stormwater Management Plan

Pinnacle Ridge Subdivison
Filing 1

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 07/08/15
SCALE:
CAD ID: 6.0swm-f1.dwg

~SHEET~
C6.0



N

SCALE IN FEET

60 30 0 60 120

1" = 60'

CONTOUR INTERVAL = 2'

GRADING NOTE:

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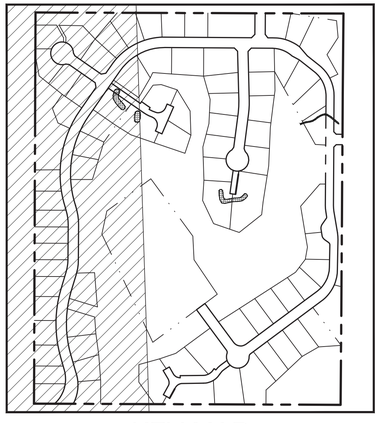
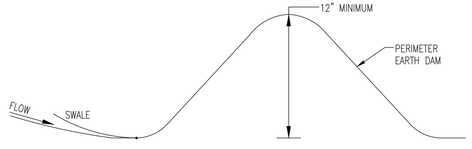


KEY MAP

N.T.S.



EARTH DAM SECTION

SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
EARTHEN DAM	ED	ED
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
SEDIMENT BASIN	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT
1	8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017

Construction Stormwater Management Plan Filling 1

Pinnacle Ridge Subdivison
Filing 1

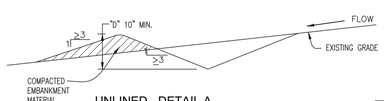
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/08/17
SCALE: SEE PLAN
CAD ID: 6.0swm-f1.dwg

~SHEET~
C6.1

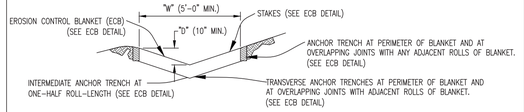
DIVERSION DITCH DETAIL A

DV

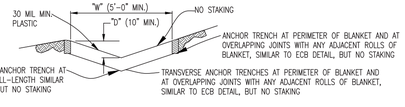


UNLINED - DETAIL A
LONGITUDINAL SLOPE ≤ 0.5%

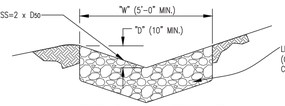




EROSION CONTROL BLANKET (ECB) LINED - DETAIL B
LONGITUDINAL SLOPE 0.5% TO 3 %



PLASTIC LINED - DETAIL C
LONGITUDINAL SLOPE 3% TO 33%



RIPRAP LINED - DETAIL D
LONGITUDINAL SLOPE 3% TO 33%

DIVERSION DITCH INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF DIVERSION DITCH.
   - TYPE OF DITCH (UNLINED, ECB PLASTIC LINED OR RIPRAP LINED).
   - LENGTH OF EACH TYPE OF DITCH.
   - DEPTH, "D", AND WIDTH, "W" DIMENSIONS.
   - FOR ECB LINED DITCH, EROSION CONTROL BLANKET TYPE (SEE ECB DETAIL).
   - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, "D 50 ".
2. SEE DRAINAGE PLANS FOR DETAILS OF ANY PERMANENT CONVEYANCE FACULTIES OR DIVERSION DITCHES EXCEEDING A 2 YEAR FLOOD 10 CFS.
3. DIVERSION DITCHES INDICATED ON INITIAL SWMP PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES..
4. FOR ECB LINED DITCHES, INSTALLATION OF EROSION CONTROL BLANKET SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.
5. IN LOCATIONS WHERE CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION DITCH, THE PERMITTEES SHALL INSTALL A TEMPORARY CULVERT WITH A MINUM DIAMETER OF 12-INCHES.

DIVERSION DITCH MAINTENANCE NOTES

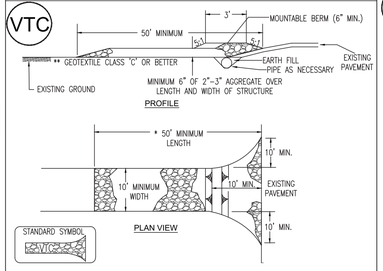
1. THE SWMP MANAGER SHALL INSPECT DIVERSION DITCHES WEEKLY AND DURING AND AFTER ANY STORM. MAKE REPAIRS AS NECESSARY.
2. DIVERSION DITCHES ARE TO REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION, OR IF APPROVED BY LOCAL JURISDICTION MAY BE LEFT IN PLACE.
3. IF DIVERSION DITCHES ARE REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, DRILL SEEDED, HAY CRIMPED MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

DETAIL BASED ON DETAILS PROVIDED BY DOUGLAS COUNTY

Urban Drainage and Flood Control District Drainage Criteria Manual (V.3)	Figure C5-3 DIVERSION DITCH AND DIKE

STABILIZED CONSTRUCTION ENTRANCE

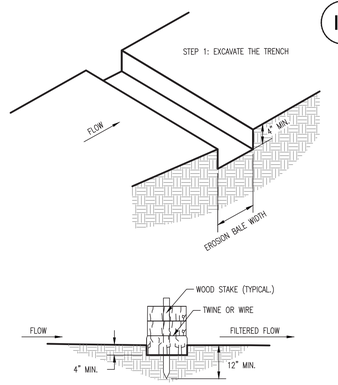
VTC



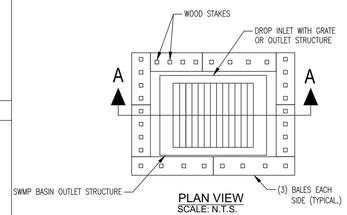
Construction Specification

1. Length – minimum of 50' (*30' for single residence lot).
2. Width – 10' minimum, should be flared at the existing road to provide a tuning radius
3. Geotextile fabric (filter cloth) shall placed over the exiting around prior to placing stone. **This plan approval authority may not require single family residence to use geotextile.
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water – all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location – A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

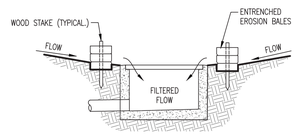
IP



EROSION BALE TRENCHING AND STAKING
SCALE: N.T.S.



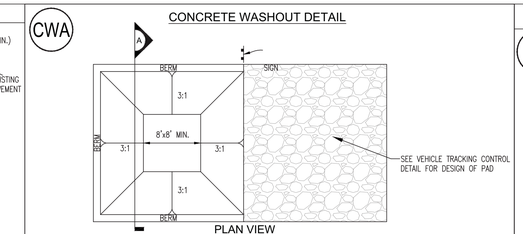
PLAN VIEW
SCALE: N.T.S.



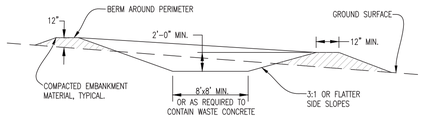
SECTION A-A
EROSION FILTER AT DROP INLET
SCALE: N.T.S.

CONCRETE WASHOUT DETAIL

CWA



PLAN VIEW



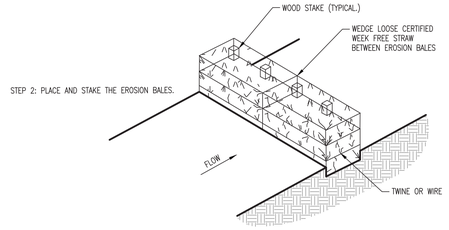
SECTION A

CONCRETE WASHOUT AREA INSTALLATION NOTES

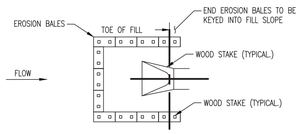
1. SEE PLAN VIEW FOR LOCATIONS OF CONCRETE WASHOUT AREA
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL IS REQUIRED AT THE ACCESS POINT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION

CONCRETE WASHOUT AREA MAINTENANCE NOTES

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, DRILL SEED AND CRIMP MULCH OR OTHERWISE STABILIZE IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
4. INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.



EROSION BALE BMP
SCALE: N.T.S.



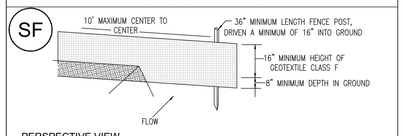
PLAN VIEW
EROSION BALE CULVERT INLET PROTECTION
SCALE: N.T.S.

NOTES

1. STAKES SHALL BE WOOD AND SHALL BE 2" X 2" NOMINAL.
2. EROSION BALES SHALL BE 18" X 18" X 36".
3. EROSION BALES SHALL BE ENTRENCHED 4 IN. MINIMUM INTO THE SOIL TIGHTLY ABUTTED WITH NO GAPS, STAKED, AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERIMETER.

DETAIL 22 - SILT FENCE

SF



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength:	50 lbs./in. (min.)	Test: MSMT 509
Tensile Modulus:	20 lbs./in. (min.)	Test: MSMT 509
Flow Rate	0.3 gal. ft. / minute (max.)	Test MSMT 322
Efficiency	75% (min.)	Test: MSMT 322

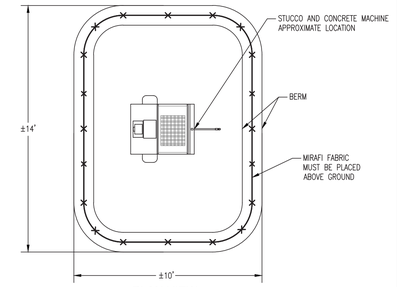
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

SILT FENCE

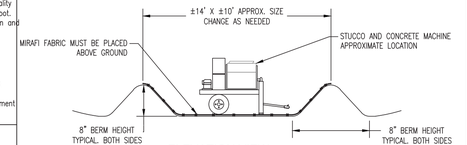
Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

NOTE:
In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.



PLAN VIEW
SCALE: N.T.S.



ELEVATION VIEW
SCALE: N.T.S.

STUCCO & CONCRETE MACHINE BMP
SCALE N.T.S.

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 PROFESSIONAL ENGINEER
11-20-17

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	BY
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	DLS

Construction Stormwater Management Plan Details

Pinnacle Ridge Subdivison
Filing 1

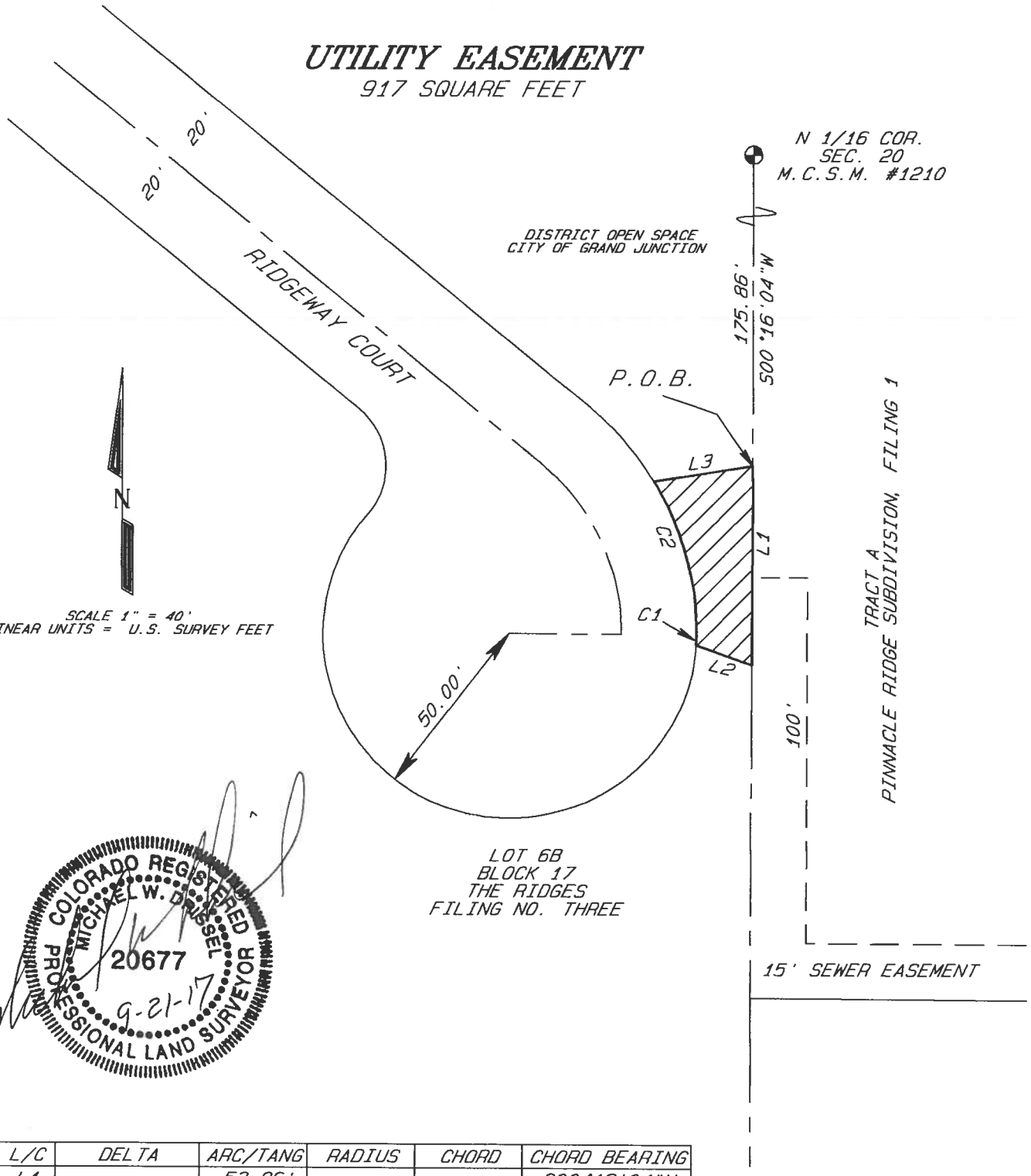
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **07/06/15**
SCALE:
CAD ID: **6.0swm-f1.dwg**

~SHEET~
C6.2

EXHIBIT A

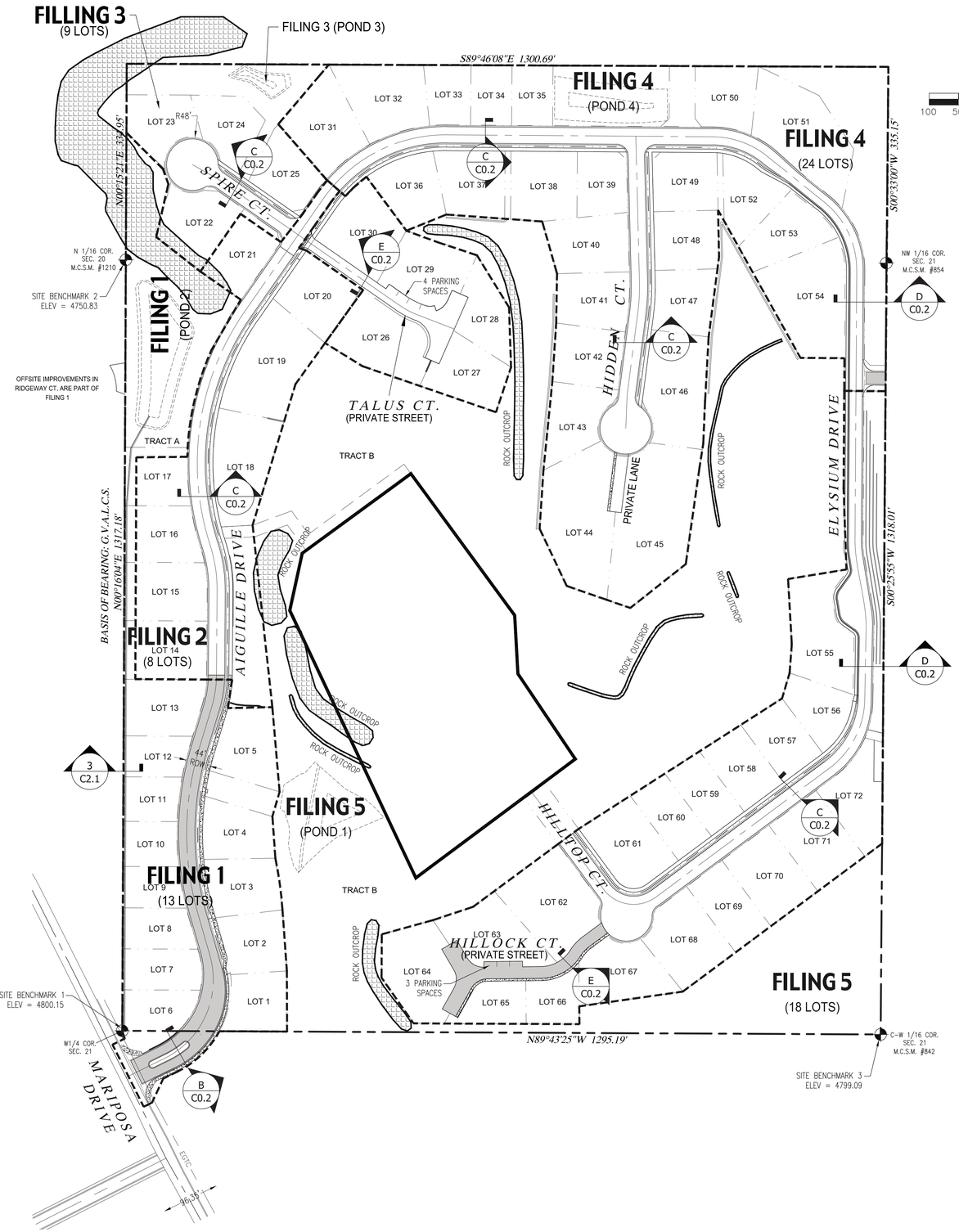
UTILITY EASEMENT
917 SQUARE FEET

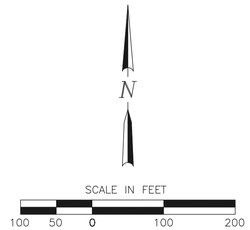


COLORADO REGISTERED
MICHAEL W. DRUSSEL
20677
PROFESSIONAL LAND SURVEYOR
9-21-17

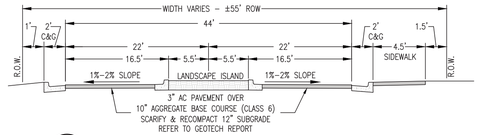
L/C	DELTA	ARC/TANG	RADIUS	CHORD	CHORD BEARING
L1		53.96'			S00°16'04"W
L2		15.91'			N70°34'18"W
C1	03°11'25"	2.78'	50.00'	2.78'	N01°51'48"E
C2	31°10'28"	43.71'	80.33'	43.17'	N15°19'09"W
L3		26.91'			N80°54'55"E

D H SURVEYS, INC.
970-245-8749
JOB #129-04-03

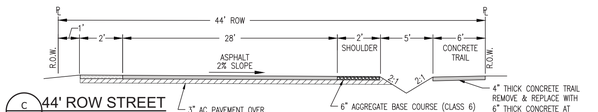




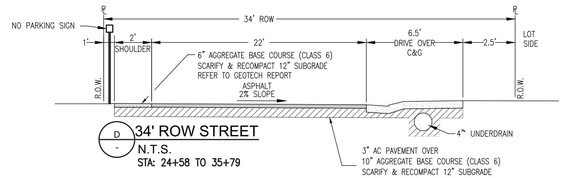
PROPOSED LAND USE TABLE			
SINGLE FAMILY LOTS (72 TOTAL)	934,944 S.F. – 21.46 AC	47.58%	OWNER: PRIVATE
TRACT A:	57,533 S.F. – 1.32 AC	2.93%	OWNER: HOA
TRACT B: OPEN SPACE	658,275 S.F. – 15.11 AC	33.50%	OWNER: HOA
FUTURE TRACTS	122,687 S.F. – 2.82 AC	6.24%	OWNER: HOA
RIGHT-OF-WAY:	191,434 S.F. – 4.39 AC	9.74%	OWNER: PUBLIC
TOTAL SITE AREA:	1,964,873 S.F. – 45.11 AC		



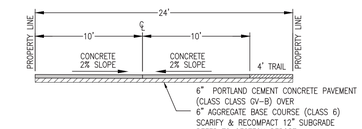
B – MARIPOSA DRIVE ENTRANCE
N.T.S.
STA: 0+24 TO STA: 2+56.85
(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 3+42)



C – 44' ROW STREET
N.T.S.
STA: 2+56.85 TO 24+58
STA: 35+79 TO 41+50



D – 34' ROW STREET
N.T.S.
STA: 24+58 TO 35+79



E – PRIVATE STREET & LANE DETAIL
N.T.S.
TRACTS C,F,J

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21. TOWNSHIP 1 SOUTH. RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM: LOTS 1 – 9. BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK B AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = R–2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'/25'
   REAR = 30'/5'
   SIDE = 15'/3'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON–BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON–SITE PARKING REQUIREMENT.

LEGEND

FILING & LIMITS OF DEVELOPMENT DESIGNATION

PROJECT BENCHMARK

PROJECT BENCHMARK #1
LOCATED AT THE SOUTHWEST CORNER OF THE SITE.
MONUMENT ID: PLS 18480, THE W1/4 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31563.18 EASTING: 78944.74 ELEV: 4800.15 (NAVD88)

PROJECT BENCHMARK #2
LOCATED AT THE WEST PROPERTY LINE, NEAR OUTLOOK COURT.
MONUMENT ID: NCSN #1210, THE N1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 32880.35 EASTING: 78949.85 ELEV: 4750.83 (NAVD88)

PROJECT BENCHMARK #3
LOCATED AT THE SOUTHEAST CORNER OF THE SITE.
MONUMENT ID: NCSN #842, THE W1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31558.05 EASTING: 80239.95 ELEV: 4799.09 (NAVD88)

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 11-20-17 PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/08/17	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017	DLS
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	JSY

Filing Plan
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 100'**
CAD ID: **0.0cover-f1.dwg**

~SHEET~
C0.2

EXHIBIT A

UTILITY EASEMENT DESCRIPTION

A parcel of land for a utility easement, situate in the SE 1/4 NE 1/4 of Section 20, Township 1 South, Range 1 West of the Ute Meridian, City of Grand Junction, Mesa County, Colorado, being more particularly described as follows:

Commencing at the N 1/16 corner of said Section 20;
thence S00°16'04"W a distance of 175.86 feet along the east line of said SE 1/4 NE 1/4 to the point of beginning;
thence S00º16’04”W a distance of 53.96 feet along said east line;
thence N70º34'18"W a distance of 15.91 feet to the right-of-way of Ridgeway Court;
thence along the arc of a non-tangent curve to the left 2.78 feet, having a central angle of 03°11'25" and a radius of 50.00 feet, the chord of which bears N15º19'09"W a distance of 2.78 feet along said right-of-way;
thence N80°54'55"E a distance of 26.91 feet to the point of beginning.
Said parcel contains 917 square feet more or less.

This description was prepared by:
Michael W. Drissel PLS
118 Ouray Ave.
Grand Junction, CO. 81501

VORTEX
ENGINEERING & ARCHITECTURE, INC.

LETTER OF TRANSMITTAL

VIA: Hand Delivered

TO: Mesa County Building Department
Attn: Darrell Bay
200 South Spruce Street
Grand Junction, CO 81501

RE: Pinnacle Ridge – Filing 1
Mariposa Drive
Grand Junction, CO

DATE: November 10, 2017
VEI #: F04-006

WE ARE SENDING YOU ☐ Shop drawings ☐ Copy of letter ☒ Attached ☐ Prints ☐ Change order

COPIES	REVISION	REVISION DATE	SHEET NO.	DESCRIPTION
One (1)				Copy of the Final Geotechnical Report (Fillings 1, 2&3), prepared by Huddleston-Berry, dated 6/7/17
One (1)	2	10/09/17	C2.0	24"x36" Copy of the Overall Grading & Drainage Plan – Filings 1 – 5, prepared by Vortex Engineering, Inc., dated 6/08/17
One (1)	2	10/09/17	C2.1	24"x36" Copy of the Final Grading & Drainage Plan-Filing 1, prepared by Vortex Engineering, Inc., dated 6/08/17
One (1)	2	10/09/17	C2.2	24"x36" Copy of the Final Grading & Drainage Plan-Filing 1 – Road Cross Sections, prepared by Vortex Engineering, Inc., dated 6/08/17
One (1)				Copy of the T.O.F. Table, prepared by Vortex Engineering, Inc., dated 11/09/17

These Are Transmitted: ☐ For review and signature ☒ For your use ☐ As requested

REMARKS:

Dear Mr. Bay,

The above-referenced documents are provided for your use and records. The City of Grand Junction requires that a letter acknowledging your department's receipt of these documents be presented to the City's Engineering department prior to final plan approval by the City. Please affix your signature, or the signature of a representative from you department, to the signature line below as proof of receipt.

Upon your review, should you have any questions or require additional information, please do not hesitate to contact me at 970-245-9051 or by e-mail at jatkinson@vortexeng.us . Thank you.

Vortex Engineering, Inc.

James C. Atkinson, P.E.

Darrell Bay 11/13/17 Darrell Bay - Chief Building Offic

Signature Date Print Name & Title – Mesa County Building Department

Cc: File

QUIT CLAIM DEED

Two R & D, LLC, of P.O. Box 39, Fruita, Co 81521 ("Grantor"), for the consideration of Ten Dollars and Other Good and Valuable Consideration, in hand paid, hereby sells and quit claims to Pinnacle Ridge Homeowners Association, Inc., of P.O. Box 39, Fruita, CO 81521 ("Grantee"), all right, title and interest in and to Tracts A and B and the drainage easements as set forth on the plat for Pinnacle Ridge Subdivision **Filing 1**

also known as street and number as: Vacant Land

with all its appurtenances, and subject to 2017 general taxes, payable in 2018, and all subsequent taxes; easements, right-of-way, restrictions, covenants, conditions and reservation of record or in use.

No Consideration

Signed on _____, 2017

_____
Robert W. Jones II, Managing Member
Two R & D, LLC

STATE OF COLORADO)
) ss.
COUNTY OF MESA)

The foregoing instrument was acknowledged before me on _____, 2017, by Robert W. Jones II, Managing Member of Two R & D, LLC.

_____
Notary Public

November 20, 2017

City of Grand Junction – Planning Department
Attn: Scott Peterson, Senior Planner
250 North 5th Street
Grand Junction, CO 81501

RE: Pinnacle Ridge Subdivision, Filing 1
Response to Comments – Round 3
East of Mariposa Drive
Grand Junction, CO
VEAI #: F04-006
FILE #: SUB-2017-271

Dear Mr. Peterson,

Pinnacle Ridge Subdivision Filing 1 is proposed at the above-referenced location in the City of Grand Junction. The following information is provided in response to Round 3 Review Comments dated November 12, 2017 from various City Departments and outside agencies.

CITY PLANNING –Scott Peterson

1. Landscaping Plan:

FYI. The Community Development Director, in accordance with Section 21.06.040 (b) (19) of the Zoning and Development Code, has approved the submitted landscaping plan for Pinnacle Ridge for the use of xeric and low water plants with no long term water supply being provided. Applicant has stated that they will install a temporary drip irrigation system with irrigation water being provided by trucking it to the site and a pump will pressurize the system. The Plan includes the provision that watering will continue to occur until all vegetation is firmly established. This landscaping plan was prepared and designed by a Licensed Landscape Architect. As such, based on staff's review and that of the Licensed Landscape Architect that this plan meets the intent of the City's landscaping code and is approved.
Code Reference: Section 21.06.060 (h) (9) of the Zoning and Development Code and V-10 of the SSIDS Manual.

Applicant's Response:
Comments acknowledged.

2. Covenants and Dedication Documents, etc.:

a. Senior City Staff Attorney has reviewed submitted CCR's and has one additional comment. See attached document and revise CCR's as applicable.

Applicant's Response:
The revised CCR's are included in this re-submittal.

b. Submit conveyance document(s) for proposed private drainage easements, proposed Ingress/Egress Easement and Warranty Deed for the dedication of Tracts to the HOA, along with legal description and map exhibits, if applicable, for review prior to recording.
Code Reference: IV-2 of the SSIDS Manual.

Applicant's Response:
The conveyance documents are included in this re-submittal.

3. Tract B Land Dedication to City:
City Project Manager has scheduled request for the December 7, 2017 City Parks Board Meeting and will request that the applicant attend meeting as well in case the Board has any additional questions, etc. The meeting will begin at Noon at the City Parks Department in Lincoln Park. Their recommendation will tentatively be scheduled for the December 20, 2017 City Council meeting.
Code Reference: Section 21.06.020 (b) of the Zoning and Development Code.

Applicant's Response:
Comments acknowledged.

4. Revocable Permit – Sign/Landscaping:
a. City Project Manager will process proposed Revocable Permit for the December 7, 2017 City Council Meeting.

Applicant's Response:
Comments acknowledged.

5. Site Plan for Recording (Sheet 1):
Label Aiguille Drive.
Code Reference: V-22 of the SSIDS Manual.

Applicant's Response:
Aiguille Drive has been labeled.

6. Off-Site Utility Easement (adjacent to Ridgeway Court):
Senior City Staff Attorney will prepare dedication document once review of legal description and map exhibit has been reviewed and approved by City Surveyor. City Project Manager will let applicant know of any requested changes. Applicant will be responsible for all recording fees.
Code Reference: IV-2 of the SSIDS Manual.

Applicant's Response:
Comments acknowledged.

CITY DEVELOPMENT ENGINEER

1. GENERAL:
a. When the grading plan is complete, provide a letter from the building department stating they have received hard copies of 1) the geotechnical report, 2) the final grading plan, and 3) a tabulation of the minimum and maximum finished floor elevations by lot. Also reference the individual lot specific grading and drainage plan requirement. This must be the final grading plan and tabulation after all revisions. Include the revision date for the grading plan on the letter: this date must match the revision date on the final plans to be approved by the City.

Applicant's Response:
Letter of Transmittal from Mesa County Building Department has been included with this re-submittal.

b. Execute the easement for the offsite utilities in Ridgeway Court.

Applicant's Response:
Awaiting document from the City for execution & recording

c. Erosion control and revegetation are key elements to the successful development of this project. The City and Developer have agreed to be flexible to add/delete or change the plans as appropriate during construction to achieve necessary results.

Applicant's Response:
Comments acknowledged.

2. PLANS:

a. How will the pond liners be installed? I assume there will be joints. If so, they will need to be glued or welded. Specify how this will happen and make sure it is inspected.

Applicant's Response:
A note has been added to the plans, C5.0 & C5.1, to install per manufacturer's recommendations by an approved contractor. Engineer shall inspect installation.

b. The openings on the trash rack in front of the water quality plate need to be much smaller than the orifice size of the water quality plate. The ¾" will allow too much debris to pass. Engineers have been specifying perforated steel plates. A Google search turns up options.

Applicant's Response:
The detail has been modified to utilize perforated metal with ½" diameter openings.

3. DRAINAGE REPORT:

a) All detention basins and infiltration-based retention basins must be registered on the State of Colorado Stormwater Detention and Infiltration Facility portal. The design engineer must visit the website and follow the directions to register the new basin. The web portal address is: https://maperture.digitaldataservices.com/gvh/?viewer=cswdif
This must be complete and accepted prior to plan approval.

Applicant's Response:
The detention basin will be registered on the State Website.

4. DIA:

Provide evidence of payment to the dry utility companies or include in the DIA.

Applicant's Response:
Prior to start of construction, the evidence of payment to the dry utility companies will be provided.

CITY SURVEYOR – Peter Krick – peterk@gjcity.org (970) 256-4003

1. Sheet 1 of 2:
No additional comments or suggestions.

Applicant's Response:
Comments acknowledged.

2. Sheet 2 of 2:
No additional comments or suggestions.

Applicant's Response:
Comments acknowledged.

OUTSIDE REVIEW AGENCY COMMENTS
(Non-City Agencies)

Ute Water Conservancy District - Jim Daugherty - jdaugherty@utewater.org (970) 242-7491

1. Ck bending radius at the entrance for the subdivision (should be no more than 75% mfg recommended deflection) show fittings as they may be needed to correct the degree of deflection.

Applicant's Response:
22 ½° and 11 ¼° horizontal fittings have been added to the plan.

2. Remove the line work that reflects the PR and Vault, as the developer has agreed to purchase regulated yokes in lieu of a regulated main.

Applicant's Response:
Line work has been removed.

3. As the water main is ten-inch the stub at the filing line should be changed to 63-feet as opposed to the indicated 43-feet, to include a four-inch BO at the line terminus.
See redline for change in water line note three.

Applicant's Response:
Water line note 3 has been revised.

(Responding with "No Comment" or have not responded as of the due date)

The following Review Agencies have <u>not</u> responded as of the comment due date.

1. N/A

The Petitioner is required to submit electronic responses, labeled as "**Response to Comments**" for the following agencies:

1. **City Planning**
2. **City Development Engineer**
3. **Ute Water Conservancy District**

Date due: **February 12, 2018**

Please provide a written response for each comment and, for any changes made to other plans or documents indicate specifically where the change was made.

Vortex Engineering, Inc. looks forward to working successfully with the City of Grand Junction to permit this project.

Upon your review of this information, should you have any questions or require additional information, please do not hesitate to contact me at 970-245-9051. Thank you.

Sincerely,
Vortex Engineering, Inc.



Robert W. Jones, II, P.E.

Cc: File

City of Grand Junction
Review Comments

Date: December 11, 2017 **Comment Round No.** 4 **Page No.** 1 of 3
Project Name: Pinnacle Ridge Subdivision, Filing 1 **File No:** SUB-2017-271
Project Location: East of Mariposa Drive

Check appropriate [X] **if comments were mailed, emailed, and/or picked up.**

Property Owner(s): Two R & D LLC – Attn: Robert Jones II
[ ] **Mailing Address:** P. O. Box 39, Fruita, CO 81521
[X] **Email:** rjones@vortexeng.us **Telephone:** (970) 245-9051
[ ] **Date Picked Up:** _____ **Signature:** _____

Representative(s): Vortex Engineering Inc. – Attn: Robert Jones II
[ ] **Mailing Address:** 2394 Patterson Road, Suite 201, Grand Junction, CO 81505
[X] **Email:** rjones@vortexeng.us **Telephone:** (970) 245-9051
[ ] **Date Picked Up:** _____ **Signature:** _____

Developer(s):
[ ] **Mailing Address:**
[ ] **Email:** **Telephone:**
[ ] **Date Picked Up:** _____ **Signature:** _____

CITY CONTACTS

Project Manager: Scott D. Peterson, Senior Planner
Email: scottp@gjcity.org **Telephone:** (970) 244-1447

Dev. Engineer: Rick Dorris
Email: rickdo@gjcity.org **Telephone:** (970) 256-4034

City of Grand Junction
REQUIREMENTS
(with appropriate Code citations)

CITY PLANNING

1. Covenants and Dedication Documents, etc.:

a. Senior City Staff Attorney has reviewed and approved submitted CCR's. No further response required.

b. Applicant submitted a "Quit Claim Deed." This document needs to be a Warranty Deed (with applicable warranty deed language) for the conveyance of proposed private drainage easements, Ingress/Egress Easement and dedication of Tracts to the HOA.

c. FYI. Senior City Staff Attorney will prepare dedication document for Temporary Turn-Around Easement for property owner's signature to be recorded at time of final subdivision plan recording for Filing 1. No separate legal description or map exhibit is necessary as proposed dedication document can refer to the plat. Applicant is responsible for all recording fees. City Project Manager will let applicant know when document is ready for signatures.

Code Reference: IV-2 of the SSIDS Manual.

Applicant's Response:

Document Reference:

2. Tract B Land Dedication to City:
City Parks Board has tabled this request pending individual board members touring of the site sometime prior to next meeting which is scheduled for Thursday, January 4, 2018. City Project Manager will again request that the applicant attend this meeting as well in case the Board has any additional questions, etc. City Project Manager will let applicant know the meeting time and location as we get closer to that date.
Code Reference: Section 21.06.020 (b) of the Zoning and Development Code.
Applicant's Response:
Document Reference:

3. Revocable Permit – Sign/Landscaping:
FYI. City Council has reviewed and approved Revocable Permit application on December 6, 2017 for the proposed sign and landscaping to be installed within the right-of-way of Aiguille Drive. Applicant will be responsible for a recording fee of $48.00. This document will be recorded at the time of Final Subdivision Plan recording.
Code Reference: Section 21.02.180 of the Zoning and Development Code.
Applicant's Response:
Document Reference:

4. Site Plan for Recording (Sheet 1):
a. Change name of Ridgeway Court to "E Plateau Court".
b. Add/Label typical Front, Side and Rear Yard Setbacks for a lot on the east side of Aiguille Drive.
Code Reference: V-22 of the SSIDS Manual.
Applicant's Response:
Document Reference:

5. Off-Site Drainage Easement (adjacent to Ridgeway Court):
Senior City Staff Attorney will prepare dedication document and City Project Manager will let applicant know when document is ready for signatures. Applicant will be responsible for all recording fees.
Code Reference: IV-2 of the SSIDS Manual.
Applicant's Response:
Document Reference:

6. Subdivision Plat:
On Sheet 2, label Tract B as a blanket "Pedestrian Easement." On Sheet 1, in the Dedication Block, add model dedication language for a Pedestrian Easement.
Code Reference: V-15 of the SSIDS Manual.
Applicant's Response:
Document Reference:

CITY DEVELOPMENT ENGINEER

GENERAL

Review Comment: Execute the easement for the offsite utilities to Ridgeway Court with plat recordation.
Applicant's Response:
Document Reference:

DIA

Review Comment: Provide evidence of payment to the dry utility companies or include in the DIA.

Applicant's Response:
Document Reference:

OUTSIDE REVIEW AGENCY COMMENTS

(Non-City Agencies)

Review Agency: Ute Water Conservancy District
Contact Name: Jim Daugherty
Email / Telephone Number: jdaugherty@utewater.org (970) 242-7491

• No objection.
• ALL FEES AND POLICIES IN EFFECT AT TIME OF APPLICATION WILL APPLY.
• If you have any questions concerning any of this, please feel free to contact Ute Water.

Applicant's Response:

REVIEW AGENCIES

(Responding with "No Comment" or have not responded as of the due date)

The following Review Agencies have not responded as of the comment due date.

1. N/A.

The Petitioner is required to submit electronic responses, labeled as "**Response to Comments**" for the following agencies:

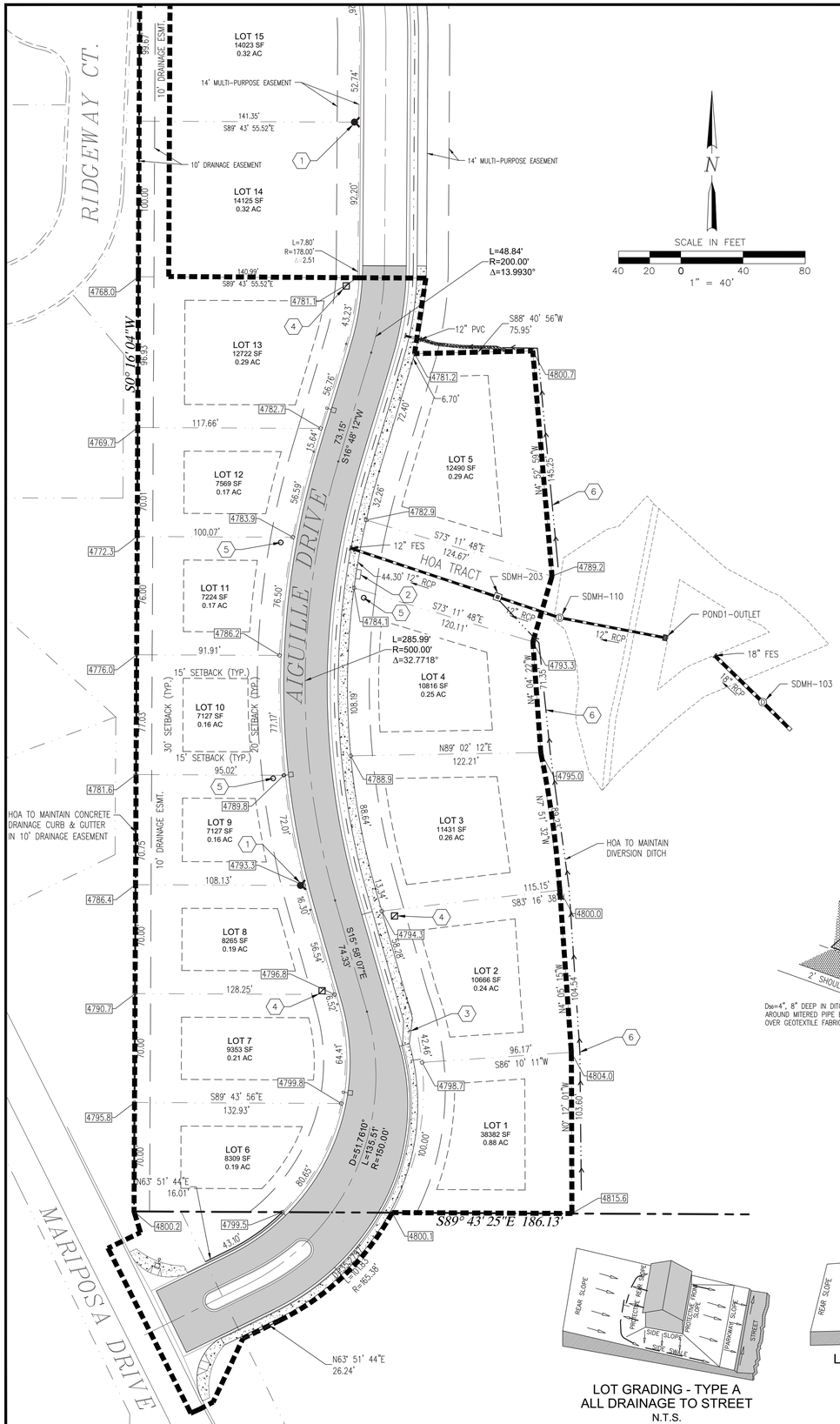
1. **N/A. Application is Approved. Please follow-up with City Project Manager for any remaining items yet to be completed as part of project approval.**

Date due: N/A.

Please provide a written response for each comment and, for any changes made to other plans or documents indicate specifically where the change was made.

I certify that all of the changes noted above have been made to the appropriate documents and plans and there are no other changes other than those noted in the response.

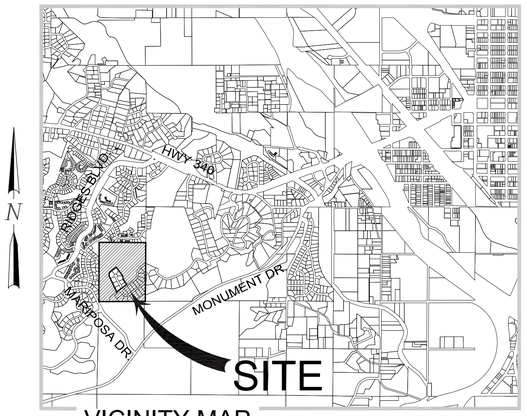
Applicant's Signature **Date**



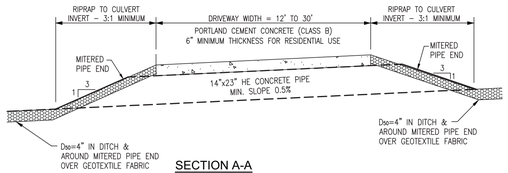
CONSTRUCTION NOTES:

1. PROPOSED FIRE HYDRANT
2. PROPOSED MAILBOX PAD
3. 15' TRANSITION FROM ATTACHED SIDEWALK TO DETACHED SIDEWALK
4. PROPOSED ELECTRIC TRANSFORMER BY XCEL ENERGY
5. PROPOSED ELECTRIC PEDESTAL BY XCEL ENERGY
6. PROPOSED DIVERSION DITCHES DO NOT DISTURB

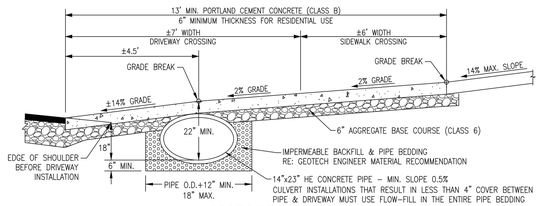
FILING 1 TOF TABLE			
Lot	*Grading*	*Min. TOF*	*Max. TOF*
1	Type A	4801.00	4801.50
2	Type A	4798.70	4799.20
3	Type A	4793.30	4793.80
4	Type A	4787.90	4788.40
5	Type A	4783.60	4784.10
6	Type C	4801.60	4802.10
7	Type C	4799.30	4799.80
8	Type C	4796.00	4796.50
9	Type C	4792.50	4793.00
10	Type C	4789.00	4789.50
11	Type C	4786.00	4786.50
12	Type C	4784.30	4784.80
13	Type C	4783.10	4783.60



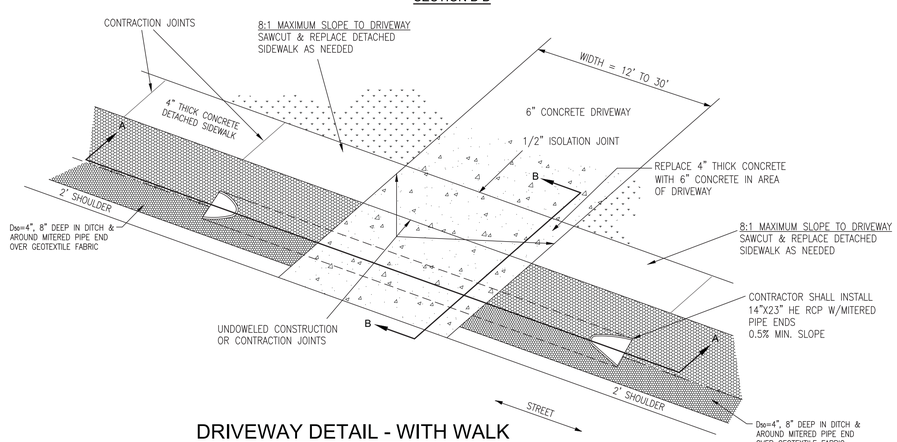
VICINITY MAP



SECTION A-A



SECTION B-B



DRIVEWAY DETAIL - WITH WALK
N.T.S.

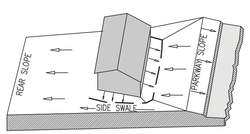
GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. ALL LOTS MUST HAVE AN INDIVIDUAL GEOTECHNICAL INVESTIGATION PERFORMED AND A SITE SPECIFIC ENGINEERING FOUNDATION.
3. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL.
4. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
5. ALL WATER SERVICES SHALL HAVE A PRESSURE REGULATED YOKE INSTALLED BASED ON PRESSURE LIMITS AS DETERMINED IN THE HYDRAULIC ANALYSIS.
6. DIVERSION DITCHES SHOWN ON THIS PLAN SHALL NOT BE DISTURBED AT ANY TIME.
7. DRIVEWAYS SHALL CONFORM TO THE DETAIL SHOWN ON THIS PLAN.
8. HOA SHALL MAINTAIN ALL CONCRETE CURBS, DETENTION PONDS, OUTLET STRUCTURES, RIPRAP, CULVERTS, DRAINAGE DITCHES, EASEMENTS AND TRACTS LOCATED OUTSIDE OF PUBLIC RIGHTS-OF-WAY. IMPROVEMENTS LOCATED WITHIN PUBLIC RIGHTS-OF-WAY ARE TO BE MAINTAINED BY THE CITY OF GRAND JUNCTION.

LEGEND

- PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- 4550.00 LOT CORNER SPOT ELEVATION
- PROPOSED FIRE HYDRANT

LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.



LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.

PROPOSED LAND USE TABLE				
USE	*AREA*	*AC*	*% OF TOTAL*	*OWNER*
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. – 45.11 AC			

CLERK AND RECORDER'S CERTIFICATE

STATE OF COLORADO } ss
COUNTY OF MESA }

I hereby certify that this instrument was filed in my office at _____o'clock__M., this _____ day of _____ A.D. 2017, and is duly recorded in Book No. _____, at page _____, Reception No. _____, Drawer No. _____ Fees $ _____

_____
Clerk and Recorder

By:_____
Deputy

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS & CSI
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED
JAMES C. ATKINSON
18828
11-20-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS
2	10/09/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	JSY

Site Plan for Recording
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 60'**
CAD ID: **pinnacle-sfr.dwg**

~SHEET~
1

PINNACLE RIDGE SUBDIVISION, FILING 1

W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.
City of Grand Junction, Mesa County, Colorado

DEDICATION

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, TWO R & D, LLC a Colorado limited liability company is the owner of that real property situate in the SW 1/4 NW 1/4, the south 10 acres of the NW 1/4 NW 1/4, Section 21, Township 1 South, Range 1 West of the Ute Meridian and a portion of the Energy Center Subdivision recorded under Reception No. 644620, City of Grand Junction, Mesa County, Colorado; being more particularly described as follows:

Beginning at the W 1/4 corner of said Section 21;
thence N00°16'04"E, being the basis of bearing, a distance of 1317.18 feet to the N 1/16 corner of said Section 21;
thence N00°15'21"E a distance of 334.95 feet along the west line of said south 10 acres;
thence S89°46'08"E a distance of 1300.69 feet along the north line of said south 10 acres;
thence S00°32'00"W a distance of 335.15 feet to the NW 1/16 corner of said Section 21;
thence S00°25'55"W a distance of 240.76 feet along the east line of said SW 1/4 NW 1/4;
thence S61°16'33"W a distance of 124.51 feet;
thence along the arc of a curve to the left 266.66 feet, having a central angle of 61°00'00" and a radius of 250.47 feet, the chord of which bears S30°46'33"W a distance of 254.25 feet;
thence along the arc of a curve to the right 208.13 feet, having a central angle of 53°00'00" and a radius of 225.00 feet, the chord of which bears S26°46'33"W a distance of 200.79 feet;
thence S53°16'33"W a distance of 249.38 feet;
thence N33°55'49"W a distance of 175.52 feet;
thence N03°09'01"W a distance of 100.00 feet;
thence N36°13'28"W a distance of 300.00 feet;
thence S53°46'33"W a distance of 230.00 feet;
thence S12°16'33"W a distance of 100.00 feet;
thence S25°13'27"E a distance of 505.16 feet;
thence S53°16'33"W a distance of 157.53 feet;
thence along the arc of a curve to the left 195.51 feet, having a central angle of 53°00'29" and a radius of 211.33 feet, the chord of which bears S26°46'23"W a distance of 188.61 feet to the south line of said SW 1/4 NW 1/4;
thence N89°43'25"W a distance of 290.18 feet to the point of beginning.
Said parcel contains 32.70 acres more or less.

Said Owner has by these presents laid out, platted and subdivided the above-described real property into Lots, and Tracts as shown hereon, and designated the same as PINNACLE RIDGE SUBDIVISION, FILING 1 in the City of Grand Junction, County of Mesa, State of Colorado, and does hereby offer the following dedications and grants:

All streets, roads and Rights-of-Way are dedicated to the City of Grand Junction for the use of the public forever.

All Multipurpose Easements are dedicated to the City of Grand Junction as perpetual easements for City approved utilities including the installation, operation, maintenance and repair of said utilities and appurtenances which may include but are not limited to, electric lines, cable TV lines, natural gas pipelines, sanitary sewer lines, storm sewers, water lines, telephone lines, traffic control facilities, street lighting, landscaping, trees and grade structures.

All Utility Easements are dedicated to the City of Grand Junction as perpetual easements for City approved utilities including the installation, operation, maintenance and repair of said utilities and appurtenances which may include but are not limited to, electric lines, cable TV lines, natural gas pipelines, sanitary sewer lines, storm sewers, water lines, telephone lines, equivalent other public utility providers and appurtenant facilities.

A Drainage Easement over Tract A is dedicated to the City of Grand Junction as a perpetual easement for the inspection, installation, operation, maintenance and repair of detention and drainage facilities and appurtenants thereto. The City of Grand Junction is dedicated reasonable ingress/egress access to the drainage/detention easement areas. The owner(s) and/or the property owners' association, if one exists, is not relieved of its responsibility to inspect, install, operate, maintain and repair the detention and drainage facilities.

All other Drainage easement are granted to the Homeowner's Association by separate instrument.

_____
Robert W. Jones II, Managing Member

STATE OF COLORADO)
)ss
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____ 2017 A.D. by TWO R & D, LLC, Robert W. Jones II, Managing Member.

Witness my hand and official seal: _____
Notary Public

My commission expires: _____

CITY APPROVAL

This plat of PINNACLE RIDGE SUBDIVISION, FILING 1, a subdivision of the City of Grand Junction, County of Mesa, State of Colorado, is approved and accepted on the ____ day of _____, 2017 A.D.

_____ _____
City Manager City Mayor

NOTICE: According to Colorado law you must commence any legal action based upon any defect in the survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of this certification/statement shown hereon.

TITLE CERTIFICATION

State of Colorado
County of Mesa

We, Heritage Title Company, a title insurance company, as duly licensed in the State of Colorado, hereby certify that we have examined the title to the hereon described property, that we find the title to the property is vested to Two R & D, LLC, a Colorado limited liability company ; that the current taxes have been paid; that all mortgages not satisfied or released of record or otherwise terminated by law are shown hereon and that there are no other encumbrances of record; that all easements, reservations and right-of-ways of record are shown hereon.

Date: _____ By: _____

LIENHOLDERS RATIFICATION OF PLAT

The undersigned, hereby certifies that it is a holder of a security interest upon the property hereon described and does hereby join in and consent to the dedication of the land described in said dedication by the owners thereof and agree that its security interest which is recorded under Reception No. 2236040, 2310515, 2422221, 2422230, 2439195, 2488454, 2654494, 2351449, 2351450, 2439196, 2488467, 2654493 of the public records of Mesa County, Colorado shall be subordinated to the dedications shown hereon.

BY: _____ FOR: Alpine Bank

STATE OF COLORADO)
)ss
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____ 2017 A.D. by

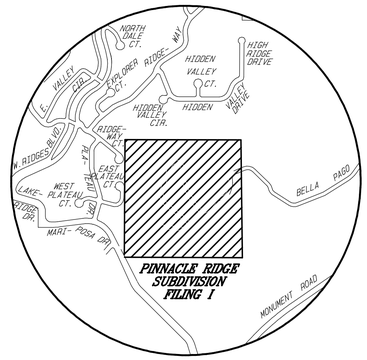
Witness my hand and official seal: _____
Notary Public

My commission expires: _____

CLERK AND RECORDER'S CERTIFICATE

This plat was accepted for filing in the office of the Clerk and Recorder of Mesa County, Colorado at _____ o'clock__M., on this ____ day of _____ 2017 A.D., and was recorded at Reception No. _____, Drawer No. _____, and Fees _____.

_____ _____
Clerk and Recorder Deputy



VICINITY MAP
N.T.S.

To be completed by the City of Grand Junction personnel. The accuracy of this information is the responsibility of the City of Grand Junction.

Declaration of Covenants, Restrictions and Conditions of the Pinnacle Ridge Homeowner's Association, Inc.

recorded under Reception No. _____.

Tracts A and B are conveyed to the Pinnacle Ridge Homeowner's Association, Inc.

recorded under Reception No. _____.

Drainage and Ingress & Egress Easements are conveyed to the Pinnacle Ridge Homeowner's Association

recorded under Reception No. _____.

SURVEYOR'S STATEMENT

I, Michael W. Drissel, a registered Professional Land Surveyor in the State of Colorado, do hereby state that this survey was performed by me or under my direct responsibility, supervision, and checking. It is based upon my professional knowledge, information and belief according to applicable standards of practice. This is not a guarantee or warranty, either expressed or implied. Title research was supplied by Heritage Title Company under FILE NUMBER: 598-H0502023-900-GTO.

FOR REVIEW

REVISED 07/27/17
REVISED 08/24/17
REVISED 09/27/17

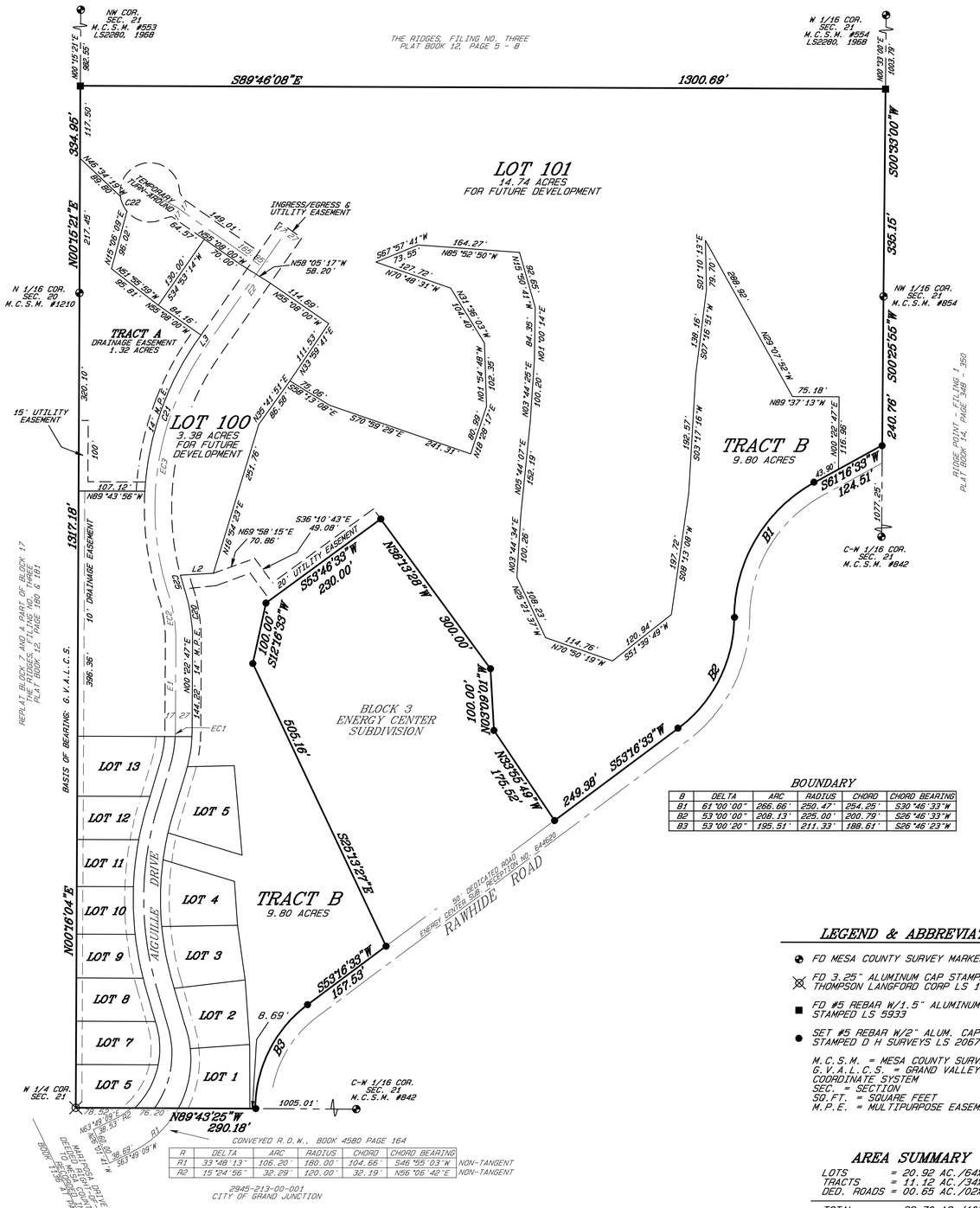
PINNACLE RIDGE SUBDIVISION
FILING 1
LOCATED IN THE
W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.

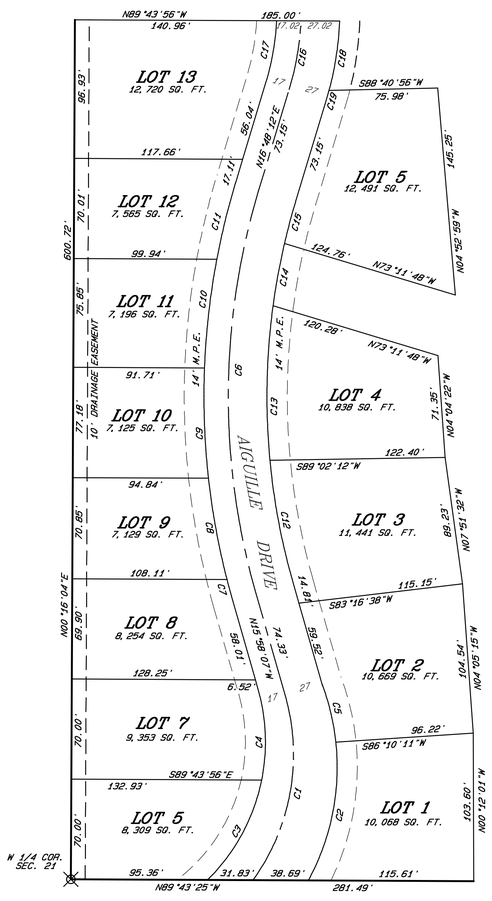
D H SURVEYS INC.
118 OURAY AVE. - GRAND JUNCTION, CO.
(970) 245-8749

Designed By M.W.D.	Checked By E.E.B.	Job No. 129-04-03
Drawn By TMODEL	Date MAY 2017	Sheet 1 OF 2

PINNACLE RIDGE SUBDIVISION, FILING 1

W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M., City of Grand Junction, Mesa County, Colorado





LOT & CENTER LINE DIMENSIONS

L/C	DELTA	ARC	RADIUS	CHORD	CHORD BEARING	
C1	51°45'39"	135.51	150.00'	130.95'	S09°54'43"W	
C2	34°44'09"	100.03'	165.00'	98.51'	S11°15'38"W	NON-TANGENT
C3	34°13'41"	80.65'	135.00'	79.45'	N28°28'58"E	
C4	27°20'14"	64.41'	135.00'	63.80'	N02°18'00"W	
C5	14°18'25"	41.20'	165.00'	41.09'	S13°15'41"E	NON-TANGENT
C6	32°46'18"	285.99'	500.00'	282.11'	S00°25'03"W	
C7	1°38'41"	14.84'	517.00'	14.84'	N15°08'46"W	
C8	7°59'00"	72.04'	517.00'	71.98'	N10°19'55"W	
C9	8°33'07"	77.17'	517.00'	77.10'	N02°03'52"W	
C10	8°28'47"	76.51'	517.00'	76.44'	N06°27'05"E	
C11	6°06'43"	55.15'	517.00'	55.12'	N13°44'50"E	
C12	10°33'49"	87.21'	473.00'	87.08'	S10°41'12"E	
C13	13°26'47"	108.25'	473.00'	108.02'	S01°09'06"W	
C14	5°21'55"	44.29'	473.00'	44.28'	S10°23'27"W	
C15	3°43'47"	30.79'	473.00'	30.79'	S14°56'18"W	
C16	13°59'35"	48.84'	200.00'	48.72'	S09°48'24"W	
C17	13°45'24"	43.94'	183.00'	43.83'	N09°55'30"E	
C18	12°25'26"	49.22'	227.00'	49.13'	S08°43'11"W	
C19	1°52'18"	7.42'	227.00'	7.42'	N15°52'03"E	
C20	18°18'09"	86.88'	271.98'	86.51'	S08°46'17"E	
C21	31°36'19"	260.36'	472.00'	257.07'	S19°03'51"W	
L2		53.58'			S86°44'38"W	
C22	31°33'47"	26.44'	48.00'	26.11'	N24°00'53"W	
L3		11.70'			N34°52'00"E	
C23	14°45'44"	58.74'	228.00'	58.58'	S46°08'11"W	
C25	03°11'16"	23.81'	428.00'	23.81'	S16°19'43"E	

INGRESS/EGRESS EASEMENT (varied width)

#	DELTA	ARC	RADIUS	CHORD	CHORD BEARING
EC1	2°25'50"	8.48'	200.00'	8.48'	N01°35'42"E
E1		144.22'			S00°22'47"W
EC2	18°18'09"	78.26'	244.98'	77.93'	S08°46'17"E
EC3	52°47'22"	419.21'	455.00'	404.54'	S08°28'20"W
E2		233.78'			N34°52'00"E

BOUNDARY

B	DELTA	ARC	RADIUS	CHORD	CHORD BEARING
B1	61°00'00"	266.66'	250.47'	254.25'	S30°46'33"W
B2	53°00'00"	208.13'	225.00'	200.79'	S26°46'33"W
B3	53°00'20"	195.51'	211.33'	188.61'	S26°46'23"W

LEGEND & ABBREVIATIONS

- FD MESA COUNTY SURVEY MARKER
- FD 3.25" ALUMINUM CAP STAMPED THOMPSON LANGFORD CORP LS 18480
- FD #5 REBAR W/1.5" ALUMINUM CAP STAMPED LS 5933
- SET #5 REBAR W/2" ALUM. CAP STAMPED D H SURVEYS LS 20677

M.C.S.M. = MESA COUNTY SURVEY MARKER
C.V.A.L.C.S. = GRAND VALLEY AREA LOCAL COORDINATE SYSTEM
SEC. = SECTION
SQ.FT. = SQUARE FEET
M.P.E. = MULTIPUAPOSE EASEMENT

AREA SUMMARY

LOTS	= 20.92 AC./64%
TRACTS	= 11.12 AC./34%
DED. ROADS	= 00.65 AC./02%
TOTAL	= 32.70 AC./100%

GRAPHIC SCALE 1"=100'
0 100 200 300
LINEAR UNITS = U.S. SURVEY FEET

FOR REVIEW

PINNACLE RIDGE SUBDIVISION FILING 1

LOCATED IN THE

W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.

D H SURVEYS INC.
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REVISED 07/27/17
REVISED 09/27/17
REVISED 11/10/17

Designed By M.W.D.	Checked By E.E.B.	Job No. 129-04-03	
Drawn By TMODEL	Date MAY 2017	Sheet 2 OF 2	

5-2-1 Drainage Authority

P.O. Box 3389, 250 N. 5th Street, Grand Junction, CO 81502
Ph. 970-263-7401 Fax 970-256-4022 www.521drainageauthority.org

Stormwater Construction Permit Application

For Office Use Only

Date: _____ CDPHE SW Permit #: _____ 5-2-1 Permit Number: _____

Project Name: _____

CSWMP Review Fee: $ _____ Permit/Inspection Fee: $ _____ Check #'s: _____

Final Construction SWMP & Maps: _____ Final Land Use Approval: _____

5-2-1 Drainage Authority Manager: _____ Date: _____

Notes and Directions:
* This application replaces Stormwater Construction Permit Applications formerly issued by the City of Grand Junction, Mesa County and the Town of Palisade. Complete this form and submit by email as an attachment. 521da@gjcity.org
* Both the Owner and the Permittee (if different than Owner) must complete and sign this Application.
* Please provide all information in the shaded areas.

Construction Stormwater Management Plan Review

Project Information:

Project Name: Pinnacle Ridge Subdivision

Project Address/Location: NE of Mariposa Drive and 1/4 mile north of Monument Road

Land Distribution Schedule:

Net Land Disturbance Area: 30 acres

Expected Start Date: August 1, 2017

Expected Final Stabilization Date: December 31, 2020

Legally Responsible Party - Permittee and Owner PERMITTEE:

Permittee Name: Two R & D, LLC

Address: PO Box 39, Fruita, CO 81521 Phone: 970-245-9051

Contact Name: Robert W. Jones, II Email: rjones@vortexeng.us

Legally Responsible Party - Permittee and Owner OWNER:

Owner Name: Two R & D, LLC

Address: PO Box 39, Fruita, CO 81521 Phone: 970-245-9051

Contact Name: Robert W. Jones, II Email: rjones@vortexeng.us

Designated CSWMP Administrator(s) - Primary Field Contact:

Primary Name: Bob Jones Title: Project Manager Cell Phone: 970-260-3006

Primary Name: _____ Title: _____ Cell Phone: _____

Primary Name: _____ Title: _____ Cell Phone: _____

5-2-1 Drainage Authority

P.O. Box 3389, 250 N. 5th Street, Grand Junction, CO 81502
Ph. 970-263-7401 Fax 970-256-4022 www.521drainageauthority.org

Stormwater Construction Permit Application

Legally Responsible Party - PERMITTEE Acknowledgement and Certifications

A) The undersigned hereby applies for a 5-2-1 Drainage Authority Stormwater Construction Permit for the aforementioned property and acknowledges that a Stormwater Construction Permit is granted with the explicit understanding that it is the Permittee's responsibility to:

1) Maintain the site in compliance with this permit, the Stormwater Management Manual (SWMM), and applicable Land Use Regulations of the governing jurisdiction (City, County, Town).
2) Allow personnel of the 5-2-1 Drainage Authority and the applicable governing jurisdiction (City, County, Town) reasonable access to the project site to conduct regular site inspections and enforcement activities.
3) Comply with any and all directives contained in any Compliance Advisory or written notification pertaining to the project site issued to the Permittee by the 5-2-1 Drainage Authority or the applicable governing jurisdiction (City, County, Town).
4) Immediately cease land-disturbing and all other construction activities upon receipt of a written notification from an authorized representative of the applicable governing jurisdiction (City, County, Town).

B) Furthermore, the undersigned certifies, and agrees:

1) To the best of my knowledge, the information provided herein is correct; and is consistent with the development plans approved by the planning and/or building departments of the applicable governing jurisdiction.
2) A Construction Stormwater Management Plan for the disturbed area on the project site was prepared and submitted in accordance with the SWMM and the applicable Land Use Regulations of the governing jurisdiction (City, County, Town).
3) If the Permittee abandons the site, or becomes insolvent or declares bankruptcy, such that the requirements of this Permit are not being met, the governing jurisdiction may perform any and all necessary corrective actions, at their sole and absolute discretion to provide sufficient remedies to correct project site deficiencies.
4) The governing jurisdiction (City, County, Town) may issue a Stop Work Order and/or a Notice of Violation and/or may revoke this Permit or pursue any other legal remedies available to it based on an enforcement referral request from the 5-2-1Drainage Authority, or if the governing jurisdiction determines the Permittee is not in compliance with the SWMM, Stormwater Construction Permit and applicable Land Use Regulations of the governing jurisdiction, or if the Permittee fails to take all corrective action requested within the time specified on any written notification issued to the Permittee by the governing jurisdiction.
5) That in addition to other remedies, a violation of the Permit shall constitute a violation of Land Use Regulations of the governing jurisdictions; and
6) Any approval obtained from the 5-2-1 Drainage Authority does not relieve the Permittee from complying with requirements of Sections 7 and 9 of the Endangered Species Act of 1973, 16 U.S.C. 11531, et seq., as amended, or with any other applicable federal, state, or local laws or regulations.

Signature of Legally Responsible Person	Robert W. Jones, II	6/7/17
	Printed Name	Date

Legally Responsible Party - Property OWNER Certifications

By signing below, I hereby certify that I am the owner of record, or am legally authorized to sign on behalf of and bind the owner of record. I agree to all of the acknowledgements and certifications of the Permittee listed in Section 5 above, and on behalf of the owner accept full responsibility for compliance with the terms and conditions of this Permit in the event that the Permittee fails to do so.

Two R & D, LLC	6/7/17
Owner of Record	Date

Original Signature of Owner or Official**	Robert W. Jones, II	Managing Member
	Printed Name	Title

***If the Owner of Record is a corporation, LLC or partnership, Mesa County requires a recorded Statement of Authority documenting the legal ability to the official to sign on behalf of the corporation. Corporate signers will need to submit the statement of Authority directly to Mesa County Planning before receiving Final Land Use Approval. Corporate signers must be the same person that signs the Final Plat.*

5-2-1 Drainage Authority

P.O. Box 3389, 250 N. 5th Street, Grand Junction, CO 81502
Ph. 970-263-7401 Fax 970-256-4022 www.521drainageauthority.org

Stormwater Construction Permit Application

Instructions

The Stormwater Construction Permit Application shall be submitted directly to the 5-2-1 Drainage Authority, along with the documentation required by Section 7, only after all reviews and approvals are in place, and just before the start of land disturbance activities.

Project Information

* Local Jurisdiction: This will be the City of Grand Junction, City of Fruita, Town of Palisade, or Mesa County. Write in the underlying jurisdiction that has "approval authority", whether it be for a development application, annexation proposal, building permit, surface alteration permit, Right of Way permit, etc.
* Project #: Use the Project # assigned by the local Jurisdiction.
* Project Name: Use the same name designation as on the development application.
* Project Address/Location: Use a specific address if there is one, particularly for commercial sites. For residential subdivisions, major street intersections are acceptable.

Land Disturbance Schedule

* Net Land Disturbance Area: Net area of land to be disturbed during construction, calculated to the nearest 0.1 acre. Generally equal to Gross size of the Filing of Phase being developed minus any designated protected (undisturbed) areas, plus off-site areas such as storage yards dedicated to the project. For help in determining Net Land Disturbance Area, contact Drainage Authority personnel. All fees are based on Net Land Disturbance Area.
* Start date is the date for <u>any</u> land disturbance activities including stockpiling, grubbing, demolition, excavating, grading, or any other activity that disturbs the ground.
* The date of final stabilization is the date when all disturbed areas have been built on and paved, and a uniform 70% re-vegetation is achieved on the remaining pervious ground. See the SWMM or State rules for details. Even if the Permittee is only doing one part of the project (for example a developer who does the site infrastructure but not the home construction) the estimated final stabilization date must be for the overall project, and Permit coverage must be maintained until final stabilization is achieved.

Legally Responsible Party - Permittee and Owner

* The Permittee (Legally Responsible Party) is <u>usually</u> the same as the permit applicant (Legally Responsible Entity) from the State General Permit Application. The Permittee may be a corporate or partnership entity, or a person. See below under Address. *For project under the land use jurisdiction of Mesa County only, the County <u>requires</u> the Permittee to be the Owner. If this is a project under County jurisdiction, the Owner should fill out ONLY the Permittee section.*
* The Owner is the entity or person who holds title to the property <u>at the time the SCP application is submitted</u>. *Caution: Sales and transfers of property title should be completed <u>before</u> submitting the application. Otherwise, an immediate Permit Transfer may be needed reflecting the ownership change.*
*Address: Please provide a physical mailing address for delivery of official correspondence, or process service, if needed.
* Permittee Contract Name: This should be the person who will serve as the primary point of contact for the Permittee with the responsibility to respond to inspection and compliance issues at the site. This person will usually be the same person that signs the certification under Designated SCWMP Administrator(s), but could be one of the CSWMP Administrators, if that person works <u>directly</u> for the Permittee. Contractors or subcontractors can not be the listed contact for the Permittee.
* Owner Contact Name: This should be the person who will serve as the primary point of contact for the Owner with the responsibility to respond to inspection and compliance issues at the site. This person will usually be the same person that signs the certifications under Permittee Acknowledgement and Certifications, but may also be an attorney or other designated Owner representative.

Designated CSWMP Administrator(s): At least one individual must be named as a primary contact for field issues and inspection notifications. Any individual named must be a Qualified Erosion Control Specialist. These individuals are responsible for day-to-day compliance, including self-inspections and record keeping. These individuals should be carefully selected by the Permittee and/or Owner, since the Permittee and Owner are ultimately liable for any compliance issues caused by the performance (or lack thereof) of the CSWMP Administrators.

Permittee Acknowledgement and Certification: This section acknowledges the Permittee's acceptance of responsibility and liability for stormwater compliance at the site. The actual signer must be an individual. Signature requirements are as follows:

* In the case of corporations, by a principal executive officer of at least the level of vice-president or his or her duly authorized representative, if such representative is responsible for the overall operation of the facility from which the discharge described in the application originates.
* In the case of a partnership, by a general partner.
* In the case of a sole proprietorship, by the proprietor.
* In the case of a municipal, state or other public facility, by either a principal executive officer, ranking elected official, or other duly authorized employee.
* *Specific to projects within the Land Use Jurisdiction of Mesa Count, the County requires the Permittee to be the Owner, and also requires a recorded Statement of Authority (SOA) verifying that a corporate, LLC or partnership officer signing on behalf of the corporation, LLC or partnership has the legal authority to do so. Submit the SOA to Mesa County Planning. The signer shall be the same person that signs the Final Plat for recording.*

Owner Certification: The Owner Certification is required because the Owner carries ultimate liability for the site when all other options or contacts are exhausted. A permit will NOT be issued without an Owner signature. The actual signer must be an individual. Signature requirements are identical to the signature requirements for the Permittee, with one exception:

* *If this project is within Mesa County jurisdiction, DO NOT sign this section. (See above Permittee Acknowledgement and Certification)*

Required Submittals: Before a permit is issued by the 5-2-1 Drainage Authority, we must have in our possession a copy of the State issued stormwater discharge permit, a complete copy of the final approved CSWMP and maps, and payment of the assessed inspection fees. Final Approval from the local land use jurisdiction to begin construction will be verified via mail.

END OF INSTRUCTIONS

5-2-1 Drainage Authority

P.O. Box 3389, 250 N. 5th Street, Grand Junction, CO 81502
Ph. 970-263-7401 Fax 970-256-4022 www.521drainageauthority.org

Stormwater Construction Permit Application

Stormwater Construction Permit Fee Schedule

Disturbed Land Area (To the nearest 0.1 acre)	**Part A Review Fee**	**Part B SW Permit/ Inspection Fee**	**Additional Inspections**	**Fee**
1 - 7.9 Acres	$250.00	$250.00	Screening Inspection	$0.00
8.0 Acres to 19.9 Acres	$400.00	$500.00	Field Inspection w/ Follow-Up (Under 20 Acres)	$150.00
20 Acres and Above	$800.00	$900.00	Field Inspection w/ Follow-Up (Over 20 Acres)	$200.00
			Full Audit (Under 20 Acres)	$275.00
			Full Audit (20 Acres and Over)	$325.00

Disturbed Land Area includes all area of cut, fill, stockpile, staging, equipment and material storage, or any other project area associated with Construction Activity, as defined by State of Colorado stormwater regulations. No reductions are given for public land dedications such as streets and open space. Undisturbed land areas may be omitted from the calculations if they are specifically identified in the Construction Stormwater Management Plan as remaining in undisturbed natural conditions, and controls are specified in the Plan to ensure the area remains undisturbed during construction.

See Drainage Authority Resolution 2008-007 for a full description of the fee basis, including when fees for additional inspections are charged.

DECLARATION OF
COVENANTS, CONDITIONS AND RESTRICTIONS OF
PINNACLE RIDGE SUBDIVISION

THIS DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS OF PINNACLE RIDGE SUBDIVISON (the "Declaration"), is hereby declared effective this _____day of _____, 201__ by **Two R&D, LLC,** a Colorado limited liability company, hereafter referred to as "Declarant".

RECITALS

A. Declarant is the owner of that certain real property situated in the City of Grand Junction, Mesa County, Colorado, described as follows:

Tax Parcel No. – 2945-212-00-011, 2945-212-08-001-010, 2945-212-10-001-009

A parcel of land situated in the W ½ NW ½ of Section 21, Township 1 South, Range 1 West of the Ute Meridian, Mesa County, Colorado. The South 10 acres of the NW ¼ NW ¼ and the SW ¼ NW ¼ of said Section 21.

EXCEPTING THEREFROM:

Lots 1-9, Block 3 and the adjoining dedicated right-of-way known as Spur Drive and Lot 2, Block 2, Energy Center Subdivision, Phase I as platted and recorded in Plat Book 8 at Page 55 with a Reception Number 644620 of the Mesa County records.

To be platted as Lots _____ through _____, inclusive, and Tracts ____ and ____, Pinnacle Ridge Filing _____, hereinafter referred to as the "Property", and Lot _____, Pinnacle Ridge, Filing ____, hereinafter referred to as "Future Development Lots."

B. The Common Interest Community has been approved for development pursuant to a Plan for Pinnacle Ridge adopted by the City of Grand Junction, Colorado (the "Major Subdivision Plan for Pinnacle Ridge Subdivision").

C. Declarant desires to develop and improve the Property as a Common Interest Community as defined in Section 38-33.3-103(22), C.R.S., under the name and style of Pinnacle Ridge Subdivision and subject the same to the covenants, conditions and restrictions hereinafter set forth. Such development shall be in phases or filings for a total number of lots not to exceed seventy-two 72 residential lots.

D. Pinnacle Ridge Home Owners Association, a Colorado non-profit corporation, has been formed as a Home Owners Association to exercise the functions set forth herein and to own, lease, hold, operate, care for and manage certain property for the common benefit of Owners and Occupants of Lots within, and of any other person acquiring an interest in, the Common Interest Community.

E. Declarant desires to establish covenants, conditions and restrictions upon the Common Interest Community and all properties that may hereafter be included thereto, and certain mutually beneficial restrictions and limitations with respect to the proper use, occupancy, improvement and enjoyment thereof, all for the purposes of enhancing and protecting the value, desirability and attractiveness of the Common Interest Community and enhancing the quality of life within the Common Interest Community.

NOW, THEREFORE, for the purposes set forth above and herein, Declarant for itself and its successors and assigns hereby declares that the Common Interest Community and all other property which becomes subject to this Declaration in the manner hereinafter provided, and each part thereof, shall be owned, held, transferred, conveyed, sold, leased, rented, improved, altered, maintained and enjoyed subject to the covenants, conditions, restrictions, assessments, charges, liens, easements, privileges, rights and other provisions hereinafter set forth, for the duration hereof, all of which are declared to be pursuant to, and in furtherance of a common and general plan of development, improvement, enhancement, use, occupancy and enjoyment of the Common Interest Community, and all of which shall run with the land and be binding upon and inure to the benefit of the Common Interest Community and every part thereof. Provided always, that to the extent this Declaration provides that Declarant shall not be bound by or is exempt from the application of certain covenants, conditions and restrictions contained herein, Declarant shall not be considered subject to such covenants, conditions or restrictions.

This Declaration shall be recorded in Mesa County, Colorado and shall be indexed in the Grantee's index in the name of Pinnacle Ridge and the Home Owners Association and in the Grantor's Index in the name of Two R&D, LLC.

ARTICLE I
DEFINITIONS

Unless otherwise expressly provided herein, the following words and phases when used in this Master Declaration shall have the meanings hereafter specified.

1.1 **Act** - shall mean the Colorado Common Interest Ownership Act, section 38-33.3-101, et seq., C.R.S., as presently existing or subsequently amended from time to time.

1.2 **Allocated Interests** - shall means and refers to the common expense liability and the ownership interest and votes in the Home Owners Association as allocated to each Lot, which interest are allocated as follows:

(a) The Common Expenses liability for each Lot is calculated on the basis of a fraction, the numerator of which is one (1) and the denominator of which is the total number of Lots in the Common Interest Community as of the date of the calculation. The denominator may be increased from time to time upon the addition of Lots to the Common Interest Community, which can be conveyed to third parties. Such fraction is then multiplied by the Common Expense or the Assessment in question to determine that Lot's share. The Common Expense liability of a Lot is determined without reference to the size, location, value or use of the Lot.

(b) One (1) vote in the Home Owners Association is allocated to each Lot in the Common Interest Community.

1.3 **Article of Incorporation** - or "Articles" means the Articles of Incorporation of Pinnacle Ridge Home Owners Association, which have been or will be filed with the Office of the Secretary of State of the State of Colorado, as the same may be amended from time to time.

1.4 **Assessment** - shall mean a Regular Assessment, Special Assessment or Reimbursement Assessment.

1.5 **Association** - shall mean and refer to Pinnacle Ridge Subdivision Home Owners Association, a Colorado nonprofit corporation, formed for the purpose of being and constituting the entity for the furtherance of the interests of the owners of property in Pinnacle Ridge and performing duties and responsibilities and exercising the powers set forth in this Declaration.

1.6 **Budget** - shall mean a written itemized estimate of the Common Expenses to be incurred by the Association in performing its functions under this Declaration and adopted by the Executive Board pursuant to this Declaration.

1.7 **Building Envelope** - shall mean that portion of a Lot which may be depicted and designed as the "Building Envelope" on a Plat. If a Lot contains a platted Building Envelope, all Improvements on that Lot must be located entirely within the Building Envelope, including but not limited to dwellings, attached patios and decks, garages, swimming pools and storage building, but excluding roof overhangs, access driveways, underground utilities, and irrigation and drainage systems. The Design Review Committee may approve the location of certain Improvements outside the Building Envelope, such as landscaping and fences.

1.8 **Bylaws** - shall mean the Bylaws of the Association which have been or will be adopted by the Executive Board of the Association, and may be amended from time to time.

1.9 **City** - shall mean the City of Grand Junction, Colorado.

1.10 **Common Elements** - shall mean and refer to that portion of the Property designated as Tracts _____ on the Plat to be owned by the Association for the benefit of the Owners, including any Improvements and all easements and facilities for the benefit of the Property, as well as any common elements created in future subdivision filings.

1.11 **Common Expenses** - shall mean any expenditures made or liabilities incurred by or on behalf of the Association, together with any allocations to reserves, including, but not limited to the costs of maintenance, management, operation, repair and replacement of the Association Property, and of all other parts of the Common Interest Community which are managed or maintained by the Association, but excluding any areas being managed or maintained at the expense of a Sub association.

1.12 **Declarant** - shall mean Two R&D, LLC a Colorado limited liability company, its successors, assigns, and affiliates. A Person shall be deemed to be a "successor and assign" of Declarant if specifically designated in a duly Recorded instrument as a successor or assign of Declarant under this Declaration and shall be deemed a successor and assign of Declarant only as to the particular rights or interests of Declarant under this Declaration which are specifically designated in that written instrument. The term "affiliate of Declarant" shall have the meaning set forth in Section 38-33.3-103(1) of the Act.

1.13 **Declaration** - shall mean and refer to this Declaration of Covenants, Conditions and Restrictions for Pinnacle Ridge Subdivision.

1.14 **Design Guidelines** - shall mean the rules, procedures, standards, guidelines and requirements promulgated from time to time by the Design Review Committee, and all amendments thereto, governing the review and approval or disapproval of proposed Improvements within the Common Interest Community, the registration of Builders, and such other matters as the Design Review Committee considers necessary or appropriate.

1.15 **Design Review Committee** - shall mean the Committee provided for in this Declaration.

1.16 **Executive Board or Board** - shall mean the Executive Board of the Association.

1.17 **Household Pets** - shall mean generally recognized household pets such as dogs, cats, fish, birds, rodents, and non-poisonous reptiles.

1.18 **Improvements** - shall mean and refer to any and all buildings, parking areas, fences screening fences, retaining walls, stairs, decks, hedges, windbreaks, plants, trees, shrubs, berms, ponds, signs, objects of art, mailboxes, drainage facilities (including pumps, pipelines, drip lines and sprinklers) and other structures or landscaping of every type and kind situated on the property, and future lots created in subsequent replats.

1.19 **Lease** - shall mean and refers to any agreement for the leasing, rental, use or occupancy of a Unit, or of a residential dwelling located on a Lot, within the Common Interest Community.

1.20 **Limited Common Areas** - shall mean a Common area that is designated by this Declaration, by a Supplemental Declaration, on the Plat or on a Supplemental Plat, for the exclusive use of one or more Lots in the Common Interest Community but fewer than all of the Lots.

1.21 **Lot** - shall mean and refer to that part of the Property shown on the Plat as a Lot, as well as any lots created by future subdivision filings.

1.22 **Map** - shall mean any map that is incorporated in a Supplemental Declaration or amendment and that depicts a portion of the Common Interest Community in three dimensions. A Map is required for any portion of the Common Interest Community with Units having a horizontal boundary. A Map and a Plat may be combined in one instrument.

1.23 **Master Declaration** - shall mean this instrument and all Supplemental Declaration, as this instrument and such Supplemental Declarations may be amended from time to time.

1.24 **Master Rules and Regulations** - shall mean rules and regulations adopted from time to time by the Executive Board.

1.25 **Member** - shall mean each Lot also including the Declarant. Membership in the Home Owners Association shall be appurtenant to, and may not be separated from, ownership of a Lot.

1.26 **Mortgage** - shall mean any mortgage, deed of trust or other security instrument, given voluntarily by the Owner of a Lot, creating a real property security interest in a Lot and Recorded in the real property records of the Clerk and Recorder if Mesa County. "First Mortgage," means a mortgage, which are the first and most senior of the Mortgages on the same Lot. The term "Mortgage" does not mean a statutory, tax or judicial lien. The term "Deed of Trust" when used herein shall be synonymous with the term "Mortgage."

1.27 **Mortgagee** - shall mean a mortgagee under a Mortgage or a beneficiary under a Deed of Trust, as the case may be, and the assignees of such Mortgagee.

1.28 **Mortgagor** - shall mean the maker, obligator or grantor of a Mortgage. The term "Mortgagor" includes a trustor or grantor under a Deed of Trust.

1.29 **Notice and Hearing** - shall mean a written notice and public hearing before the Executive Board, or a panel appointed by the Executive Board, as set forth in the Bylaws.

1.30 **Occupant** - shall mean any Person who is a tenant in a residence on a Lot, pursuant to a Lease with the Owner thereof. "Occupant" also means any Person who is present within the Common Interest Community as a family member, guest or invitee of an Owner, an Occupant, the Declarant, or the Association.

1.31 **Owner** - shall mean the Person, including Declarant, or, if more than one, all Person collectively, who hold fee simple title of Record to a Lot, including sellers under executor contracts of

sale and excluding buyers there under. The term "Owner" shall be analogous to the term "Unit Owner", as that term is defined in the Act.

1.32 **Permitted Exceptions** - shall mean all liens, encumbrances, reservations, restrictions, conditions, easements and other matters of record which encumber the title to all or any part of the Common Interest Community, as of the date this Declaration or a Supplemental Declaration or Map is recorded. This Declaration and any Supplemental Declaration or Map shall be subject to such Permitted Exceptions.

1.33 **Persons** - shall mean a natural person, a corporation, a partnership, a limited liability company, a trust, or any other entity capable of holding title to real property pursuant to the laws of the State of Colorado.

1.34 **Plat** - shall mean and refer to that certain plat of the property or plat(s) upon future subdivision filings recorded (or to be recorded) in the Mesa County Clerk and Recorder's official records. The Plat is incorporated herein by this reference.

1.35 **Property** - shall mean and refer to all of the real estate situated and described in the recitals and any future additions of property to the Subdivision.

1.36 **Registered Builder** - shall mean a general contractor that has been registered to perform work within Pinnacle Ridge with the Design Review Committee pursuant to the guidelines and procedures set forth herein and in the Design Guidelines.

1.37 **Record or Recorded** - shall mean an instrument of record in, or the act of recording an instrument with, the office of the Clerk and Recorder of Mesa County.

1.38 **Regular Assessment** - shall mean a charge against an Owner and the Owner's Lot for purposes of covering the annual costs of operating and administering the Association and all other Common Expenses. Regular Assessments are based on a Budget adopted by the Executive Board and are allocated to the Lots in accordance with the Allocated Interests, except that Common Expenses that in the judgment of the Executive Board benefit fewer than all of the Lots shall be allocated exclusively to the Lots benefited.

1.39 **Reimbursement Assessment** - shall mean a charge against a particular Owner and the Owner's Lot for purpose of reimbursing the Association for costs and expenses incurred by the Association in connection with the enforcement of any provision hereof or the remedying of any violation by the Owner or an Occupant of this Declaration or any amendment hereto or any Supplemental Declaration, the Articles, Bylaws, Master Rules and Regulations, or Design Guidelines, or any approvals granted by the Design Review Committee, or for other purposes set forth in the Declaration, pursuant to Section 10.9 hereof, together with late charges and interest as provided for herein. Reimbursement Assessment shall include without limitation any Common Expense cause by the misconduct of any Lot Owner or of such Owner's Occupants.

1.40 **Special Assessment** - shall means a charge against an Owner and the Owner's Lot for purpose of reimbursing the Association for costs and expenses incurred or to be incurred by the Association for the purpose of paying for the construction, reconstruction, repair, maintenance or replacement of capital improvements to or upon serving the Common Interest Community, the costs of which were not included in a Regular Assessment, or for excess reconstruction costs or other extraordinary expenses, or to acquire Association Property, or for funding any operating deficit of the Association, as authorized by the Executive Board from time to time as provided herein. Special Assessment shall be based on a Budget adopted by the Executive Board in accordance with below.

1.41 **Sub Association** - shall mean any Colorado nonprofit corporation, and its successors and assigns, organized and established by Declarant pursuant to or in connection with any supplemental Declaration.

1.42 **Sub Association Common Areas** - shall mean all real property interests (not just fee title and leasehold interests) and the Improvements or amenities and personal property thereon which may from time to time be owned, leased or maintained by a Sub Association or otherwise held by a Sub Association for the use, enjoyment and benefit of the members of such Sub Association or some of them.

1.43 **Subdivision** - shall mean and refer to Pinnacle Ridge a residential subdivision in the City of Grand Junction, Mesa County, Colorado.

1.44 **Supplemental Declaration** - shall mean an amendment to this Declaration which adds real property to the Common Interest Community, subjects such real property to this Declaration, and sets forth such amendments to the Declaration and such additional covenants, conditions uses and restrictions as may be applicable to the acquired property, executed by Declarant and Recorded in the Office of the Clerk and Recorder of Mesa County, and any Recorded amendments thereto.

1.45 **Supplemental Plat**- shall mean any land survey plat which is Recorded by Declarant for the purpose of acquiring the real property described therein to the Common Interest Community, and any Recorded amendments to such Supplemental Plat. Supplemental Plats shall include, without limitation, those City-approved Plats or subsequent filings of Pinnacle Ridge, or those portions of such Plats, as are made subset to this Declaration from time to time by Supplemental Declaration.

ARTICLE II
GENERAL DECLARATION

2.1 **Intent** It is the intention of this Declarant is to enhance, perfect and preserve the value, desirability and attractiveness of the Property and the Common Elements, Improvements and Buildings thereon in a manner beneficial to all Owner and to subject the Subdivision to the Act as a Common Interest Community.

2.2 **Estate Subject to Declaration** Declarant does hereby subject the Property to the provisions of the Declaration. All easements, restrictions, conditions, covenants, reservations, liens, charges, right, benefits, and privileges which are granted, created, covenants reservations, liens, charges, rights, benefits, and privileges which are granted, created, reserved or declared by this Declaration shall be deemed to be covenants appurtenant to, touching and concerning and running with the land and shall at tall times inure to the benefit of and be binding upon any Person having at any time any interest or estate in the Property, and their respective heirs, successors, representatives or assigns. All of the easements, restrictions, conditions, covenants, reservations, liens, charges, rights, benefits and privileges which are granted, created, reserved or declared herein shall be fully and completely set forth in their entirety in any document or instrument filed for record in the Mesa County Clerk and Recorder's office subsequent to the recording of this Declaration or Supplemental Declaration.

2.3 **Owners' Rights to Common Elements** Every Owner, Mortgagee, Occupant and all other persons hereafter acquiring any interest in the Common Interest Community shall have a right and easement of enjoyment in and to the Common Elements which shall be appurtenant to and shall pass with the title to every Lot subject to the provisions of this Declaration, Supplemental Declaration, the Articles and Bylaws of the Association and any rules and regulations promulgated by the Association. Any Owner may delegate, in accordance with the Bylaws, his right of enjoyment to the Common Elements and facilities for the members of his family, his tenants, or occupants who reside on his Lot.

ARTICLE III
GENERAL RESTRICTIONS

3.1 **Master Development Control** Except as otherwise expressed in this Declaration or in any Supplemental Declaration, no residence, building, structure, fence, wall, landscaping or other Improvement shall be commenced, erected, improved, altered, made, done, permitted, located or removed within the Common Interest Community without the prior written approval of the Design Review Committee, and all subsequent additions to or changes or alterations in any residence, building structure, fence, wall, landscaping or other Improvement, including without limitation exterior color scheme, and all changes in the grade of Lots, shall also be subject to the prior written approval of the Design Review Committee.

No modifications from the approvals granted by the Design Review Committee shall be made without the prior written approval of the Design Review Committee. Notwithstanding the foregoing, in the event of an emergency or the sudden occurrence of unanticipated conditions which threaten the health, safety or physical well-being of Persons or property within the Common Interest Community, the Executive Board and/or the Design Review Committee shall have the authority (without the prior approvals described above), to take whatever remedial action may be necessary anywhere in the Common Interest Community to protect Persons and property until such time as applicable notice and/or approval procedures can reasonably be utilized. Further notwithstanding the foregoing, Design Review Committee approval shall not be required for Improvements made by Declarant in the exercise

of any development rights or special Declarant rights reserved by Declarant in this Declaration or in any Supplemental Declaration.

3.2 **Residential Use and Occupancy** All Lots shall be improved, occupied and used only for private single-family residential purposes. Only single-family dwellings, including a private garage which holds a minimum of two (2) automobiles, which garage shall be an enclosed structure, and other outbuildings directly incidental to single-family residential use shall be erected, altered, placed or permitted to remain on any Lot. No structures shall be permitted unless they meet the Pinnacle Ridge Design Guidelines and the requirements of these Covenants and which are constructed in accordance with City of Grand Junction zoning regulations .

3.3 **Vehicle Parking, Storage, Operation and Repair** Passenger automobiles and pick-up trucks not exceeding one ton owned by the Owner or occupant of a Lot shall be parked within the garage situate on the Lot or on the driveway of the Lot. No other portion of the Lot may be used by the Owner or the occupant for the parking or storage of automobiles or pick-ups except to the extent permitted under section 38-33.3-106.5(l)(d), C.R.S.

Recreational vehicles, boats, trailers, buses, motor homes, mobile homes, campers (on or off supporting vehicles), motorcycles, snowmobiles, recreational vehicles, all terrain vehicles, golf carts, trucks, industrial or commercial vehicles (both cabs or trailers), abandon or inoperable vehicles (as defined), or any other similar vehicles (excepting passenger automobiles and one ton or smaller pick-up trucks) may be stored on a Lot only if placed within a garage or placed in a Design Review committee approved outbuilding or screened storage facility. All recreation vehicle shall be behind fences and behind the front of the Residential Building on the Lot.

Notwithstanding the forgoing, vehicles may be temporarily parked on driveways on Lots and on public streets within the Common Interest Community for loading, delivery, services or emergency purposes, but only for the time required to accomplish such purpose, and as necessary on a daily basis for the construction, maintenance or servicing of Improvement within the Common Interest Community.

If Executive Board determines that a vehicle is abandoned, inoperable or improperly parked, a written notice of violation describing the vehicle shall be personally delivered to the vehicle owner, or notice may be sent by registered or certified mail or by email or facsimile, and shall be conspicuously placed upon the vehicle. If the offending vehicle is not removed within seventy-two (72) hours thereafter, the Executive Board or its agent shall have the right to remove and store the offending vehicle, or cause the vehicle to be removed and stored, at the sole expense of the owner of the vehicle. The Executive Board or its agent shall have the authority to enter upon an Owner's Lot for such purposes without liability on the part of the Executive Board .

Snowmobiles, motorcycles, trail bikes, mini bikes, dirt bikes, all-terrain vehicles, and similar motorized vehicles shall not be used or operated within the Common Interest Community, except that motorcycles properly licensed for operations on public roads may be used on public streets within the

Common Interest Community. The Association shall have the authority to adopt Master Rules and Regulations governing the type and use of golf carts on streets within the Common Interest Community, subject always to City rule, ordinance or regulation.

3.4 **New Construction Required: No Temporary Buildings or Occupancy** Only new I.R.C. (International Residential Code) residential buildings shall be permitted within the Common Interest Community. Furthermore, no pre-fabricated or manufactured housing, no mobile homes (single or double wide), and no used or temporary house, structure, or non-permanent out-buildings (specifically including mobile homes and trailers) shall ever be placed, erected or allowed to remain within the Common Interest Community except temporary structures or construction trailers approved in advance by the Design Review Committee which are used for construction purpose during the construction of a residence. Such temporary facilities shall be removed immediately following completion of construction or 18 months following commencement of construction, whichever first occurs, unless a written extension is granted by the Design Review Committee. No completed residence on a Lot shall be occupied in any manner until all provisions of the Declaration and the Design Guidelines and all conditions of development approval have been complied with and a Certificate of Compliance has been issued.

3.5 **House Size Regulations** Single-family residences in the Common Interest Community shall contain a minimum of 2,000 square feet and a maximum of 6,000 square feet of interior living space measured from the interior surfaces of the walls, excluding garages, patios, covered porches, and any walkouts that may be approved by the Design Review Committee.

3.6 **Structure Sprinkler Systems** Structures on Lots 26 through 29, 55 through 72 must have sprinkler systems installed for fire protection of the units. The sprinkler system shall be an approved fire sprinkler system designed to meet the minimum design standards of NFPA 13D and the International Fire Code, 2006 edition, as amended by the City of Grand Junction. The amendment prohibits the use of separate water supplies (such as tanks and pumps) when the home is served by a public water purveyor.

3.7 **Setbacks** The Subdivision is located in the City of Grand Junction, Colorado. All buildings shall meet or exceed setbacks established by the applicable zoning authority.

3.8 **Re-subdivision, Re-Platting, Rezoning or Combining** Except as expressly permitted in this Declaration or in a Supplemental Declaration by which additional property is added to the Common Interest Community, no Lot shall be subdivided or re-platted by an Owner into smaller lots or parcels, no Owner shall seek to change the zoning of such Owner's Lot, and no Lot may be combined with other Lots, except as related to the declarant's future development rights. There shall be no boundary line adjustment between any Lots, such that the original configuration is modified or altered; provided, however, underlying adjustment shall be permitted in the event there is an error in surveying the Plat, or error in the construction of the home such that a boundary line adjustment shall be reasonable and necessary to accommodate such error.

(a) Declarant reserves the right to subdivide a Lot, or to combine two (2) lots owned by Declarant, or to adjust or remove boundary lines between Lots owned by Declarant, provided any necessary City approvals are obtained, all Declaration and Plat amendments required by the Act and/or local land use laws are prepared, executed and Recorded, and any necessary reallocation of Allocated Interests of the Owners is accomplished. In the case of the combination of two or more Lots, no change in Allocated Interest shall occur. In other words, if two Lots are combined, the resulting Lot shall continue to constitute two (2) Lots for assessment and voting purposes. All costs relating to the foregoing activities shall be the sole responsibility and obligation of Declarant, or of the Owner performing the same. Declarant's rights under this subsection (a) shall terminate upon the first to occur of (i) the date which is 10 years after the Recording of this Declaration, or (ii) Declarant's relinquishing of these rights by a Recorded instrument.

(b) No further covenants, conditions, restrictions or easements shall be Recorded by any Owner (except Declarant in the exercise of its reserved rights) or other Person against any Lot without the provisions thereof having been first approved in writing by the Executive Board for consistency with the Declaration, any applicable Supplement Declaration, and the general plan of development for the Common Interest Community. Any covenants, conditions, restrictions or easements Recorded without such approvals being evidenced thereon shall be null and void. This provision does not apply to Mortgages.

3.9 **Fences Prohibited or Restricted** Perimeter fencing shall be limited to fences not exceeding six (6) feet in height and shall not extend beyond the front of the residential Building as approved by the Design Review Committee. Front yard perimeter fencing shall be as approved by the Design Review Committee and shall not exceed three (3) feet in height. Owner shall be responsible for obtaining a permit prior to construction of perimeter fencing from the City of Grand Junction.

3.10 **Annoying Light, Sound or Odor** All exterior lighting installed or maintained on a Lot is limited to six (6) feet or lower and placed so that the light source is screened or shielded from the residence on any other Lots. No light shall be emitted from any part of the Common Interest Community, which is unreasonably bright or causes unreasonable glare. Without limiting the generality of the foregoing, no spotlights, floodlights or other high-intensity lights shall be permitted within the Common Interest Community and will meet the City of Grand Junction lighting standards.

No sound shall be emitted from any part of the Common Interest Community which is unreasonably loud or annoying to others, and no odor shall be emitted from any part of the Common Interest Community which is noxious or unreasonably offensive to others. Again without limiting the generality of the foregoing, no exterior speakers, horns, whistles, bells, or other sound devices, other than security devices used exclusively for security purposes, shall be located or used within the Common Interest Community.

3.11 **Violation of Law, Insurance, Etc** No Owner or Occupant or Person shall do any act or cause or permit anything to be done or kept in or upon a Lot, Buildings or Improvements constructed thereon, or the Association Property which would result in the increase of, or cancellation of, insurance

maintained by the Association or would be in violation of any federal, state, city or other law, ordinance, regulation or code of any governmental body having jurisdiction, or of any Master Rule and Regulation promulgated by the Association, or of any provisions of this Declaration.

3.12 **General Maintenance of Lots, Buildings and Improvements**

(a) Maintenance The Owners shall keep, maintain and repair their Lots, Buildings and Improvements situated thereon, including any fencing or landscape Improvements installed by the Declarant in a neat, clean, cultivated, attractive and well maintained condition, free from the accumulation of trash or debris or visual deterioration. The Owners shall repair and maintain any fencing on the common boundary with other Owners, including fencing installed by the Declarant, and the costs and expenses therefore shall be shared equally between the Owners sharing the common boundary.

(b) Trash No Lot shall be used as a dumping ground for rubbish. No garbage, rubbish or trash shall be allowed to accumulate on any Lot. All garbage, rubbish and trash shall be placed and kept in covered containers. All containers shall be kept within garages or enclosed backyards so as to not be visible from neighboring property, except to make the same available for collection during regular trash collection days.

(d) Association Authority In the event any Owner fails to keep, maintain or repair such Owner's Lot or the Building(s) or Improvement(s) situated thereon, including landscape and fence Improvements installed by the Declarant, in accordance with this section, a written notice will be issued. If an Owner fails to perform any of such obligations within ten (10) days following the receipt of a written notice from the Association then the Association shall be authorized to conduct such maintenance, repairs or restoration and assess the cost thereof to Owners on whose Lot or for whose benefit such maintenance or repairs were conducted as a reimbursement assessment.

3.13 **Duty to Maintain: Erosion and Sediment Control** Each Lot owner shall be responsible for making certain that any builder who performs any construction on such Lot adheres to and regularly notifies suppliers and subcontractors of their obligation by virtue of this Declaration to adhere to the Stormwater Best Management Practices during construction activities.

The Owner or its contractor shall install silt fences or straw bales around the site at the beginning of construction as needed to prevent sediment from leaving or entering the Lot in any direction, and shall comply with the Subdivision drainage plans. Backfill and rough grade of the Lots shall be completed as soon as possible in the construction process and final grade shall be established as soon as practical.

Permanent erosion and sediment control measures shall be installed and functioning within 6 months of the issuance of the certificate of occupancy on a residential building.

3.14 **Design Guidelines** All excavation and other land disturbance, construction, landscaping and irrigation activities within the Common Interest Community shall be governed by the procedures, standards, guidelines, restrictions and requirements set forth in the Design Guidelines. A violation of the Design Guidelines shall constitute a violation of this Declaration and may be enforced in accordance with the terms thereof.

3.15 **Noxious or Offensive Activities; Nuisances; Construction Activities** No noxious or offensive activity shall occur or be allowed at anytime on any property within the Common Interest Community, nor shall anything be done or placed thereon which is or may become a nuisance or cause an unreasonable embarrassment, disturbance, or annoyance to Owners, Occupants, Declarant, or the Association, or which interferes with the peaceful enjoyment or possession and proper use of the Common Interest Community, or any part thereof, by Owners or Occupants. As used herein, the term "nuisance" shall not apply to any activities of Declarant, which are reasonable necessary or appropriate to the development, improvement, maintenance, marketing and/or sale of the Common Interest Community or any part thereof. The Executive Board, in its sole discretion, shall have the right and authority to determine the existence of any nuisance or unreasonable annoyance.

Each Owner shall comply with the Master Rules and Regulations and the requirements of all health authorities and other governmental authorities having jurisdiction over the Common Interest Community. Normal construction activities and parking, during normal working hours, in connection with the building of Improvements on a Lot shall not be considered a nuisance or otherwise prohibited by the Master Declaration unless they are in violation of the Design Guidelines or other requirements of the Design Review Committee, but Lots and Association Property shall be kept in a neat and tidy condition during construction periods, trash, and debris shall not be permitted to accumulate, and supplies of brick, block, lumber and other building materials shall be neatly piled. In addition, construction equipment and building materials may only be stored or kept within the Common Interest Community during and in connection with the construction of Improvements thereon. All such equipment and materials and equipment shall be removed immediately following completion of construction.

3.16 **No Hazardous or Unsafe Activities** No activity shall be conducted on, and no Improvement shall be constructed on, any property within the Common Interest Community, which is or might be unsafe or hazardous to any Person or property. Without limiting the generality of the foregoing, and except as allowed below, no explosives, gasoline, or other volatile and/or incendiary materials or devices or any materials deemed hazardous or toxic substances under applicable environmental laws, or regulations shall ever be used, kept, stored, permitted to remain or be released or disposed of on any Lot or elsewhere within the Common Interest Community. Gasoline or fuel for the Owner's lawn mower, snow blower, and the like may be maintained on an incidental basis in an enclosed structure on a Lot in an amount not to exceed 10 gallons, except for construction purposes.

3.17 **Outside Burning; Fire Hazards** No exterior fires shall be lighted or permitted on any property within the Common Interest Community except in a contained barbeque unit while attended

and in use for cooking purposes, or in a landscaped exterior fire pit. Notwithstanding the foregoing, the Declarant shall have the right to perform burning activities in connection with the development and marketing of the Common Interest Community.

3.18 **No Firearms or Hunting** The discharge of firearms and hunting on any part of the Common Interest Community is expressly prohibited.

3.19 **No Unsightliness** All unsightly structures, facilities, equipment, objects, and conditions sporting equipment (e.g., skis, snowboards, bikes, mountain bikes, kayaks, etc.) and snow removal, garden or maintenance equipment except when in actual use, shall be kept in an enclosed structure or in a screened area approved by the Design Review Committee. No laundry or wash shall be dried or hung outside any residence.

3.20 **Animals** Except as specifically permitted below or by the Master Rules and Regulations, no animals, reptiles, primates, fish, fowl or insects of any kind shall be kept, raised, bred, maintained or boarded within or upon any part of the Common Interest Community.

Each Lot shall be entitled to a Maximum of no more than two (2) dogs or cats (or one of each) and a reasonable number of other household Pets, so long as such dogs, cats and other Household Pets are not kept for any commercial purpose, are not kept in unreasonable numbers, do not cause an unreasonable amount of noise or odor, or do not otherwise become a nuisance or threat to other Lot Owners or Occupants. Permitted dogs, cats, and other Household Pets must be fenced or restrained at all times within the Owner's or Occupant's Lot and shall not be permitted outside such Lot except when leashed and accompanied by the pet's owner or the owner's representative. All Household Pets shall be properly immunized and otherwise maintained and cared for as a required by applicable laws.

The Owner of Lot where a Household Pet is kept, as well as the legal owner of the pet (if not such Owner), shall be jointly and severally liable for any and all damage and destruction caused by the pet, and for any clean-up on the Owner's Lot and of streets, sidewalks, Association Property or other Lots necessitated by such pet.

The Executive Board shall be responsible for enforcing the restrictions set forth in this Section, and shall have, and is hereby given, the right and authority to determine in its sole discretion that dogs, cats and other Household Pets are being kept for commercial purposes, or are being kept in unreasonable numbers, or are causing an unreasonable amount of noise or odor, or are a nuisance or threat to other Lot Owners or Occupants, or that a Lot Owner or Occupant is otherwise in violation of this Section, and to take such action or actions as it deems reasonably necessary to remedy the violation, including without limitation the levying of fines and/or Reimbursement Assessments as provided in hereof. Also, without limiting the generality of the foregoing, the Executive Board may require the owner or custodian of a dog that barks or howls excessively, or of a dog, cat or other Household Pet with other offensive habits or threatening behavior, to confine such animal indoors, or to permanently remove such animal from the Common Interest Community, and may adopt Master Rules and Regulations governing pets.

3.21 **Restriction on Equipment, Tanks, Antennae, Satellite Dishes, Etc.** Air movement, air conditioning (including swamp coolers), heating, wind collection, or refrigeration equipment must be screened from the view of neighboring properties. Solar power units meeting all governmental guidelines for residential uses may be incorporated into a residence if the solar power unit meets the same architectural criteria as are applied to other Improvements within the Common Interest Community, and the solar power unit is approved in advance by the Design Review Committee. No tanks of any kind, whether elevated or buried, shall be erected, placed or permitted to remain upon any Lot or Association Property except in compliance with applicable federal and state regulations, and then only with the prior written consent of the Design Review Committee.

Satellite dishes that exceed one meter in diameter, and MDS antennas that exceed one meter in diameter or diagonal measurement, shall not be allowed within the Common Interest Community. Mast antennas that are extended higher than 12 feet above the roof line and antennas that are not used to receive video programming shall only be permitted within the Common Interest Community if they receive the prior written approval of the Design Review Committee as to design, location and screening from neighboring Lots, Units, and the Association Property.

3.22 **Restrictions on Mining or Drilling** No Lot within the Subdivision shall be used for any exploration or extraction of oil, gas or other minerals, including but not limited to, the drilling mining, quarrying, boring or developing water, geothermal resources, hydrocarbons, minerals, rocks, stones, gravel, or underground water.

3.23 **Excavation; Natural Rock Features** No excavation or other earth disturbances shall be performed or permitted within the Subdivision except in connection with the construction of Improvements. Whenever possible significant natural rock features shall be preserved, and shall not in any event be disturbed unless the written approval of the Design Review Committee is first obtained. Upon completion of construction, openings in the ground shall be backfilled and compacted and all disturbed ground shall be graded and landscaped in accordance with the Design Guidelines and the requirements of the Design Review Committee.

3.24 **No Interference with Waterways or Drainage Systems** All runoff shall be properly channeled into a storm drain, storage area, or other storm water management facility in conformance with the drainage portion of the approved site plan. All elements of the drainage control system shall be constructed and maintained in accordance with the approved site plan.

No Owner or Lessee shall construct, install, maintain or permit any fence or other improvement or obstruction or plant trees or take any other action which damages or interrupts or interferes in any way with the normal flow of water through and along waterways and water features within the Subdivision, any ditch, lateral, pond or other water collection, storage or distribution system within or serving the Subdivision, or normal drainage patterns within the Subdivision, subject always to the rights of owners of ditches and other water rights and the requirements of the Design Review Committee.

The Association shall have the authority to take such action as may be necessary to abate any such damage or interference, and shall have the right to enter upon a Lot or Common Element for purposes of correcting or removing obstructions, and any costs incurred by the Association in connection with such abatement, injunctive or corrective activities shall be assessed to the responsible Lot Owner in the form of a Reimbursements Assessment.

3.25 **Ponds** No swimming or boating or ice-skating activities shall be conducted on any ponds within the Subdivision.

3.26 **Tree and Natural Shrub Preservation** All Improvements within the Subdivision shall be located, designed, and constructed so as to preserve and protect trees and natural shrubs. In order to conserve the natural shrubs (e.g., pine, cedar, pinon, other evergreens, and gamble oak or sage brush) may be removed or trimmed except with the prior written approval of the Design Review Committee. This restriction shall not apply to the removal or trimming of dead or diseased vegetation, or essential clearing by a Lot Owner in connection with the construction of a residence on a site previously approved by the Design Review Committee. Any violation of this Section shall subject the offending Lot Owner to such penalties, fines and/or other conditions as the Design Review Committee considers appropriate, including without limitation the withdrawal or modification of previously granted development approvals, or the requirement that replacement trees or shrubs or equivalent or different size and type be planted and maintained by the Lot Owner.

3.27 **Use of Easement Areas; Utility Installation** All easements shown on a Plat or Supplemental Plat covering any portion of the Subdivision have been created or reserved for the purposes indicated on such Plat and/or Article. No Lot Owner may erect any structure in such easement areas, nor may an Owner or Occupant use the surface of such easement areas for any private use, other than landscaping which will not interfere with the use of said easement by the Persons or entities for whose benefit it has been created or reserved and which received the prior written approval of the Design Review Committee.

With respect to easements created for access and/or utility purposes either by the terms of this Master Declaration or any other Recorded agreement or on a Plat, any and all bona fide public and private utility service companies, including special districts, shall have the right of access, ingress, egress, and use of such easement areas for the installation, operation and maintenance of utility facilities service the Subdivision.

3.28 **Landscaping and Irrigation Regulations** No landscaping shall be performed on any Lot or Common Element or on Association Property unless a landscaping plan has received prior written approval of the Design Review Committee, and all landscaping shall comply with the Design Guidelines. A landscaping plan for each Lot must be approved by the Design Review Committee before construction is commenced on the residence on that Lot. Any substantial change in the type or location of approved landscaping vegetation shall require the further approval of the Design Review Committee.

The only type of Turf Grass permitted to be installed in the Subdivision is low-maintenance turf. A maximum of fifteen percent (15%) green space of the Lot may be planted with turf grass configured and shall have a permanent irrigation system installed. Green space is defined as the entire parcel less any Improvement footprints, driveways, vehicle use areas, and other impervious areas. Storm water management system areas are excluded in the calculation of green space area.

The Planting of low water requirement plants, trees and shrubs shall be regulated by the Design Review Committee, and shall be limited in accordance with Design Guidelines. The preservation of the natural high desert look of Pinnacle Ridge and the views of each Lot owner shall be respected.

Subsurface and soils conditions may vary substantially from Lot to Lot in Pinnacle Ridge, ranging from sand to clay to rock. Over-watering under some soil conditions has the potential of causing damage to the Lot Owners' Improvements as well as to neighboring properties. Each Lot Owner shall obtain a soil and subsurface conditions report from an independent qualified geotechnical firm before constructing any improvements on his Lot. The Lot Owner shall comply with all restrictions and recommendations contained in the report with respect to construction and methods and practices appropriate for the specific soils and subsurface conditions encountered on the Lot. Irrigation plans and systems proposed within each Lot shall also be in compliance with the Design Guidelines and approved by the Design Review Committee. By virtue of the fact that neither the Declarant nor the Association shall have the means to monitor irrigation systems installed or actual irrigation practices, the assumption of risk, waiver and release provisions of Section below shall in all cases apply notwithstanding approval of a landscaping plan by the Design Review Committee.

Each Owner shall diligently maintain, trim, weed, cultivate, husbandry, protect, preserve and otherwise keep in a healthy and attractive condition of the low maintenance shrubs, trees, hedges, grass, planters, gardens and other landscaping upon the Owner's Lot, including, without limitation, the removal of dead and diseased branches and brush and the performance of other tasks necessary to remove or eliminate material which constitutes or creates a fire hazard or nuisance, and shall keep the Owner's Lot free of noxious weeds. Each Owner shall also maintain all paved, concrete and other synthetically surfaced areas within the Owner's Lot, including but not limited to, driveway and parking areas, in good condition and repair.

3.29 **Tennis Courts and Basketball Hoops** Tennis courts, and basketball hoops, backboards and nets shall not be allowed unless they comply with the Design Guidelines and the approval of the Design Review Committee is first obtained.

3.30 **Swimming Pools, Spas, and Related Equipment** Pools, spas or hot tubs may be erected, constructed or installed on Lots or Common Elements within the Subdivision, provided they comply with the Design Guidelines and that have received the prior written consent of the Design and Review Committee. If a pool, spa or hot tub is approved, all service equipment shall be fenced and located in either a side yard between the front and rear boundaries of the residence, or in the rear yard adjacent to

the residence, and shall be adequately screened from any neighboring Lot, the Association Property, and all streets in the Common Interest Community.

3.31 **Signs and Advertising** With the exception of one entry/identification sign per Lot during the period of actual construction on the Lot, which sign shall comply with the Design Guidelines, no sign, poster, billboard or advertising device of any kind shall be allowed or displayed upon any Lot or any Association Property within the Common Interest Community except:

(a) Such signs as may be used by the Declarant or builders approved by Declarant in connection with the development, marketing and sale of Lots in the subdivision;

(b) Such signs as may be required for traffic control and regulation of Association Property;

(d) Neighborhood monuments (e.g., entrance and directional signs) which are compatible with the architecture of the area;

(e) One security company sign;

(f) One "For Sale" or "For Rent" sign on any Lot,

(g) One "Private Residence" sign on any Lot. All such signs must comply with the Design Guidelines.

3.32 **Camping and Picnicking** No camping or picnicking shall be allowed on Association Property except in areas, designated for such purpose by the Association.

3.33 **No Individual Water Wells or Individual Sewage Disposal Systems** No individual water wells, and no cesspools, septic tanks or other individual sewage disposal systems, shall be drilled, constructed, maintained or permitted to remain within the Common Interest Community, except such water and/or septic systems as may be installed by Declarant or Declarant's successor, assign or agent or the Association to serve the Common Interest Community.

3.34 **Regulation of Pesticides** The Design Review Committee may adopt reasonable rules and regulations governing the use and application of pesticides, herbicides, fertilizers and fungicides within the subdivision.

3.35 **Untreated Water Irrigation System, Ditches, Laterals, Ponds, and Water Use Obligations** Declarant hereby discloses that certain irrigation systems, pipes, stub-outs, ditches, ditch laterals and ponds are currently located or may be constructed within ditch and irrigation easement areas located upon certain Lots in the Common Interest Community, upon Association Property, and/or within City-owned right-of-ways (collectively referred to as the "Untreated Water Irrigation System"). Declarant reserves the right, in its sole discretion, to extend said Untreated Water Irrigation System into the acquired property, as shall be more specifically set forth in the Supplement Declaration(s) therefore. Declarant further discloses that as of the date of this Master Declaration, the ownership of any and all water rights carried or to be carried in said Untreated Water Irrigation System is vested in the City of Grand Junction, and the City has no obligation to transfer ownership of any of such water rights to any

Lot Owner or the Association. In no event shall the Association or any Lot Owner be entitled to the right of use of the Untreated Water Irrigation System or any water flowing through said Untreated Water Irrigation System, except pursuant to the payment of fees and compliance with the rules and regulations of the City of Grand Junction. Furthermore, in no event shall any Lot Owner be entitled to install irrigation facilities, to divert water from the Untreated Water Irrigation System or to make Modifications to the Untreated Water Irrigation System for diversion purposes. In addition, in no event shall any Lot Owner or the Association obstruct or impede the flow of water through the Untreated Water Irrigation System.

The City's operation of the Untreated Water Irrigation System is solely pursuant to the Plan and Agreement between the City and the Ridges Metropolitan District, Dated November 1, 1991, approved by the District Court of Mesa County in Case No. 26330.

As long as the City operates the Untreated Water Irrigation System, the City will provide untreated water to Pinnacle Ridge for irrigation purposes through the Untreated Water Irrigation System. To the extent possible, all irrigation within Pinnacle Ridge shall be accomplished with untreated water from the Untreated Water Irrigation System. City will also provide untreated water for the Association for purposes of irrigating Association Property, and the Home Owners Association will pay the monthly fee associated therewith. The Association is responsible for irrigating Association Property and the landscaping along certain public roadways.

All Owners hereby assume any risk involved with respect to the operation of the Untreated Water Irrigation System and hereby acknowledge that the Association, the Declarant, and the City shall not have any responsibility or liability of any kind to any loss, damage, cost or expense arising from or relating to said Untreated Water Irrigation System, including, but not limited to, any loss or damage caused by over watering, failure of irrigation system components, flooding or the failure to deliver water. In accordance with the foregoing, such Owners, on behalf of themselves and their Occupants, successors and assigns, by acceptance of a deed acknowledge their assent to the provisions hereof, and hereby waive and release Declarant, the City, and the Association and each of their officers, directors, partners, trustees, members, agents, employees, stockholders, and contractors, from and against any and all obligations, claims, demands, liabilities, costs, expenses, attorneys' fees, or causes of action of any kind whatsoever, whether arising prior or subsequent to the date hereof, whether known or unknown, based upon, arising out of, or in any manner related to the Untreated Water Irrigation System.

3.36 **Restoration of Improvements in the Event of Damage or Destruction** In the event of damage to or destruction of any Improvement on any Lot, the Owner thereof shall cause the damaged or destroyed Improvement to be restored or replaced to its original condition or such other conditions as may be approved in writing by the Design Review Committee, or the Owner shall cause the damaged or destroyed Improvement to be demolished and the Lot to be suitably landscaped, subject to the approval of the Design Review Committee, so as to present a pleasing and attractive appearance. Such Improvements shall be repaired, restored, or otherwise demolished and suitably landscaped within such reasonable time frame as may be established by the Design Review committee.

3.37 **Leases** Any Owner shall have the right to Lease his Lot including the Improvements under the following conditions.

(a) All Leases shall be in writing.

(b) All Leases shall provide the terms of the lease and the tenant's (Occupant's) use of the Lot shall be subject in all respects to the provisions of this Declaration or any pertinent Supplemental Declaration, and the Articles, the Bylaws, and the Master Rules and Regulations, and the Design Guidelines, that the Occupant has received and reviewed copies of said documents, and any failure by the Occupant to comply with any of the aforesaid documents, in any respect, shall be a default by Occupant under the Lease and a default by Occupant and Owner under said documents which may be enforced against Occupant and/or Owner by the Executive Board.

(c) Each Owner who leases a Lot shall be responsible for assuring compliance by the Occupant with all of the provisions of this Declaration, any pertinent Supplemental Declaration, the Articles, the Bylaws, the Master Rules and Regulations, and the Design Guidelines, and shall be jointly and severally responsible with the Occupant of any violations thereof by the occupant.

(d) Each Lease shall expressly provide that the Association (via the Executive Board) shall have the right to give the Occupant written notice that the Occupant is in violation of one or more of the documents listed in subsection above, which notice shall specify a period of time (at least 5 days) in which the Occupant may cure the violation.

(e) All legal fees and costs incurred by the Association in connection with a Lease shall be the joint and several liabilities of the Lot Owner and the Occupant and may be collected by legal action in which the prevailing party shall be entitled to an award of its reasonable costs and attorney's fees.

3.38 **Right of Entry** During reasonable hours and upon notice to the Owner and Occupant of a Lot, any member of the Executive Board, shall have the right to enter upon and inspect any Lot, and the Improvements thereon, except for the interior portions of any occupied dwelling (which shall require the permission of the Owner or Occupant, except in case of emergency, when no notice or permission shall be required), for the purpose of ascertaining or not the provisions of the Declaration and of the Design Guidelines have been or are being complied with, or for the purpose of exercising any rights or performing any responsibilities (maintenance, repair, etc.) provided for in this Declaration or in any Supplemental Declaration, and such individuals shall not be deemed guilty of trespass by reason of entry.

3.39 **Damage by Owners During Construction** Each owner is responsible for any damage caused to roads, streets, ditches, fences, trails, natural drainage courses, utilities, Association Property, or to other Lots, Units, or Improvements thereon, during the construction or alteration of Improvements upon the Owner's Lot, including without limitation damage caused by any construction vehicles using the roads or streets within the Common Interest Community. Damage shall include any degradation in the appearance or condition of such roads, streets, Association Property, or other Lots, Units, or Improvements. The responsible Owner shall promptly repair and clean up any such damage, at its sole expense. Each Owner shall also be responsible for any damage caused by utility cuts in roads,

washouts and runoff damage caused by failure to properly install culverts, and to promptly repair any such damage. If the Owner fails to repair any such damage within 5 days following receipt of a written notice from the Executive Board requesting the same, the Executive Board shall have the right to perform such repairs on behalf of the Owner, and to levy a Reimbursement Assessment upon the Owner and its Lots to recover the costs thereof. All construction activity must maintain the integrity of the City's Stormwater Management Manual. All violations are subject to penalty under the City's ordinance.

3.40 **Health, Safety, and Welfare** In the event any uses, activities, and facilities within the Subdivision are deemed by the Executive Board to be an unreasonable annoyance or nuisance, or to adversely affect the health, safety or welfare of Owners or Occupants, the Executive Board may amend the Master Rules and Regulations In order to appropriately restrict and regulate such uses, activities or facilities within the Subdivision. Such rules shall be consistent with the purposes and provisions of this Declarations.

3.41 **Implementation and Variances** The Executive Board is charged with implementing and enforcing the restrictions in this Article, or otherwise restrict and regulate the use and occupancy of the Subdivision and the Lots by reasonable Master Rules and Regulations of general application adopted by the Executive Board from time to time. The Executive Board may, in its sole discretion and in extenuating circumstances, grant variances from any of the restrictions set forth in Article 3 (excepting any such restrictions with respect to which the Design Review Committee has the authority to grant variances under Article IV), if the Executive Board determines, in its discretion, (a) either (i) that a particular restriction a substantial hardship or burden on an Owner or Occupant, which hardship or burden was not caused by said Owner or Occupant, or (ii) that a change of circumstances since the Recordation of this Declaration has rendered such restriction obsolete, and (b) that the activity permitted under the variance, in the judgment of the Executive Board will not have any material adverse effect on the Owners and Occupants of the Subdivision (including neighboring Lots) and is consistent with the high quality of living intended to be promoted hereby throughout the Subdivision. When an Owner applies for a variance, the Board must give at least ten (10) days advance written notice of the variance hearing and the nature of the variance requested, postage paid, by certified mail, return receipt requested, to all Owners of Lots that are situated within a radius of 300 feet of the Lot for which the variance is sought, at current addresses for such Owner reflected in the Association files. The applying Owner must provide the Committee with an accurate list of the Owners to be so notified. If the foregoing notice requirements are complied with, it is not necessary that the Owners actually receive the notice that is mailed to them, such notices being deemed received upon mailing.

No variance shall conflict with the Master Subdivision Plan for Pinnacle Ridge or with ordinances or regulations of the City. If a variance from the Master Subdivision Plan or City laws or regulations is also required in connection with a matter for which a variance is desired, it shall be the Owner's responsibility to obtain such City variance before submitting a variance application to the Executive Board.

3.42 **Declarant Activities** Nothing contained in this Declaration is intended or shall be interpreted to prevent, regulate or delay or to restrict Declarant's right and ability to develop, improve, maintain, repair, regulate, operate, administer, manage, market, sell, lease, encumber or dispose of the Common Interest Community, the Lots, the Association Property, additional unspecified real estate, or any part thereof, including the right to construct Improvements, place a construction office, construction trailers, and install signs thereon, all in the discretion of Declarant.

ARTICLE IV
DESIGN REVIEW COMMITTEE

4.1 **Establishment of Design Review Committee** The Association shall establish and maintain the Design Review Committee, consisting of three (3) members, each of whom shall be appointed and removed by the Executive Board of the Association from time to time in its discretion. The qualifications for members of the DRC shall be set forth in the bylaws. The Design Review Committee and the members thereof shall not be liable for damage to any Person submitting requests for approval or to any Owner within the Property by reason of any act, omission, approval, disapproval or failure to approve or disapprove with regard to any request. The actions of the Design Review Committee shall be deemed conclusively binding upon the Owners.

4.2 **Meetings and Action of Committee** The Design Review Committee shall meet as often as necessary to review applications. The meetings shall be held at locations, times and dates determined by the Design Review Committee. Such meetings shall be conducted according to the procedures adopted by the Design Review Committee. The applicant may attend the meetings, and address the Committee or answer questions in the Design Review Committee's discretion. The majority vote of the Design Review Committee members shall be required to take any action on behalf of the Committee.

4.4 **Compensation of Committee Members** The Design Review Committee may be compensated for services performed pursuant to this Declaration within the discretion of the Executive Board.

4.5 **Records of Actions** The Design Review Committee shall keep a permanent record of all actions of the Design Review Committee.

4.6 **Design Guidelines** The Design Review Committee shall establish the initial set of rules, procedures, standards, guidelines and requirements, including without limitation architectural, design and development standards and guidelines, governing the review and approval or disapproval of all Improvements proposed for new construction or the restoration or modification of existing, roof construction within the Common Interest Community consistent with this Declaration. The design standards and guidelines may be amended from time to time as the Design Review Committee deems reasonable or necessary.

4.7 **Submission of Plan** Prior to commencement of any work to accomplish any proposed Improvements, the Owner proposing such Improvements shall submit three (3) sets of plans, designs,

drawings, specifications and samples as the Design Review Committee shall require pursuant to its design and development standards and guidelines, which may include, but are not necessarily limited to the following: construction plans and specifications, including floor plan and exterior elevations, site plan of house to be built on the Lot, sample of exterior colors; sample of trim and soffit colors, sample of roof shingle, landscape plan, including sprinkler system, drainage and grading, and application for Design Review Committee approval form required by the Design Review Committee.

From and after the day on which the Design Review Committee receives all required information and materials in connection with the proposed Improvements and Builder, The Design Review Committee shall have 30 calendar days in which to approve, approve with conditions, or deny the application. In the discretion of the Committee, one or more meetings may be held with the Owner during that period. If the Design Review Committee fails to approve or deny the application within said 30-day period, the final plans and specifications submitted to the Committee by the Owner shall be deemed approved.

4.8 **Design Review Fee** The Design Review Committee shall adopt a design review fee schedule for processing requests for the original construction of a residential improvement, and for subsequent requests for approval of Improvements on a Lot including remodels, renovations or other alterations of the original approval. No fee shall be charged for any proposed alteration or addition to an approved landscaping plan. The design review fee schedule may be modified from time to time and shall be set forth in the Design Guidelines.

4.10 **Design Review and Construction Process** Every owner proposing to make Improvements on its Lot must comply with the design review and construction procedures that are set forth in the Design Guidelines. The Declarant is exempt from this requirement.

4.11 **Approval of Plans** The Design Review Committee shall approve any plans submitted if it determines in its discretion that such plans comply with the Committee rules and procedures, the design and development standards and guidelines, and the requirements of the Plat and the Declaration. Upon approval of any plans, the Design Review Committee shall stamp both sets of the plans accordingly and return one set to the applicant. The other set shall be retained by the Design Review Committee, along with the application form. In the event of any later discrepancies between the set of plans given to the applicant and the set retained, the set of plans on file with the Design Review Committee shall control.

Approval by the Committee on any Improvement shall not imply or require that such approval will be granted again in the future for the same or similar Improvements, and the Committee shall have complete discretion, consistent with the standards and criteria contained herein and in the Design Guidelines, to grant or deny such approval in each instance on the merits of the particular application or proposal and considering the circumstances surrounding the same.

4.12 **Decisions of Committee** Decisions of the Design Review Committee shall be made in accordance with the procedures established in the Design Guidelines and shall be binding on all parties.

4.14 **Completion of Work After Approval** Following the approval of any proposed Improvements by the Design Review Committee, the proposed Improvements shall be completed by the Lot Owner: (a) as promptly and diligently as possible but in no event in excess of the time periods set forth below; (b) in compliance with the Design Guidelines and with all applicable laws, regulations and codes, (c) in strict conformance with all plans and specifications and other materials furnished to and approved by the Design Review Committee and with the Certificate of Approval; and (d) in accordance with any and all conditions imposed by the Design Review Committee. All Improvements approved be the Design Review Committee shall be completed, a Certificate of Compliance shall be obtained in accordance with Section 4.15 below, and all construction equipment, materials and debris shall be removed, (i) within 18 months from the date of approval of such Improvements by the Design Review Committee, or (ii) within such other time period as the Design Review Committee may prescribe. Provided, however, that any and all landscaping and/or gardening approved by the Design Review Committee which is related to the initial construction of a residence on a Lot shall be completed no later than 180 days immediately following the issuance of the Certificate of Occupancy for such residence. Failure to comply with the terms and conditions of this Section 4.14shall constitute noncompliance with the terms and provisions of this Declaration and the Design Review Committee and/or the Executive Board shall have the right to invoke all rights and remedies provided to them hereunder, including but not limited to, the right to seek injunctive relief and/or to impose fines and penalties.

4.13 **Right to Inspect** Designated members or authorized consultants of the Design Review Committee or of the Executive Board, or any authorized officer, agent of the Association, may with notice at any reasonable time enter upon any Lot without being deemed guilty of trespass, in order to inspect Improvements constructed or being constructed on such Lot, to ascertain whether such Improvements have been or are being built or changed in compliance with the Design Guidelines, the approvals granted by the Design Review Committee, and this Declaration.

4.14 **Notice of Completion; Inspection of Work; Correction of Defects**

(a) Upon completion of any Improvements (excepting the related landscaping) for which plans and specifications have been approved by the Design Review Committee, the Owner shall submit to the Committee a written Notice of Completion, on a one page form to be provided by the Committee, which Notice shall certify that the Improvements have been completed in accordance with all plans, specifications and other materials furnished to and approved by the Committee, the Certificate of Approval, any conditions imposed by the Committee, and with the Design Guidelines. Until receipt of such Notice, the Committee shall not be deemed to have any notice regarding completion of the Improvements.

(b) Within seven (7) days following the receipt of the Notice of Completion, the Design Review Committee or its duly authorized representative shall inspect the Improvements. If the Committee finds that the Improvements have not been completed at set forth in the Notice of Completion, it shall notify the Lot Owner in writing of such noncompliance within said seven (7) day

period, specifying the particulars of noncompliance, and shall require the Owner to remedy the same. If for any reason other than the Lot Owner's act or neglect, the Committee fails to notify the Owner of any noncompliance or to issue the Owner a Certificate of Compliance pursuant to Section4.15 below prior to the expiration of said seven (7) day period, the Improvements shall be deemed in compliance if the Improvements were, in fact, completed as of the date of the Notice of Completion and the Owner or Registered Builder may proceed to request a Certificate of Occupancy from the City.

(c) If upon the expiration of thirty (30) days from the date of such notification of noncompliance the Lot Owner shall have failed to remedy such noncompliance, the Design Review Committee shall notify the Executive Board in writing of such failure. The right of the Home Owners Association to remedy or remove any noncompliance shall be in addition to all other rights ad remedies which the Association may have at law, in equity, or under this Declaration or any Supplemental Declaration, and the Lot shall have no claim for damages or otherwise on account of the entry upon the property and remedying or removal of the non-complying Improvement.

4.15 **Certificate of Compliance** When the Design Review Committee is satisfied that the Improvements have completed in accordance with all plans, specifications and other materials furnished to the Design Review Committee, the Certificate of Approval, any conditions imposed by the Committee, and with the Design Guidelines, it shall issue within seven (7) days to the Owner a Certificate of Compliance with respect to said Improvements. Upon receipt of such Certificate, but not before, the Owner or Registered Builder may apply to the City for a Certificate of Occupancy. No newly-constructed residence on a Lot shall be occupied until a Certificate of Occupancy has been issued therefore by Mesa County.

4.16 **Improvements Must Conform to Approvals** No building, fence, landscaping, wall, structure or other Improvement shall be commenced, constructed, erected, placed, installed, located, maintained or removed within the Common Interest Community, nor shall there be any additions or changes to the exterior of any residence or other structure or Improvement upon a Lot or the landscaping, grading or drainage thereof, including without limitation, the painting or staining (other than painting or staining with the same color and type of paint or stain as previously existed) of exterior walls, patio covers and fences, except in accordance with plans and specifications therefore which have been submitted to and approved by the Design Review Committee and in compliance with the Design Guidelines.

4.17 **Committee Power to Grant Variances** The Design Review Committee may grant variances from any of the restrictions in this Declaration or any Supplemental Declaration or the Design Guidelines including restrictions upon height, size, floor area, setbacks, location or placement of structures, or similar restrictions, when unique circumstances not created by the Lot Owner, such as topography, natural obstructions, or aesthetic or environmental considerations would otherwise result in substantial hardship or burden which is not suffered by other similarly-situated Lots, or when a change of circumstances since the Recording of this Declaration has rendered such restriction obsolete. In granting a variance the Design Review Committee shall determine that the activity allowed by the

variance will not have any material adverse effect on the Owners and Occupants of the Common Interest Community (including neighboring Lots) and is consistent with the quality of living intended to be promoted throughout the Common Interest Community. When an Owner applies for a variance, the Committee must give at least seven (7) days written notice of the variance hearing, and of the nature of the variance requested, postage prepaid by certified mail, return receipt requested, or by other means provided for in the Bylaws, to all Owners of Lots that are situated within a radius of 300 feet of the Lot for which the variance is sought, at the current addresses for such Owners reflected in the Association files. The applying Owner must provide the Committee with an accurate list of the Owners to be so notified. If the foregoing notice requirements are complied with, it is not necessary that the Owners actually receive the notice that is mailed to them, such notices being deemed received upon mailing.

All variances granted by the Design Review Committee must be evidenced in writing, must specify the Lot for which the variance, and must be signed by at least the majority of the members of the Committee. If any such variance is granted, no violation of the covenants, conditions and restrictions contained in this Declaration or any Supplemental Declaration or the Design Guidelines shall be deemed to have occurred with respect to the matter for which the variance was granted. The granting of such a variance shall not operate to waive any of the terms and provisions of this Declaration or of any Supplemental Declaration or the Design Guidelines for any purpose except as to the particular property and particular provision hereof covered by the variance. A copy of each variance request and approval, or denial, will be kept on file at the Association offices.

The granting of a variance in a particular instance shall in no event imply or require that such a variance will be granted again in the future in a similar situation, and the Committee shall have complete discretion, consistent with the standards and criteria contained herein and in the Design Guidelines, to grant or deny a variance in each instance on the merits of the particular application and considering the circumstances surrounding the same.

No variance shall conflict with the Master Subdivision Plan for Pinnacle Ridge or with ordinances or regulations of the City. If a variance from the Master Subdivision Plan or City laws or regulations is also required in connection with a matter for which a variance is desired hereunder, it shall be the Owner's responsibility to obtain such City variance before submitting a variance application to the Design Review Committee.

4.18 **Non-liability for Approval or Disapproval of Plans and Specifications, for Issuance of Certificates of Approval or Compliance, or Restriction of Builders** The Design Review Committee shall not be responsible for reviewing plans and specifications with respect to engineering design or for compliance with zoning, building ordinances, environmental laws, or any other applicable laws or regulations. By its approval of any such plans and specifications, and by its issuance of a Certificate of Approval, neither the Design Review Committee, the members thereof, the Association, any member, the Executive Board not the Declarant assumes or shall have any liability or responsibility with respect to engineering design or for compliance with zoning, building ordinances, environmental laws, or any

other applicable laws or regulations, or for any defect in any Improvement constructed from such plans and specifications.

Likewise, Builders shall register with Design Review Committee in the manner set forth in the Design Guidelines. By registering a Builder, the Design Review Committee does not represent or warrant, either expressly or by implication, and hereby disclaims any representations or warranties, that the Registered Builder will in fact complete the Improvements on schedule, within the Owner's budget, or in a competent and workmanlike manner, or that the Registered Builder is or will remain financially sound, and the Lot Owner's assume all risks regarding such matters.

4.19 **Registration of Builders** The construction or renovation of Units or of residential improvements on Lots within the Common Interest Community shall be accomplished only by licensed general contractors.

ARTICLE V
THE ASSOCIATION

5.1 **General Powers** The Association's general purpose is to be and constitute the entity to further the mutual interests of the Declarant and the Owners pursuant to this Declaration, the Articles and Bylaws and the Act, including without limitation, enforcement of the Master Declaration; Owning, repairing and maintaining the Common Elements; Maintenance and use of any Lots, Buildings and Improvements as authorized in the Declaration; Levying and enforcing assessments to defray the cost and expenses of the Association's duties and responsibilities in this Declaration; and, providing other utilities and services pursuant to the Articles and Bylaws. The Association shall have and may exercise all of the powers and duties of the Colorado corporation formed under the Colorado Revised Nonprofit Corporation Act.

5.2 **Association Executive Board** The affairs of the Association shall be managed by an Executive Board of three (3) directors (the "Board") initially. When Declarant relinquishes control of the Board to the Owners pursuant to Section 5.5 below, the Board shall be managed by at least three (3) directors. Directors shall meet the qualifications described in the Articles of Incorporation and Bylaws of the Association.

A quorum shall be present throughout any meeting of the Executive Board, and all regular and special meetings of the Executive Board or any committee thereof shall be open to attendance by all members of the Association or their representatives. Without limiting the generality of the foregoing, no Master Rule or Regulation may be adopted during an executive session. Agendas for meetings of the Executive Board shall be made reasonably available for examination by all Members of the Association or their representatives.

The Executive Board may not act on behalf of the Association to amend this Declaration, terminate the Common Interest Community, elect members of the Executive Board or determine the qualifications, powers and duties, or terms of office of Executive Board members, but the Executive Board may fill vacancies in its membership for the unexpired portion of any term.

5.3 **Membership in Home Owners Association** By acceptance of a deed to a Lot within the Subdivision, each Owner shall be a Member of the Association. A membership shall be appurtenant to and may not be separated from ownership of any Lot. Declarant shall hold a Membership in the Association for each Lot owned by Declarant. Membership in the Association shall not be assignable separate and apart from fee simple title to a Lot, and may not otherwise be separated from ownership of a Lot.

5.4 **Voting Rights of Member** The Association shall have one class of voting membership, each Owner being entitled to vote one (1) vote for each Lot owned upon matters subject to vote by the Members as provided in the Articles and Bylaws of the Association. A vote for each Lot shall be exercised as the Owner or Owners may determine, but in no event shall more than one (1) vote be cast with respect to any Lot.

Provided a quorum of Members entitled to vote is present in person or by proxy, the affirmative vote of a majority of the Members so present shall constitute approval of any matter voted upon unless a different number is required on a particular matter by the Act, this Declaration, any Supplemental Declaration, the Articles, or the Bylaws.

The Lot Owners, by a vote of sixty-seven percent (67%) of all Members present and entitled to vote at any meeting of the Lot Owners at which a quorum is present, may remove any member of the Executive Board with or without cause, other than a member appointed by Declarant.

5.5 **Declarant Control of Association** From the date of the formation of the Association until termination of Declarant's control as provided below, Declarant shall have and hereby reserves the power to appoint and remove, in its sole discretion, the members of the Executive Board and the officers of the Association during the period commencing upon the Recording of this Declaration and terminating upon the first to occur of either sixty (60) days after conveyance of seventy-five percent (75%) of the Lots to Owners other than Declarant or two (2) years after the last conveyance of a Lot by Declarant in the ordinary course of business.

Declarant may voluntarily surrender the right to appoint and remove officers of the Association and members of the Board before termination of the period of Declarant's control, but in that event Declarant may require, for the duration of the period of Declarant's control, that specified actions of the Association or Board, as described in a recorded instrument executed by Declarant, be approved by Declarant before they become effective. Not later than sixty (60) days after conveyance of twenty-five percent (25%) of the Lots to Owners other than Declarant, at least one (1) member and not less than twenty-five percent (25%) of the members of the Executive Board must be elected by Lot Owners other than Declarant. Not later than sixty (60) days after conveyance of fifty percent (50%) of the Lots to Owners other than Declarant, not less than thirty-three and one-third percent (33%) of the members of the Executive Board must be elected by Lot Owners other than Declarant.

Within sixty (60) days after Lot Owners other than Declarant elect a majority of the members of the Executive Board, Declarant shall deliver to the Association all property of the Lot

Owners and of the Association held or controlled by Declarant, including, without limitation, those items specified in the Act.

5.6 **Termination of Contracts and Leases of Declarant** The following contracts and leases, if entered into before the Executive Board elected by the Lot Owners pursuant to Section 38-33.3-303(7) takes Office, may be terminated without penalty by the Association at any time after the Executive Board elected by the Lot Owners pursuant to said Section 38-33.3-303(7) takes office, upon not less than ninety (90) days notice to other party; (i) Any management contract, employment contract or lease of recreational or parking areas or facilities; (ii) Any other contract or lease between the Association and Declarant or an affiliate of Declarant; or (iii) Any contract or lease that is not bona fide or was unconscionable to the Lot Owners at the time entered into under the circumstances then prevailing.

ARTICLE VI
ASSOCIATION PROPERTY

6.1 **Use and Enjoyment of Association Property** With the exception of Limited Common Areas, and except as otherwise provided in the Declaration, in any Supplemental Declaration, or in the Master Rules and Regulations, each Owner shall have the non-exclusive right to use and enjoy Association Property in common with all other Owners. This right to use and enjoy Association Property shall extend to each Owner, Occupant, and the family members, guests and invitees of each Owner, and to such other users as may be authorized by this Declaration or by the Executive Board from time to time, and shall be appurtenant to each Lot, subject at all time to the provisions of the Declaration, the Articles, Bylaws, and the Master Rules and Regulations. No Owner or Occupant shall place any structure or store or leave any materials or personal property upon Association Property, nor shall any Owner or Occupant engage in any activity, which will temporarily or permanently impair free and unobstructed access to all parts of the Association Property by all Owners. Use of the Association Property is also subject to any applicable terms of the Declaration of Easements.

6.2 **Home Owners Association May Regulate Use of Association Property** The Association, acting through the Executive Board, shall have the right and authority to regulate the use of Association Property by the promulgation, enforcement and interpretation from time to time of such Master Rules and Regulations relating thereto as the Association considers necessary or appropriate for the protection and preservation of Association Property and the enhancement of the use and enjoyment thereof by Owners and Occupants and other authorized users.

The Association, acting through the Executive Board, may for good cause suspend the right of any person to use and enjoy the Association Property, including the right of a Member who or which is delinquent in the payment of any Assessments, and the right of any Member or other authorized user who is in violation of the terms and provisions of this Declaration or any Supplemental Declaration, the Articles, Bylaws, Master Rules and Regulations, Design Guidelines or the terms and provisions of any approvals granted by the Design Review Committee.

6.3 **Association to Maintain and Improve Association Property** The Association, its agents and employees, shall maintain and repair, snowplow as necessary, and otherwise manage the Association Property (including the Limited Common Area), including, but not limited to, any Improvements, landscaping, paths, trails, parking areas, drives, and recreational and other facilities located thereon. The Association may construct, alter and remove such Improvements and landscaping upon Association Property as the Association in its discretion considers necessary, desirable or appropriate from time to time, and may do all such other and further acts which the Executive Board deems necessary or appropriate to preserve, protect and enhance the Association Property and the beauty thereof in accordance with the general objectives for the Common Interest Community reflected in the Declaration. Separate bids shall be let for the maintenance of Limited Common Areas so that the costs thereof can be assessed exclusively to the Lots benefited thereby.

The Association shall take title to, own, manage and maintain the Common Areas, particularly the private streets, recreational areas, open space, and areas for storm water management, erosion and sediment control. The Association shall maintain the private streets, the parking areas included within the same tracts as the private streets and maintain a vegetation-free zone along the private streets that is 20 feet in width (10 feet each side from the center of the private street).

The Association shall grant the City of Grand Junction Police Department the right and power to enter the private streets for the purpose of enforcing parking restrictions.

6.4 **No Partition of Association Property** No Owner or other Person shall have any right to partition or to seek the partition of Association Property thereof.

6.5 **Owner Liability for Owner or Occupant Damage to Association Property** Each Owner shall be liable to the Association for any damage to Association Property of for any expense, loss or liability suffered or incurred by the Association in connection with Association Property arising from the negligence or willful misconduct of such Owner or of any Occupant, agent, employee, family member, guest or invitee of such Owner, or any violation by such Owner or any Occupant, agent, employee, family member, guest or invite of such Owner of any law, regulation, or code, including without limitation any environmental law, or of any provisions of this Declaration, and Supplemental Declaration, or the Master Rules and Regulations, relating to Association Property. Each Owner shall indemnify, defend and hold the Association harmless from any loss, damage, expense or liability arising from the circumstances described above. The Association shall have the power to levy and collect a Reimbursement Assessment against a Lot Owner to recover the costs, expenses, damages, losses or liabilities incurred by the Association as a consequence of any such negligence, willful misconduct or violations.

6.6 **Damage or Destruction to Association Property** In the event of damage to or destruction of Association Property, including Improvements thereon, by fire or other casualty, the Association shall repair or replace the same in accordance with the provisions in the Declaration. Repair, reconstruction, or replacement of Association Property shall be accomplished under such contacting

and bidding procedures as the Association shall determine are appropriate. If insurance proceeds available to the Association on account of damage or destruction exceed the maintenance, repair, improvement, and operation of Association Property or for any other use deemed appropriate by the Executive Board.

6.7 **Condemnation of Association Property** If any Association Property or part thereof or interest therein is taken under exercise of the power of eminent domain or by purchase in lieu thereof, the portion of any award in condemnation or the price payable for the deed in lieu that is attributable to the Association Property taken or purchased shall be paid to the Association. The Association shall have the exclusive right to participate in such condemnation proceedings and to represent the interest of all Owners and Occupants and other Persons therein. Any award or funds received by the Association shall be held by the Association for the purposes stated above or as a reserve for future maintenance, repair, reconstruction, or replacement of Association Property or may be used for Improvements or additions to or operation of Association Property or for such other uses as may be deemed appropriate by the Executive Board. Except as may otherwise be provided by the Act, no Owner or other Person shall be entitled to participate as a party or otherwise in any condemnation proceedings nor to receive any proceeds therefore.

6.8 **Title of Association Property Upon Dissolution of Association** In the event of dissolution of the Association, the Association Property shall, to the extent permitted by law and reasonably possible, be conveyed or transferred to an appropriate public, government or quasi-governmental agency or organization or to a nonprofit corporation, association, trust, or other organization, to be used, in any such event, for the common benefit of Owners for the purposes for which the Association Property was held by the Association. If the foregoing is not possible, the Association Property shall be sold or disposed of and the proceeds from the sale or disposition shall be distributed to Owners in proportion to each Owner's Allocated Interest in the Common Expense of the Association.

6.9 **Mechanic's Liens on Association Property** Declarant shall be responsible for the release of mechanics' liens filed with respect to Association Property, or any part thereof, if such liens arise from labor performed or materials furnished at the instance of Declarant, its agents, contractors or subcontractors. Likewise, the Association shall be responsible for the release of mechanics' liens filed with respect to Association Property, or any part thereof, is such liens arise from labor performed or material furnished at the instance of the Association, its directors, officers, agents, contractors or subcontractors. No labor performed or materials furnished with respect to Association Property at the instance of the Executive Board shall be the basis for filing a lien against any Lot.

ARTICLE VII
DECLARATION'S RESERVED RIGHTS

7.1 **Statement of Interest** Declarant hereby expressly reserves to itself and its successors and assigns the Development Rights set forth herein, any one or more of which rights may be exercised, in the sole and absolute discretion of Declarant, at any time and from time to time during the period

commencing upon the recording of this Declaration or in any Supplemental Declaration and ending on the date of termination of such rights established under Section below. It is expressly understood that Declarant shall not be obligated to exercise any of these Development Rights, and that no consent be required from any Owner, Mortgagee, or the Association for the effective exercise of any of the Development Rights. Declarant reserves the right to create up to 72 single family residential lots in one or more phasing's of the subdivision.

The Developer Rights hereinafter set forth shall be prior and superior to any other provisions of this Declaration and may not be amended, modified, terminated or otherwise altered in any way without the express prior written consent of Declarant. All conveyances of Lots, whether by Declarant or otherwise, shall be deemed and construed to reserve to Declarant and/or to grant to Declarant all of the Development Rights reserved by and to Declarant in this Article VI and elsewhere in this Declaration or in any Supplemental Declaration, even though no specific reference to such rights appears in the conveying instruments.

7.2 **Construction of Improvements** The Declarant reserves the right, but not obligation, to construct additional Improvements on the Common Elements at any time and from time to time for the improvement and enhancement thereof for the benefit of the Association and Lot Owners. The right to complete Improvements indicated on the Plat or this Declaration or in any Supplemental Declaration may be amended from time to time. The right to construct and complete Improvements required by the terms of any development improvements agreement with applicable governmental entity may be amended from time to time. The Declarant shall have the right to create, grant and/or use and enjoy additional nonexclusive easements, and to relocate existing platted or other easements, upon or across any portion of the Property (including Lots and Common Elements), as may be reasonably required for the construction by Declarant of Improvements to the Common Elements or the effective exercise by Declarant of any of the other Development Rights described in this Article.

7.3 **Sales, Marketing and Management** The Declarant shall have the right to construct, locate or operate, and to maintain upon, and to remove from any part of the Property, in the discretion of Declarant, and in such number, size and location as may be reasonably required by Declarant in connection with the completion of Improvements, the management of the development, and/or the promotion, marketing, sale or rental of Lots, the following:

(a) Sales offices, management offices, and/or construction offices, and structures containing or relating to the same, including without limitation mobile homes, office trailers and construction trailers. Such offices, to the extent they are not situated on a Lot, are hereby declared to be personal property of the Declarant and shall in any case be successors or assigns ceasing to be a Lot Owner;

(b) Signs identifying, advertising the Common Interest Community and the Lots therein, or relating to development or construction thereon;

(c) Model residences constructed or to be constructed on Lots;

(d) Parking areas and facilities and lighting necessary or desirable in the marking of the Property and the Lots; and

(e) Employees, equipment, vehicles and marketing and construction materials.

7.4 **Declarant Control of Association** Declarant shall have the right to appoint or remove any Executive Board member or officer of the Association as more specifically set forth in Article 5.5 above consistent with the Act.

7.5 **Other Reserved Development Rights** Subject to compliance with the requirements of the applicable governmental authority, the Declarant may as to all or any portion of the Declarant Owner Property; (a) create additional Lots; (b) subdivide Lots; (c) combine Lots; (d) create Common Elements; and (e) reconfigure Lots, or streets. Additionally, in order to effectively exercise the Development Rights reserved to Declarant under this Article VI, the Declarant may amend this Declaration or in any Supplemental Declaration and the Plat (without the consent of Owners, Mortgagees or the Association being required) for purposes of complying with or qualifying for any required federal or state registration of the project, satisfying title insurance requirements, bringing any provision or provisions of the Declaration or in any Supplemental Declaration or the Plat into compliance with the Act, or cure technical errors, typographical errors or deficiencies in the Declaration or Plat.

7.6 **Transfer of Declarant's Reserved Rights** Any one or more rights created or reserved for the benefit of Declarant under this Article VII or elsewhere in this Declaration or in any Supplemental Declaration may be transferred to any Person by an instrument describing the rights or rights transferred and recorded in Mesa County records. Such instrument shall be executed by the Declarant and the transferee. The provisions of Section 38-33.3-304 of the Act shall apply to any transfer of special Declarant reserved rights.

7.7 **Termination of Declarant's Reserved Rights** With the exception of Declarant's right to appoint or remove Executive Board members and officers of the Association, the rights reserved by Declarant in this Article VII shall automatically terminate and expire upon the first to occur of the date which is thirty (30) years after the recording of this Declaration or in any Supplemental Declaration, or Declarant's relinquishment and surrender of such rights by recorded instrument. The Association is authorized and empowered to extend the time period for Declarant's exercise of the Development Rights, or reinstate a lapsed Development Right, without requiring Lot Owner or Mortgagee approval thereof. The extension or renewal of a Development right shall be made as an amendment to the Declaration or in any Supplemental Declaration or Plat, as the circumstances require, and shall be executed by Declarant and the Association.

7.8 **Owner Acceptance and Waiver of Rights Regarding Declarant's Reserved Rights** Each Owner, by his/her acceptance of a deed to a Lot, acknowledges that the Owner has carefully read and understands the Declarant's reserved Development Rights as set forth in this Article VII or elsewhere in this Declaration or in any Supplemental Declaration, that the Owner accepts, approves and

understands the Declarant's reserved Development Rights and waives and releases any rights the Owner may have to object to or to interfere with the implementation or the exercise of the Development Rights reserved by the Declarant.

7.9 **Withdrawal Rights and Procedure** The right at any time and from time to time to withdraw from the Subdivision (and any additions thereto) any Declarant-owned Lot or Lots, or Association Property. Withdrawal may only be accomplished be the recording by Declarant of an amendment to this Declaration or any Supplemental Declaration affected by the withdrawal, and an amendment to the Plat or any Supplemental Plat affected by the withdrawal. Upon the recording of such amendments, the withdrawn Lots or Association Property shall no longer be part of the Subdivision or subject to this Declaration or any applicable Supplemental Declaration in any way.

Each Declarant-owned Lot, and each Declarant-owned Association Property, is hereby described and declared to be a separate portion of real estate that is subject to this right of withdrawal, and Declarant expressly reserves the right to withdraw one or more Declarant-owned Lots and/or portion of any Declarant-owned Association Property from the Subdivision. Once a Lot has been conveyed to a Lot Owner other than Declarant, that portion of the real estate is no longer subject to this right to withdrawal. Likewise, once an Association Property has been conveyed to the Association, that portion of the real estate is no longer subject to this right of withdrawal.

7.10 **Subdivision of Blocks or Lots** Declarant shall have and hereby reserves the right to subdivide any Declarant-owned Block or Lot located within the Subdivision to create additional Lots, Association Property, and/or streets, subject to the maximum number of Lots set forth in the Recitals to this Declaration; provided, however, that such subdivision is consistent with the Declaration Plan for Pinnacle Ridge or that said Master Subdivision Plan is amended if necessary, and that the subdivision of any Block or Lot in compliance with City subdivision requirements. Upon the subdivision of any Block, or Lot in accordance with the terms and conditions contained herein, the Allocated Interest contained in this Master Declaration.

7.11 **Declarant as Attorney-In-Face For Owners** Each Owner, by its acceptance of a deed or other conveyance vesting in the Owner on interest Lot in the Subdivision, does hereby irrevocably constitute and appoint Declarant (with full power of substitution) as said Owner's attorney-in-fact, in said Owner's name, place and stead, to take any and all actions and to execute and deliver any and all instruments as may be necessary or appropriate to Declarant's exercise of the various rights reserved Declarant under this Article VII or elsewhere in this Declaration or in any Supplemental Declaration specifically including without limitation Declarant's reserved right to use all existing easements within the Subdivision or to create, grant, use and/or replat and relocate additional or existing easements across any portion of the Subdivision excepting platted Building Envelopes.

ARTICLE VIII
GENERAL PROVISIONS

8.1 **Duration of Master Declaration** The term of this Declaration shall be perpetual.

8.2 **Enforcement** The provisions of the Declaration or in any Supplemental Declaration may be enforced by the Association or any Owner against any Person, including any Owner or the Association, as a result of any failure to comply with the terms of the Declaration or in any Supplemental Declaration, the Bylaws or the Act to the fullest extent permitted under the Act including the recovery of costs and attorney's fees with or without commencing legal proceedings. The failure by the Association or by any Owner to enforce any covenant or restriction herein contained shall in no event be deemed an estoppels or waiver of the right to enforce this Declaration, or a waiver of any other or subsequent breach of any covenant, condition or restriction herein contained.

(a) Acceleration The Association may elect to accelerate and declare immediately due and payable the remaining balance of any assessment payable in installments for such fiscal year.

(b) Collection The Association may bring a suit at law to collect delinquent assessments, including any accelerated assessment. Any judgment rendered in such action shall include a sum for costs of suite, including a reasonable attorney's fees.

(c) Lien All delinquent assessments shall be and constitute a lien upon the Owner's Lot in addition to being the personal obligation of the Owner. Such lien shall have the priority and shall be enforced in accordance with section 38-33.3-316 of the Act.

(d) Penalty Beginning with second month of delinquency, a five percent (5%) penalty will be added to all delinquent amounts each month until payments are current.

8.3 **Interpretation of Master Declaration and Supplemental Declaration; Conflicts with Act** The provisions of this Declaration and of all Supplemental Declaration shall be liberally construed to effectuate their purpose of creating a common and general plan for the development, improvement, enhancement, protection and enjoyment of the Common Interest Community, and to the extent possible, shall be construed so as to be consistent with the Act. In the event that any of the terms and conditions of this Declaration or of any Supplemental Declaration is determined to be inconsistent with the Act, the Act shall control. Notwithstanding anything to the contrary in this Declaration or in any Supplemental Declaration, no rights or powers reserved to Declarant hereunder or in any Supplemental Declaration shall exceed the time limitations upon or the permissible under the Act, and in the event any of such reserved rights or powers are determined to be inconsistent with the Act, the related provisions shall not be invalidated but shall be modified to the extent required to comply with the Act.

8.4 **Conflict With Plats** In the event of any conflict or inconsistency between the provisions of this Declaration or any Supplemental Declaration and the Plat, or any Supplemental Plat, including the Plat notes thereon, the provisions of said Plat or Supplemental Plat or Plat notes, as the case may be, shall govern and control and this Declaration or any Supplemental Declaration shall automatically be

amended, but only to the extent necessary to conform the conflicting provisions hereof with the provisions of said Plat or Plat notes.

8.5 **Costs and Attorneys' Fees** In any action or proceeding involving the interpretation or enforcement or any provision of the Declaration or of any Supplemental Declaration, the prevailing party shall be entitled to recover its reasonable attorneys' fees and costs incurred in connection therewith.

8.6 **No City Liability** Notwithstanding any other provisions therein to the contrary, no obligation, duty or liability including a duty to pay money, interest, attorneys' fees or other costs, shall be assumed by, transferred to, or imposed on the City of Grand Junction pursuant to this Declaration, or by virtue of the City's ownership of any Tract within Pinnacle Ridge.

8.7 **Disclaimer Regarding Safety** Declarant and the Association hereby disclaim any obligation regarding the security of any persons or property within the Common Interest Community. Any owner of property within the Common Interest Community acknowledges that Declarant and the Association are only obligated to do those acts specifically enumerated herein, or in the Articles of Incorporation and Bylaws, and are not obligated to do any other acts with respect to the safety or protection of persons or property within the Common Interest Community.

8.8 **Amendment of Master Declaration and Plat** The Declaration and/or the Plat may be amended by Declarant at any time and for any purpose to the conveyance of the first Lot to an Owner. Subsequent to the conveyance of the first Lot to an Owner, the Declarant may amend the Declaration or the Plat: (i) to correct any clerical, typographical or technical errors, (ii) to comply with the requirements, standards or guidelines of recognized secondary markets, the Department of Housing and Urban Development, the Federal Housing Administration, the Veterans Administration, the Federal Home Loan Mortgage Corporation, the Government National Mortgage Association, or the Federal National Mortgage Association, (iii) to exercise any of the reserved Development Rights as set forth in Article above or (iv) to effect the Declarant's intent as expressed in the Declaration or the Plat. This Declaration may also be amended at any time and for any purpose and in such manner as is provided in the Act.

This Declaration and any Supplemental Declaration (including the Plat and any Supplement Plats) may be amended by the vote or agreement of Owners of Lots to which at least fifty percent (50%) of the votes in the Association are allocated, provided such amendment does not impair, restrict or modify any of the reserved Development Rights of the Declarant, or conflicts with any provision of the Act. Any amendment must be recorded. The Declaration, Supplemental Declaration and Plat may not be amended without the approval of the City of Grand Junction in regard to amendments that relate to the Common Elements

8.9 **Governing Law; Jurisdiction** This Declaration shall control and govern over any conflicting provision of the Act, except to the extent that such conflicting provision in the Act is mandatory according to the terms of Sections -105, -106, and -107 of the Act. This Declaration shall

further control any conflicting term in the Articles, Bylaws or any rule or regulation promulgated by the Association or the Design Board.

8.10 **Resolution Procedures**

(a) Dispute Resolution All actions, disputes, claims or controversy between any Owner, the Design Review Board, the Association, the Declarant, and their respective agents, contractors, successors and assigns, whether in contract, tort or otherwise, shall be resolved by the procedures as set forth in this Section or as set forth in any limited warranty (if any), or any applicable agreement between Declarant and any Owner or his/her heirs, successors or assigns.

(b) Initial Notification; Negotiation For each claim governed by this section (a "Claim"), the claimant ("Claimant") shall give notice to the other party(ies) against whom the claim is asserted ("Respondent"), setting forth; the nature of the Claim; the basis or reason for the Claim; any other material information regarding the Claim; the specific relief and/or proposed remedy sought; and the intent to invoke this Section (the "Notice of Claim"). Claimant and Respondent shall use good faith efforts to resolve the Claim through negotiations following delivery of the notice, pending mediation pursuant to Section 7.2(c).

(c) Mediation The Claim shall first be mediated before a mediator jointly selected by the parties. Mediation is a process in which the parties meet with an impartial person who helps to resolve the dispute formally and confidentially. Mediators cannot impose binding decisions. The parties to the dispute must agree before any settlement is binding. The mediation shall occur within thirty (30) days following delivery of the Notice of Claim (the "Mediation Period"). Mediation shall be a condition precedent to arbitrating any dispute. In the event Claimant does not appear for mediation, Claimant shall be deemed to have irrevocably waived the Claim, and Respondent shall be released from any and all liability to Claimant on account of such Claim. The costs of the mediation shall be borne by Claimant and Respondent. In the event mediation is successful, the resolution shall be documented in writing and signed by the parties. Thereafter, if either party violates the resolution, the other party may apply immediately to a court for relief. The mediation, unless otherwise agreed, shall terminate in the event that the entire dispute is not resolved before the expiration of the Mediation Period. In the event the mediation is unsuccessful, then the Claimant may make written demand for arbitration pursuant to Section 7.2(d) within sixty (60) days following the expiration of the Mediation Period. If no written demand for arbitration is made within the specified time, Claimant shall irrevocably waiver the Claim and any and all right to proceed to arbitration regarding the Claim.

(d) Arbitration Following the Mediation Period and a written demand for arbitration, the Claim shall be resolved by binding arbitration administered by the American Arbitration Association (or any successor to such association) in accordance with the current American Arbitration Association Construction Industry Arbitration Rules in effect at the time of submission to arbitration, and as provided for in this subsection. In the event of any inconsistency between such rules and these arbitration provisions, these provisions shall supersede such rules. Should an action, dispute, claim or

controversy be brought against Declarant and or any builder by a third party who is not bound by a binding arbitration provision similar to the arbitration provision contained herein, the terms of this subsection shall apply to such action, dispute, claim or controversy. The Arbitrator shall be selected from a panel of Arbitrators from Mesa County, Colorado (or if such panel is available, from Denver County, Colorado), with an Arbiter mutually acceptable to the parties. If the parties are unable to jointly agree upon the Arbiter, then each party shall select an arbiter and the two arbiters shall select a third person to serve as the sole Arbiter. The parties agree that the Arbiter shall have substantial experience in the real estate field. The parties shall share equally in the arbitrator's fees and the costs of the arbitration. All parties shall have the right to be represented by legal, counsel. In determining any question, matter, or dispute before them, the Arbiter shall apply the provisions of the Declaration or in any Supplemental Declaration, and Articles and Bylaws, without varying from them in any respect, and they shall not have the power to add to, modify or change any of the provisions hereof. Any arbitration award may be enforced through entry of judgment by any court having jurisdiction there over. Exclusive venue for any arbitration proceeding shall be in Mesa County, Colorado. Except as may be required by law or for enforcement, neither a party nor the arbiter may disclose the existence, content, or results of any arbitration without the prior written consent of all parties to the Claim.

The Arbiter's decision may contain findings of fact and conclusions of law to the extent applicable and the Arbiter shall have the authority to rule on all post-hearing motions in the same manner as a trial judge. The statement of decision of the Arbiter upon all of the issues considered by the arbitrator is conclusive, final and binding upon the parties. Judgment upon any award rendered by the Arbiter may be entered by any State or Federal Court, as appropriate.

(e) Standards of Construction If any claim regarding defects in construction is made, each claim shall be specified with particularity. Each location of any claimed defect must be identified and all evidence supporting each claim, along with all repair methodologies and costs of repair, must be provided by the claimant in advance of any mediation hereunder. In any arbitration or other proceedings, it shall be rebuttably presumed that any construction done by the builder or Declarant was not defective, that the builder or Declarant adequately performed its obligations under its contract, and that the builder or Declarant was not negligent if the builder or Declarant's performance was substantially in accordance with any of the following: (A) the standards of trade in the Grand Junction Area on the date hereof or (B) Any applicable building code in Grand Junction on the date hereof; or (C) any applicable national association of home builders residential construction guidelines. In any such proceedings, evidence of any scientific, engineering, or technical advancements or other knowledge or techniques, where such advancements were discovered subsequent to the date hereof, shall not be admissible for any purpose. If any of Claimant's claims relate, in any way, to any work completed by any of Declarant's or builder's subcontractors or any materials and/or equipment provided by any suppliers, Declarant or builder, as applicable, in its sole discretion, may join such subcontractors and/or suppliers to any arbitration proceeding with Claimant. The sole manner which may be used to establish breach of any obligations under this Declaration, any obligations which may exist by law or reason of any statute, any applicable industry standards, and/or Claimant's damages, including, but not limited to, appropriate repair costs, shall be through the testimony of a homebuilder

with experience in Mesa County, Colorado. The Arbiter shall completely exclude the testimony of any tendered expert who does not meet the foregoing qualifications.

(f) Limitation of Remedies Each party hereby disclaims and waives any claims for the following remedies and damages for any matters related to any Claim, whether a Claim is made on the basis of contract, tort or any other theory or basis at law or in equity; (i) punitive or exemplary damages, (ii) claims for emotional distress or pain and suffering and/or (iii) claims for incidental and/or consequential damages (except as otherwise provided herein). Claimant further agrees that, subject to the other limitations contained herein, Respondent's total liability to Claimant shall be limited to, and in no event exceed, the amount of any insurance proceeds actually available with respect to any and all Claims, whether in contract, tort or otherwise.

(g) Acknowledge of Waivers of Rights to Jury Trail Each party understands that by using binding arbitration to resolve disputes they are voluntarily waiving and giving up any right that they may have to a judge or jury trial with regard to all issues concerning the Lot, Home, Common Elements, the Property, Improvements, and matters related thereto.

8.11 **Severability** Invalidation of any one of these covenants or restrictions by judgment or court order shall not affect any other provisions which shall remain in full force and effect.

8.12 **Limitation on Association** Any action, resolution or attempted action of the Association in conflict with any term or provision of this Declaration shall be void and of no force and effect whatsoever.

ARTICLE IX
POWERS AND DUTIES OF HOME OWNERS ASSOCIATION

9.1 **General Powers & Duties of the Home Owners Association** The Association shall have and may exercise all of the powers and rights and duties of a Colorado corporation formed under the Colorado Revised Nonprofit Corporation Act, and all of the powers and duties provided for in the Act including those enumerated in Section 38-33.3-302 of the Act, as such laws may be amended from time to time, subject only to the limitations upon such powers as are contained in this Declaration. More Specifically, and without limiting the generality of the foregoing, the Association shall have all of the powers and duties necessary (i) for the administration, management, governance and operation of the Common Interest Community and the Association, (ii) to own, operate, improve, maintain, repair, manage, lease, encumber, and otherwise deal with Association Property, (iii) to improve, maintain and repair the Limited Common Areas, and (iv) to do any and all lawful things that may be authorized, required or permitted to be done by the Association under the Act and/or under the provisions of this Declaration and of any Supplemental Declarations.

9.2 **Power to Grant Easements** The Association shall have the power to grant access, utility, drainage, irrigation, and such other easements upon, over, across or under Association Property as it deems necessary or desirable for the benefit of the Common Interest Community or parts thereof, or for

the benefit of all or less than all of the Lot Owners, or for the benefit of lands situated outside the Common Interest Community.

9.3 **Power to Convey or Encumber Association Property** The Association shall have the power to convey, or subject to a security interest, portion of the Association Property if Owners entitled to cast at least sixty-seven percent (67%) of the votes in the Association, including sixty-seven percent (67%) of the votes allocated to Lots not owned by the Declarant, agree to that action, except that all Owner(s) of Lots to which any Limited Common Area is allocated must agree in order to convey that Limited Common Area or to subject it to a security interest. Proceeds of the sale are an asset of the Association.

An agreement to convey, or subject to a security interest, Association Property must be evidenced by the execution of an agreement, in the same manner as a deed, by the Association. The agreement must specify a date after which the agreement will be void unless approve by the required percentage of Lot Owners. Any grant, conveyance or deed executed by the Association must be recorded in the County, and is effective only upon Recordation. The Association, on behalf of the Lot Owners, may contract to convey an interest in at Association Property, but the contract is not enforceable against the Association until approved, executed and ratified pursuant to this Section.

Thereafter, the Association shall have all the powers necessary and appropriate to affect the conveyance or encumbrance, including the power to execute deeds or other instruments. Unless in compliance with this Section, any purported conveyance, encumbrance, judicial sale, or other transfer of Association Property is void. A conveyance or encumbrance of Association Property pursuant to this Section shall not deprive any Lot of its rights of (i) access, ingress and egress to the Lot, and (ii) support of the Lot. A conveyance or encumbrance of Association Property pursuant to this Section shall not affect the priority or validity of pre-existing encumbrance.

9.4 **General Power to Provide Services and Facilities to Owners** The Association shall have the power, but not the obligation, to acquire, construct, operate, manage, maintain, repair and administer services and facilities for the benefit of the Owners, or some of them, including, without limitation, security, animal control, vegetation control, insect and pest control, television service, parking facilities, transportation facilities, snow removal, signage, (including entry monuments), lighting, (including seasonal lighting), interior and perimeter fencing, landscape walls, landscaping services and facilities, drainage facilities, including retention and detention pods, irrigation facilities, water features, trash and sold waste disposal services, including recycling programs, utility services, recreational facilities and services, maintenance, and such other service, functions and facilities as are deemed appropriate by the Executive Board. The foregoing list shall not be deemed to be a representation by Declarant of services or facilities that will in fact be available for use by the Owners. The Association may enter into such agreements and arrangements as it may deem appropriate with any provider of utilities or services to the Common Interest Community or any portion thereof, including any special district that provides such services, and may form or join any districts created to provide such services.

9.5 **Power to Provide Special Services to Owners** The Association shall have the power to provide services to an Owner or group of Owners. Any service or services to an Owner or group of Owners shall be provided pursuant to an agreement in writing, or through one (1) or more Supplemental Declarations, which shall provide for payment to the Association by such Owner or group of Owners of the costs and expenses of the Association in providing such services, including a fair share of the overhead expenses of the Association, and shall contain reasonable provisions assuring that the obligation to pay for such services shall be binding upon any heirs, personal representatives, successors and assigns of the Owner or group of Owners and that the payment for such service shall be secured by a lien on the Lot(s) of the Owner or group of Owners.

9.6 **Power to Charge for Special Association Property Uses and Special Association Services** The Association shall have to power to establish reasonable admission or other fees or charges for any special or extraordinary Association Property uses or Association services such as special parking privileges, special recreation facilities, conference rooms, instruction, or similar uses beyond the ordinary use of Association Property and ordinary Association services. Such charges or fees shall be set forth-in schedules of charges and fees adopted from time to time by the Executive Board.

9.7 **Power to Adopt Master Rules and Regulations** The Association may adopt, amend, repeal, and enforce such reasonable Master Rules and Regulations as the Executive Board may consider necessary, desirable or appropriate from time to time with respect to the interpretation and implementation of this Declaration, the operation of the Association, the use and enjoyment of Association Property (including Limited Common Areas), and the use of any other property within the Common Interest Community, including Lots. Any such Master Rules and Regulations shall be effective only upon adoption by resolution at an open meeting of the Executive Board. Notice of the adoption, amendment, or repeal of any Master Rule or Regulation shall be given in writing to each Owner, and copies of the currently effective Master Rules and Regulations shall be made available to each Owner and Occupant upon request and payment of the reasonable expense of copying the same. Each Owner and Occupant (and all other Persons who are authorized users of Association Property) shall comply with such Master Rules and Regulations, and each Owner shall see that Occupant claiming through such Owner comply with such Master Rules and Regulations. Such Master Rules and Regulations shall have the same force and affect as if they were set forth in and were part of this Declaration. In the event of conflict between the Master Rules and Regulations and the provisions of this Declaration, the provisions of this Master Declaration shall govern. Such Master Rules and Regulations may establish reasonable and uniformly applied penalties (including the levying and collection of fines) for the violation of such Master Rules and Regulations or of any provisions of this Declaration, the Articles, or the Bylaws.

9.8 **Power to Contract with Employees, Agents, Contractors, Districts, Consultants and Managers** The Association shall have the power to contract with, and/or to employ and discharge employees, agents, independent contractors and consultants, including lawyers and accountants, and special districts, to perform any of the responsibilities of the Association under this Declaration, including without limitation maintenance responsibilities. The Association shall also have the power to

retain and pay for the services of a manager or managers, which may be an affiliate of Declarant, to undertake any of the administrative or managerial responsibilities for which the Association may have responsibility under this Declaration, to the extent deemed advisable by the Association, and may delegate any of its duties, powers, or functions to any such manager. Notwithstanding and delegation to a manager of any duties, powers, or functions of the Association, the Association and its Executive Board shall remain ultimately responsible for the performance and exercise of such duties, powers, and functions.

9.9 **Power to Assign Future Income** The Association shall have the power to assign its right to future income, including the right to receive Regular Assessments, but only following the affirmative vote of the Owners Lots to which at least fifty-one percent (51%) of the votes in the Home Owners Association are allocated, at a dully-called meeting of the Members of the Association.

9.10 **Duty to Accept Property and Facilities Transferred by Declarant** The Association shall accept title to any real property, or interests in real property, including any Improvements and personal property thereon, and including water rights and related facilities, transferred to the Association by Declarant, or Declarant's successors or assigns. Property interests transferred to the Association by Declarant or its successors or assigns may include fee simple title, undivided interests, easements, leasehold interest and licenses to use. Except as may otherwise be approved by the Executive Board, any property or interest in property transferred to the Association by Declarant to its successors or assigns shall be within the boundaries of the Common Interest Community. Provided, however, the Declarant shall be entitled to transfer and convey the beneficial use of an easement, subject to any obligations there under, located outside of the Common Interest Community but which benefits the Association and the Owners.

Any property or interest in property transferred to the Association by Declarant shall, except to the extent otherwise specifically approved by resolution of the Executive Board, be transferred to the Association free and clear of all monetary obligations, liens and encumbrances (other than the lien of property taxes and assessments not then due and payable), but shall be subject to the terms of this Declaration, and easements, covenants, conditions, restrictions, and equitable servitudes or other encumbrances of record or otherwise in existence. Except as otherwise specifically approved by resolution of the Executive Board, no property or interest in property transferred to the Association by Declarant shall impose upon the Association any obligation to make monetary payments to Declarant or any affiliate of Declarant, including but not limited to, any purchase price, rent, charge, or fee.

Any Improvements or personal property transferred to the Association by Declarant shall be in good working order, ordinary wear and tear excepted, and at the time of transfer Declarant shall make any repairs reasonably required to bring the transferred property into good working order. Subject only to the foregoing, the Association shall accept all properties transferred to it by Declarant in their "Where is, As is" condition, without recourse of any kind, and Declarant disclaims and shall not be deemed to make or have made any representations or warranties, express or implied, by fact or law,

with respect to the transferred properties or any aspect or element thereof, including without limitation warranties of merchantability, fitness for a particular purpose, or workman like construction.

9.11 **Duty to Mange and Care for Association Property** The Association shall manage, care for, operate, maintain, repair and replace all Association Property and keep the same in a functional, clean and attractive condition for the benefit and enjoyment of the Owners.

9.12 **Duty to Provide Winter Snow Removal for a portion of Elysium Drive** The Association shall be responsible for snow removal along the north facing slope on Elysium Drive generally located between lots 54 and 55. The Association shall maintain signage along this portion of Elysium Drive stating that the Association is responsible for snow removal and not the City of Grand Junction.

9.13 **Duty to Pay Taxes** The Association shall pay any taxes and assessments levied upon Association Property (excepting Limited Common Area) and any other taxes and assessments payable by the Association before they become delinquent. The Association shall have the right to contest any such taxes or assessments by appropriate legal proceedings provided no sale or foreclosure of any lien for such tax or assessment occurs and provided further that the Association shall keep and hold sufficient funds to pay and discharge the taxes and assessments, together with any other interest and penalties which may accrue with respect thereto, if the contest of such taxes in unsuccessful.

9.14 **Duty to Keep Association Records** The Association shall keep financial records in sufficient detail to enable the Association to carry out its responsibilities under this Declaration and to comply with the requirements of the Act, including, but not limited to, current records of paid and unpaid Assessments for each Lot. All financial and other records of the Association shall be made reasonably available for examination by the Owners and the authorized agents of the Owners.

9.15 **Duty to Support the Design Review Committee** The Association shall take such actions, provide such funds, and do such other things as may be necessary or appropriate from time to time to support and assist the Design Review Committee in the performance of its responsibilities under this Declaration, and shall cooperate with said Committee to the fullest extent possible in such matters.

9.16 **Insurance** Commencing not later than the time of the first conveyance of a Lot to a Person other than Declarant, the Home Owners Association shall maintain and keep in effect at all times the following types of insurance, and the cost of said coverage shall be paid by the Association as a Common Expense:

(a) *Casualty Insurance*. To the extent reasonably available, property insurance on all Association Property, including but limited to Improvements and personality, owned or lease by the Association, and on all property that must become Association Property. Such insurance shall be for broad form covered causes of loss, including casualty, fire, and extended insurance including, if available at reasonable cost, coverage for vandalism and malicious mischief and, if available and if deemed appropriate, coverage for flood, earthquake, and war risk. Such insurance shall, to the extent reasonably, obtainable, be for the full insurable replacement cost of the insured property, less applicable

deductibles at the time the insurance is purchased and at each renewal date, exclusive of land, excavation, foundations and other items normally excluded from property policies.

(b) *Liability Insurance*. Comprehensive general liability insurance against claims and liabilities arising in connection with the ownership, existence, use, maintenance or management of the Association Property (including the Limited Common Areas), and covering public liability or clams of liability for injury to persons and/or property, and death of any person or persons, and, if the Association owns or operates motor vehicles, public liability or claims of liability for bodily injury (including death) and property damage arising as a result of the ownership and operation of motor vehicles. Such liability insurance shall be in such amounts as deemed advisable by the Executive Committee and shall (a) insure the Executive Board, the Design Review Committee, the Association and its officers, the manager, if any, and their respective employees, agents and all Persons acting as agents; (b) include the Declarant as an additional insured as its interest may appear; (c) include the Owners as insured's, but only for claims and liabilities arising in connection with the ownership, existence, use, maintenance or management of Association Property; (d) cover claims of one or more insured parties against other insured parties; (e) be written on an occurrence basis; and (f) shall name as additional insured's such other parties as may be required by specific agreements.

(c) *Contractual Liability Insurance*. To the extent reasonably available, contractual liability insurance covering such contractual obligations and liabilities, indemnifications, hold harmless agreements, and agreements to defend, and the Association may have or be party to from time to time, with coverage in amounts determined by the Executive Committee.

(d) *Fidelity Bonds*. To the extent reasonably available, fidelity bond coverage against dishonest act on the part of directors, officers, managers, trustees, agents, employees or volunteers responsible for handling funds belonging to or administered by the Association. If funds of the Home Owners Association are handled by a management agent, then fidelity bond coverage may also be obtained for the officers, employees, or agents thereof handling or responsible for Association funds. The fidelity bond or insurance must name the Association as the named insured and shall be written to provide protection in an amount no less than the lesser of (a) fifty thousand dollars, (b) a sum equal to two (2) months aggregate Regular Assessments, plus reserves, as calculated from the current Budget of the Association; or (c) the estimated maximum amount of funds, including reserves, in the custody of the Association (and its management agent) at any one time. In connection with such coverage, an appropriate endorsement to the policy to cover any person who serves without compensation shall be added if the policy would not otherwise cover volunteers.

(e) *Worker's Compensation*. A Worker's Compensation policy, if necessary, to meet the requirements of law.

(f) *Directors and Officers Liability Insurance.* Directors and officers liability insurance with coverage as the Executive Board shall approve for all Association, Executive Board and Design Review Committee directors, officers, members and managers, for any and all errors and/or

omissions and other covered actions that occur during their tenure in office or employment. This insurance coverage shall be mandatory.

(g) *Other Insurance*. Such other insurance in such amounts as the Executive Board shall determine, from time to time, to be appropriate to protect the Association or the Lot Owners, or as may be required by the Act.

(h) *General Provisions Respecting Insurance*. Insurance obtained by the Association may contain such deductible provisions as good business practice may dictate. If the insurance described is not reasonably available, or if any policy of such insurance is canceled or not renewed without a replacement policy therefore having been obtained by it, the Association shall promptly cause notice of that fact to be delivered or sent prepaid by U.S. Mail to all Owners.

Insurance policies carried pursuant to Sections 9.16(a) and 9.16(b) above shall provide that each Owner is an insured Person under the policy with respect to liability arising out of such Owner's interest in the Association Property or membership in the Association; the insurer waives its rights of subrogation under the policy against the Association, each Owner, and any Person claiming by, through, or under such Owner or any other director, agent, or employee of the foregoing; no act or omission by any Owner, unless acting within the scope of such Owner's authority on behalf of the Association, will void the policy or be a condition to recovery under the policy; if at the time of a loss under the policy, there is other insurance in the name of an Owner covering the same risk covered by the policy, the Association's policy shall be the primary insurance. An insurer that has issued an insurance policy for the insurance described above shall issue certificates or memoranda of insurance to the Association and, upon request, to any Lot Owner or holder of a security interest. Unless otherwise provided by statute, the insurer issuing the policy may not cancel or refuse to renew it until thirty (30) days after the notice of the proposed cancellation or nonrenewal has been mailed to the Association, and each Lot Owner and holder of a security interest to whom a certificate or memorandum of insurance has been issued, at their respective last-known addresses.

Any loss covered by the property insurance policy described above must be adjusted with the Association, but the insurance proceeds for that loss shall be payable to any insurance trustee designated for that purpose, or otherwise to the Association, and not to any holder of security interest. The insurance trustee or the Association shall hold any insurance proceeds in trust for the Association Lot Owners and lien holders as their interests may appear. Subject to the provisions of Section 38.33.3-313(9) of the Act, the proceeds must be disbursed first for the repair or restoration of the damage property, and the Association, Lot Owners, and lien holders are not entitled to receive payment of any portion of the proceeds unless there is a surplus of proceeds after the property has been completely repaired or restored or the Common Interest Community is terminated.

The Association may adopt and establish written nondiscriminatory policies and procedures relating to the submittal of claims, responsibility for deductibles, and any other matters of claims adjustment. To the extent of the Association settles claims for damages to real property, it shall have

the authority to assess negligent Owners causing such loss or benefiting from such repair or restoration for all deductibles paid by the Association. In the event more than on Lot is damaged by loss, the Association in its reasonable discretion may assess each Lot Owner a pro rata share of any deductible paid by the Association. Insurance obtained by the Association shall, to the extent reasonably possible, and provided Declarant reimburses the Association for any additional premium payable on account thereof, name Declarant as an additional insured and shall contain a waiver or rights of subrogation as against Declarant.

Insurance policies and insurance coverage shall be reviewed at least annually by the Executive Board to ascertain whether coverage under the policies is sufficient in light of the current values of the Association Property and in light of the possible or potential liabilities of the Association and other insured parties. The aforementioned insurance may be provided under blanket policies covering the Association Property and property of Declarant.

In no event shall insurance coverage obtained or maintained by the Association obviate the need for Owners and Occupants to obtain insurance for their own benefit.

Furthermore, to the extent reasonable available, insurance policies obtained by the Association shall contain the following provisions:

(a) The coverage afforded by such policies shall not be brought into contribution or proration with any insurance which may be purchased by a Lot Owner, Occupant or Mortgagee.

(b) The conduct of any one or more Lot Owners or Occupants shall not constitute grounds for avoiding liability on any such policies.

(c) Each policy must contain a waiver of any defenses based on co-insurance or on invalidity arising from the acts of the insured.

(d) A "severability if interest" endorsement shall be obtained which shall prelude the insurer from denying the claim of a Lot Owner or Occupant because of the conduct or negligent acts of the Association and its agents or other Lot Owners or Occupants.

(e) Any "no other insurance" clause shall exclude insurance purchased by Lot Owners, Occupants or Mortgagees.

(f) Coverage must not be prejudice by any act or neglect of Lot Owners or Occupants when such act or neglect is not within the control of the Association, or any failure of the Association to comply with any warranty or condition regarding any portion of the Common Interest Community over which the Association had no control.

(g) Coverage may not be canceled or substantially modified without at least thirty (30) days (or such lesser period as the Association may reasonably deem appropriate) prior written notice to the Association.

(h) Any policy of property insurance which give the carrier the right to elect to restore damage in lieu of a cash settlement must provide that such election is not exercisable without the prior written approval of the Association, or when in conflict with the insurance trust provisions contained herein, or any requirement of law.

(i) A recognition of any insurance trust agreement entered into by the Association.

(j) Each hazard insurance policy shall be written by a hazard insurance carrier, which has a financial rating as designated in *Best's Key Rating Guide* of Class VI or better, or if such rating service be discontinued, an equivalent rating by a successor thereto or a similar such rating service. Each insurance carrier must be specifically licensed or authorized by law to transact business within the State of Colorado.

(k) *Nonliability of Association or Executive Board.* Notwithstanding the duty of the Association to obtain insurance coverage, as stated herein, neither the Association nor Executive Board member, nor the Declarant, shall be liable to any Lot Owner, Occupant, Mortgagee or other Person, if any risks or hazards are not covered by insurance, or if the appropriate insurance is not obtained because such insurance coverage is not reasonably obtainable on the Association's behalf, or if the amount of insurance is not adequate, and it shall be the responsibility of each Lot Owner and Occupant to ascertain the coverage and protection afforded by the Association's insurance and to procure and pay for such additional insurance coverage and protection as the Lot Owner or Occupant may desire.

(j) *Master Premiums*. Premiums for insurance policies purchased by the Association and other expenses connected with acquiring such insurance shall be paid by the Association as a Common Expense, except that (i) liability insurance on Limited Common Areas shall be separately bid and the cost thereof shall only be included in the Regular Assessments of the Lots entitled to use such Limited Common Areas, and (ii) the amount of increase over any annual or other premium occasioned by the use, misuse, occupancy or abandonment of a Lot or its appurtenances, or Association Property, by a Lot Owner or Occupant, may at the Executive Board's election, be assessed against that particular Lot Owner and its Lot as a Reimbursement Assessment.

(l) *Insurance Claims*. The Association is hereby irrevocably appointed and authorized, subject to the provisions contained herein, to adjust all claims arising under insurance policies purchased by the Association and to executive and deliver releases upon the payment of claims, and to do all other acts reasonable necessary to accomplish any of the foregoing. The Executive Board has full and complete power to act for the Association in this regard, and may, in its discretion, appoint an authorized representative, or enter into an insurance trust agreement, wherein the trustee shall have the authority to negotiate losses under any policy purchased by the Association.

(m) *Benefit***.** Except as otherwise provided herein, all insurance policies purchased by the Association shall be for the benefit of, and any proceeds of insurance received by the Association or any insurance trustee shall be held or disposed of in trust for the Association, the Lot Owners, or the Occupants, as their interest may appear.

(n) *Other Insurance to be Carried by Lot Owners*. Insurance coverage on the furnishings and other personal property owned by a Lot Owner or Occupant, public liability insurance coverage upon each Lot, and casualty insurance coverage on the Improvements constructed on Lots, shall be the responsibility of the Owner or Occupant of the Lot. No Lot Owner or Occupant shall maintain any insurance, whether on its Lot or otherwise, which would limit or reduce the insurance proceeds payable under casualty insurance maintained by the Association in the event damage to the Improvements or fixtures on Association Property.

9.17 **Damage to Common Interest Community** Any portion of the Common Interest Community for which insurance is required under Section 39-33.3-313 of the Act (except any portion on which insurance is carried by a Sub association) which is damaged or destroyed must be repaired or replaced promptly by the Association unless; repair or replacement is the responsibility of a Sub association under a Supplemental Declaration, the Common Interest Community is terminated; repair or replacement would be illegal under any state or local statue or ordinance governing health or safety; seventy-six percent (76%) of the Lot Owners, including owners of every Lot that will not be rebuilt, vote not to rebuild; or prior to the conveyance of any Lot to a person other than Declarant, a Mortgagee on the damaged portion of the Common Interest Community rightfully demands all or substantial part of the insurance proceeds.

The cost of repair or replacement in excess of insurance proceeds and reserves is a Common Expense. If the entire Common Interest Community is not repaired or replaced, the insurance proceeds attributable to the damaged Association Property must be used to restore the damaged area to a condition compatible with the remainder of the Common Interest Community, and, except to the extent that other Persons will be distributes, the insurance proceeds attributable to Lots that are not rebuilt must be distributed to the Owners of those Lots, or to lien holders, as their interests may appear, and the remainder of the proceeds must be distributed to all Lot Owners or lien holders as their interest may appear in proportion to the Common Expense liabilities of all the Lots.

In the event of damage to or destruction of all or a portion of the Association Property due to fire or other adversity or disaster, the insurance proceeds, if sufficient to reconstruct or repair the damage, shall be applied by the Association to such reconstruction and repair. If the insurance proceeds with respect to such Association Property damage or destruction area insufficient to repair and reconstruct the damage or destruction, the Association may levy a Special Assessment in the aggregate amount of such deficiency, or if any Owner group of Owners responsible therefore, and shall proceed to make such repairs or reconstruction. Such Assessment shall be due and payable as provided by resolution of the Executive Board, but no sooner than sixty (60) days after written notice thereof. The Assessment provided for herein shall be a debt of each Lot Owner assessed and a lien on his Lot, and may be enforced and collected in the same manner as any Assessment Lien provided for in this Declaration. In the entire damaged Association Property is not repaired or replaced, the insurance proceeds attributable to the damaged Association Property must be used to restore the damaged area to a condition compatible with the remainder of the Common Interest Community. No distributions of

insurance proceeds shall be made unless made jointly payable to the Lot Owner and first Mortgagees of their respective Lots.

9.18 **Limited Liability** Neither the Association nor its past, present or future officers or directors, nor any other employee, agent or committee member or the Association shall be liable to any Owners or Occupant or to any other Person for actions taken or omissions made except for wanton and willful acts or omissions. Without limiting the generality of the foregoing, the Association, the Executive Board and the Design Review Committee shall not be liable to any Owner or Occupant or other Person for any action or for any failure to act with respect to any matter in the action taken or failure to act was in good faith and without malice. Acts taken upon the advice of legal counsel, certified public accountants, registered or licensed engineers, architects or surveyors shall conclusively be deemed to be in good faith without malice. To the extent insurance carried by the Association for such purposes shall not be adequate, the Owners severally agree to indemnify and to defend the Association, the Executive Board and the Design Review Committee against claims, damages or other liabilities resulting from such good faith action or failure to act.

ARTICLE X
ASSESSMENTS

10.1 **Owner's Obligation** By accepting a deed to any Lot, each Owner agrees to pay to the Association all the assessments, to be fixed and levied from time to time as provided in the Declaration, the Articles and Bylaws. Such assessments, together with interest accruing thereon and the costs of collection in the event of delinquency of payment, shall be the personal obligation of the person who is the Owner, or the Persons who are jointly and severally the Owner, at the time the assessment was made.

10.2 **Regular Assessments**

(a) At least thirty (30) days prior to the commencement of each fiscal year, the Executive Board shall estimate the cost and expenses to be incurred by the Association during such fiscal year in performing its functions, and shall subtract from such estimate an amount equal to the anticipated balance (exclusive of any reserves) in the operating fund at the state of such fiscal year which is attributable to the operation and maintenance assessments for the prior fiscal year. The annual assessments made or common expense shall be based upon the advance estimate of the cash requirements by the Association to provide for the payment of all common expenses growing out of or connected with the maintenance and operation of the Common Elements, or the other duties and obligations of the Association as provided in the Declaration, Articles or Bylaws, which sums may include, among other things, expenses of management, taxes and special assessments, premiums for all insurance which the Association is required or permitted to maintain, care of grounds, landscape improvements, common lighting and heating, repairs and renovations, legal and accounting fees, management fees, expenses and liabilities incurred by the Association under or by reasons of this Declaration, the Articles of Incorporation and the Bylaws of the Association, any deficit remaining

from a previous assessment, the creation of a reasonable contingency or other reserve or surplus fund and any other expenses and liabilities which may be incurred by the Association for the benefit of the Owners. Subject to Section 10.2(b) hereof, the sum or net estimate so determined shall be allocated to the Owners by dividing the total estimate by the total number of single family residential Lots and assessing the resulting amount to the Owner of each Lot equally. Assessment shall be paid in one (1) or more installments and be due on such date(s) as the Association shall determine.

(b) Within ninety days after adoption of any proposed budget for the Association, the executive board shall mail, by ordinary first-class mail, or otherwise deliver a summary of the budget to all the unit owners and shall set a date for a meeting of the unit owners to consider the budget not less than fourteen (14) days nor more than sixty (60) days after the mailing or other delivery of the summary. Such meeting shall occur within a reasonable time after mailing or other delivery of the summary, or as allowed for in the bylaws. The executive board shall give notice to the unit owners of the meeting as allowed for in the bylaws. The budget proposed by the executive board does not require approval from the unit owners and it will be deemed approved by the unit owners in the absence of a veto at the noticed meeting by a majority of all unit owners. If the proposed budget is vetoed, the periodic budget last proposed by the executive board and not vetoed by the unit owners must be continued until a subsequent budget proposed by the executive board is not vetoed by the unit owners.

10.3 **Special Assessments** If at any time during the fiscal year the regular assessment proves inadequate for any reason, including nonpayment of any Owner's share thereof, the Board may levy a special assessment in the amount of such actual or estimated inadequacy. The special assessment shall be assessed to the Owners by dividing the total estimate by the total number of residential Lots and assessing the resulting amount equally to the Owner of each Lot, such assessment to be paid either in equal monthly installments over the balance of the remaining fiscal year, or in a lump sum upon billing as the Board shall determine.

10.4 **Reimbursement Assessments** The Association may levy an assessment against any Owner or Owners as a result of such Owner's failure to landscape such Owner's Lot, or failure to repair, maintain or restore the Improvements and Buildings situated on such Owner's Lot including landscape or fence Improvements installed by the Declarant or as is otherwise authorized by this Declaration. Such assessment shall be for the purpose of reimbursing the Association for its actual costs and expenses paid or incurred for such purposes and shall be due and payable to the Association when levied, or at such time or times as the Association shall determine.

10.5 **Reserve Fund** The Association may establish a reserve fund for the maintenance, repair and replacement of the Common Elements. The amount of such fund shall be determined by the Association and shall be funded through annual payments of the common assessments and shall be held by the Association in a separate account, which may be an interest-bearing account, to be held in trust for the Owners for such purposes.

10.6 **Capital Improvements** In addition to regular and special assessments, the Association may levy, in any assessment year, a special assessment for the purposes of defraying in whole or in part the cost of any capital improvement upon the Common Elements, including fixtures, landscape improvements, personal property related thereto or the Irrigation Facilities, provided that such assessment shall have the affirmative vote of a majority of the Members of the Association approving the assessment.

10.8 **Out-of-State Owners Who Are Not Occupants** If an Owner does not occupy the residence and maintains his or her principal residence outside of the State of Colorado, the Board may at its discretion require a guarantee of payment of the assessments by (a) posting a surety bond with the Association indemnifying the Association against the default of such Owner in the payment of assessment the amount of two times the amount of the regular assessment for the preceding fiscal year, or (b) payment of the regular assessment pursuant in advance by the 10th days of the first month of the fiscal year.

ARTICLE XI
EMINENT DOMAIN

11.1 **Definition of Taking** The term "taking" shall mean condemnation by eminent domain or sale under threat of condemnation.

11.2 **Representation in Condemnation Proceeding of Association Property** In the event of a threatened taking of all or any portion of the Association Property, the Lot Owners hereby appoint the Association through such persons as the Executive Board may designate to represent the Association and all of the Lot Owners in connection therewith. The Association shall act in its sole discretion with respect to any awards being made in connection with the taking and shall be entitled to make voluntary sale to the condemner in lieu of engaging in a condemnation action. Service of process on the Association shall constitute sufficient notice to all Lot Owners, and service of process on each individual Lot Owner shall not be necessary.

11.3 **Award for Association Property** Any awards received by the Association on account of taking of Association Property shall be paid to the Association. The Association may, in its sole discretion, retain any award in the general funds of the Association or distribute all or any portion thereof to the Lot Owners as their interest may appear. The Rights of a Lot Owner and the Mortgagee of a Lot as to any such distribution shall be governed by the provisions of the Mortgage encumbering the Lot.

11.4 **Taking Of Lots** If a Lot is acquired by eminent domain or part of a Lot is acquired by eminent domain leaving the Lot Owner with a remnant which may not practically or lawfully be used for any purpose permitted by this Declaration, the award must include compensation to the Lot Owner for that Lot and its Allocated Interests whether or not any Association Property was acquired. Upon acquisition, unless the decree otherwise provides, that Lots in proportion to the respective Allocated Interests of those Lots before the taking. Any remnant of a Lot remaining after part of the Lot is taken

is thereafter Association Property. Otherwise, if part of a Lot is acquired by eminent domain, the award must compensate the Lot Owner for the reduction in value of the Lot and its interest in the Association Property whether or not any Association Property was acquired. Upon acquisition, unless the decree otherwise provides:

(a) That Lot's Allocated Interests are reduce in proportion to the reduction in the size of the Lot; and

(b) The portion of Allocated Interests divested from the partially acquired Lot is automatically reallocated to that Lot and to the remaining Lots (as appropriate) in proportion to the respective interest of those Lots before taking, with the partially acquired Lot participating in the reallocation on the basis of its reduced Allocated Interests.

11.5 **Governing Clause** This Declaration shall control and govern over any conflicting provision of the Act, except to the extent that such conflicting provisions in the Act is mandatory according to the terms of Sections -105, -106, -106.5 and -107 of the Act. This Declaration shall further control any conflicting term in the Articles, Bylaws or any rule or regulation promulgated by the Association or the Design Review Board.

IN WITNESS WHEREOF, Declarant sets its hand and seal the _____ day of _____, 2017.

Two R&D, LLC

By: _____

Title: _____

STATE OF COLORADO)
) ss.
COUNTY OF MESA)

The foregoing Declaration was acknowledged before me this _____ day of _____,

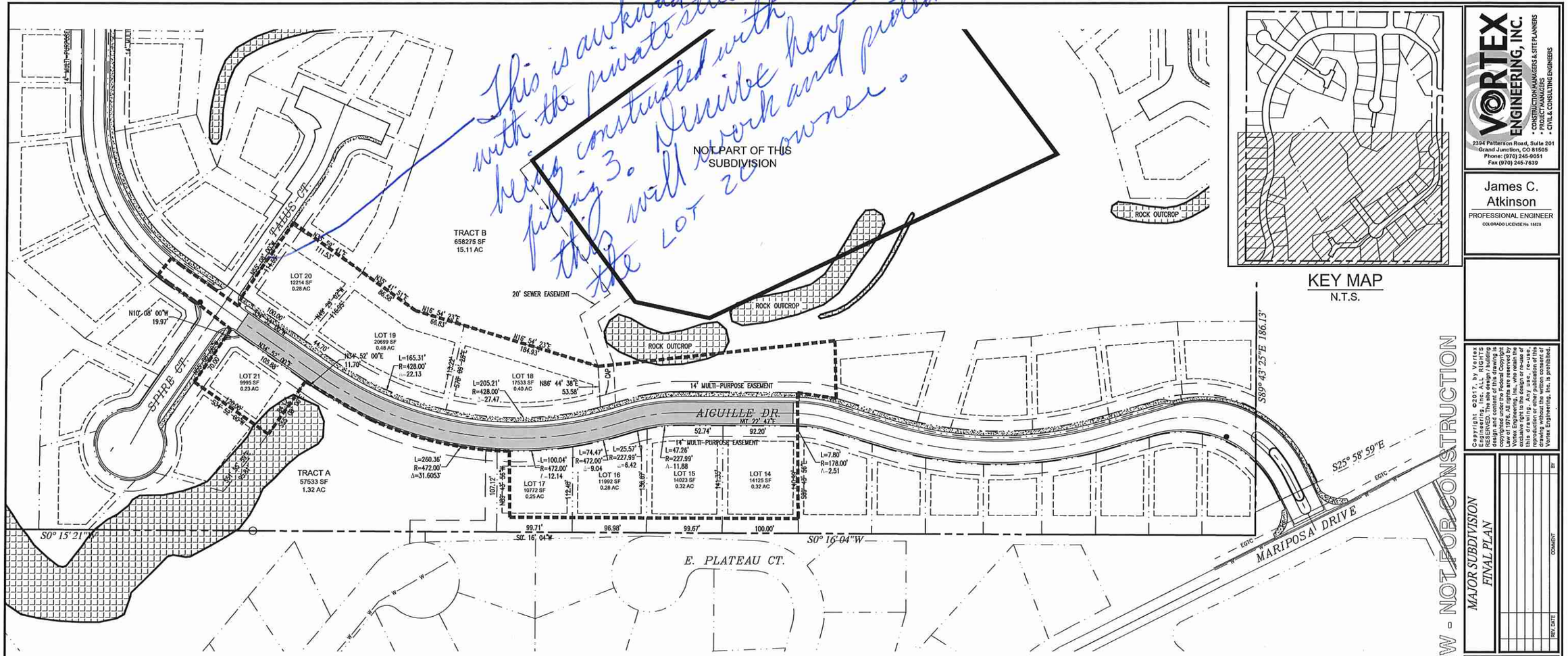
2017 by _____the_____

of Two R&D, LLC a Colorado limited liability company.

Witness my hand and official seal.

_____
Notary Public

This is awkward with the private street being constructed with filing 3. Describe how this will work and protect the LOT 20 owner.



UTILITY PROVIDERS INFORMATION		
UTILITY	*PROVIDER*	*PHONE NUMBER*
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

PROPOSED LAND USE TABLE			
SINGLE FAMILY LOTS (72 TOTAL)	934,944 S.F. – 21.46 AC	47.58%	OWNER: PRIVATE
TRACT A:	57,533 S.F. – 1.32 AC	2.93%	OWNER: HOA
TRACT B: OPEN SPACE	658,275 S.F. – 15.11 AC	33.50%	OWNER: HOA
FUTURE TRACTS	122,687 S.F. – 2.82 AC	6.24%	OWNER: HOA
RIGHT-OF-WAY:	191,434 S.F. – 4.39 AC	9.74%	OWNER: PUBLIC
TOTAL SITE AREA:	1,964,873 S.F. – 45.11 AC		

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's **below.** **Call** before you dig.

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1-800-922-1987
co811.org

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY GEOTECHNICAL ENGINEERING GROUP, INC., DATED APRIL 16, 2002 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X–OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET C0.2

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____

FOR REVIEW - NOT FOR CONSTRUCTION

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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MAJOR SUBDIVISION
FINAL PLAN

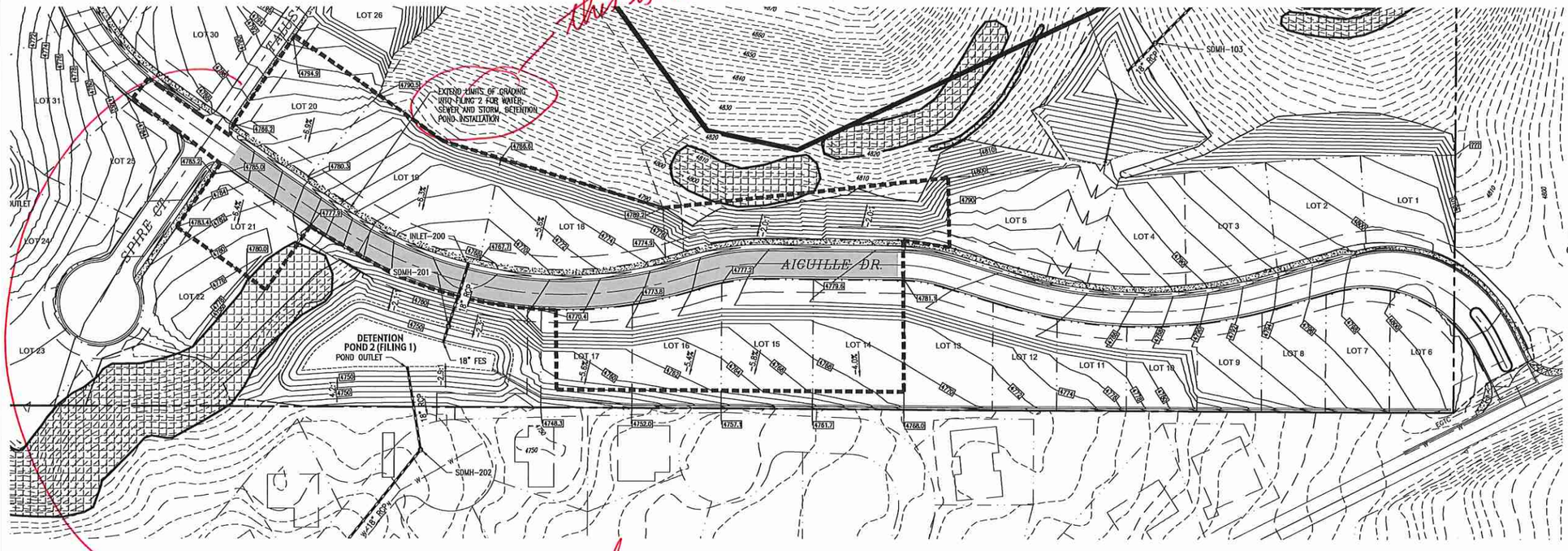
REV. DATE	COMMENT	BY

Composite Site Plan - Layout and Geometry Plan

Filing 2
Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 04/24/17
SCALE: see plan
CAD ID: 1.0layout-f2.dwg

SHEET
C1.0



N

SCALE IN FEET

60 30 0 60 120

1" = 60'

CONTOUR INTERVAL = 2'

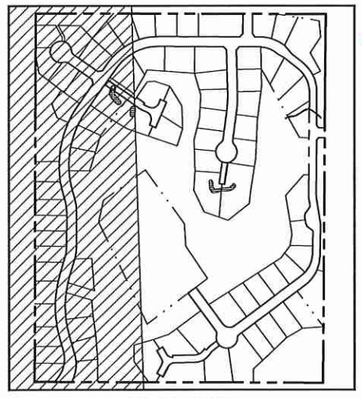
Address how runoff is collected and conveyed to the ditch.

Drainage will be an issue in here. Pay careful attention & design the solution.

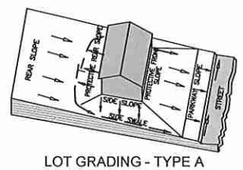
FILING 2 TOF TABLE			
Lot	Grading	Min. TOF	Max. TOF
14	Type C	4781.40	4781.90
15	Type C	4779.40	4779.90
16	Type C	4776.50	4777.00
17	Type C	4773.40	4773.90
18	Type A	4773.00	4773.50
19	Type A	4774.50	4775.50
20	Type A	4782.50	4784.50
21	Type C	4784.50	4786.50

GENERAL NOTES:

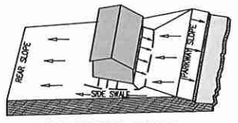
1. ALL CONSTRUCTION TO CONFORM TO THE CURRENT CITY OF GRAND JUNCTION DEPARTMENT OF PUBLIC WORKS AND PLANNING STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR MUST CONTACT CITY OF GRAND JUNCTION TRAFFIC OPERATIONS SUPERVISOR PRIOR TO CONSTRUCTION OR PLACEMENT OF TRAFFIC CONTROL DEVICES/FEATURES (STRIPING, SIGNALS, MEDIANS, ETC.) FOR CONSTRUCTION IN THE RIGHT-OF-WAY ONLY.
3. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY, DATED 8/2/12 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE SANITARY SEWER, SEE SANITARY SEWER PLAN & PROFILE.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE SHEETS C2.2



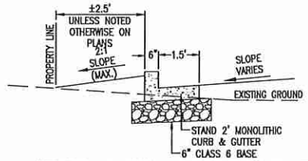
KEY MAP
N.T.S.



LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.



LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.



WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

CONCRETE CURB DETAIL
N.T.S.

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____

FOR REVIEW - NOT FOR CONSTRUCTION

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
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Phone: (970) 245-9051
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James C. Atkinson
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COLORADO LICENSE No. 19828

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MAJOR SUBDIVISION
FINAL PLAN

REV. DATE	COMMENT	BY

Grading Plan Filing 2
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado

PROJECT NO F04-006
DATE 06/12/17
SCALE 1" = 60'
CAD ID 2.0grad-f2.dwg

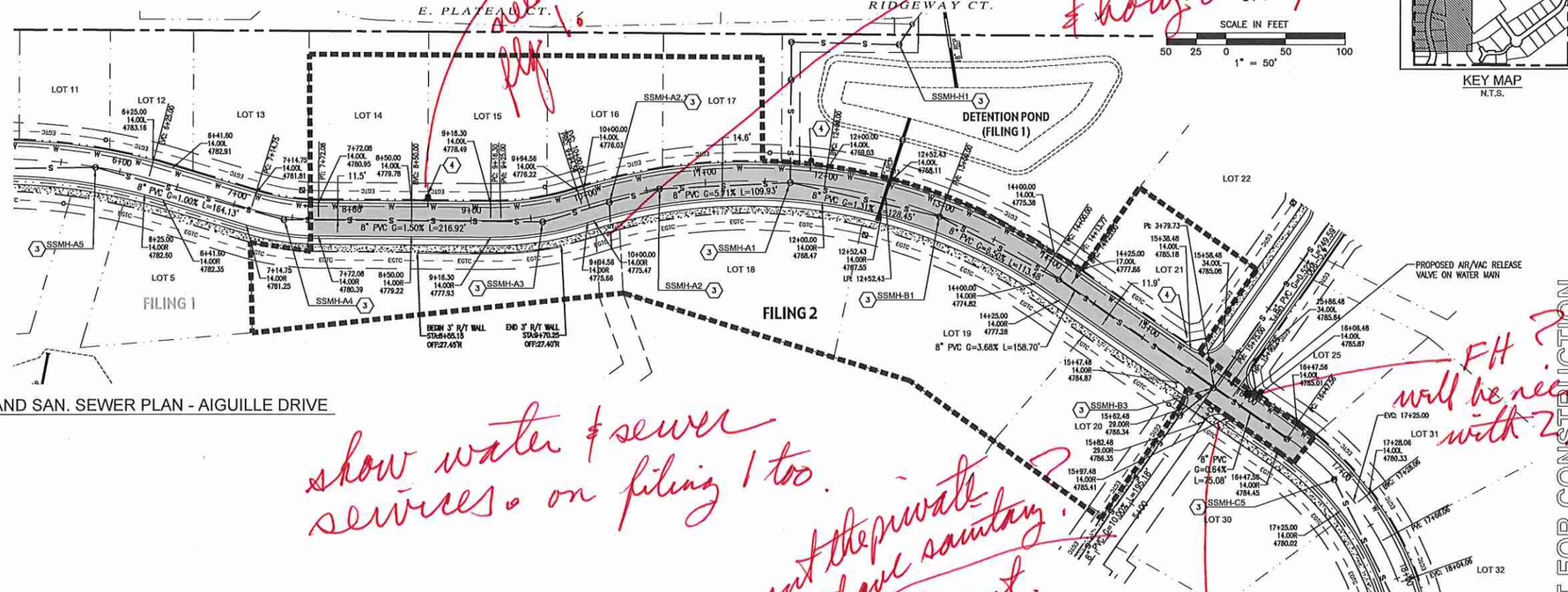
~SHEET~
C2.1

CONSTRUCTION NOTES:

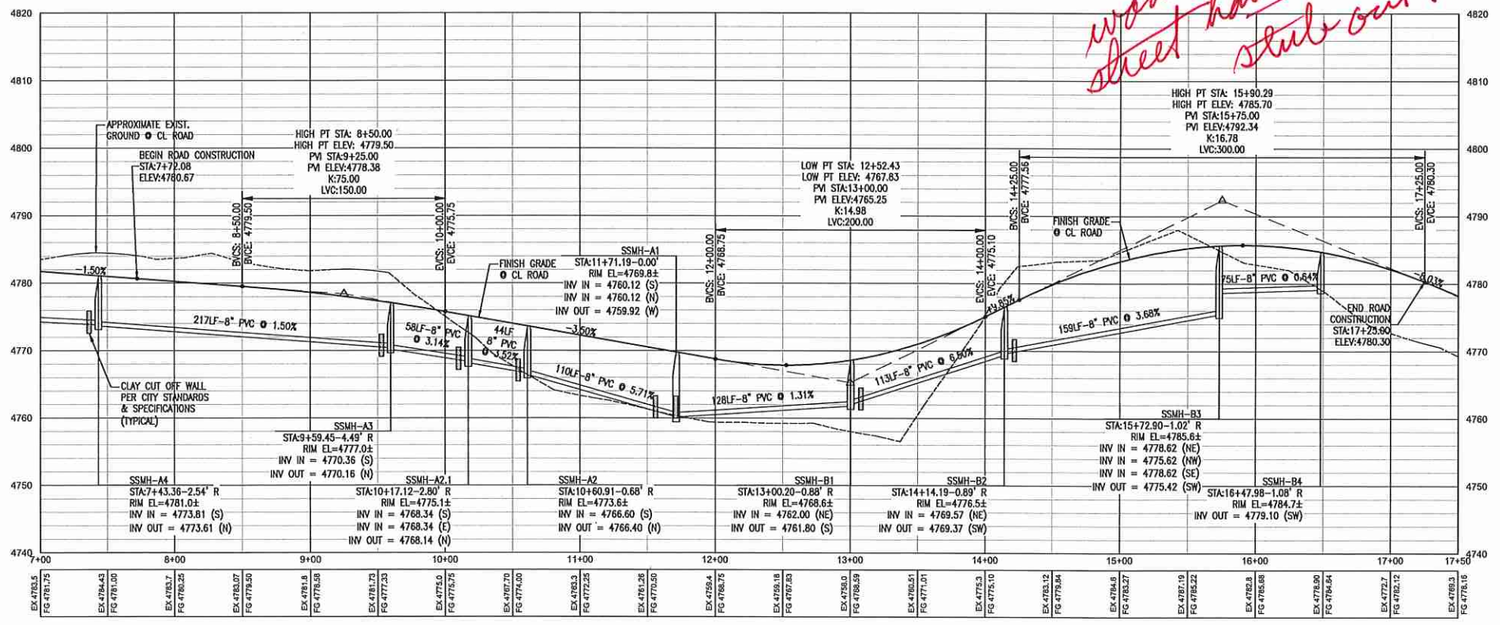
1. INSTALL STOP SIGN & STREET SIGN RE: MUTCD
2. CONSTRUCT HANDICAPPED RAMP RE: CITY OF GJ DETAILS
3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT RE: UTE WATER DETAILS

GENERAL NOTES:

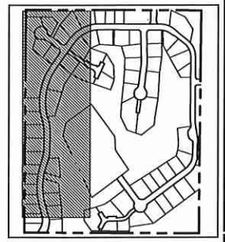
1. REFERENCE SHEET 2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE.
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET C0.2 FOR STREET SECTIONS
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION



ROAD AND SAN. SEWER PLAN - AIGUILLE DRIVE
SCALE: 1" = 50'



ROAD AND SAN. SEWER PROFILE - AIGUILLE DRIVE
HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



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COLORADO LICENSE No. 16828

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY

Road & Sanitary Sewer Plan & Profile
Aiguille Drive
Pinnacle Ridge Subdivision Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: 1" = 50'
CAD ID: 4.0ss-road-f2.dwg

~SHEET~
C4.0

I suspect needed with filing 1.

call out as 8" & provide vertical & horiz. design.

show water & sewer services on filing 1 too.

want the private street have sanitary stub out.

FH will be needed with 2

C2.2 has shading to S. side intersection.

Final Plan of Subdivision

Pinnacle Ridge Subdivision

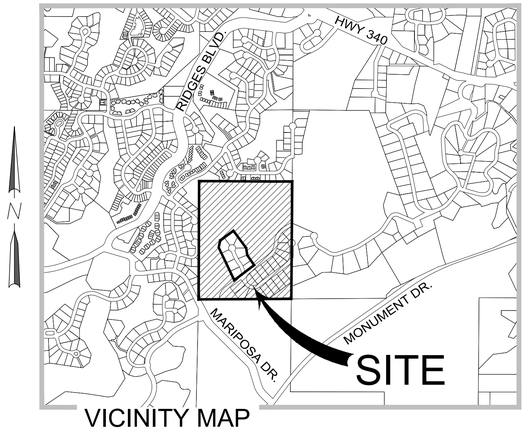
Filing 2

Grand Junction, Colorado

LEGEND

- 4560 — EXISTING CONTOUR
- PROPERTY BOUNDARY
- OLD PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- W W W — PROPOSED WATER LINE
- W W W — EXISTING WATER LINE
- IRR IRR IRR — PROPOSED IRRIGATION
- X X X — EXISTING FENCE
- EGTC — PROPOSED DRY UTILITIES (BY OTHERS)
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- 4550.00 — LOT CORNER SPOT ELEVATION
- G 4550.00 — PROPOSED SWALE/BERM ELEVATION.
- FL 4550.00 — PROPOSED FL CURB/V-PAN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER METER
- PROPOSED IRRIGATION RISER
- PROPOSED IRRIGATION VALVE
- CO ● — PROPOSED IRRIGATION CLEANOUT
- 4550.00 — EXISTING CONTOUR LABEL
- 4550.00 — PROPOSED CONTOUR LABEL

UTILITY PROVIDERS INFORMATION		
UTILITY	*PROVIDER*	*PHONE NUMBER*
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626



VICINITY MAP

ABBREVIATION LEGEND

&	AND	MCSM	MESA COUNTY SURVEY MONUMENT
℄	CENTERLINE	MFG'S	MANUFACTURER'S
Ø	DIAMETER	M.P.E.	MULTI-PURPOSE EASEMENT
'	FEET	MPH	MILES PER HOUR
"	INCHES	NE COR	NORTHEAST CORNER
±	PLUS OR MINUS	N&S&E	NORTH AND SOUTH AND EAST
APPROX.	APPROXIMATELY	NO.	NUMBER
BRL	BUILDING RESTRICTION LINE	N.T.S.	NOT TO SCALE
BVCS	BEGIN VERTICAL CURVE STATION	PROP.	PROPOSED
BVCE	BEGIN VERTICAL CURVE ELEVATION	PRV	PRESSURE REDUCING VALVE
CB	CATCH BASIN	PSI	POUNDS PER SQUARE INCH
CL III	CLASS 3	PVC	POLYVINYL CHLORIDE
CMP	CORRUGATED METAL PIPE	PVI	POINT OF VERTICAL INTERSECTION
CR	CURB RETURN	PVMT	PAVEMENT
CT.	COURT	O.C. E.W.	ON CENTER EACH WAY
DR.	DRIVE	RCP	REINFORCED CONCRETE PIPE
EL.	ELEVATION	RD	ROAD
ELEV	ELEVATION	RET. WALL	RETAINING WALL
EX.	EXISTING	R.O.W.	RIGHT-OF-WAY
EXIST.	EXISTING	RT	RIGHT
EVCS	END VERTICAL CURVE STATION	SCH	SCHEDULE
EVCE	END VERTICAL CURVE ELEVATION	SD	STORM DRAIN
FL	FLOWLINE	SEC	SECTION
FH	FIRE HYDRANT	SF	SQUARE FEET
FT	FEET	SQ. FT.	SQUARE FEET
GPM	GALLONS PER MINUTE	SS	SANITARY SEWER
GV	GAS VALVE	ST.	STREET
G.V.A.L.C.S.	GRAND VALLEY ALIQUOT LOCAL COORDINATE SYSTEM	STA	STATION
		THRU	THROUGH
HGL	HYDRAULIC GRADE LINE	TYP.	TYPICAL
HI PT	HIGH POINT	TW	TOP OF WALL
HP	HORSE POWER	U.W.C.D.	UTE WATER CONSERVANCY DISTRICT
INV	INVERT	VC	VERTICAL CURVE
LT	LEFT	VCP	VITRIFIED CLAY PIPE
MAX	MAXIMUM	W/	WITH
MIN	MINIMUM	WM	WATER METER
MH	MANHOLE	WV	WATER VALVE

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL E. ISTING UTILITIES PRIOR TO CONSTRUCTION.

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SHEET NUMBER	SHEET TITLE
C0.0	COVER
C0.1	PROJECT NOTES
C0.2	OVERALL SITE PLAN AND FILING PLAN
C1.0	COMPOSITE SITE PLAN - LAYOUT AND GEOMETRY PLAN
C2.0 - C2.2	COMPOSITE SITE PLAN - GRADING PLAN
C3.0	COMPOSITE SITE PLAN - OVERALL UTILITY AND WATER PLAN
C4.0	ROAD AND SEWER PLAN AND PROFILE - AIGUILLE DRIVE
C6.0 - 6.2	CONSTRUCTION STORM WATER MANAGEMENT PLAN

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21. TOWNSHIP 1 SOUTH. RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM. LOTS 1 – 9. BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK 8 AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = RSF-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'
   REAR = 25'
   SIDE = 7'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY GEOTECHNICAL ENGINEERING GROUP, INC. REFER TO REPORT DATED APRIL 16, 2002.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
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James C. Atkinson
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COLORADO LICENSE No. 18828

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION FINAL PLAN

REV. DATE	COMMENT	BY

Cover
Pinnacle Ridge Subdivision Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/12/17**
SCALE:
CAD ID: 0.0cover-f2.dwg

~SHEET~
C0.0

LOCAL CONTACT INFORMATION
GRAND JUNCTION DEVELOPMENT INSPECTOR: MARK BARSLUND
970-201-1362

GENERAL NOTES:

1. THESE GENERAL NOTES SHALL BE APPLICABLE TO ALL SHEETS WITHIN THIS SET OF DRAWINGS.
2. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE GOVERNING AGENCY. CONTRACTOR MUST CONTACT THE APPROPRIATE AGENCY PRIOR TO CONSTRUCTION IN THE RIGHT-OF-WAY.
3. PLANNING PERMIT APPROVAL MUST BE OBTAINED BY INDIVIDUAL LOT OWNERS PRIOR TO CONSTRUCTION. THE LOT OWNER MUST SUBMIT A PROPOSED DRAINAGE PLAN OF EACH SITE TO THE GOVERNING AGENCY FOR REVIEW.
4. EXISTING WATER, SANITARY, AND STORM SEWER LINES ARE SHOWN BASED ON BEST AVAILABLE INFORMATION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS SPECIFICALLY AT CONNECTION POINTS AND AT POTENTIAL POINTS OF CONFLICT. ALL INFORMATION SHALL BE SUPPLIED TO THE ENGINEER PRIOR TO CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR:
   (A) CONTACTING THE APPROPRIATE AGENCY TO ARRANGE A PRE-CONSTRUCTION MEETING AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
   (B) OBTAINING ALL PERMITS FOR STREET CUTS, UTILITIES CONSTRUCTION AND GRADING. THE COST OF ALL PERMITS SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S BID.
   (C) COORDINATING WITH ALL UTILITY COMPANIES INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. ADVANCE COORDINATION BY THE CONTRACTOR TO ALL UTILITY COMPANIES INVOLVED SHALL BE REQUIRED FOR ANY SERVICE INTERRUPTIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER, PROJECT MANAGER AND THE UTILITY COMPANY 48 HOURS PRIOR TO START OF CONSTRUCTION. NO UTILITY TAPS SHALL BE MADE WITHOUT WRITTEN AUTHORIZATION BY THE UTILITY COMPANY AND THE CITY.
   (D) VERIFICATION OF ALL OTHER UNDERGROUND FACILITIES WHICH MAY BE AFFECTED BY THIS PROJECT AND REPAIR THEREOF IN CASE OF DAMAGE.
   (E) CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO OBTAIN TEMPORARY POWER AND TELEPHONE SERVICE DURING CONSTRUCTION. ALL COST FOR TEMPORARY SERVICES SHALL BE THE CONTRACTORS RESPONSIBILITY.
   (F) RESTORATION OF DISTURBED STREET PAVEMENT AS REQUIRED BY THE CITY AND THE STATE'S DEPARTMENT OF TRANSPORTATION.
   (G) ALL PROJECT SAFETY INCLUDING, BUT NOT LIMITED TO, TRENCH EXCAVATION AND SHORINGS, TRAFFIC CONTROL, AND SECURITY.
   (H) COORDINATING ALL WORK AND INSPECTIONS AS REQUIRED BY THE CITY OR THE STATE.
   (I) OBTAINING NECESSARY PERMITS FROM THE DEPARTMENT OF TRANSPORTATION FOR ALL WORK IN AND ADJACENT TO STATE RIGHT-OF-WAY.
   (J) RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE. AS-BUILTS SHALL INCLUDE UNDERGROUND UTILITIES AS WELL AS ANY FIELD MODIFICATIONS OF THE PLANS.
   (K) KEEPING ADJACENT STREETS FREE AND CLEAN OF ALL DEBRIS AND DIRT FROM THE JOB SITE.
   (L) THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED AT THE JOB SITE AT ALL TIMES. EACH SUBCONTRACTOR (INCLUDING THE SURVEYOR) SHALL HAVE A SIGNED COPY OF THE PLANS AND THE APPROPRIATE STANDARDS AND SPECIFICATIONS IN HIS POSSESSION AT ALL TIMES WHEN IMPROVEMENTS ARE BEING INSTALLED.
   (M) THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR COMPLETION OF INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED BY NOTE TO BE "PROVIDED," "INSTALLED" OR "CONSTRUCTED" UNLESS SPECIFICALLY NOTED OTHERWISE.
   (N) CONTRACTOR WILL HAVE A COPY OF APPROVED SOILS REPORTS FOR PAVEMENT DESIGN AND COMPACTION REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL RECOMMENDATIONS CONTAINED WITHIN THE SOILS REPORT.
   (O) VERIFYING THE ACCURACY OF THE VERTICAL BENCHMARK INFORMATION. CONTRACTOR SHALL USE BENCHMARKS AND DATUMS SHOWN HEREON TO SET PROJECT BENCHMARK(S), BY RUNNING A LEVEL LOOP BETWEEN AT LEAST TWO BENCHMARKS, AND SHALL PROVIDE SURVEY NOTES OF SUCH TO PROJECT ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
6. IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
7. TWO WORKING DAYS BEFORE YOU DIG, GRADE, OR EXCAVATE, CALL THE APPROPRIATE UTILITY NOTIFICATION CENTER FOR THE MARKING OF MEMBER UNDERGROUND UTILITIES. THE UTILITIES SHOWN ON THESE PLANS ARE PLOTTED BASED ON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION, AND REPAIR OF ANY EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. ANY UTILITY DAMAGED BY CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
8. THIS PLAN WAS PREPARED BASED ON SURVEY INFORMATION PROVIDED BY A LICENSED SURVEYOR. VORTEX ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR ERRORS DUE TO INCOMPLETE OR INACCURATE SURVEY INFORMATION.
9. SUBGRADE DENSITY SHALL BE TESTED BY A PRIVATE SOILS TESTING FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING BASE COURSE OR CONCRETE. BASE COURSE DENSITY SHALL ALSO BE TESTED BY THE PRIVATE GEOTECHNICAL FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING PAVEMENT.
10. THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM ALL UTILITY COMPANIES PRIOR TO ANY DEMOLITION WORK OR DISCONNECTION OF ANY SERVICE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANIES.
2. ALL UTILITIES INCLUDING STORM SEWER, SANITARY SEWER AND WATER MAINS SHALL BE COMPLETELY REMOVED FROM THE GROUND UNLESS OTHERWISE SPECIFIED. NO EXISTING UTILITY, STRUCTURES OR UNDERGROUND IMPROVEMENT SHALL BE ABANDONED IN PLACE WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER, OWNER AND GOVERNING AGENCY.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES WHICH ARE TO REMAIN IN SERVICE. INCLUDING BUT NOT LIMITED TO GAS, ELECTRIC, CABLE AND TELEPHONE SERVICES.
4. ALL STRUCTURE INCLUDING BASEMENT WALLS AND FLOOR SLABS SHALL BE COMPLETELY REMOVED FROM THE SITE.
5. ALL DEMOLITION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS INCLUDING BUT NOT LIMITED TO HAZARDOUS MATERIALS, DISPOSAL, HOURS OF OPERATION.
6. ALL EROSION CONTROL MEASURES DESIGNED FOR THE SITE PERIMETER OR TO PROTECT EXISTING IMPROVEMENTS SHALL BE IN PLACE PRIOR TO THE START OF ANY DEMOLITION ACTIVITIES.
7. THE CONTRACTOR SHALL OBTAIN AND REVIEW THE ENVIRONMENTAL STUDIES PROVIDED BY THE OWNER AND TAKE ALL NECESSARY PRECAUTIONS FOR ENVIRONMENTAL SAFETY DURING DEMOLITION ACTIVITIES. IT SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE EXISTING STRUCTURES FOR ANY OTHER CONDITIONS WHICH MAY AFFECT THE DEMOLITION PROCEDURES.
8. ANY CONDITIONS WHICH MAY BE UNCOVERED DURING THE PROCESS OF DEMOLITION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER IMMEDIATELY. ADDITIONAL EXPENSES INCURRED BY UNFORESEEN CONDITIONS SHALL BE APPROVED BY THE OWNER PRIOR TO THE ADDITIONAL WORK.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE PROPERTY FOR THE TYPE AND QUANTITY OF DEMOLITION REQUIRED, PRIOR TO SUBMISSION OF A BID.
10. THE CONTRACTOR SHALL HAVE WATER ON SITE FOR DUST ABATEMENT AT ALL TIMES DURING DEMOLITION ACTIVITIES.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF ALL DEBRIS. BURNING ON SITE SHALL NOT BE PERMITTED. NO DEBRIS INCLUDING CONCRETE OR ASPHALT MAY BE PLACED IN ANY FILL AREA.
12. ANY DAMAGE TO PUBLIC UTILITIES OR ADJACENT PROPERTIES AS A RESULT OF THE DEMOLITION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. REPAIRS SHALL BE MADE IN A TIMELY MANNER TO THE SATISFACTION OF THE DAMAGED PARTY.
13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH DOCUMENTATION OF THE CONDITION OF EXISTING IMPROVEMENTS TO REMAIN IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS NOT DOCUMENTED AS PRE-EXISTING. DOCUMENTATION SHALL BE PROVIDED PRIOR TO COMMENCEMENT OF WORK.
14. ALL EXISTING UTILITY SERVICES SHALL BE COMPLETELY REMOVED FROM THE SITE. SERVICE SHALL BE CUT AND PLUGGED AT THE PROPERTY LINE IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS. THE DEMOLITION CONTRACTOR SHALL CLEARLY MARK ALL STUBS AT THE PROPERTY LINE WITH A 4 X 4 X 4 WOOD POST (MINIMUM 4' ABOVE GRADE, 4' BELOW GRADE) MARKED WITH THE SERVICE TYPE.
15. ALL EXISTING WELLS SHALL BE CAPPED AND ABANDONED IN ACCORDANCE WITH ALL STATE REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL REQUIRED PROCEDURES, FILE ALL REQUIRED FORMS, APPLICATIONS AND REPORTS, AND OBTAIN ALL REQUIRED APPROVALS FROM THE STATE ENGINEER'S OFFICE.
16. DURING THE COURSE OF DEMOLITION, CONTRACTOR SHALL PROVIDE SECURITY FENCING AND OTHER PRECAUTIONARY SAFETY MEASURE AS NECESSARY.

EROSION CONTROL NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL FACILITIES SHOWN.
3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORESEEN PROBLEMS OR IF THE PLAN DOES NOT FUNCTION AS INTENDED. A JURISDICTION REPRESENTATIVE MAY REQUIRE ADDITIONAL CONTROL DEVICES UPON INSPECTION OF PROPOSED FACILITIES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED, STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM TRAFFIC FROM THE SITE.
5. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE PAVED, SEEDED WITH NATIVE VEGETATION OR LANDSCAPED. REFER TO LANDSCAPE PLANS FOR SEED MIX AND PLANTING SPECIFICATIONS.
6. EROSION CONTROL STRUCTURES BELOW SEDIMENT BASINS MAY BE REMOVED ONCE SOD AND FINAL LANDSCAPING IS IN PLACE. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION. EROSION CONTROL IN PROPOSED PAVED AREAS SHALL REMAIN IN PLACE UNTIL PAVEMENT IS COMPLETE.
7. THIS PLAN IS ONLY TO BE USED FOR INSTALLATION OF EROSION CONTROL FACILITIES. DO NOT USE THIS PLAN FOR GRADING OR STORM SEWER CONSTRUCTION.
8. CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLE WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES WILL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS, MOVED WHEN NECESSARY AND REMOVED WHEN THE SITE IS PAVED.
9. INLET PROTECTION DEVICES SHALL BE INSTALLED IMMEDIATELY UPON INDIVIDUAL INLET'S BECOMING FUNCTIONAL.
10. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH GRADING AND/OR UTILITY CONSTRUCTION SHALL OBTAIN A COPY OF THE STORM WATER MANAGEMENT PLAN (SWMP) AND ANY OTHER DOCUMENTATION REGARDING "STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY" AND BECOME FAMILIAR WITH THEIR CONTENTS.
11. THE TEMPORARY PARKING AND STORAGE AREA SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AREA, EQUIPMENT CLEANING AREA. EMPLOYEE BREAK AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
12. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, ETC.) SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT WITH STORM WATER DISCHARGES FROM THE SITE.
13. MAINTAIN ON THE SITE OR HAVE READILY AVAILABLE SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
14. FUGITIVE DUST BLOWING FROM THE SITE SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS ABSOLUTELY PROHIBITED.
15. NO RUBBISH, TRASH, GARBAGE, OR OTHER SUCH MATERIALS SHALL BE DISCHARGED INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
16. ALL MEASURES PRESENTED IN THE SWMP SHALL BE INITIATED AS SOON AS PRACTICABLE.
17. IF THE GRAVEL CONSTRUCTION ENTRANCES ARE NOT EFFECTIVE IN REMOVING THE MAJORITY OF DIRT OR MUD FROM THE TIRES OF THE CONSTRUCTION VEHICLES, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP AND THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.
18. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
19. IF SOIL STOCKPILING IS EMPLOYED ON THE SITE, SILT FENCES SHALL BE USED TO HELP CONTAIN THE SEDIMENT.
20. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
21. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN 30 DAYS AFTER FINAL STABILIZATION. FINAL STABILIZATION HAS OCCURRED WHEN ALL SOIL DISTURBING ACTIVITIES ARE COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OF THE COVER FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES HAS BEEN EMPLOYED.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) DUE TO GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT.
23. ALL OFF-SITE CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR STORM DRAIN CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.

EROSION CONTROL MAINTENANCE NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL MEASURES CONTAINED IN THIS PLAN SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT, AND SHOULD BE CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:
3. STRAW BALE INLET PROTECTION DEVICES AND BARRIERS SHALL BE FIXED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR SHALL BE REPLACED IF THEY SHOW SIGNS OF DETERIORATION.
4. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, RE-SEEDED, AND WATERED AS NEEDED.
5. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-THIRD TO ONE-HALF THE HEIGHT OF THE SILT FENCE.
6. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
7. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
8. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES, SEDIMENT IN THE SEDIMENTATION BASINS SHALL NOT EXCEED THE SEDIMENTATION CLEANOUT LEVEL.
9. IF THE STONES IN THE GRAVEL CURB INLET SEDIMENT FILTERS BECOME CLOGGED WITH SEDIMENT, THE STONES MUST BE PULLED AWAY, CLEANED AND REPLACED.
10. THE EMBANKMENT OF THE SEDIMENTATION BASIN SHALL BE CHECKED REGULARLY TO INSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
11. THE TEMPORARY SEDIMENT TRAP AND SEDIMENTATION BASIN STRUCTURES SHALL BE CHECKED REGULARLY TO INSURE THAT THEY ARE STRUCTURALLY SOUND AND HAVE NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. SEDIMENT DEPOSITION SHALL BE REMOVED PERIODICALLY TO ENSURE FULL VOLUME IS AVAILABLE IN THE POND.

GRADING NOTES:

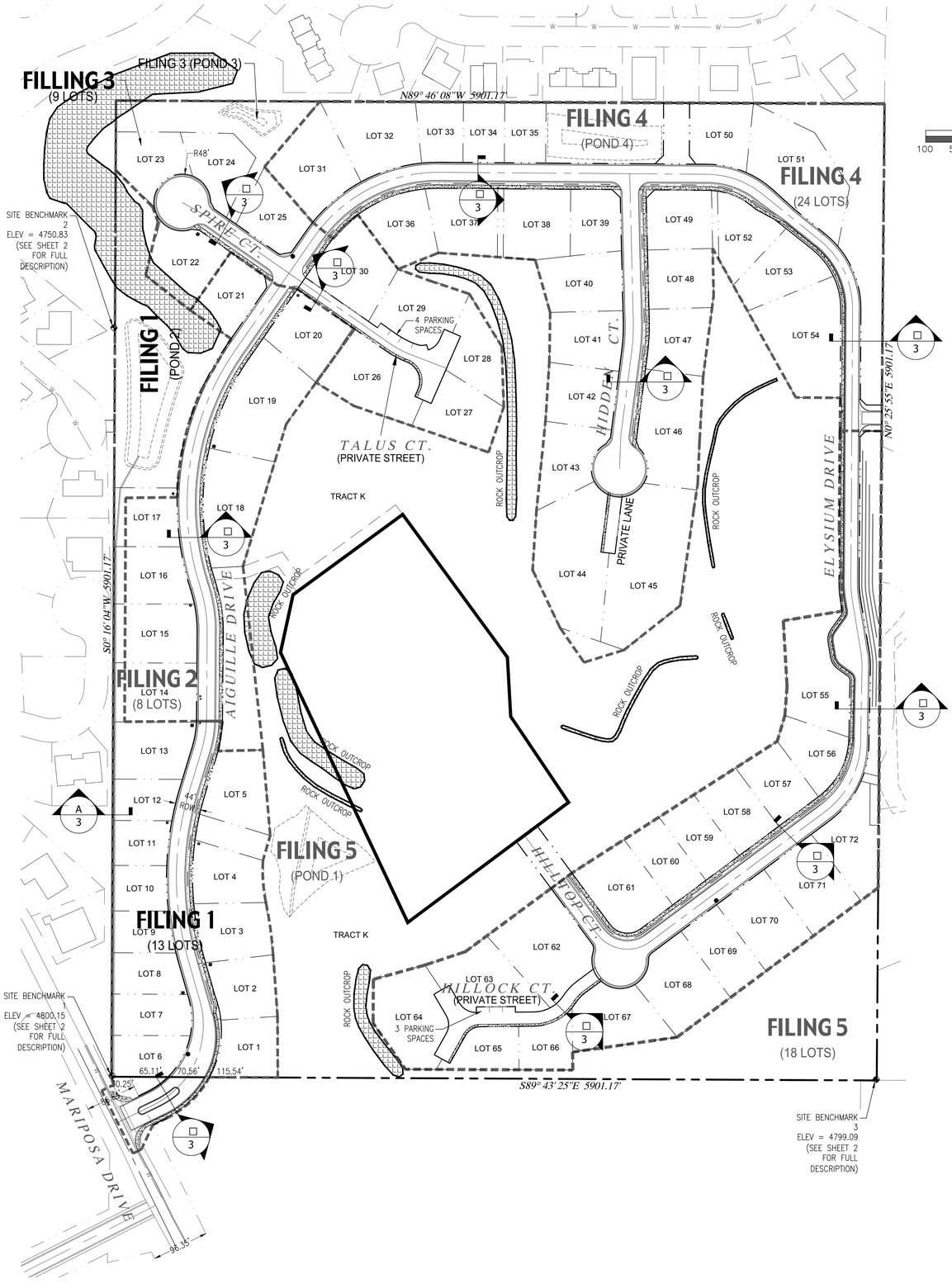
1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. CONTOURS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY. CONTOUR INTERVAL = 1 FOOT UNLESS OTHERWISE NOTED ON PLANS.
3. ALL DISTURBED AREAS THAT ARE UNSURFACED OR ARE NOT DESIGNATED AS LANDSCAPE AREAS ARE TO BE SEEDED, FERTILIZED, AND WATERED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.
4. IF DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE SOILS ENGINEER SHALL BE CONTACTED FOR RECOMMENDATIONS.
5. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND STANDARDS OF THE GOVERNING AGENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED TO 95% OF MODIFIED PROCTOR MAXIMUM DENSITY PER A.S.T.M. TEST D-1557. MOISTURE CONTENT AT TIME OF PLACEMENT SHALL NOT EXCEED 2% ABOVE NOR 3% BELOW OPTIMUM. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED, LICENSED, SOILS ENGINEER, CERTIFYING THAT THE SUBBASE WITHIN THE AREAS TO BE PAVED HAS BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECS.
6. NO PROPOSED SLOPE SHALL EXCEED THREE (3) HORIZONTAL TO ONE (1) VERTICAL. ALL SLOPED AREAS MUST BE PROTECTED FROM EROSION.
7. IF STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS ARE STOCKPILED ON THE SITE. TOPSOIL MAY BE PLACED TO A HEIGHT OF FIVE FEET. SILT FENCE SHALL BE PLACED AROUND THE BASE OF THE STOCKPILE AND THE STOCKPILE SHALL BE SEEDED WITH NATIVE SEED MIX IMMEDIATELY AFTER STRIPING OPERATIONS ARE COMPLETE.
8. ON-SITE MATERIALS SUITABLE FOR FILL BENEATH DRIVES, AND PARKING AREAS BEYOND 5' OF THE BUILDING SHALL BE COMPACTED IN ACCORDANCE WITH THE GUIDELINES PRESENTED IN THE SOILS REPORT.
9. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHY AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO ENSURE 0.75% MIN. SLOPE AGAINST ALL GUTTERS TO PREVENT PUDDLING. ANY DISCREPANCIES SHALL BE PROVIDED TO THE ENGINEER IN WRITING IMMEDIATELY.
10. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED TO 95% OPTIMUM DENSITY (AS DETERMINED BY MODIFIED PROCTOR METHOD).
11. SPOT ELEVATIONS REPRESENT FLOWLINE OR TOP OF ASPHALT UNLESS OTHERWISE NOTED.
12. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS WHICH DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB AND GUTTER AND UTILITIES.
13. ALL UTILITIES (MANHOLES, VALVE COVERS, CLEANOUTS, VAULTS, BOXES, ETC.) SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
14. ALL EARTH MOVING AND PLACEMENT OPERATIONS SHALL BE IN CONFORMANCE WITH THE RECOMMENDATIONS IDENTIFIED IN THE SOILS REPORT. THE CONTRACTOR SHALL HAVE A SIGNED AND SEALED COPY OF THE SOILS REPORT ON THE SITE AT ALL TIMES.
15. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.
16. WHERE NEW CURB AND GUTTER IS BEING CONSTRUCTED ADJACENT TO EXISTING ASPHALT, THE FOLLOWING SHALL APPLY: PRIOR TO PLACEMENT OF ANY CONCRETE THE CONTRACTOR SHALL HAVE A LICENSED SURVEYOR VERIFY GRADE AND CROSS SLOPE OF THE CURB AND GUTTER FORMS. THE CONTRACTOR SHALL SUBMIT THE SLOPES AND GRADES TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY SECTION WHICH DOES NOT CONFORM TO THE DESIGN OR TYPICAL CROSS SECTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CURB AND GUTTER POURS WITHOUT APPROVAL OF THE ENGINEER.
17. MAINTENANCE OF ANY STORMWATER MANAGEMENT FACILITY SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL GUIDELINES FOR PRIVATE STORMWATER MANAGEMENT FACILITIES AND SHALL BE THE RESPONSIBILITY OF THE OWNER AND THE ASSIGNEES.
18. SURFACE RESTORATION SHALL BE AS FOLLOWS:
   (A) FINE GRADE ALL AREAS DISTURBED BY THE CONSTRUCTION OPERATIONS AFTER COMPLETION OF BACKFILLING AND COMPACTING. AREAS WHICH ARE TO RECEIVE PAVEMENTS, SURFACING, TOPSOIL OR LANDSCAPING SHALL BE GRADED AS REQUIRED TO ALLOW INSTALLATION OF THE SPECIFIC SURFACE TREATMENT. GRADE ALL OTHER AREAS TO MATCH THE EXISTING GROUND LINE.
   (B) REPLACE AND REPAIR ANY SURFACE IMPROVEMENTS DAMAGED OR REMOVED. CONFORM TO CITY STANDARDS & SPECIFICATIONS.
19. BITUMINOUS PAVEMENT
   (A) BITUMINOUS PAVEMENT SHALL BE REMOVED TO CLEAN STRAIGHT LINES AT THE LOCATIONS INDICATED ON PLANS. WIDTH OF REMOVAL FOR PIPELINES SHALL BE KEPT TO A MINIMUM AS DICTATED BY TRENCHING OPERATIONS, BUT SHALL EXTEND AT LEAST 6 INCHES BEYOND THE LIMITS OF TRENCH EXCAVATION.
   (B) THE CUT SHALL BE MADE WITH PAVEMENT CUTTING WHEEL, SAW OR OTHER APPROVED METHOD, SO AS TO PROVIDE A REASONABLY STRAIGHT AND SQUARE EDGE.

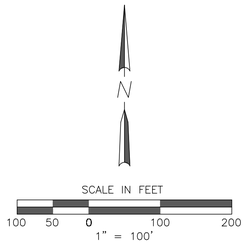
SANITARY SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL GRAVITY SANITARY SEWER LINES SHALL BE POLYVINYL CHLORIDE PIPE (PVC), ASTM D-3034 SDR.35, SEWER LINE MATERIALS AND CONSTRUCTION SHALL CONFORM TO ASTM STANDARDS AND SPECIFICATIONS.
3. DISTANCES FOR SANITARY SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. THEREFORE, DISTANCES SHOWN ON PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT.
4. RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATION. PIPELINE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT AND STEEL SHIMS TO ADJUST THE MANHOLE FRAME TO THE REQUIRED FINAL GRADE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS.
5. ALL SANITARY SEWER MAINS TESTING SHALL BE IN ACCORDANCE WITH LOCAL SPECIFICATIONS. COPIES OF ALL TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER, THE OWNER AND THE GOVERNING AUTHORITY PRIOR TO THE START OF THE WARRANTY PERIOD.
6. COMPACTION OF ALL TRENCHES WITHIN THE PROJECT SITE MUST BE ATTAINED AND COMPACTION RESULTS SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE. .
7. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING STRUCTURES AND IMPROVEMENTS DURING INSTALLATION OF THE SANITARY SEWER LINE.
8. THE CONTRACTOR SHALL POTHOLE THE EXISTING SEWER MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
9. SANITARY SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.

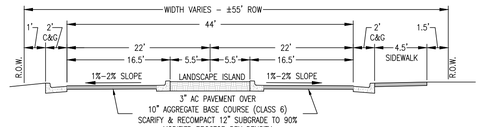
STORM SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING:
   (A) OBTAINING ALL REQUIRED PERMITS FROM THE CITY, THE DOT, OR ANY REGULATORY AUTHORITY AT THE CONTRACTOR'S COST INCLUDING PERMITS REQUIRED FOR WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
   (B) RESTORATION OF ANY EXISTING IMPROVEMENTS INCLUDING (BUT NOT LIMITED TO) FENCES, SOD, LANDSCAPING, PAVEMENT, SPRINKLER SYSTEMS.
   (C) VERIFICATION AND PROTECTION OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF THE PROJECT.
   (D) PROVIDING AS-BUILT DRAWINGS TO THE CITY AND ENGINEER.
   (E) ALL PERMITTING, DEVELOPMENT, CONNECTION, LOCATION INSPECTION AND TESTING FEES REQUIRED FOR STORM SEWER CONSTRUCTION.
   (F) VERIFYING ALL STANDARD DETAILS CONFORM TO CURRENT CITY/COUNTY STANDARDS AND SPECIFICATIONS.
   (G) FOR OBTAINING AND UNDERSTANDING ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THE CONSTRUCTION OF THE STORM SEWER IMPROVEMENTS.
   (H) FOR SCHEDULING ALL REQUIRED INSPECTIONS.
3. THE CONTRACTOR SHALL POTHOLE THE EXISTING STORM MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
4. STORM SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.
5. THE CONTRACTOR SHALL COORDINATE HIS WORK SCHEDULE WITH THE DITCH COMPANY TO ENSURE ALL DITCH FACILITIES ARE CONSTRUCTED WITHOUT DISRUPTION TO DITCH COMPANY OPERATIONS.
6. ALL STORM SEWER CONSTRUCTION SHALL BE IN CONFORMANCE WITH LOCAL STANDAR

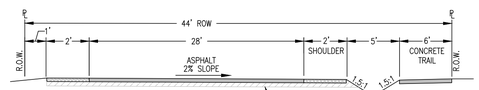




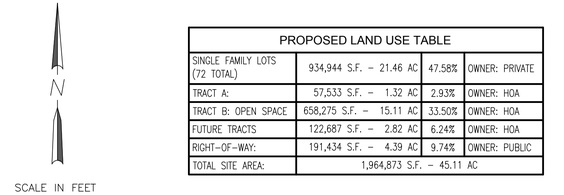
PROPOSED LAND USE TABLE			
SINGLE FAMILY LOTS (72 TOTAL)	934,944 S.F. – 21.46 AC	47.58%	OWNER: PRIVATE
TRACT A:	57,533 S.F. – 1.32 AC	2.93%	OWNER: HOA
TRACT B: OPEN SPACE	658,275 S.F. – 15.11 AC	33.50%	OWNER: HOA
FUTURE TRACTS	122,687 S.F. – 2.82 AC	6.24%	OWNER: HOA
RIGHT-OF-WAY:	191,434 S.F. – 4.39 AC	9.74%	OWNER: PUBLIC
TOTAL SITE AREA:	1,964,873 S.F. – 45.11 AC		



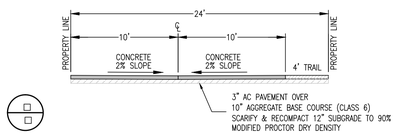
MARIPOSA DRIVE ENTRANCE
N.T.S.
STA: 0+24 TO STA: 1+52
(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 3+42)



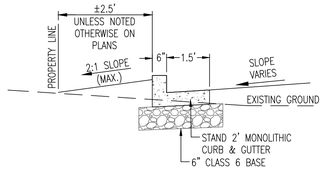
44' ROW STREET
N.T.S.
STA: 3+42 TO 24+58
STA: 35+79 TO 41+50



34' ROW STREET
N.T.S.
STA: 24+58 TO 35+79



PRIVATE STREET ▯ LANE DETAIL
N.T.S.
TRACT C,F,J



WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

CONCRETE CURB DETAIL
N.T.S.

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21. TOWNSHIP 1 SOUTH. RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM. LOTS 1 – 9. BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK 8 AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = RSF-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'
   REAR = 25'
   SIDE = 7'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY GEOTECHNICAL ENGINEERING GROUP, INC. REFER TO REPORT DATED APRIL 16, 2002.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

LEGEND

▬▬▬▬▬▬▬▬ FILING & LIMITS OF DEVELOPMENT DESIGNATION

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

FOR REVIEW - NOT FOR CONSTRUCTION

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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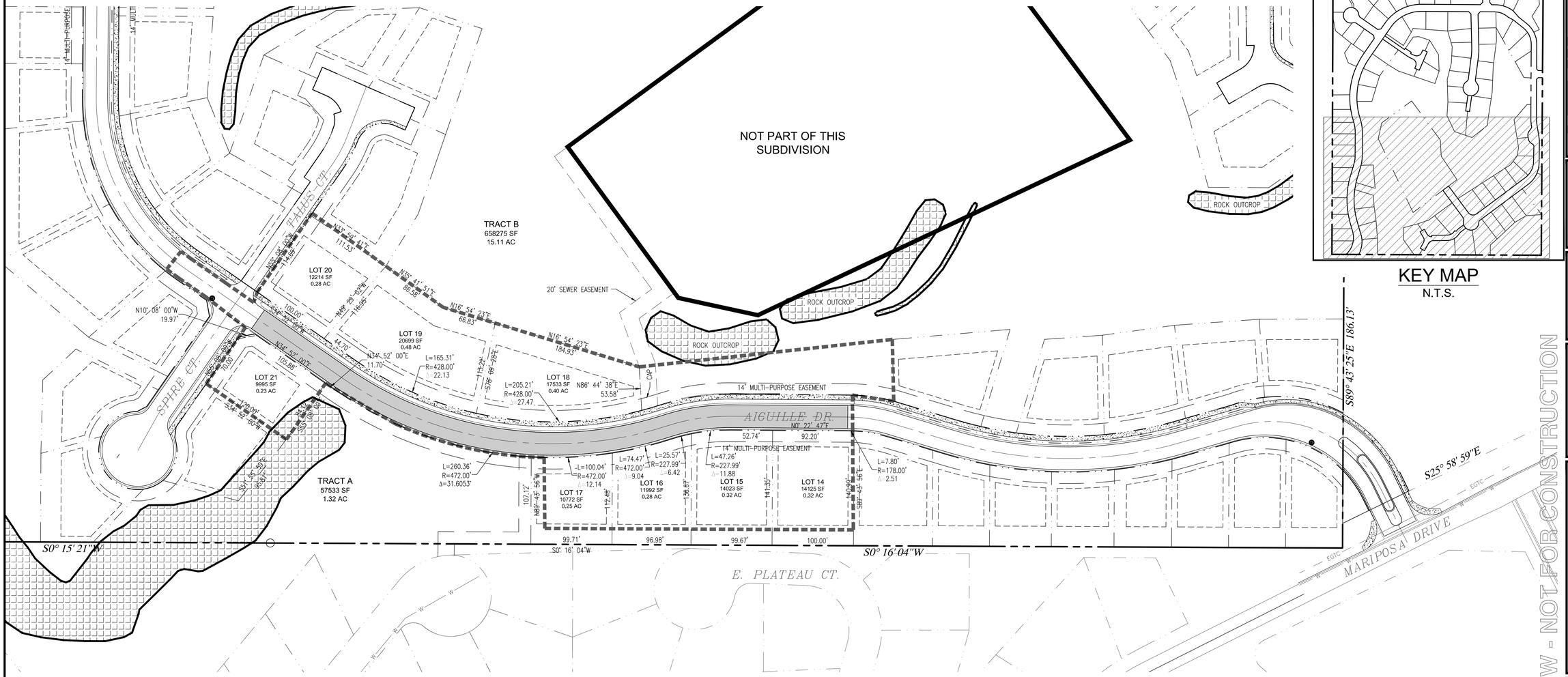
MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY

Filing Plan
Pinnacle Ridge Subdivision
Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/12/17**
SCALE: **1" = 100'**
CAD ID: 0.0cover-f2.dwg

~SHEET~
C0.2



KEY MAP
N.T.S.

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• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
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Grand Junction, CO 81505
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James C. Atkinson
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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY

Composite Site Plan - Layout and Geometry Plan

Filing 2
Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **04/24/17**
SCALE: **see plan**
CAD ID: **1.0layout-f2.dwg**

~SHEET~
C1.0

UTILITY PROVIDERS INFORMATION		
UTILITY	*PROVIDER*	*PHONE NUMBER*
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

PROPOSED LAND USE TABLE			
SINGLE FAMILY LOTS (72 TOTAL)	934,944 S.F. – 21.46 AC	47.58%	OWNER: PRIVATE
TRACT A:	57,533 S.F. – 1.32 AC	2.93%	OWNER: HOA
TRACT B: OPEN SPACE	658,275 S.F. – 15.11 AC	33.50%	OWNER: HOA
FUTURE TRACTS	122,687 S.F. – 2.82 AC	6.24%	OWNER: HOA
RIGHT-OF-WAY:	191,434 S.F. – 4.39 AC	9.74%	OWNER: PUBLIC
TOTAL SITE AREA:	1,964,873 S.F. – 45.11 AC		

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL E□ISTING UTILITIES PRIOR TO CONSTRUCTION.

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co811.org

GENERAL NOTES

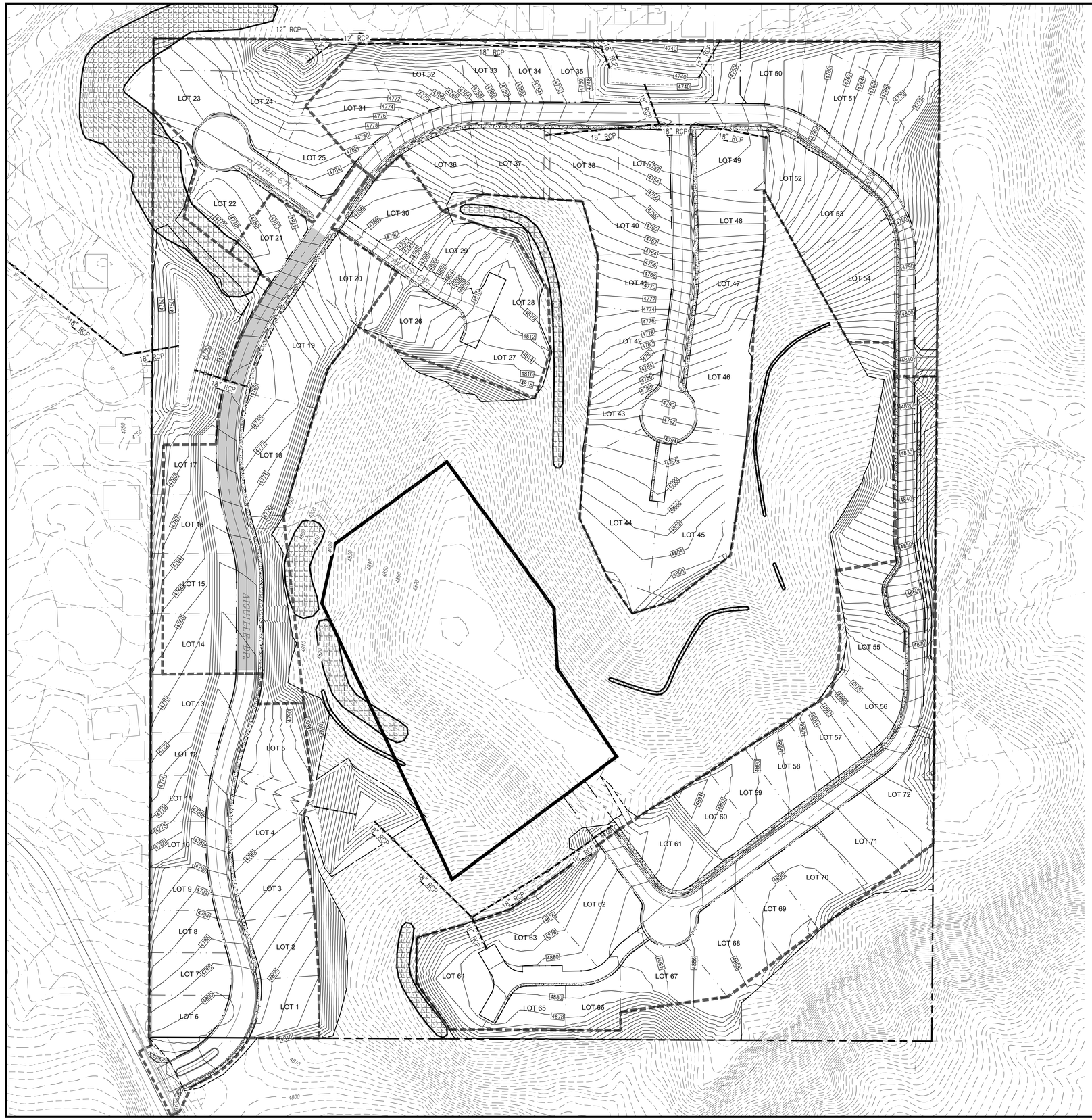
1. REFER TO THE GEOTECHNICAL INVESTIGATION BY GEOTECHNICAL ENGINEERING GROUP, INC., DATED APRIL 16, 2002 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET C0.2

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____



GENERAL NOTES

1. ALL CONSTRUCTION TO CONFORM TO THE CURRENT CITY OF GRAND JUNCTION DEPARTMENT OF PUBLIC WORKS AND PLANNING STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR MUST CONTACT CITY OF GRAND JUNCTION TRAFFIC OPERATIONS SUPERVISOR PRIOR TO CONSTRUCTION OR PLACEMENT OF TRAFFIC CONTROL DEVICES/FEATURES (STRIPING, SIGNALS, MEDIANS, ETC.) FOR CONSTRUCTION IN THE RIGHT-OF-WAY ONLY.
3. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY, DATED 8/2/12 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE SANITARY SEWER, SEE SANITARY SEWER PLAN & PROFILE.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE FILING PLAN.
8. REFER TO SHEETS C0.1, C6.0 AND C6.2 FOR STORMWATER MANAGEMENT CONTROL PLANS AND EROSION CONTROL NOTES.

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

FOR REVIEW - NOT FOR CONSTRUCTION

VORTEX ENGINEERING, INC.
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• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
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James C. Atkinson
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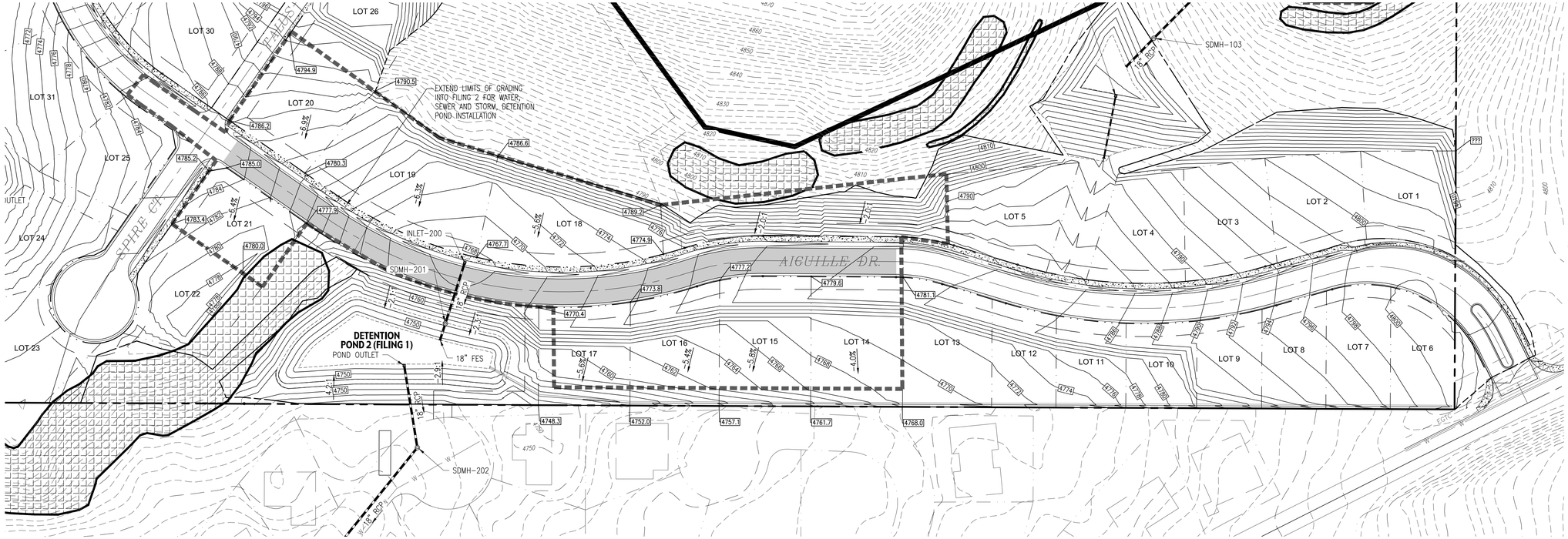
MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY

Overall Grading Plan Filings 1 - 5
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/12/17**
SCALE: **1"= 80'**
CAD ID: **2.0grad-f2.dwg**

~SHEET~
C2.0



N

SCALE IN FEET

60 30 0 60 120

1" = 60'

CONTOUR INTERVAL = 2'

FILING 2 TOF TABLE			
Lot	*Grading*	*Min. TOF*	*Max. TOF*
14	Type C	4781.40	4781.90
15	Type C	4779.40	4779.90
16	Type C	4776.50	4777.00
17	Type C	4773.40	4773.90
18	Type A	4773.00	4773.50
19	Type A	4774.50	4775.50
20	Type A	4782.50	4784.50
21	Type C	4784.50	4786.50

GENERAL NOTES:

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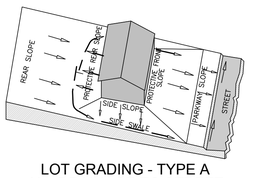
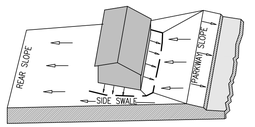
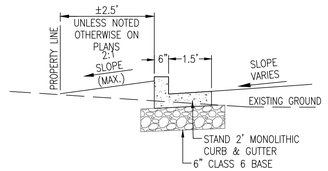
7. FOR STREET SECTIONS SEE SHEETS C2.2



LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.



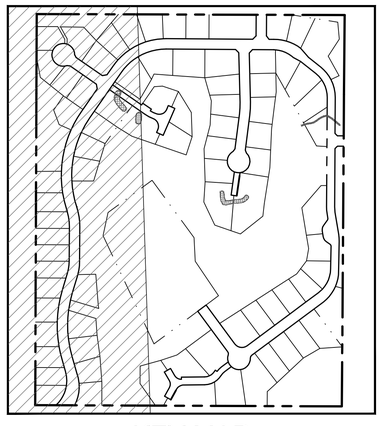
LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.



WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

CONCRETE CURB DETAIL

N.T.S.



KEY MAP

N.T.S.

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

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CITY DEVELOPMENT ENGINEER DATE

FOR REVIEW - NOT FOR CONSTRUCTION

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• CIVIL & CONSULTING ENGINEERS
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Phone: (970) 245-9051
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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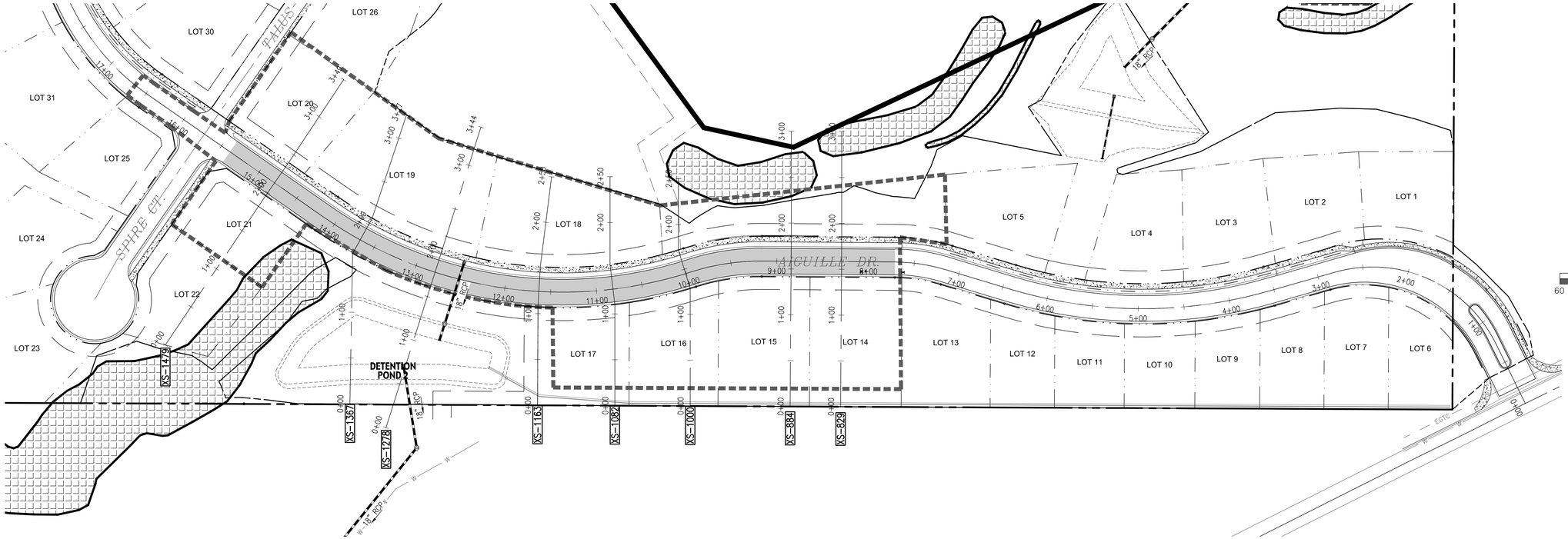
MAJOR SUBDIVISION
FINAL PLAN

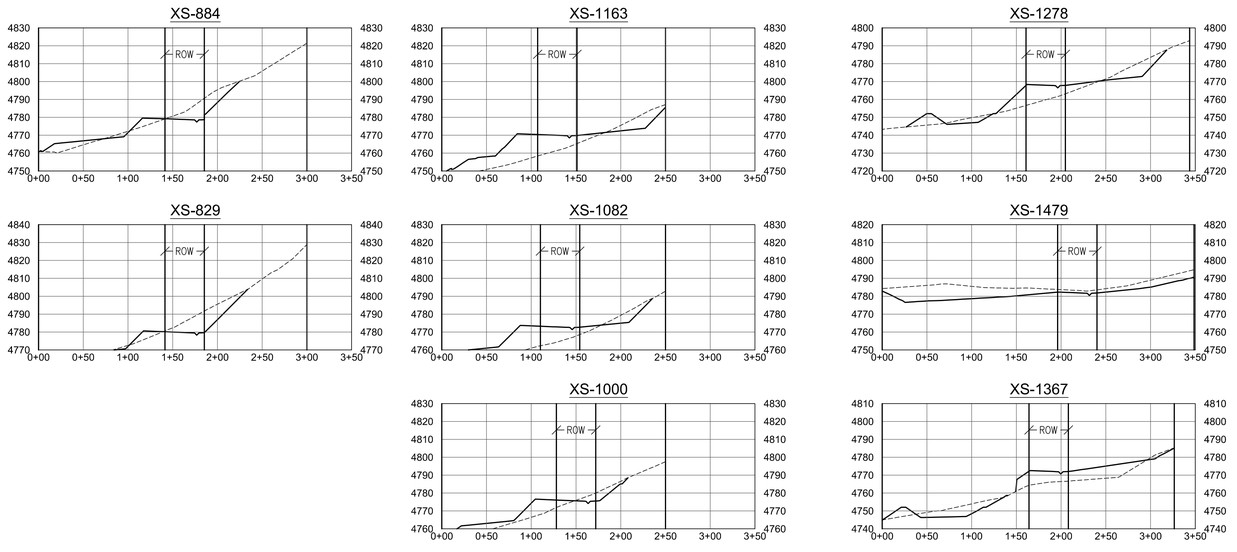
REV	DATE	COMMENT
1		
2		
3		
4		
5		
6		
7		
8		

Grading Plan Filing 2
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/12/17**
SCALE: **1" = 60'**
CAD ID: **2.0grad-f2.dwg**

~SHEET~
C2.1





SECTIONS ALONG LOT LINES

SCALE: 1" = 80' HORIZONTAL
1" = 40' VERTICAL

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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT

Grading Plan Filing 2 - Road Cross Sections

Pinnacle Ridge Subdivision
Filing 2

Mariposa Drive
Grand Junction, Colorado

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

PROJECT NO: **F04-006**
DATE: **06/12/17**
SCALE: **SEE PLAN**
CAD ID: **2.0grad-f2.dwg**

~SHEET~
C2.2

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY GEOTECHNICAL ENGINEERING GROUP, INC., DATED APRIL 16, 2002 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X–OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET 3
6. HOUSES CONSTRUCTED ON LOTS 26–29 AND LOTS 55–72 SHALL HAVE SPRINKLER SYSTEMS INSTALLED. A 1" CUSTOMER WATER SERVICE LINE AND ¾" WATER METER WILL BE UTILIZED IN ACCORDANCE WITH UTE WATER CONSERVANCY DISTRICT STANDARDS & SPECIFICATIONS.

FILING NOTES

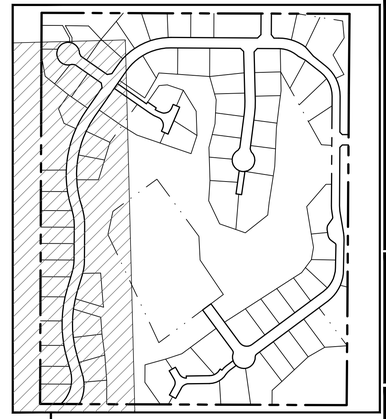
1. INSTALL SANITARY SEWER FROM SSMH–A1 TO SSMH–B4, LOCATED ON EAS SIDE OF INTERSECTION WITH SPIRE CT.
2. END WATER LINE CONSTRUCTION JUST PAST THE INTERSECTION WITH SPIRE CT.

N

SCALE IN FEET

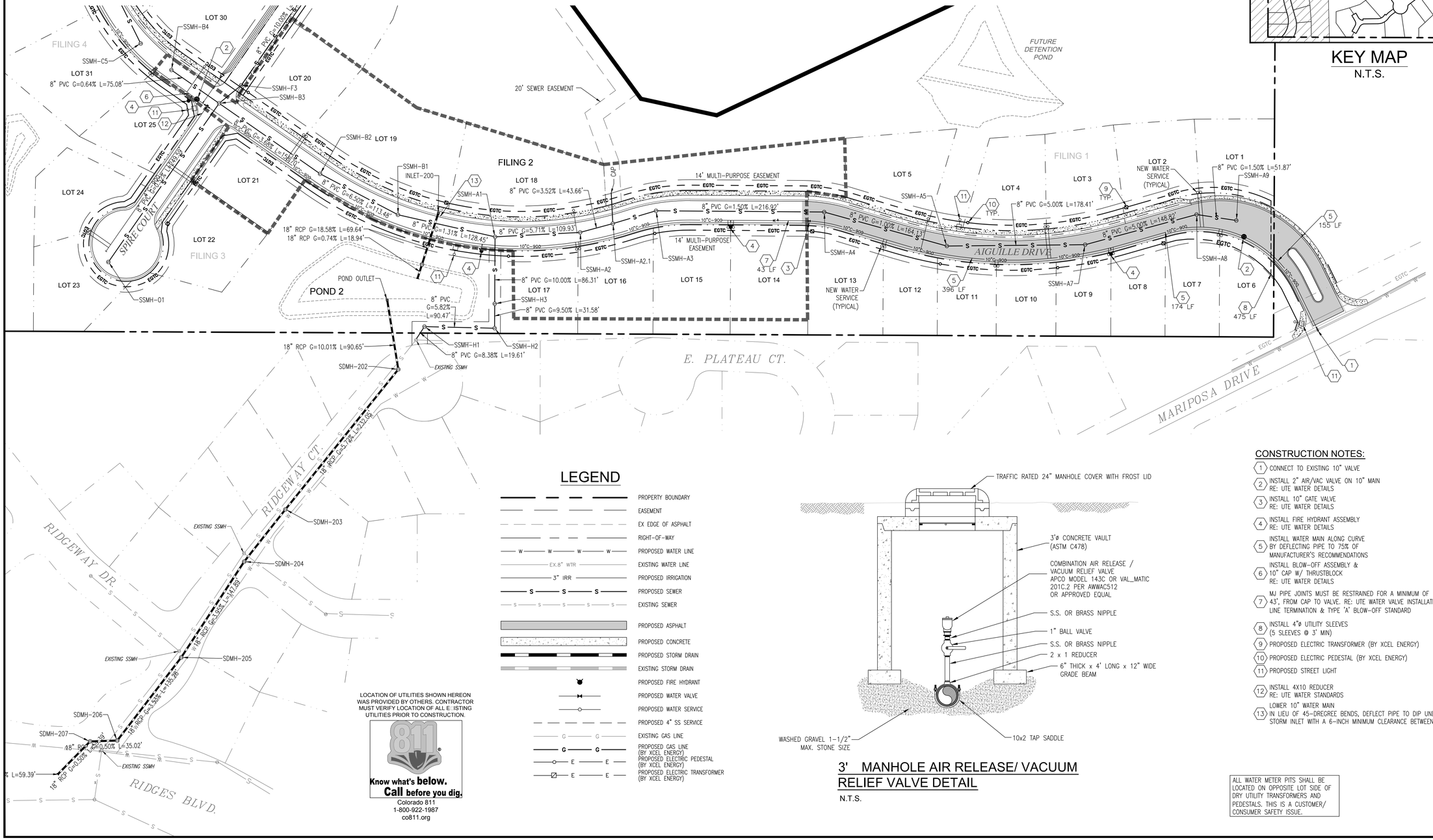
60 30 0 60 120

1" = 60'



KEY MAP

N.T.S.



LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT–OF–WAY
- PROPOSED WATER LINE
- EXISTING WATER LINE
- PROPOSED IRRIGATION
- PROPOSED SEWER
- EXISTING SEWER
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER SERVICE
- PROPOSED 4" SS SERVICE
- EXISTING GAS LINE
- PROPOSED GAS LINE (BY XCEL ENERGY)
- PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
- PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL E ISTING UTILITIES PRIOR TO CONSTRUCTION.

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3' MANHOLE AIR RELEASE/ VACUUM RELIEF VALVE DETAIL

N.T.S.

CONSTRUCTION NOTES:

1. CONNECT TO EXISTING 10" VALVE
2. INSTALL 2" AIR/VAC VALVE ON 10" MAIN RE: UTE WATER DETAILS
3. INSTALL 10" GATE VALVE RE: UTE WATER DETAILS
4. INSTALL FIRE HYDRANT ASSEMBLY RE: UTE WATER DETAILS
5. INSTALL WATER MAIN ALONG CURVE BY DEFLECTING PIPE TO 75% OF MANUFACTURER'S RECOMMENDATIONS
6. INSTALL BLOW–OFF ASSEMBLY & 10" CAP W/ THRUSTBLOCK RE: UTE WATER DETAILS
7. MJ PIPE JOINTS MUST BE RESTRAINED FOR A MINIMUM OF 43', FROM CAP TO VALVE. RE: UTE WATER VALVE INSTALLATION, LINE TERMINATION & TYPE 'A' BLOW–OFF STANDARD
8. INSTALL 4"ø UTILITY SLEEVES (5 SLEEVES @ 3' MIN)
9. PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)
10. PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
11. PROPOSED STREET LIGHT
12. INSTALL 4X10 REDUCER RE: UTE WATER STANDARDS
13. LOWER 10" WATER MAIN IN LIEU OF 45–DREGREE BENDS, DEFLECT PIPE TO DIP UNDER STORM INLET WITH A 6–INCH MINIMUM CLEARANCE BETWEEN PIPES.

ALL WATER METER PITS SHALL BE LOCATED ON OPPOSITE LOT SIDE OF DRY UTILITY TRANSFORMERS AND PEDESTALS. THIS IS A CUSTOMER/ CONSUMER SAFETY ISSUE.

VORTEX ENGINEERING, INC.
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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

REV. DATE	COMMENT	BY

Composite Site Plan - Utility and Water Plan

Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/12/17**
SCALE: **1"= 60'**
CAD ID: **3.0utility-f2.dwg**

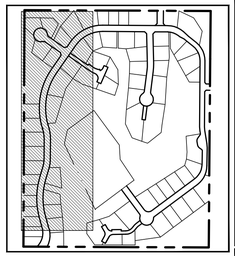
~SHEET~
C3.0

CONSTRUCTION NOTES:

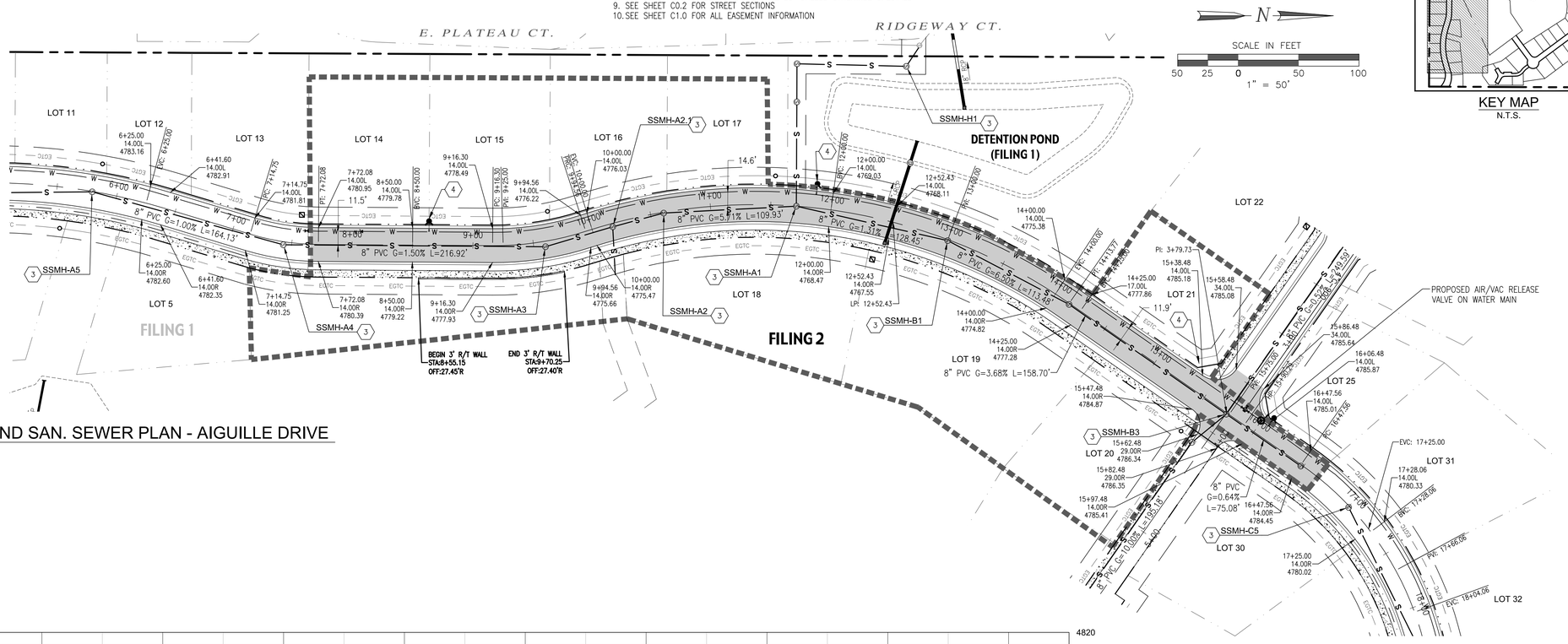
1. INSTALL STOP SIGN & STREET SIGN
   RE: MUTCD
2. CONSTRUCT HANDICAPPED RAMP
   RE: CITY OF GJ DETAILS
3. CONSTRUCT 48"ø SEWER MANHOLE
   RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT
   RE: UTE WATER DETAILS

GENERAL NOTES:

1. REFERENCE SHEET 2 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET C0.2 FOR STREET SECTIONS
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION

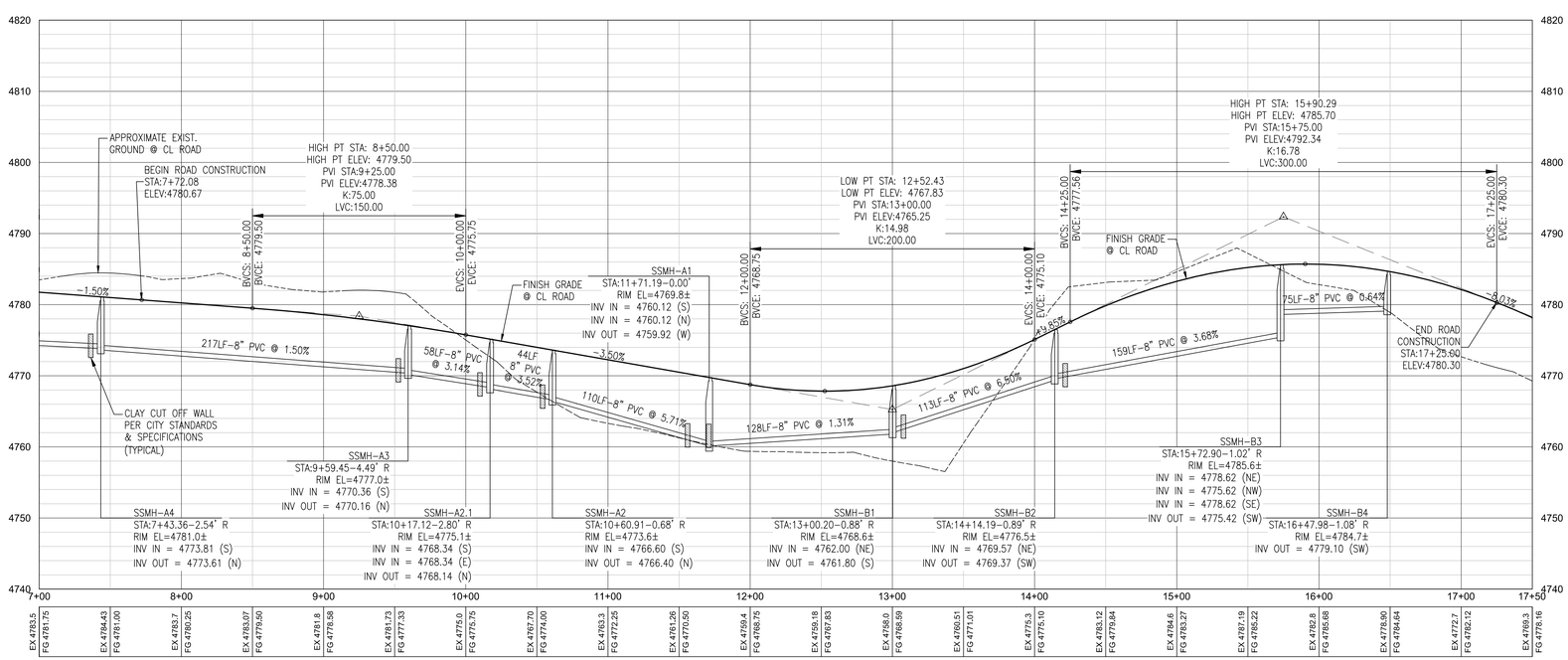


KEY MAP
N.T.S.



ROAD AND SAN. SEWER PLAN - AIGUILLE DRIVE

SCALE: 1" = 50'



ROAD AND SAN. SEWER PROFILE - AIGUILLE DRIVE

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

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• PROJECT MANAGERS
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY

Road & Sanitary Sewer Plan & Profile
Aiguille Drive
Pinnacle Ridge Subdivision Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/12/17**
SCALE: **1" = 50'**
CAD ID: **4.0ss-road-f2.dwg**

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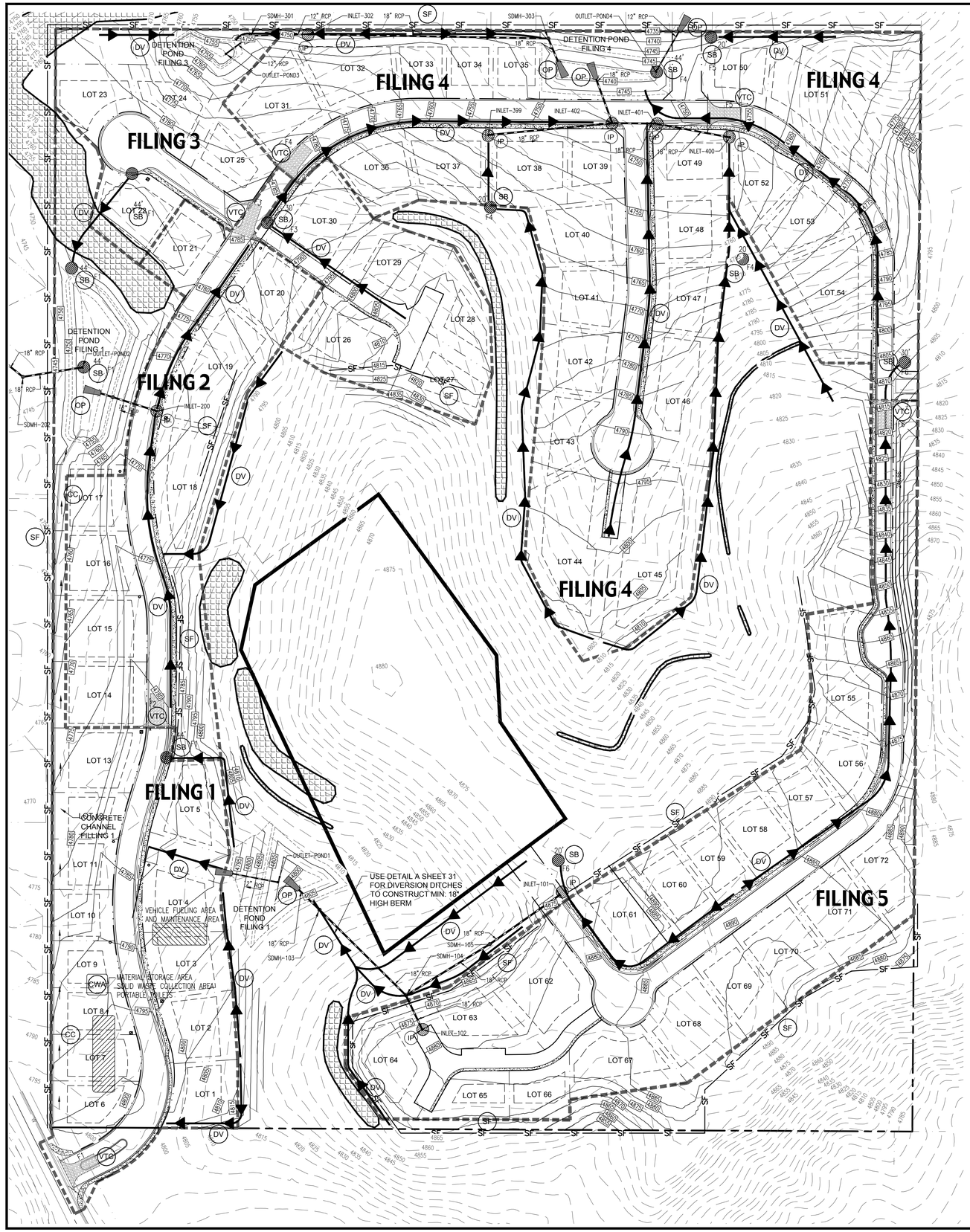
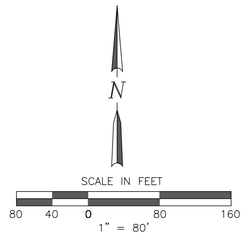
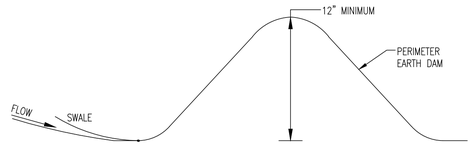
C4.0







EARTH DAM SECTION
SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
SILT FENCE	SF	SF
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
VEHICLE TRACKING CONTROL	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

GENERAL NOTES:

1. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL REQUIRED EASEMENTS, RIGHT AND/OR RIGHTS-OF-WAY PURSUANT TO THE DISCHARGE FROM THE SEDIMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS AND GRADING OR OTHER WORK TO BE PERFORMED ON ADJACENT OR DOWNSTREAM PROPERTIES AFFECTED BY THE PLAN.
2. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1); FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE, THE IN-PLACE SEDIMENT CONTROL MEASURES WILL BE MAINTAINED ON A CONTINUING BASIS UNTIL THE SITE IS PERMANENTLY STABILIZED AND ALL PERMIT REQUIREMENTS ARE MET.
3. REFER TO CITY OF GRAND JUNCTION STANDARD DRAWINGS AND SPECIFICATIONS.
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE 5-2-1 DRAINAGE AUTHORITY. CONTACT MARK BARSLUND 970-201-1362

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

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• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
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FOR REVIEW

MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY

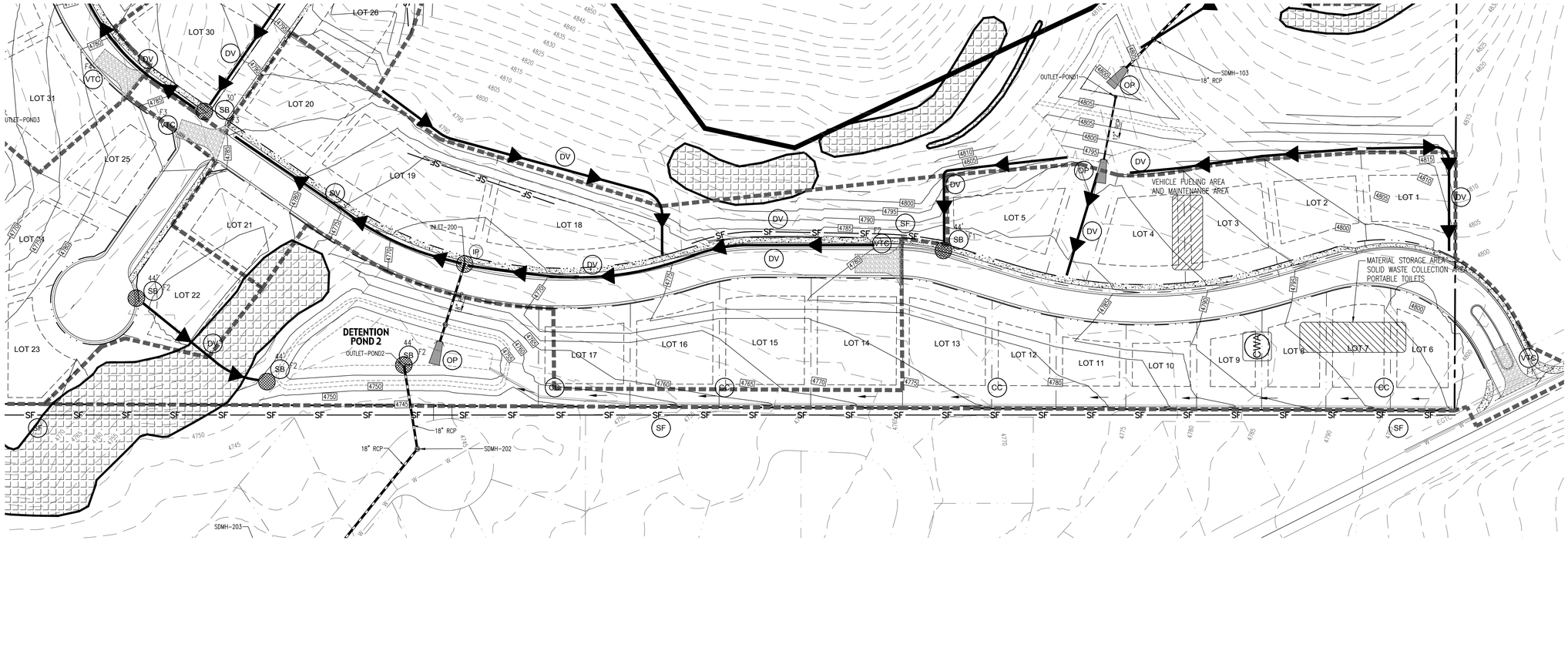
Overall Construction Stormwater Management Plan

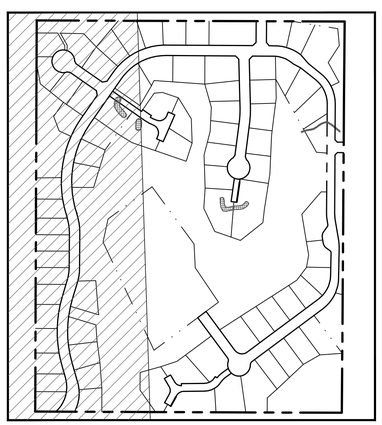
Pinnacle Ridge Subdivison Filing 2

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE:
CAD ID: 6.0swm-f2.dwg

~SHEET~
C6.0





KEY MAP
N.T.S.

GENERAL NOTES:

1. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL REQUIRED EASEMENTS, RIGHT AND/OR RIGHTS-OF-WAY PURSUANT TO THE DISCHARGE FROM THE SEDIMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS AND GRADING OR OTHER WORK TO BE PERFORMED ON ADJACENT OR DOWNSTREAM PROPERTIES AFFECTED BY THE PLAN.
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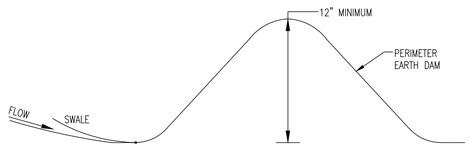
3. REFER TO CITY OF GRAND JUNCTION STANDARD DRAWINGS AND SPECIFICATIONS.
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE 5-2-1 DRAINAGE AUTHORITY. CONTACT MARK BARSLUND 970-201-1362



EARTH DAM SECTION
SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
SILT FENCE	SF	SF
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
VEHICLE TRACKING CONTROL	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

FOR REVIEW

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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY

Construction Stormwater Management Plan Filling 1

Pinnacle Ridge Subdivison Filing 2

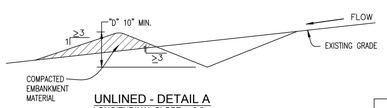
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/12/17**
SCALE: **SEE PLAN**
CAD ID: **6.0swm-f2.dwg**

~SHEET~
C6.1

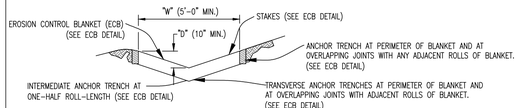
DIVERSION DITCH DETAIL A

DV

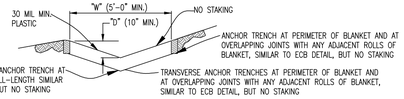


UNLINED - DETAIL A
LONGITUDINAL SLOPE ≤ 0.5%

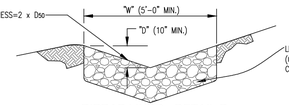




EROSION CONTROL BLANKET (ECB) LINED - DETAIL B
LONGITUDINAL SLOPE 0.5% TO 3%



PLASTIC LINED - DETAIL C
LONGITUDINAL SLOPE 3% TO 33%



RIPRAP LINED - DETAIL D
LONGITUDINAL SLOPE 3% TO 33%

DIVERSION DITCH INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF DIVERSION DITCH.
   - TYPE OF DITCH (UNLINED, ECB PLASTIC LINED OR RIPRAP LINED).
   - LENGTH OF EACH TYPE OF DITCH.
   - DEPTH, "D", AND WIDTH, "W" DIMENSIONS.
   - FOR ECB LINED DITCH, EROSION CONTROL BLANKET TYPE (SEE ECB DETAIL).
   - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, "D 50 ".
2. SEE DRAINAGE PLANS FOR DETAILS OF ANY PERMANENT CONVEYANCE FACULTIES OR DIVERSION DITCHES EXCEEDING A 2 YEAR FLOOD 10 CFS.
3. DIVERSION DITCHES INDICATED ON INITIAL SWMP PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES..
4. FOR ECB LINED DITCHES, INSTALLATION OF EROSION CONTROL BLANKET SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.
5. IN LOCATIONS WHERE CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION DITCH, THE PERMITTEES SHALL INSTALL A TEMPORARY CULVERT WITH A MINUM DIAMETER OF 12-INCHES.

DIVERSION DITCH MAINTENANCE NOTES

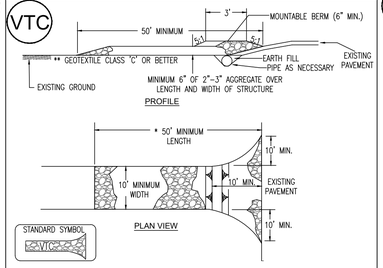
1. THE SWMP MANAGER SHALL INSPECT DIVERSION DITCHES WEEKLY AND DURING AND AFTER ANY STORM. MAKE REPAIRS AS NECESSARY.
2. DIVERSION DITCHES ARE TO REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION, OR IF APPROVED BY LOCAL JURISDICTION MAY BE LEFT IN PLACE.
3. IF DIVERSION DITCHES ARE REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, DRILL SEEDED, HAY CRIMPED MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

DETAIL BASED ON DETAILS PROVIDED BY DOUGLAS COUNTY

Urban Drainage and Flood Control District Drainage Criteria Manual (V.3)	Figure C5-3 DIVERSION DITCH AND DIKE

STABILIZED CONSTRUCTION ENTRANCE

VTC

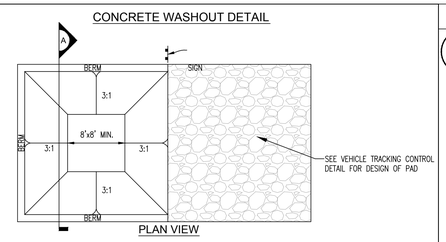


Construction Specification

1. Length – minimum of 50' (*30' for single residence lot).
2. Width – 10' minimum, should be flared at the existing road to provide a tuning radius
3. Geotextile fabric (filter cloth) shall placed over the exiting around prior to placing stone. **This plan approval authority may not require single family residence to use geotextile.
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water – all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location – A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

CONCRETE WASHOUT DETAIL

CWA



SECTION A

CONCRETE WASHOUT AREA INSTALLATION NOTES

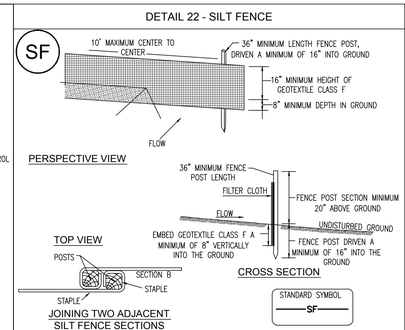
1. SEE PLAN VIEW FOR LOCATIONS OF CONCRETE WASHOUT AREA
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL IS REQUIRED AT THE ACCESS POINT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION

CONCRETE WASHOUT AREA MAINTENANCE NOTES

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, DRILL SEED AND CRIMP MULCH OR OTHERWISE STABILIZE IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
4. INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.

DETAIL 22 - SILT FENCE

SF



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-setion and shall meet the following requirements for Geotextile Class F:

Tensile Strength:	50 lbs./in. (min.)	Test: MSMT 509
Tensile Modulus:	20 lbs./in. (min.)	Test: MSMT 509
Flow Rate	0.3 gal. ft. / minute (max.)	Test MSMT 322
Efficiency	75% (min.)	Test: MSMT 322

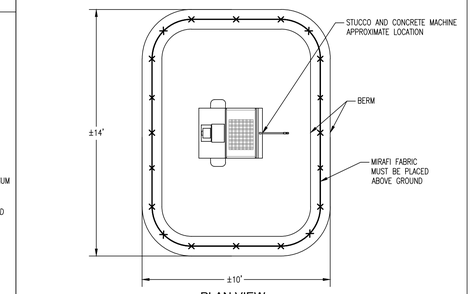
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

SILT FENCE

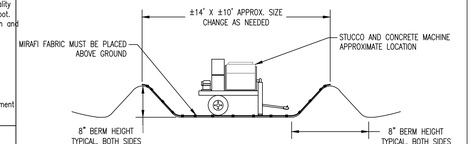
Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

NOTE:
In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.



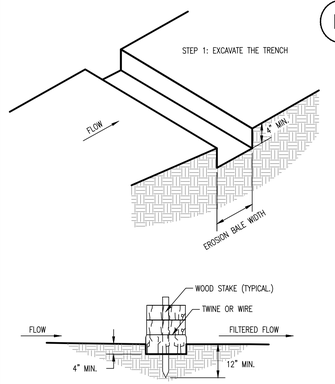
PLAN VIEW
SCALE: N.T.S.



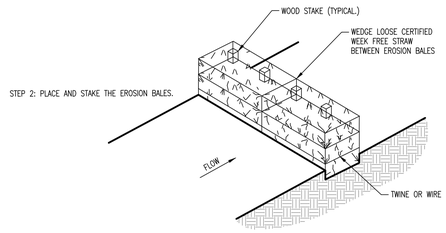
ELEVATION VIEW
SCALE: N.T.S.

STUCCO & CONCRETE MACHINE BMP
SCALE N.T.S.

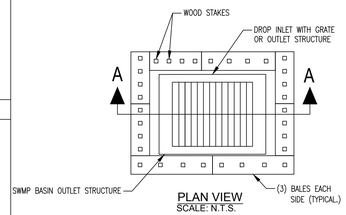
IP



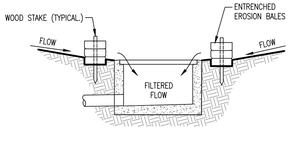
EROSION BALE TRENCHING AND STAKING
SCALE: N.T.S.



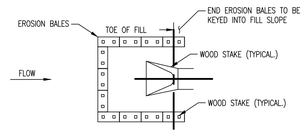
EROSION BALE BMP
SCALE: N.T.S.



PLAN VIEW
SCALE: N.T.S.



SECTION A-A
EROSION FILTER AT DROP INLET
SCALE: N.T.S.



PLAN VIEW
EROSION BALE CULVERT INLET PROTECTION
SCALE: N.T.S.

NOTES

1. STAKES SHALL BE WOOD AND SHALL BE 2" X 2" NOMINAL.
2. EROSION BALES SHALL BE 18" X 18" X 36".
3. EROSION BALES SHALL BE ENTRENCHED 4 IN. MINIMUM INTO THE SOIL TIGHTLY ABUTTED WITH NO GAPS, STAKED, AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERIMETER.

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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FOR REVIEW

MAJOR SUBDIVISION
FINAL PLAN

REV. DATE	COMMENT	BY

Construction Stormwater Management Plan Details

Pinnacle Ridge Subdivison
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/12/17**
SCALE:
CAD ID: **6.0swm-f1.dwg**

~SHEET~
C6.2

City of Grand Junction
COLORADO
PUBLIC WORKS & PLANNING

Development Application

We, the undersigned, being the owner's of the property adjacent to or situated in the City of Grand Junction, Mesa County, State of Colorado, as described herein do petition this:

Petition For: Subdivision Plat/Plan - Major Final

Please fill in blanks below only for Zone of Annexation, Rezones, and Comprehensive Plan Amendments:

Existing Land Use Designation: Residential Low (.5-2 du/ac)
Existing Zoning: R2 (2 du/ac)
Proposed Land Use Designation: N/A
Proposed Zoning: N/A

Property Information

Site Location: NE of Mariposa Drive, 1/4 mile north of Monument Road
Site Acreage: 3.37
Site Tax No(s): 2945-212-00-011
Site Zoning: R2
Project Description: Major subdivision for Pinnacle Ridge Subdivision, Filing 2 containing 8 lots

Property Owner Information

Name: Two R & D, LLC
Street Address: PO Box 39
City/State/Zip: Fruita, CO 81521
Business Phone #: 970-245-9051
E-Mail: rjones@vortexeng.us
Fax #: 970-245-7639
Contact Person: Robert W. Jones, II
Contact Phone #: 970-245-9051

Applicant Information

Name: SAME AS OWNER
Street Address:
City/State/Zip:
Business Phone #:
E-Mail:
Fax #:
Contact Person:
Contact Phone #:

Representative Information

Name: Vortex Engineering, Inc.
Street Address: 2394 Patterson Road
City/State/Zip: Grand Junction, CO 8
Business Phone #: 970-245-9051
E-Mail: rjones@vortexeng.us
Fax #: 970-245-7639
Contact Person: Robert W. Jones, II
Contact Phone #: 970-245-9051

NOTE: Legal property owner is owner of record on date of submittal.

We hereby acknowledge that we have familiarized ourselves with the rules and regulations with respect to the preparation of this submittal, that the foregoing information is true and complete to the best of our knowledge, and that we assume the responsibility to monitor the status of the application and the review comments. We recognize that we or our representative(s) must be present at all required hearings. In the event that the petitioner is not represented, the item may be dropped from the agenda and an additional fee may be charged to cover rescheduling expenses before it can again be placed on the agenda.

Signature of Person Completing the Application: Robert W. Jones II
Date: 6/7/17

Signature of Legal Property Owner: Robert W. Jones II
Date: 6/7/17

EXHIBIT B

IMPROVEMENTS COST ESTIMATE

DATE: June 8, 2017
DEVELOPMENT NAME: **PINNACLE RIDGE FILING 2**
LOCATION: Mariposa Drive, Grand Junction, CO
PERSON PREPARING:

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
A.	**SANITARY SEWER**				
1	8" PVC Sanitary Sewer Main	LF	272	$ 20.00	$ 5,440.00
2	10" PVC Sanitary Sewer Main	LF		$ 30.00	$ -
3	____ " PVC Sanitary Sewer Main	LF			$ -
4	Sewer services	EA		$ 400.00	$ -
5	Sanitary Sewer Manhole	EA		$ 2,500.00	$ -
6	Sanitary Sewer Drop Manhole	EA			$ -
7	Connection to Existing Manhole	EA		$ 1,000.00	$ -
8	Concrete Encasement	LF		$ 20.00	$ -
	Subtotal Part A Sanitary Sewer				**$ 5,440.00**
B.	**DOMESTIC WATER**				
1	Air Vacuum Release Valve	EA	1		$ -
2	8" PVC Water Main	LF		$ 30.00	$ -
3	10" PVC Water Main	LF	796	$ 35.00	$ 27,860.00
4	_4__ " Gatevalve	EA			$ -
5	8" Gatevalve	EA		$ 1,200.00	$ -
6	10" Gatevalve	EA		$ 1,500.00	$ -
7	Water Services (copper)	EA	8	$ 500.00	$ 4,000.00
8	Connect to Existing Water Line	EA		$ 1,500.00	$ -
9	Fire Hydrant with Valve	EA	3	$ 2,500.00	$ 7,500.00
10	Utility Adjustments	EA			$ -
11	Blowoff	EA		$ 500.00	$ -
12	UTE Water Tap Fee	EA			$ -
	Subtotal Part B - Domestic Water				**$ 39,360.00**
C1	**STREETS**				
1	4" PVC Utility sleeves	LF		$ 15.00	$ -
2	8" & 12" PVC irr. Sleeves	LF		$ 20.00	$ -
3	Xcel (Gas & Electric) Services	EA	8		$ -
4	Qwest and Charter Services	EA	8		$ -
5	Aggregate Base Course (Class 6) (_6" Compacted Thickness)	CY		$ 20.00	$ -
6	Aggregate Base Course (Class 6) (12" Compacted Thickness)	CY	124	$ 20.00	$ 2,480.00
7	Hot Bituminous Paving, Grading (3" thick)	TON	31	$ 90.00	$ 2,790.00
8	Hot Bituminous Paving, Grading__ (5" thick)	TON		$ 90.00	$ -
9	Hot Bituminous Paving, Patching (___" Thick)	SY		$ 90.00	$ -
10	Geotextile	SY		$ 2.00	$ -
11	Concrete Curb (__" Wide by __" High)	LF			$ -

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
12	Concrete Curb and Gutter (2' wide)	LF			$ -
13	Concrete Curb and Gutter (1.5' wide)	LF	1,567		$ -
14	Monolithic, Vertical Curb, Gutter and Sidewalk (7.0' Wide)	LF		$ 20.00	$ -
15	Drive Over Curb, Gutter, and Sidewalk (6.5' Wide)	LF		$ 20.00	$ -
16	Concrete Sidewalk (6' Wide)	LF	793	$ -	$ -
17	Concrete Gutter and Driveway Section (6" Thick)	SY			
18	Concrete Drainage Pan (6' Wide, 6" Thick)	LF		$ 15.00	$ -
19	Concrete Corner Fillet	EA		$ 2,500.00	$ -
20	Concrete Curb Ramp	SY			$ -
21	8" Comb. Cross pans, Fillets & ADA Ramps	SF			$ -
22	Concrete Driveway (_6" Thick)	SY			$ -
23	Driveway/Concrete Repair	SY			$ -
24	Retaining Walls	LF			$ -
25	Street Signs	EA	2	$ 400.00	$ 800.00
26	Striping (New, Remove/Replace)	LF			$ -
27	Street Lights	EA			$ -
28	Signal Construction or Reconstruction	LS			$ -
29	Flowable Fill	CY			$ -
30	End of the Road Barrier	EA		$ 1,000.00	$ -
C2	**BRIDGES**				
					$ -
1	Box Culvert Pre-Cast	LS			$ -
2	Box Culvert Cast-in-Place	LS			$ -
3	Wingwalls	LS			$ -
4	Parapet Wall	LS			$ -
5	Railing (handrail, guardrail)	LS			$ -
	Subtotal Part C - Streets and Bridges				**$ 6,070.00**
D1	**EARTHWORK**				
1	Mobilization	LS	1		$ -
2	Clearing and Grubbing	AC		$ 1,000.00	$ -
3	Unclassified Excavation	CY	19,304	$ 2.00	$ 38,608.00
4	Unclassified Embankment	CY	9,046	$ 3.00	$ 27,138.00
5	Import Material	CY	19,304		$ -
D2	**REMOVALS AND RESETTING**				
1	Removal of Asphalt	SY			$ -
2	Removal of Miscellaneous Concrete	SY			$ -
3	Remove Curb and Gutter	LF			$ -
4	Removal of Culverts	LF			$ -
5	Remove Structures	EA			$ -
6	Remove Signs	EA			$ -
7	Remove Fence	LF			$ -
8	Adjust Manhole	EA		$ 250.00	$ -
9	Adjust Valvebox	EA		$ 150.00	$ -
10	Relocate or Adjust Utilities	LS			$ -
11	House & Garage Demo	LS			$ -

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
D3	**EROSION CONTROL, SEEDING, AND SOIL RETENTION**				
1	Sod	SY			$ -
2	Seeding (Native)	AC			$ -
3	Seeding (Bluegrass/Lawn)	SY or AC			$ -
4	Hydraulic Seed and Mulching	SY or AC			$ -
5	Soil Retention Blanket	SY			$ -
6	Silt Fence	LF		$ 2.00	$ -
7	Straw Waddles	LF		$ 3.00	$ -
8	Temporary Berms	LF		$ 2.00	$ -
9	Inlet Protection	EA		$ 500.00	$ -
10	Sediment Trap/Basin	EA			$ -
11	Monthly Maintenance/Inspection	Month			$ -
12	Watering (Dust Control)	LS		$ 2,000.00	$ -
13	Temporary Irrigation				$ -
D4	**STORM DRAINAGE FACILITIES**				
1	Finish Grading (incl. Swales, and Ponds)	LS	1	$ 5,000.00	$ 5,000.00
2	18" ADS Storm Drain Pipe	LF		$ 20.00	$ -
3	15" RCP Storm Drain Pipe	LF			$ -
4	18" RCP Storm Drain Pipe	LF		$ 40.00	$ -
5	24" RCP Storm Drain Pipe	LF		$ 40.00	$ -
6	30" RCP Storm Drain Pipe	LF		$ 50.00	$ -
7	12" ADS Flared End Section	EA		$ 1,000.00	$ -
8	30" Flared End Section	EA		$ 2,000.00	$ -
9	48" Storm Drain Manhole	EA		$ 3,000.00	$ -
10	60" Storm Drain Manhole	EA		$ 3,500.00	$ -
11	72" Storm Drain Manhole	EA		$ 4,000.00	$ -
12	Manhole with Box Base	EA			$ -
13	Connection to Existing MH	EA			$ -
14	Single Curb Opening Storm Drain Inlet	EA		$ 1,000.00	$ -
15	Double Curb Opening Storm Drain Inlet	EA		$ 2,000.00	$ -
16	Triple Curb Opening Storm Drain Inlet	EA		$ 3,000.00	$ -
17	Area Inlet	EA		$ 1,000.00	$ -
18	Detention Area Outlet structure	EA		$ 5,000.00	$ -
19	Sidewalk Trough Drain	EA		$ 500.00	$ -
20	Pump Systems including Electrical	LS		$ 2,000.00	$ -
21	Concrete V-pan (2' wide x 6" thick)	LF		$ 4.00	$ -
22	seep drains	LF		$ -	$ -
	Subtotal Part D - Grading and Drainage				**$ 70,746.00**
E1	**IRRIGATION**				
1	Connect to Existing Pipe	LS			$ -
2	4" PVC Irrigation Pipe	LF		$ 3.00	$ -
3	8" PVC Irrigation Pipe	LF		$ 4.00	$ -
4	Fittings and Valves	LS			$ -
5	Services	EA		$ 10.00	$ -
6	Pump System and Concrete Vault	LS			$ -
7	Irrigation Structure	EA		$ 1,800.00	$ -
8	Vacuum Relief and/or Air Release Valve	EA			
					$ -
E2	**LANDSCAPING**				$ -
1	Design/Architecture	LS			$ -
2	Earthwork	CY			$ -
3	Hardscape Features	LS			$ -
4	Plant Material & Planting	LS		$ 6,000.00	$ -
5	Irrigation System	LS			$ -

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
6	Curbing	LF			$ -
7	Retaining Walls & Structures	LF			$ -
8	1 Year Maintenance Agrmnt.	LS			$ -
9	Topsoil	CY			$ -
	Subtotal Part E - Landscaping and Irrigation				**$ -**
	Subtotal Construction Costs				**$ 121,616.00**
F.	**MISCELLANEOUS ITEMS**				
1	Construction staking/surveying	%	2.00%	$ 121,616.00	$ 2,432.32
2	Developer's inspection cost	%		$ 121,616.00	$ -
3	General construction supervsion	%		$ 121,616.00	$ -
4	Quality control testing	%	2.00%	$ 121,616.00	$ 2,432.32
5	Construction traffic control	%	0.00%	$ 121,616.00	$ -
6	City inspection fees	%	0.50%	$ 121,616.00	$ 608.08
7	As-builts	%	2.00%	$ 121,616.00	$ 2,432.32
	Subtotal Part F - Miscellaneous Items				**$ 7,905.04**
% = Percentage of total site construction costs					
G.	**COST SUMMARY**				
1	**Total Improvement Costs**				**$ 129,521.04**
2	**City Security (20%)**				**$ 25,904.21**
3	**Total Guarantee Amount**				**$ 155,425.25**

NOTES
1. All prices shall be for items complete in place and accepted.
2. All pipe prices shall include excavation, pipe, bedding, backfill, and compaction.
3. Water main shall include pipe, excavation, bedding, backfill, bends, and appurtenances not itemized elsewhere.
4. All concrete items shall include Aggregate Base Course where required by the drawings.
5. Fill in the pipe type for irrigation pipe and sleeves.
6. Reconditioning shall be calculated to at least 6" outside of back of walk on both sides.
7. Units can be changed if desired, simply annotate what is used.
8. Additional lines or items may be added as needed.

_____
Signature of Developer Date
(If corporation, to be signed by President and attested to by Secretary together with the corporate seals.)

I have reviewed the estimated costs and time schedule shown above and, based on the construction drawings submitted to date and the current cost of construction, I take no exception to the above.

_____
City Development Engineer Date

_____
Community Development Date

Final Drainage Report
For
Pinnacle Ridge Subdivision
Grand Junction, Colorado

Date: June 9, 2017

Prepared by: Vortex Engineering, Inc.
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
970-245-9051
VEI# F13-023

Submitted to: City of Grand Junction
250 N. 5th Street
Grand Junction, CO 81501

Type of Design: Major Subdivision

Owners: Two R & D LLC
Fruita, Co

Property Address: Mariposa Drive
Grand Junction, CO

Tax Schedule No.: 2945-212-00-011

"I hereby certify that this Final Drainage Report for the design Pinnacle Ridge Subdivision was prepared by me (or under my direct supervision) in accordance with the provisions of the Stormwater Management Manual for the owners thereof. I understand that City of Grand Junction does not and will not assume liability for drainage facilities designed by others.



6-9-17

James C. Atkinson P.E. Date

As an authorized signing representative of Pinnacle Ridge Subdivision, I hereby certify that the drainage facilities shall be constructed according to the design presented in this report. I understand that City of Grand Junction does not and will not assume liability for the drainage facilities designed and/or certified by my engineer. I understand that City of Grand Junction reviews drainage plan but cannot, on behalf of Pinnacle Ridge Subdivision, guarantee that Final drainage design review will absolve Pinnacle Ridge Subdivision and/or their successors and/or assigns of future liability for improper design. I further understand that approval of the Construction Plans does not imply approval of my engineer's drainage design.

Signature

6-9-17

Date

Table of Contents

1.0 Introduction....4
A. Background....4
B. Project Location....4
C. Property Description....4
2.0 Drainage System Description....5
A. Existing Drainage Conditions....5
B. Master Drainage Plans....5
C. Offsite Tributary Areas....6
D. Proposed Drainage System Description....6
3.0 Drainage Analysis and Drainage Criteria....7
A. Regulations....7
B. Hydrologic Criteria....7
C. Ponds' Summary Tables....8
D. Hydraulic Criteria....8
4.0 Conclusions....8
A. Compliance with Manual....9
5.0 References....9
Appendix A – Location Map....10
Appendix B – NCRS Soils Map....12
Appendix C – FEMA FIRM Maps....13
Appendix D – Basin Runoff, HGL Calcs....14
Appendix E – HYDROCAD Report....15
Appendix F – SWMM Checklis....16
Appendix G – Major Basins Exhibit....17
Appendix H – Variance Request Letter....18
Appendix I – Drainage Maps....19

1.0 Introduction

A. Background

This Final Drainage Report has been prepared by Vortex Engineering, Inc., and is required as part of the Pinnacle Ridge Major Subdivision submittal. This Final Drainage report has been created in accordance with the Mesa County/Grand Junction Stormwater Management Manual.

B. Project Location

The Pinnacle Ridge Subdivision is approximately 45-acres in size, located in the area known as The Ridges/Redlands in the political boundary of The City of Grand Junction, Colorado. It is located about 1/4 mile directly north of the intersection of Mariposa Drive and Monument Rd. Surrounding Pinnacle Ridge Subdivision are existing residential and open space parcels. Legal description of the site is as follows: Township 1 North, Range 1 East, and in Section 21 of the Ute Meridian. A vicinity map is provided in Appendix A for reference.

C. Property Description

The study area for the development of the subject site consists of about 49.2 acres. The development itself site consists of approximately 45 acres which does not include a 4.12-acre-undeveloped parcel located near the middle of the property. The project site is covered with native vegetation consisting of grasses and sparsely located shrubs. The highest point on the site is the ridge in the southeast corner that reaches a height of 4904. Grades on the site vary from 5 to 30 percent.

The Natural Resources Conservation Service (NRCS) classifies the soils within the Pinnacle Ridge Heights site predominantly as Persayo-Blackstone (Soil Symbol 87). These soils are classified as Hydrologic Group “D” which is described as soils having a slow infiltration rate when thoroughly wet. These soils consist mainly of clays that have a high shrink-swell potential, and a slow rate of water transmission. The NRCS Soils report is included in Appendix B.
No jurisdictional FEMA flood plain has been established on the site. See FEMA panel 08077C0815F in Appendix C

2.0 Drainage System Description

A. Existing Drainage Conditions

The existing topography of the site creates outflow conditions only. No offsite runoff enters the project site. The site is also intersected by a major sub-basin boundary placing the majority of the site, about 43 acres (basins EX2 to EX5) in the Major Basin 51 and about 6 acres (basin EX1) in The No Thoroughfare Canyon Basin. Both of these basins discharge into the Colorado River, located about a mile downstream from the site. There are no existing drainage or irrigation facilities present on the site, other than the natural channels and gulleys. The runoff from all of the 5 existing basins identified on the project site, exits the site in a shallow concentrated flow manner. Basin EX1 discharges out of the site along the southeast corner. Basin EX2 discharges west onto Plateau Ct. The runoff from Basin EX3 exits the site at about Ridgeway Ct along the western property boundary. The runoff from Basin EX4, the largest of the set, exits the site at the north onto a vacant lot that is situated between the following addresses 2417 and 2419 Hidden Valley Drive. From the vacant lot, the runoff enters an existing 24" culvert which routes the water to a drainage way in The Hidden Valley Park. Likewise, Basin EX5 runs off into Hidden Valley Court to the north.

Existing Conditions 3 Hour Runoff

Basin	Basin Area	CN	Tc (min.)	Runoff	
				10 yr	100 yr
EX1	5.96	86	7.9	1.62	4.47
EX2	9.4	86	11.3	1.41	6.74
EX3	9.18	86	8.5	1.42	6.8
EX4	21.3	86	21.8	2.91	13.46
EX5	2.77	86	4.6	0.45	2.22
EX6	0.62	86	5	0.11	0.55

B. Master Drainage Plans

As indicated above, the site is intersected by a major sub-basin boundary which places the majority of the site, about 43 acres in the Major Basin 59 and about 6 acres in the No Thoroughfare Canyon Basin. The proposed development diverts approximately 3.5 acres from the No Thoroughfare Canyon Basin to Basin 59. This area is negligible in comparison to the sizes of the above basins, being about 1 and 19 square miles for Basin 51 and No Thoroughfare Canyon Basin, respectively.

C. Offsite Tributary Areas

There are no offsite tributary basins discharging onto the project site.

D. Proposed Drainage System Description

The proposed storm sewer system for this project consists of overland sheets flows, shallow concentrated flows, gutter flows, ditch flows, piped storm sewer and 4 detention ponds in series of 2 each. The ponds are designed to treat and attenuate the Water Quality Capture Volume (WQCV), the 10 year minor storm and the 100 year major storm.

Pond 1, located in the southwest quarter of the site, shall intercept the runoff from approximately 6.8 acres. After, the water is released through the pond's outlet structure, it flows via a 1.25-foot-deep v-ditch for about 800 feet until it is intercepted by Inlet 200, and along with the surface runoff from Basin 200 it enters Pond 2. In addition to what is intercepted by Inlet 200, Pond 2 receives the surface runoff and concentrated flow delivered by a 24" wide by 6" concrete channel located along the western property boundary, Basin 201. Total tributary basin area for Pond 2 is approximately 15.5 acres. This channel shall collect runoff from the lots located on the west side of Aiguille Drive, thus eliminating the potential of flash flooding onto Plateau Ct, and Ridgeway Ct. After the runoff in Pond 2 is treated and attenuated, the water shall exit the pond via a 18" concrete pipe for about 777 feet until it discharges into the ditch in the median located at the intersection of Ridgeway Court and Ridges Boulevard.

Pond 3 is designed to intercept the surface runoff from basin 300 located in the northwest corner of the property. After the runoff is treated and attenuated in Pond 3, it exits via a 12" RCP to the area Inlet 403 from where it travels in an 18" RCP for about 400 feet until it discharges into the Pond 4. In addition to the above, Pond 4 receives runoff from basins 401 and 402 in a concrete pipe, and surface runoff from 2 lots located directly west of Pond 4, Basin 400. The pond's outlet discharges the water onto the vacant lot located between 2417 and 2419 Hidden Valley Drive. From there the water shall exit the lot in the existing 24" culvert under Hidden Valley Drive into a small natural creek taking it to the Colorado River.

The parcels located along the side of the streets with the roadside ditch will require culverts under the drives. The culverts will be sized for a minor storm for each affected lot and that information will be provided in the final report and on the final construction plans for this subdivision. The major storm flow path will be designed in a greater detail and the proposed finished floor of the houses in the affected area will set at least 1 vertical foot above the 100 year water surface elevation. For the scope

of this Final report attached are normal water surface calculations for the 2 year storm for ditches and channels in critical locations of the site. The lining of the ditches and utilizing hydraulic structures will be applied and detailed in the final plans, where warranted. It is intended to keep the velocities between scouring and eroding limits. Also, the use of check dams and other hydraulic structures will be utilized and detailed.

The proposed grading on the site is designed to eliminate cross lot drainage and to maintain positive runoff out of the site. There are 2 minor basins, DD1 and DD2 whose runoff directly discharges onto the offsite. The areas of basins DD1 and DD2 are 1.93 acres and 0.39 acres, respectively. The runoff from these basins shall present no potential for adverse effects downstream of the site for the Basin DD1 shall remain mostly undisturbed, and Basin DD2 shall have its surface finished with a permanent erosion control and diversion ditches routing the runoff onto the vacant lot at the Pond 4 outfall. No impervious area shall be introduced within the boundary of these basins. **The runoff flows from basins DD1 and DD2 in the proposed conditions in minor storm yield 0.32 and 0.06 cfs, respectively. Whereas the minor storm runoff from basins EX1 and EX6 yield 1.62 and 0.11 cfs, respectively. The decrease in runoff from existing to proposed conditions from DD1 and DD2 is caused by decreasing of the area of the basins in proposed conditions. The runoff from basins DD1 and DD2 is compensated in volumes and discharge rates in ponds 1 and 4, respectively. Nevertheless, the size of either of the basins does not comply with the regulation 1407.3 of the SWMM. Therefore, a variance from compliance with the section 1407.3 of SWMM is hereby requested for Basins DD1 and DD2. A copy of the variance request letter is found in Appendix H of this report.**

3.0 Drainage Analysis and Drainage Criteria

A. Regulations

The supporting drainage design and calculations were performed in accordance with the Mesa County/City of Grand Junction Stormwater Management Manual (SWMM) and the UDFCD “Urban Storm Drainage Criteria Manual, Volume 1.
Variance requests are listed in Section 2.0 D and 4.0 A of this report.

B. Hydrologic Criteria

The hydrologic and hydraulic analysis proposed is to use procedures per the Mesa County Stormwater Management Manual (SWMM) guidelines, dated December 2007.

A Computer Aided Design program (HydroCAD) was used for modeling the hydrology and hydraulics of stormwater runoff. HydroCAD is based largely on hydrology techniques developed by the Soil Conservation Service (now the Natural Resources Conservation Service), combined with other hydrology and hydraulic calculations. The storm selected for analysis is the Mesa County 3 hour storm recommended by the SWMM.

C. Pond Summary Tables

Pond	Pond to be Built in Filing:	Pond Contributing Area (ac)	CN	Storm Events	Volume (cf)	WSEL (ft)	Design Peak Discharge (cfs)	SUM OF DD1 AND POND 1 PEAK FLOWS (CFS)	Allowable Peak Discharge (cfs)
POND 1	6	6.87	89	WQCV	3,296	4801.50	NA	NA	NA
				10 YEAR	6,082	4802.31	0.26	0.58	0.59
				100 YEAR	13,335	4804.31	0.48	2.09	2.47
POND 2	1	15.58	89	WQCV	7,575	4847.71	NA	NA	NA
				10 YEAR	13,992	4748.32	0.52		1.87
				100 YEAR	31,059	4749.95	4.21		7.79
POND 3	3	1.56	88	WQCV	720	4752.64	NA	SUM OF DD2 AND POND 4 PEAK FLOWS (CFS)	NA
				10 YEAR	820	4752.88	0.17		0.19
				100 YEAR	2,077	4754.06	0.55		0.78
POND 4	4	22.94	89	WQCV	11,098	4742.19	NA	NA	NA
				10 YEAR	14,737	4742.73	1.91	1.96	2.71
				100 YEAR	33,969	4745.13	10.21	10.40	11.28

D. Hydraulic Criteria

Storm Drains

Storm Drains are designed to have the 2 year HGL below pipes' crowns.

Street Flow and Inlet Capacities

The SWMM criteria were used to check for street flow capacity and inlet capacities. Details shall be provided in the Final Drainage Report.

4.0 Conclusions

This report discusses the information requirements for a Final Drainage Report and Plan as defined by the Grand Valley "Stormwater Management Manual", Section 300.

The proposed development of the Pinnacle Ridge property will effectively convey runoff from the site per the SWMM best recommendations.

The proposed drainage facilities are designed to accept the 100-year runoff and continue the conveyance to the ultimate discharge in the Colorado River. Erosion control BMP's will be implemented during construction in an effort to prevent adverse impacts on downstream properties and drainage facilities. The proposed development will not adversely affect the surrounding properties or existing storm drainage systems.

A. Compliance with Manual

This report discusses the information requirements for a Final Drainage Report and Plan per the Mesa County/City of Grand Junction Stormwater Management Manual. The proposed drainage facilities are designed to collect and detain the 10-year and 100-year event runoff rates from the site along with offsite contributory flows and release at/or below the allowed rates. The proposed development will not adversely affect the surrounding properties or existing drainage systems.

The following variance is hereby requested for this project:

A variance from compliance with the section 1407.3 of SWMM is hereby requested for Basins DD1 and DD2, as described in section 2.0 D of this report.

5.0 References

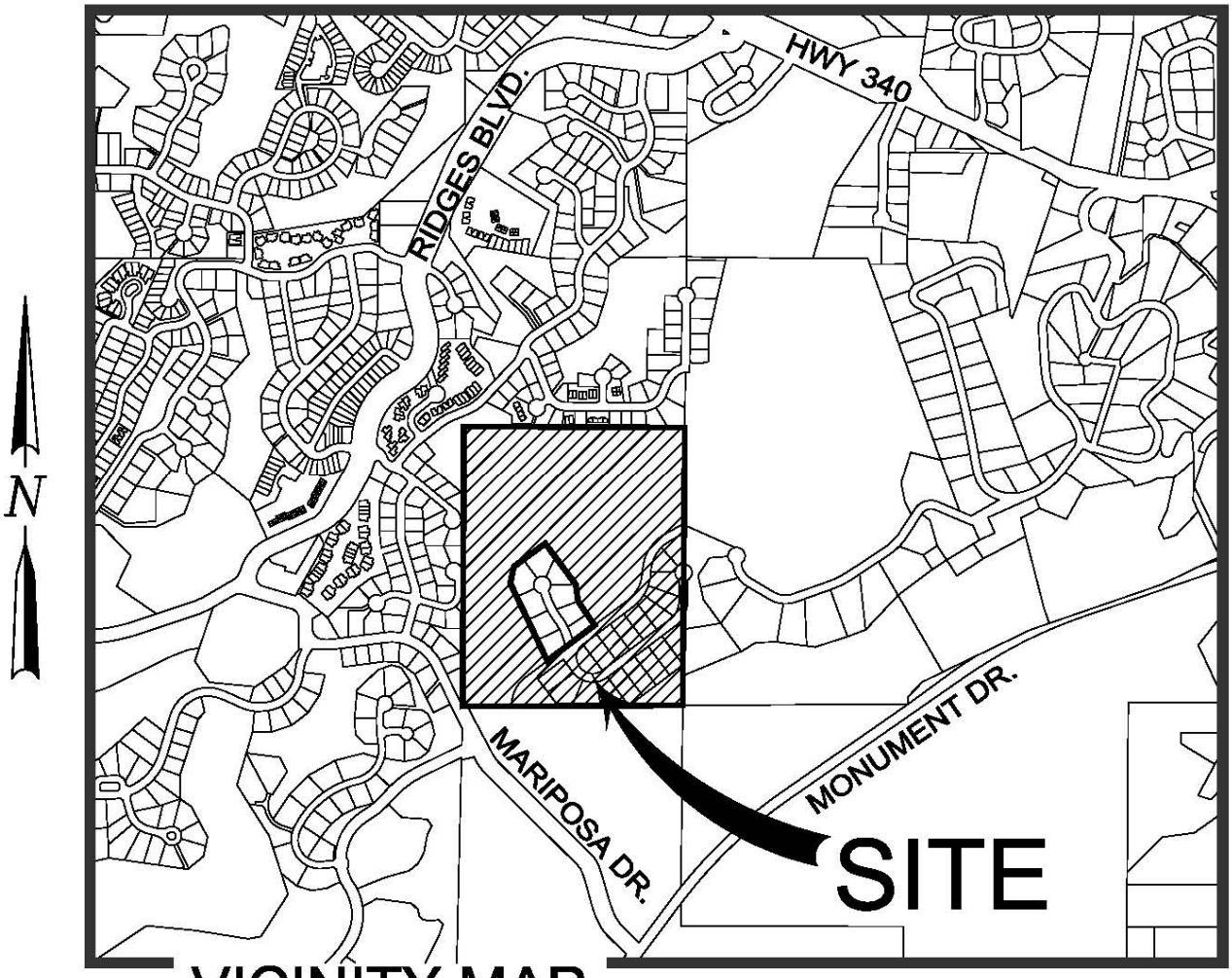
Mesa County/City of Grand Junction Stormwater Management Manual, adopted March 20, 2008.

"Soil Survey of Mesa County Area, Colorado", prepared by United States Department of Agriculture, Soil Conservation Service, issued September 1993.

"Urban Storm Drainage Criteria Manual, Volume 1", prepared by the Urban Drainage and Flood Control District, effective September 1999.

Federal Emergency Management Agency, Flood Insurance Rate Map, Mesa County, Colorado unincorporated Areas, Map No. 08077C0815F.

Appendix A – Location Map



VICINITY MAP

Appendix B – NCRS Soils Map

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Mesa County Area, Colorado



March 19, 2015

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means

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Contents

Preface.....2
Soil Map.....5
Soil Map.....6
Legend.....7
Map Unit Legend.....8
Map Unit Descriptions.....8
Mesa County Area, Colorado.....10
87—Persayo-Blackston complex, 6 to 45 percent slopes.....10
127—Rock outcrop-Persayo-Hostage complex, 25 to 99 percent slopes, extremely stony.....11

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



Map Scale: 1:3,240 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 45 90 180 270

Feet
0 150 300 600 900

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Mesa County Area, Colorado
Survey Area Data: Version 5, Sep 22, 2014

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 22, 2010—Sep 2, 2010

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Mesa County Area, Colorado (CO680)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
87	Persayo-Blackston complex, 6 to 45 percent slopes	49.7	99.7%
127	Rock outcrop-Persayo-Hostage complex, 25 to 99 percent slopes, extremely stony	0.1	0.3%
Totals for Area of Interest		**49.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If

intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Mesa County Area, Colorado

87—Persayo-Blackston complex, 6 to 45 percent slopes

Map Unit Setting

National map unit symbol: k0bh
Elevation: 4,500 to 6,000 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 50 to 54 degrees F
Frost-free period: 100 to 190 days
Farmland classification: Not prime farmland

Map Unit Composition

Persayo and similar soils: 65 percent
Blackston and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Persayo

Setting

Landform: Mesas
Landform position (two-dimensional): Backslope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Residuum weathered from clayey shale

Typical profile

A - 0 to 4 inches: silty clay loam
C - 4 to 15 inches: silty clay loam
Cr - 15 to 19 inches: weathered bedrock

Properties and qualities

Slope: 6 to 45 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Silty saltdesert (R034XY410CO)

Description of Blackston

Setting

Landform: Mesas
Landform position (two-dimensional): Shoulder
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Alluvium derived from sandstone and shale and/or outwash derived from sandstone and shale

Typical profile

A - 0 to 3 inches: very gravelly sandy clay loam
Bk1 - 3 to 7 inches: gravelly clay loam
Bk2 - 7 to 15 inches: very gravelly sandy clay loam
2Bk3 - 15 to 35 inches: extremely gravelly sandy loam
2C - 35 to 60 inches: extremely gravelly sand

Properties and qualities

Slope: 6 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 35 percent
Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Very low (about 2.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: Loamy saltdesert (R034XY401CO)

127—Rock outcrop-Persayo-Hostage complex, 25 to 99 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: k07k
Elevation: 4,700 to 5,400 feet
Mean annual precipitation: 7 to 10 inches
Mean annual air temperature: 47 to 50 degrees F
Frost-free period: 150 to 180 days
Farmland classification: Not prime farmland

Map Unit Composition

Rock outcrop: 35 percent

Persayo and similar soils: 30 percent
Hostage and similar soils: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rock Outcrop

Setting
Landform: Ledges, cliffs

Typical profile
H1 - 0 to 60 inches: unweathered bedrock

Properties and qualities
Slope: 50 to 99 percent
Depth to restrictive feature: 0 to 4 inches to lithic bedrock
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.00 in/hr)
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8

Description of Persayo

Setting
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Residuum weathered from clayey shale

Typical profile
A - 0 to 2 inches: very parachannery clay loam
C - 2 to 11 inches: very parachannery silty clay loam
Cr - 11 to 15 inches: weathered bedrock

Properties and qualities
Slope: 25 to 65 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 10 to 20 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 40 percent
Gypsum, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to slightly saline (2.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Very low (about 1.5 inches)

Interpretive groups
Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: D
Ecological site: Saltdesert breaks (R034XY406CO)

Description of Hostage

Setting

Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Colluvium derived from sandstone and shale over residuum weathered from clayey shale

Typical profile

A - 0 to 4 inches: clay loam
B - 4 to 25 inches: clay loam
C1 - 25 to 50 inches: silty clay loam
C2 - 50 to 55 inches: silty clay loam
Cr - 55 to 59 inches: weathered bedrock

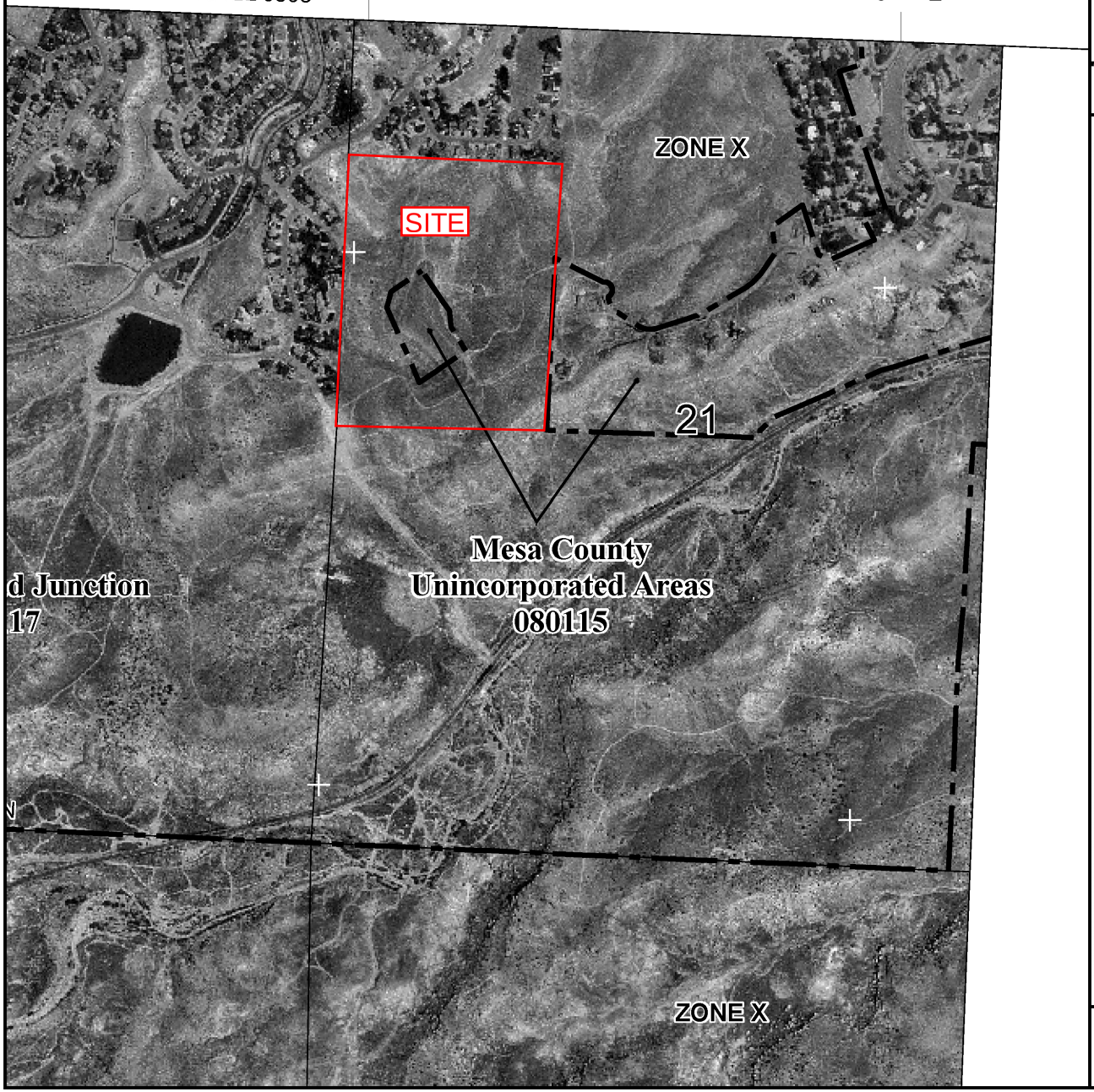
Properties and qualities

Slope: 25 to 50 percent
Percent of area covered with surface fragments: 10.0 percent
Depth to restrictive feature: 39 to 59 inches to paralithic bedrock
Natural drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 30 percent
Gypsum, maximum in profile: 1 percent
Salinity, maximum in profile: Nonsaline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Ecological site: Saltdesert breaks (R034XY406CO)

Appendix C – FEMA FIRM Maps



MAP SCALE 1" = 1000'

500 0 1000 2000 FEET

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0815F

FIRM

FLOOD INSURANCE RATE MAP
MESA COUNTY, COLORADO
AND INCORPORATED AREAS

PANEL 815 OF 1725

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
GRAND JUNCTION, CITY OF	080117	0815	F
MESA COUNTY	080115	0815	F

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
08077C0815F

EFFECTIVE DATE
JULY 6, 2010

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Appendix D – Basin Runoff, HGL Calcs

Pinnacle Estates
Existing Basins

Vortex Engineering, Inc.
December 15, 2015

Basin	Basin Area	CN	Tc (min.)	Runoff	
				10 yr	100 yr
EX1	5.96	86	7.9	1.62	4.47
EX2	9.4	86	11.3	1.41	6.74
EX3	9.18	86	8.5	1.42	6.8
EX4	21.3	86	21.8	2.91	13.46
EX5	2.77	86	4.6	0.45	2.22
EX6	0.62	86	5	0.11	0.55

Pinnacle Ridge **Vortex Engineering, Inc.**

Drainage Area C calculations - 2yr and 100yr Events **June 9, 2017**

BASIN	TOTAL AREA (ft^2)	BASIN AREA (ac)	LOT/PERV. AREA (ft^2)	LOT AREA $C_{2\ year}$	LOT AREA C $_{100\text{-}year}$	STREET IMP. AREA (ft^2)	IMPREVIOUS AREA (ac)	STREET AREA $C_{2\ year}$	STREET AREA $C_{100\ year}$	2 yr WEIGHTED C VALUE	100 yr WEIGHTED C VALUE
100	164,742	3.78	162,042	0.29	0.40	2,700	0.06	0.89	0.96	0.30	0.41
101	53,987	1.24	42,611	0.29	0.40	11,376	0.26	0.89	0.96	0.42	0.52
102	80,428	1.85	67,828	0.29	0.40	12,600	0.29	0.89	0.96	0.38	0.49
200	467,961	10.74	395,061	0.29	0.40	72,900	1.67	0.89	0.96	0.38	0.49
201	210,613	4.84	210,613	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
300	67,941	1.56	67,941	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
400	34,503	0.79	34,503	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
401	312,940	7.18	256,240	0.29	0.40	56,700	1.30	0.89	0.96	0.40	0.50
402	178,940	4.11	178,940	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
403	25,850	0.59	25,850	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
404	95,303	2.19	83,753	0.29	0.40	11,550	0.27	0.89	0.96	0.36	0.47
405	165,832	3.81	154,232	0.29	0.40	11,600	0.27	0.89	0.96	0.33	0.44
406	187,532	4.31	187,532	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
DD1	83,873	1.93	83,873	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
DD2	16,796	0.39	16,796	0.29	0.40	0	0.00	0.89	0.96	0.29	0.40
Total On-Site Area =		49.29	45.17				4.12				

Description	Basin area (ac)	Impreviousness (%)
Lots	45.17	50.0%
Streets and Sidewalks	4.12	98.0%
Total Area/Impreviousne	49.29	54%

Pinnacle Ridge **Vortex Engineering, Inc.**
Curve Number Calculations **February 10, 2014**

Pond 1

Assumptions:		Impreviousness
4000 sf homes		
1.75 du/acre density	**From Figure 703 Mesa County**	**SWMM**
Streets Area (ac)	0.61	98%
Lot area (ac)	6.26	44%
Total Basin Area (ac)	6.87	
Impreviousness=	49%	

CN = 98*Imp+X*(1-Imp) Where: X=80 (D Type Soils)

CN= 88.79 **use 89**

Pond 2

Assumptions:		Impreviousness
4000 sf homes		
1.75 du/acre density	**From Figure 703 Mesa County**	**SWMM**
Streets Area (ac)	1.67	98%
Lot area (ac)	13.90	44%
Total Basin Area (ac)	15.58	
Impreviousness=	50%	

CN = 98*Imp+X*(1-Imp) Where: X=80 (D Type Soils)

CN= 88.96 **use 89**

Pond 3

Assumptions:		Impreviousness
4000 sf homes		
1.75 du/acre density	**From Figure 703 Mesa County**	**SWMM**
Streets Area (ac)	0.00	98%
Lot area (ac)	1.56	44%
Total Basin Area (ac)	1.56	
Impreviousness=	44%	

CN = 98*Imp+X*(1-Imp) Where: X=80 (D Type Soils)

CN= 87.92 **use 88**

Pond 4

Assumptions:		Impreviousness
4000 sf homes		
1.75 du/acre density	**From Figure 703 Mesa County**	**SWMM**
Streets Area (ac)	2.31	98%
Lot area (ac)	20.63	44%
Total Basin Area (ac)	22.94	
Impreviousness=	49%	

CN = 98*Imp+X*(1-Imp) Where: X=80 (D Type Soils)

CN= 88.90 **use 89**

Pinnacle Ridge | **Vortex Engineering, Inc.**
Detention Pond's | **February 10, 2014**
WQCV and Detention Volume Calculations | Rev. June 26, 2015
POND 1 | December 16, 2015

Elevation [ft.]	Area [ft²]	Stage Volume [cf]	Change in Elevation [ft]	Cumulative Volume [cf]	Cumulative Volume [acre-ft]
4799.00	0	0.00	0.0	0.0	0.000
4800.00	856	285.33	1.0	285.3	0.007
4802.00	3447	4013.83	2.0	4299.2	0.099
4804.00	5204	8590.90	2.0	12890.1	0.296
4806.00	7321	12464.93	2.0	25355.0	0.582
4808.00	9798	17058.95	2.0	42413.9	0.974

$WQCV=K(a(0.91*I^3-1.19*I^2+0.78*I))$

Where:

K = adjustment to equation for Mesa County = $d_6/0.43$) = 0.65

a = Adjustment for BMP's drain Time (for 40hrs a=1.0) = 1.00

I = watershed Impreviousness in decimal = 0.49

d_6 = Depth of average producing storm d_6 = 0.28

Watershed area (100+101+102) = 6.87

WQCV= 0.132 in

		WSEL (ft)	Pond Design Peak Discharge** (cfs)	Basin DD1 Design Peak Discharge ** (cfs)	Sum of Direct Discharge and Pond Design Discharge (cfs)	Adjusted Allowable Peak Discharge*** (cfs)
Req'd storage WQCV =	3,296 cf	4,801.50*	N/A	N/A	N/A	N/A
10 yr Runoff + WQCV =	6,082 cf	4802.31**	0.26	0.32	0.58	0.59
100 yr Runoff + WQCV =	15,335 cf	4804.31**	0.48	1.61	2.09	2.47

Pond 1 is designed to compensate for direct dicharge from Basin DD1 (SWMM Sec. 1407.3)
Allowable Discharge:

DD1 Q_{10} = 0.23 cfs

DD1 Q_{100}** = 0.96 cfs

* Water surface elevation thru linear interpolation

** By hydrograph routing

*** Mesa Co. SWMM Table 1402.

Pinnacle Ridge
Detention Pond 1
WQ Orifice Plate

Vortex Engineering, Inc.
June 2, 2017

WQCV Orifice Plate Area

Per UDFCD Volume 2, SO-13a, pg SO-12

$$A_o = \frac{88V^{(0.95/H^{0.085})}}{T_D S^{0.09} H^{(2.6S0.8)}}$$

A_o= area per row of orifice spaced on 4" centers (in^2)
V= design volume (WQCV, ac-ft)
T_D= Time to drain the prescribed volume (hrs)
H= Depth of Volume (ft)
S= slope (ft/ft)

V= 0.07567 ac-ft
T_D= 40 hrs
H= 2.50
S= 0.02
A_o= 0.3116
# of columns= 1
area per hole in a row (in^2)= 0.3116
hole diameter (in)= 0.6298

USE 5/8" DIA. HOLES

Pinnacle Ridge **Vortex Engineering, Inc.**
Detention Pond's **May 31, 2017**
WQCV and Detention Volume Calculations
POND 2

Elevation [ft.]	Area [ft²]	Stage Volume [cf]	Change in Elevation [ft]	Cumulative Volume [cf]	Cumulative Volume [acre-ft]
4746.06	0	0.00	0.0	0.0	0.000
4747.00	6765	2119.70	0.9	2119.7	0.049
4748.00	8746	7734.33	1.0	9854.0	0.226
4749.00	10334	9528.97	1.0	19383.0	0.445
4750.00	11994	11153.70	1.0	30536.7	0.701
4751.00	13830	12901.11	1.0	43437.8	0.997
4752.00	15490	14652.16	1.0	58090.0	1.334

$WQCV=K(a(0.91*I^3-1.19*I^2+0.78*I))$

Where:

K = adjustment to equation for Mesa County = $d_6/0.43$)= 0.65
a = Adjustment for BMP's drain Time (for 40hrs a=1.0)= 1.00
I = watershed Impreviousness in decimal = 0.50
d_6 = Depth of average producing storm d_6= 0.28
Watershed area = 15.58

WQCV= 0.134 in

		WSEL (ft)	Design Peak Discharge** (cfs)	Allowable Discharge*** (cfs)
Req'd storage WQCV =	7,575 cf	4,747.71*	N/A	N/A
10 yr Runoff + WQCV =	13,992 cf	4748.32**	0.52	1.87
100 yr Runoff + WQCV =	31,059 cf	4749.95**	4.21	7.79

* Water surface elevation thru linear interpolation
** Water Surface by hydrograph routing
*** Mesa Co. SWMM Table 1402

Pinnacle Ridge
Detention Pond 2
WQ Orifice Plate

Vortex Engineering, Inc.
June 2, 2017

WQCV Orifice Plate Area

Per UDFCD Volume 2, SO-13a, pg SO-12

$$A_o = \frac{88V^{(0.95/H^{0.085})}}{T_D S^{0.09} H^{(2.6S0.8)}}$$

A_o= area per row of orifice spaced on 4" centers (in^2)
V= design volume (WQCV, ac-ft)
T_D= Time to drain the prescribed volume (hrs)
H= Depth of Volume (ft)
S= slope (ft/ft)

V= 0.17389 ac-ft
T_D= 40 hrs
H= 1.65
S= 0.02
A_o= 0.6230
# of columns= 1
area per hole in a row (in^2)= 0.6230
hole diameter (in)= 0.8906

USE 7/8" DIA. HOLES

Pinnacle Ridge | **Vortex Engineering, Inc.**
Detention Pond's | **February 10, 2014**
WQCV and Detention Volume Calculations | Rev. June 26, 2015
POND 3 | December 16, 2015

Elevation [ft.]	Area [ft²]	Stage Volume [cf]	Change in Elevation [ft]	Cumulative Volume [cf]	Cumulative Volume [acre-ft]
4751.00	0	0.00	0.0	0.0	0.000
4752.00	483	161.00	1.0	161.0	0.004
4754.00	1277	1696.91	2.0	1857.9	0.043
4756.00	2080	3324.52	2.0	5182.4	0.119

$WQCV=K(a(0.91*I^3-1.19*I^2+0.78*I))$

Where:

K = adjustment to equation for Mesa County = $d_6/0.43$)= 0.65
a = Adjustment for BMP's drain Time (for 40hrs a=1.0)= 1.00
I = watershed Impreviousness in decimal = 0.44
d_6 = Depth of average producing storm d_6= 0.28
Watershed area = 1.56

WQCV= 0.124 in

		WSEL (ft)	Design Peak Discharge** (cfs)	Allowable Discharge*** (cfs)
Req'd storage WQCV =	702 cf	4,752.64*	N/A	N/A
10 yr Runoff + WQCV =	820 cf	4752.88**	0.17	0.19
100 yr Runoff + WQCV =	2,077 cf	4754.06**	0.55	0.78

* Water surface elevation thru linear interpolation
** By hydrograph routing
*** Mesa Co. SWMM Table 1402

Pinnacle Ridge
Detention Pond 3
WQ Orifice Plate

Vortex Engineering, Inc.
June 2, 2017

WQCV Orifice Plate Area

Per UDFCD Volume 2, SO-13a, pg SO-12

$$A_o = \frac{88V^{(0.95/H^{0.085})}}{T_D S^{0.09} H^{(2.6S0.8)}}$$

A_o= area per row of orifice spaced on 4" centers (in^2)
V= design volume (WQCV, ac-ft)
T_D= Time to drain the prescribed volume (hrs)
H= Depth of Volume (ft)
S= slope (ft/ft)

V= 0.01611 ac-ft
T_D= 40 hrs
H= 1.64
S= 0.02
A_o= 0.0713
# of columns= 1
area per hole in a row (in^2)= 0.0713
hole diameter (in)= 0.3013

USE 5/16" DIA. HOLES

Pinnacle Ridge | **Vortex Engineering, Inc.**
Detention Pond's | **February 10, 2014**
WQCV and Detention Volume Calculations | Rev. June 26, 2015
POND 4 | December 16, 2015

Elevation [ft.]	Area [ft²]	Stage Volume [cf]	Change in Elevation [ft]	Cumulative Volume [cf]	Cumulative Volume [acre-ft]
4739.00	0	0.00	0.0	0.0	0.000
4740.00	3373	1124.33	1.0	1124.3	0.026
4742.00	5394	8688.29	2.0	9812.6	0.225
4744.00	8104	13406.39	2.0	23219.0	0.533
4746.00	10902	18936.97	2.0	42156.0	0.968

$WQCV=K(a(0.91*I^3-1.19*I^2+0.78*I))$

Where:

K = adjustment to equation for Mesa County = $d_6/0.43$)= 0.65
a = Adjustment for BMP's drain Time (for 40hrs a=1.0)= 1.00
I = watershed Impreviousness in decimal = 0.49
d_6 = Depth of average producing storm d_6= 0.28
Watershed area (400 thru 403) = 22.94

WQCV= 0.133 in

		WSEL (ft)	Design Peak Discharge** (cfs)	Basin DD2 Design Peak Discharge (cfs)	Sum of Direct Discharge and Pond Design Discharge (cfs)	Adjusted Allowable Peak Discharge*** (cfs)
Req'd storage WQCV =	11,098 cf	4,742.19*	N/A	N/A	N/A	N/A
10 yr Runoff + WQCV =	14,737 cf	4742.73**	1.91	0.05	1.96	2.71
100 yr Runoff + WQCV =	36,969 cf	4745.13**	10.21	0.19	10.40	11.28

Pond 1 is designed to compensate for direct dicharge from Basin DD1 (SWMM Sec. 1407.3)
Allowable Discharge:

DD2 Q_{10}= 0.05 cfs
DD2 Q_{100}= 0.19 cfs

* Water surface elevation thru linear interpolation
** By hydrograph routing
*** Mesa Co. SWMM Table 1402.

Pinnacle Ridge
Detention Pond 4
WQ Orifice Plate

Vortex Engineering, Inc.
June 2, 2017

WQCV Orifice Plate Area

Per UDFCD Volume 2, SO-13a, pg SO-12

$$A_o = \frac{88V^{(0.95/H^{0.085})}}{T_D S^{0.09} H^{(2.6S0.8)}}$$

A_o= area per row of orifice spaced on 4" centers (in^2)
V= design volume (WQCV, ac-ft)
T_D= Time to drain the prescribed volume (hrs)
H= Depth of Volume (ft)
S= slope (ft/ft)

V= 0.14103 ac-ft
T_D= 40 hrs
H= 2.45
S= 0.02
A_o= 0.5374
# of columns= 1
area per hole in a row (in^2)= 0.5374
hole diameter (in)= 0.8272

USE 13/16" DIA. HOLES

Pinnacle Ridge
Basin Runoff Calculation

Vortex Engineering, Inc.
June 9, 2017

DRAINAGE AREA	INLET #	Area (ac)	'C_2' Weighted	'C_{100}' Weighted	T_c (min)	2-Yr. Storm Intensity (in/hr)	100-Yr. Storm Intensity (in/hr)	2-Yr. Q (cfs) Basin Runoff	100-Yr. Q (cfs) Basin Runoff	Inlet Type for Minor Storm
100	POND 1	3.78	0.30	0.41	5	1.2	4.68	1.36	7.24	
101	101	1.85	0.38	0.49	5	1.2	4.68	0.85	4.21	
102	102	1.24	0.42	0.52	5	1.2	4.68	0.62	3.00	
200	200	10.74	0.38	0.49	5	1.2	4.68	4.94	24.50	
201	POND 2	4.84	0.29	0.40	5	1.2	4.68	1.68	9.05	
300	POND 3	1.56	0.29	0.40	5	1.2	4.68	0.54	2.92	
400	POND 4	0.79	0.29	0.40	5	1.2	4.68	0.28	1.48	
401	401	7.18	0.40	0.50	5	1.2	4.68	3.44	16.86	
402	402	4.11	0.29	0.40	5	1.2	4.68	1.43	7.69	
403	403	0.59	0.29	0.40	5	1.2	4.68	0.21	1.11	
404	404	2.19	0.36	0.47	5	1.2	4.68	0.95	4.79	
405	405	3.81	0.33	0.44	5	1.2	4.68	1.52	7.82	
406	406	4.31	0.29	0.40	5	1.2	4.68	1.50	8.06	
DD1	offsite	1.93	0.29	0.40	5	1.2	4.68	0.67	3.60	
DD2	offsite	0.39	0.29	0.40	5	1.2	4.68	0.13	0.72	

Total on site basins = 36.68

Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Monday, Jun 5 2017

FILING 1 CONCRETE CHANNEL - FLAT - 2yr storm

Gutter

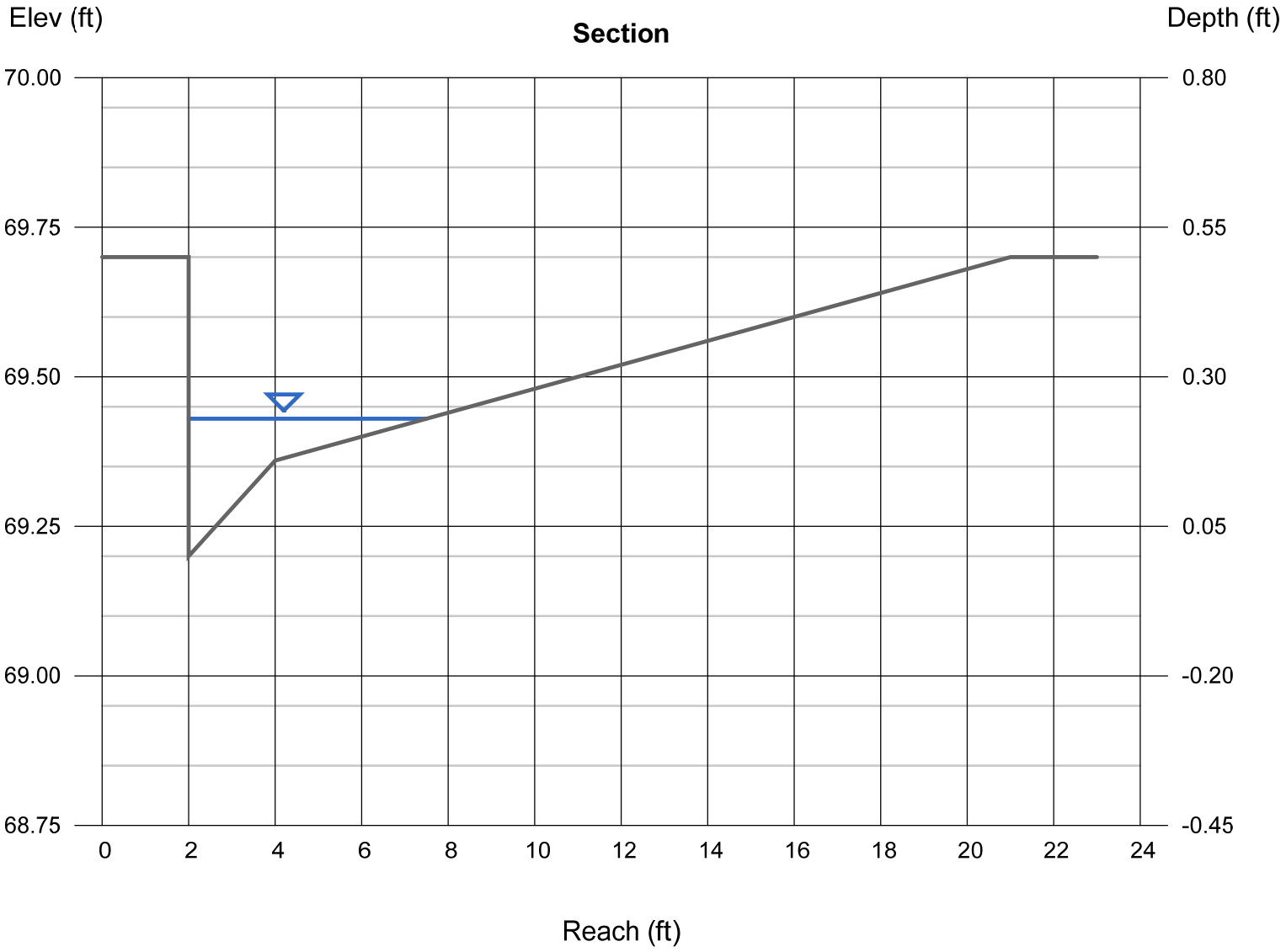
Cross Sl, Sx (ft/ft)	= 0.02
Cross Sl, Sw (ft/ft)	= 0.08
Gutter Width (ft)	= 2.00
Invert Elev (ft)	= 69.20
Slope (%)	= 6.71
N-Value	= 0.013

Calculations

Compute by:	Known Q
Known Q (cfs)	= 2.00

Highlighted

Depth (ft)	= 0.23
Q (cfs)	= 2.000
Area (sqft)	= 0.42
Velocity (ft/s)	= 4.73
Wetted Perim (ft)	= 5.74
Crit Depth, Yc (ft)	= 0.32
Spread Width (ft)	= 5.50
EGL (ft)	= 0.58



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Monday, Jun 5 2017

FILING 1 CONCRETE CHANNEL - FLAT - 2yr storm

Gutter

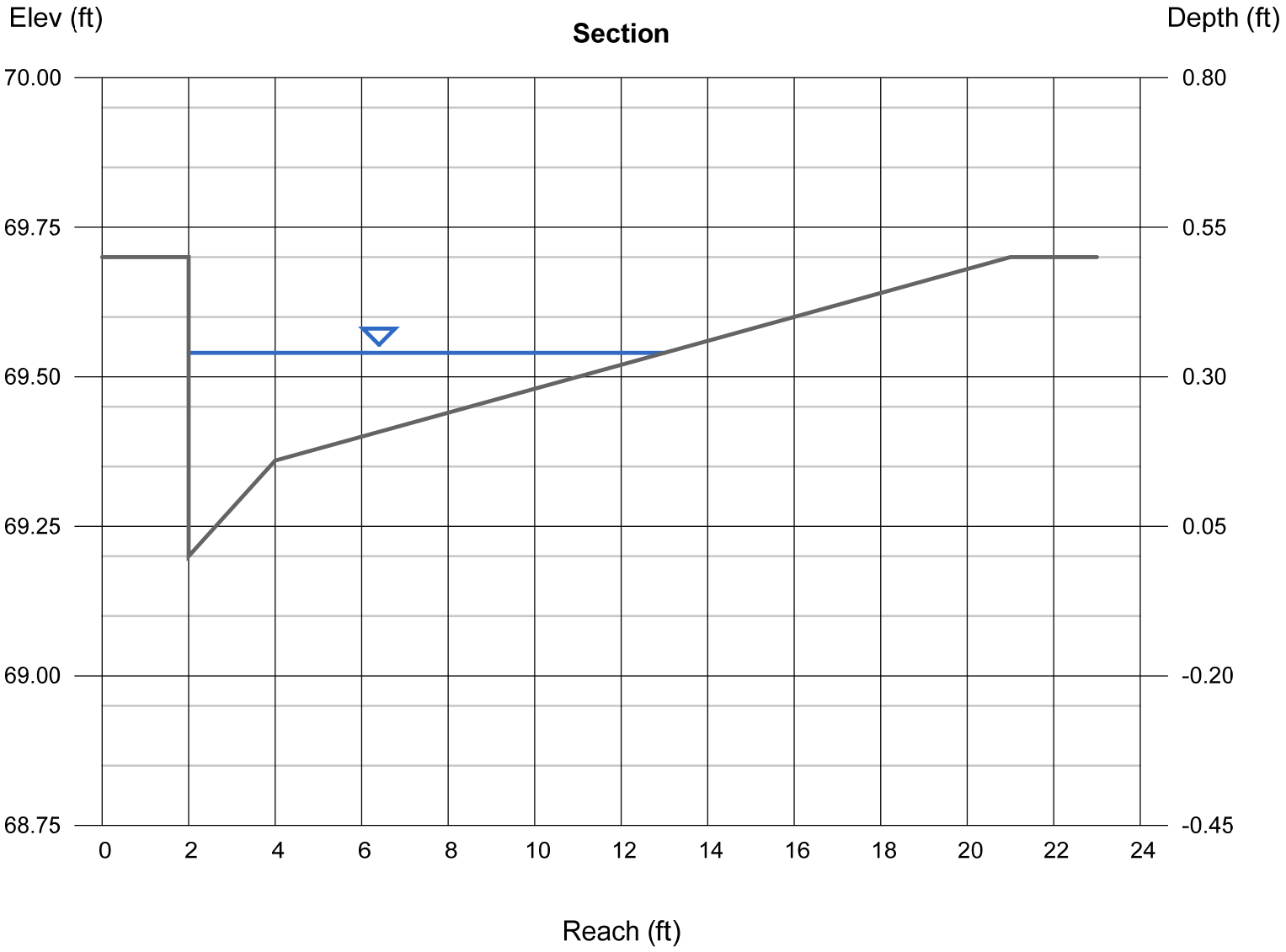
Cross Sl, Sx (ft/ft)	= 0.02
Cross Sl, Sw (ft/ft)	= 0.08
Gutter Width (ft)	= 2.00
Invert Elev (ft)	= 69.20
Slope (%)	= 6.71
N-Value	= 0.013

Calculations

Compute by:	Known Q
Known Q (cfs)	= 9.05

Highlighted

Depth (ft)	= 0.34
Q (cfs)	= 9.050
Area (sqft)	= 1.33
Velocity (ft/s)	= 6.80
Wetted Perim (ft)	= 11.35
Crit Depth, Yc (ft)	= 0.50
Spread Width (ft)	= 11.00
EGL (ft)	= 1.06



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Wednesday, Jun 7 2017

FILING 1 CONCRETE CHANNEL - FLAT - 2yr storm

Gutter

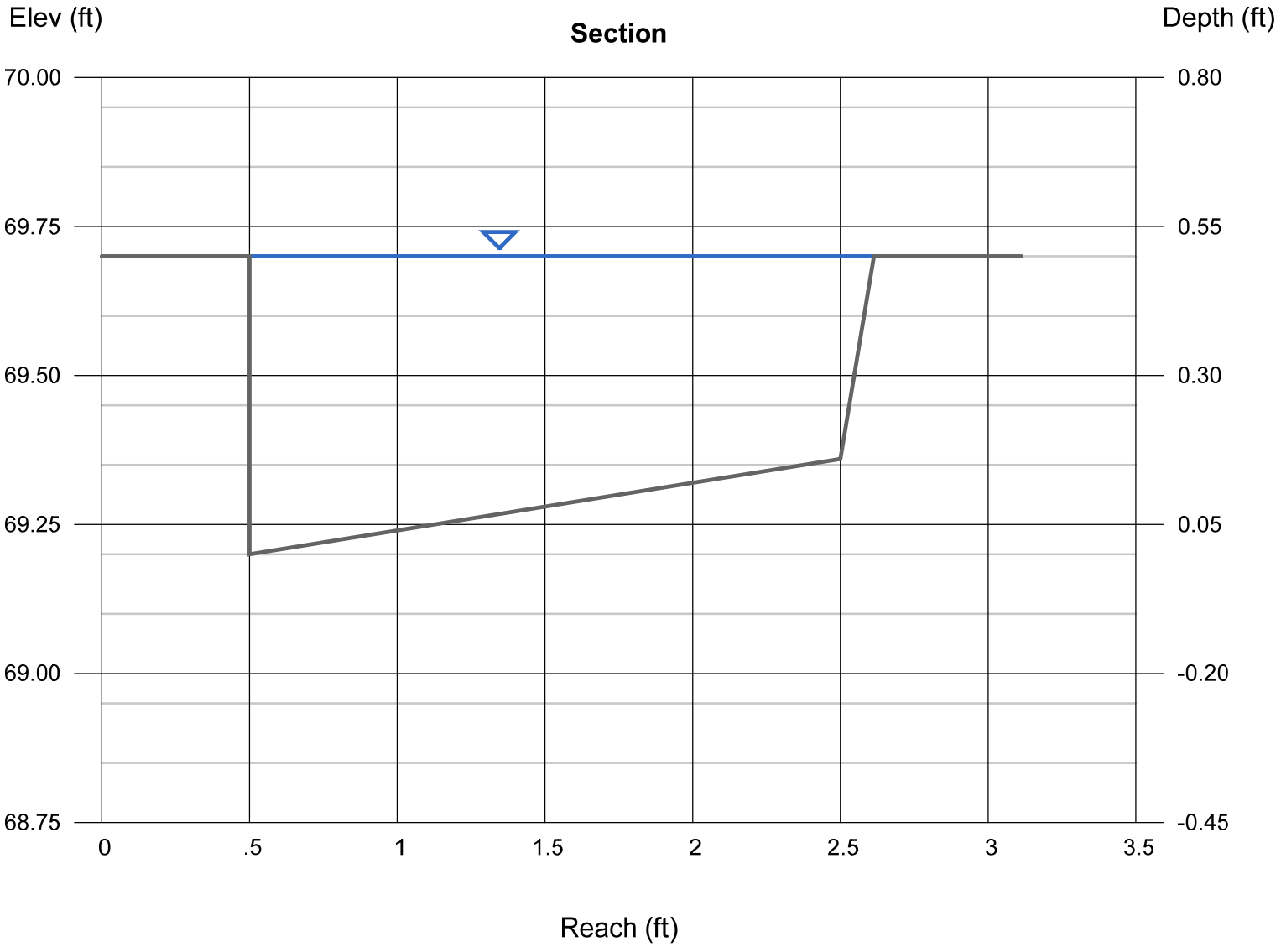
Cross Sl, Sx (ft/ft)	= 3.00
Cross Sl, Sw (ft/ft)	= 0.08
Gutter Width (ft)	= 2.00
Invert Elev (ft)	= 69.20
Slope (%)	= 1.24
N-Value	= 0.013

Calculations

Compute by:	Known Q
Known Q (cfs)	= 4.80

Highlighted

Depth (ft)	= 0.50
Q (cfs)	= 4.800
Area (sqft)	= 0.86
Velocity (ft/s)	= 5.59
Wetted Perim (ft)	= 2.86
Crit Depth, Yc (ft)	= 0.64
Spread Width (ft)	= 2.11
EGL (ft)	= 0.99



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Friday, Dec 11 2015

44' ROW Elysium Drive - VERY STEEP - 2yr storm Section C Drainage Map

User-defined

Invert Elev (ft)	= 99.40
Slope (%)	= 13.00
N-Value	= 0.014

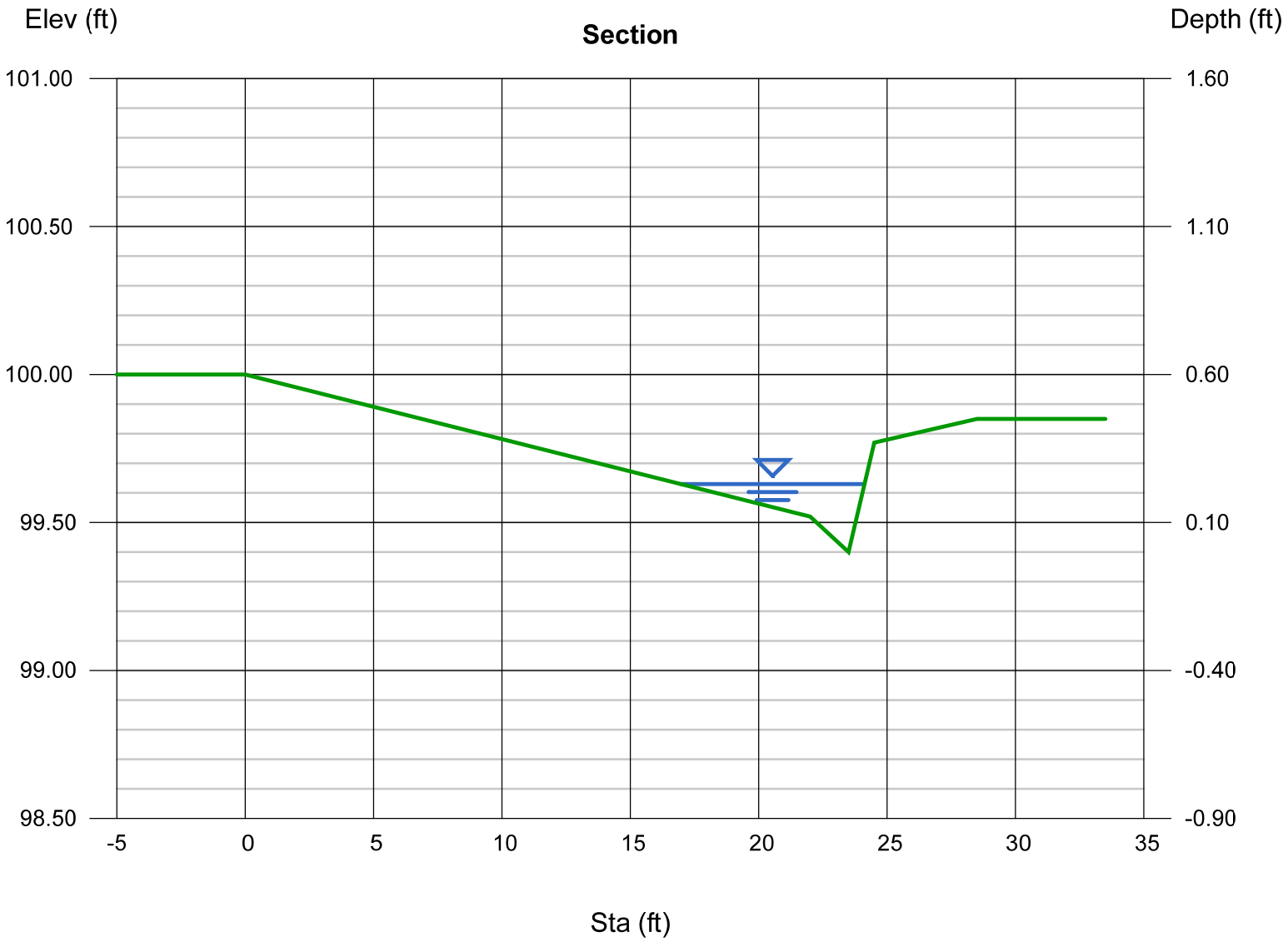
Calculations

Compute by:	Known Q
Known Q (cfs)	= 4.00

Highlighted

Depth (ft)	= 0.23
Q (cfs)	= 4.000
Area (sqft)	= 0.60
Velocity (ft/s)	= 6.62
Wetted Perim (ft)	= 7.21
Crit Depth, Yc (ft)	= 0.36
Top Width (ft)	= 7.16
EGL (ft)	= 0.91

(Sta, El, n)-(Sta, El, n)... (-5.00, 101.00)-(22.50, 99.54, 0.014)-(23.50, 99.40, 0.014)-(24.50, 99.77, 0.014)-(28.50, 99.85, 0.014)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Friday, Dec 11 2015

44' ROW Aiguille Drive - FLAT - 2yr storm Section D Drainage Map

User-defined

Invert Elev (ft)	= 97.70
Slope (%)	= 1.50
N-Value	= 0.025

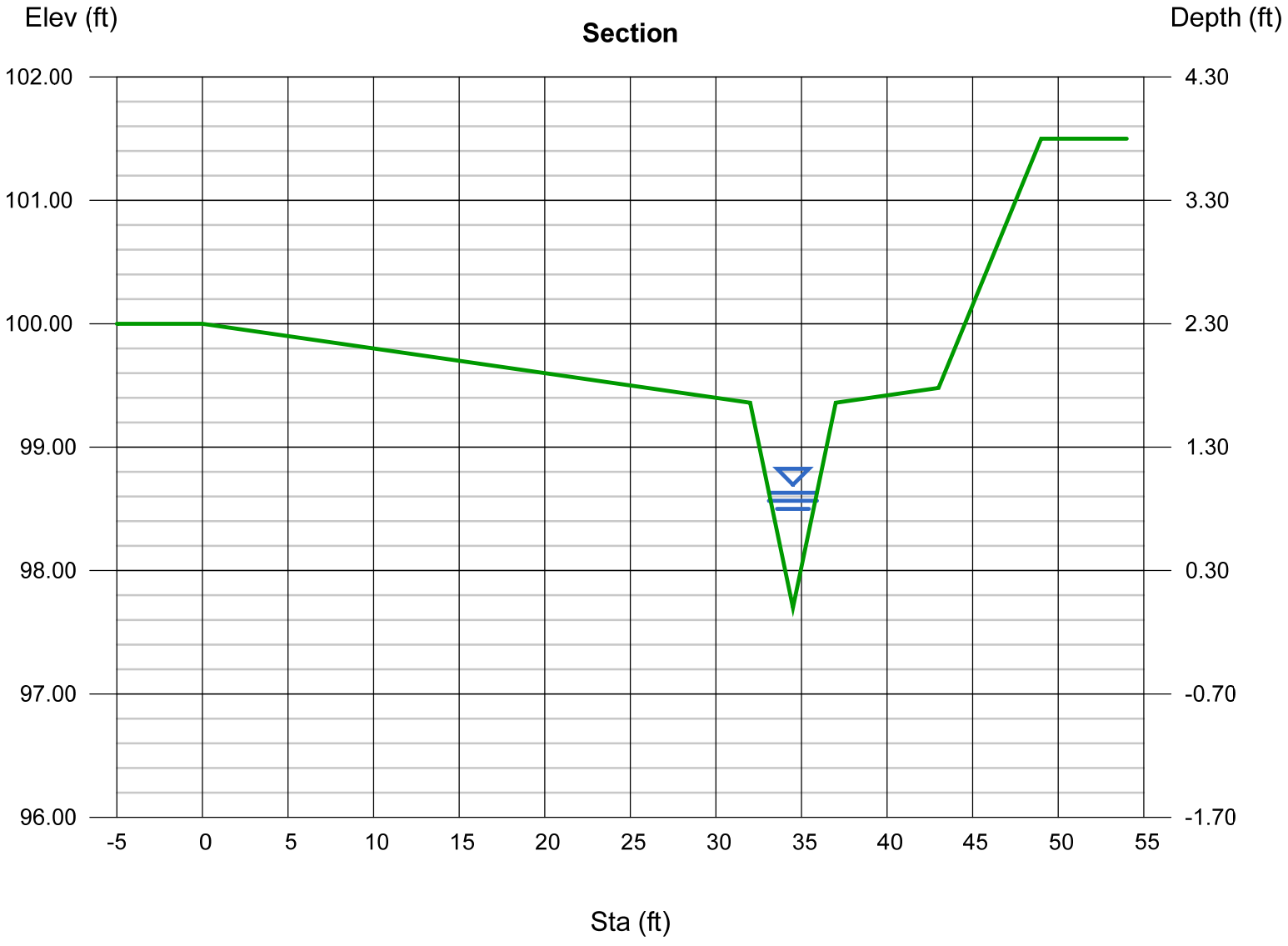
Calculations

Compute by:	Known Q
Known Q (cfs)	= 5.00

Highlighted

Depth (ft)	= 0.93
Q (cfs)	= 5.000
Area (sqft)	= 1.30
Velocity (ft/s)	= 3.84
Wetted Perim (ft)	= 3.36
Crit Depth, Yc (ft)	= 0.93
Top Width (ft)	= 2.80
EGL (ft)	= 1.16

(Sta, El, n)-(Sta, El, n)... (-5.00, 102.00)-(2.00, 99.90, 0.014)-(32.00, 99.36, 0.014)-(34.50, 97.70, 0.025)-(37.00, 99.36, 0.025)-(43.00, 99.48, 0.014)-(49.00, 101.50, 0.025)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Friday, Dec 11 2015

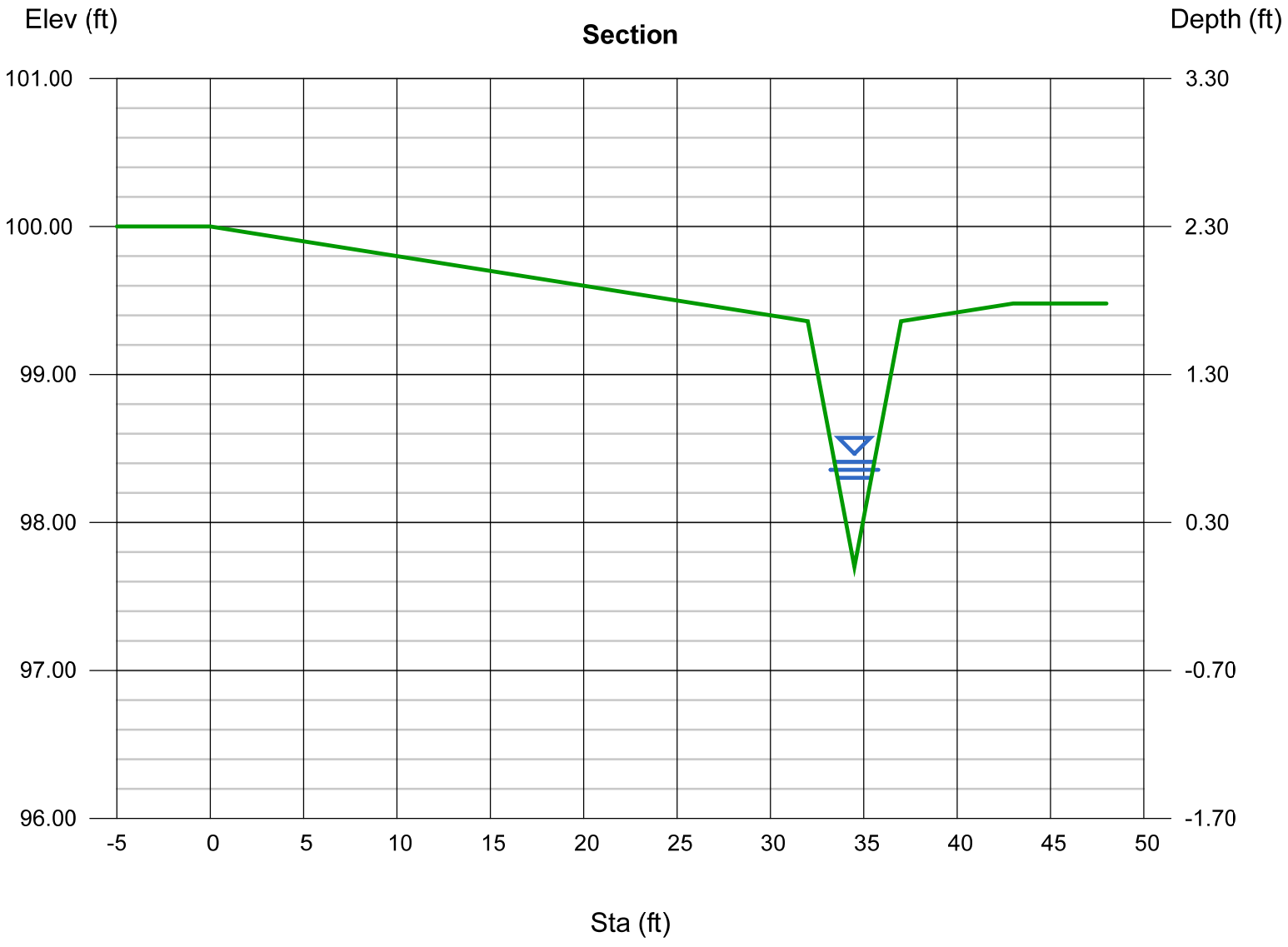
44' ROW Aiguille Drive - STEEP - 2yr storm Section E Drainage Map

User-defined	
Invert Elev (ft)	= 97.70
Slope (%)	= 9.00
N-Value	= 0.030

Calculations	
Compute by:	Known Q
Known Q (cfs)	= 5.00

Highlighted	
Depth (ft)	= 0.71
Q (cfs)	= 5.000
Area (sqft)	= 0.76
Velocity (ft/s)	= 6.59
Wetted Perim (ft)	= 2.57
Crit Depth, Yc (ft)	= 0.93
Top Width (ft)	= 2.14
EGL (ft)	= 1.38

(Sta, El, n)-(Sta, El, n)... (-5.00, 101.00)-(2.00, 99.98, 0.014)-(32.00, 99.36, 0.014)-(34.50, 97.70, 0.030)-(37.00, 99.36, 0.030)-(43.00, 99.48, 0.014)



Channel Report

Hydraflow Express Extension for AutoCAD® Civil 3D® 2010 by Autodesk, Inc. Friday, Dec 11 2015

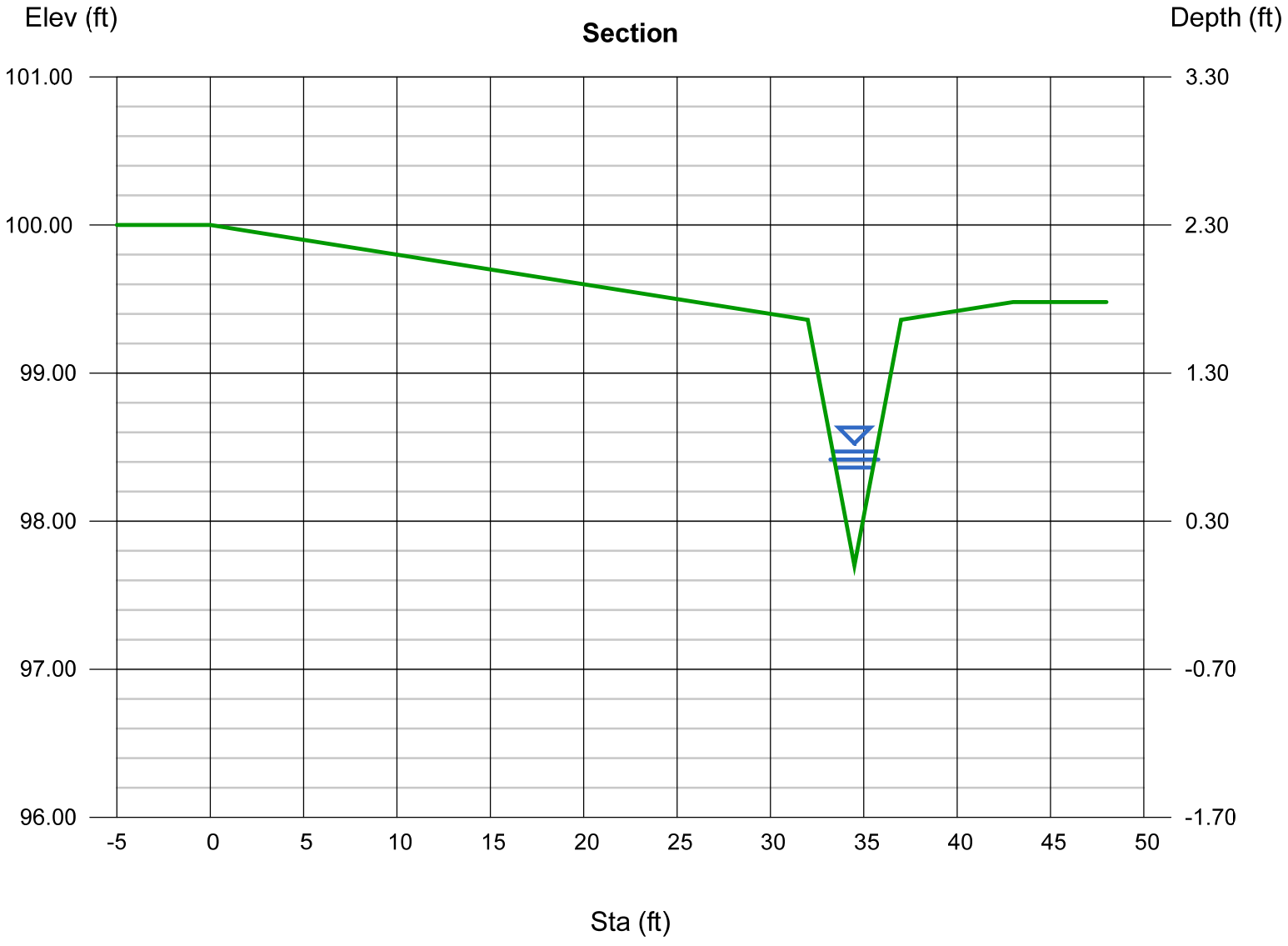
44' ROW Hidden Court - VERY STEEP - 2yr storm Section F Drainage Map

User-defined	
Invert Elev (ft)	= 97.70
Slope (%)	= 12.00
N-Value	= 0.035

Calculations	
Compute by:	Known Q
Known Q (cfs)	= 6.00

Highlighted	
Depth (ft)	= 0.77
Q (cfs)	= 6.000
Area (sqft)	= 0.89
Velocity (ft/s)	= 6.72
Wetted Perim (ft)	= 2.78
Crit Depth, Yc (ft)	= 1.00
Top Width (ft)	= 2.32
EGL (ft)	= 1.47

(Sta, El, n)-(Sta, El, n)... (-5.00, 101.00)-(2.00, 99.96, 0.014)-(32.00, 99.36, 0.014)-(34.50, 97.70, 0.035)-(37.00, 99.36, 0.035)-(43.00, 99.48, 0.014)



HGEGL2y

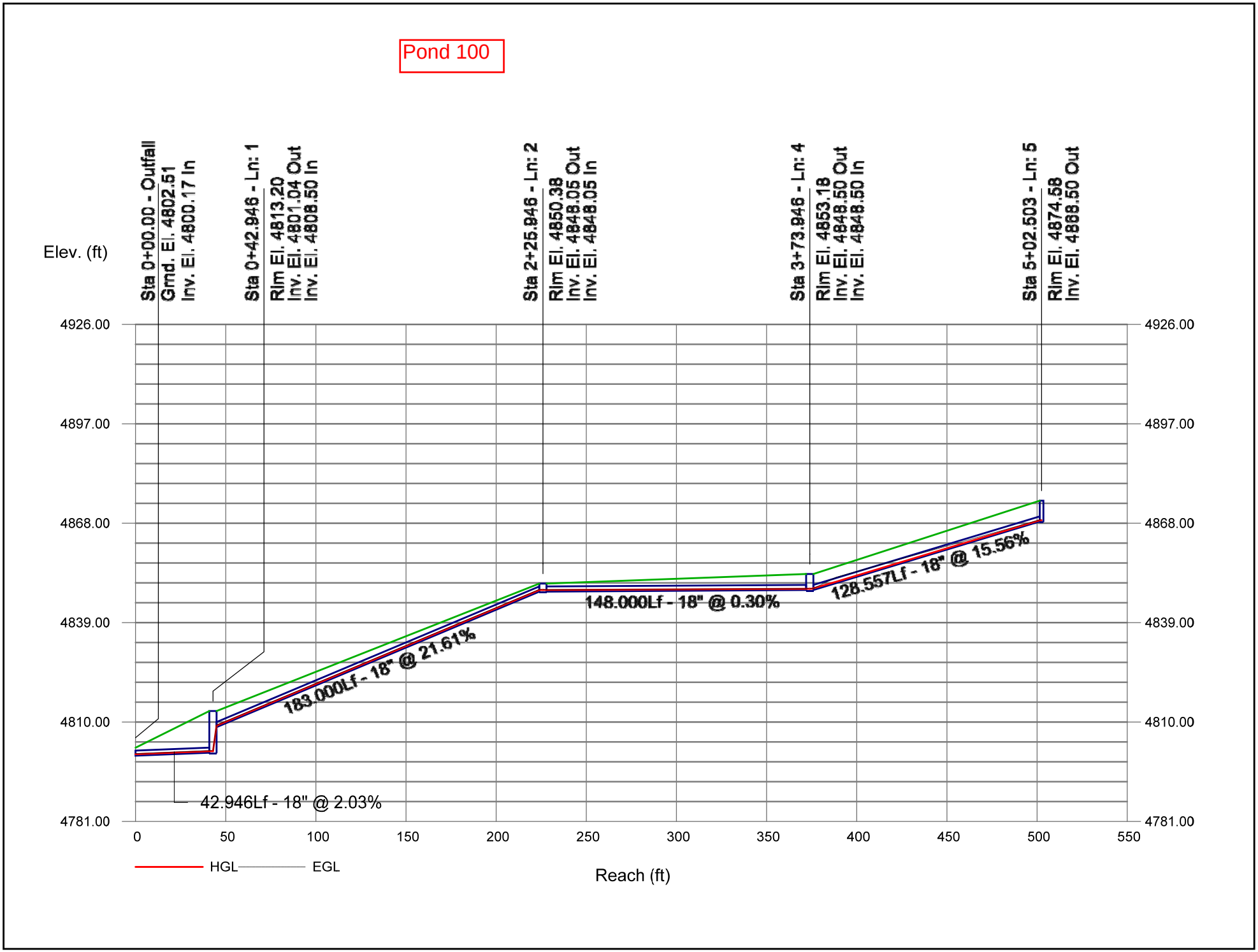
Line No.	Line ID	Line Size (in)	Known Q (cfs)	Invert Dn (ft)	Gnd/Rim El Dn (ft)	Invert Up (ft)	Gnd/Rim El Up (ft)	Capac Full (cfs)	Flow Rate (cfs)	Line Length (ft)	Vel Ave (ft/s)	HGL Up (ft)	HGL Dn (ft)	EGL Up (ft)	EGL Dn (ft)	
1	1	18	0.00	4800.17	4802.51	4801.04	4813.20	14.95	1.47	42.946	3.17	4801.50	4800.63	4801.66	4800.79	
2	2	18	0.00	4808.50	4813.20	4848.05	4850.38	48.82	1.47	183.000	3.17	4848.51	4808.96	4848.67	4809.12	
3	3	18	0.62	4856.50	4850.38	4870.50	4879.05	52.04	0.62	57.005	2.46	4870.80	4856.80	4870.90	4856.90	
4	4	18	0.00	4848.05	4850.38	4848.50	4853.18	5.79	0.85	148.000	2.20	4848.87	4848.51	4848.97	4848.57	
5	5	18	0.85	4848.50	4853.18	4868.50	4874.58	41.42	0.85	128.557	2.55	4868.85 j	4848.88	4868.97	4848.97	
6	6	18	0.00	4747.30	4749.63	4747.44	4752.05	9.03	4.94	18.945	4.77	4748.29	4748.15	4748.65	4748.51	
7	7	18	4.94	4748.73	4752.05	4761.66	4766.26	45.25	4.94	69.639	4.79	4762.51	4749.58	4762.87	4749.94	
8	8	18	1.43	4739.00	4741.33	4741.90	4746.57	21.30	6.65	70.493	5.41	4742.88	4739.98	4743.34	4740.44	
9	9	18	3.44	4741.90	4746.57	4743.22	4747.46	14.94	3.72	65.215	3.67	4743.96 j	4742.88	4744.25	4743.03	
10	10	18	0.28	4743.22	4747.46	4748.33	4753.73	22.27	0.28	113.583	1.15	4748.53 j	4743.96	4748.59	4743.96	
11	11	18	1.50	4741.90	4746.57	4748.41	4754.73	19.58	1.50	187.192	2.21	4748.88 j	4742.88	4749.04	4742.91	

Project File: Pinnacle-AllFilings-2yr.stm | Number of lines: 11 | Date: 6/7/2017

NOTES: ** Critical depth

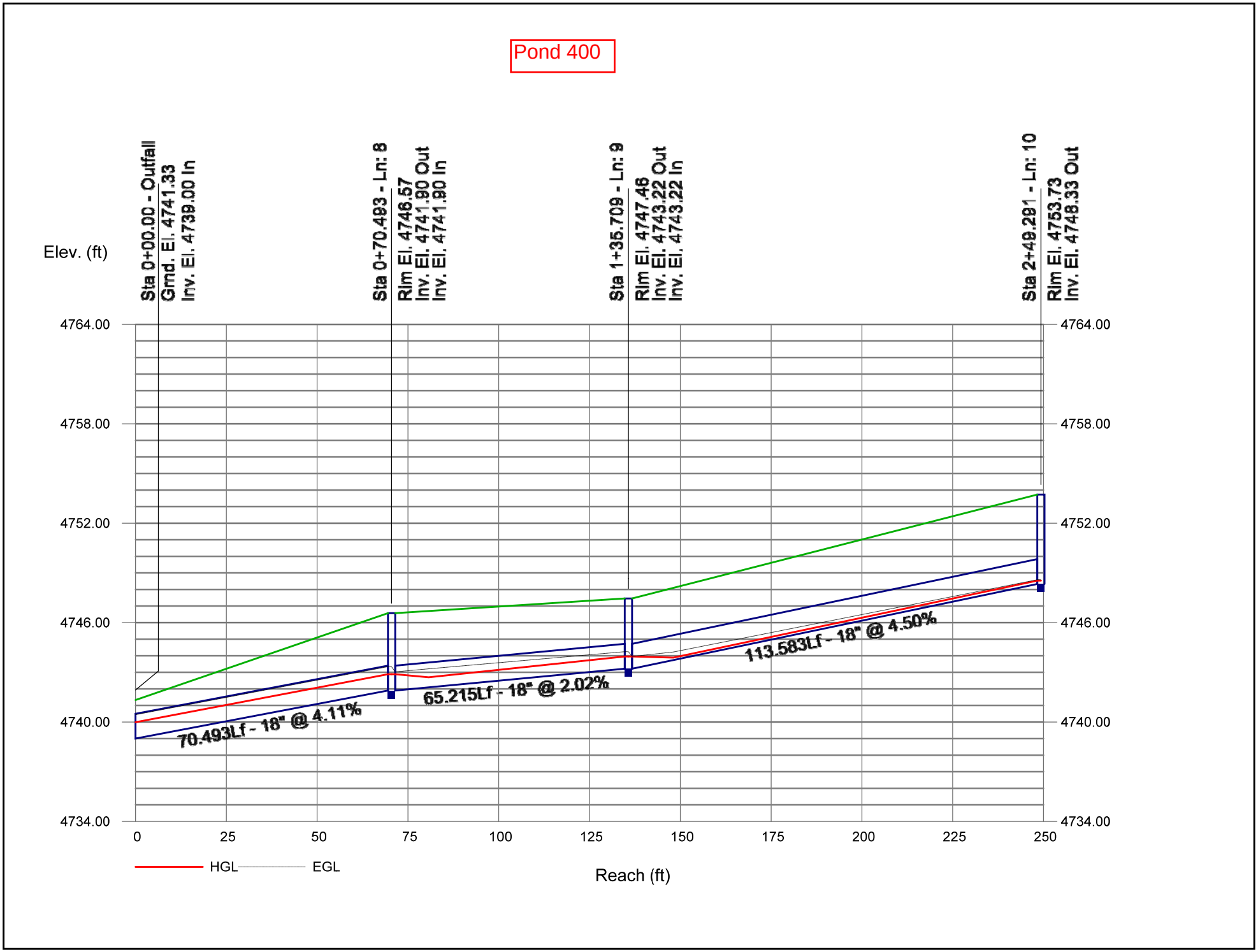
Storm Sewer Profile

Proj. file: Pinnacle-AllFilings-2yr.stm



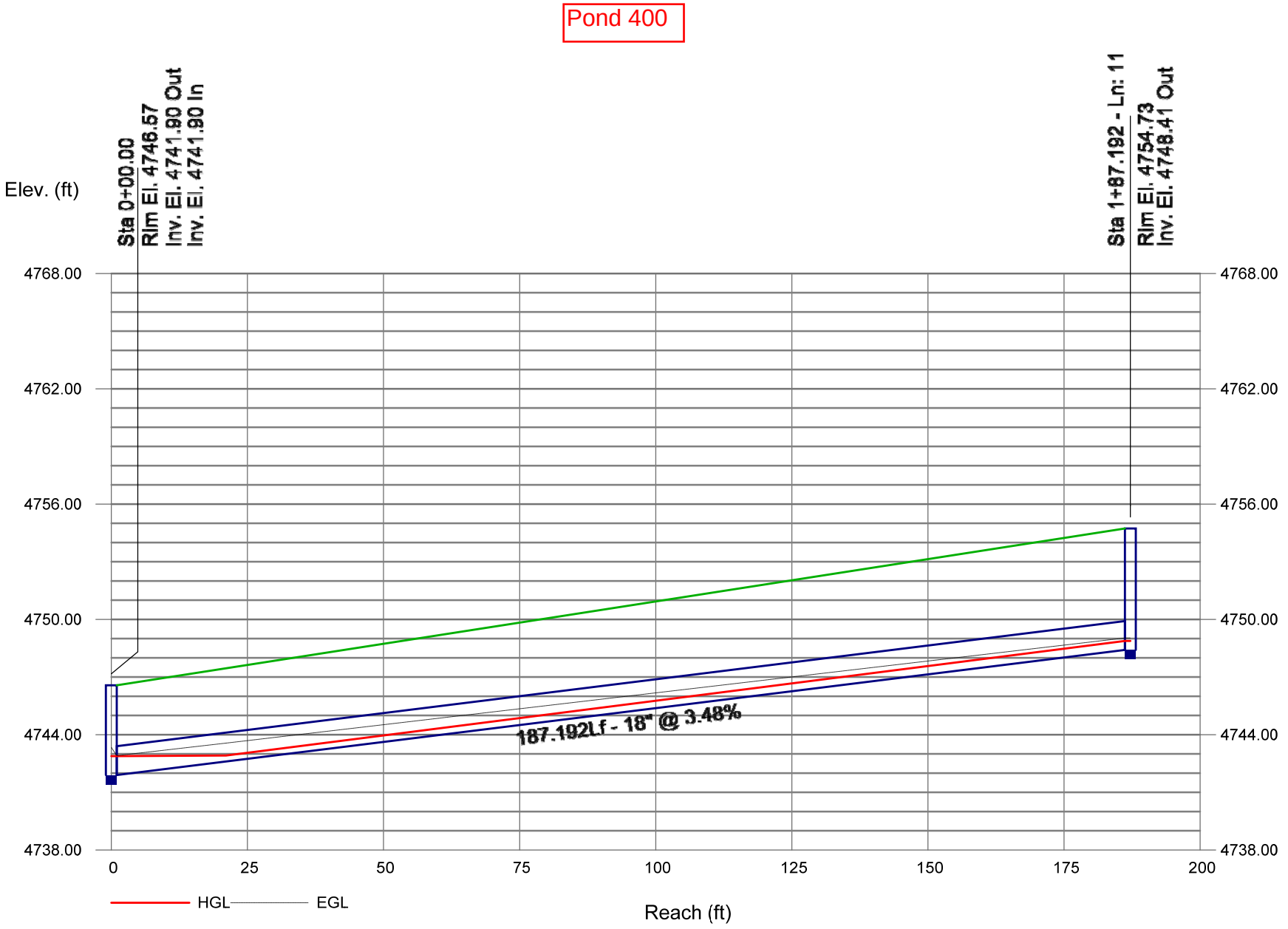
Storm Sewer Profile

Proj. file: Pinnacle-AllFilings-2yr.stm



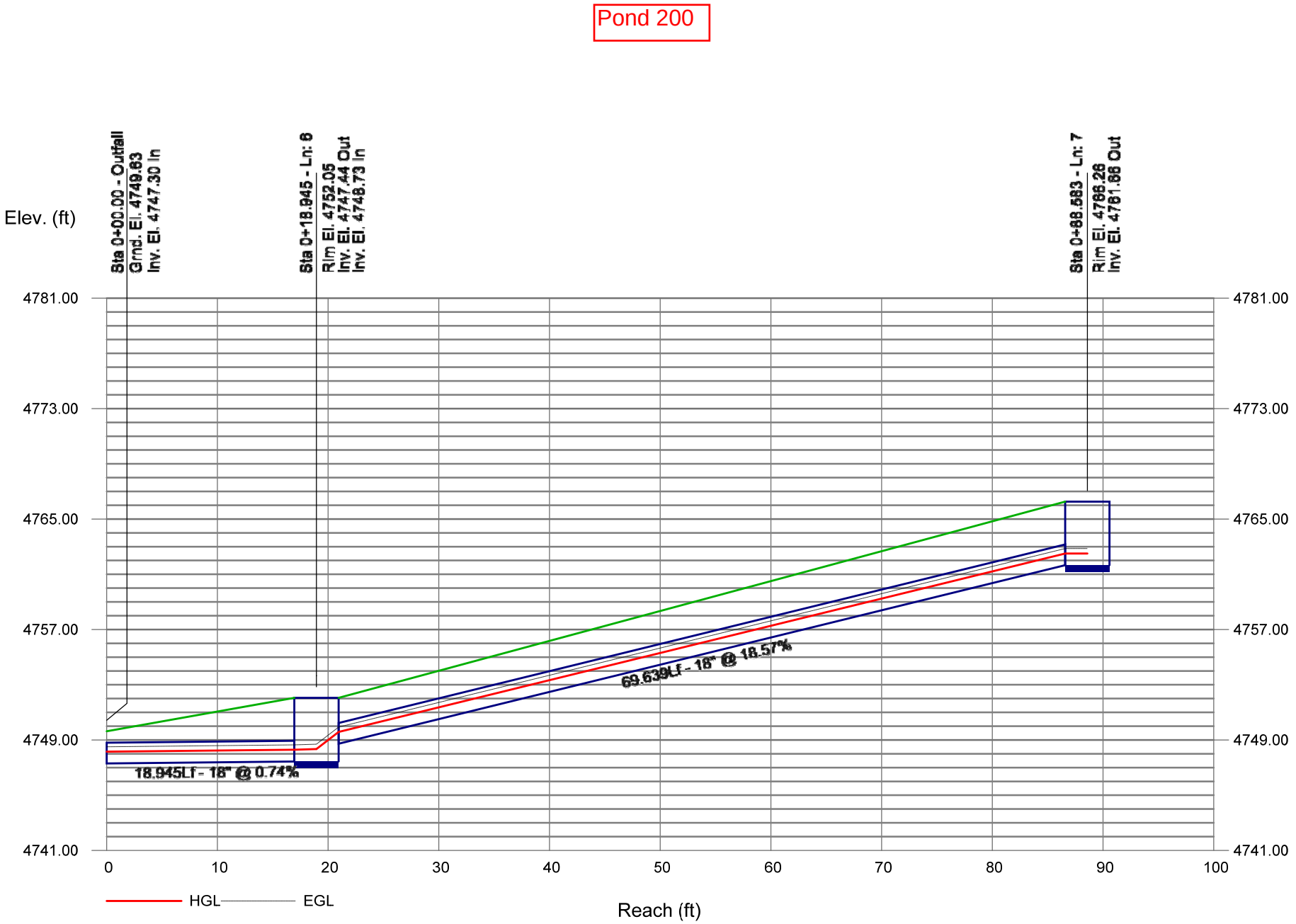
Storm Sewer Profile

Proj. file: Pinnacle-AllFilings-2yr.stm

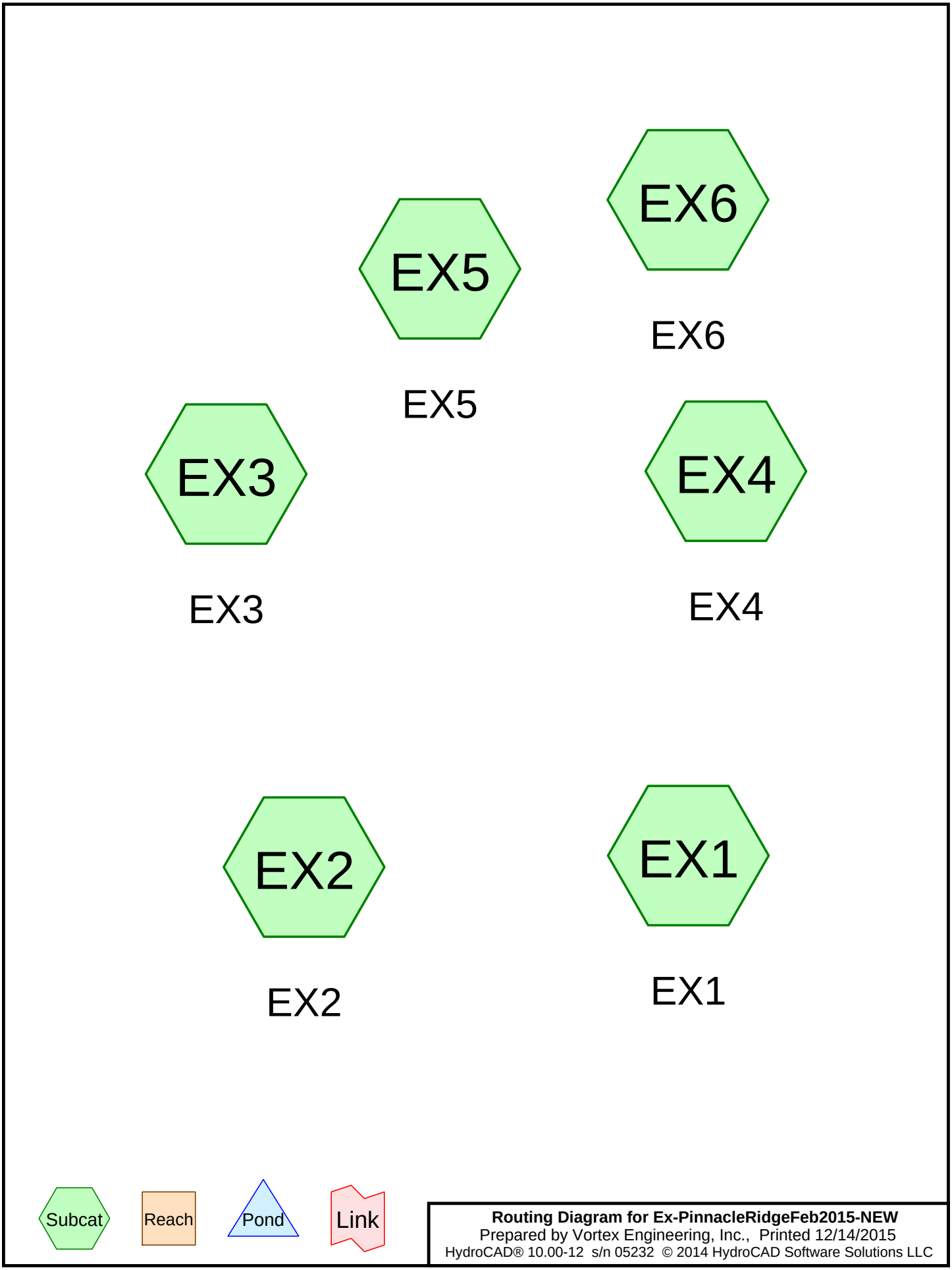


Storm Sewer Profile

Proj. file: Pinnacle-AllFilings-2yr.stm



Appendix E – HYDROCAD Report



Routing Diagram for Ex-PinnacleRidgeFeb2015-NEW
Prepared by Vortex Engineering, Inc., Printed 12/14/2015
HydroCAD® 10.00-12 s/n 05232 © 2014 HydroCAD Software Solutions LLC

Summary for Subcatchment EX1: EX1

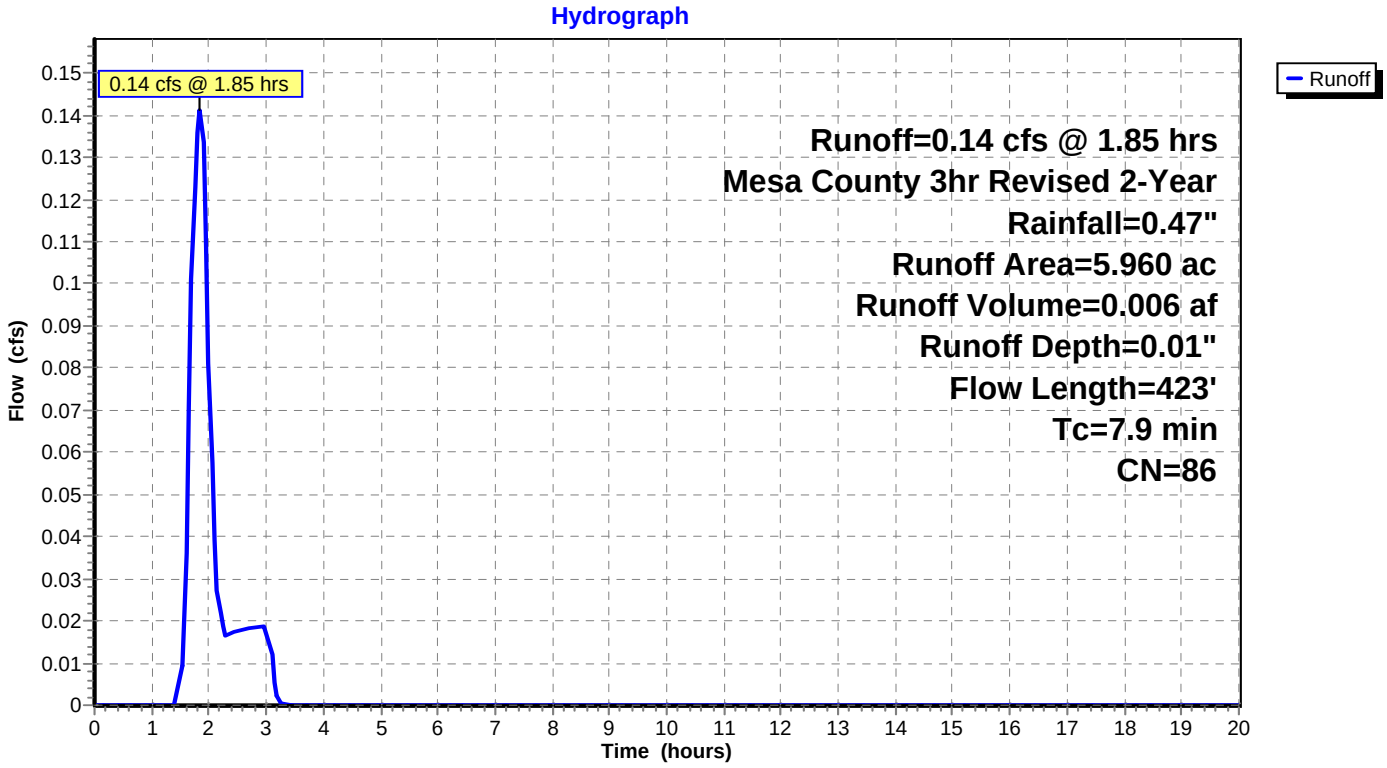
Runoff = 0.14 cfs @ 1.85 hrs, Volume= 0.006 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
5.960	86	Desert shrub range, Fair, HSG D
5.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0200	0.26		**Sheet Flow,** n= 0.026 P2= 0.46"
1.5	323	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
7.9	423	Total			

Subcatchment EX1: EX1



Summary for Subcatchment EX2: EX2

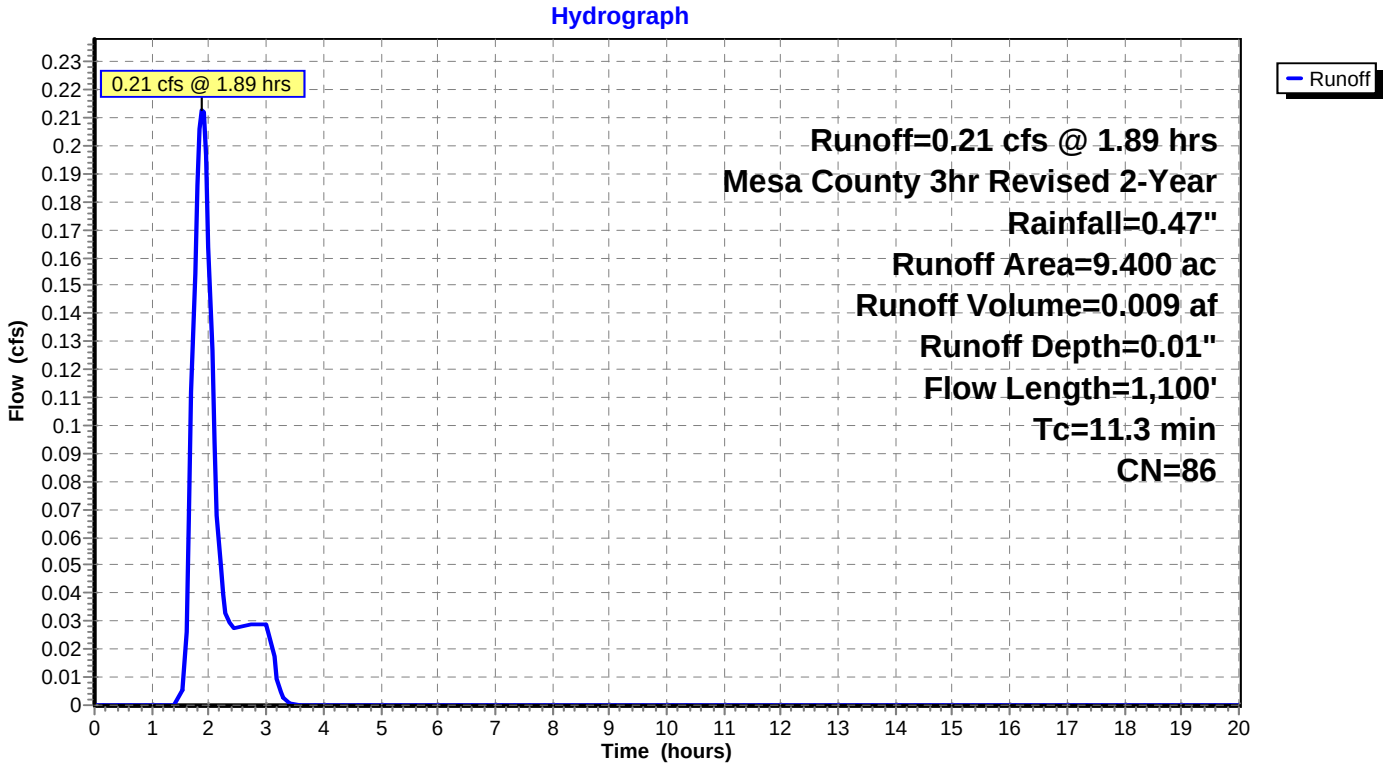
Runoff = 0.21 cfs @ 1.89 hrs, Volume= 0.009 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
9.400	86	Desert shrub range, Fair, HSG D
9.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	100	0.0200	0.25		**Sheet Flow,** n= 0.028 P2= 0.46"
4.6	1,000	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
11.3	1,100	Total			

Subcatchment EX2: EX2



Summary for Subcatchment EX3: EX3

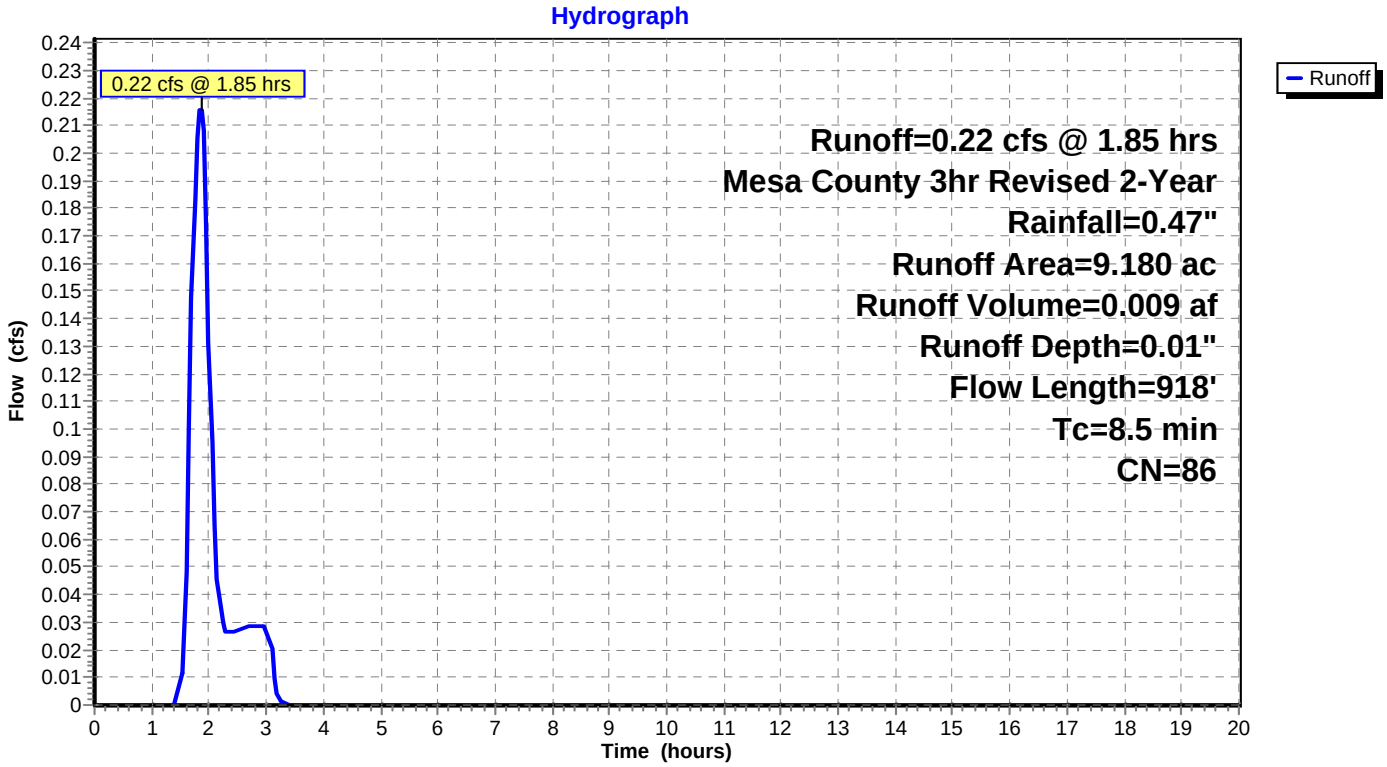
Runoff = 0.22 cfs @ 1.85 hrs, Volume= 0.009 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
9.180	86	Desert shrub range, Fair, HSG D
9.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	100	0.1600	0.57		**Sheet Flow,** n= 0.028 P2= 0.46"
2.6	466	0.1800	2.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.0	352	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	918	Total			

Subcatchment EX3: EX3



Summary for Subcatchment EX4: EX4

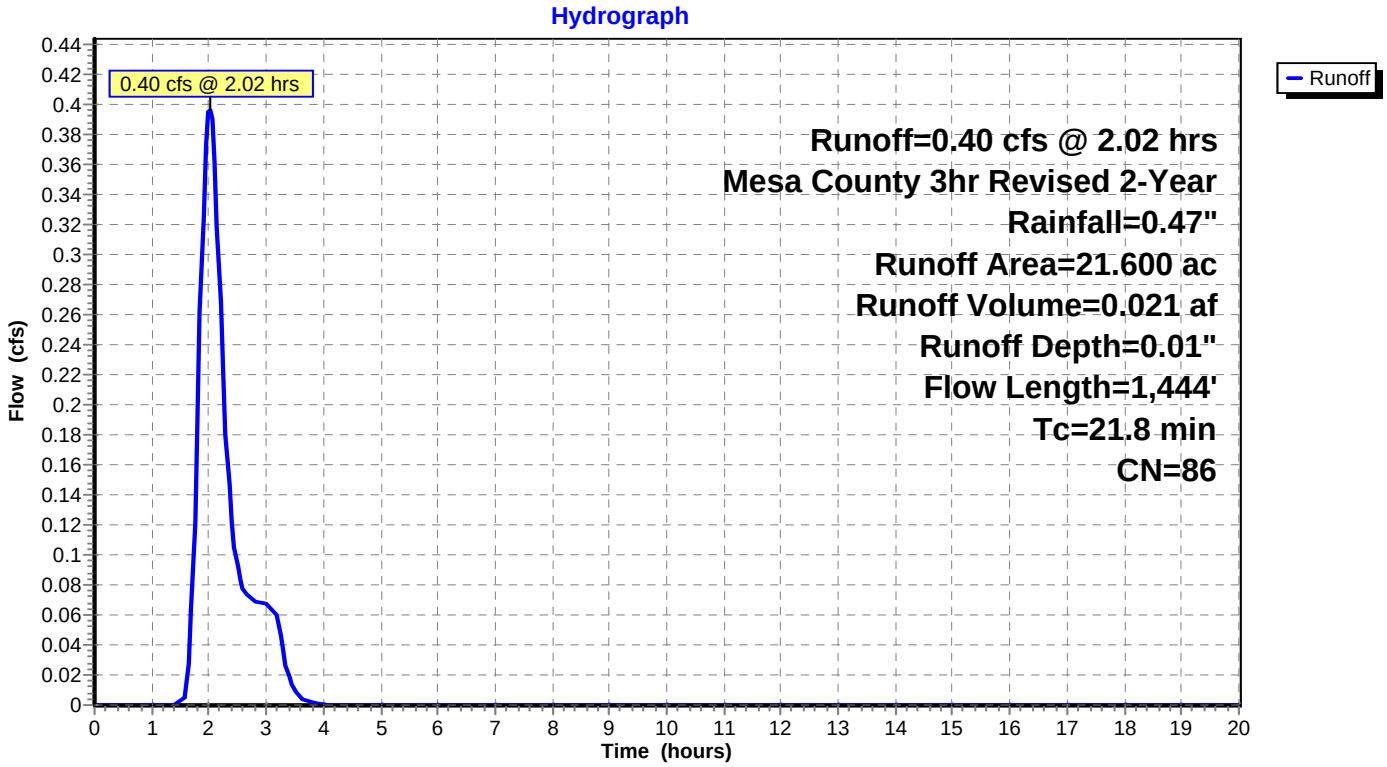
Runoff = 0.40 cfs @ 2.02 hrs, Volume= 0.021 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
21.600	86	Desert shrub range, Fair, HSG D
21.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0	192	0.0100	0.21		**Sheet Flow,** n= 0.028 P2= 0.46"
0.7	360	0.2900	8.67		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.1	892	0.0600	2.45		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
21.8	1,444	Total			

Subcatchment EX4: EX4



Summary for Subcatchment EX5: EX5

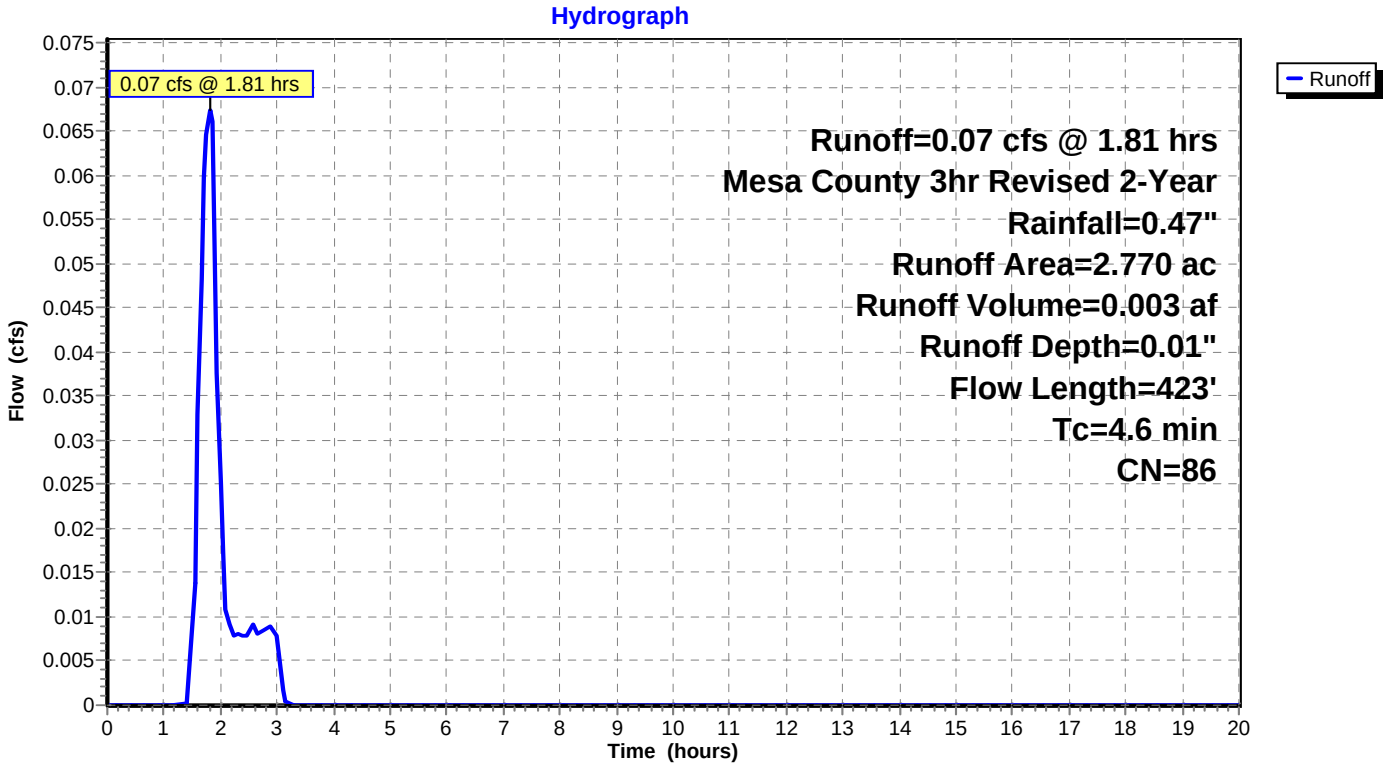
Runoff = 0.07 cfs @ 1.81 hrs, Volume= 0.003 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
2.770	86	Desert shrub range, Fair, HSG D
2.770		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.2500	0.68		**Sheet Flow,** n= 0.028 P2= 0.46"
2.1	323	0.1300	2.52		**Shallow Concentrated Flow,** Kv= 7.0 fps
4.6	423	Total			

Subcatchment EX5: EX5



Summary for Subcatchment EX6: EX6

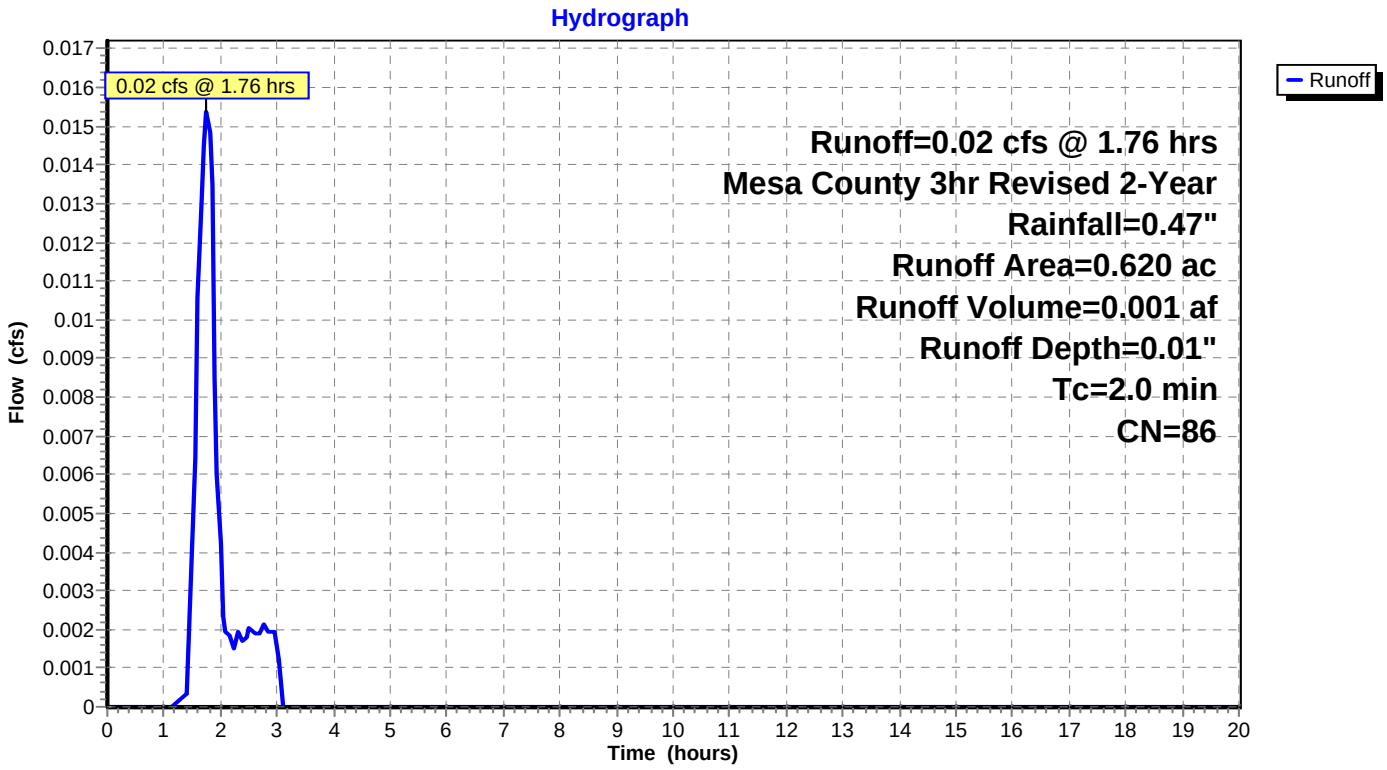
Runoff = 0.02 cfs @ 1.76 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 2-Year Rainfall=0.47"

Area (ac)	CN	Description
0.620	86	Desert shrub range, Fair, HSG D
0.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment EX6: EX6



Summary for Subcatchment EX1: EX1

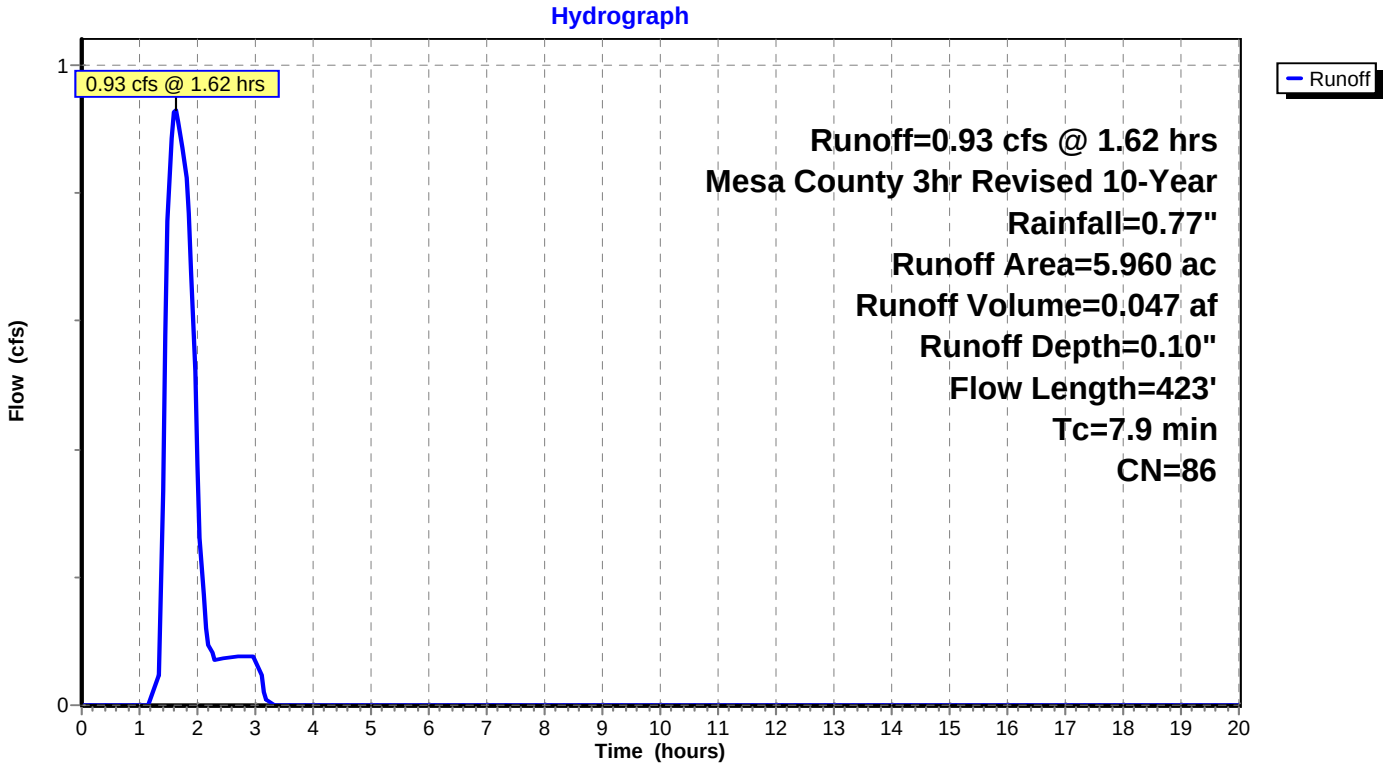
Runoff = 0.93 cfs @ 1.62 hrs, Volume= 0.047 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
5.960	86	Desert shrub range, Fair, HSG D
5.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0200	0.26		**Sheet Flow,** n= 0.026 P2= 0.46"
1.5	323	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
7.9	423	Total			

Subcatchment EX1: EX1



Summary for Subcatchment EX2: EX2

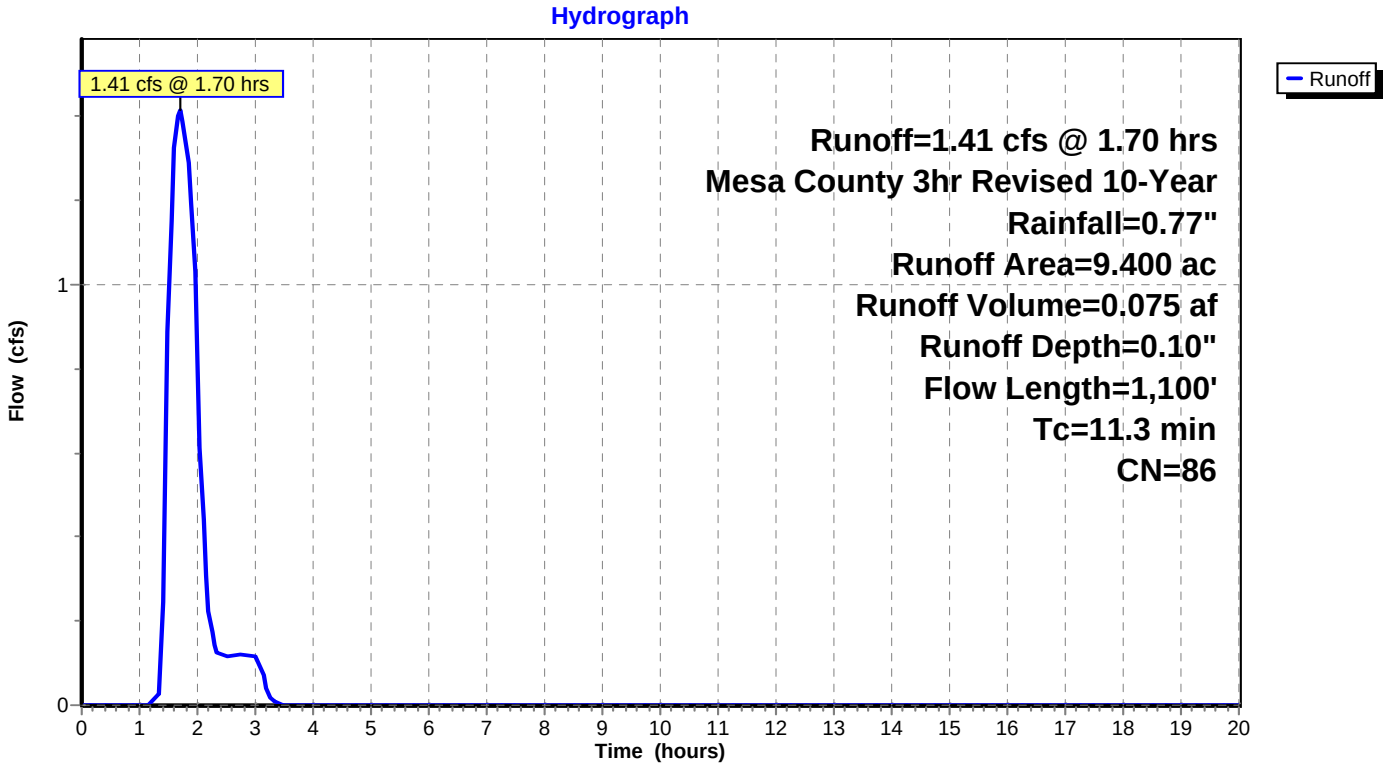
Runoff = 1.41 cfs @ 1.70 hrs, Volume= 0.075 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
9.400	86	Desert shrub range, Fair, HSG D
9.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	100	0.0200	0.25		**Sheet Flow,** n= 0.028 P2= 0.46"
4.6	1,000	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
11.3	1,100	Total			

Subcatchment EX2: EX2



Summary for Subcatchment EX3: EX3

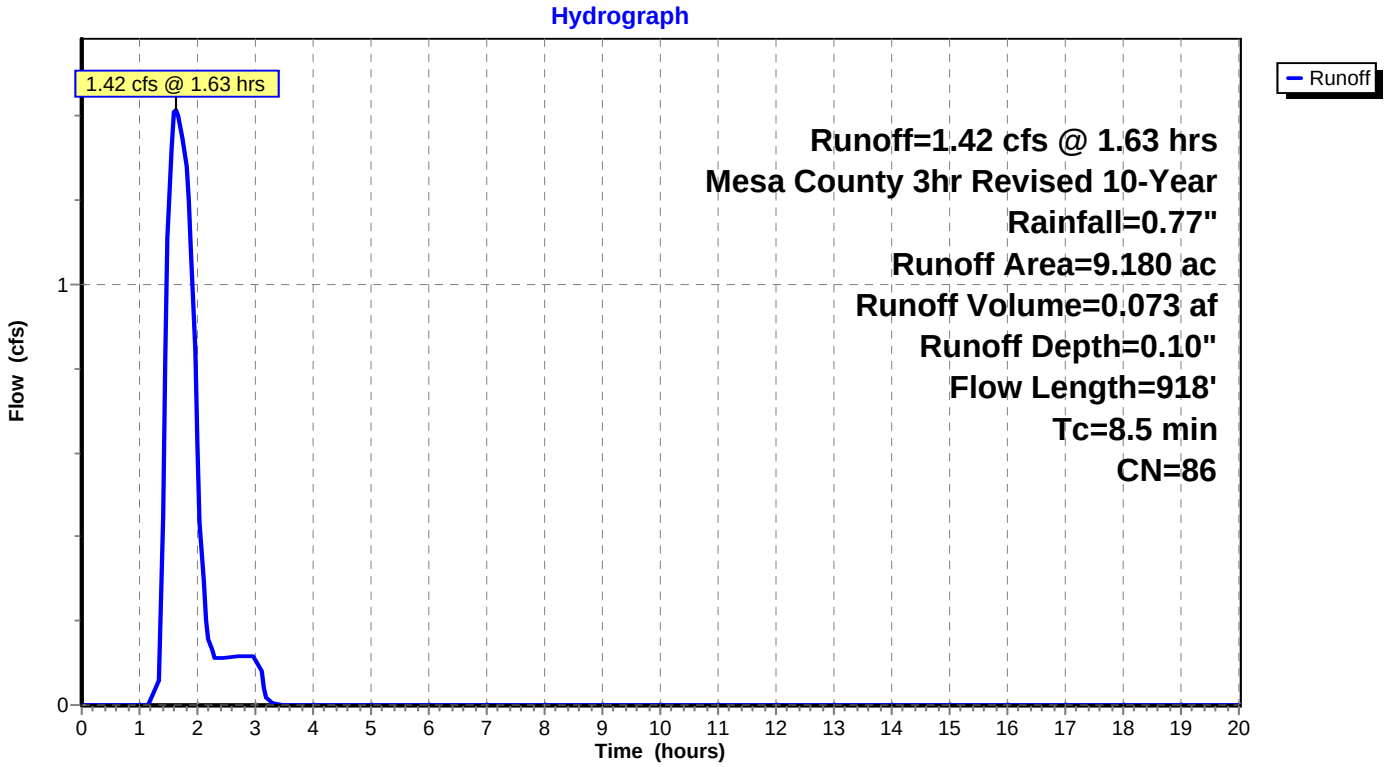
Runoff = 1.42 cfs @ 1.63 hrs, Volume= 0.073 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
9.180	86	Desert shrub range, Fair, HSG D
9.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	100	0.1600	0.57		**Sheet Flow,** n= 0.028 P2= 0.46"
2.6	466	0.1800	2.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.0	352	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	918	Total			

Subcatchment EX3: EX3



Summary for Subcatchment EX4: EX4

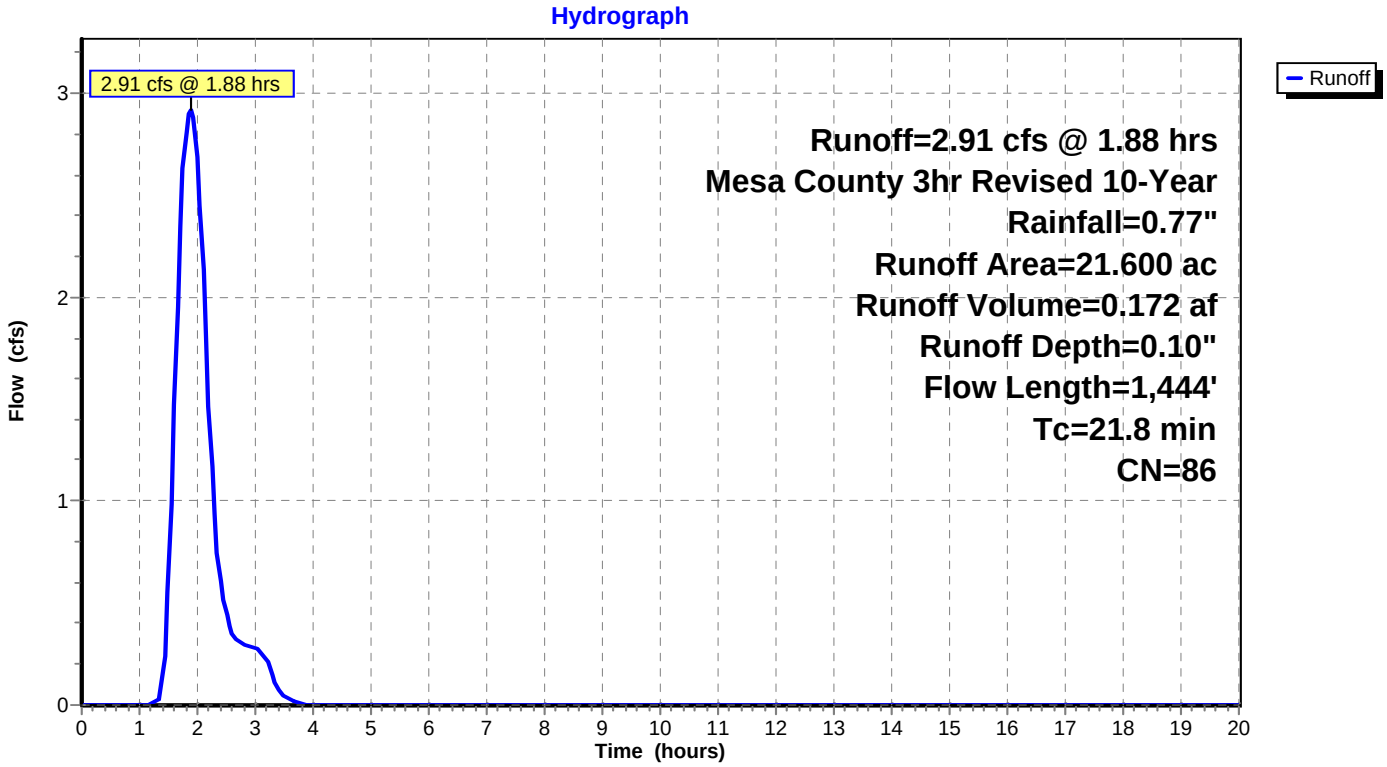
Runoff = 2.91 cfs @ 1.88 hrs, Volume= 0.172 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
21.600	86	Desert shrub range, Fair, HSG D
21.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0	192	0.0100	0.21		**Sheet Flow,** n= 0.028 P2= 0.46"
0.7	360	0.2900	8.67		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.1	892	0.0600	2.45		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
21.8	1,444	Total			

Subcatchment EX4: EX4



Summary for Subcatchment EX5: EX5

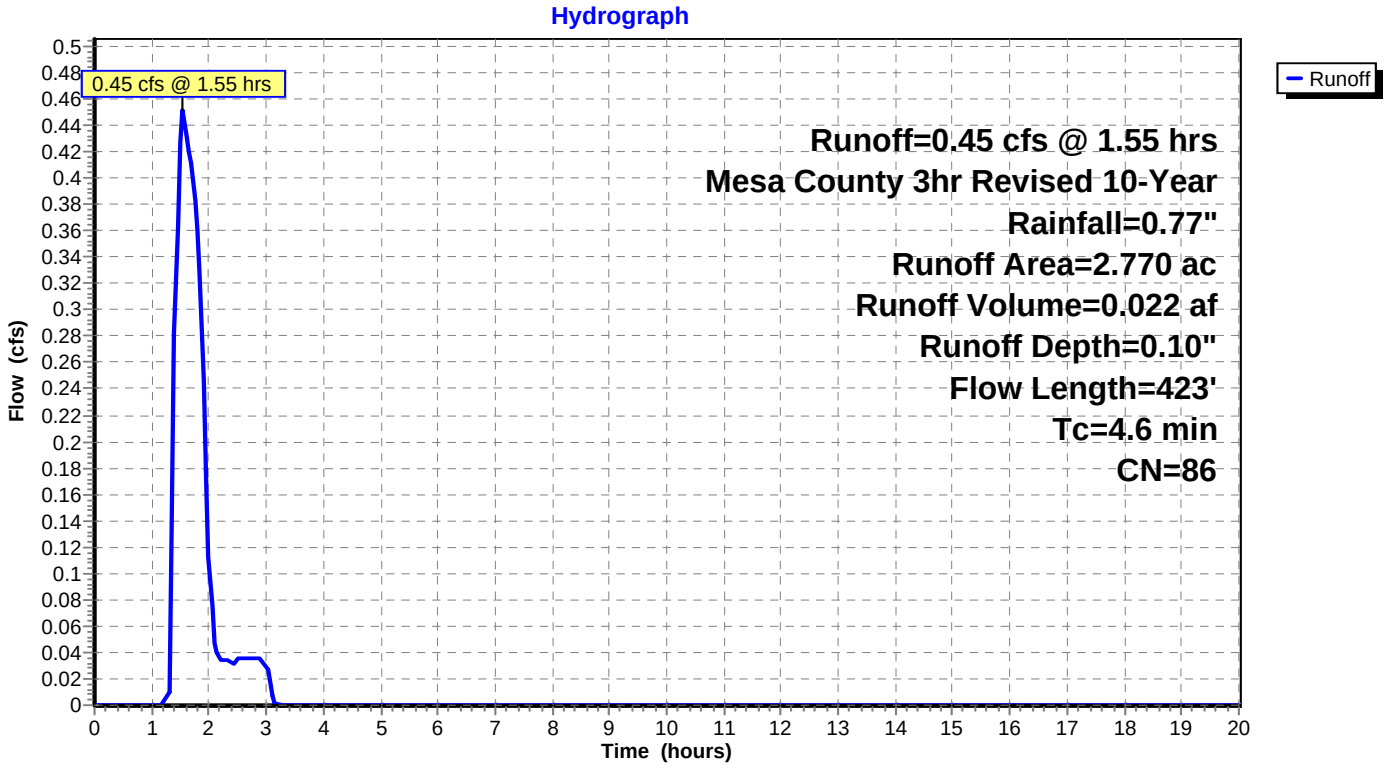
Runoff = 0.45 cfs @ 1.55 hrs, Volume= 0.022 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
2.770	86	Desert shrub range, Fair, HSG D
2.770		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.2500	0.68		**Sheet Flow,** n= 0.028 P2= 0.46"
2.1	323	0.1300	2.52		**Shallow Concentrated Flow,** Kv= 7.0 fps
4.6	423	Total			

Subcatchment EX5: EX5



Summary for Subcatchment EX6: EX6

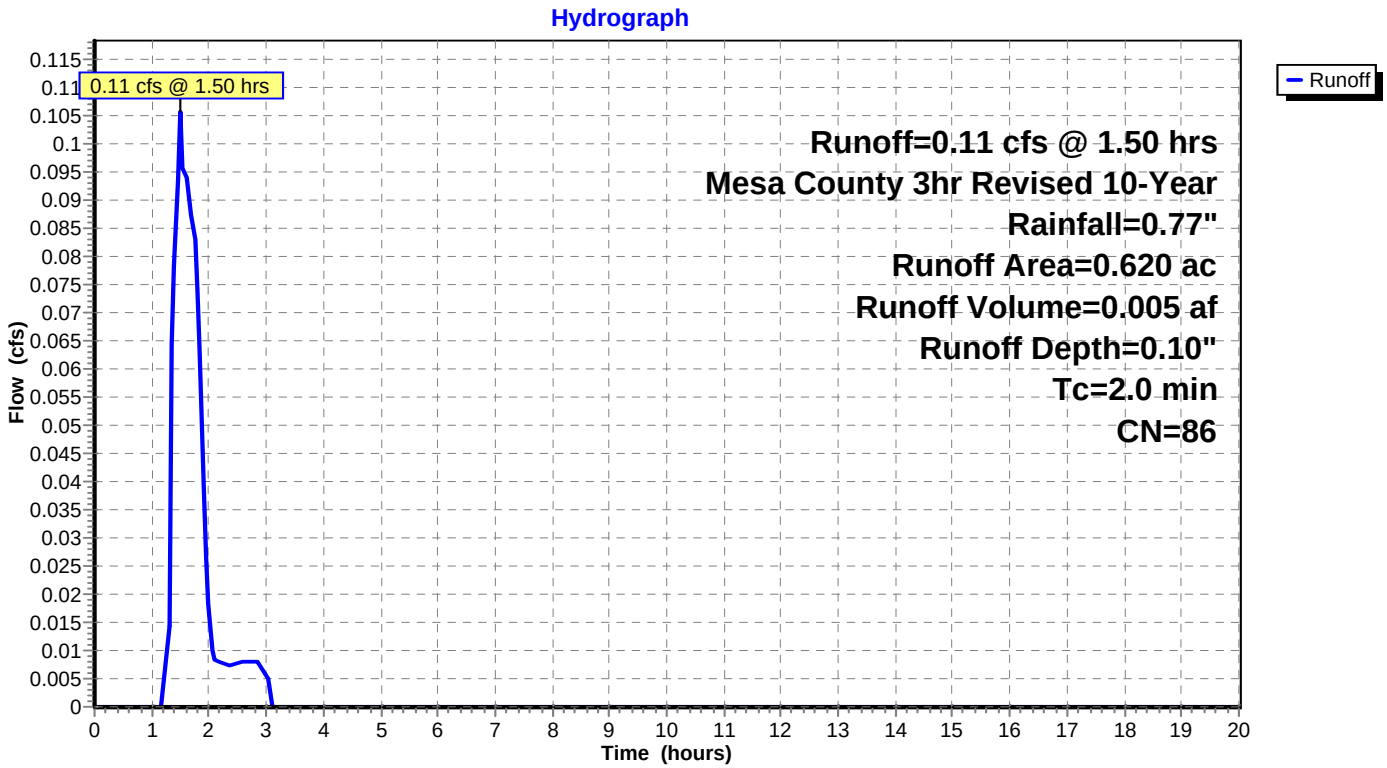
Runoff = 0.11 cfs @ 1.50 hrs, Volume= 0.005 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

Area (ac)	CN	Description
0.620	86	Desert shrub range, Fair, HSG D
0.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment EX6: EX6



Summary for Subcatchment EX1: EX1

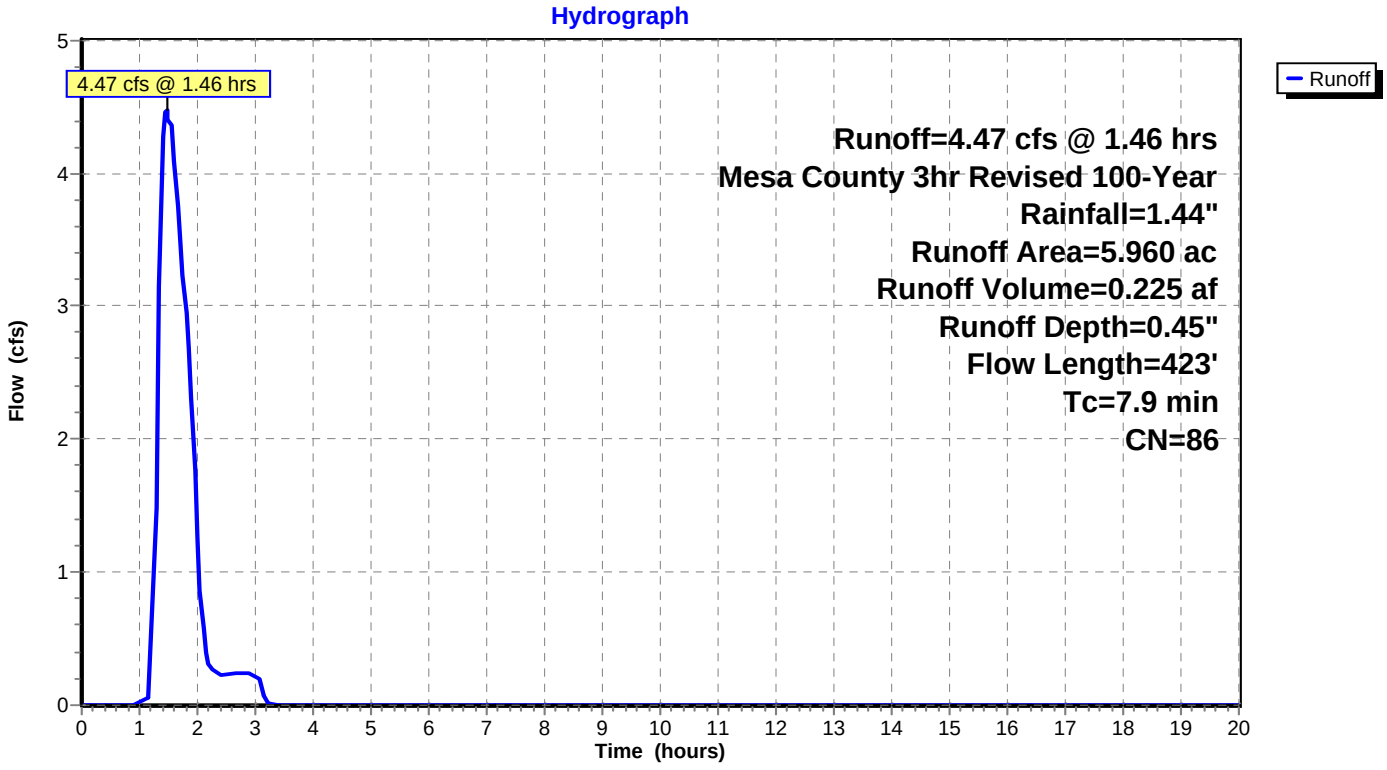
Runoff = 4.47 cfs @ 1.46 hrs, Volume= 0.225 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
5.960	86	Desert shrub range, Fair, HSG D
5.960		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	100	0.0200	0.26		**Sheet Flow,** n= 0.026 P2= 0.46"
1.5	323	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
7.9	423	Total			

Subcatchment EX1: EX1



Summary for Subcatchment EX2: EX2

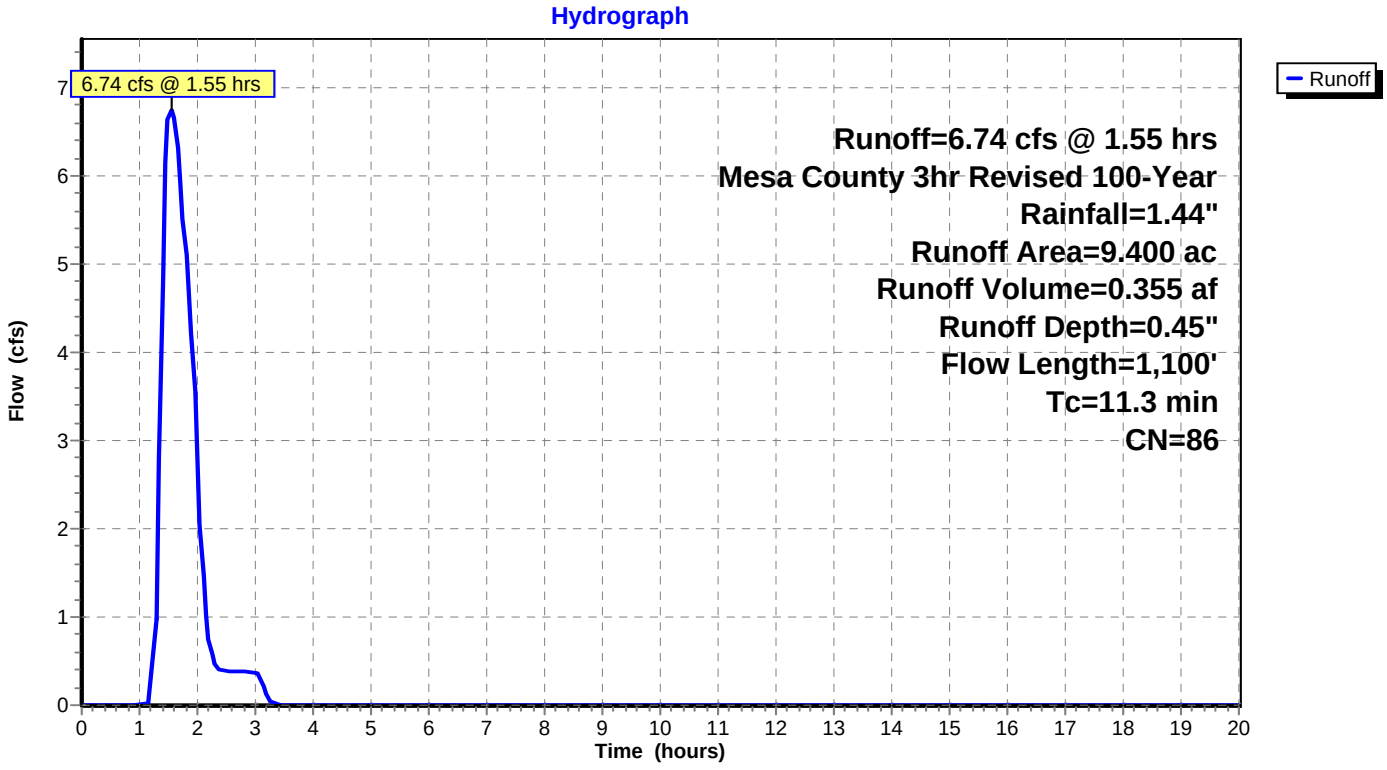
Runoff = 6.74 cfs @ 1.55 hrs, Volume= 0.355 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
9.400	86	Desert shrub range, Fair, HSG D
9.400		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.7	100	0.0200	0.25		**Sheet Flow,** n= 0.028 P2= 0.46"
4.6	1,000	0.1300	3.61		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
11.3	1,100	Total			

Subcatchment EX2: EX2



Summary for Subcatchment EX3: EX3

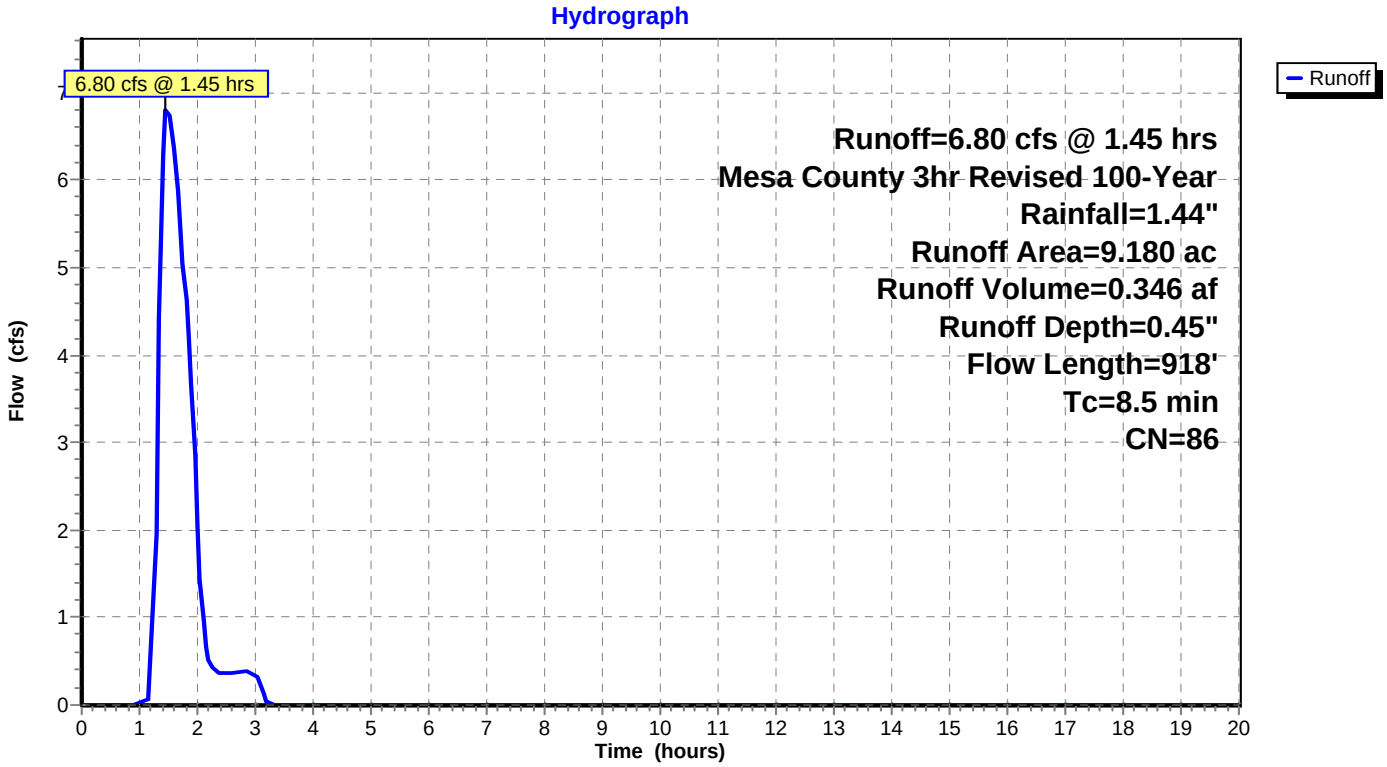
Runoff = 6.80 cfs @ 1.45 hrs, Volume= 0.346 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
9.180	86	Desert shrub range, Fair, HSG D
9.180		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.9	100	0.1600	0.57		**Sheet Flow,** n= 0.028 P2= 0.46"
2.6	466	0.1800	2.97		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.0	352	0.0800	1.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.5	918	Total			

Subcatchment EX3: EX3



Summary for Subcatchment EX4: EX4

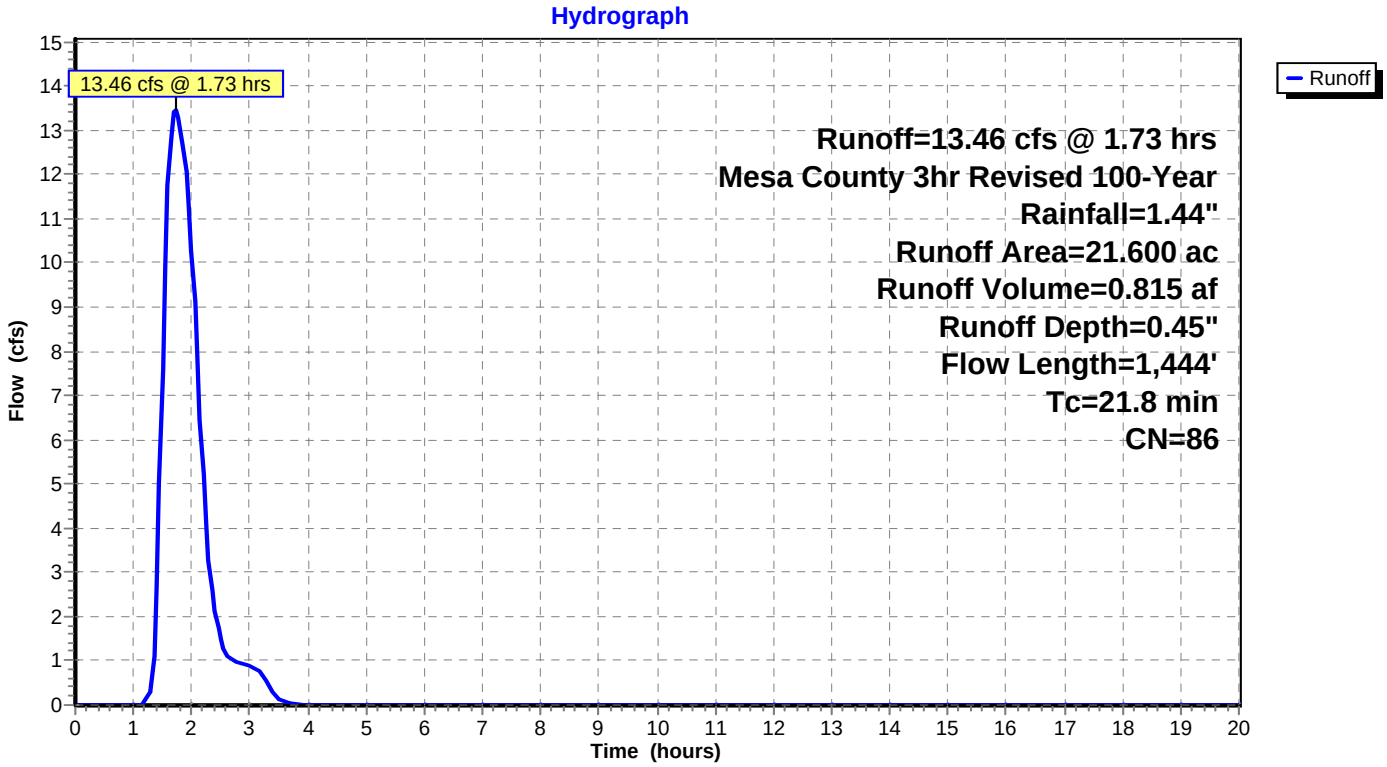
Runoff = 13.46 cfs @ 1.73 hrs, Volume= 0.815 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
21.600	86	Desert shrub range, Fair, HSG D
21.600		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.0	192	0.0100	0.21		**Sheet Flow,** n= 0.028 P2= 0.46"
0.7	360	0.2900	8.67		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.1	892	0.0600	2.45		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
21.8	1,444	Total			

Subcatchment EX4: EX4



Summary for Subcatchment EX5: EX5

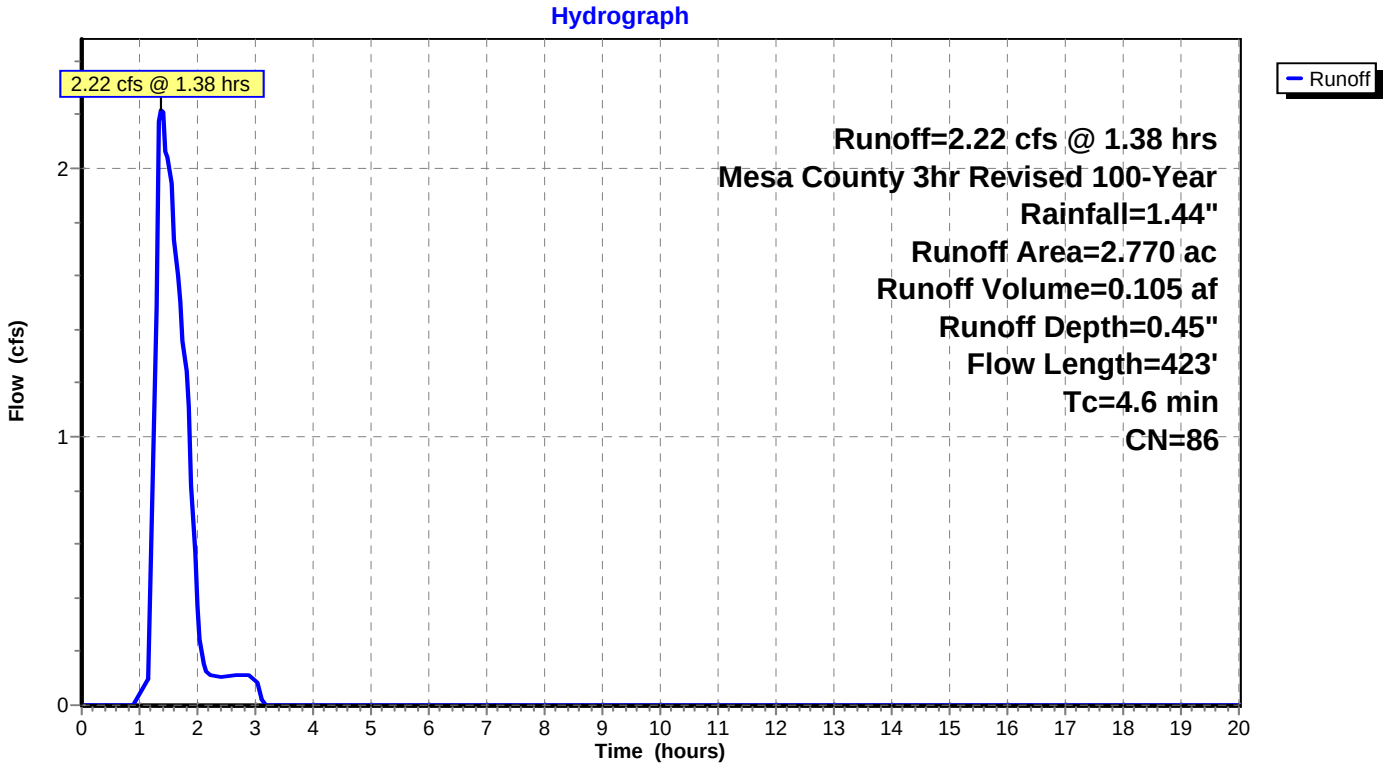
Runoff = 2.22 cfs @ 1.38 hrs, Volume= 0.105 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
2.770	86	Desert shrub range, Fair, HSG D
2.770		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.5	100	0.2500	0.68		**Sheet Flow,** n= 0.028 P2= 0.46"
2.1	323	0.1300	2.52		**Shallow Concentrated Flow,** Kv= 7.0 fps
4.6	423	Total			

Subcatchment EX5: EX5



Summary for Subcatchment EX6: EX6

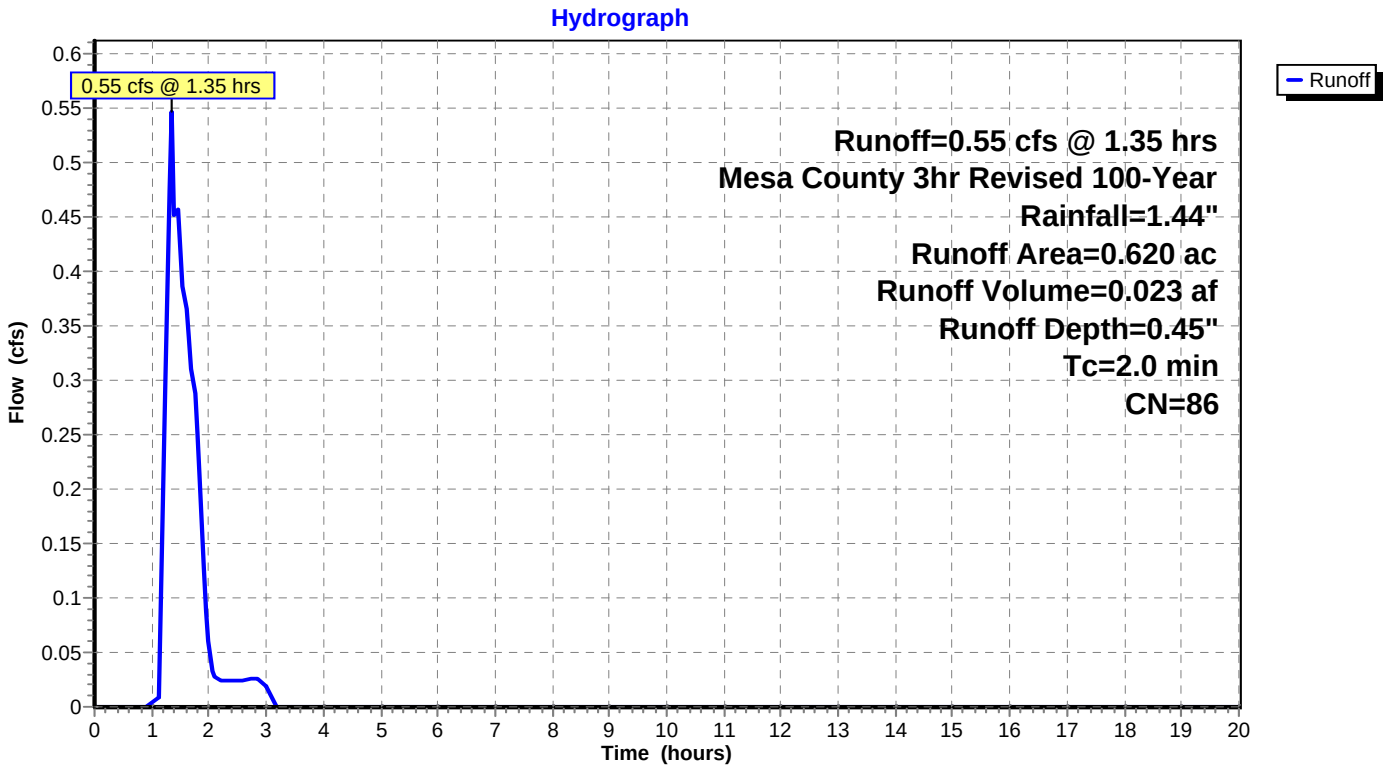
Runoff = 0.55 cfs @ 1.35 hrs, Volume= 0.023 af, Depth= 0.45"

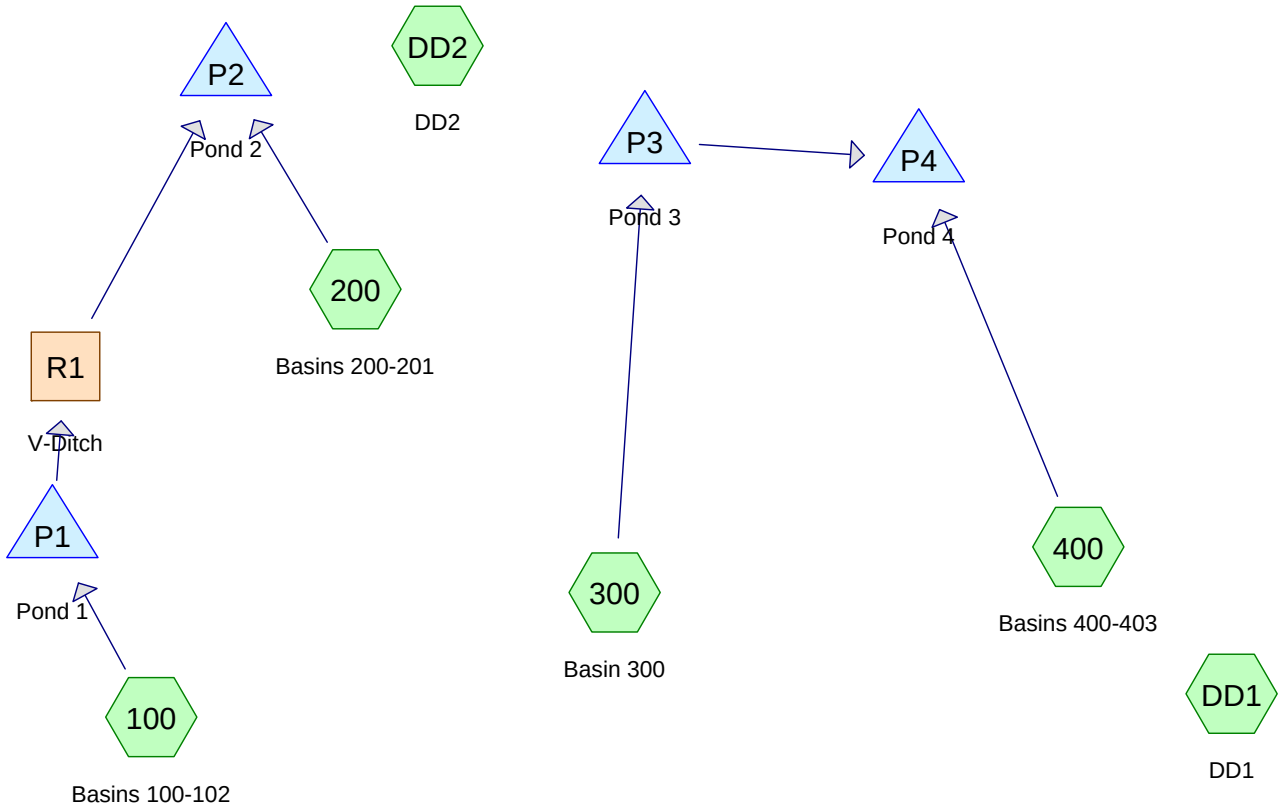
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-20.00 hrs, dt= 0.05 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

Area (ac)	CN	Description
0.620	86	Desert shrub range, Fair, HSG D
0.620		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
2.0					**Direct Entry,**

Subcatchment EX6: EX6





Subcat Reach Pond Link

Routing Diagram for PinnacleRidgeFeb2015
Prepared by Vortex Engineering, Inc., Printed 6/2/2017
HydroCAD® 10.00-19 s/n 05232 © 2016 HydroCAD Software Solutions LLC

Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 100: Basins 100-102 Runoff Area=6.870 ac Runoff Depth=0.16"
Flow Length=991' Tc=25.6 min CN=89 Runoff=1.41 cfs 0.089 af

Subcatchment 200: Basins 200-201 Runoff Area=15.580 ac Runoff Depth=0.16"
Tc=9.1 min CN=89 Runoff=3.93 cfs 0.202 af

Subcatchment 300: Basin 300 Runoff Area=1.560 ac Runoff Depth=0.13"
Tc=5.0 min CN=88 Runoff=0.36 cfs 0.017 af

Subcatchment 400: Basins 400-403 Runoff Area=22.940 ac Runoff Depth=0.16"
Flow Length=1,690' Tc=12.5 min CN=89 Runoff=5.52 cfs 0.297 af

Subcatchment DD1: DD1 Runoff Area=1.930 ac Runoff Depth=0.10"
Tc=5.0 min CN=86 Runoff=0.32 cfs 0.015 af

Subcatchment DD2: DD2 Runoff Area=0.390 ac Runoff Depth=0.10"
Tc=5.0 min CN=86 Runoff=0.06 cfs 0.003 af

Reach R1: V-Ditch Avg. Flow Depth=0.23' Max Vel=2.50 fps Inflow=0.26 cfs 0.170 af
n=0.025 L=815.0' S=0.0368 '/' Capacity=24.18 cfs Outflow=0.26 cfs 0.170 af

Pond P1: Pond 1 Peak Elev=4,802.31' Storage=6,082 cf Inflow=1.41 cfs 0.089 af
Outflow=0.26 cfs 0.170 af

Pond P2: Pond 2 Peak Elev=4,748.32' Storage=13,992 cf Inflow=3.98 cfs 0.372 af
Outflow=0.52 cfs 0.569 af

Pond P3: Pond 3 Peak Elev=4,752.88' Storage=820 cf Inflow=0.36 cfs 0.017 af
Outflow=0.17 cfs 0.032 af

Pond P4: Pond 4 Peak Elev=4,742.73' Storage=14,737 cf Inflow=5.59 cfs 0.329 af
Outflow=1.91 cfs 0.593 af

Total Runoff Area = 49.270 ac Runoff Volume = 0.624 af Average Runoff Depth = 0.15"

Summary for Subcatchment 100: Basins 100-102

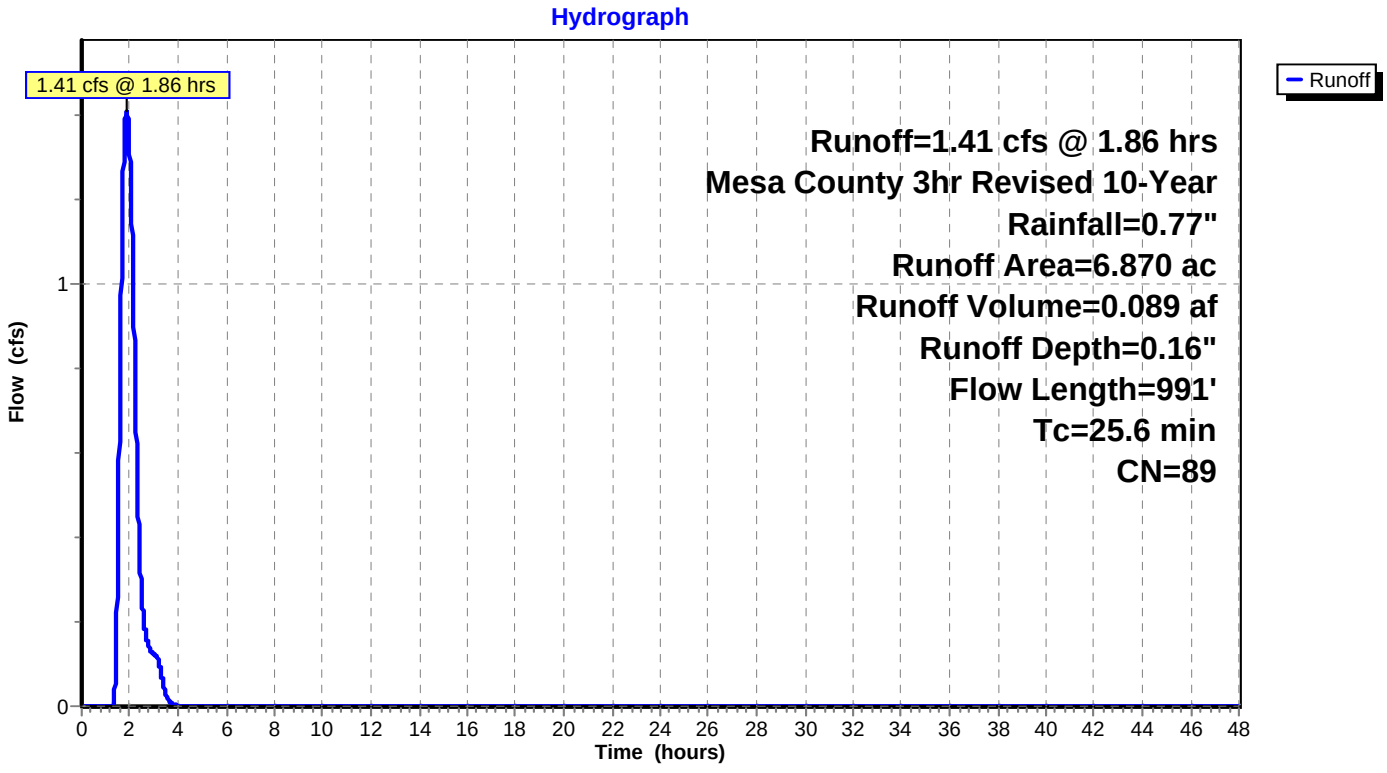
Runoff = 1.41 cfs @ 1.86 hrs, Volume= 0.089 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	6.870	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.9	136	0.0500	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 0.46"
2.7	855	0.1100	5.34		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
25.6	991	Total			

Subcatchment 100: Basins 100-102



Summary for Subcatchment 200: Basins 200-201

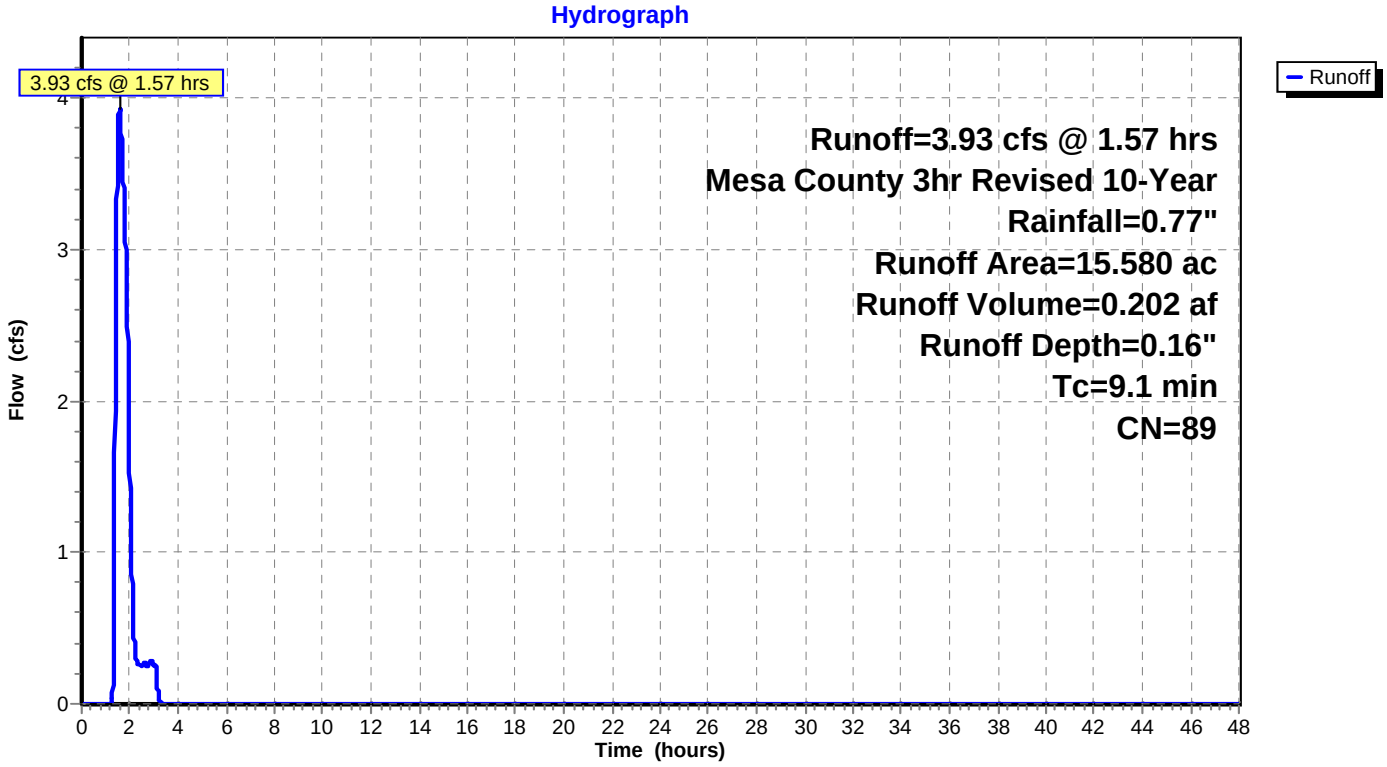
Runoff = 3.93 cfs @ 1.57 hrs, Volume= 0.202 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	15.580	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1					**Direct Entry, Tc to Pond #2**

Subcatchment 200: Basins 200-201



Summary for Subcatchment 300: Basin 300

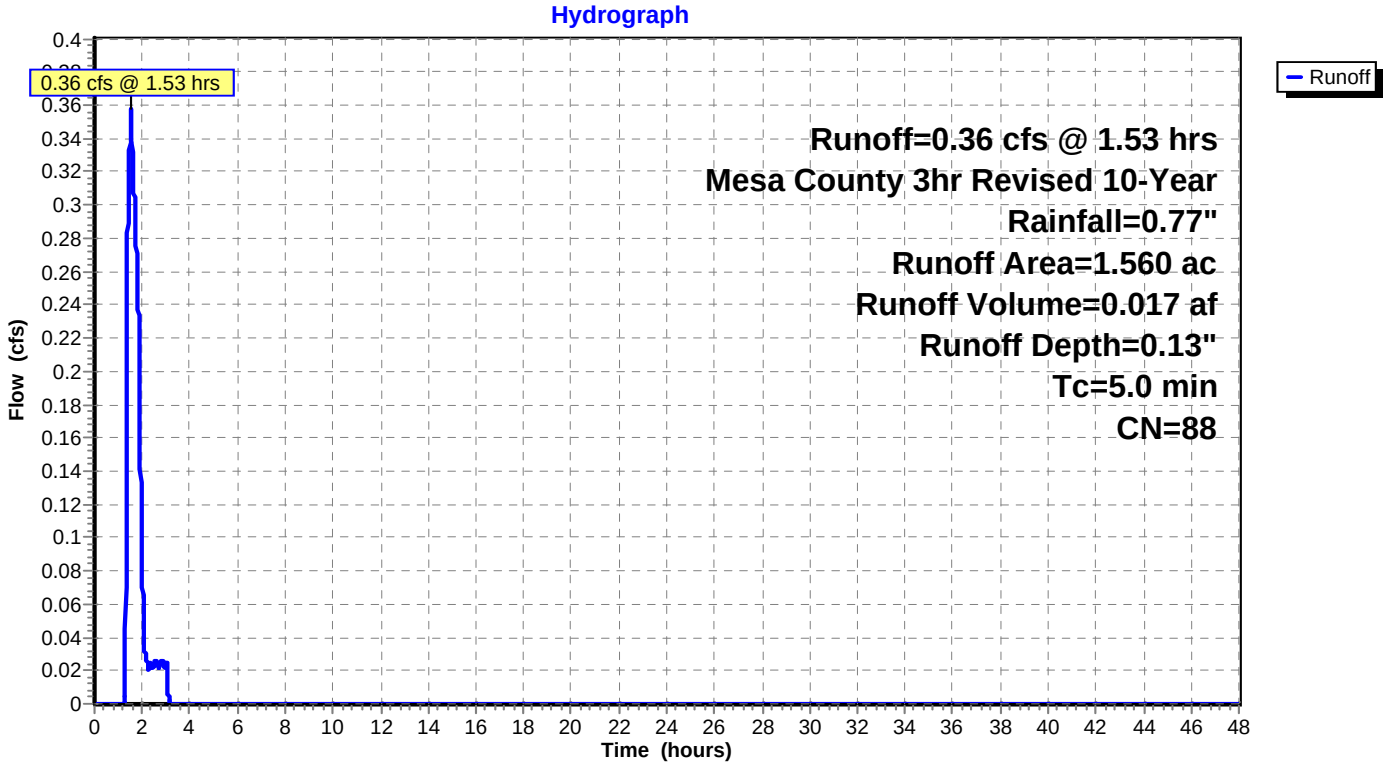
Runoff = 0.36 cfs @ 1.53 hrs, Volume= 0.017 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	1.560	88	LOTS W/ HOUSES 4000 SF

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 300: Basin 300



Summary for Subcatchment 400: Basins 400-403

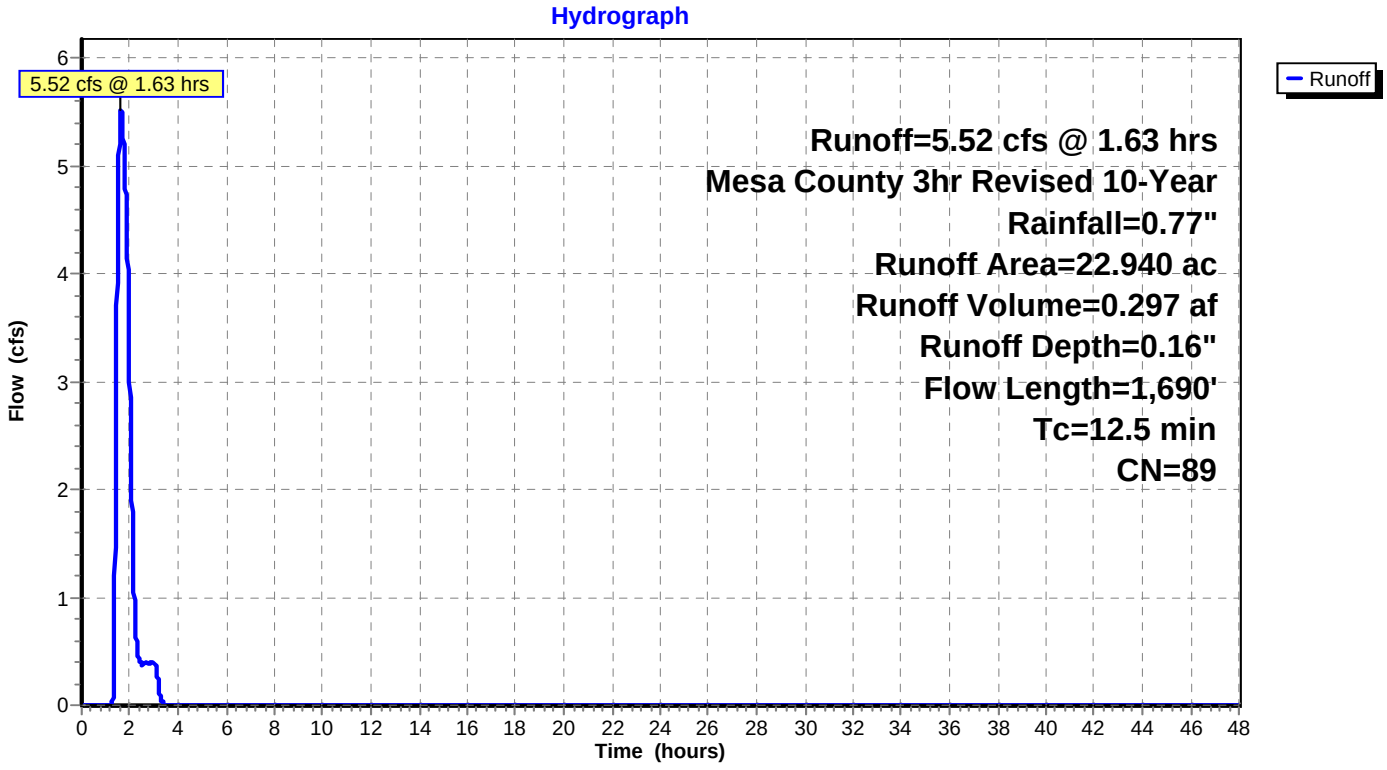
Runoff = 5.52 cfs @ 1.63 hrs, Volume= 0.297 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	22.940	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	190	0.0300	0.31		**Sheet Flow,** n= 0.030 P2= 0.46"
2.4	1,500	0.0933	10.27	32.09	**Trap/Vee/Rect Channel Flow,** Bot.W=0.00' D=1.25' Z= 2.0 '/' Top.W=5.00' n= 0.030
12.5	1,690	Total			

Subcatchment 400: Basins 400-403



Summary for Subcatchment DD1: DD1

Direct Discharge basin compensated in Pond 1

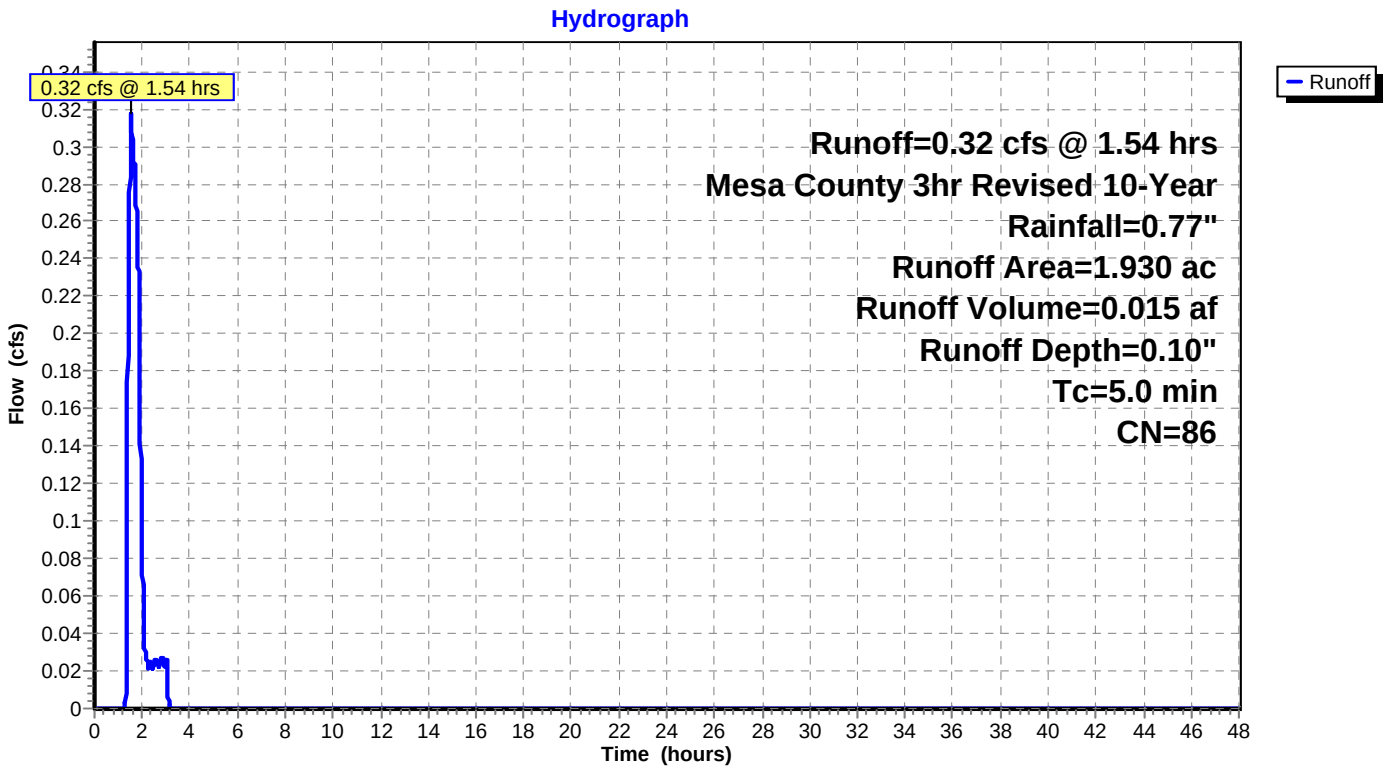
Runoff = 0.32 cfs @ 1.54 hrs, Volume= 0.015 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	1.930	86	Natural western desert, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DD1: DD1



Summary for Subcatchment DD2: DD2

Disrect discharge basin, compensated in Pond 4

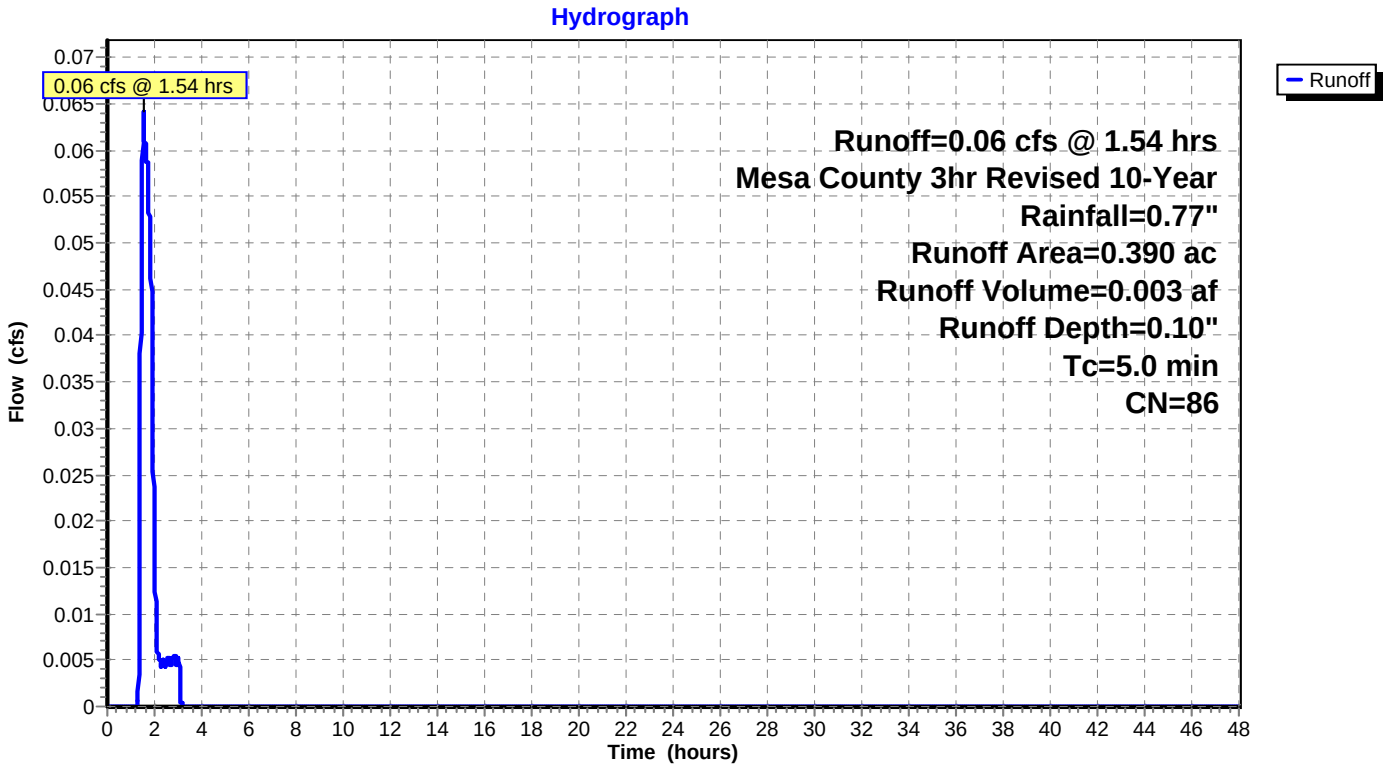
Runoff = 0.06 cfs @ 1.54 hrs, Volume= 0.003 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 10-Year Rainfall=0.77"

	Area (ac)	CN	Description
*	0.390	86	Natural western desert, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DD2: DD2



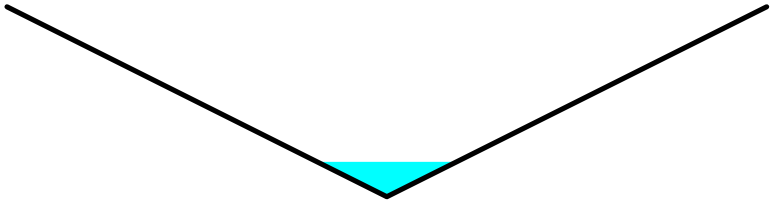
Summary for Reach R1: V-Ditch

Inflow Area = 6.870 ac, Inflow Depth > 0.30" for 10-Year event
Inflow = 0.26 cfs @ 2.49 hrs, Volume= 0.170 af
Outflow = 0.26 cfs @ 2.57 hrs, Volume= 0.170 af, Atten= 0%, Lag= 5.0 min

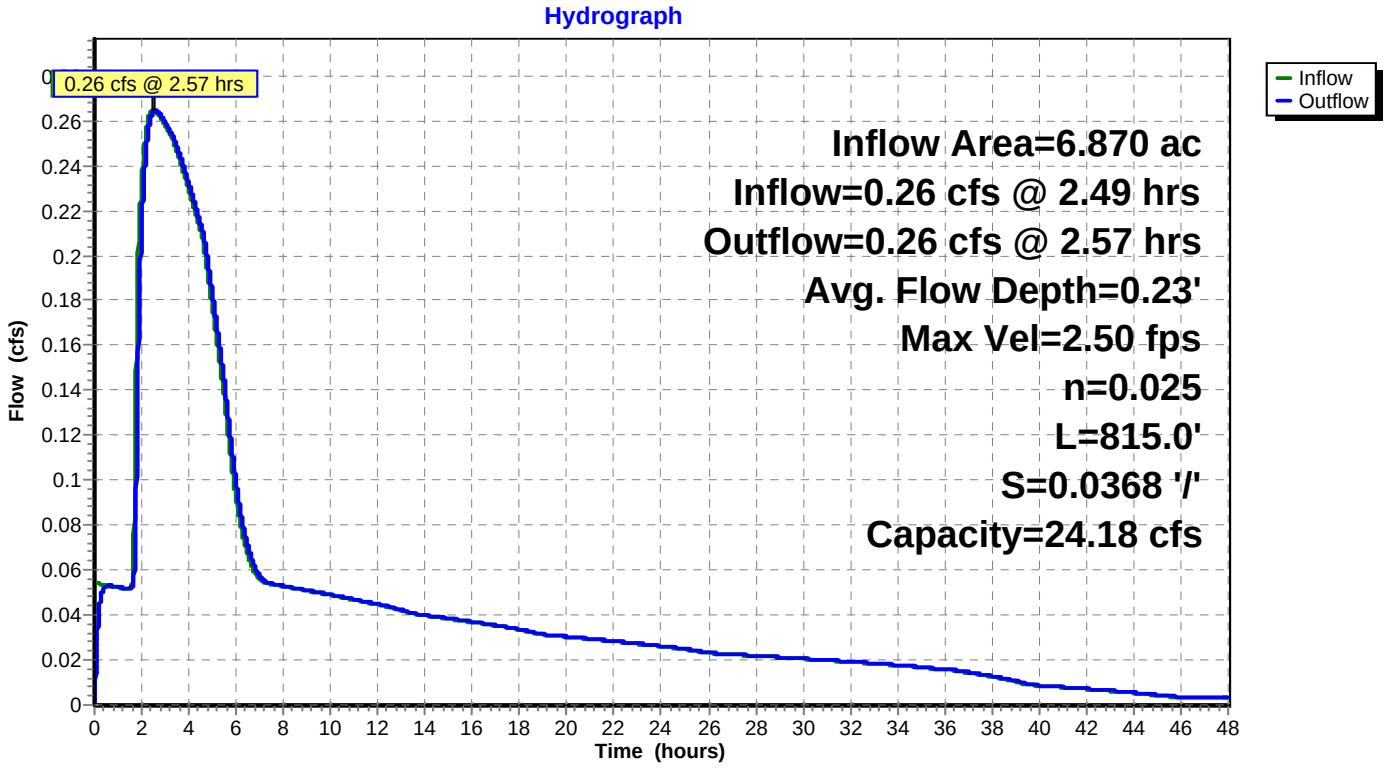
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.50 fps, Min. Travel Time= 5.4 min
Avg. Velocity = 1.44 fps, Avg. Travel Time= 9.4 min

Peak Storage= 86 cf @ 2.57 hrs
Average Depth at Peak Storage= 0.23'
Bank-Full Depth= 1.25' Flow Area= 3.1 sf, Capacity= 24.18 cfs

0.00' x 1.25' deep channel, n= 0.025
Side Slope Z-value= 2.0 '/' Top Width= 5.00'
Length= 815.0' Slope= 0.0368 '/'
Inlet Invert= 4,796.00', Outlet Invert= 4,766.00'



Reach R1: V-Ditch



Summary for Pond P1: Pond 1

Inflow Area = 6.870 ac, Inflow Depth = 0.16" for 10-Year event
Inflow = 1.41 cfs @ 1.86 hrs, Volume= 0.089 af
Outflow = 0.26 cfs @ 2.49 hrs, Volume= 0.170 af, Atten= 81%, Lag= 37.5 min
Primary = 0.26 cfs @ 2.49 hrs, Volume= 0.170 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,801.50' Surf.Area= 2,799 sf Storage= 3,655 cf
Peak Elev= 4,802.31' @ 2.49 hrs Surf.Area= 3,721 sf Storage= 6,082 cf (2,426 cf above start)

Plug-Flow detention time= 1,075.9 min calculated for 0.086 af (97% of inflow)
Center-of-Mass det. time= 585.6 min (708.3 - 122.7)

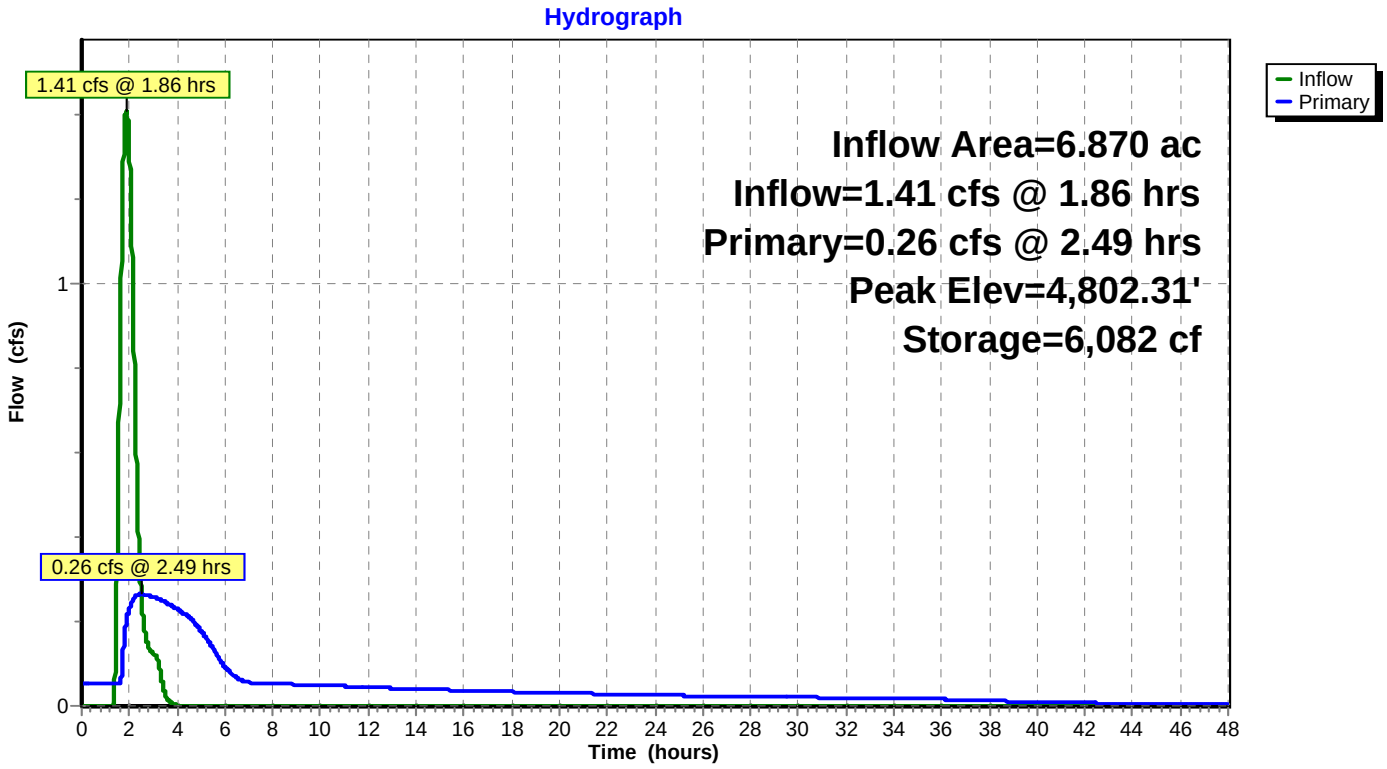
Volume	Invert	Avail.Storage	Storage Description
#1	4,799.00'	43,026 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,799.00	0	0	0
4,800.00	856	428	428
4,802.00	3,447	4,303	4,731
4,804.00	5,204	8,651	13,382
4,806.00	7,321	12,525	25,907
4,808.00	9,798	17,119	43,026

Device	Routing	Invert	Outlet Devices
#1	Primary	4,799.00'	**0.5" Vert. Orifice/Grate** X 7 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,801.50'	**3.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	4,804.50'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.26 cfs @ 2.49 hrs HW=4,802.31' TW=4,796.23' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.07 cfs @ 7.21 fps)
- **2=Orifice/Grate** (Orifice Controls 0.20 cfs @ 3.99 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P1: Pond 1



Summary for Pond P2: Pond 2

Inflow Area = 22.450 ac, Inflow Depth > 0.20" for 10-Year event
Inflow = 3.98 cfs @ 1.57 hrs, Volume= 0.372 af
Outflow = 0.52 cfs @ 2.94 hrs, Volume= 0.569 af, Atten= 87%, Lag= 82.0 min
Primary = 0.52 cfs @ 2.94 hrs, Volume= 0.569 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,747.71' Surf.Area= 8,172 sf Storage= 8,686 cf
Peak Elev= 4,748.32' @ 2.94 hrs Surf.Area= 9,255 sf Storage= 13,992 cf (5,306 cf above start)

Plug-Flow detention time= 475.5 min calculated for 0.369 af (99% of inflow)
Center-of-Mass det. time= 220.2 min (605.7 - 385.5)

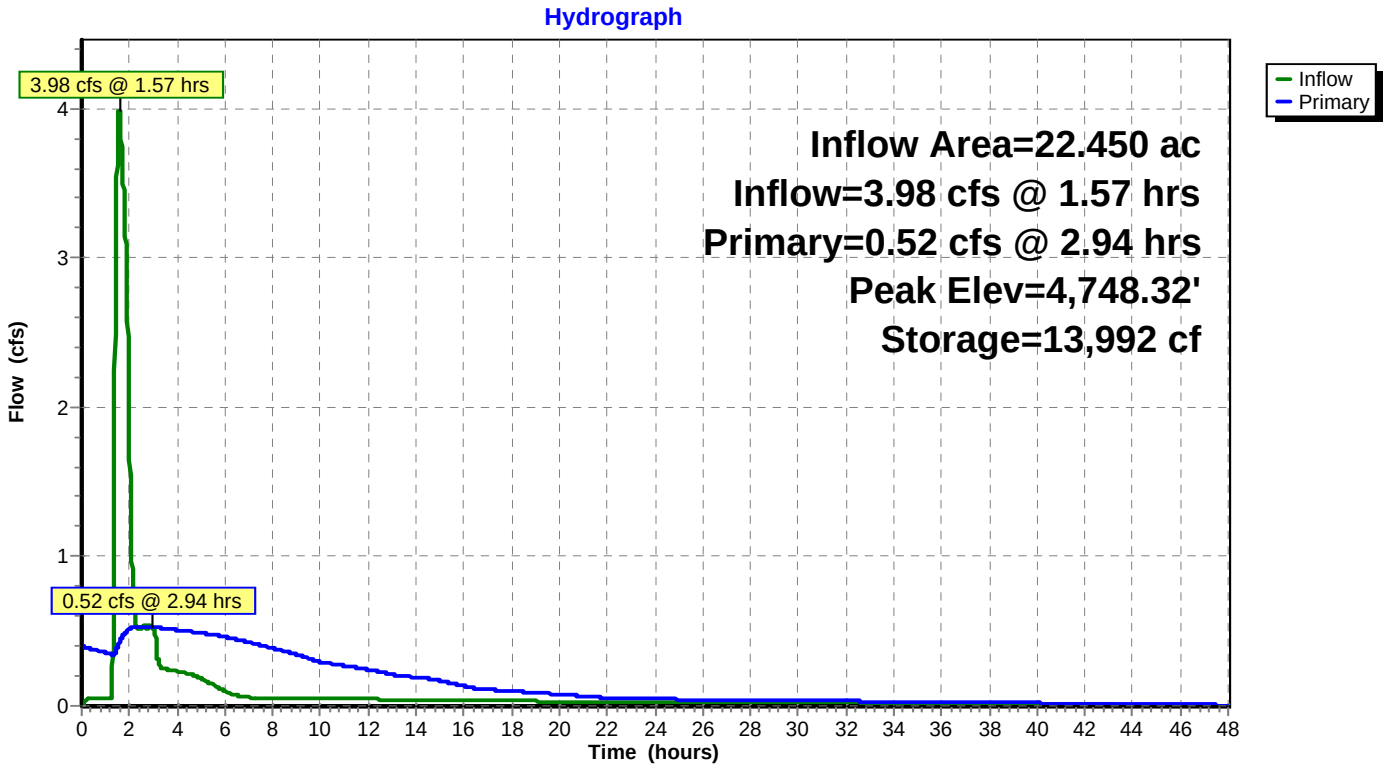
Volume	Invert	Avail.Storage	Storage Description
#1	4,746.06'	59,211 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,746.06	0	0	0
4,747.00	6,765	3,180	3,180
4,748.00	8,746	7,756	10,935
4,749.00	10,334	9,540	20,475
4,750.00	11,994	11,164	31,639
4,751.00	13,830	12,912	44,551
4,752.00	15,490	14,660	59,211

Device	Routing	Invert	Outlet Devices
#1	Primary	4,746.06'	**0.9" Vert. Orifice/Grate X 4.00 columns** X 5 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,748.32'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	4,751.00'	**14.0' long x 0.5' breadth emergency spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.52 cfs @ 2.94 hrs HW=4,748.32' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.52 cfs @ 5.93 fps)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 0.00 cfs @ 0.06 fps)
- **3=emergency spillway** (Controls 0.00 cfs)

Pond P2: Pond 2



Summary for Pond P3: Pond 3

Inflow Area = 1.560 ac, Inflow Depth = 0.13" for 10-Year event
Inflow = 0.36 cfs @ 1.53 hrs, Volume= 0.017 af
Outflow = 0.17 cfs @ 1.90 hrs, Volume= 0.032 af, Atten= 52%, Lag= 22.2 min
Primary = 0.17 cfs @ 1.90 hrs, Volume= 0.032 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,752.64' Surf.Area= 737 sf Storage= 632 cf
Peak Elev= 4,752.88' @ 1.90 hrs Surf.Area= 832 sf Storage= 820 cf (188 cf above start)

Plug-Flow detention time= 184.7 min calculated for 0.017 af (100% of inflow)
Center-of-Mass det. time= 92.6 min (197.3 - 104.8)

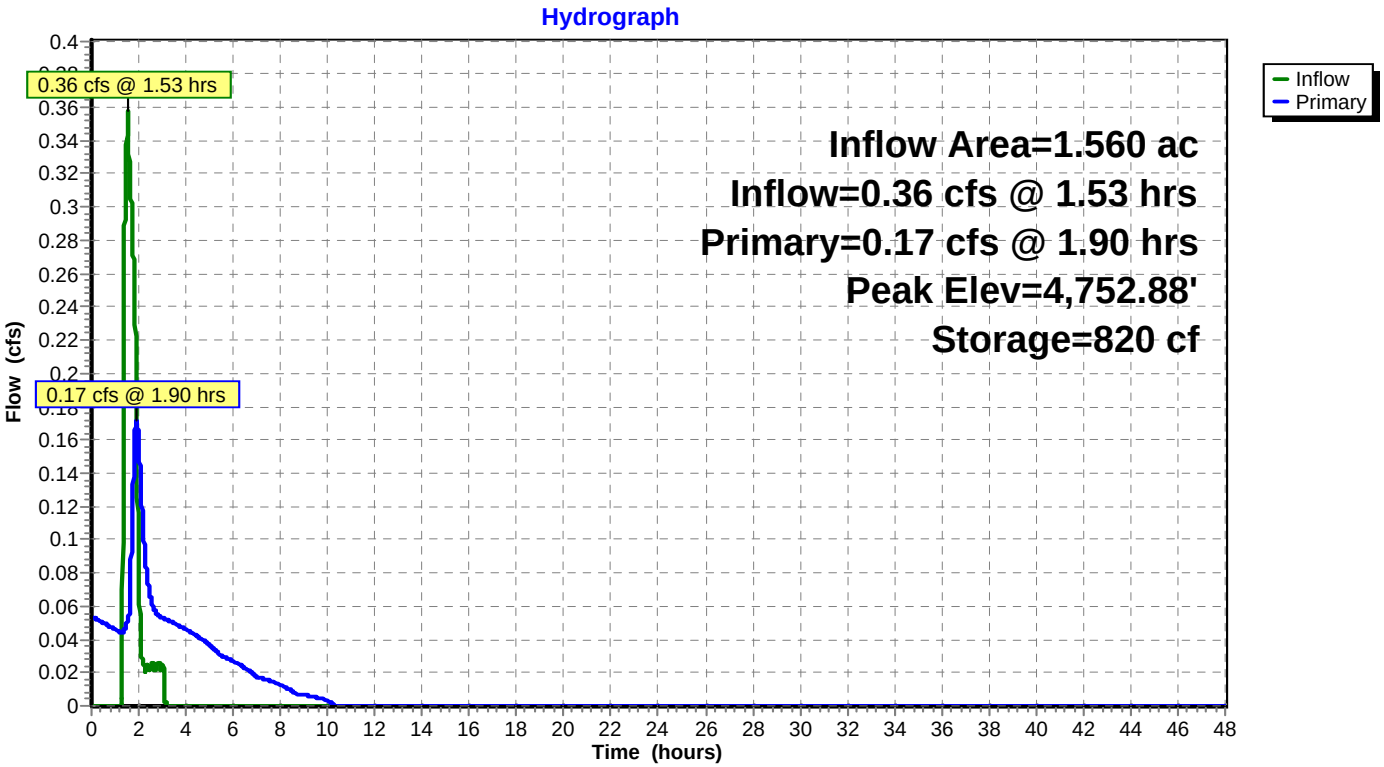
Volume	Invert	Avail.Storage	Storage Description
#1	4,751.00'	5,359 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,751.00	0	0	0
4,752.00	483	242	242
4,754.00	1,277	1,760	2,002
4,756.00	2,080	3,357	5,359

Device	Routing	Invert	Outlet Devices
#1	Primary	4,751.00'	**0.7" Vert. Orifice/Grate** X 4 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,752.64'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	4,754.06'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.17 cfs @ 1.90 hrs HW=4,752.88' TW=4,742.58' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.06 cfs @ 5.54 fps)
- **2=Orifice/Grate** (Orifice Controls 0.11 cfs @ 1.67 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P3: Pond 3



Summary for Pond P4: Pond 4

Inflow Area = 24.500 ac, Inflow Depth = 0.16" for 10-Year event
Inflow = 5.59 cfs @ 1.63 hrs, Volume= 0.329 af
Outflow = 1.91 cfs @ 2.09 hrs, Volume= 0.593 af, Atten= 66%, Lag= 27.4 min
Primary = 1.91 cfs @ 2.09 hrs, Volume= 0.593 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,742.19' Surf.Area= 5,651 sf Storage= 11,503 cf
Peak Elev= 4,742.73' @ 2.09 hrs Surf.Area= 6,380 sf Storage= 14,737 cf (3,234 cf above start)

Plug-Flow detention time= 185.7 min calculated for 0.329 af (100% of inflow)
Center-of-Mass det. time= 89.4 min (208.4 - 118.9)

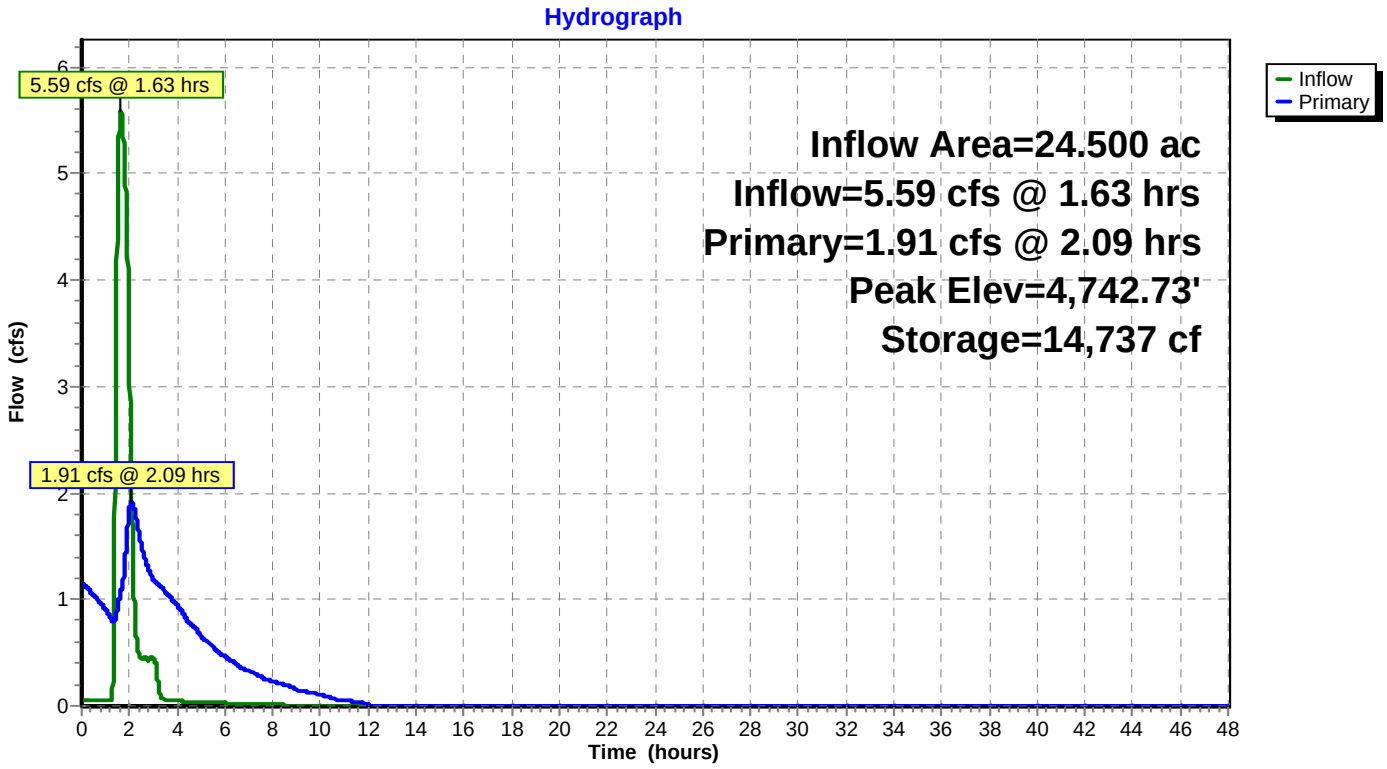
Volume	Invert	Avail.Storage	Storage Description
#1	4,739.00'	42,958 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,739.00	0	0	0
4,740.00	3,373	1,687	1,687
4,742.00	5,394	8,767	10,454
4,744.00	8,104	13,498	23,952
4,746.00	10,902	19,006	42,958

Device	Routing	Invert	Outlet Devices
#1	Primary	4,739.00'	**1.0" Vert. Orifice/Grate X 4.00 columns** X 8 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,742.19'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	4,745.13'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=1.91 cfs @ 2.09 hrs HW=4,742.73' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 1.32 cfs @ 7.55 fps)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 0.60 cfs @ 2.22 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P4: Pond 4



Time span=0.00-48.00 hrs, dt=0.01 hrs, 4801 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

Subcatchment 100: Basins 100-102 Runoff Area=6.870 ac Runoff Depth=0.59"
Flow Length=991' Tc=25.6 min CN=89 Runoff=5.32 cfs 0.335 af

Subcatchment 200: Basins 200-201 Runoff Area=15.580 ac Runoff Depth=0.59"
Tc=9.1 min CN=89 Runoff=15.76 cfs 0.761 af

Subcatchment 300: Basin 300 Runoff Area=1.560 ac Runoff Depth=0.54"
Tc=5.0 min CN=88 Runoff=1.63 cfs 0.070 af

Subcatchment 400: Basins 400-403 Runoff Area=22.940 ac Runoff Depth=0.59"
Flow Length=1,690' Tc=12.5 min CN=89 Runoff=21.55 cfs 1.120 af

Subcatchment DD1: DD1 Runoff Area=1.930 ac Runoff Depth=0.45"
Tc=5.0 min CN=86 Runoff=1.61 cfs 0.073 af

Subcatchment DD2: DD2 Runoff Area=0.390 ac Runoff Depth=0.45"
Tc=5.0 min CN=86 Runoff=0.33 cfs 0.015 af

Reach R1: V-Ditch Avg. Flow Depth=0.29' Max Vel=2.91 fps Inflow=0.48 cfs 0.414 af
n=0.025 L=815.0' S=0.0368 '/' Capacity=24.18 cfs Outflow=0.48 cfs 0.414 af

Pond P1: Pond 1 Peak Elev=4,804.31' Storage=15,335 cf Inflow=5.32 cfs 0.335 af
Outflow=0.48 cfs 0.414 af

Pond P2: Pond 2 Peak Elev=4,749.95' Storage=31,059 cf Inflow=15.82 cfs 1.174 af
Outflow=4.21 cfs 1.368 af

Pond P3: Pond 3 Peak Elev=4,754.06' Storage=2,077 cf Inflow=1.63 cfs 0.070 af
Outflow=0.55 cfs 0.085 af

Pond P4: Pond 4 Peak Elev=4,745.13' Storage=33,969 cf Inflow=21.99 cfs 1.204 af
Outflow=10.21 cfs 1.469 af

Total Runoff Area = 49.270 ac Runoff Volume = 2.373 af Average Runoff Depth = 0.58"

Summary for Subcatchment 100: Basins 100-102

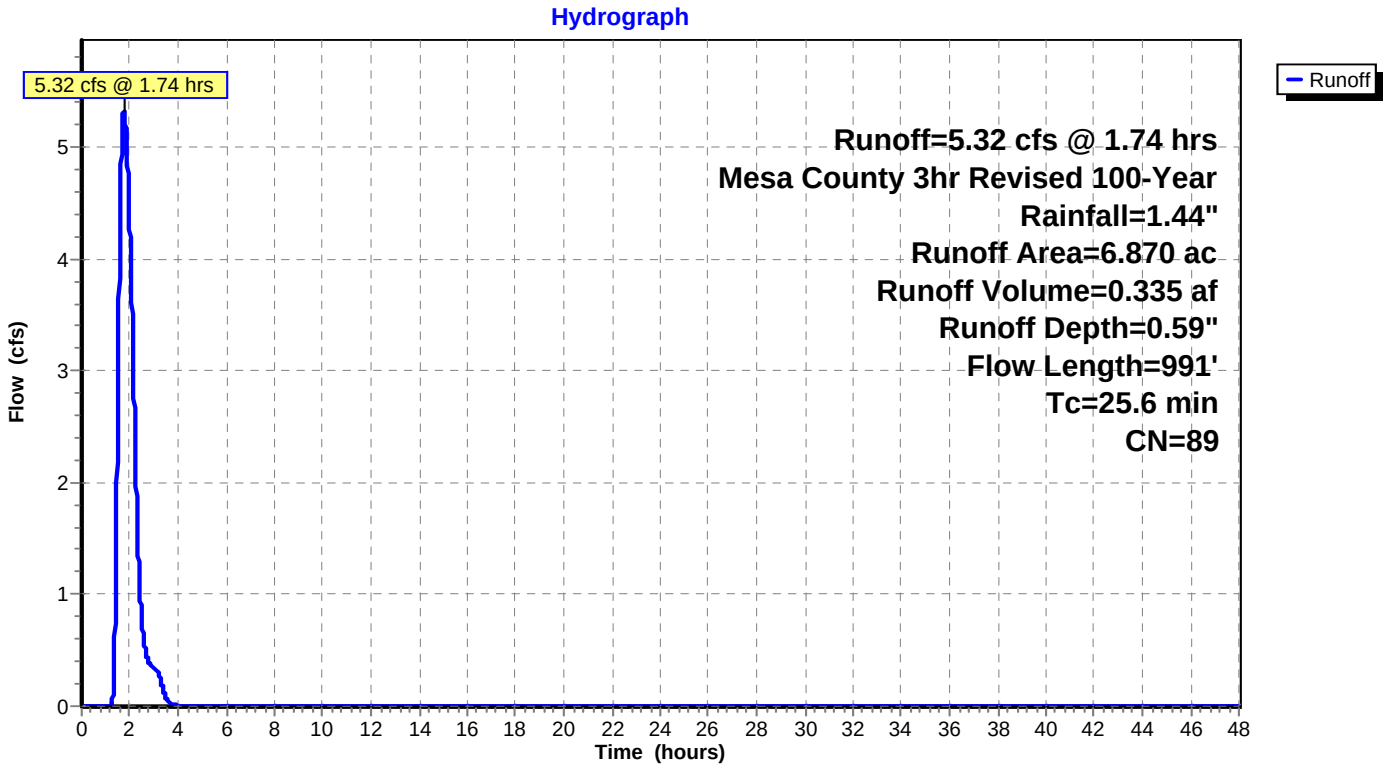
Runoff = 5.32 cfs @ 1.74 hrs, Volume= 0.335 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	6.870	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
22.9	136	0.0500	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 0.46"
2.7	855	0.1100	5.34		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
25.6	991	Total			

Subcatchment 100: Basins 100-102



Summary for Subcatchment 200: Basins 200-201

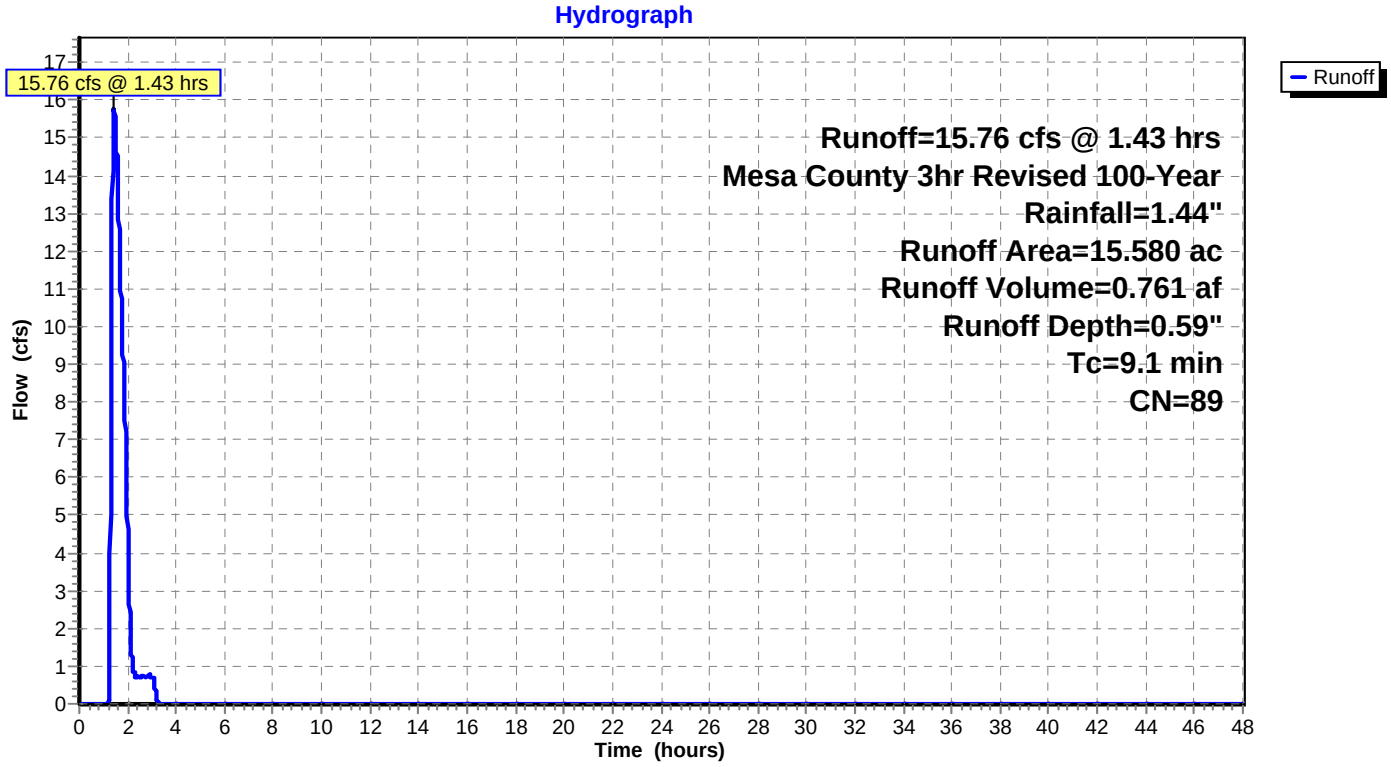
Runoff = 15.76 cfs @ 1.43 hrs, Volume= 0.761 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	15.580	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.1					**Direct Entry, Tc to Pond #2**

Subcatchment 200: Basins 200-201



Summary for Subcatchment 300: Basin 300

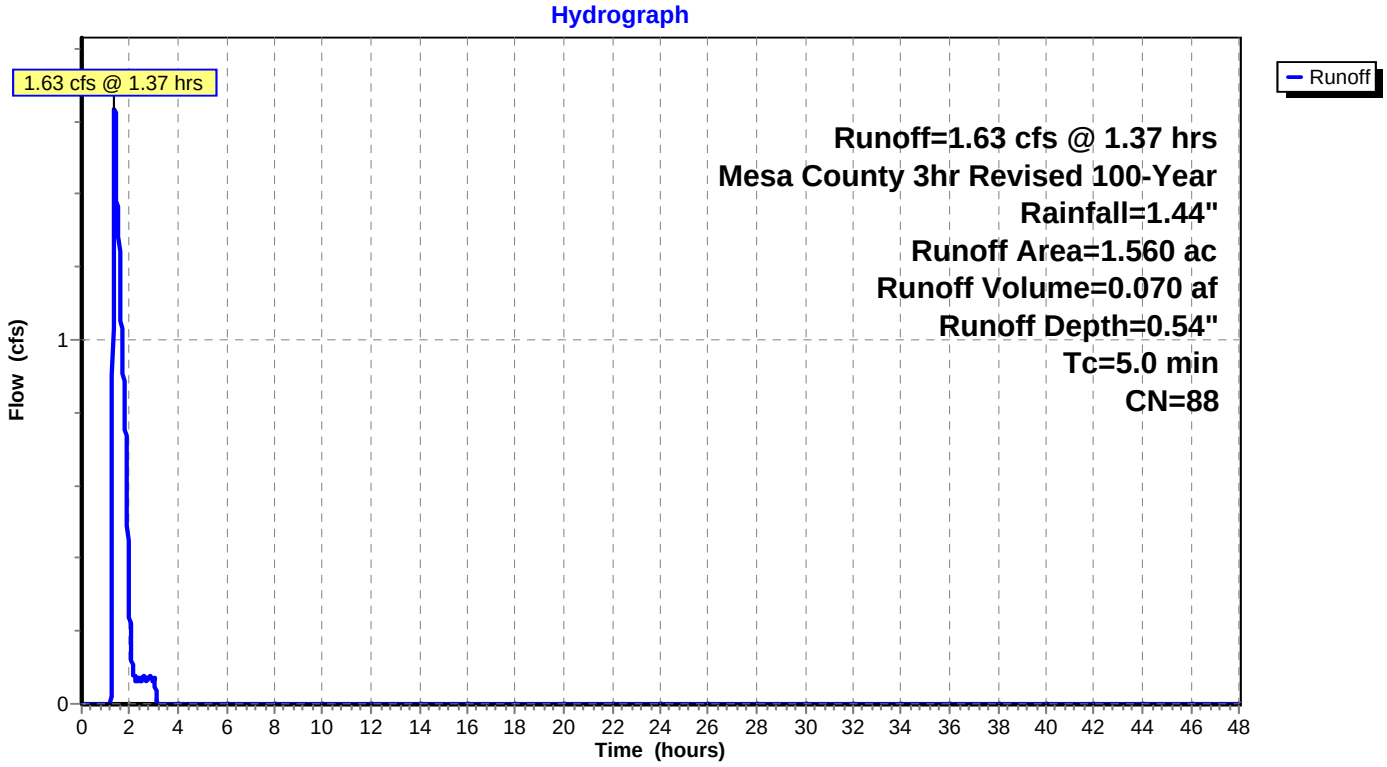
Runoff = 1.63 cfs @ 1.37 hrs, Volume= 0.070 af, Depth= 0.54"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	1.560	88	LOTS W/ HOUSES 4000 SF

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment 300: Basin 300



Summary for Subcatchment 400: Basins 400-403

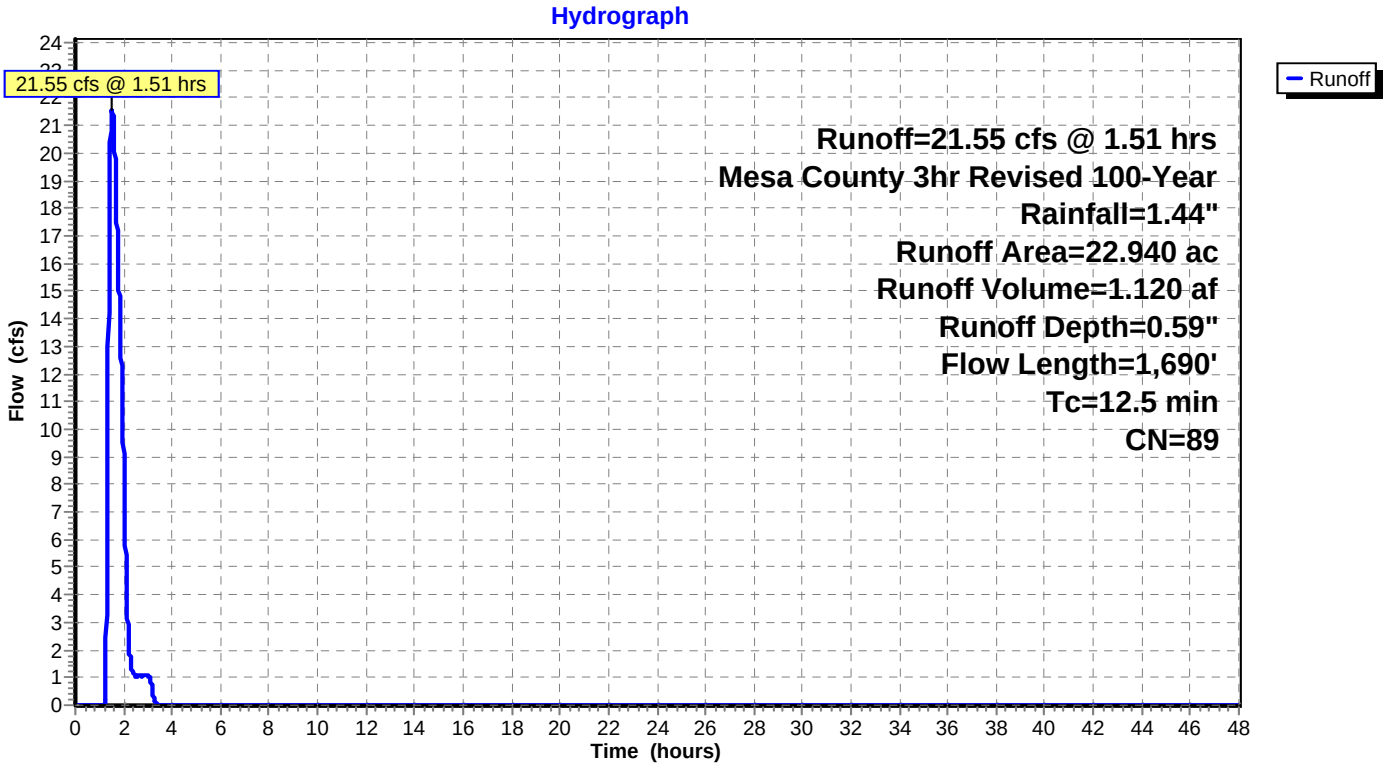
Runoff = 21.55 cfs @ 1.51 hrs, Volume= 1.120 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	22.940	89	

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	190	0.0300	0.31		**Sheet Flow,** n= 0.030 P2= 0.46"
2.4	1,500	0.0933	10.27	32.09	**Trap/Vee/Rect Channel Flow,** Bot.W=0.00' D=1.25' Z= 2.0 '/' Top.W=5.00' n= 0.030
12.5	1,690	Total			

Subcatchment 400: Basins 400-403



Summary for Subcatchment DD1: DD1

Direct Discharge basin compensated in Pond 1

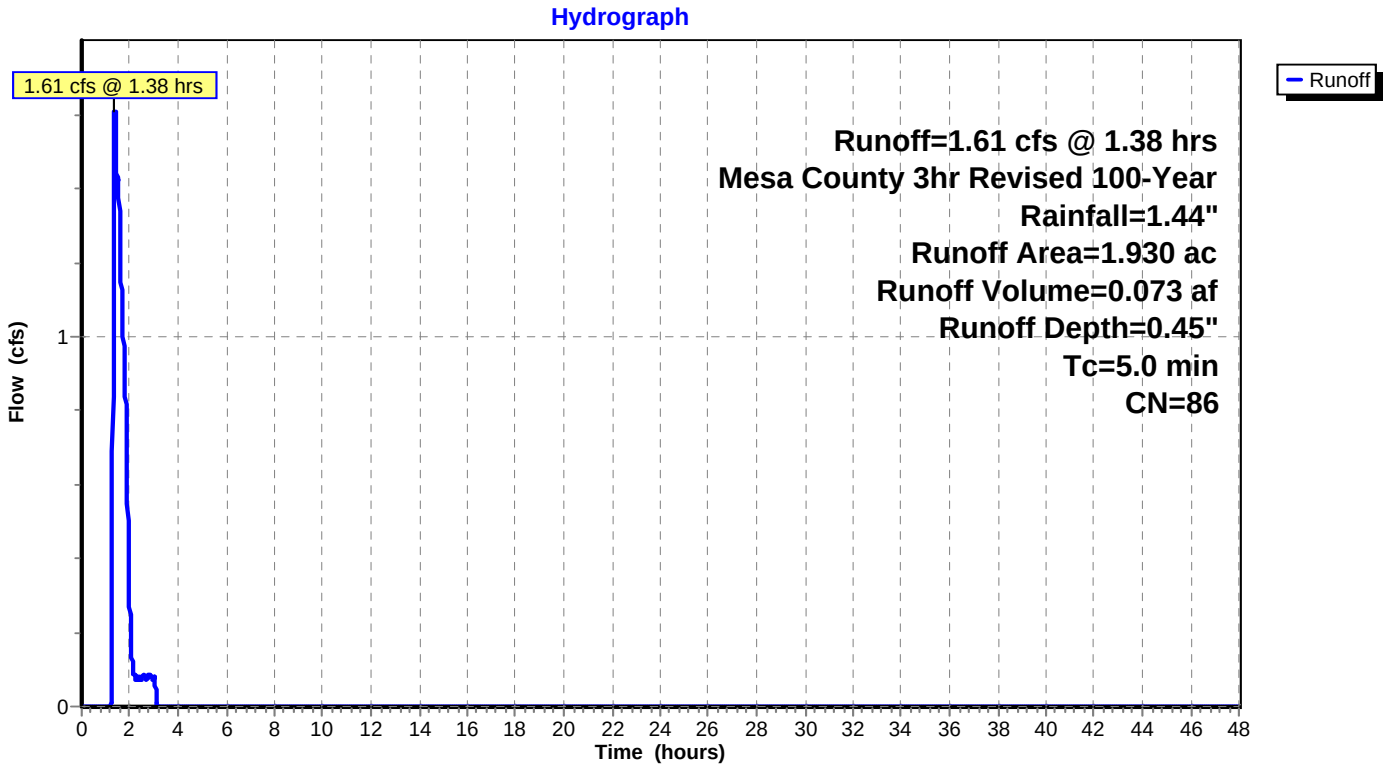
Runoff = 1.61 cfs @ 1.38 hrs, Volume= 0.073 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	1.930	86	Natural western desert, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DD1: DD1



Summary for Subcatchment DD2: DD2

Disrect discharge basin, compensated in Pond 4

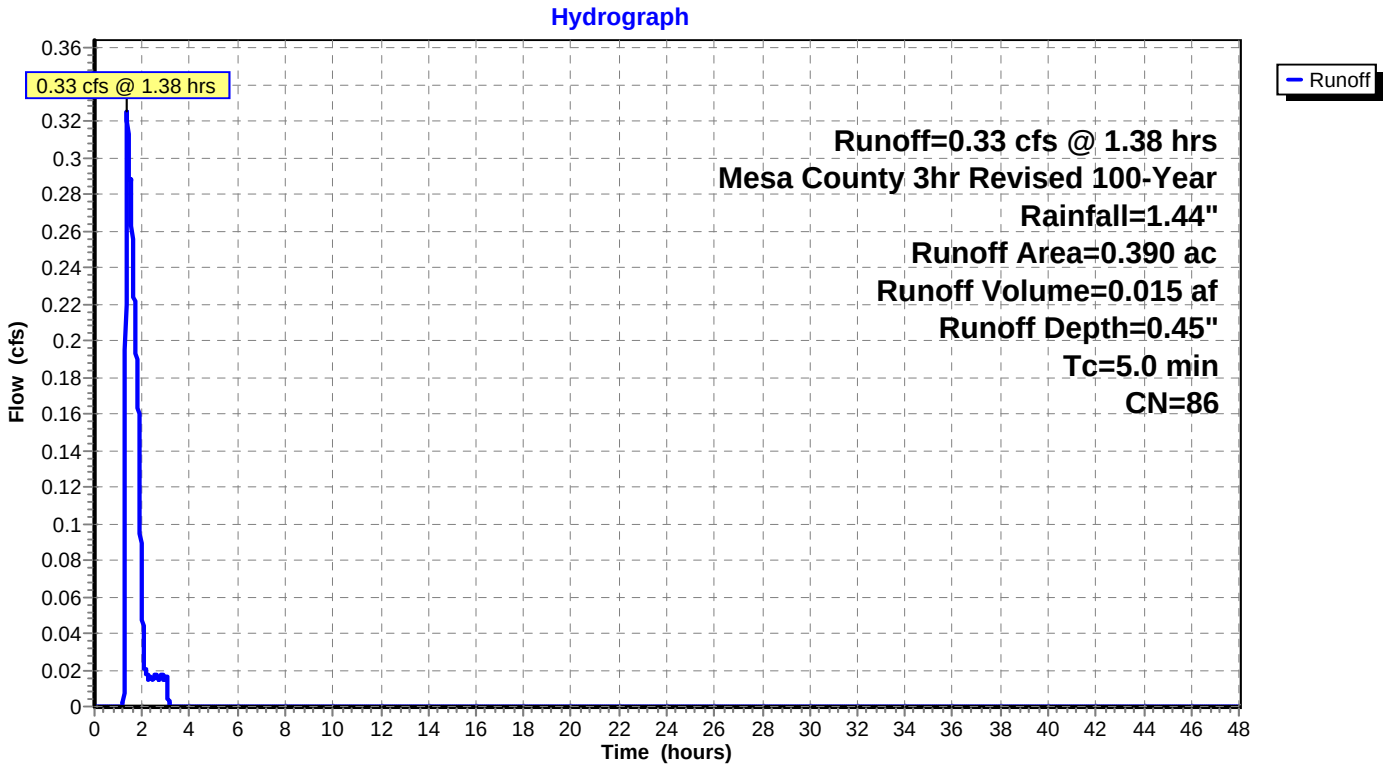
Runoff = 0.33 cfs @ 1.38 hrs, Volume= 0.015 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Mesa County 3hr Revised 100-Year Rainfall=1.44"

	Area (ac)	CN	Description
*	0.390	86	Natural western desert, HSG D

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0					**Direct Entry,**

Subcatchment DD2: DD2



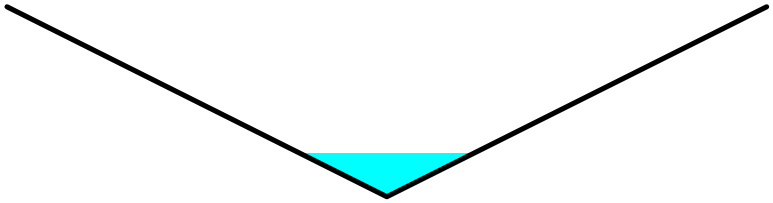
Summary for Reach R1: V-Ditch

Inflow Area = 6.870 ac, Inflow Depth > 0.72" for 100-Year event
Inflow = 0.48 cfs @ 2.66 hrs, Volume= 0.414 af
Outflow = 0.48 cfs @ 2.74 hrs, Volume= 0.414 af, Atten= 0%, Lag= 4.3 min

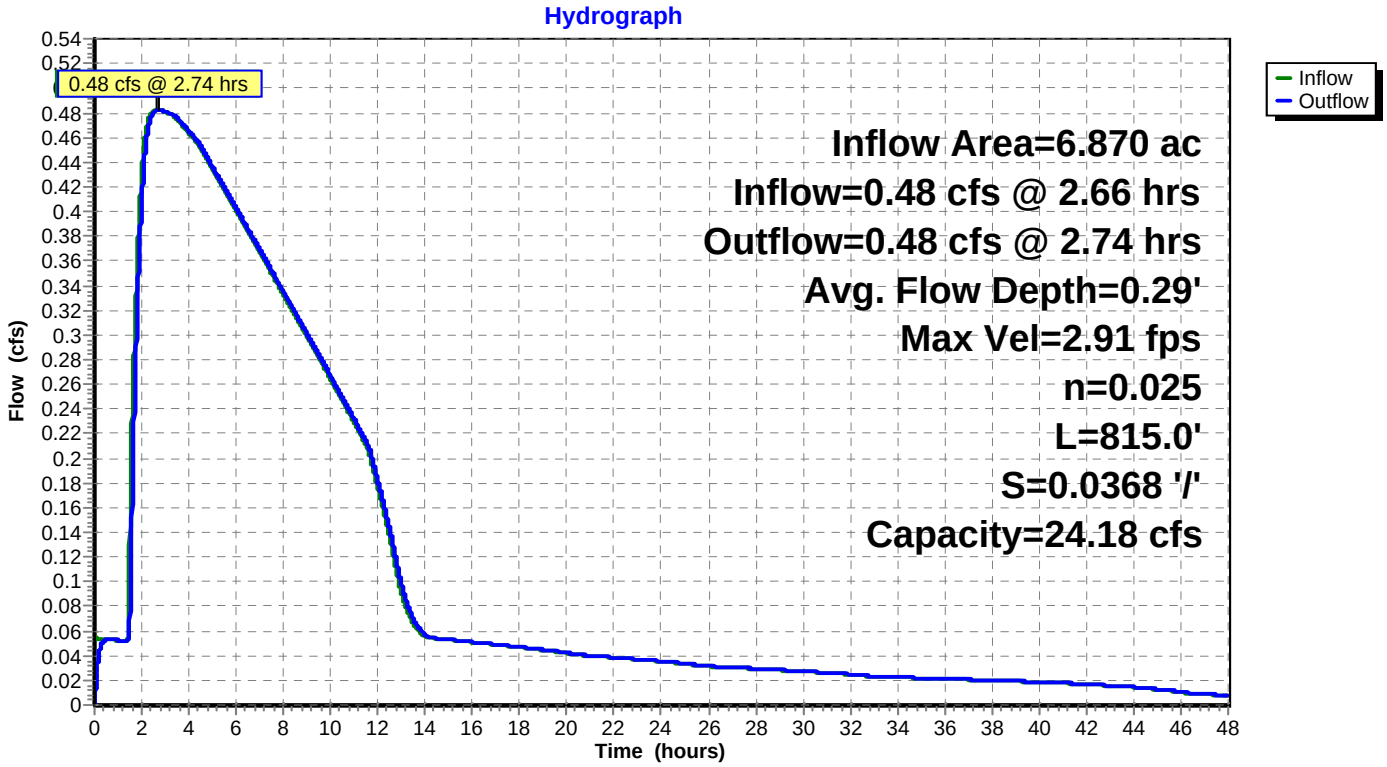
Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Max. Velocity= 2.91 fps, Min. Travel Time= 4.7 min
Avg. Velocity = 1.72 fps, Avg. Travel Time= 7.9 min

Peak Storage= 135 cf @ 2.74 hrs
Average Depth at Peak Storage= 0.29'
Bank-Full Depth= 1.25' Flow Area= 3.1 sf, Capacity= 24.18 cfs

0.00' x 1.25' deep channel, n= 0.025
Side Slope Z-value= 2.0 '/' Top Width= 5.00'
Length= 815.0' Slope= 0.0368 '/'
Inlet Invert= 4,796.00', Outlet Invert= 4,766.00'



Reach R1: V-Ditch



Summary for Pond P1: Pond 1

Inflow Area = 6.870 ac, Inflow Depth = 0.59" for 100-Year event
Inflow = 5.32 cfs @ 1.74 hrs, Volume= 0.335 af
Outflow = 0.48 cfs @ 2.66 hrs, Volume= 0.414 af, Atten= 91%, Lag= 55.3 min
Primary = 0.48 cfs @ 2.66 hrs, Volume= 0.414 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,801.50' Surf.Area= 2,799 sf Storage= 3,655 cf
Peak Elev= 4,804.31' @ 2.66 hrs Surf.Area= 5,534 sf Storage= 15,335 cf (11,680 cf above start)

Plug-Flow detention time= 616.1 min calculated for 0.330 af (98% of inflow)
Center-of-Mass det. time= 496.5 min (613.9 - 117.5)

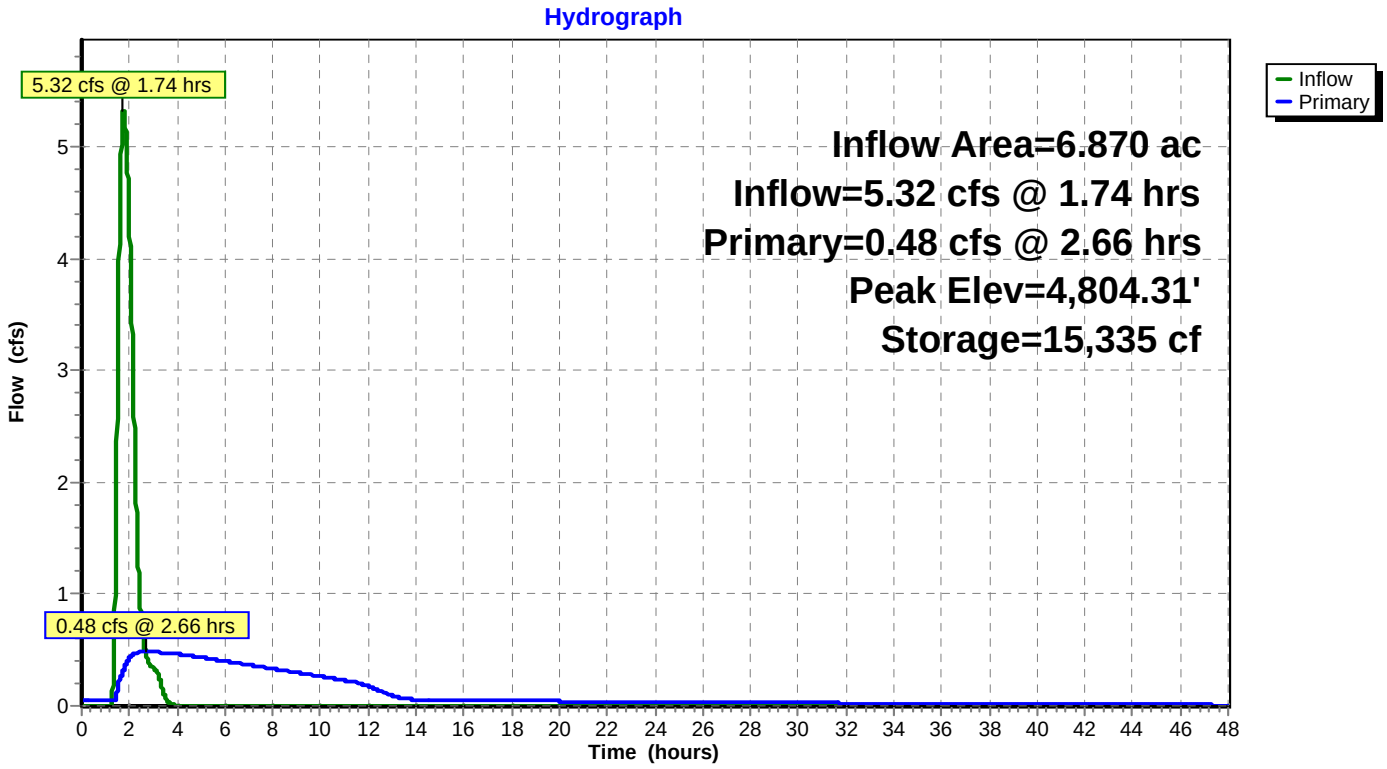
Volume	Invert	Avail.Storage	Storage Description
#1	4,799.00'	43,026 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,799.00	0	0	0
4,800.00	856	428	428
4,802.00	3,447	4,303	4,731
4,804.00	5,204	8,651	13,382
4,806.00	7,321	12,525	25,907
4,808.00	9,798	17,119	43,026

Device	Routing	Invert	Outlet Devices
#1	Primary	4,799.00'	**0.5" Vert. Orifice/Grate** X 7 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,801.50'	**3.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	4,804.50'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.48 cfs @ 2.66 hrs HW=4,804.31' TW=4,796.29' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.09 cfs @ 9.94 fps)
- **2=Orifice/Grate** (Orifice Controls 0.39 cfs @ 7.89 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P1: Pond 1



Summary for Pond P2: Pond 2

Inflow Area = 22.450 ac, Inflow Depth > 0.63" for 100-Year event
Inflow = 15.82 cfs @ 1.43 hrs, Volume= 1.174 af
Outflow = 4.21 cfs @ 2.02 hrs, Volume= 1.368 af, Atten= 73%, Lag= 35.1 min
Primary = 4.21 cfs @ 2.02 hrs, Volume= 1.368 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,747.71' Surf.Area= 8,172 sf Storage= 8,686 cf
Peak Elev= 4,749.95' @ 2.02 hrs Surf.Area= 11,908 sf Storage= 31,059 cf (22,373 cf above start)

Plug-Flow detention time= 309.8 min calculated for 1.168 af (100% of inflow)
Center-of-Mass det. time= 226.9 min (511.1 - 284.3)

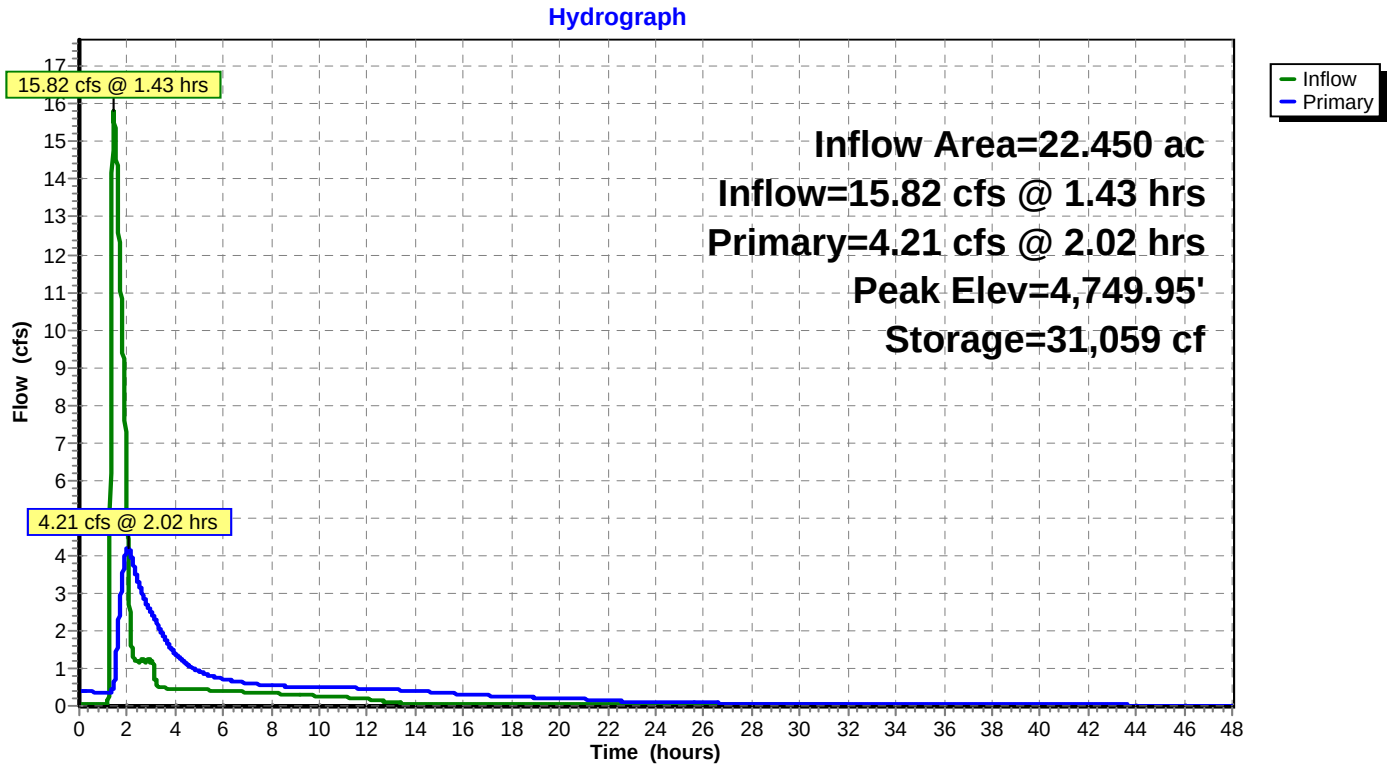
Volume	Invert	Avail.Storage	Storage Description
#1	4,746.06'	59,211 cf	**Custom Stage Data (Prismatic)**Listed below

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,746.06	0	0	0
4,747.00	6,765	3,180	3,180
4,748.00	8,746	7,756	10,935
4,749.00	10,334	9,540	20,475
4,750.00	11,994	11,164	31,639
4,751.00	13,830	12,912	44,551
4,752.00	15,490	14,660	59,211

Device	Routing	Invert	Outlet Devices
#1	Primary	4,746.06'	**0.9" Vert. Orifice/Grate X 4.00 columns** X 5 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,748.32'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	4,751.00'	**14.0' long x 0.5' breadth emergency spillway** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=4.21 cfs @ 2.02 hrs HW=4,749.95' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 0.76 cfs @ 8.57 fps)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 3.45 cfs @ 4.24 fps)
- **3=emergency spillway** (Controls 0.00 cfs)

Pond P2: Pond 2



Summary for Pond P3: Pond 3

Inflow Area = 1.560 ac, Inflow Depth = 0.54" for 100-Year event
Inflow = 1.63 cfs @ 1.37 hrs, Volume= 0.070 af
Outflow = 0.55 cfs @ 1.90 hrs, Volume= 0.085 af, Atten= 66%, Lag= 31.4 min
Primary = 0.55 cfs @ 1.90 hrs, Volume= 0.085 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,752.64' Surf.Area= 737 sf Storage= 632 cf
Peak Elev= 4,754.06' @ 1.90 hrs Surf.Area= 1,301 sf Storage= 2,077 cf (1,445 cf above start)

Plug-Flow detention time= 86.5 min calculated for 0.070 af (100% of inflow)
Center-of-Mass det. time= 67.0 min (166.0 - 99.0)

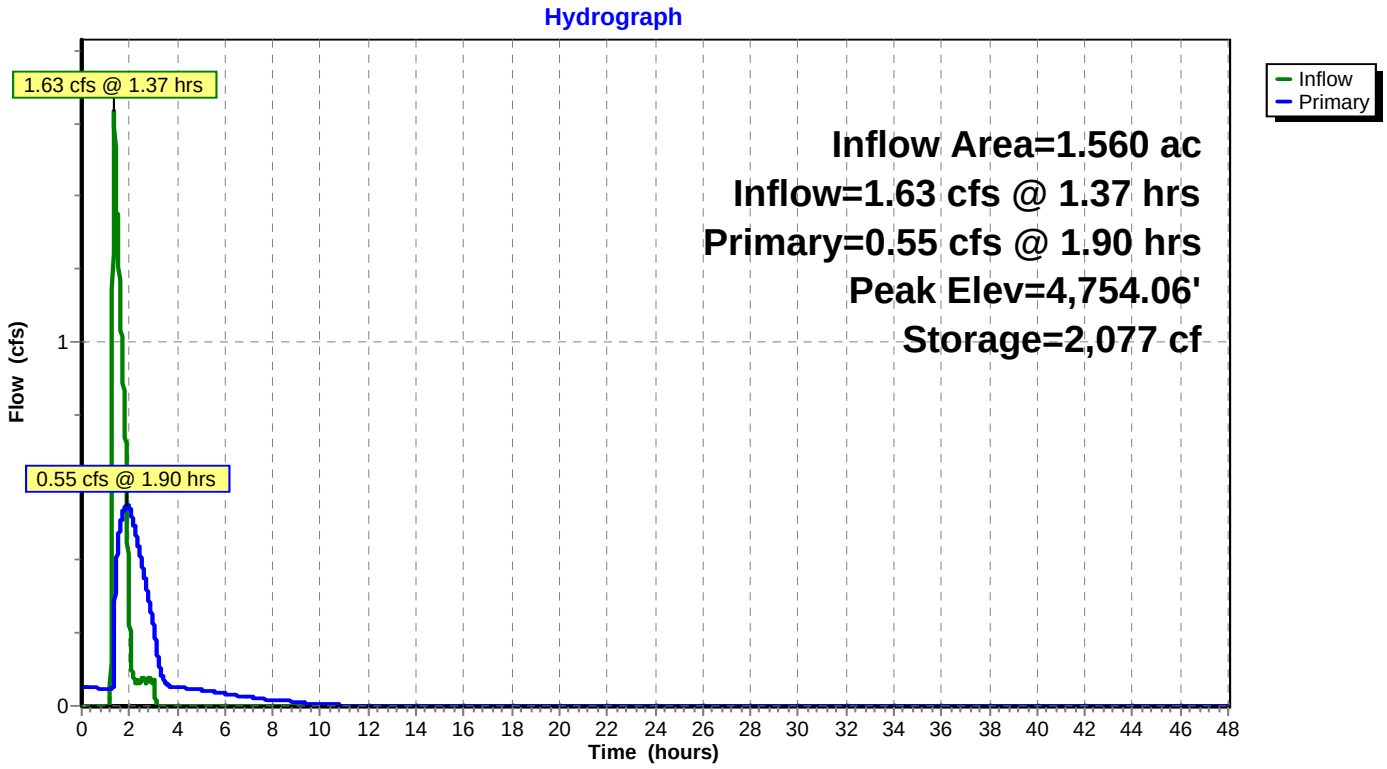
Volume	Invert	Avail.Storage	Storage Description
#1	4,751.00'	5,359 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,751.00	0	0	0
4,752.00	483	242	242
4,754.00	1,277	1,760	2,002
4,756.00	2,080	3,357	5,359

Device	Routing	Invert	Outlet Devices
#1	Primary	4,751.00'	**0.7" Vert. Orifice/Grate** X 4 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,752.64'	**4.0" Vert. Orifice/Grate** C= 0.600
#3	Primary	4,754.06'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=0.55 cfs @ 1.90 hrs HW=4,754.06' TW=4,745.08' (Dynamic Tailwater)
- **1=Orifice/Grate** (Orifice Controls 0.08 cfs @ 7.64 fps)
- **2=Orifice/Grate** (Orifice Controls 0.47 cfs @ 5.39 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P3: Pond 3



Summary for Pond P4: Pond 4

Inflow Area = 24.500 ac, Inflow Depth = 0.59" for 100-Year event
Inflow = 21.99 cfs @ 1.52 hrs, Volume= 1.204 af
Outflow = 10.21 cfs @ 1.98 hrs, Volume= 1.469 af, Atten= 54%, Lag= 27.6 min
Primary = 10.21 cfs @ 1.98 hrs, Volume= 1.469 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-48.00 hrs, dt= 0.01 hrs
Starting Elev= 4,742.19' Surf.Area= 5,651 sf Storage= 11,503 cf
Peak Elev= 4,745.13' @ 1.98 hrs Surf.Area= 9,680 sf Storage= 33,969 cf (22,467 cf above start)

Plug-Flow detention time= 97.0 min calculated for 1.204 af (100% of inflow)
Center-of-Mass det. time= 73.1 min (182.6 - 109.6)

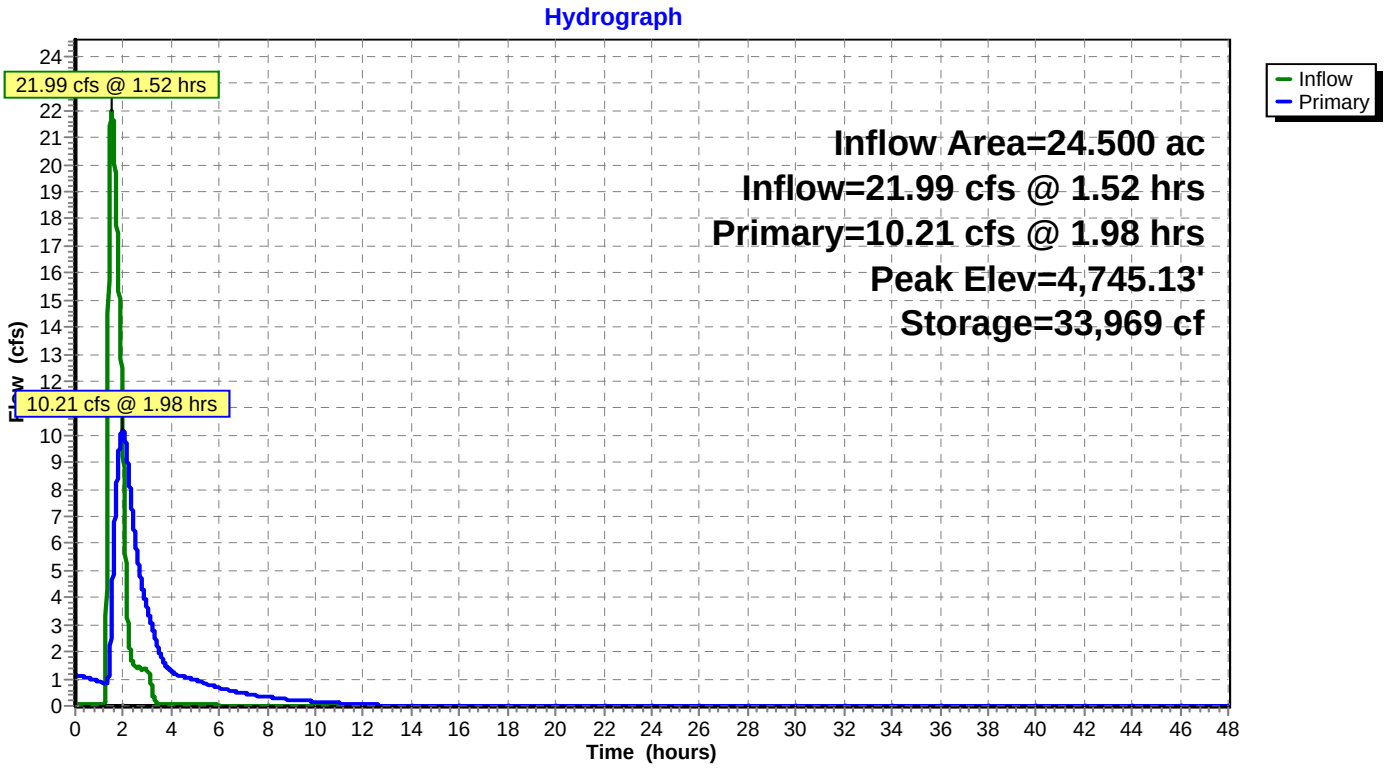
Volume	Invert	Avail.Storage	Storage Description
#1	4,739.00'	42,958 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
4,739.00	0	0	0
4,740.00	3,373	1,687	1,687
4,742.00	5,394	8,767	10,454
4,744.00	8,104	13,498	23,952
4,746.00	10,902	19,006	42,958

Device	Routing	Invert	Outlet Devices
#1	Primary	4,739.00'	**1.0" Vert. Orifice/Grate X 4.00 columns** X 8 rows with 4.0" cc spacing C= 0.600
#2	Primary	4,742.19'	**0.5' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32
#3	Primary	4,745.13'	**14.0' long x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

Primary OutFlow Max=10.21 cfs @ 1.98 hrs HW=4,745.13' (Free Discharge)
- **1=Orifice/Grate** (Orifice Controls 1.86 cfs @ 10.65 fps)
- **2=Broad-Crested Rectangular Weir** (Weir Controls 8.35 cfs @ 5.69 fps)
- **3=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

Pond P4: Pond 4



Appendix F – SWMM Checklist

Table 302
Stormwater Management Manual
Drainage Report Checklist

Instructions:
1. Applicant to identify with a "check-mark" if information is provided with report. If applicant believes information is not required, indicate with "n/a" and attach separate sheet with explanation
2. The reviewer will determine if information labeled "n/a" is required and whether information must be submitted.
3. Those items noted with an "asterisk" are not typically required for conceptual/ preliminary report. Applicant shall confirm this with local jurisdiction.
4. Submit three (3) copies of report and include copy of check list bound with report.

TITLE PAGE

A. Type of report (Conceptual/Preliminary or Final Drainage Report).
B. Project Name.
C. Preparer name, firm, address, number, and date.
D. Professional Engineer's seal of preparer.
E. Certifications (see SWMM Section 303.1)

I. INTRODUCTION

A. Background
- X 1. Identify report preparer and purpose.
- NA 2. Identify date of letter with previous County comments.

B. Project Location
- X 1. Identify Township, Range, and Section.
- X 2. Identify adjacent street and subdivision names.
- X 3. Reference to General Location Map.

C. Property Description
- X 1. Identify area in acres of entire contiguous ownership.
- X 2. Describe existing ground cover, vegetation, soils, topography and slopes.
- X 3. Describe existing drainage facilities, such as channels, detention areas, or structures.
- NA 4. Describe existing irrigation facilities, such as ditches, head-gates, or diversions.
- X 5. Identify proposed types of land use and encumbrances.

D. Previous Investigations
- X 1. Identify drainage master plans that include the project area, including floodplain studies.
- X 2. Identify drainage reports for adjacent development.

II. DRAINAGE SYSTEM DESCRIPTION

A. Existing Drainage Conditions
- X 1. Describe existing topography and provide map with contours extending a minimum of 100 feet beyond property limits.
- X 2. Identify major drainageway or outfall drainageway and describe map showing location of proposed development within the drainageways.
- X 3. Identify pre-developed drainage patterns and describe map showing pre-developed sub-basins and concentrated discharge locations. Provide calculations of pre-developed peak flows entering and leaving the site.

B. Master Drainage Plan
- X 1. Describe location of the project relative to a previously prepared master drainage plan, including drainage plans prepared for adjacent development.

C. Offsite Tributary Area

X 1. Identify all offsite drainage basins that are tributary to the project.
X 2. Identify assumptions regarding existing and future land use and effects of offsite detention on peak flows.

D. Proposed Drainage System Description

NA 1. Identify how offisite stormwater is collected and conveyed through the site and ultimately to the receiving water(s).
X 2. Identify sub-basins and describe, in general terms, how onsite stormwater is collected and conveyed through the site for each location where stormwater is discharged from the site.
X * 3. Describe detention volumes, release rates and pool elevations.
X * 4. Identify the difference in elevation between pond invert and the groundwater table.
X 5. Describe how stormwater is discharged from the site, including both concentrated and dispersed discharges and rates.
X 6. Describe stormwater quality facilities.
X * 7. Describe maintenance access aspects of design.
X * 8. Describe easements and tracts for drainage purposes, including limitation on use.

E. Drainage Facility Maintenance

NA * 1. Identify responsible parties for maintenance of each drainage and water quality facility.
NA * 2. Identify general maintenance activities and schedules.

III. DRAINAGE ANALYSIS AND DESIGN CRITERIA

A. Regulations

X 1. Identify that analysis and design was prepared in accordance with the provisions of the Manual.
X 2. Identify other regulations or criteria which have been used to prepare analysis and design.

B. Development Criteria

X 1. Identify drainage constraints placed on the project, such as by a major drainage study, floodplain study or other drainage reports relevant to the project.
X 2. Identify drainage constraints placed on the project, such as from major street alignments, utilities, existing structures, and other developments.

C. Hydrologic Criteria

(If Manual was followed without deviation, then a statement to that effect is all that is required. Otherwise provide the following information where the criteria used deviates from the Manual.)

X 1. Identify developed storm runoff peak flows and volumes and how they were determined, including rainfall intensity or design storm.
X 2. Identify which storm events were used for minor and major flood analysis and design.
X 3. Identify how and why any other deviations from the Manual occurred.

D. Hydraulic Criteria

(If Manual was followed without deviation, then a statement to that effect is all that is required. Otherwise provide the following information where the criteria used deviates from the Manual.)

NA * 1. Identify type(s) of streets within and adjacent to development and source for allowable street capacity.
NA * 2. Identify which type(s) of storm inlets were analyzed or designed and source for allowable capacity.
3. Identify which type of storm sewers which were analyzed or designed and

Manning's n-values used.

4. Identify which method was used to determine detention volume requirements and how allowable release rates were determined.
5. Identify how the capacity of open channels and culverts were determined.
6. Identify any special analysis or design requirements not contained with the Manual.
7. Identify how and why any other deviations from the Manual occurred.

E. Variance from Criteria

1. Identify any provisions of the Manual for which a variance is requested.
2. Identify pre-existing conditions which cause the variance request.

***IV. POST CONSTRUCTION STORMWATER MANAGEMENT. See Manual Section 1600 for requirements.**

Note: This section of the Final Drainage Report identifies additional information required by Mesa County's, City of Grand Junction's, and Town of Palisade's, Permit for Stormwater Discharges Associated with Municipal Separate Storm Sewer Systems (MS4s), permit No. COR-090000. The Final Drainage Plan and the Construction SWMP (see SWMM Section 1500) meets the requirements of the MS4s Permit. In general, this section identifies permanent BMP practices to control the discharge of pollutants after construction is complete.

*A. Stormwater Quality Control Measures

1. Describe the post-construction BMPs to control discharge of pollutants from the project site.
2. If compensating detention is provided, discuss practices to address water quality from area not tributary to detention area.
3. If underground detention is proposed, discuss how water quality facilities will be provided on the surface.
4. If proprietary BMPs are proposed, provide the justification and sizing requirements (see SWMM Section 1603.3).

*B. Calculations

1. Provide methods and calculations for WQCV, sediment storage, and water quality outlet structure.

V. CONCLUSIONS

A. Compliance with Manual

Compliance with Manual and other approved documents, such as drainage plans and floodplain studies.

B. Design Effectiveness

Effectiveness of drainage design to control impacts of storm runoff.

C. Areas in Flood Hazard Zone

Meet requirements of Floodplain Regulations: Mesa County Land Development Code, Section 7.13; City of Grand Junction Zoning and Development Code, Section 7.1.

D. Variances from Manual

Applicant shall identify any requested variances and provide basis for approving variance. If no variances are requested, applicant shall state that none are requested.

VII. REFERENCES

Provide a reference list of all criteria, master plans, drainage reports, and technical information used.

TABLES

Include copy of all tables prepared for report.

FIGURES

A. General Location Map (See Section 303.2a)

X B. Flood Plain Information
X C. Drainage Plan (See Section 303.2b)
X D. Other pertinent figures.

APPENDICIES

A. DESIGN CHARTS

X 1. Provide copy of all design charts (i.e.: tables, figures, charts from other criteria) used for the report.

B. HYDROLOGIC CALCULATIONS (see Manual Sections 600 and 700)

X 1. Land use assumptions for off-site runoff calculations.
X 2. Time of concentration and runoff coefficients for pre-existing and post development conditions.
X 3. Pre-developed hydrologic computations.
X 4. Developed conditions hydrologic computations.

C. HYDRAULIC CALCULATIONS

NA 1. Capacity of existing channels, streets, storm sewers, inlets, culverts and other facilities.
NA 2. Calculations for existing storm sewer and open channel.
NA 3. Irrigation ditch flows and ditch system capacity.
X * 4. Detention pond design (see Manual, Section 1400 for requirements).
X * a. Storage volume, release rates, and pool elevations for 10-year and 100-year storm.
X * b. Outlet structure dimensions, orifice diameter, weir lengths, pipe headwater and other data.
X * c. Outlet velocity and energy dissipation requirements.
X * d. Routing of outlet flows and emergency spillway flows.
X * 5. Street capacity calculations, if data in Manual not used (see Section 1100).
NA * 6. Storm inlet capacity calculations, if data in Manual not used (see Section 1100).
NA * 7. Storm sewer capacity calculations, if data in Manual not used (see Section 1000).
NA * 8. Channel capacity calculations, if data in Manual not used (see Section 800).
NA * 9. Culvert capacity calculations (see Manual, Section 1200).
NA * 10. Other hydraulic structure calculations (see Manual, Section 900).

D. STORMWATER QUALITY CALCULATIONS

X 1. Water Quality Capture Volume (WQCV).
X * 2. Storage volume for sediment volume and pool elevations for WQCV.
X * 3. Outlet calculations for required area per row, diameter of individual holes, number of holes per row, and number of holes per column.

X

CERTIFICATION – PROFESSIONAL ENGINEER'S SEAL AND SIGNATURE

ACKNOWLEDGEMENTS

Drainage Report checklist was prepared by: SSM

Table 303
Stormwater Management Manual

Drainage Plan Checklist

Instructions:
1. Applicant to identify with a "check-mark" if information is provided. If applicant believes information is not required, indicate with "n/a".
2. County will determine if information labeled "n/a" is required and whether information must be submitted.

I. EXISTING FACILITIES

- X A. Contours at two foot intervals, based on USGS datum. Contours to extend at least 50 feet past property line.
- X B. Location and elevation of USGS benchmarks or benchmarks referenced to USGS.
- X C. Property lines.
- X D. Drainage easements.
- X E. Street names.
- X F. Major and minor channels and floodplains.
- X G. A historic drainage plan including historic basin boundaries and flow paths.

II. PROPOSED FACILITIES

- X A. Contours at two-foot intervals, based on USGS datum.
- X B. Property lines.
- X C. Drainage easements.
- X D. Street names and grades.
- X E. Right of way and easement.
- X F. Finished floor elevations for protection from major storm run-off.
- X G. Detention pond information:
  1. X Location of each detention pond with site at 1"=50' scale or larger with 2-foot contour intervals.
  2. X Inlet and outlet structure, and trickle channel design details.
  3. X Details of emergency spillway and channel.
  4. X Landscape information, including side slopes, vegetation and planting requirements.
  5. X Details of water quality outlet structure.
- X H. Channel Information:
  1. X Profiles with existing and proposed grades.
  2. X Cross sections on 100-foot stations showing existing and proposed topography and required rights of way.
  3. X Locations and size of all existing and proposed structures.
  4. X Locations and profiles of adjacent utilities.
  5. X Typical channel section and lining details.
- X I. Storm sewer information:
  1. X Alignment and location of manholes, inlets, and outlet structures.
  2. X Profile of invert and pipe crown.
  3. X Invert elevations at manholes and inlets.
  4. X Lengths and grades between manholes and inlets.
  5. X Locations and elevations of utilities adjacent to and crossing storm sewer.
  6. X Easement and other O&M access geometry.
  7. X Outlet details, such as end sections, headwall and wingwalls, erosion control, and vegetation.
- N/A J. Street cross sections with design 100-year flood depth.
- N/A K. Other drainage related structures and facilities, including underdrains and sump pump discharge lines.
- N/A L. Other permanent BMP measures to control pollutant discharges to the County's MS4 system.

III. HYDRAULIC AND HYDROLOGIC INFORMATION

X A. Routing and accumulative runoff peaks at upstream and downstream ends of the site and at various critical points onsite for initial and major storms. Inflow and outflow from each subbasin shall be shown for both initial and major storms.

NA B. Street cross sections showing 100-year flood levels.

NA C. Major and minor channels and floodplains.

X D. Detention pond data:

X 1. Release rates for 10- and 100-year storm events.

X 2. Required and provided volumes for 10- and 100-year storm events.

X 3. Design depths for 10- and 100-year storm events.

X 4. Water quality capture volume and pool elevation.

NA E. Channel data:

NA 1. Water surface profiles.

NA 2. Representative 100-year flow velocity and Froude number.

NA F. Storm sewer data:

NA 1. Profile of water surface for design flow rate.

NA 2. Peak flows for design flow, 2-year and 100-year storm events.

IV. STANDARD NOTES

X A. No building, structure, or fill will be placed in the detention areas and no changes or alterations affecting the hydraulic characteristics of the detention areas will be made without the approval of the County.

X B. Maintenance and operation of the detention and water quality areas is the responsibility of property owner. If owner fails in this responsibility, the County has the right to enter the property, maintain the detention areas, and be reimbursed for costs incurred.

X C. Detention pond volumes, all drainage appurtenances, and basin boundaries shall be verified. As-built drawings shall be prepared by a registered professional engineer prior to issuance of certificate of occupancy for any structure within the development.

X D. Permission to reproduce these plans is hereby given to Mesa County for County purposes associated with plan review, approval, permitting, inspection and construction of work.

X **V. PROFESSIONAL ENGINEER'S SEAL AND SIGNATURE**

Y **VI. OTHER**

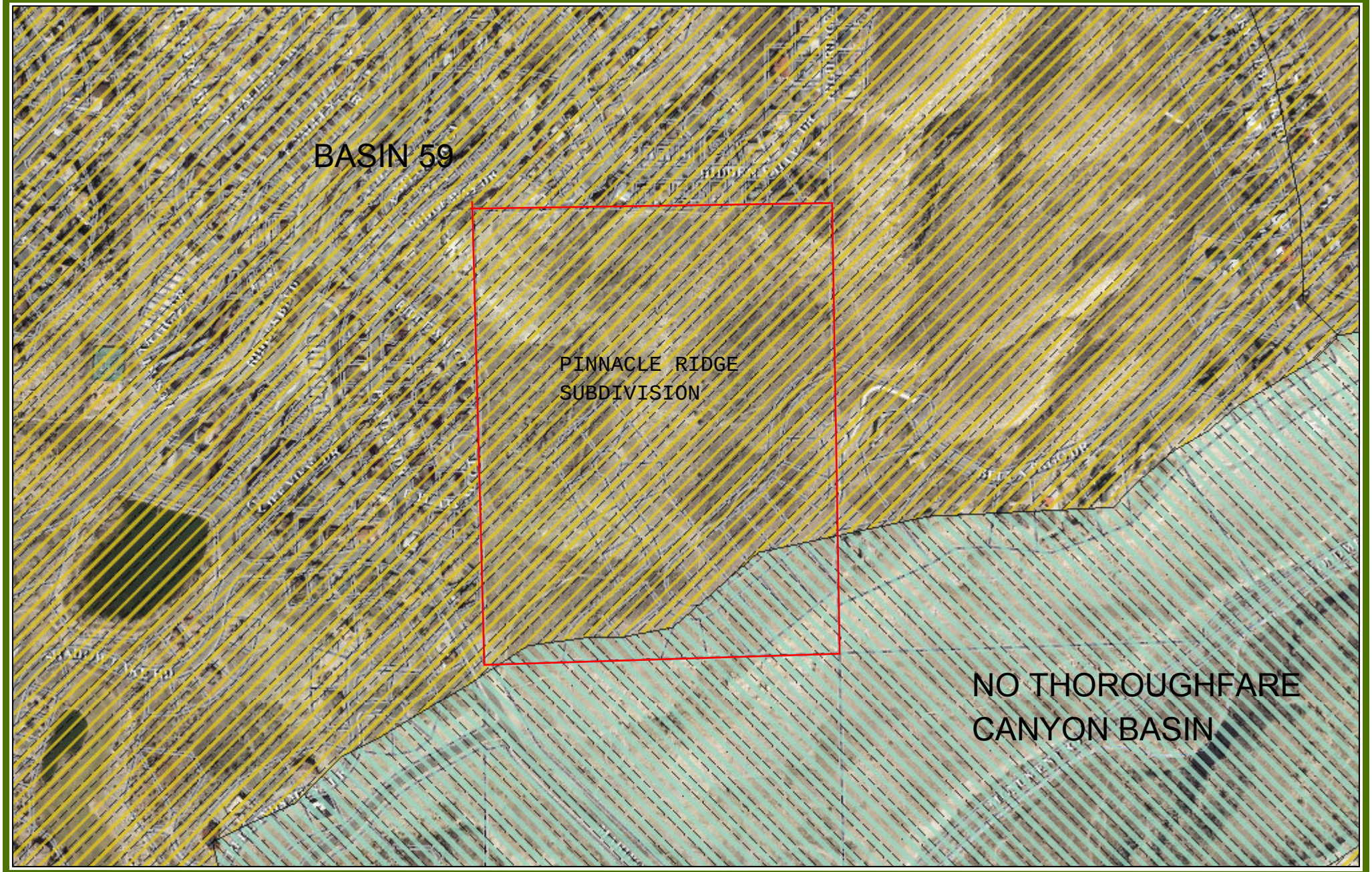
A. Horizontal and vertical control information and ties to existing and proposed features.

ACKNOWLEDGEMENTS

Drainage Plan checklist was prepared by: CSM

Appendix G – Major Basins Exhibit

City of Grand Junction



N

0 0.125 0.25 Miles

Printed: 6/23/2015

1 inch = 468 feet

CITY OF Grand Junction COLORADO GEOGRAPHIC INFORMATION SYSTEM

Appendix H – Variance Request Letter

VORTEX
ENGINEERING, INC.

December 22, 2015

City of Grand Junction
Attn: Rick Dorris, P.E.
250 N 5th Street
Grand Junction, CO 81501

RE: Pinnacle Ridge Subdivision
Drainage Variance Request
East of Mariposa Drive
Grand Junction, CO

VEI #: F04-006
PROJECT #: SUB-2015-120

Dear Mr. Dorris,

This letter is to request a variance from compliance with section 1407.3 of The Grand Junction Storm Water Management Manual, hereinafter SWMM, which requires that "The total of un-detained area shall not exceed 5% or 5000 square feet of total area whichever is less." This request shall be taken into consideration in conjunction with the data and narrative contained in the approved "Preliminary Drainage Report for Pinnacle Ridge Subdivision". The copy of this letter is found in Appendix H of the above mentioned report. The subject project has two (2) basins that do not meet the above requirement, and are the cause for this request; Basins DD1 and DD2.

The proposed basin DD1 is about 1.93 acres in size, located in the south east corner of the project site. In proposed conditions this basin shall remain mostly undisturbed. Historically, the runoff from this area is generated by the existing basin EX1, with an area of 5.96 acres and discharges 1.62 and 4.47 cfs runoff for the minor (10 year storm) and the major (100 year storm), respectively. The runoff during the proposed conditions from DD1 is estimated to be 0.32 cfs and 1.61 cfs for minor and major storm event, respectively. The reduction of the runoff in the proposed conditions is created by reducing the existing basin area, due to the onsite grading.

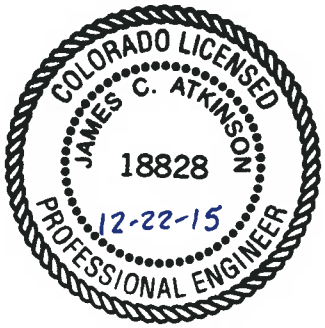
Basin DD2 is located in the north east corner of the site with an area of 0.39 acres. The proposed runoffs from this basin are 0.06 cfs and 0.33 cfs for minor and major storm, respectively. The existing runoff flows in this area are generated by the existing basin EX6 and are estimated to be 0.11 cfs and 0.55 cfs for minor and major storm, respectively. The area of the basin in proposed conditions is decreased by almost a half. The runoff from this basin is impossible to route via gravity through Pond 4 due to the basin elevations at low end are below the inverts of the designated ponds. The runoff from DD2 shall be concentrated in swales along the northern property boundary and diverted into the adjacent vacant lot owned by Genie Inc., and located between 2417 and 2419 Hidden Valley Drive, at the same point of discharge as the outfall from Pond 4. The sum of the flows into the vacant lot from Pond 4 outfall and DD2 runoff, in proposed conditions, is estimated to be 1.96 cfs and 10.40 cfs, for minor and major storm respectively, which is less than the adjusted allowable 2.71 cfs and 11.28 and also less than the historic runoff from basin EX4 = 2.91 cfs and 13.46 during the minor and major storm events, respectively.

In both cases of the direct discharge from basins DD1 and DD2, in the proposed conditions is less than in the existing conditions. In case of DD2 the runoff onto the north property shall be controlled with diversion ditches running along the boundary in the direction of the above mentioned vacant lot, thus reducing the cross lot drainage onto the developed lots located directly north of the basin.

In both cases the low points of DD1 and DD2 basins are well below inverts of their respective detention ponds, thus the hydraulic conditions in these basins cannot be adequately addressed to comply with the SWMM. Nevertheless, both basins DD1 and DD2 are over detained in Pond 1 and Pond 4, respectively.

Vortex Engineering, Inc. looks forward to successfully working with the City of Grand Junction to permit this project. Upon your review of this information, should you have any questions or require additional information, please do not hesitate to contact me at 970-245-9051. Thank you.

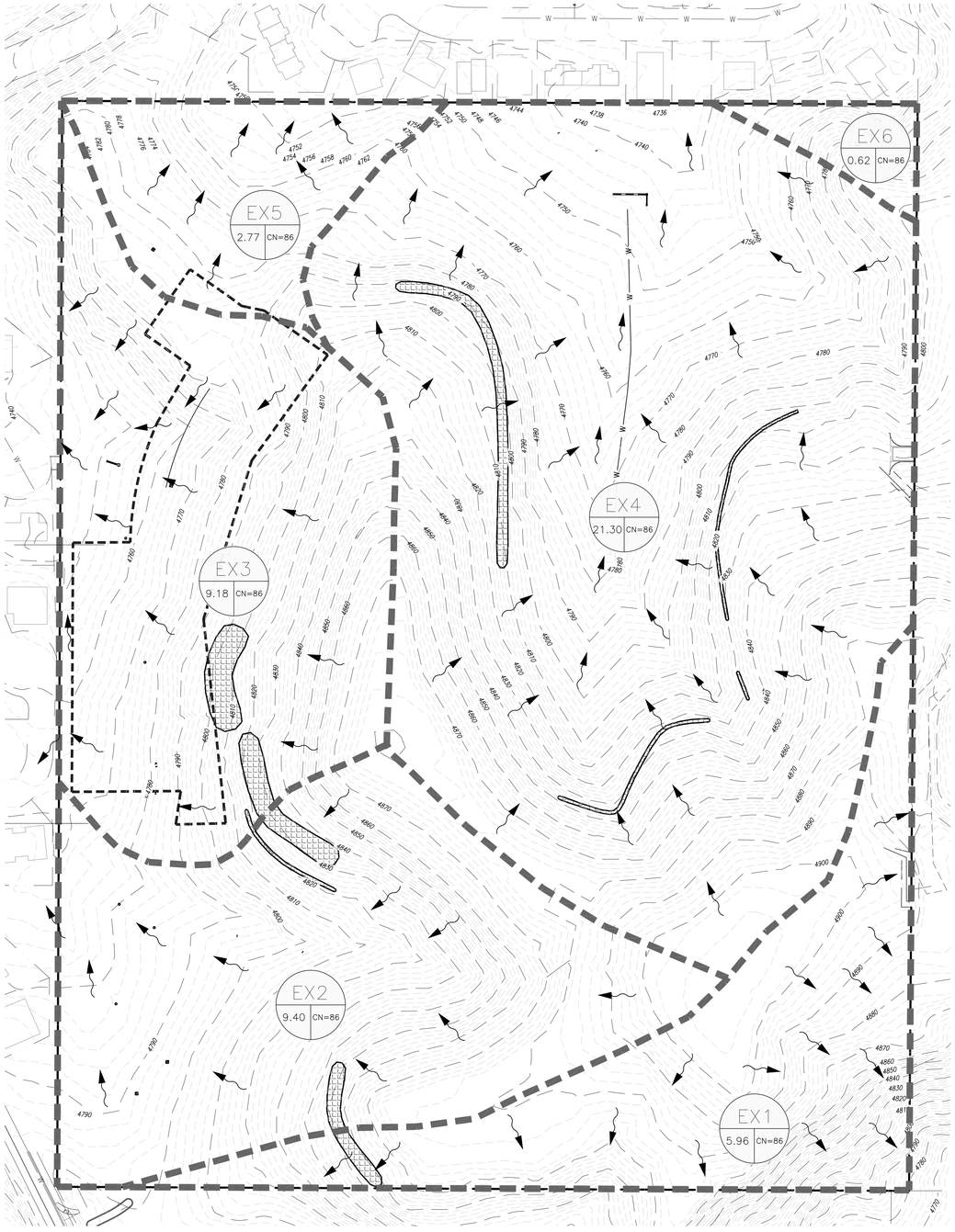
Sincerely,
Vortex Engineering, Inc

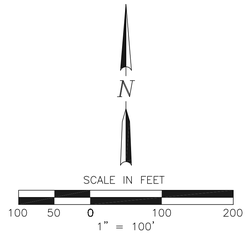


James C. Atkinson, P.E.

Cc: Two R&D
File

Appendix I – Drainage Maps





RUNOFF TABLE

BASIN	10 YEAR RUNOFF (CFS)	100 YEAR RUNOFF (CFS)
EX1	1.62	4.47
EX2	1.41	6.74
EX3	1.42	6.80
EX4	2.91	13.46
EX5	0.45	2.22
EX6	0.11	0.55

PROJECT BENCHMARK

PROJECT BENCHMARK #1 IS A SURVEY MONUMENT LOCATED AT THE SE1/16 CORNER OF SECTION 4, T1S, R1W, ON F 1/4 ROAD. ELEVATION IS BASED ON THE MESA COUNTY SURVEY INFORMATION MANAGEMENT SYSTEM.
ELEVATION=4571.298
PROJECT BENCHMARK #2 IS A SURVEY MONUMENT LOCATED AT THE C-E1/16 CORNER OF SECTION 4, T1S, R1W. ELEVATION IS BASED ON THE MESA COUNTY SURVEY INFORMATION MANAGEMENT SYSTEM.
ELEVATION=4580.794

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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FOR REVIEW

MAJOR SUBDIVISION
FINAL PLAN

REV. DATE	COMMENT	BY

Drainage Map - Existing Conditions

-

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/07/17
SCALE: SEE PLAN
CAD: pinnacledrainagemap.dwg

~SHEET~
1/2

PONDS' SUMMARY TABLES

POND 1	VOLUME (CF)	WSEL (FT)	DESIGN PEAK DISCHRGE FLOW (CFS)	SUM OF DD1 AND POND 1 PEAK FLOWS (CFS)	ADJUSTED ALLOWABLE PEAK DISCHARGE FLOW (CFS)
WQCV	3,296	4801.50	NA	NA	NA
10 YEAR	6,082	4802.31	0.26	.58	0.59
100 YEAR	15,335	4804.31	0.48	2.09	2.47

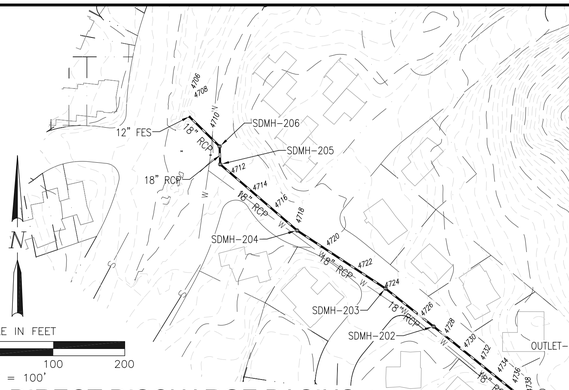
POND 2	VOLUME (CF)	WSEL (FT)	PEAK DISCHRGE FLOW (CFS)	ALLOWABLE PEAK DISCHRGE FLOW (CFS)
WQCV	7,575	4848.83	NA	NA
10 YEAR	13,992	4748.32	0.52	1.87
100 YEAR	31,059	4749.95	4.21	7.79

POND 3	VOLUME (CF)	WSEL (FT)	PEAK DISCHRGE FLOW (CFS)	ALLOWABLE PEAK DISCHRGE FLOW (CFS)
WQCV	720	4752.64	NA	NA
10 YEAR	820	4752.88	.17	0.19
100 YEAR	2,077	4754.06	.55	0.78

POND 4	VOLUME (CF)	WSEL (FT)	PEAK DISCHRGE FLOW (CFS)	SUM OF DD2 AND POND 4 PEAK FLOWS (CFS)	ADJUSTED ALLOWABLE PEAK DISCHARGE FLOW (CFS)
WQCV	11,098	4742.19	NA	NA	NA
10 YEAR	14,737	4742.73	1.91	1.96	2.71
100 YEAR	33,969	4745.13	10.21	10.40	11.28

OUTLET STRUCTURE TABLES

POND	A	B	C	D	E	F	G	H	I
POND 1	4799.00	4801.50	4802.31	4804.31	6"	32"	1	7	5/8"
POND 2	4747.00	4748.83	4749.39	4750.94	20"	21"	1	4	7/8"
POND 3	4751.00	4752.64	4752.88	4754.06	6"	21"	1	4	5/16"
POND 4	4739.00	4742.19	4742.73	4745.13	20"	35"	1	8	13/16"



DIRECT DISCHARGE BASINS:

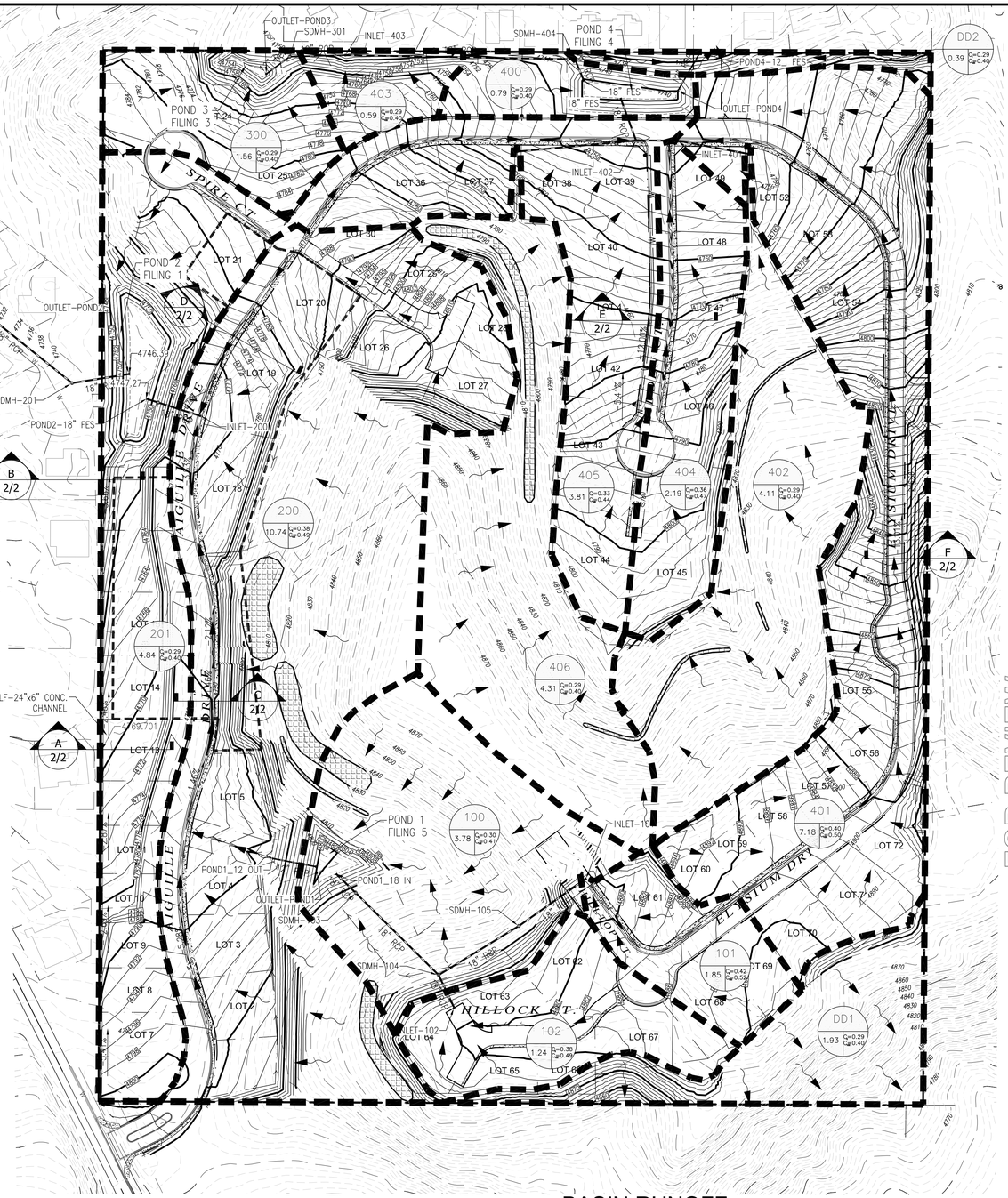
BASIN	10 YEAR RUNOFF (CFS)	100 YEAR RUNOFF (CFS)
DD1	0.32	1.61
DD2	0.06	0.33

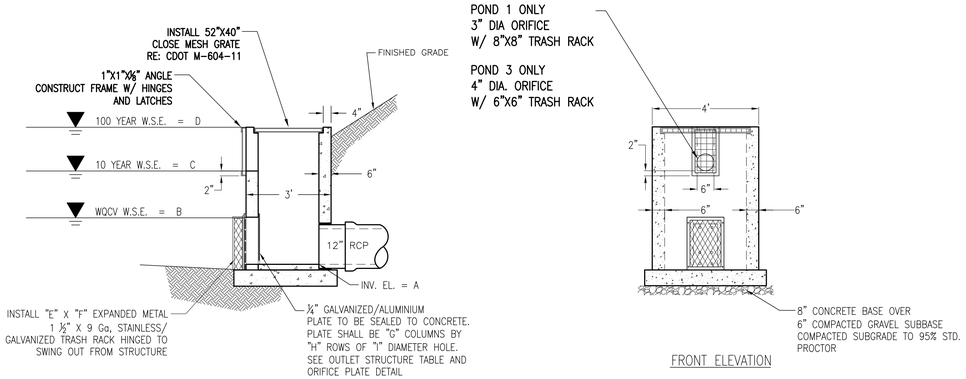
GENERAL NOTES:

1. NO BUILDING, STRUCTURE, OR FILL WILL BE PLACED IN THE DETENTION AREAS AND NO CHANGES OR ALTERATIONS AFFECTING THE HYDRAULIC CHARACTERISTICS OF THE DETENTION AREAS WILL BE MADE WITHOUT THE APPROVAL OF THE CITY.
2. MAINTENANCE AND OPERATION OF THE DETENTION AND WATER QUALITY AREAS IS THE RESPONSIBILITY OF PROPERTY OWNER. IF OWNER FAILS IN THIS RESPONSIBILITY, THE CITY HAS THE RIGHT TO ENTER THE PROPERTY, MAINTAIN THE DETENTION AREAS, AND BE REIMBURSED FOR COSTS INCURRED.
3. DETENTION POND VOLUMES, ALL DRAINAGE APPURTENANCES, AND BASIN BOUNDARIES SHALL BE VERIFIED. AS-BUILT DRAWINGS SHALL BE PREPARED BY A REGISTERED PROFESSIONAL ENGINEER PRIOR TO ISSUANCE OF CERTIFICATE OF OCCUPANCY FOR ANY STRUCTURE WITHIN THE DEVELOPMENT.
4. PERMISSION TO REPRODUCE THESE PLANS IS HEREBY GIVEN TO THE CITY OF GRAND JUNCTION FOR CITY'S PURPOSES ASSOCIATED WITH PLAN REVIEW, APPROVAL, PERMITTING, INSPECTION AND CONSTRUCTION OF WORK.

LEGEND

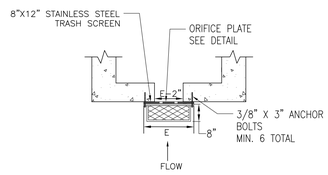
- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- BASIN INFO BLOCK (BASIN DESIGNATION, AREA (AC), RATIONAL COEFFICIENTS)
- DESIGN POINT
- DIVERSION DITCH

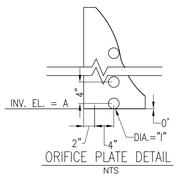




POND 1 ONLY
3" DIA ORIFICE
W/ 8"X8" TRASH RACK

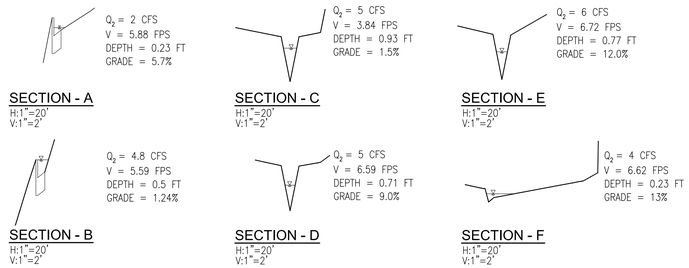
POND 3 ONLY
4" DIA. ORIFICE
W/ 6"X6" TRASH RACK





POND OUTLET STRUCTURE DETAIL

N.T.S.



BASIN RUNOFF

DRAINAGE AREA	Area (ac)	2-Yr. Q (cfs) Basin Runoff	100-Yr. Q (cfs) Basin Runoff
100	3.78	1.36	7.24
101	1.85	0.85	4.21
102	1.24	0.62	3.00
200	10.74	4.94	24.50
201	4.84	1.68	9.05
300	1.56	0.54	2.92
400	0.79	0.28	1.48
401	7.18	3.44	16.86
402	4.11	1.43	7.69
403	0.59	0.21	1.11
404	2.19	0.95	4.79
405	3.81	1.52	7.82
406	4.31	1.50	8.06
DD1	1.93	0.67	3.60
DD2	0.39	0.13	0.72

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James C. Atkinson
PROFESSIONAL ENGINEER
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FOR REVIEW

MAJOR SUBDIVISION FINAL PLAN

REV. DATE	COMMENT	BY

Drainage Map - Proposed Conditions

-

Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/07/17**
SCALE: **SEE PLAN**
CAD: **pinnacledrainagemap.dwg**

~SHEET~
2/2

City of Grand Junction
Fire Department New Development Fire Flow

Instructions: To process the application, the developer/applicant's engineer should first fill out all items in Section A, and then deliver/mail this form to the appropriate water purveyor.[1] Once the water supplier has signed and given the required information, deliver/mail the completed and fully signed form to the City or County Planning Department.[2]

SECTION A

Date: May 29, 2017
Project Name: Pinnacle Ridge, Filings 1 and 2
Project Street Address: NE of Mariposa Drive, 1/4 mi north of
Assessor's Tax Parcel Number: 2945-212-00-011
Project Owner Name: Two R & D, LLC.
City or County project file #: TBD

1. If the project includes one or more one or two-family dwelling(s):
   a. The maximum fire area [1] for each one or two family dwelling will be 6,000 sf square feet.
   b. All dwelling units will ☐ will not ■ include an approved automatic sprinkler system.
   Comments:
   There are no homes in Filing 1 and 2 that will require a fire sprinkler system.
2. If the project includes a building other than one and two-family dwelling(s):
   a. List the fire area and type of construction for all buildings used to determine the minimum fire flow requirements:
      N/A
   b. List each building that will be provided with an approved fire sprinkler system:
      N/A
3. List the minimum fire flow required for this project (based on Appendix B and C):
   2000 gpm at 20 psi

   Comments:

Note: Fire Flow Rule: The City's Fire Code[3] sets minimum fire flows for all structures and new development. In general, for single family dwellings, at least 1000 g.p.m. at 20 p.s.i. residual pressure must be continuously available at each structure. Duplex, other residential and all non-residential uses must have more fire flows in order to fight fires. Inadequate fire flows are normally due to water supply pipes that are too small or too little water pressure, or a combination of both.

Note for the Applicant/Project engineer: Refer to Appendix B and C, IFC 2012, to determine the minimum fire flow required for this project, based on the Water Purveyor's information (*i.e.*, location, looping and size of water lines; water pressure at the site, *etc.*) and the type, density and location of all structures. Base your professional judgment on the City approved utility plans and Water Provider information shown on this Form. Each time the utility plans/other information relating to treated water changes, resubmit this form just as you did the first time.

[End of Section A. Section B continues on the reverse side of this page]

[1] Fire flow calculation area, 2012 IFC, B104.1 p 445.

City of Grand Junction
Fire Flow Form

SECTION B
[To be completed by the Water Supplier]

1. Circle the name of the water supplier: (Ute) Clifton Grand Junction

2. List the approximate location, type and size of supply lines for this project, or attach a map with the same information:
   See the attached map.

3. List the g.p.m. at 20 p.s.i. residual pressure at the point that the development/project will be connected to the existing water system:
   3,621 g.p.m. @ 20 p.s.i.

4. Attach fire flow test data for the fire hydrants nearest to the development/project that must be used to determine available fire flow: See the attached flow test results.
   [Or: **1.)** attach a map or diagram with the same information, or **2.)** attach a map/diagram with flow modeling information.]

5. If new lines are needed (or if existing lines must be looped) to supply the required fire flows, or if more information is needed to state the available minimum g.p.m. @ 20 p.s.i. residual pressure, please list what the applicant/developer must do or obtain: .....

Print Name and Title of Water Supplier Employee completing this Form:

Robert Yates - Fire Hydrants Division Date: May 31, 2017

****

Note: Based on the facts and circumstances, the Fire Chief may require the applicant/developer to engage an engineer[4] to verify/certify that the proposed water system improvements, as reflected in the approved utility plans submitted in support of the application/development, will provide the minimum fire flows to all structures in this project. If so, the engineer's signature below means that the City's Fire Flow requirements will be met by this development, if constructed as approved.

Print Name and License No. of P.E.: _____

Signature of P.E.: _____

Dated: _____

---

[1] There are three drinking water suppliers: Ute Water, Clifton Water and City water.
[2] Address: City – 333 West Ave, Bldg A, Grand Junction, CO 81501; County – PO Box 20000, Grand Junction, CO 81502
[3] International Fire Code, 2012 Edition
[4] City Code defines engineer as one who is licensed as a P.E. by the state of Colorado.

Fire Flow Hydrant Master
With Graph

Company Name: Ute Water Conservancy District
Address: 2190 H 1/4 Rd
City: Grand Junction
State: Colorado
Zip: 81505

Work Order: 566
Operator: Robert/Dusty

Test Date: 5/31/17 2:00 pm

NFPA Classification:

Blue	AA
3621.87	

Test did not reach recommended drop of 25% per NFPA 291

Test Hydrant: 738
Address: 2398 MARIPOSA DR
Cross Street:
Location:
District:
Sub-Division:

Latitude: 706960.304
Longitude: 4325735.005
Elevation: 4788.95
State X / Y: _____ / _____

Pumpers: **Nozzles:** **Open Dir:**

Manuf: Kennedy Valve
Model: Guardian

Installed: 01/01/2014
Main Size: 0.00

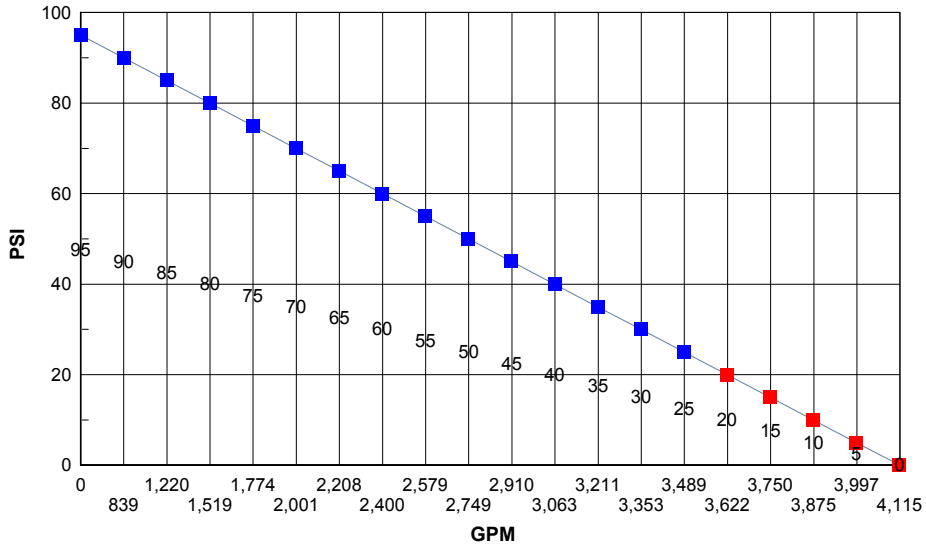
Vandal Proof:
Bury Depth: 0.00

	Flow Hydrant	Flow Device	Diameter	GPM	Gallon Used
1:	3096	2.5" Hose Monster	2.50	1284.55	6422.76
2:					
3:					
4:					
5:					

Pitot / Nozzle PSI: 58.00
Static PSI: 95.00
Residual PSI: 84.00
Percent Drop: 11.58

Total Gallons Used: 6422.76
Max GPM during test: 1,284.55
Elapsed Time Min:Sec: 5 : 0
Predicted GPM @ 20 PSI: 3621.87

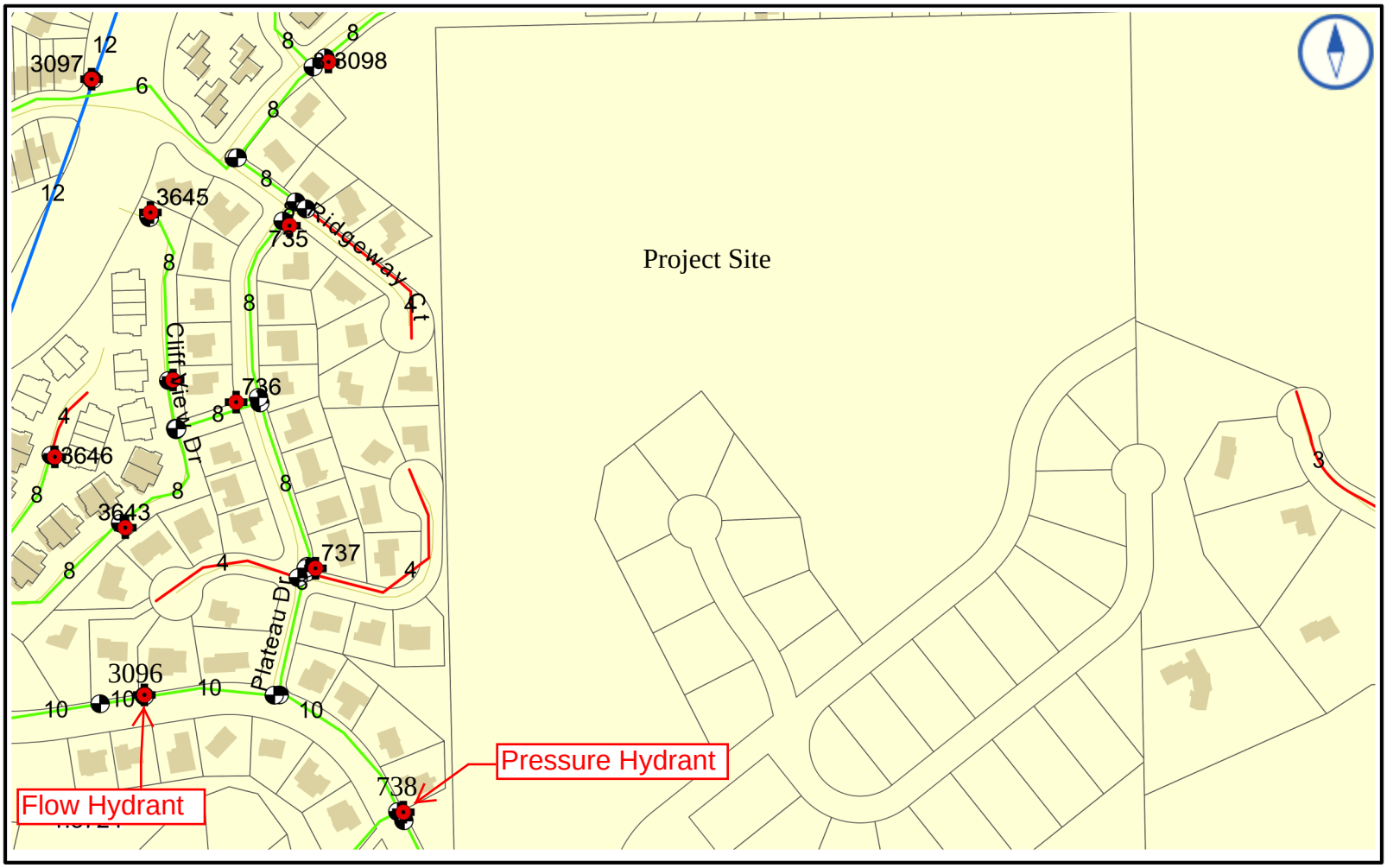
738 Flow GPM



GPM rounded to nearest gallon

Values inside grid below flow line are PSI @ predicted flow

Ute Water



1 Pushpins
2 Cities
3 Hydrants
4 Sample Stations
5 System Valves
6 Control Valves
7 Regulators
8 Address Points
9 Meters
10 Water Mains
1" thru 4"
6" thru 10"
12" thru 18"
24" thru 36"
42" thru 54"
11 Lateral Lines
12 Abandoned M…
13 Roadways
139
I70
I70B
14 Local Roads
15 Major Roadways
17 Parcels
18 Building Footp…

Fire Flow Water System Report
For
Pinnacle Ridge Subdivision

Date:	January 12, 2015
Prepared by:	Vortex Engineering, Inc. 2394 Patterson Road Grand Junction, CO 81505 970-245-9051 VEI # F04-006
Type of Design:	New Residential Subdivision
Developer/Owner:	Two R&D, LLC 1880 K Road Fruita, CO 81521
Property Address:	Mariposa Drive Grand Junction, CO
Tax Schedule No.:	2697-243-00-770

TABLE OF CONTENTS

1. Introduction/Project Description 3
   A. Property Location 3
   B. Description of Project 3
   C. Purpose of Fire Flow Water System Report 3
2. Water Supply 3
   A. Water Source 3
   B. Existing Pressures and Available Flow 4
3. Water Usage 4
   A. Increase in Average Daily and Peak Hour Flows 4
   B. Fire Flow Criteria 4
   C. Pressure and Velocity Requirements 5
   D. Pipe Sizes and Materials 5
   E. Appurtenances 5
4. Water System Analysis 6
   A. Modeling Software 6
   B. Model Input 6
   C. Design Scenarios 6
5. Results and Conclusions 7
   A. Design Scenario 1 – Peak Domestic Flow 7
   B. Design Scenario 2 – Fire Flows 7
   C. Conclusions 7
6. Limitations/Restrictions 8
APPENDIX ‘A’ 9
APPENDIX ‘B’ 10

1. Introduction/Project Description

A. Property Location

The site is located north of Monument Road and east of Mariposa Road in the area known as the Redlands.

B. Description of Project

The Utility Composite Plan of the project is included in Appendix C. The total size of the project is approximately 45 acres. This subdivision will consist of 79 lots. The site is currently vacant.

C. Purpose of Fire Flow Water System Report

The purpose of this report is to verify the adequacy of the proposed potable water system with respect to the required fire flow.

2. Water Supply

A. Water Source

The water source for this project is a 10” water main located in Mariposa Drive, a Ute Water Conservancy District (UWCD). Contact information is provided below.

UWCD
2190 H 1/4 Road, Grand Junction, CO 81505
(970) 242 - 7491

The proposed point of connection for the project’s potable water is the 10” water main in Mariposa Drive, located about 150 feet north of center line of West Ridge Blvd at the proposed intersection of Mariposa Drive and Pinnacle Heights Drive.

B. Existing Pressures and Available Flow

Fire Hydrant pressure test has been performed on fire hydrant located near the tie-in point at 2389 Mariposa Drive. UWCD conducted a flow test on this hydrant and determined that the static pressure is approximately 140 psi. The hydrant flowed 1251 gpm at 100 psi residual pressure. UWCD estimated that the available fire flow at 20 psi will be 2,264 gpm. A copy of the fire flow test is included in Appendix A.

3. Water Usage

A. Increase in Average Daily and Peak Hour Flows

Criteria used for the water system analysis is as follows:

- 100 gallons per capita per day
- 3 persons per single family residence
- Peak Hour Flow equal to 3 times average flow

Based on the above criteria, flow rates for this project are estimated as follows:

- 300 gallons per residential unit per day (single family residence)
- Average residential daily flow of 23,700 gallons (79 residences)
- Peak flow demand of 3x(23,700/(24x60))=49.4 gpm

For the purpose of this study the domestic peak demand flow has been distributed among 14 junctions of a total of 3.5 gpm each.

B. Fire Flow Criteria

Fire flow criteria is based on the International Fire Code (IFC) which is summarized as follows:

Type and Size of Structure	Residential less than 3,600 square feet	Residential between 3,600 and 4,800 square feet	Residential between 4,800 and 6,200 square feet
Fire Flow (gpm)	1,000	1,750	2,000
Residual Pressure (psi)	20	20	20

The IFC Appendix B states that a reduction in required fire flow of 50 percent (as approved) is allowed when the building is provided with an approved automatic sprinkler system.

C. Pressure and Velocity Requirements

UWCD will own and operate the distribution system once constructed and accepted. Their pressure and velocity requirements are as follows:

- Under static operating conditions, main line pressures should not exceed 125 psi. Pressures exceeding this amount cause undue stress on the pipeline and residential services.
- Under peak flow condition, all points in the distribution system shall have at least 20 psi and flow velocities less than 10 feet per second (fps).

D. Pipe Sizes and Materials

Pipe sizes will be a minimum of 10-inch diameter. Pipe material will be Poly Vinyl Chloride (PVC) schedule DR 18 or greater.

E. Appurtenances

Water line appurtenances will include approximately twelve (12) fire hydrants distributed throughout the project. The fire hydrant locations are based on maximum 500 foot centers to provide a maximum distance of 250 feet from a fire hydrant. Fire hydrants are typically placed at intersections on the waterline side of the street. Gate valves will be placed at all junctions. Water services and meters will be placed in accordance with UWCD standards.

4. Water System Analysis

A. Modeling Software

Bentley WaterCAD Version V8i computer software was used in this model.

B. Model Input

A computer model of portions of the existing water system and the proposed water system was input into the WaterCAD software. Pipe size, lengths, type and elevations of the junctions were input to the model for evaluation. Friction loss through pipe was estimated based on a Hazen-Williams roughness coefficient of friction set at 150 for the PVC pipe. Minor loses have been set to each pipe in the model. A schematic of the WaterCAD model is included in Appendix B.

The water source for this model has been modeled as a reservoir with the Hydraulic grade line (HGL) set at the static pressure recorded during the below listed Fire Hydrant Flow Test

WATER SUPPLY PRESSURE/FLOW VALUES AT FIRE HYDRANT AT 2389 MARIPOSA DRIVE TEST CONDUCTED ON OCTOBER 21, 2014 BY UTE WATER.

Pressure (psi)	Flow (gpm)	Comments
140	0	Static test
100	1250	Residual test
20	2,264	Estimate by UWCD

C. Design Scenarios

1. Peak Domestic Flow – Conditions at peak domestic demand with No Fire Flows
2. Fire Flow Analysis on hydrants FH-1 to FH-12 with 2000 gpm Fire Flow Demand

5. Results and Conclusions

A. Design Scenario 1 – Peak Domestic Flow

In this scenario, the pressures at the analyzed junctions vary between 98.6 and 158.3 psi. International Plumbing Code requires domestic pressures to be at 80 psi. The resulting pressures on the junctions warrant that a Pressure Regulating Valves (PRV) be installed at the meter yokes for each residence.

B. Design Scenario 2 – Fire Flows

The Fire Flow analysis feature in WaterCAD performs fire flows with the desired flow demands, which in this model are set at 2000 gpm. The software simulates these flows on the chosen junctions, which in this model are designated as FH-1 thru FH-12. The fire flow simulation is done in one run, with the output of the minimums and the maximums at the time of the flow thru the simulated hydrant. The residual pressures vary between 64.4 and 92.9 psi, which is more than adequate.

C. Conclusions

The fire flow demand has been set to 2000 gpm, assuming that the size of every residence shall be between 4,800 sf and 6,200 sf. This flow requires the main to be at least 10” I.D. Most of the residences, will most likely be between 3,600 sf and 4,800 sf, thus rendering the potable water system more than adequate for fire flows.

6. Limitations/Restrictions

This report is a site-specific investigation and is applicable only for the client for whom our work was performed. Use of this report under other circumstances is not an appropriate application of this document. This report is a product of Vortex Engineering Incorporated and is to be taken in its entirety. Excerpts from this report may be taken out of context and may not convey the true intent of the report. It is the owner's and owner's agents' responsibility to read this report and become familiar with recommendations and findings contained herein. Should any discrepancies be found, they must be reported to the preparing engineer within 5 days.

The recommendations and findings outlined in this report are based on: 1) Knowledge of the site and discussion of the development with the owner, 2) the base maps of the existing water system and test data furnished by Ute Water Conservancy District, 3) various conversations with planners and utility companies, and 4) the Haestad Methods WaterCAD Software. Vortex Engineering, Inc. assumes no liability for the accuracy or completeness of information furnished by the client or municipality/agency personnel. Site conditions are subject to external environmental effects and may change over time. Use of this report under different site conditions is inappropriate. If it becomes apparent that current site conditions vary from those reported, the design engineer should be contacted to develop any required report modifications. Vortex Engineering, Inc. is not responsible and accepts no liability for any variation of assumed information.

Vortex Engineering, Inc. represents this report has been prepared within the limits prescribed by the owner and in accordance with the current accepted practice of the civil engineering profession in the area. No warranty or representation either expressed or implied is included or intended in this report or in any of our contracts.

APPENDIX ‘A’

FIRE HYDRANT FLOW TEST

Ute Water Conservancy District

Company Name: Ute Water Conservancy District
Address: 2190 H 1/4 Rd
City: Grand Junction
State: Colorado
Zip: 81505

Work Order: 56
Operator: Nick

Test Date: 10/21/14 11:00 am

NFPA Classification:	
Blue	AA
2263.94	

Test Hydrant: 738
Address: 2398 MARIPOSA DR
Cross Street:
Location:
District:
Sub-Division:

Latitude: 706960.304
Longitude: 4325735.005
Elevation: 4788.95
State X / Y: _____ / _____

Pumpers: **Nozzles:** **Open Dir:**

Manuf: Clow
Model:

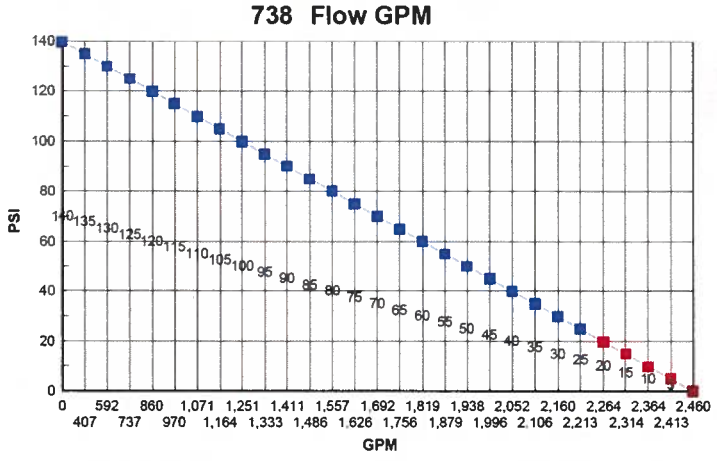
Installed: 01/01/1900
Main Size: 0.00

Vandal Proof:
Bury Depth: 0.00

	Flow Hydrant	Flow Device	Diameter	GPM	Gallon Used
1:	3096	2.5" Hose Monster	2.50	1250.89	6254.45
2:					
3:					
4:					
5:					

Pitot / Nozzle PSI: 55.00
Static PSI: 140.00
Residual PSI: 100.00
Percent Drop: 28.57

Total Gallons Used: 6254.45
Max GPM during test: 1,250.89
Elapsed Time Min:Sec: 5 : 0
Predicted GPM @ 20 PSI: 2263.94



GPM rounded to nearest gallon

Values inside grid below flow line are PSI @ predicted flow

APPENDIX ‘B’

PEAK DOMESTIC FLOW

FIRE FLOW CONDITION

Pinnacle Ridge, Grand Junction, Colorado



Fire Flow Report

Label	Satisfies Fire Flow Constraints ?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Flow (Total Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Static Pressure @ Peak Domestic Demand (psi)	Residual Pressure (Calculated @ FH Junction) (psi)	Minimum Pressure in System (psi)	Junction w/ Minimum Pressure (System)	Is Fire Flow Run Balanced?	Velocity of Maximum Pipe (ft/s)	Pipe w/ Maximum Velocity
J-1	(N/A)	2,000.0	(N/A)	(N/A)	20.0	140.6	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
FH-2	True	2,000.0	2,001.0	2,004.5	20.0	144.5	134.9	89.0	FH-9	True	8.37	P-26
FH-3	True	2,000.0	2,001.0	2,004.5	20.0	148.8	135.0	84.8	FH-9	True	8.37	P-26
FH-4	True	2,000.0	2,001.0	2,001.0	20.0	141.9	126.4	83.1	FH-9	True	8.37	P-26
J-5	(N/A)	2,000.0	(N/A)	(N/A)	20.0	144.5	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
FH-5	True	2,000.0	2,001.0	2,004.5	20.0	151.8	133.2	80.0	FH-9	True	8.37	P-26
FH-6	(N/A)	2,000.0	(N/A)	(N/A)	20.0	158.3	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
FH-12	(N/A)	2,000.0	(N/A)	(N/A)	20.0	141.9	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
FH-7	True	2,000.0	2,001.0	2,004.5	20.0	129.8	103.5	72.3	FH-9	True	8.37	P-26
FH-9	True	2,000.0	2,001.0	2,004.5	20.0	98.6	67.0	67.4	FH-10	True	8.37	P-26
FH-10	True	2,000.0	2,001.0	2,001.0	20.0	99.1	64.4	67.0	FH-9	True	8.37	P-26
J-12	(N/A)	2,000.0	(N/A)	(N/A)	20.0	102.1	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
FH-11	True	2,000.0	2,001.0	2,004.5	20.0	101.7	64.4	64.4	FH-10	True	8.37	P-26
FH-8	True	2,000.0	2,001.0	2,004.5	20.0	103.8	74.6	69.3	FH-9	True	8.37	P-26
FH-1	True	2,000.0	2,001.0	2,004.5	20.0	138.4	132.7	92.9	FH-9	True	8.37	P-26
J-16	(N/A)	2,000.0	(N/A)	(N/A)	20.0	147.1	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-17	(N/A)	2,000.0	(N/A)	(N/A)	20.0	103.8	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)

Peak Domestic Flow - Pipe Table

ID	Label	Length (Scaled) (ft)	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Has Check Valve?	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Headloss Gradient (ft/ft)	Has User Defined Length?	Length (User Defined) (ft)	Velocity (Maximum) (ft/s)
36	P-3	511	FH-2	FH-3	10.0	PVC	150.0	False	0.600	42.0	0.17	0.000	False	0	0.17
38	P-4	199	FH-3	FH-4	10.0	PVC	150.0	False	0.400	38.5	0.16	0.000	False	0	0.16
40	P-5	49	FH-4	J-5	10.0	PVC	150.0	False	0.000	38.5	0.16	0.000	False	0	0.16
42	P-6	343	J-5	FH-5	10.0	PVC	150.0	False	0.400	31.5	0.13	0.000	False	0	0.13
44	P-7	275	FH-5	FH-6	10.0	PVC	150.0	False	0.400	28.0	0.11	0.000	False	0	0.11
46	P-8	630	FH-6	FH-12	10.0	PVC	150.0	False	0.500	3.5	0.01	0.000	False	0	0.01
48	P-9	673	FH-6	FH-7	10.0	PVC	150.0	False	0.600	21.0	0.09	0.000	False	0	0.09
52	P-11	385	FH-9	FH-10	10.0	PVC	150.0	False	0.300	10.5	0.04	0.000	False	0	0.04
54	P-12	29	FH-10	J-12	10.0	PVC	150.0	False	0.000	10.5	0.04	0.000	False	0	0.04
56	P-13	293	J-12	FH-11	10.0	PVC	150.0	False	0.500	3.5	0.01	0.000	False	0	0.01
58	P-14	381	FH-7	FH-8	10.0	PVC	150.0	False	0.300	17.5	0.07	0.000	False	0	0.07
59	P-15	294	FH-8	FH-9	10.0	PVC	150.0	False	0.400	14.0	0.06	0.000	False	0	0.06
62	P-17	462	FH-1	FH-2	10.0	PVC	150.0	False	0.700	45.5	0.19	0.000	False	0	0.19
64	P-18	256	J-16	J-5	10.0	PVC	150.0	False	0.300	-3.5	0.01	0.000	False	0	0.01
66	P-19	255	J-17	J-12	10.0	PVC	150.0	False	0.400	-3.5	0.01	0.000	False	0	0.01
84	P-25	329	R-1	J-1	10.0	PVC	150.0	False	0.100	49.0	0.20	0.000	False	0	0.20
86	P-26	358	J-1	FH-1	10.0	PVC	150.0	False	0.800	49.0	0.20	0.000	False	0	0.20

Peak Domestic Flow - Junction Table

ID	Label	Elevation (ft)	Zone	Demand Collection	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
31	J-1	4,790.00	<None>	<Collection: 0 items>	0.0	5,114.99	140.6
33	FH-2	4,781.00	<None>	<Collection: 1 items>	3.5	5,114.98	144.5
35	FH-3	4,771.00	<None>	<Collection: 1 items>	3.5	5,114.97	148.8
37	FH-4	4,787.00	<None>	<Collection: 0 items>	0.0	5,114.97	141.9
39	J-5	4,781.00	<None>	<Collection: 1 items>	3.5	5,114.97	144.5
41	FH-5	4,764.00	<None>	<Collection: 1 items>	3.5	5,114.97	151.8
43	FH-6	4,749.00	<None>	<Collection: 1 items>	3.5	5,114.97	158.3
45	FH-12	4,787.00	<None>	<Collection: 1 items>	3.5	5,114.96	141.9
47	FH-7	4,815.00	<None>	<Collection: 1 items>	3.5	5,114.96	129.8
49	FH-9	4,887.00	<None>	<Collection: 1 items>	3.5	5,114.96	98.6
51	FH-10	4,886.00	<None>	<Collection: 0 items>	0.0	5,114.96	99.1
53	J-12	4,879.00	<None>	<Collection: 1 items>	3.5	5,114.96	102.1
55	FH-11	4,880.00	<None>	<Collection: 1 items>	3.5	5,114.96	101.7
57	FH-8	4,875.00	<None>	<Collection: 1 items>	3.5	5,114.96	103.8
60	FH-1	4,795.00	<None>	<Collection: 1 items>	3.5	5,114.99	138.4
63	J-16	4,775.00	<None>	<Collection: 1 items>	3.5	5,114.97	147.1
65	J-17	4,875.00	<None>	<Collection: 1 items>	3.5	5,114.96	103.8

General Project Report
For
Pinnacle Ridge Final Plat and Plan – Filing 2
Grand Junction, CO

Date:	June 8, 2017
Prepared by:	Robert W. Jones II, P.E. Vortex Engineering and Architecture, Inc. 2394 Patterson Road, Suite 201 Grand Junction, CO 81505 VEI# F04-006
Submitted to:	City of Grand Junction 250 N. 5th Street Grand Junction, CO 81501
Type of Design:	Final Plat and Plan
Owner:	Two R & D, LLC PO Box 39 Fruita, CO 81521
Property Address:	Northeast of Mariposa Drive and ¼ mile north of Monument Road Grand Junction, CO 81507
Tax Schedule No:	2945-212-00-011

I. Project Intent

The applicant's intent is to construct a high quality single family residential subdivision in an area attractive to buyers with proximity to schools, open space and parks, shopping, medical facilities and employment centers near downtown Grand Junction. The proposed infill development will provide much needed housing in the Grand Junction market and reduce suburban sprawl by developing close to the City Center.

II. Project Description

The subject property is located northeast of Mariposa Drive and ¼ mile north of Monument Road (see Attachment A). The Pinnacle Ridge Subdivision proposes 72 single family homes to be developed in five filings. This application is made for Filing 2 which contains 8 lots. Tracts for detention have been included in Filing 1 and have been designed to handle stormwater for Filing 2 development.

The overall density is 1.59 dwelling units per acre which is consistent with the R2 zone district. Pedestrian trails are provided throughout the development as well as a large open space area.

The legal description of this site is:

Lots 14-21, Pinnacle Ridge Subdivision, Filing 2
A Replat of Lot 100, Pinnacle Ridge Subdivision, Filing 1, Reception No., W ½ NW ¼, Sec. 21 T1S, R1W, U.M.
City of Grand Junction, Mesa County, Colorado
Dated: May 2017

III. Neighborhood Meeting and Public Notice

A Neighborhood Meeting was held on March 11, 2015 at 5:30 pm as required by the Zoning and Development Code for the Preliminary Plan submittal. Information related to the neighborhood meeting was included with the earlier application for Preliminary Plan approval which was granted by City Council on April 19, 2017. A neighborhood meeting is not required for Final Plat/Plan submittal. Public notice for this application will be provided in accordance with Sec. 21.02.080(g) of the Grand Junction Municipal Code, including posting the subject property on all public rights-of-way.

IV. Comprehensive Plan

The Comprehensive Plan's Future Land Use Map shows the subject property as Residential Low (RL, .5-2 du/ac). The subject property is located within the 201 Sewer Service Boundary and the Urban Development Boundary. These areas are expected to grow and develop with urban densities and services.

The proposed development meets a number of the goals and policies of the Comprehensive Plan:

Goal 1, Policy D: For development that requires municipal services, those services shall be provided by a municipality or district capable of providing municipal services.

Goal 3: The Comprehensive Plan will create ordered and balanced growth and spread future growth throughout the community.
Goal 8: Create attractive public spaces and enhance the visual appeal of the community through quality development.
Goal 8, Policy A: Design streets and walkways as attractive public spaces.

V. Zoning and Surrounding Areas

Surrounding area zoning and land uses include:

North – City PD (with R4 default zone) with single family and multifamily dwelling units land use
South – City Community Services and Recreation (CSR) with open space land use
West – City PD (with R3 default zone) with single family and multifamily dwelling units land use
East – City PD and Mesa County RSF-4 with single family land use and vacant land

The subject property is zoned R2 and currently undeveloped.

VI. Utility Providers

All necessary and required utilities shall be provided concurrent with construction of the Pinnacle Ridge Subdivision. Utilities shall be installed to current City standards and specifications.

Utility providers for the site are as follows:

Sewer: City of Grand Junction/Persigo
Water: Ute Water
Electric: Grand Valley Power
Irrigation Water: N/A; there is no irrigation water provided to this site
Cable: Spectrum

VII. Soils, Drainage and Grading

An in depth, detailed final Geotechnical Report has been prepared by Huddleston-Berry Engineering and Testing, LLC, with specific information regarding slope stability, rockfall and earthwork analysis and requirements for the Pinnacle Ridge development. A Materials Testing Plan has been included with the Geotechnical Report that outlines the field observation and testing plan. Please see the report for specific information regarding the results and findings of the field investigation and recommendations from Huddleston-Berry.

A final drainage report is included with this application and addresses the entire site. Please see the report for specific information regarding drainage issues for the Pinnacle Ridge development.

Approval for overlot grading was requested with submittal of the final plat and plans for Filing 1. This request was made prior to allow City staff, the owner's geotechnical engineer and the applicant an extended opportunity to observe the soil properties and behavior in the embankment cuts and areas of fill where the street rights-of-way and building pad sites are located.

VIII. Wetlands and Floodplain

There are no known wetland or floodplain areas identified on the subject property.

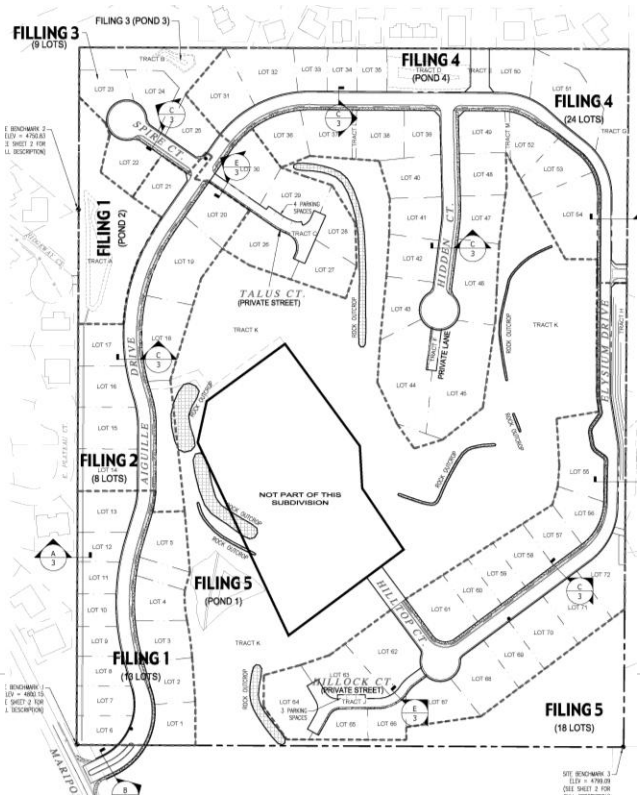
IX. Traffic

The site will be accessed by two streets providing interconnectivity and efficient traffic flow between filings and adjacent development. Filings One, Two and Three will be accessed from Mariposa Drive. The second point of access will be constructed with Filing 4 and will connect the development to Hidden Valley Drive on the northern property line. A stub street will be provided to the east for possible future connection and through traffic with adjacent property with Filing 4.

To address concerns of past street failures, an Alternative Street section has been approved by the City for use to reduce the differential movement between the asphalt street surface and the concrete curb, gutter and sidewalk. The majority of Aiguille Drive and a portion of Elysium will use a 44' ROW with 28' pavement section that has 2' shoulders. A drainage swale will be located on one side of the street with a 6' wide detached pedestrian trail next to the swale.

The mid-section of Elysium Drive will use a 34' ROW with 22' pavement section and 6.5' combination curb, gutter and sidewalk on one side of the street. Parking will be restricted to one side for this portion of the street. This street section will be constructed in Filing 5.

There are two private streets (to be constructed in Filing 3 and Filing 5) which include parking pods that provide required off-site residential parking. The CC&Rs will contain provisions for maintenance of the private streets, including snow removal, and signage will be posted to distinguish the private streets from the public streets.



X. Open Space

The Cluster Development standards of the Zoning Code have been utilized to cluster development and preserve a significant amount of open space within the Pinnacle Ridge subdivision. Open space in excess of 33% has been preserved with this development for use by residents and the public. The majority of the open space will be platted with Filing 1 for the entire subdivision, therefore it will not be necessary to plat additional open space with each filing. The open space will be provided in a tract that contains 15.06 acres and will be accessed by public right-of-way upon construction of Aiguille Drive and Elysium Drive. The applicant has offered to dedicate the 15.06 acres of open space to the City of Grand Junction to expand the public parks system.

XI. Approval Criteria

The final plat shall conform to the approved preliminary subdivision plan. Section 21.02.070(s), Final Plat, states that the final plat shall demonstrate compliance with all of the following:

(i) The same criteria as the preliminary subdivision plan in subsection (r) of this section; and

(ii) The preliminary plan approval and any condition attached thereto.

Sec. 21.02.070(r)(2), Preliminary Subdivision Plan, Approval Criteria: A preliminary subdivision plan shall not be approved unless the applicant proves compliance with the purpose portion of this section and with all of the following criteria:

(i) The preliminary subdivision plan will be in conformance with the Comprehensive Plan, Grand Valley Circulation Plan, Urban Trails Master Plan, and other adopted plans;

Response: The Pinnacle Ridge Subdivision Future Land Use classification is Residential Low (RL, .5-2 du/ac). The proposed land use and density is supported by the current zoning of the property of R2 (Residential, 2 du/ac). The property is identified by the Comprehensive Plan as an "area of change" which anticipates new growth and development of vacant land near or within Centers as identified by the Comprehensive Plan. In addition, the proposed development supports several of the goals and policies of the Comprehensive Plan as noted earlier in this report.

The proposed development is designed to be compliant with the Grand Valley Circulation Plan. Specifically the development meets Sec. 31.08.020(d) which states: Subdivisions and other development shall be designed to continue or create an integrated system of streets and trails that provide for efficient movement of pedestrians, bicycles, and automobiles to and from adjacent development. Sidewalks and various detached pedestrian trails have been included in the design to meet the needs of an integrated system of streets and trails with convenient interconnectivity between streets and adjacent development.

This criterion has been MET.

(ii) The subdivision standards in Chapter 21.06 GJMC;

Response: The Pinnacle Ridge Subdivision has been designed to comply with all provisions of the Zoning and Development Code, including detached pedestrian trails along Aiguille Drive and open space that provides detention facilities, off street pedestrian trails and protection of environmentally sensitive areas.

The design is consistent with adopted plans and policies as well as the City's technical standards and specifications. Reports as required by the SSID manual have been prepared for the site. The Transportation Engineering Design Standards have been utilized and are incorporated into the circulation plan for the development.

This criterion has been MET.

(iii) The zoning standards in Chapters 21.03 and 21.04 GJMC;

Response: The Pinnacle Ridge Subdivision shall comply with all requirements of Sec. 21.03, Zoning Districts, and Sec. 21.04, Uses, of the Zoning and Development Code. Specifically, all development shall comply with the R2 zone district bulk and development standards and the Cluster Development standards; and only those uses that are permitted within the R2 zone district shall be allowed. All development, including principle and accessory structures and fences, shall obtain the necessary permits prior to commencement of construction.

This criterion has been MET.

(iv) Other standards and requirements of this code and other City policies and regulations;

Response: The Pinnacle Ridge Subdivision is designed to comply with all known City policies and regulations which include those listed earlier in this report as well as payment of all required fees, dedication of all required rights-of-way or easements, meeting all design specifications and reporting requirements.

This criterion has been MET.

(v) Adequate public facilities and services will be available concurrent with the subdivision;

Response: All necessary and required public facilities and utilities shall be provided through the construction process for the Pinnacle Ridge Subdivision. Public facilities such as hospitals, schools, parks and a public library are available and sufficient to serve the proposed development. Utility providers have the capacity and willingness to provide services to this development. Utilities shall be installed to current City standards and specifications.

This criterion has been MET.

(vi) The project will have little or no adverse or negative impacts upon the natural or social environment;

Response: The Pinnacle Ridge Subdivision is identified by the Comprehensive Plan as an "area of change" in anticipation of development as the City and Grand Valley grow. The Future Land Use Map classification of Residential Low calls for development to occur with a density of not more than 2 dwelling units per acre, which this development meets.

Several studies including a Geotechnical Report, Drainage Report, Transaction Screen Process and others have been conducted to ensure that the development is designed and constructed in a manner that is compliant with City development codes and regulations. Environmentally sensitive areas such as rock outcrops within the open space will not be disturbed. Pedestrian trails have been provided to encourage social interaction between filings and to provide a safe, pleasant pedestrian experience for residents and the public to enjoy.

Thoughtful design has gone into creating a new residential development that meets City standards and provides needed housing for the local market without adversely impacting the natural or social environment, or environmentally sensitive areas.

This criterion has been MET.

(vii) Compatibility with existing and proposed development on adjacent properties;

Response: Pinnacle Ridge Subdivision will provide infill single family residential development between the established neighborhoods to the north, east and west, and the open space located to the south. Lots will be developed at a density slightly lower than adjacent properties and approximately 33% open space for the entire development will be provided with Filing 1 for use by residents and the public. The proposed development is compatible because it is single family residential which is what compromises the existing neighborhoods in the immediate area.

This criterion has been MET.

(viii) Adjacent agricultural property and land uses will not be harmed;

Response: There is no agricultural land located near the Pinnacle Ridge site; therefore there are no anticipated negative impacts with development of the Pinnacle Ridge Subdivision in regards to agricultural property. There are no known negative impacts associated with the infill development of the Pinnacle Ridge site.

This criterion has been MET.

(ix) Is neither piecemeal development nor premature development of agricultural land or other unique areas;

Response: This is the second filing of the subject property which is approximately 45 acres and is being planned and developed in five filings, therefore there is no piecemeal development occurring. All

required facilities and utilities will be provided with urban levels of service. The site is located within the Persigo 201 Sewer Service Boundary, the Urban Development Boundary and is identified as an "area of change" by the Comprehensive Plan, therefore development is neither piecemeal nor premature.

This criterion has been MET.

(x) There is adequate land to dedicate for provision of public services; and

Response: There is adequate land to dedicate for necessary street rights-of-way, multipurpose easements, detention facilities, pedestrian trails and open space tracts. All required utility easements shall be provided. The applicant has offered to dedicate 15.06 acres of open space with Filing 1 to the City to extend the City's park system for use by the public.

This criterion has been MET.

(xi) This project will not cause an undue burden on the City for maintenance or improvement of land and/or facilities.

Response: The Pinnacle Ridge Subdivision will not cause an undue burden to the City for maintenance. Alternative residential streets have been approved for use and shall be constructed to City standards and specifications. The HOA shall own and maintain the two private streets approved by City Council and tracts with detention facilities. Furthermore, the City has required that the HOA provide snow removal for the private streets and a portion of Elysium Drive, therefore this project will not cause an undue burden on the City for maintenance or improvement of land and/or facilities.

This criterion has been MET.

XII. Conditions of Preliminary Plan Approval

On April 19, 2017, Preliminary Plan Approval was granted by the City Council subject to the following conditions:

1. At final design, perform an in depth geotechnical engineering investigation and report with proper slope stability, rockfall, and earthwork analysis and requirements. This can be incremental to the phases where final design approval is being requested; however, if slope stability and/or rockfall analyses prove problematic, the Preliminary Plan could be nullified or may need to be redesigned and reapproved.
   Response: *A detailed final Geotechnical Report has been prepared by Huddleston-Berry Engineering and Testing, LLC for the entire site based on field investigation. The report includes site specific slope and rockfall analysis in addition to soil and materials testing. Please refer to the final geotechnical report for specific details and information related to the site.*

a. The geotechnical report must design the earthwork and streets to minimize vertical movement and construction must strictly adhere to the report and be documented by daily observations and proper testing during construction.
Response: *Please refer to the final Geotechnical Report as noted above for specific details and information. A Materials and Testing Plan has been prepared by Huddleston-Berry Engineering and Testing, LLC that details the proposed inspection and testing plan for all phases of this development.*

b. A secured two-year warranty will be required as offered by the developer.
Response: *A Development Improvements Agreement (DIA) and extended two-year warranty will be provided by the applicant with each filing. The extended warranty was offered by the applicant and exceeds the City's standard one-year warranty period for public infrastructure.*

c. Landscaping shall be limited to low water requirement plants and irrigation systems. The details will be defined in conjunction with the geotechnical engineer at final design.
Response: *A landscape plan prepared by a licensed landscape architect has been included with the final construction plans for all areas to be landscaped. Landscape materials shall be low water requirement plants with irrigation systems to establish the xeric plant materials. In addition, the CC&Rs require all home owners to install only low water requirement plants and irrigation systems. The CC&Rs have been submitted for review and approval of required language related to the landscaping standards for the development.*

d. A site specific slope and rockfall analysis (based on field investigation) in the areas of concern will be required with each filing.
Response: *A site specific slope and rockfall analysis (based on field investigation) has been provided with the final Geotechnical Report. In addition, each home owner will be required to have a site specific slope and rockfall analysis performed prior to construction of each home.*

e. Lot specific grading and drainage plans will either be required with the final design for each filing or with each planning clearance.
Response: *Lot specific grading and drainage plans will be required for each planning clearance to ensure that the grading and drainage functions properly for each lot.*

2. Perfect an intermediate connection to Hidden Valley Drive, with Filing 4 according to the current phasing plan, as required by the January 2007 TEDS exception.
Response: *The applicant has begun discussions with relevant property owners to secure the required connection to Hidden Valley Drive. The connection will be secured prior to commencement of Filing 4 as required by the January 2007 TEDS exception.*

3. Perfect the ability to loop water lines, if needed, and provide sanitary sewer to portions of the project via the Hidden Valley Drive connection with Filing 4 according to the current phasing plan.

Response: *Ute Water has withdrawn their comment regarding the looped water line. Sanitary sewer will be provided to the portions of the project where needed via Hidden Valley Drive.*

4. The HOA is required to remove snow along the north facing slope on Elysium Drive. Provide proper language and assessments in the CC & R's and signs must be conspicuously placed on the street stating such.
   Response: *See the CC&Rs for specific language regarding the HOA's duty to remove snow along the north facing slope on Elysium Drive. Also, signage will be conspicuously posted on that portion of the Elysium Drive stating such.*

5. Private streets will be allowed in two areas of the subdivision, Talus Court and Hillock Court.
   Response: *Only those private streets, as approved by City Council on April 19, 2017, are included in the Pinnacle Ridge development.*

XIII. Development Schedule

Upon review and approval of the Final Plat and Plans, construction of Filing 2 is expected to begin within 30 days. Subsequent filings will commence annually thereafter, or sooner if market conditions are favorable, until the subdivision has been fully constructed.

XIV. Conclusion

After demonstrating how Pinnacle Ridge, Filing 2, meets the goals and policies of the Comprehensive Plan, applicable sections of the Grand Junction Zoning and Development Code and other related development regulations, we respectfully request approval of the final plat and plans.

XIV. Limitations/Restrictions

This report is a site-specific report and is applicable only for the client for whom our work was performed. The review and use of this report by City of Grand Junction, affiliates, and review agencies is fully permitted and requires no other form of authorization. Use of this report under other circumstances is not an appropriate application of this document. This report is a product of Vortex Engineering, Inc. and is to be taken in its entirety. Excerpts from this report when taken out of context may not convey the true intent of the report. It is the owner's and owner's agent's responsibility to read this report and become familiar with recommendations and findings contained herein. Should any discrepancies be found, they must be reported to the preparing engineer within 5 days.

The recommendations and findings outlined in this report are based on: 1) The site visit and discussion with the owner, 2) the site conditions disclosed at the specific time of the site investigation of reference, 3) various conversations with planners and utility companies, and 4) a general review of the zoning and transportation manuals. Vortex Engineering, Inc. assumes no liability for the accuracy or completeness of information furnished by the client or municipality/agency personnel. Site conditions are subject to external environmental effects and may change over time. Use of this report under different site conditions is inappropriate. If it becomes apparent that current site conditions vary from those reported, the design engineering should be contacted to develop any required report modifications. Vortex Engineering, Inc. is not responsible and accepts no liability for any variation of assumed information.

Vortex Engineering, Inc. represents this report has been prepared within the limits prescribed by the owner and in accordance with the current accepted practice of the civil engineering profession in the area. No warranty or representation either expressed or implied is included or intended in this report or in any of our contracts.

ATTACHMENT "A"

LOCATION MAP



E-Filed

Colorado Secretary of State
Date and Time: 05/22/2017 01:05 PM
ID Number: 20171380252

Document number: 20171380252
Amount Paid: $50.00

Document must be filed electronically.
Paper documents are not accepted.
Fees & forms are subject to change.
For more information or to print copies
of filed documents, visit www.sos.state.co.us.

ABOVE SPACE FOR OFFICE USE ONLY

Articles of Incorporation for a Nonprofit Corporation

filed pursuant to § 7-122-101 and § 7-122-102 of the Colorado Revised Statutes (C.R.S.)

1. The domestic entity name for the nonprofit corporation is Pinnacle Ridge Home Owners Association, Inc.

*(**Caution:** The use of certain terms or abbreviations are restricted by law. Read instructions for more information.)*

2. The principal office address of the nonprofit corporation's initial principal office is

Street address
2394 Patterson Road, Suite 201
(Street number and name)

Grand Junction | CO | 81505
(City) | *(State)* | *(ZIP/Postal Code)*

(Province – if applicable) | United States *(Country)*

Mailing address
(**leave blank** if same as street address)

(Street number and name or Post Office Box information)

(City) | *(State)* | *(ZIP/Postal Code)*

(Province – if applicable) | *(Country)*

3. The registered agent name and registered agent address of the nonprofit corporation's initial registered agent are

Name
(if an individual)
Jones | Robert | | Jr.
(Last) | *(First)* | *(Middle)* | *(Suffix)*

OR

(if an entity)

*(**Caution:** Do not provide both an individual and an entity name.)*

Street address
2394 Patterson Road, Suite 201
(Street number and name)

Grand Junction | CO | 81505
(City) | *(State)* | *(ZIP Code)*

Mailing address
(**leave blank** if same as street address)

(Street number and name or Post Office Box information)

(City) CO *(State)* *(ZIP Code)*

(The following statement is adopted by marking the box.)

☑ The person appointed as registered agent above has consented to being so appointed.

4. The true name and mailing address of the incorporator are

Name
(if an individual)

Jones *(Last)* Robert *(First)* *(Middle)* Jr. *(Suffix)*

OR

(if an entity)

*(**Caution:** Do not provide both an individual and an entity name.)*

Mailing address

2394 Patterson Road, Suite 201
(Street number and name or Post Office Box information)

Grand Junction *(City)* CO *(State)* 81505 *(ZIP/Postal Code)*

(Province – if applicable) United States *(Country)*

(If the following statement applies, adopt the statement by marking the box and include an attachment.)

☐ The corporation has one or more additional incorporators and the name and mailing address of each additional incorporator are stated in an attachment.

5. *(If the following statement applies, adopt the statement by marking the box.)*

☑ The nonprofit corporation will have voting members.

6. Provisions regarding the distribution of assets on dissolution:

No distributions of the corporate assets to Members shall be made until all corporate debts are paid, and then only upon final dissolution of the Association. Upon dissolution and after winding up the affairs of the Association, all assets shall be distributed, transferred and conveyed to the Members pro-rata.

7. *(If the following statement applies, adopt the statement by marking the box and include an attachment.)*

☑ This document contains additional information as provided by law.

8. ***(Caution:** Leave blank if the document does not have a delayed effective date. Stating a delayed effective date has significant legal consequences. Read instructions before entering a date.)*

(If the following statement applies, adopt the statement by entering a date and, if applicable, time using the required format.)

The delayed effective date and, if applicable, time of this document is/are _____.
(mm/dd/yyyy hour:minute am/pm)

Notice:

Causing this document to be delivered to the Secretary of State for filing shall constitute the affirmation or acknowledgment of each individual causing such delivery, under penalties of perjury, that the document is the individual's act and deed, or that the individual in good faith believes the document is the act and deed of the person on whose behalf the individual is causing the document to be delivered for filing, taken in conformity with the requirements of part 3 of article 90 of title 7, C.R.S., the constituent documents, and the organic statutes, and that the individual in good faith believes the facts stated in the document are true and the document complies with the requirements of that Part, the constituent documents, and the organic statutes. This perjury notice applies to each individual who causes this document to be delivered to the Secretary of State, whether or not such individual is named in the document as one who has caused it to be delivered.

9. The true name and mailing address of the individual causing the document to be delivered for filing are

Beckner (*Last*) Larry (*First*) _____ (*Middle*) _____ (*Suffix*)

PO Box 220
(Street number and name or Post Office Box information)

Grand Junction (*City*) CO (*State*) 81502 (*ZIP/Postal Code*)

_____ (*Province – if applicable*) United States (*Country*)

(If the following statement applies, adopt the statement by marking the box and include an attachment.)

☐ This document contains the true name and mailing address of one or more additional individuals causing the document to be delivered for filing.

Disclaimer:

This form/cover sheet, and any related instructions, are not intended to provide legal, business or tax advice, and are furnished without representation or warranty. While this form/cover sheet is believed to satisfy minimum legal requirements as of its revision date, compliance with applicable law, as the same may be amended from time to time, remains the responsibility of the user of this form/cover sheet. Questions should be addressed to the user's legal, business or tax advisor(s).

ARTICLES OF INCORPORATION OF PINNACLE RIDGE HOME OWNERS ASSOCIATION, INC.

The undersigned hereby signs and acknowledges these Articles of Incorporation for the purpose of forming a nonprofit corporation under the Colorado Revised Nonprofit Corporation Act ("Act").

I. NAME

The name of this corporation shall be Pinnacle Ridge Home Owners Association, Inc. ("Association").

II. DURATION

The period of duration of the Association shall be perpetual.

III. PURPOSES

The Association is organized to be and constitutes the Association to which reference is made in the Declaration of Covenants, Conditions and Restrictions for the Pinnacle Ridge Subdivision ("Declaration"). The Declaration is executed or will be executed by Robert Jones Jr., as agent for Two R&D, LLC, a Colorado limited liability company as the "Declarant". The Declaration is recorded or will be recorded in the office of the Clerk and Recorder of Mesa County, Colorado. All capitalized terms used herein shall have the same meanings as used in the Declaration, unless otherwise defined herein. The Declaration relates to real property (the " Common Interest Community ") in the County of Mesa, State of Colorado, which is or may become subject to the Declaration.

The Association shall be a nonprofit corporation without shares. The Association is not organized in contemplation of pecuniary gain or profit to Members. No part of the net earnings of the Association shall inure to the benefit of any Member of the Association, other than by acquiring, constructing or providing management, maintenance, and care of such property of the Association qualifying as "Association Property" under Section 528(c)(4) of the Internal Revenue Code, and other than by a rebate of excess membership dues, fees or assessments.

Specific purposes for which the Association is organized are:

(a) To exercise all of the rights, powers and privileges and to perform all of the duties and obligations of the Association as set forth in the Declaration or in any amendment to the Declaration;

(b) To provide for maintenance, preservation and architectural control of the Common Interest Community, including the Lots and any Association Property;

(c) To promote, foster and advance the health, safety and welfare of residents within the Common Interest Community;

(d) To fix, levy, collect and enforce payment of, by any lawful means, assessments and other amounts payable by or with respect to Owners of Lots within the Common Interest Community as provided in the Declaration;

(e) To manage, control, operate, maintain, repair and improve Association Property, and to perform services and functions for or relating to the Common Interest Community, all as provided in the Declaration;

(f) To enforce covenants, restrictions, conditions and equitable servitudes affecting the Common Interest Community;

(g) To make and enforce rules and regulations with respect to the use of the Lots and Association Property within the Common Interest Community, as provided in the Declaration; and

(h) To establish and maintain the Common Interest Community as property of the highest quality and value, and to enhance and protect its value, desirability and attractiveness.

Each purpose specified herein is an independent purpose and is not to be restricted by reference to or inference from the terms of any other purpose.

IV. POWERS

The Association shall have all of the powers that a nonprofit corporation may exercise under the Act and the laws of the State of Colorado in effect from time to time.

V. PRINCIPAL OFFICE

The street address of the Association's initial principal office is 2394 Patterson Road, Suite 201, Grand Junction, Colorado 81505.

VI. REGISTERED OFFICE AND AGENTS

The initial registered office in the State of Colorado of the Association shall be at 2394 Patterson Road, Suite 201, Grand Junction, Colorado 81505, and the initial registered agent of the Association upon whom process may be served is Robert Jones Jr. at the same address. The registered office and registered agent may be changed, without amendment of these Articles of Incorporation, as provided by statute.

VII. MEMBERS

The affairs of the Association shall be managed by its Members. A "Member," as defined in the Declaration, is the Person, or if more than one, all Persons collectively, who constitute the Owner of a Lot, including, but not limited to, the Declarant. Each Membership shall be

appurtenant to the fee simple title to a Lot. The Person or Persons who constitute the Owner of fee simple title to a Lot shall automatically be the holder of the Membership appurtenant to that Lot and the Membership shall automatically pass with fee simple title to the Lot. The Association shall have voting Members and each Member, as an Owner of a Lot, shall have the right to cast one (1) vote in accordance with the Declaration. If the Members determine to elect Directors, the duties, qualifications, number and term of Directors and the manner of their election, appointment and removal shall be as set forth in the Bylaws. If the Members determine to elect Directors, cumulative voting by Members in the election of Directors shall not be permitted.

VIII. AMENDMENT OF ARTICLES

The Association may amend these Articles of Incorporation from time to time in accordance with the Act by vote of the Members, but only so long as the Articles of Incorporation as amended contain such provisions as are lawful under the Act and are not contrary to or inconsistent with any provision of the Declaration. In the event of a conflict between the provisions of these Articles and the provisions of the Declaration, the provisions of the Declaration shall govern and control. In the event of a conflict between the provisions of these Articles and the provisions of the Bylaws adopted by the Association, the provisions of these Articles shall govern and control.

IX. BYLAWS

The Association shall have the power to make and alter Bylaws not inconsistent with these Articles of Incorporation, the Declaration or the laws of the State of Colorado, for the administration and regulation of the affairs of the Association. The Members shall adopt the Bylaws of the Association.

X. DISSOLUTION

The Association shall not pay any dividends. No distributions of the corporate assets to Members shall be made until all corporate debts are paid, and then only upon final dissolution of the Association. Upon dissolution and after winding up the affairs of the Association, all assets shall be distributed, transferred and conveyed to the Members pro-rata.

XI. LIMITATION OF LIABILITY

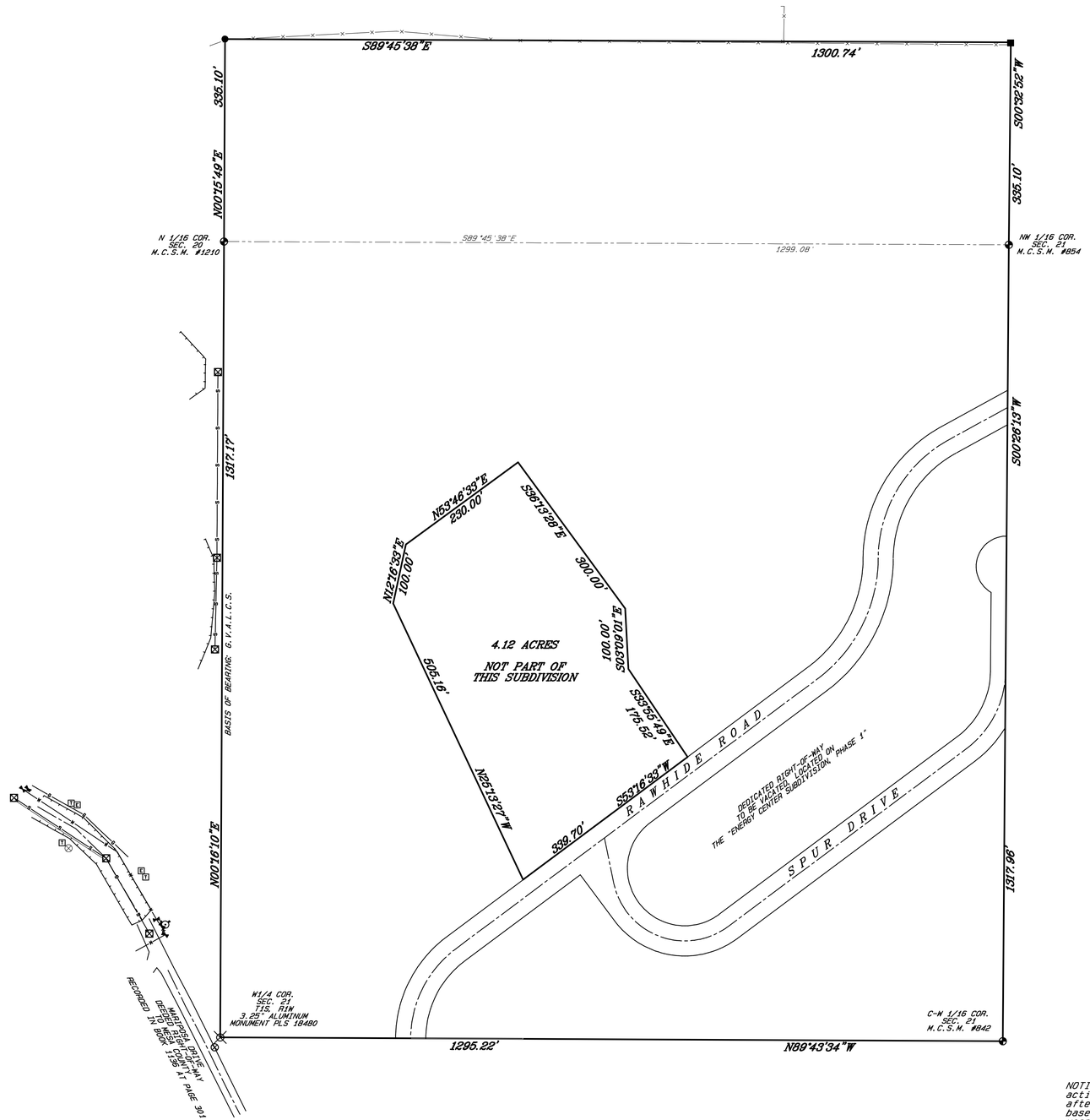
To the fullest permitted by the laws of the State of Colorado, as the same exist or are amended, a director, officer, committee member, or other Member representative of the Association shall not be liable to the Association or its Members for monetary damages for breach of its fiduciary duty except that the foregoing shall not eliminate or limit the liability of a director, officer, committee member, or other Member representative for: any breach of its duty of loyalty to the Association or its Members; acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law; acts specified in C.R.S. 7-128-403 or 7- 128-501(2); or any transaction from which the director, officer, committee member, or other Member representative directly or indirectly derived an improper personal benefit. Any repeal or modifications of this article by the Members of the Association shall be prospective only and shall

not adversely affect any right or protection of a director, officer, committee member, or other Member representative of the Association existing at the time of such repeal or modification.

XIII. INCORPORATOR

The incorporator of this Association is Robert Jones Jr. with an address of 2394 Patterson Road, Suite 201, Grand Junction, Colorado 81505.

IMPROVEMENT SURVEY PLAT



PROPERTY DESCRIPTION

A parcel of land situate in the W 1/2 NW 1/4 of Section 21, Township 1 South, Range 1 West of the Ute Meridian, Mesa County, Colorado, being described as follows:

The south 10 acres of the NW 1/4 NW 1/4 and the SW 1/4 NW 1/4 of said Section 21.

EXCEPTING THEREFROM: Lots 1 - 9, Block 3 and the adjoining dedicated right-of-way known as Spur Drive, Energy Center Subdivision, Phase I as platted and recorded in Plat Book B at Page 55 with a Reception Number 644620 of the Mesa County records.

Said parcel contains 45.36 acres more or less.

LEGEND & ABBREVIATIONS

- FD MESA COUNTY SURVEY MARKER
- FD 3.25" ALUMINUM CAP STAMPED THOMPSON LANGFORD CORP LS 18480
- FD #5 REBAR W/1.5" ALUMINUM CAP STAMPED LS 5933
- SET #5 REBAR W/2" ALUM. CAP STAMPED D H SURVEYS LS 20677

M.C.S.M. = MESA COUNTY SURVEY MARKER

G.V.A.L.C.S. = GRAND VALLEY AREA LOCAL COORDINATE SYSTEM

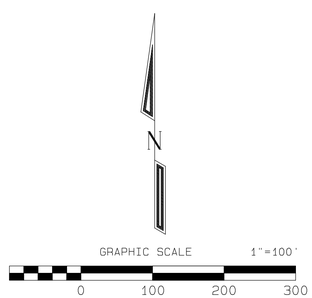
SEC. = SECTION

- ELECTRIC PED./VAULT
- POWER POLE
- GAS METER
- TELEPHONE PED.
- SAN. SEWER MANHOLE
- STORM SEWER MANHOLE
- IRRIG. MANHOLE/RISER
- FIRE HYDRANT
- WATER METER/MANHOLE
- WATER VALVE
- MAILBOX
- LIGHT POLE
- STREET SIGN
- TREE/BUSH
- STORM SEWER INLET

- ELECTRIC LINE
- TELEPHONE/CABLE LINE
- WATER LINE
- SEWER LINE
- IRRIGATION LINE
- LIMITS OF ASPHALT
- FENCE LINE
- DIRECTION OF FLOW
- FLOWLINE
- CONCRETE

SURVEYOR'S STATEMENT

I, Michael W. Drissel, a registered Professional Land Surveyor in the State of Colorado, do hereby state that this survey was performed by me or under my direct responsibility, supervision, and checking. That title research was supplied by First American Heritage Title Company under File Number: 915-H0074568-900-GTO, Amendment No. A.



NOTICE: According to Colorado law you must commence any legal action based upon any defect in the survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of this certification/statement shown hereon.

TWO R & D, LLC

LOCATED IN THE

W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.

D H SURVEYS INC.

118 OURAY AVE. - GRAND JUNCTION, CO.

(970) 245-8749

Designed By M.W.D.	Checked By S.L.H.	Job No.	129-04-03
Drawn By TMODEL	Date JAN. 2008	Sheet	1 OF 1

Mesa County Treasurer Tax Receipt

Account	Parcel Number	Receipt Date	Receipt Number
R068288	294521200011	Jun 5, 2017	2017-06-05-CLH-14241

TWO R & D LLC
P.O. BOX 39
FRUITA, CO 81521

Situs Address	Payor
	ALPINE BANK ESCROW DISBURSEMENT 400 7TH ST SOUTH RIFLE CO 81650

Legal Description

S 10A OF NW4NW4 + SW4NW4 SEC 21 1S 1W EXC BLKS 1-2 + 3 ENERGY CENTER SUB PHASE 1 - 35.00AC

Property Code	Actual	Assessed	Year	Area	Mill Levy
35 AC NO MORE THAN 100 AC - 0550	355,000	102,950	2016	14100	61.572

Payments Received

Check — Multi-Account Payment

Check # 017263

Payments Applied

Year	Charges	Billed	Prior Payments	New Payments	Balance
2016	Tax	$6,338.84	$3,169.42	$3,169.42	$0.00
				$3,169.42	$0.00
			Balance Due as of Jun 5, 2017		**$0.00**

Thank you for your payment.

OWNERSHIP STATEMENT - CORPORATION OR LIMITED LIABILITY COMPANY

(a) Two R & D, LLC ("Entity") is the owner of the following property:

(b) Pinnacle Ridge Subdivision

A copy of the deed(s) evidencing the owner's interest in the property is attached. Any documents conveying any interest in the property to someone else by the owner are also attached.

I am the (c) Managing Member for the Entity. I have the legal authority to bind the Entity regarding obligations and this property. I have attached the most recent recorded Statement of Authority of the Entity.

(•) My legal authority to bind the Entity both financially and concerning this property is unlimited.

( ) My legal authority to bind the Entity financially and/or concerning this property is limited as follows:

(•) The Entity is the sole owner of the property.

( ) The Entity owns the property with other(s). The other owners of the property are:

On behalf of Entity, I have reviewed the application for the (d) _____

I have the following knowledge or evidence of a possible boundary conflict affecting the property:

(e) N/A

I understand the continuing duty of the Entity to inform the City planner of any changes regarding my authority to bind the Entity and/or regarding ownership, easement, right-of-way, encroachment, lienholder and any other interest in the land.

I swear under penalty of perjury that the information in this Ownership Statement is true, complete and correct.

Signature of Entity representative: Robert W. Jones, II

Printed name of person signing: Robert W. Jones, II

State of Colorado)

County of Mesa) ss.

MARY F BURNS
Notary Public – State of Colorado
Notary ID 20064010840
My Commission Expires Jan 11, 2021

Subscribed and sworn to before me on this 6th day of June, 2017

by Mary F. Burns

Witness my hand and seal.

My Notary Commission expires on January 11, 2021

Mary F Burns
Notary Public Signature

POST-CONSTRUCTION STORMWATER CONTROL OPERATIONS AND MAINTENANCE AGREEMENT

Agreement No. _____

THIS AGREEMENT ("Agreement") is made and entered into this 16th day of June, 20 17, by and between Two R & D, LLC _____, (hereinafter the "Landowner"), and the 5-2-1 Drainage Authority (hereinafter the "Authority") as a representative of the City of Grand Junction ("City").

RECITALS

The Landowner is the owner of the following real property (hereinafter referred to as "the Property").

__ If the Property is a single parcel:

Street Address: _____

Parcel Number: _____

X If the Property is a subdivision or planned unit development:

Development Name: Pinnacle Ridge Subdivision

The Landowner is developing the Property.

The Authority and the Landowner, on behalf of all successors and assigns, agree that the health, safety, and welfare of the residents and the protection and maintenance of water quality require that on-site stormwater Best Management Practices be constructed and maintained on the Property. The Landowner acknowledges the 521 Drainage Authority has been granted legal authority by the City to execute this Agreement and perform the activities identified in this agreement within the jurisdiction of the City.

For the purposes of this Agreement, the following definition shall apply:

> BMP – "Best Management Practice;" activities, facilities, designs, measures or procedures used to manage stormwater impacts from land development, to protect and maintain water quality and groundwater recharge and to otherwise meet the purposes of the Municipal Stormwater Pollution Prevention Ordinance, including but not limited to infiltration trenches, seepage pits, filter strips, bioretention, wet ponds, permeable paving, grassed swales, forested buffers, sand filters and detention basins.

As part of the approval of the development of the property, the Authority will review and approve a Final Drainage Report which will implement Post-Construction Storm Water Management BMPs required by the Mesa County/City of Grand Junction Stormwater Management Manual.

The purpose of this Agreement is to insure the adequate maintenance, operation and repair of the storm water management facilities, in perpetuity, by the owners of the property served by these facilities.

The Landowner desires to subject and place upon the Property the covenants and servitudes set forth herein which shall run with the Property and be binding on all parties having any right, title, or interests in the Property or any part thereof, their heirs, personal representatives, successors and assigns, and shall inure to the benefit of each owner thereof.

NOW, THEREFORE, in consideration of the foregoing promises, the mutual covenants contained herein and the following terms and conditions, the parties hereto agree as follows:

1. The BMPs shall be constructed by the Landowner in accordance with the plans and specifications shown and described in the Final Drainage Report.

2. The Landowner shall operate and maintain in perpetuity the BMP(s) as shown and described on the Final Drainage Report in good working order as reasonably determined by the Authority and in accordance with the specific maintenance requirements noted on the Final Drainage Report.

3. The Landowner shall cause the BMP(s) to be inspected annually by a Qualified Erosion Control Specialist to ensure good working order and shall send a report from said inspection to the Authority annually, on or before December 31st of each year.

4. The Landowner hereby grants a perpetual easement to the Authority, its authorized agents and employees, to enter upon the Property, at reasonable times and upon presentation of proper identification, to inspect the BMP(s) whenever it deems necessary. The Authority shall make reasonable efforts to notify the Landowner prior to entering the Property.

5. In the event the Landowner fails to operate and maintain the BMP(s) as shown and described on the Final Drainage Report in good working order as reasonably determined by the Authority, the Authority and the City may enter upon the Property and take action to maintain and/or repair and/or reconstruct said BMP(s). It is expressly understood and agreed that the Authority and the City are under no obligation to maintain or repair said facilities, and in no event shall this Agreement be construed to impose any such obligation on the Authority and the City.

6. In the event the Authority and the City, pursuant to this Agreement, performs work of any nature, or expends any funds in performance of said work for labor, use of equipment, supplies, materials, and the like, the Landowner shall reimburse the Authority and the City for all reasonable expenses (direct and indirect) incurred within 10 days of receipt of invoice from the Authority and the City.

7. The intent and purpose of this Agreement is to ensure the proper maintenance of the onsite BMP(s) by the Landowner. This Agreement shall not be deemed to create or affect any additional liability of any party for damage alleged to result from or be caused by stormwater runoff.

8. The Authority may conduct routine inspections of the BMP(s) to verify their continued adequate functioning. The Authority may also inspect the BMP(s) in the event of reported or suspected failure to function adequately. These inspection activities shall not absolve the Landowner of its obligation to maintain the BMPs in perpetuity or to provide the Authority with the required Landowner inspection report.

9. This Agreement shall not be interpreted or deemed to limit the authority, privilege or right of the Authority and the City pursuant to any duly enacted ordinance of the Authority or the City, charter provision, statute or any duly granted federal or state water discharge permit.

10. Notifications and reports made under this Agreement shall be provided to the Authority at:

5-2-1 Drainage Authority
P.O. Box 3389
Grand Junction, CO 81502

and to the Landowner at:

Two R & D, LLC
P.O. Box 39
Fruita, CO 81521

This Agreement shall be recorded in the Mesa County, Colorado land records and shall, once recorded, constitute a covenant running with the Property and shall be an equitable servitude binding on present and subsequent owners of the Property in whole or in part, and their administrators, executors, assigns, heirs and successors in interest, in perpetuity

WITNESS the following signatures and seals:

FOR THE AUTHORITY:

By: _____
521 Drainage Authority Manager

ATTEST:

_____

_____
Printed Name & Title

LANDOWNER: Two R & D, LLC (SEAL – if incorporated)

By: Robert W. Jones

Printed name and title: Robert W. Jones II, Managing Member

COUNTY OF Mesa, STATE OF Colorado

I, Mary F. Burns, a Notary Public in and for the County and State aforesaid, whose commission expires on the 11th day of January, 2021, do hereby certify that Robert W. Jones II, whose name(s) is/are signed to the foregoing Agreement has/have acknowledged the same before me in my said County and State.

Given under my hand this 6th day of June, 2017.

Mary F Burns
Notary Public (SEAL)

MARY F BURNS
Notary Public – State of Colorado
Notary ID 20064010840
My Commission Expires Jan 11, 2021

City of Grand Junction
Review Comments

Date: July 18, 2017 **Comment Round No.** 1 **Page No.** 1 of 14
Project Name: Pinnacle Ridge Subdivision, Filing 2 **File No:** SUB-2017-273
Project Location: East of Mariposa Drive

Check appropriate [X] **if comments were mailed, emailed, and/or picked up.**

Property Owner(s): Two R & D LLC – Attn: Robert Jones II
[ ] **Mailing Address:** P. O. Box 39, Fruita, CO 81521
[X] **Email:** rjones@vortexeng.us **Telephone:** (970) 245-9051
[ ] **Date Picked Up:** _____ **Signature:** _____

Representative(s): Vortex Engineering Inc. – Attn: Robert Jones II
[ ] **Mailing Address:** 2394 Patterson Road, Suite 201, Grand Junction, CO 81505
[X] **Email:** rjones@vortexeng.us **Telephone:** (970) 245-9051
[ ] **Date Picked Up:** _____ **Signature:** _____

Developer(s):
[ ] **Mailing Address:**
[ ] **Email:** **Telephone:**
[ ] **Date Picked Up:** _____ **Signature:** _____

CITY CONTACTS

Project Manager: Scott D. Peterson, Senior Planner
Email: scottp@gjcity.org **Telephone:** (970) 244-1447

Dev. Engineer: Rick Dorris
Email: rickdo@gjcity.org **Telephone:** (970) 256-4034

City of Grand Junction
REQUIREMENTS
(with appropriate Code citations)

CITY PLANNING

1. Request is for Final Subdivision Plan review for Filing 2 of Pinnacle Ridge Subdivision in order to develop 8 single-family detached residential lots that would be developed in accordance with the approved Preliminary Plan (City file # SUB-2015-120) on 3.37 +/- acres in an existing R-2 (Residential – 2 du/ac) zoning district. Proposed residential density for all filings within the subdivision would be 1.58 +/- dwelling units/acre (72 lots total). The Comprehensive Plan Future Land Use Map identifies the area as Residential Low (.5 - 2 dwelling units/acre). No further response required.

Applicant's Response:
Document Reference

2. Subdivision Plat (Sheet 1):

a. FYI. The Preliminary Plan application approved the use of the cluster provisions for the subdivision, therefore the bulk requirements, building setbacks, etc., for the subdivision will need to meet the standards of the R-4 zone district (Section 21.03.060 (c) (4) of the Zoning and Development

Code); minimum lot width of 70', building setbacks of 20' front, 7' side and 25' rear and maximum lot coverage of 50%. Please design house plans accordingly within these parameters.
b. Are private Drainage Easements needed to be identified at the rear of the properties located along the west property line of the subdivision? If so, please identify and label locations on the plat. Same comment for the properties located on the eastside of Aiguille Drive. Are private Irrigation Easements also needed to serve each individual lot?
c. Correct misspelling of "Aiguille."
d. In the Dedication Block, revise Multi-Purpose Easement paragraph to the correct Model Dedication Language (April 2008).
e. Surveyor's Title Block in lower right corner of the plat indicates that this is a two sheet plat. Please revise to be Sheet 1 of 1 since a second sheet has not been proposed.
Applicant's Response:
Document Reference:

3. Fencing:
Is the applicant proposing any subdivision perimeter fencing? If so, please label location within construction documents and include overall height of fencing (Section 21.04.040 (i) (4) of the Zoning and Development Code).
Applicant's Response:
Document Reference:

4. Covenants and Dedication Documents, etc.:
a. Senior City Staff Attorney is currently reviewing submitted CCR's. City Project Manager will email applicant with the requested changes once review is complete.
b. All proposed private drainage and irrigation easements etc., dedicated to the HOA shall be conveyed by separate document(s). Please submit proposed conveyance documents for review prior to recording.
c. Submit Statement of Authority document (either previously recorded or proposed) which authorizes Robert W. Jones II to sign as Managing Member (or other Title) on behalf of Two R & D LLC. If not previously recorded, submit original document at time of final subdivision plan recording.
Code Reference: IV-2 of the SSIDS Manual.
Applicant's Response:
Document Reference:

5. Fees:
a. City Park Fee: $1,800.00 (8 new lots @ $225 per new lot payable at time of subdivision plat recording).
b. City Open Space Fee: 10% of the value of the raw land payable at time of subdivision plat recording. Senior City Staff Attorney is currently reviewing submitted MAI Appraisal Report and will let City Project Manager know if acceptable in determination of this fee. It appears that the applicant will be paying the required 10% fee for all phases of development, rather than on a per filing basis, since the appraisal report included all 45 acres.
c. School Impact Fee: $560 per dwelling unit payable at time of Planning Clearance issuance.
d. Plant Investment Fees: Contact City Customer Service Division for sewer fees payable at time of Planning Clearance issuance. Contact Ute Water Conservancy District for water tap fees payable at time of Planning Clearance issuance.
e. See City Development Engineer comments for other applicable fees.
Code Reference: Section 21.06.020 and 030 of the Zoning and Development Code.
Applicant's Response:
Document Reference:

CITY DEVELOPMENT ENGINEER

These comments are very repetitive of filing 1.

FEES

Review Comment: Transportation Capacity Payment (TCP) – To be determined and collected at the time of planning clearance for individual building permits.

Storm Drainage Fee (in lieu of detention) – None, detention provided.

Inspection Fee – 8 residential units x $90/unit = $720.

Fee In Lieu of Utility Undergrounding – None, no overhead utilities to underground.

Applicant's Response:
Document Reference:

GENERAL

Review Comment: Discuss the construction approach to filing 1 and 2. How and when will they be built?

Applicant's Response:
Document Reference:

Review Comment: The applicant is requesting a grading permit. The City will support issuing a grading permit in concept. The plans and reports aren't clear what will be graded at this time. Is it the entire project, filings 1 and 2, or something else? The Stormwater management drawing and/or plan need to describe how disturbed areas will be stabilized if allowed to sit for an extended period of time. Dust and erosion will be prevalent if disturbed ground protected. Prepare a grading plan showing the desired limits of grading, construction erosion control measures, and permanent or temporary dust and erosion control measures. If revegetation is the chosen measure, appropriate soil preparation and probably temporary irrigation will be necessary to establish growth.

Applicant's Response:
Document Reference:

Review Comment: When the grading plan is complete, provide a letter from the building department stating they have received hard copies of 1) the geotechnical report, 2) the final grading plan, and 3) a tabulation of the minimum and maximum finished floor elevations by lot. Also reference the individual lot specific grading and drainage plan requirement. This must be the final grading plan and tabulation after all revisions. Include the revision date for the grading plan on the letter: this date must match the revision date on the final plans to be approved by the City.

Applicant's Response:
Document Reference:

Review Comment: Provide easement description and exhibit for the storm and sanitary sewers crossing City property. The City will prepare the easement document.

Applicant's Response:
Document Reference:

Review Comment: Street lights are not shown at the required TEDS manual spacing of every 250' and at all intersections. Either install per standards or submit a TEDS exception requesting something different.

Applicant's Response:
Document Reference:

Review Comment: Record a site plan establishing the unusual CC&R responsibilities, lot grading plans, engineered foundations, etc.

Applicant's Response:
Document Reference:

PLANS

Review Comment: See redlined plans. Respond in different color ink next to each comment and return with written response. The plans were not reviewed in detail because the same types of redlines from the filing 1 redlines also apply to filing 2. There are a few redlines.

Applicant's Response:
Document Reference:

Review Comment: The plans need a thorough quality control check and many details have not been included.

Applicant's Response:
Document Reference:

Review Comment: Include a sheet that shows all filing 2 construction and any grading or utilities outside of filing 2. Show what was installed with filing 1.

Applicant's Response:
Document Reference:

Review Comment: Please include a benchmark with the appropriate description and coordinates on the construction drawings. Include the horizontal and vertical datum source. It shall be located on or close to the site for ease of use, where it won't be destroyed, and shown graphically. Also include on the construction drawings coordinates on a minimum of two of the exterior boundary corners.

Applicant's Response:
Document Reference:

Review Comment: Make sure acceptance blocks are on all sheets except the outside agency detail sheets and 521 sheets.

Applicant's Response:
Document Reference:

Review Comment: There have been recent problems with fire hydrants set to the wrong elevations and having to be raised after the fact. Call out flange elevations for all fire hydrants according to the appropriate water utility providers details. The hydrants shall be as-built prior to concrete.

Applicant's Response:
Document Reference:

Review Comment: The grading for the diversion ditches needs to be reflected on the grading plan and the cross sections. Currently, they are only shown on the Stormwater management plan. They are shown as unlined on sheet C6.0. I suspect there will be a lot of sediment in these ditches and it will deposit a lot of sediment in the roadside ditches. The City will be maintaining the roadside ditches and all grading must be designed to minimize sedimentation and erosion in these ditches. The drainage report must design these ditches including design flow velocity erosion and sedimentation.

Applicant's Response:
Document Reference:

Review Comment: Address driveway culverts and how they will be handled on the plans.

Applicant's Response:
Document Reference:

Review Comment: It is critical to establish areas of no disturbance so construction traffic doesn't travel on open spaces. The desert pavement is pretty well established in many areas and erosion is fairly small. Any disturbance of these areas will increase erosion.

Applicant's Response:
Document Reference:

Review Comment: Review the signage memo from a few months ago. No outlet or dead end signs are required. May be others. Include in DIA.

Applicant's Response:
Document Reference:

Review Comment: Provide a temporary turn around and easement at the end of filing 2.

Applicant's Response:
Document Reference:

DRAINAGE REPORT

Review Comment: All detention basins and infiltration-based retention basins must be registered on the State of Colorado Stormwater Detention and Infiltration Facility portal. The design engineer must visit the website and follow the directions to register the new basin. The web portal address is: https://maperture.digitaldataservices.com/gvh/?viewer=cswdif This must be complete and accepted prior to plan approval.

Applicant's Response:
Document Reference:

Review Comment: Refer to section 404.2, Design Storm Events, in the SWMM. The street must be designed to carry the 100 event with less than 1.0' of ponding at the flowline. Given the roadside ditches and no crown in the street plus the street is in cut on the uphill side and fill on the downhill a new criterion should be proposed. Also, every time a driveway culvert is encountered, the ditch hydraulics are likely reduced. Propose a method to evaluate the 100 yr street capacity. Also evaluate how the ditches and driveway culverts work and the culverts don't wash out. We should discuss this.

Applicant's Response:
Document Reference:

Review Comment: The report mentions ditch velocity, check dams, and hydraulic structures but doesn't discuss and none are proposed on the plans. The report must discuss ditch velocities and how they will be designed to prevent both sedimentation and erosion as was discussed in the Preliminary Plan review. The report shows velocities for the 2-yr storm in excess of 6 fps which will erode site soils.

Applicant's Response:
Document Reference:

Review Comment: The curb and gutter on the west side must be designed to carry the 100 yr event.

Applicant's Response:
Document Reference:

Review Comment: The pipe down ridgeway court was designed but the pipes on site conveying water from the ditches to the ponds were not.

Applicant's Response:
Document Reference:

Review Comment: Section 3D, report talks about checking street and inlet capacities to be done in the final drainage report. This is the final. No inlets were sized or designed.

Applicant's Response:
Document Reference:

Review Comment: The report says the runoff from basin DD2 will be routed to the lot at the pond 4 outfall. The plan doesn't show how to accomplish this.

Applicant's Response:
Document Reference:

Review Comment: The outflow from pond 1 appears to travel in an open ditch down a steep slope to the roadside ditch. This will deposit sediment quickly in the roadside ditch.

Applicant's Response:
Document Reference:

Review Comment: I don't understand the HGEGL2y table although it looks like the 18" pipe will easily handle the pond 2 100 yr discharge. Let's visit.

Applicant's Response:
Document Reference:

Review Comment: The report needs to address the diversion ditches on the hillside behind all houses, see comment under plans.
Applicant's Response:
Document Reference:

STORMWATER

Review Comment: Obtain the 521 permit.
Applicant's Response:
Document Reference:

GEOTECHNICAL REPORT

Review Comment: General note 9 says the contractor shall provide testing. To ensure the requirements of the geotech report and the materials testing plan are correctly implemented, the owner should be providing testing and on-site geotechnical engineering.
Applicant's Response:
Document Reference:

Review Comment: Address the water quality and detention basins uphill of existing houses. The water quality component will keep water in the basins for up to 40 hours whenever it rains. Will this water infiltrate and cause problems for downhill structures? Do the ponds need to be lined up to the water quality capture volume elevation plus a little freeboard? Any other concerns about this situation?
Applicant's Response:
Document Reference:

Review Comment: The report mentions underdrains below the sidewalk where it is attached. This filing has very little attached walk. Is an underdrain necessary.
Applicant's Response:
Document Reference:

Review Comment: The report mentions to excavate rock to provide gradual transition from rock to soil. This may not apply on Filing 1 but show on the plans in filings where it does apply.
Applicant's Response:
Document Reference:

Review Comment: The lab work focuses mostly on test pits #1 and #4. What is the reason other test pits weren't tested?
Applicant's Response:
Document Reference:

Review Comment: Will grading in the areas of filing 4 and 5 occur with filing 1? If so, we need geotechnical info. to assess viability.
Applicant's Response:
Document Reference:

Review Comment: What about benching details for fill placement? Are they needed? What about cut areas?

Applicant's Response:
Document Reference:

Review Comment: Is there any value in bedding the utilities in low permeability materials similar to Summer Hill?

Applicant's Response:
Document Reference:

TESTING PLAN

Review Comment: In the reporting section, The City will require a report from HBET stating construction was done in accordance with the geotechnical report, City standards, and the materials testing plan. It shall also summarize site issues encountered and how they were resolved.

Applicant's Response:
Document Reference:

Review Comment: I didn't see subgrade proof rolling prior to basecourse placement. Shouldn't this be done?

Applicant's Response:
Document Reference:

Review Comment: Is trench compaction to be 98% of modified like fill placement?

Applicant's Response:
Document Reference:

Review Comment: Reference benching if required.

Applicant's Response:
Document Reference:

Review Comment: Reference underdrain construction.

Applicant's Response:
Document Reference:

Review Comment: In section 2.2 where it identifies 1 test per 300 SY or fill, include a depth requirement. I.e. 1 test per 300 SY per 2' rise or whatever is appropriate.

Applicant's Response:
Document Reference:

DIA

Review Comment: Exhibit B was not reviewed in detail because the same types of comment from the filing 1 also apply to filing 2.

Applicant's Response:
Document Reference:

Review Comment: $20 per foot for sanitary sewer seems pretty light.

Applicant's Response:
Document Reference:

Review Comment: The 8” gate valves should be 10”.
Applicant’s Response:
Document Reference:

Review Comment: Aren’t two fire hydrants needed?
Applicant’s Response:
Document Reference:

Review Comment: Fire hydrant seems light.
Applicant’s Response:
Document Reference:

Review Comment: What are the irrigation sleeves for? Is irrigation being provided?
Applicant’s Response:
Document Reference:

Review Comment: $20 per yard is real light for basecourse.
Applicant’s Response:
Document Reference:

Review Comment: Asphalt seems light at $90 per ton.
Applicant’s Response:
Document Reference:

Review Comment: Include reconditioning for subgrade prep.
Applicant’s Response:
Document Reference:

Review Comment: $20 for curb, gutter, and walk is light.
Applicant’s Response:
Document Reference:

Review Comment: Include street lights.
Applicant’s Response:
Document Reference:

Review Comment: Include end of road barriers.
Applicant’s Response:
Document Reference:

Review Comment: Are $2 and $3 real numbers for excavation and backfill?
Applicant’s Response:
Document Reference:

Review Comment: Section D3 needs more items.
Applicant’s Response:
Document Reference:

Review Comment: Include street repair for the storm sewer in the street. Also, there will likely be many services affected that will cost money.
Applicant's Response:
Document Reference:

Review Comment: Where is the money for the curb and gutter on the west side?
Applicant's Response:
Document Reference:

Review Comment: Delete City inspection fees.
Applicant's Response:
Document Reference:

Review Comment: Is this a good quality control testing number given the added geotechnical presence?
Applicant's Response:
Document Reference:

Review Comment: Include money for the Developer's inspection cost.
Applicant's Response:
Document Reference:

Review Comment: Include dry utilities and trenching.
Applicant's Response:
Document Reference:

CC & R'S

Review Comment: Complete section 1.10.
Applicant's Response:
Document Reference:

Review Comment: Add diversion ditches to 1.18.
Applicant's Response:
Document Reference:

Review Comment: The CC & Rs talk about irrigation water provided by the City. Is irrigation water really being provided? It isn't shown on the plans.
Applicant's Response:
Document Reference:

Review Comment: A condition of the preliminary plan approval is for the HOA to provide snow removal on Elysium drive and to post signs stating such in conspicuous locations. Include in the CC & Rs.
Applicant's Response:
Document Reference:

CITY SURVEYOR – Peter Krick – peterk@gjcity.org (970) 256-4003

Please follow-up directly with City Surveyor regarding Filing 2 requested plat changes, if any.
Applicant's Response:
Document Reference:

CITY FIRE DEPARTMENT – Mike Gazdak – mikega@gjcity.org (970) 549-5854

1. Fire flow form (Ute Water dated 5/31/17) submitted shows 3621 gpm at 20 psi available at test hydrant. The Fire Flow Water System Report (Vortex) provided on January 12, 2015 Appendix B indicates a predicted fire flow of 2001 gpm at 20 psi for all proposed fire hydrants which is acceptable for the proposed residential structures (V-B construction) up to 6000 square feet.

2. The fire department has no other comments or objections to this Major Subdivision (Filing 2).
Applicant's Response:
Document Reference:

CITY TRANSPORTATION ENGINEER – Sandy Mallory – sandym@gjcity.org (970) 244-1567

Filing 2 has the Stop sign & Street name sign listed under construction notes...These signs and the additional signs listed in comments for filing 1 need to be shown in plan for filing 1. "stop sign (R1-1), Street Name signs (D3-1), No outlet sign (W14-2a) at intersection of Mariposa Dr. & Auguille Dr. and 20 MPH Speed Limit sign (R2-1) on Aiguille Dr."
Applicant's Response:
Document Reference:

CITY ADDRESSING – Pat Dunlap – patd@gjcity.org (970) 256-4030

Addresses to be assigned at time of final plat recording.
Applicant's Response:
Document Reference:

OUTSIDE REVIEW AGENCY COMMENTS

(Non-City Agencies)

Review Agency: 5-2-1 Drainage Authority
Contact Name: Mark Barslund
Email / Telephone Number: markb@gjcity.org (970) 256-4106

The SWMP is accepted as submitted. Prior to the issuance of a 521 storm water permit the following items must be submitted.
*A copy of the CDPHE permit.
*An ORIGINAL signed and notarized 521 O&M agreement.
*A $900.00 permit fee.
Applicant's Response:

Review Agency: Mesa County Development Engineer
Contact Name: Dana Brosig
Email / Telephone Number: dana.brosig@mesacounty.us (970) 255-5035

Complete annexation required of parcels surrounded by Pinnacle Ridge Subdivision per the Persigo Agreement Section E.
Applicant's Response:

Review Agency: Ute Water Conservancy District
Contact Name: Jim Daugherty
Email / Telephone Number: jdaugherty@utewater.org (970) 242-7491

• The water main in Monument Rd is a Contract Water Line (CWL) assessments for the CWL will need to be paid prior to wet tap or tap and meter sales.
• Note 17 needs to read OF 250 "MINIMUM" AND SHALL.
• If the alternative of regulated yokes were installed during construction for Filing 1, then regulated yokes at services based on pressure limits as determined in the hydraulic analysis for Filing 2 should be installed. Developer will reimburse the District for materials required for this work.
• Lot 18's service needs to connect to water main not the SS. Move service 10-feet the north of the manhole SSMH-A2.
• Check separation on SS and water main.
• Show termination for filing two.
• Change AV/AR as in filing one redline.
• See redline drawing for further comment.
• ALL FEES AND POLICIES IN EFFECT AT TIME OF APPLICATION WILL APPLY.
• If you have any questions concerning any of this, please feel free to contact Ute Water.
Applicant's Response:

Review Agency: United States Postal Service
Contact Name: Christopher Buzzell
Email / Telephone Number: Christopher.w.buzzell@usps.gov (970) 858-7715

All new development must be centralized with the cost of mailbox purchase and installation the sole responsibility of the developer. Mailbox equipment may be purchased from www.florencemailboxes.com but is only a recommendation, other vendors may also be used. Location of mailbox equipment must be pre-approved by local USPS management. For any questions, please contact:
Chris Buzzell
(970) 260-3719
Plat maps can be submitted to:
Christopher.w.buzzell@usps.gov
To determine mailbox placement.
Applicant's Response:

Review Agency: Colorado Geological Survey
Contact Name: Jill Carlson
Email / Telephone Number: carlson@mines.edu (303) 384-2643

CGS has reviewed the Pinnacle Ridge Subdivision Filing 2 final subdivision plan referral, for eight single family detached lots in the western corner of the overall Pinnacle Ridge property. The referral documents include:

- Pinnacle Ridge Subdivision, Filing 2 plat sheet 1 of 2 (D H Surveys Inc., May 2017),
- General Project Report for Pinnacle Ridge Final Plat and Plan – Filing 2 (Vortex Engineering & Architecture, Inc. [Vortex], June 8, 2017)
- Final Geotechnical Report, Pinnacle Ridge Subdivision, Filings 1, 2, and 3 (Huddleston-Berry Engineering & Testing, LLC [HBET], June 7, 2017),
- Construction Materials Testing and Engineering Oversight Plan, Pinnacle Ridge Subdivision Filings 1, 2, and 3 (HBET, June 7, 2017),
- Improvement Survey Plat (DH Surveys, January 2008),
- Set of 12 construction plans (Vortex, June 12, 2017),
- Final Drainage Report (Vortex, June 9, 2017),
- and other documents.

HBET has satisfactorily addressed CGS's concerns regarding slope stability and rockfall in the western portion of the site, corresponding to proposed Filings 1, 2, and 3. CGS agrees with HBET's recommendations for construction materials testing and engineering oversight to (1) evaluate cut slopes during construction to confirm that soil conditions are consistent with assumptions and to verify long term stability of cut slopes in rock, and (2) evaluate rockfall hazards after completion of site grading. Inconsistencies may require stabilization or other mitigation.

Provided the recommendations in HBET's Final Geotechnical Report and Construction Materials Testing and Engineering Oversight for Filings 1, 2, and 3 are strictly adhered to, CGS has no objection to approval of Filing 2 as proposed. As noted in our Filing 1 final subdivision plan review letter, a similar level of slope and roadway analysis will be needed prior to platting individual lots within proposed Filings 4 and 5 (reserve Lots 102 and 103). CGS looks forward to reviewing this when available.

As HBET notes on page 14 of their Final Geotechnical Report, lot-specific geotechnical investigations will be needed for use in design of individual foundations, floor slabs, slope stability, grading, drainage, etc.

Thank you for the opportunity to review and comment on this project. If you have questions or require further review, please call me at (303) 384-2643, or e-mail carlson@mines.edu.

Applicant's Response:

Review Agency: Mesa County Building Department
Contact Name: Darrell Bay
Email / Telephone Number: Darrell.bay@mesacounty.us (970) 244-1651

MCBD has no objections.

Provide a soil report, drainage plan and TOF tabulation sheet to our office in paper form.

Applicant's Response:

Review Agency: Xcel Energy
Contact Name: Dan Steinkirchner/Danny Moore
Email / Telephone Number: danny.moore@xcelenergy.com (970) 244-2690

I have no objections at this time.

Applicant's Response:

REVIEW AGENCIES

(Responding with "No Comment" or have not responded as of the due date)

The following Review Agencies have responded with "No Comment."

1. Regional Transportation Planning Office (RTPO)

The following Review Agencies have <u>not</u> responded as of the comment due date.

1. Mesa County Valley School District #51
2. Mesa County Assessor's Office
3. Redlands Water and Power
4. Urban Trails Committee

The Petitioner is required to submit electronic responses, labeled as "**Response to Comments**" for the following agencies:

1. **City Planning**
2. **City Development Engineer**
3. **City Surveyor**
4. **City Transportation Engineer**
5. **5-2-1 Drainage Authority**
6. **Ute Water Conservancy District**

Date due: **October 18, 2017**

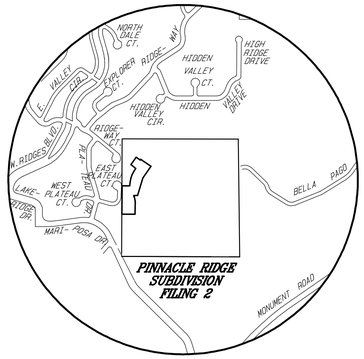
Please provide a written response for each comment and, for any changes made to other plans or documents indicate specifically where the change was made.

I certify that all of the changes noted above have been made to the appropriate documents and plans and there are no other changes other than those noted in the response.

Applicant's Signature	**Date**

PINNACLE RIDGE SUBDIVISION, FILING 2

A REPLAT OF LOT 100, PINNACLE RIDGE SUBDIVISION FILING 1, Reception No., W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.
City of Grand Junction, Mesa County, Colorado



VICINITY MAP
N.T.S.

LEGEND & ABBREVIATIONS

- FD MESA COUNTY SURVEY MARKER
- FD 3.25" ALUMINUM CAP STAMPED THOMPSON LANGFORD CORP LS 18480
- FD #5 REBAR W/1.5" ALUMINUM CAP STAMPED LS 5933
- SET #5 REBAR W/2" ALUM. CAP STAMPED D H SURVEYS LS 20677

M.C.S.M. = MESA COUNTY SURVEY MARKER
G.V.A.L.C.S. = GRAND VALLEY AREA LOCAL COORDINATE SYSTEM
M.P.E. = MULTIPURPOSE EASEMENT
SEC. = SECTION
SQ.FT. = SQUARE FEET

To be completed by the City of Grand Junction personnel. The accuracy of this information is the responsibility of the City of Grand Junction.

Declaration of Covenants, Restrictions and Conditions of the Pinnacle Ridge Homeowner's Association, Inc.

recorded under Reception No. _____.

CITY APPROVAL

This plat of PINNACLE RIDGE SUBDIVISION, FILING 2, a subdivision of the City of Grand Junction, County of Mesa, State of Colorado, is approved and accepted

on the ____ day of _____, 2017 A.D.

_____ City Manager

_____ City Mayor

CLERK AND RECORDER'S CERTIFICATE

This plat was accepted for filing in the office of the Clerk and Recorder of Mesa County, Colorado at _____ o'clock__M., on this ____ day of _____ 2017 A.D., and was recorded at Reception No. _____, Drawer No. _____, and Fees _____.

_____ Clerk and Recorder

_____ Deputy

AREA SUMMARY

LOTS	= 2.57 AC./ 76%
DED. ROADS	= 0.80 AC./ 14%
TOTAL	= 3.37 AC./100%

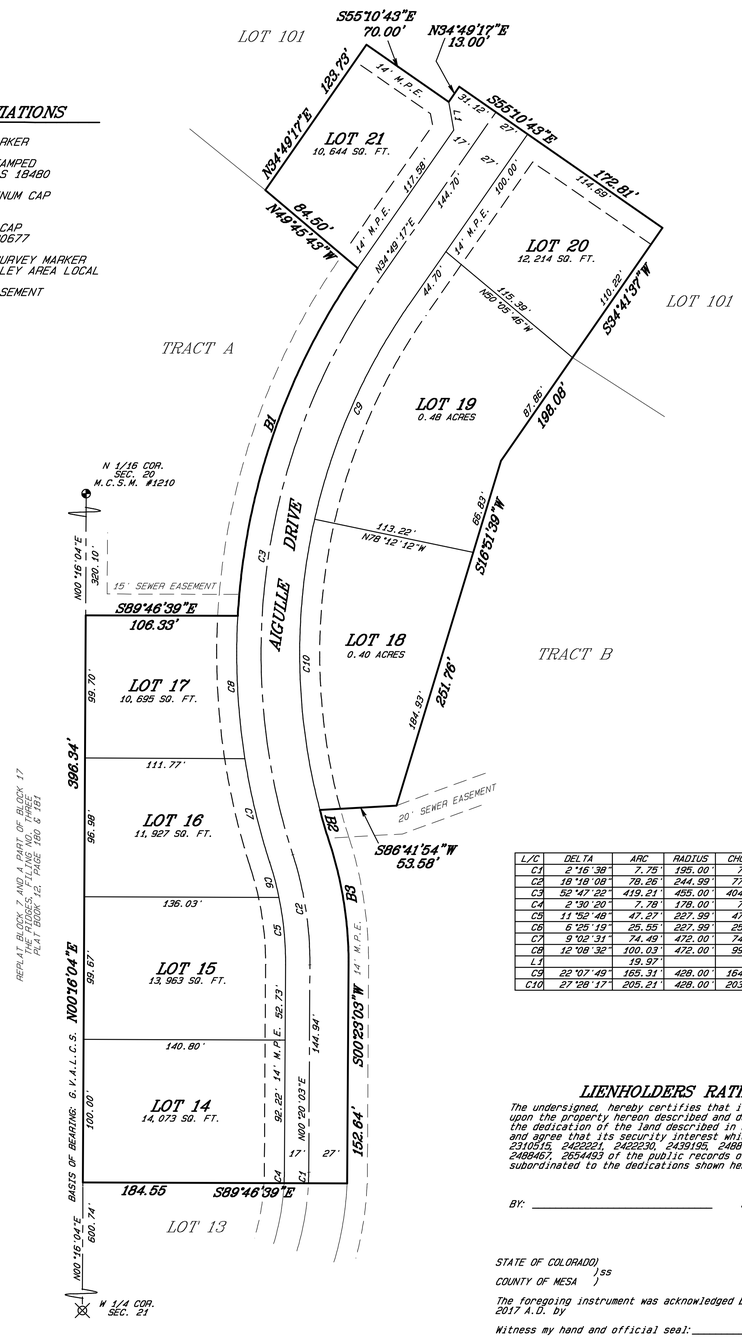


LINEAR UNITS = U.S. SURVEY FEET

BOUNDARY DIMENSIONS

B	DELTA	ARC	RADIUS	CHORD	CHORD BEARING
B1	31°36'19"	260.36'	472.00'	257.07'	N19°01'07"E
B2	3°11'16"	23.81'	428.00'	23.81'	S16°22'27"E
B3	18°18'08"	86.88'	271.99'	86.51'	S08°49'01"E

NOTICE: According to Colorado law you must commence any legal action based upon any defect in the survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of this certification/statement shown hereon.



L/C	DELTA	ARC	RADIUS	CHORD	CHORD BEARING
C1	2°16'38"	7.75'	195.00'	7.75'	N01°28'22"E
C2	18°18'08"	78.26'	244.99'	77.93'	N08°49'01"W
C3	52°47'32"	419.21'	455.00'	404.54'	N08°25'36"E
C4	2°30'20"	7.78'	178.00'	7.78'	N01°35'13"E
C5	11°52'48"	47.27'	227.99'	47.19'	N05°36'21"W
C6	6°25'19"	25.55'	227.99'	25.54'	N14°45'25"W
C7	9°02'31"	74.49'	472.00'	74.41'	N13°26'50"W
C8	12°08'32"	100.03'	472.00'	99.84'	N02°51'18"W
L1		19.97'			N10°10'43"W
C9	22°07'49"	165.31'	428.00'	164.29'	S23°45'22"W
C10	27°28'17"	205.21'	428.00'	203.25'	S01°02'41"E

DEDICATION

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, TWO R & D, LLC a Colorado limited liability company is the owner of that real property situate in the W 1/2 NW 1/4 of Section 21, Township 1 South, Range 1 of the Ute Meridian, City of Grand Junction, Mesa County, Colorado; being more particularly described as follows:

Lot 100, Pinnacle Ridge Subdivision, Filing 1, Reception No.

Said parcel contains 3.37 acres more or less.

Said Owner has by these presents laid out, platted and subdivided the above-described real property into Lots, and Tracts as shown hereon, and designated the same as PINNACLE RIDGE SUBDIVISION, FILING 2 in the City of Grand Junction, County of Mesa, State of Colorado, and does hereby offer the following dedications and grants:

All streets, roads and Rights-of-Way are dedicated to the City of Grand Junction for the use of the public forever.

All Multipurpose Easements are dedicated to the City of Grand Junction for the use of City-approved utilities and public providers as perpetual easements for the installation, operation, maintenance and repair of utilities and appurtenances including, but not limited to, electric lines, cable TV lines, natural gas pipelines, sanitary sewer lines, storm sewers, water lines, telephone lines, traffic control facilities, street lighting, landscaping, trees and grade structures.

_____ TWO R & D, LLC, Member

STATE OF COLORADO)
)ss
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____ 2017 A.D. by TWO R & D, LLC, Member _____

Witness my hand and official seal: _____ Notary Public

My commission expires: _____

TITLE CERTIFICATION

State of Colorado
County of Mesa

We, Heritage Title Company, a title insurance company, as duly licensed in the State of Colorado, hereby certify that we have examined the title to the hereon described property, that we find the title to the property is vested to Two R & D, LLC, a Colorado limited liability company , that the current taxes have been paid; that all mortgages not satisfied or released of record or otherwise terminated by law are shown hereon and that there are no other encumbrances of record; that all easements, reservations and right-of-ways of record are shown hereon.

Date: _____ By: _____

SURVEYOR'S STATEMENT

I, Michael W. Drissel, a registered Professional Land Surveyor in the State or Colorado, do hereby state that this survey was performed by me or under my direct responsibility, supervision, and checking. It is based upon my professional knowledge, information and belief according to applicable standards of practice. This is not a guarantee or warranty, either expressed or implied. Title research was supplied by Heritage Title Company under FILE NUMBER: 598-H0502023-900-GTO.

LIENHOLDERS RATIFICATION OF PLAT

The undersigned, hereby certifies that it is a holder of a security interest upon the property herein described and does hereby join in and consent to the dedication of the land described in said dedication by the owners thereof and agree that its security interest which is recorded under Reception No. 2236040, 2310515, 2492221, 2492230, 2439195, 2488454, 2654494, 2351445, 2351450, 2439196, 2488467, 2654493 of the public records of Mesa County, Colorado shall be subordinated to the dedications shown hereon.

BY: _____ FOR: Alpine Bank

STATE OF COLORADO)
)ss
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____ 2017 A.D. by _____

Witness my hand and official seal: _____ Notary Public

My commission expires: _____

FOR REVIEW

PINNACLE RIDGE SUBDIVISION FILING 2

LOCATED IN THE
W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.

D H SURVEYS INC.
118 OURAY AVE. - GRAND JUNCTION, CO.
(970) 245-8749

Designed By M.W.D.	Checked By E.E.B.	Job No.	129-04-03
Drawn By TMODEL	Date MAY 2017	Sheet	1 OF 2

CITY OF GRAND JUNCTION

(03-21-12)

SURVEYOR VERIFICATION INITIAL SUBMITTAL CHECKLIST

(GS = GRAPHIC STANDARDS F = FEATURES)

Plat Name Pinnacle Ridge Subdivision, Filing 1 & 2

		Yes	N/A
1.	A legible scale is indicated and a graphic bar scale included (GS A)	☒	☐
2.	Drawing size is 24"x36" (GS B)	☒	☐
3.	Margins; 2" minimum left, 1" top, 1/2" bottom and right, minimum (GS B)	☒	☐
4.	Minimum text height is 0.08" lower case letter height (GS R)	☒	☐
5.	Limits of platted parcel are depicted with a bold, heavy line weight (GS E)	☒	☐
6.	North arrow appears on each sheet (GS I)	☒	☐
7.	All abbreviations and symbols used on the plat listed in a legend (GS M,N)	☒	☐
8.	Match lines used for multiple sheet plats (GS P)	☐	☒
9.	A graphical key index map for multiple sheet plats (GS P)	☐	☒
10.	Legible site/vicinity map (all major streets or roads within 1/2 mile radius) (F 26)	☒	☐
11.	All section, 1/4 section and 1/16 section lines within the plat or used for control are drawn with lightly dashed lines and accurately described (GS K)	☒	☐
12.	Plat name in large bold characters in top center of sheet (GS K)	☒	☐
13.	Plat name cannot begin with "The", "A", "Replat" or numerals (GS K)	☒	☐
14.	All descriptive references shall be placed beneath the plat name (GS K)	☒	☐
15.	Crosshatching, if used, neat and legible and doesn't obscure text (GS E)	☐	☒
16.	Replats shall not depict existing lots, tracts or parcels (F 27)	☒	☐
17.	Improvement survey meeting State and City requirements (F 1)	☒	☐
18.	All recorded and apparent rights-of-way and easements are depicted (F 2a)	☒	☐
19.	Indicate the source for the recorded easements and rights-of-way (F 2b)	☒	☐
20.	Book and page recording information for easements and rights-of-way (F 2b)	☒	☐
21.	Easements and rights-of-way completely dimensioned (F 2c)	☒	☐
22.	Easements and rights-of-way dimensioned to lot lines and boundaries (F 2c)	☒	☐
23.	All easements identified on the Plat (f 2D)	☒	☐
24.	Blanket easements noted with all recording information noted (F 2e)	☐	☒
25.	All dimensions necessary to establish boundaries in field (F 21)	☒	☐
26.	Statement that survey was performed under responsible charge of surveyor (F 22)	☒	☐
27.	All interior "excepted" parcels labeled as "NOT PLATTED HEREON" (F 23)	☒	☐
28.	A written statement describing the Basis of Bearings (F 3a)	☒	☐

	Yes	N/A
29. Basis of Bearings line graphically depicted and tied to boundary of plat (F 3b)	☒	☐
30. Boundary monuments fully described with size, composition and markings (F 4b)	☒	☐
31. Boundary monuments no further than 1400' apart (F 4c)	☐	☒
32. Monuments set at all angle points and at the beginning and end of curves (F 4f)	☒	☐
33. Witness corners set on line or prolongation thereof (f 4g)	☒	☐
34. Two reference monuments for each corner if not set on line or extension (F 4g)	☐	☒
35. Control monuments shown and identified (F 4h)	☒	☐
36. Monuments set at the boundary intersection of newly dedicated rights-of-way (F 4i)	☒	☐
37. Description references the City, County and State (F 5a)	☒	☐
38. Description references the Section, Township, Range and Meridian (F 5a)	☒	☐
39. Descriptions for replats include recording information of prior plat (F 5b)	☒	☐
40. Descriptions for replats include reference to lots and blocks being replatted	☒	☐
41. Description and boundary is complete and has a mathematical closure of +/- 0.01' (F 5c, 20a)	☒	☐
42. The Point of Commencement and Beginning clearly indicated (F 5d)	☐	☒
43. Conflicts from adjoining descriptions shown and method of resolution noted (F 7a)	☐	☒
44. Physical evidence of boundary conflicts noted (F 7b)	☐	☒
45. Recorded boundary agreements noted and recording information included	☐	☒
46. Dedication language matching approved City Model Language and corresponds with items such as new easements labeled on the plat (GS 2)	☒	☐
47. Consent to subordination for all known lienholders (F 8a)	☒	☐
48. Notary statement for all known lienholders (F 8b)	☒	☐
49. The record owner(s) signature(s) which shall be notarized (F 9a)	☒	☐
50. Statement by owner `that all lienholders appear hereon' or "there are no lienholders of record" (F 9b)	☒	☐
51. Total area of lands being platted noted in acres or square feet (F 10a)	☒	☐
52. Summary table provided, including percentage of the whole (F 10c)	☒	☐
53. Adjoining subdivisions noted with plat title and recording information (F 11a)	☒	☐
54. If Plat includes a portion of a previously recorded plat, sufficient ties to controlling lines (F 11b)	☒	☐
55. All adjoining recorded and apparent easements depicted (F 11c)	☒	☐
56. All adjoining recorded and apparent rights-of-way depicted (F 11c)	☒	☐
57. Width and use of adjoining rights-of-way, easements and reservations (F 11d)	☒	☐

	Yes	N/A
58. Recording information for adjoining rights-of-way, easements & reservations (F 11a)	☒	☐
59. Tabular data of lines and curves on applicable sheet, if possible (F 28)	☒	☐
60. Vertical datum must be referenced to NAVD88, unless otherwise pre-approved (F 12a)	☐	☒
61. Horizontal data shall be the Mesa County Local Coordinate System, unless otherwise pre-approved (F 12b)	☐	☐
62. Title block contains the Section, Township, Range and Meridian (F 13a)	☒	☐
63. The name of the plat appears in the title block (F 13b)	☒	☐
64. Every revision must be dated and noted in the title block (F 13c)	☐	☒
65. All curves must show the delta, arc length, radius, chord bearing and length (F 14a)	☒	☐
66. All non-tangent curves must be identified and labeled (including table data) (F 14b)	☐	☒
67. Blocks and lots numbered consecutively (F 15a)	☒	☐
68. Additional filings, when contiguous, must continue with sequential numbering of lots and blocks from previous filings (F 15b)	☒	☐
69. City Model language on the plat for the City Manager and Mayor to sign (GS T, F 16a)	☒	☐
70. City Model language on the plat for the Title Company to sign (GS T, F 17)	☒	☐
71. City Model language on the plat for the Clerk and Recorder's certificate (GS T, F 16b)	☒	☐
72. City Model language on the plat for any lienholder to sign (GS T, F 8)	☒	☐
73. Proper language on the plat for the Owner(s) to sign (GS T, F 9)	☒	☐
74. Proper language on the Surveyor to sign and seal (GS T, F 6)	☒	☐
75. A "City Use Block" provided for City personnel to use (F 30)	☒	☐
INTERNAL STAFF ITEMS ONLY		
76. Surveyor's Verification Form	☐	☐
77. Plat name does not duplicate the title of an existing plat or is not so nearly the same as an existing plat as to create confusion.	☐	☐
78. Legible copies provided for all documents referenced on the plat	☐	☐
79. Legible copies provided for all documents referenced in the title commitment	☐	☐
80. Legible copies provided of all recorded covenants and restrictions	☐	☐
81. Legible copies provided of all proposed covenants and restrictions	☐	☐
82. Copies of all instruments dedicating non-public easements or tracts	☐	☐
83. Exterior boundary monuments in place	☐	☐
84. Boundary monuments must be embedded in concrete	☐	☐
85. Alternative monumentation anchored in concrete or rock	☐	☐

By: _____ Date: 5-30-17

Professional Land Surveyor

P.L.S. Number 20677

TRANSACTION SCREEN

FOR

PINNACLE RIDGE SUBDIVISION
EAST of MARIPOSA DRIVE
GRAND JUNCTION, COLORADO

SUBMITTED TO:

COMMUNITY DEVELOPMENT
CITY OF GRAND JUNCTION
250 NORTH 5TH STREET
GRAND JUNCTION, COLORADO 81501

PREPARED FOR:

Two R & D, LLC
1880 K Road
Fruita, Colorado 81521

PREPARED BY:

Rhino Engineering, Inc.
1334 Ute Avenue
Grand Junction, Colorado 81501

June 29, 2005

RE Project No. 21070.01

TABLE OF CONTENTS

I. OVERVIEW 1

II. LOCATION AND DESCRIPTION OF PROPERTY 1

A. Location of Property 1
B. Description of Prior Property Use 1
C. Description of Bordering Property Use 2
D. Description of Future Property Use 2

III. METHODS AND FINDINGS 2

A. Transaction Screen Questionnaire (TSQ) 2
B. Government Database Review 2
C. Site Inspection 2

IV. RECOMMENDATIONS 4

V. LIMITATIONS 4

VI. REFERENCES 4

Appendix A: Transaction Screen Questionnaire
Appendix B: Government Database Review

I. OVERVIEW

A. Introduction to Environmental Risk Transaction Screen

To assess the potential for real estate to be environmentally impaired, an environmental review of a borrower's property was undertaken by Rhino Engineering. In general, environmental transaction screening evaluates risk of environmental hazards using a questionnaire, a government database review, and a site inspection. The ASTM Transaction screen process as an economical first step in the environmental due-diligence process. ASTM document E 1528-00 defines good commercial and customary practice for the transaction screen process. Proper implementation of the Transaction Screen Questionnaire allows Rhino Engineering to recommend one of the following options: (a) that no further inquiry is needed to assess the potential for identifying any recognized environmental conditions, or (b) that further inquiry is required to assess the environmental condition of the property.

B. Summary of Findings

Based on the Environmental Risk Transaction Screen Process, Rhino Engineering concludes that ***no further inquiry is needed to assess the potential for identifying any recognized environmental conditions***.

The process and evidence that led to this conclusion is detailed in the following sections.

II. LOCATION AND DESCRIPTION OF PROPERTY

A. Location of Property

The project site is located south and east of the "Ridges" development in the Redlands, in the City of Grand Junction. The site was annexed into the City of Grand Junction in 2004 and also recently zoned as RSF-2. The subject site lies south of Hwy 340, north of Monument Road, and east of Mariposa Drive.

By legal description, the property is located in the NW¼ of Section 21, Township 1 South, Range 1 West of the Ute Meridian in Mesa County, Colorado. The property occupies about 45.3 acres.

Single-family residences surround this property on the north, west, and partially the southeast. Undeveloped land lies partially on the east and south.

B. Description of Prior Property Use

The site is undeveloped. Previously, the land was used as irrigated and non-irrigated pasture and rangeland. According to the evidence found in the Transaction Screen Process, no industrial or commercial facilities have existed on the site.

C. Description of Bordering Property Use

The area to the south of the property is composed both city and private property. The areas to the north, east, and west are residential properties. A golf course borders the site on the west. According to the evidence found in the Transaction Screen Process, no industrial or commercial facilities have existed on properties adjacent to the site.

D. Description of Future Property Use

The proposed development consists of developing 45.3± acres into residential development. About 35% of the total area will remain undisturbed and as "open space".

III. METHODS AND FINDINGS

Rhino Engineering performed the Transaction Screen Process in conformance with the ASTM E 1528-00 guidance document, *Standard Practice for Environmental Site Assessments: Transaction Screen Process.*

A. Transaction Screen Questionnaire (TSQ)

A key component to the Transaction Screen Process is the Transaction Screen Questionnaire. The TSQ asks the owner and any occupants to offer any and all knowledge of prior industrial uses of the land, existing or prior land issues, and existing or prior structural evidence of industrial usage. Additionally, a site visit by Rhino Engineering is conducted to assess the same questions per the TSQ. The complete TSQ is provided in Appendix A.

The completed TSQ indicates no reason for concern on this site.

B. Government Database Review

Satisfi produced a government database report on the site. The report, included in Appendix B, lists most if not all ASTM required findings for possible sources of contamination surrounding the site. The site in this report had ***three mapped findings all related to the Petro Mart Broadway gas station***. Other unmapped sites were found, but it is unclear how close to the site they exist. The site inspection detailed below gives more information of additional findings.

The database review for this site indicates that the site is free of contamination.

C. Site Inspection

A reconnaissance site visit by Rhino Engineering was used as to answer question on the TSQ and provide visual evidence of any findings. A digital camera was used to photograph areas of the site. All photographs are shown on page 4.

Residential property surrounds most of the site. Pasture and open space land also exist along the north and south boundaries. ***No environmental conditions were recognized***. Existing conditions worth noting include cut rock and soil piles.



Figure 1: Cut soil piles, south side of property



Figure 2: Cut rock piles, center of property



Figure 3: Nearest gas station, Broadway Blvd.



Figure 4: Golf Course to the west

IV. RECOMMENDATIONS

No environmental conditions of concern were recognized per the ASTM Transaction Screen Process. No further inquiry is needed at the site.

V. LIMITATIONS

Environmental conditions that visual observation cannot identify may exist. While significant information is obtained through the Transaction Screen Process based on the reconnaissance visit and the TSQ, no investigation is complete enough to ensure that no hazardous material, petroleum products, or contamination exists on the site in question.

This report presents professional opinions and judgment, but should not be used as a guarantee for a risk- free site. The Transaction Screen Process does not meet the requirements for obtaining Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) liability protection under the U.S. Environmental Protection Agency's proposed "All Appropriate Inquiry" rule. Opinions and judgments in this report do not extend to property conditions beyond the time of the assessment.

VI. REFERENCES

The following manuals and computer programs were used for this report:

- ASTM Document E 1528-00 *Standard Practice for Environmental Site Assessments: Transaction Screen Process*

APPENDIX A:

Transaction Screen Questionnaire

ASTM E1528 Transaction Screen Questionnaire

Site Name: Pinnacle Ridge Subdivision
Client: Two R & D, LLC
Address/Location: 1880 K Road
Fruita, Colorado 81521

	Question	Owner	Occupants(if applicable)	Observed During Site Visit
1a.	Is the property used for an industrial use?	N	N/A	N
1b.	Is any adjoining property used for an industrial use?	N	N/A	N
2a.	Did you observe evidence or do you have any prior knowledge that the property has been used for an industrial use in the past?	N	N/A	N
2b.	Did you observe evidence or do you have any prior knowledge that the adjoining property has been used for an industrial use in the past?	N	N/A	N
3a.	Is the property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing or recycling facility (if applicable, identify which)?	N	N/A	N
3b.	Is any adjoining property used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing or recycling facility (if applicable, identify which)?	N	N/A	N
4a.	Did you observe evidence, or do you have prior knowledge that the property has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing or recycling facility (if applicable, identify which)?	N	N/A	N
4b.	Did you observe evidence, or do you have prior knowledge that any adjoining property has been used as a gasoline station, motor repair facility, commercial printing facility, dry cleaners, photo developing laboratory, junkyard or landfill, or as a waste treatment, storage, disposal, processing or recycling facility (if applicable, identify which)?	N	N/A	N

	Question	Owner	Occupants(if applicable)	Observed During Site Visit
5a.	Are there currently any damaged or discarded automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of >5gal (19L) in volume or 50 gal (190L) in the aggregate, stored on or used at the property or at the facility?	N	N/A	N
5b.	Did you observe evidence, or do you have prior knowledge that there have been previously any damaged or discarded automotive or industrial batteries, pesticides, paints, or other chemicals in individual containers of >5gal (19L) in volume or 50 gal (190L) in the aggregate, stored on or used at the property or at the facility?	N	N/A	N
6a.	Are there currently any industrial drums (typically 55 gal [208 L]) or sacks of chemical located on the property or at the facility?	N	N/A	N
6b.	Did you observe evidence, or do you have any prior knowledge that there have been previously any industrial drums (typically 55 gal [208L]) or sacks of chemical located on the property or at the facility?	N	N/A	N
7a.	Did you observe evidence or do you have any prior knowledge that fill dirt has been brought onto the property that originated from a contaminated site?	N	N/A	N
7b.	Did you observe evidence or do you have any prior knowledge that fill dirt has been brought onto the property that is of an unknown origin?	N	N/A	N
8a.	Are there currently any pits, ponds, or lagoons located on the property in connection with waster treatment or waste disposal?	N	N/A	N
8b.	Did you observe evidence, or do you have any prior knowledge that there have been previously any pits, ponds, or lagoons located on the property in connection with waste treatment or waste disposal?	N	N/A	N
9a.	Are there currently any stained soils on the property?	N	N/A	N
9b.	Did you observe evidence or do you have any prior knowledge that there has been previously any stained soils on the property?	N	N/A	N
10a.	Are there currently any registered or unregistered storage tanks (above or underground) located on the property?	N	N/A	N
10b.	Did you observe evidence or do you have any prior knowledge that there has been previously any registered or unregistered storage tanks (above or underground) located on the property?	N	N/A	N

	Question	Owner	Occupants(if applicable)	Observed During Site Visit
11a.	Are there currently any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?	N	N/A	N
11b.	Did you observe evidence or do you have any prior knowledge that there has been previously any vent pipes, fill pipes, or access ways indicating a fill pipe protruding from the ground on the property or adjacent to any structure located on the property?	N	N/A	N
12a.	Is there currently evidence of leaks, spills, or staining by substances other that water, or foul odors, associated with any flooring, drains, walls, ceilings, or exposed grounds on the property?	N	N/A	N
12b.	Did you observe evidence or do you have prior knowledge that there have been previously any leaks, spills, or staining by substances other than water, or foul odors, associated with any flooring, drains, walls, ceilings, or exposed grounds on the property?	N	N/A	N
13a.	If the property is served by a private well or non-public water system, is there evidence or do you have prior knowledge that contaminants have been identified in the well or system that exceed guidelines applicable to the water system?	N	N/A	N
13b.	If the property is served by a private well or non-public water system, is there evidence or do you have prior knowledge that the well has been designated as contaminated by any government environmental/health agency?	N	N/A	N
14.	Does the owner or occupant of the property have any knowledge of environmental liens or governmental notification relating to past or recurrent violations of environmental laws with respect to the property or any facility located on the property?	N	N/A	N
15a.	Has the owner or occupant of the property been informed of the past existence of the hazardous substances or petroleum products with respect to the property or any facility located on the property?	N	N/A	N
15b.	Has the owner or occupant of the property been informed of the current existence of the hazardous substances or petroleum products with respect to the property or any facility located on the property?	N	N/A	N

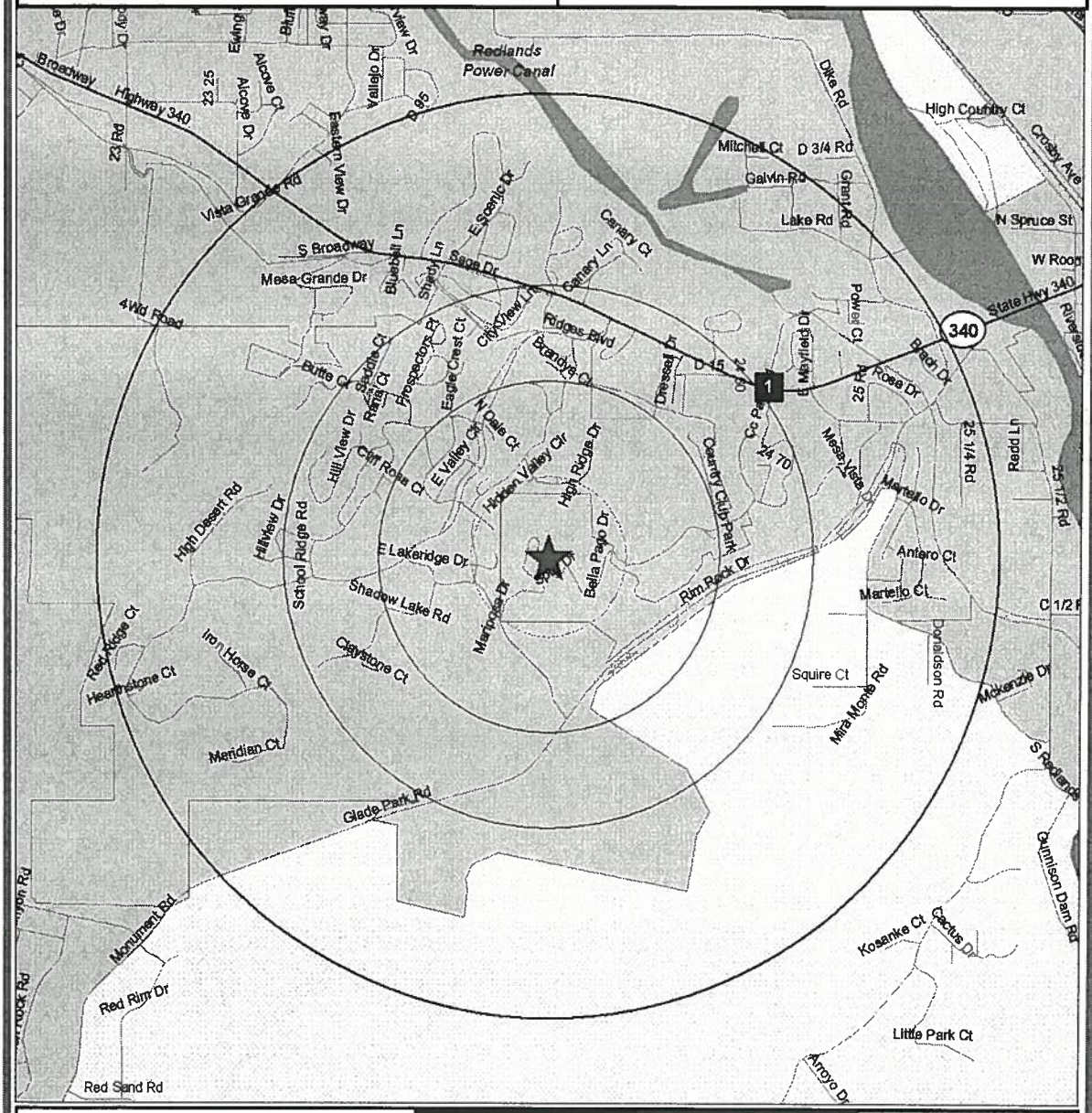
	Question	Owner	Occupants(if applicable)	Observed During Site Visit
15c.	Has the owner or occupant of the property been informed of the past existence of environmental violations with respect to the property or any facility located on the property?	N	N/A	N
15d.	Has the owner or occupant of the property been informed of the currently existence of environmental violations with respect to the property of any facility located on the property?	N	N/A	N
16.	Does the owner or occupant of the property have any knowledge of any environmental site assessment of the property or facility that indicated the presence of hazardous substances or petroleum products on, or contamination of, the property or recommended further assessment of the property?	N	N/A	N
17.	Does the owner or occupant of the property know any past, threatened, or pending lawsuits or administrative proceedings concerning a release or threatened release of any hazardous substance or petroleum products involving the property by any owner or occupant of the property?	N	N/A	N
18a.	Does the property discharge waste water (not including sanitary waste or storm water) onto or adjacent to the property and/or into a storm water system?	N	N/A	N
18b.	Does the property discharge waste water (not including sanitary waste or storm water) onto or adjacent to the property and/or into a sanitary sewer system?	N	N/A	N
19.	Did you observe evidence or do you have any prior knowledge that any hazardous substances or petroleum products, unidentified waste materials, tires, automotive or industrial batteries, or any other waste materials have been dumped above grade, buried, and/or burned on the property?	N	N/A	N
20.	Is there a transformer, capacitor, or any hydraulic equipment for which there are any records indicating the presence of PCBs?	N	N/A	N

APPENDIX B:

Government Database Review

Environmental Database Search

Subject Property	Client Information
Pinnacle Ridge Subdivision **East of Mariposa Drive** **Grand Junction, CO 81503** Latitude: 39.057761 Longitude: -108.605310	Rhino Engineering 1334 Ute Avenue Grand Junction, CO 81501 Attention: Gretta Simpson Reference: 21070.01



NORTH

satisfi environmental information

Databases >	NPL, SPL, CORRACT			TSD, CERCLIS, SCL, Landfill, Tank Leak			Tank, NFRAP, Spill, Generator, Other HW		
Search Radius >	1 mile			1/2 mile			1/4 mile		
Subject Property	Single Finding	Multiple Findings	Large Finding	Single Finding	Multiple Findings	Large Finding	Single Finding	Multiple Findings	Large Finding
★	#	#	#	#	#	#	#	#	#

Executive Summary - Mapped Sites

MAP #	SITES FOUND		Distance (miles)*	NPL	SPL	CORRACTS	TSD	CERCLIS	SCL	Landfill	Tank Leak	Tank	NFRAP	Spill	Generator	Other HW
		Search Radius >		1 mile			1/2 mile					1/4 mile				
1	PETRO MART #30	2526 BROADWAY	0.49								■	●			●	
	0 Sites Within 0 - 1/4 mile		0 Findings >	0	0	0	0	0	0	0	0	0	0	0	0	0
	1 Sites Within 1/4 - 1/2 mile		3 Findings >	0	0	0	0	0	0	0	1	1	0	0	1	0
	0 Sites Within 1/2 - 1 mile		0 Findings >	0	0	0	0	0	0	0	0	0	0	0	0	0
	1 SITES TOTAL		3 FINDINGS TOTAL >	0	0	0	0	0	0	0	1	1	0	0	1	0

* Distances are approximate and should not be blindly relied on, for three reasons...

1) Although the subject property is mapped as a point, the ASTM standard requires that distance be measured from the property boundary. To approximate the boundary, Satisfi adds a buffer that may be seen on the map as a faint circle around the star. All distances in this report are measured from this buffer. For example, if the buffer is 0.06 mile, then the 1/4 mile search circle is actually 0.31 mile from the center of the star.

2) Findings are usually mapped as points as well, and distance is measured to these points. However, depending on the size of a finding, its nearest boundary may actually be much closer than the point at which it is mapped.

3) Findings are normally mapped based on their address. Although Satisfi uses the best digital address maps available, mapping by address is not an exact science.

Accordingly, a distance of 0.00 miles does not necessarily mean that a finding is on or adjacent to the property. It only means that the finding was mapped within the buffer described in 1) above.

"OtherHW" includes RCRA listings that do not fall in the categories of Generator, TSD or CORRACTS. These listings may be former or suspected generators, transporters, or identified non-generators. See the RCRIS Activity details in the Detailed Findings for an indication of why a given site is listed in RCRIS. Although OtherHW is not required by ASTM, it can be very helpful at times.

If it appears that a finding has been reported beyond the ASTM-required distance, it is because it's a "tagalong". When Satisfi reports a site, all of the findings for that site are included regardless of distance, in order to provide full detail. For example, if a Tank Leak is found beyond 1/4 mile, the Tank listing is also included in order to add useful information about the number of tanks, their size, age, contents, etc.

Unmapped Sites

SITES FOUND		NPL	SPL	CORRACTS	TSD	CERCLIS	SCL	Landfill	Tank Leak	Tank	NFRAP	Spill	Generator	Other HW
BOOKCLIFF	ADDRESS NOT REPORTED;							■						
CLIMAX MILL	ADDRESS NOT REPORTED;							■						
CONOCO FEATER PETROLEUM	Unknown							■						
COTTER	ADDRESS NOT REPORTED;							■						
FEGA STATE RECREATION AREA	ADDRESS NOT REPORTED;							■						
MATCHETT MEADOWS SUBDIVISION	Unknown							■						
MESA CO SL	ADDRESS NOT REPORTED;							■						
NOWSCO SERVICES	PABCO INDUSTRIAL PARK 2;									●				
PIUTE ENERGY COMPANY	ADDRESS NOT REPORTED;							■						
TRAVEL GALLERY	TRAVEL GALLERY;								■					
UMTRAP	ADDRESS NOT REPORTED;							■						
UTE WATER CONSV. GRAND JUNCT.	ADDRESS NOT REPORTED;							■						
VALLEY VISTA SUB. GRAND JUNCT	ADDRESS NOT REPORTED;							■						
13 TOTAL SITES	13 TOTAL FINDINGS >	0	0	0	0	0	0	11	1	1	0	0	0	0

These sites could not be mapped accurately because of inadequate addresses or street maps. Although Satisfi uses the best digital address maps available, mapping by address is not an exact science. If you locate one of these listings, please call Satisfi at 720-200-9472 to have it mapped.

Unmapped listings are reported on the chance that their location might be revealed during the course of a site visit or other research. However, unless there is some specific reason to believe that a listing is nearby and of potential concern, there is no requirement in the ASTM standard to attempt to track down

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Limitation of Liability: Please note that the accuracy of public records cannot be guaranteed, nor can this search. No warranty is made or implied regarding our products. By reviewing this report, the reader agrees to assume all related risk and to release Satisfi from liability for any damages. However, if this

The body of the report that follows is organized into three sections for quick review:

DETAILED FINDINGS - MAPPED SITES

DETAILED FINDINGS - UNMAPPED SITES

DATABASE SOURCES

Detailed Findings - Mapped Sites

PETRO MARK BROADWAY
2526 BROADWAY, GRAND JUNCTION, CO 81503

Map # ▶ ~0.49 mile NE

1

Conditionally Exempt Small Quantity Generator - Source 71/ RCRIS

Generator

Satisfi ID:	00071-0006260
RCRA Handler ID:	COR000007203
Contact:	CHRIS CLARK 140 NORTH MESA, FRUITA, CO 81521 9708589115
Owner:	WESCOURT GROUP INC
RCRIS Activity:	14-MAR-1997 - Conditionally Exempt Generator Activity
RCRIS Violations:	None

PETRO MART #30
2526 BROADWAY, GRAND JUNCTION, CO, 81503

Map # ▶ ~0.49 mile NE

1

Registered Tank - Source 77/ TANKS

TANK

Satisfi ID:	00077-0008809
Facility ID:	9027
Owner:	7550 - WESTEC FRUITA INC, PO BOX 2184, GRAND JUNCTION, CO, 81502
Tank Details:	9027-1 12000 gal. UST Contents: Gasoline Status: Closed
Tank Details:	9027-2 3000 gal. UST Contents: Gasoline Status: Closed
Tank Details:	9027-3 6000 gal. UST Contents: Gasoline Status: Closed
Tank Details:	9027-4 6000 gal. UST Contents: Gasoline Status: Closed
Tank Details:	9027-5 12000 gal. UST Contents: Gasoline Status: Closed
Tank Details:	9027-6 1000 gal. UST Contents: Gasoline Status: Closed
Tank Details:	9027-7 10000 gal. UST Contents: Gasoline Status: Closed
Tank Details:	9027-8 6000 gal. UST Contents: Gasoline Status: Closed
Tank Details:	9027-9 4000 gal. UST Contents: 4 - Diesel Status: Closed

PETRO MART #30
2526 BROADWAY, GRAND JUNCTION, 81503

Map # ▶ ~0.49 mile NE

1

Tank Leak - Source 78/ Tank Leaks

TANKLEAK

Satisfi ID:	00078-0002805
Alternate Facility Name:	METRO #30
Event ID:	3031
Date Reported:	8/3/1995
File Status:	Open

Unmapped Sites

BOOKCLIFF
ADDRESS NOT REPORTED, CITY NOT REPORTED, CO

Unmapped

Waste or Fill Site - Source 70/ CO Old Landfills — Landfill

Satisfi ID:	00070-0001766
Source Name:	CO Old Waste Sites
Source Description:	"This list represents the collective memory of CDPHE personnel in the 1980's as to where landfilling or illegal dumping were known or suspected to have occurred. The list is not being updated. From CDPHE - Colorado Department of Public Health & Environment
Site Type:	LANDFILL
Fill Material:	REFUSE.
Size (acres):	10 - 50
Comments:	BLM PERMITTED.

CLIMAX MILL
ADDRESS NOT REPORTED, CITY NOT REPORTED, CO

Unmapped

Waste or Fill Site - Source 70/ CO Old Landfills — Landfill

Satisfi ID:	00070-0001764
Source Name:	CO Old Waste Sites
Source Description:	"This list represents the collective memory of CDPHE personnel in the 1980's as to where landfilling or illegal dumping were known or suspected to have occurred. The list is not being updated. From CDPHE - Colorado Department of Public Health & Environment
Township Range Section:	T11S R S24
Site Type:	MILL WASTE
Fill Material:	TAILINGS.
Size (acres):	10 - 50
Comments:	COLORADO RIVER.

CONOCO FEATER PETROLEUM
, No City Reported, CO

Unmapped

Waste or Fill Site - Source 73/ CO CDPHE Landfills — Landfill

Satisfi ID:	00073-0000377
Source Name:	CO Recent Waste Sites
Source Description:	"This list includes solid waste facilities that have been permitted by the state and may be open or closed. Satisfi checks for new listings every 90 days. From CDPHE - Colorado Department of Public Health & Environment
Agency Landfill ID:	999-REM-102
Site Type:	REMEDIATION
Open Date:	2/22/2000
Close Date:	Currently Open

COTTER
ADDRESS NOT REPORTED, CITY NOT REPORTED, CO

Unmapped

Waste or Fill Site - Source 70/ CO Old Landfills — Landfill

Satisfi ID:	00070-0001763
Source Name:	CO Old Waste Sites

Unmapped Sites (Cont.)

(Cont.) — Unmapped

Source Description:	"This list represents the collective memory of CDPHE personnel in the 1980's as to where landfilling or illegal dumping were known or suspected to have occurred. The list is not being updated. From CDPHE - Colorado Department of Public Health & Environment
Operator/Owner/Other:	/ / COTTER
Site Type:	OTHER
Fill Material:	RADIOACTIV.
Comments:	DATE 1978 5(E) CONTAMINATED CLAY POND. HAZARD TYPE: RADIOACTIV. IMPACT: SOIL.

FEGA STATE RECREATION AREA
ADDRESS NOT REPORTED, CITY NOT REPORTED, CO — Unmapped

Waste or Fill Site - Source 70/ CO Old Landfills — Landfill

Satisfi ID:	00070-0001765
Source Name:	CO Old Waste Sites
Source Description:	"This list represents the collective memory of CDPHE personnel in the 1980's as to where landfilling or illegal dumping were known or suspected to have occurred. The list is not being updated. From CDPHE - Colorado Department of Public Health & Environment
Site Type:	LANDFILL
Fill Material:	REFUSE.
Size (acres):	1 - 10

MATCHETT MEADOWS SUBDIVISION
, No City Reported, CO — Unmapped

Waste or Fill Site - Source 73/ CO CDPHE Landfills — Landfill

Satisfi ID:	00073-0000367
Source Name:	CO Recent Waste Sites
Source Description:	"This list includes solid waste facilities that have been permitted by the state and may be open or closed. Satisfi checks for new listings every 90 days. From CDPHE - Colorado Department of Public Health & Environment
Agency Landfill ID:	999-REM-083
Site Type:	REMEDIATION
Open Date:	10/18/1999
Close Date:	Closed, but date not reported.

MESA CO SL
ADDRESS NOT REPORTED, GRAND JUNCTION, CO — Unmapped

Waste or Fill Site - Source 70/ CO Old Landfills — Landfill

Satisfi ID:	00070-0001786
Source Name:	CO Old Waste Sites
Source Description:	"This list represents the collective memory of CDPHE personnel in the 1980's as to where landfilling or illegal dumping were known or suspected to have occurred. The list is not being updated. From CDPHE - Colorado Department of Public Health & Environment
Township Range Section:	02S 1E 5
Site Type:	LANDFILL
Fill Material:	REFUSE.
Size (acres):	10 - 50

Unmapped Sites (Cont.)

NOWSCO SERVICES
PABCO INDUSTRIAL PARK 2, GRAND JUNCTION, CO, 81503

Unmapped

Registered Tank - Source 77/ TANKS — TANK

Satisfi ID:	00077-0008279
Facility ID:	8487
Owner:	551 - BIG THREE INDUSTRIES, 3535 W 12TH ST BOX 3047, HOUSTON, TX, 77253
Tank Details:	8487-1 10000 gal. UST Contents: Gasoline Status: Closed
Tank Details:	8487-2 10000 gal. UST Contents: Kerosene Status: Closed
Tank Details:	8487-3 10000 gal. UST Contents: Z Hazardous Substance Status: Closed
Tank Details:	8487-4 560 gal. UST Contents: 6 - Used Oil (Waste Oil) Status: Closed

PIUTE ENERGY COMPANY
ADDRESS NOT REPORTED, CITY NOT REPORTED, CO

Unmapped

Waste or Fill Site - Source 70/ CO Old Landfills — Landfill

Satisfi ID:	00070-0001761
Source Name:	CO Old Waste Sites
Source Description:	"This list represents the collective memory of CDPHE personnel in the 1980's as to where landfilling or illegal dumping were known or suspected to have occurred. The list is not being updated. From CDPHE - Colorado Department of Public Health & Environment
Township Range Section:	8S 98W 36
Site Type:	OTHER
Fill Material:	LIQUIDS.
Comments:	OIL DISPOSAL SITE. HAZARD TYPE: OTHER. IMPACT: GW.

Travel Gallery
Grand Junction, Mesa, CO

Unmapped

Tank Leak - Source 23/ LUST Trust Tanks — TANKLEAK

Satisfi ID:	00023-0000228
Satisfi Comment:	No other information reported

UMTRAP
ADDRESS NOT REPORTED, CITY NOT REPORTED, CO

Unmapped

Waste or Fill Site - Source 70/ CO Old Landfills — Landfill

Satisfi ID:	00070-0001762
Source Name:	CO Old Waste Sites
Source Description:	"This list represents the collective memory of CDPHE personnel in the 1980's as to where landfilling or illegal dumping were known or suspected to have occurred. The list is not being updated. From CDPHE - Colorado Department of Public Health & Environment
Site Type:	MILL WASTE
Fill Material:	TAILINGS.
Comments:	DATE- 1966 CONTAMINATED GROUND&BUILDG. HAZARD TYPE: RADIOACTIV. IMPACT: AIR.

UTE WATER CONSV. GRAND JUNCT.
ADDRESS NOT REPORTED, GRAND JUNCTION, CO

Unmapped

Waste or Fill Site - Source 70/ CO Old Landfills — Landfill

Satisfi ID:	00070-0001781

Unmapped Sites (Cont.)

(Cont.) — Unmapped

Source Name:	CO Old Waste Sites
Source Description:	"This list represents the collective memory of CDPHE personnel in the 1980's as to where landfilling or illegal dumping were known or suspected to have occurred. The list is not being updated. From CDPHE - Colorado Department of Public Health & Environment
Township Range Section:	T11 R98 S02
Site Type:	IMPOUNDMENT
Fill Material:	LIQUIDS.
Size (acres):	>100
Comments:	5B IND 7E 2PONDS 9C SETTLING PONDS. HAZARD TYPE: CHEMICAL. IMPACT: GW.

VALLEY VISTA SUB. GRAND JUNCT
ADDRESS NOT REPORTED, GRAND JUNCTION, CO — Unmapped

Waste or Fill Site - Source 70/ CO Old Landfills — Landfill

Satisfi ID:	00070-0001780
Source Name:	CO Old Waste Sites
Source Description:	"This list represents the collective memory of CDPHE personnel in the 1980's as to where landfilling or illegal dumping were known or suspected to have occurred. The list is not being updated. From CDPHE - Colorado Department of Public Health & Environment
Operator/Owner/Other:	/ / VALLEY VISTA SUBDIVI
Township Range Section:	T01 R01E S34
Site Type:	IMPOUNDMENT
Fill Material:	LIQUIDS.
Size (acres):	1 - 10
Comments:	5-B IND 7B 3PONDS 8I NONE 9C AIR LAGOO. HAZARD TYPE: CHEMICAL. IMPACT: GW.

Database Sources

◆ 1 mile search radius

NP	**Source: 75 / CERCLIS** The National Priority List (NPL) identifies sites with confirmed contamination that are either proposed to be or are in the process of being cleaned up under the direction of the US EPA Superfund Program. Nationwide, there are approximately 1,600 Superfund sites. NPL sites are a subset of the EPA's Comprehensive Environmental Response, Compensation & Liability Information System (CERCLIS). Agency Name: US EPA - United States Environmental Protection Agency, Superfund Program Agency Website: http://www.epa.gov/superfund/sites/cursites/index.htm			
	Agency Updated:	04/29/05	Updated by Agency:	Monthly
	Satisfi Obtained:	04/29/05	Agency Contact:	None
	Last Requested:	04/29/05		
NPL	**Source: 11 / Denver Radium** Although the Denver Radium site is reported as a single NPL listing, it includes 68 locations grouped into 11 Operable Units spread throughout metro Denver. Because of the large number of scattered locations, Satisfi treats this NPL site as a separate source. For more information, please visit the Denver Radium web site at: www.cdphe.state.co.us/hm/rpdenrad.asp Agency Name: US EPA - United States Environmental Protection Agency, Superfund Program Agency Website: www.epa.gov/region08/sf/shtk/index.html AND http://www.cdphe.state.co.us/hm/rpdenrad.asp			
	Agency Updated:	05/04/04	Updated by Agency:	Monthly
	Satisfi Obtained:	05/04/04	Agency Contact:	None
	Last Requested:	04/01/05		
SPL	**Source: 8 / SPL** There is no State Priority List (SPL) for Colorado. However, there are twenty sites that the state seems to place in the same category as NPL sites. Eighteen of them are UMTRA (Uranium Mill Tailing Remedial Action) sites, one is a NRDS site (Natural Resource Damages Site), and one is a Private Cleanup Site (Non-Superfund). Thousands of UMTRA "vicinity properties" have also been identified where mill tailings were used as sand in concrete, roadbase, trenches, bricks, etc. Such properties have been remediated in Durango, Grand Junction, Fruita, Palisade, Gunnison, Maybell, Naturita and Rifle, but some unidentified tailings may still remain in and around these communities. CDPHE's list of vicinity properties is not publicly available and was not searched for this report. Property-specific information is available through the CDPHE Grand Junction office. See www.cdphe.state.co.us/hm/rptailng.html. Agency Name: CDPHE - CO Dept of Public Health & Environment, Hazardous Materials & Waste Mgmt Div Agency Website: www.cdphe.state.co.us/hm/rp_gen.asp AND http://www.cdphe.state.co.us/hm/sf_sites.asp			
	Agency Updated:	08/26/03	Updated by Agency:	No set schedule
	Satisfi Obtained:	08/26/03	Agency Contact:	None
	Last Requested:	04/29/05		
CORRACTS	**Source: 71 / RCRIS** Corrective Action (CORRACT) sites have hazardous waste problems, often involving contamination. Under the Resource Conservation & Recovery Act (RCRA), the owners or operators of these facilities are responsible for investigating and, as necessary, cleaning up releases. Nationwide, there are approximately 6,500 CORRACT sites. CORRACT sites are a subset of the EPA's Resource Conservation & Recovery Information System (RCRIS). Agency Name: US EPA - United States Environmental Protection Agency, Office of Solid Waste Agency Website: www.epa.gov/epaoswer/hazwaste/ca/facility.htm			
	Agency Updated:	03/15/05	Updated by Agency:	Monthly
	Satisfi Obtained:	03/15/05	Agency Contact:	Tony Selle
	Last Requested:	03/15/05		

■ 1/2 mile search radius

TSD	**Source: 71 / RCRIS** Facilities that Treat, Store or Dispose of hazardous waste (TSD sites) are regulated under the Resource Conservation & RecoveryAct (RCRA). Nationwide, there are approximately 2,000 TSD facilities. TSD sites are a subset of the Resource Conservation & Recovery Information System (RCRIS). Agency Name: US EPA - United States Environmental Protection Agency, Office of Solid Waste Agency Website: www.epa.gov/epaoswer/hazwaste/ca/facility.htm			
	Agency Updated:	03/15/05	Updated by Agency:	Monthly
	Satisfi Obtained:	03/15/05	Agency Contact:	Tony Selle
	Last Requested:	03/15/05		

Database Sources (Cont.)

■ 1/2 mile search radius (Cont.)

CERCLIS	**Source: 75 / CERCLIS** The Comprehensive Environmental Response, Compensation, & Liability Information System (CERCLIS) identifies potential and confirmed hazardous waste sites that are being assessed by EPA for possible inclusion on the National Priority List (NPL). If a site does not qualify for the NPL, it is removed from CERCLIS and archived on the No Further Remedial Action Planned (NFRAP) list. There are over 11,000 CERCLIS sites nationwide. Agency Name: US EPA - United States Environmental Protection Agency, Superfund Program Agency Website: http://www.epa.gov/superfund/sites/cursites/index.htm			
	Agency Updated:	04/29/05	Updated by Agency:	Monthly
	Satisfi Obtained:	04/29/05	Agency Contact:	None
	Last Requested:	04/29/05		
SCL	**Source: 74 / CO VCL VCUP** There is no State Cerclis List (SCL) for Colorado. However, the state's Voluntary Cleanup List (VCL) does identify sites where owners have submitted a Voluntary Cleanup Plan (VCUP) for state approval. The list also includes sites where owners have requested a No Action Determination (NAD) from the state and have been rejected. The state's cleanup decisions are based on existing standards and the proposed use of the property. Owners are responsible for the cleanup and verification. Agency Name: CDPHE - CO Dept of Public Health & Environment, Hazardous Materials & Waste Mgmt Div Agency Website: www.cdphe.state.co.us/hm/rpvoluntarycleanup.asp			
	Agency Updated:	04/25/05	Updated by Agency:	No set schedule
	Satisfi Obtained:	04/25/05	Agency Contact:	Mark Walker
	Last Requested:	04/25/05		
Landfill	**Source: 70 / CO Old Landfills** This database is proprietary to Satisfi and represents a compilation of eleven state and local agency sources. The agencies generated these lists on a one-time basis and do not expect to update them. A more detailed description of the applicable source is included with any findings reported from this database. The eleven sources are: 1. Adams County CO Old Landfills 2. Arapahoe County CO Old Landfills 3. Douglas County CO Old Landfills 4. Weld County CO Old Landfills 5. Boulder County CO Old Landfills 6. Jefferson County CO Old Landfills 7. Denver CO Methane Study 8. CO Methane Study 9. DRCOG Methane Study 10. Denver CO Old Fil Sites 11. CO Old Waste Sites Agency Name: US EPA and various State and Local Agencies Agency Website: No website available			
	Agency Updated:	02/17/05	Updated by Agency:	Never
	Satisfi Obtained:	02/17/05	Agency Contact:	Varies
	Last Requested:	02/06/03		
Landfill	**Source: 73 / CO CDPHE Landfills** These solid waste facilities have received permits from the state. The facilities may be open or closed. Agency Name: CDPHE - CO Dept of Public Health & Environment, Hazardous Materials & Waste Mgmt Div Agency Website: www.cdphe.state.co.us/hm/cp_gen.asp#cp_swu			
	Agency Updated:	04/19/05	Updated by Agency:	No set schedule
	Satisfi Obtained:	04/19/05	Agency Contact:	Mira Neumiller
	Last Requested:	04/19/05		
TANKLEAK	**Source: 23 / LUST Trust Tanks** Suspected tank leaks have been discovered at these sites, but the facility responsible for the leak has not been identified. The state's investigation and search for responsible parties is paid for out of the state's Leaking Underground Storage Tank (LUST) Trust fund. Agency Name: Colorado Dept of Labor & Employment, Division of Oil & Public Safety, State Fund Section Agency Website: http://oil.cdle.state.co.us/OIL/Fund/fund_home.asp			
	Agency Updated:	01/01/00	Updated by Agency:	Database Closed
	Satisfi Obtained:	11/16/02	Agency Contact:	Wendy Shoup
	Last Requested:			

Database Sources (Cont.)

■ 1/2 mile search radius (Cont.)

TANKLEAK	**Source: 78 / Tank Leaks** These are above-ground and underground storage tank leaks that have been reported to the state. Agency Name: Colorado Dept of Labor & Employment, Division of Oil & Public Safety, Oil Inspectors Section Agency Website: http://costis.cdle.state.co.us/home.asp			
	Agency Updated: Satisfi Obtained: Last Requested:	05/09/05 05/09/05 05/09/05	Updated by Agency: Agency Contact:	Frequently Wendy Shoup

● 1/4 mile search radius

Tank	**Source: 77 / TANKS** These are above-ground and underground storage tanks that have been registered with the state. Agency Name: Colorado Dept of Labor & Employment, Division of Oil & Public Safety, Oil Inspectors Section Agency Website: http://costis.cdle.state.co.us/home.asp			
	Agency Updated: Satisfi Obtained: Last Requested:	05/09/05 05/09/05 05/09/05	Updated by Agency: Agency Contact:	Frequently Wendy Shoup
NFRAP	**Source: 76 / NFRAP** The No Further Remedial Action Planned (NFRAP) database identifies sites where assessment has been completed and EPA has determined no further steps will be taken to list the site on the National Priority List (NPL). This may mean that: a) no contamination was found: b) contamination was removed; or c) contamination was not serious enough to qualify for the NPL. Nationwide, there are over 33,000 NFRAP sites. Agency Name: US EPA - United States Environmental Protection Agency, Superfund Program Agency Website: http://www.epa.gov/superfund/sites/arcsites/index.htm			
	Agency Updated: Satisfi Obtained: Last Requested:	04/29/05 04/29/05 04/29/05	Updated by Agency: Agency Contact:	Monthly None
NFRAP	**Source: 74 / CO VCL VCUP** There is no state NFRAP list for Colorado. However, the state's Voluntary Cleanup List (VCL) does identify sites where owners have requested a No Action Determination (NAD) and the state has approved them. The state's cleanup decisions are based on existing standards and the proposed use of the property. Agency Name: CDPHE - CO Dept of Public Health & Environment, Hazardous Materials & Waste Mgmt Div Agency Website: www.cdphe.state.co.us/hm/rpvoluntarycleanup.asp			
	Agency Updated: Satisfi Obtained: Last Requested:	04/25/05 04/25/05 04/25/05	Updated by Agency: Agency Contact:	No set schedule Mark Walker
Spill	**Source: 72 / ERNS** The Emergency Response Notification System (ERNS) contains data on all releases of oil and hazardous substances reported to the National Response Center (NRC) and to the EPA since 1986. The information is usually called in by a person associated with the facility or vehicle that had the release, although government agencies and the public at large may also call. All calls are recorded without regard for their significance or accuracy, and information is often sketchy. Nationwide, approximately 30-35,000 reports are recorded every year. Agency Name: US EPA - United States Environmental Protection Agency, National Response Center (NRC) Agency Website: www.nrc.uscg.mil/wdbcgi/wdbcgi.exe/WWWUSER/WEBDB.foia_query.show_parms			
	Agency Updated: Satisfi Obtained: Last Requested:	01/26/05 04/12/05 04/15/05	Updated by Agency: Agency Contact:	Annually None
Generator	**Source: 71 / RCRIS** These facilities generate hazardous waste and are regulated under the Resource Conservation & Recovery Act (RCRA). Generators are a subset of the Resource Conservation & Recovery Information System (RCRIS). Agency Name: US EPA - United States Environmental Protection Agency, Office of Solid Waste Agency Website: www.epa.gov/epaoswer/hazwaste/ca/facility.htm			
	Agency Updated: Satisfi Obtained: Last Requested:	03/15/05 03/15/05 03/15/05	Updated by Agency: Agency Contact:	Monthly Tony Selle

Database Sources (Cont.)

● 1/4 mile search radius (Cont.)

OTHERHW

Source: 71 / RCRIS These facilites are listed on the Resource Conservation & Recovery Information System (RCRIS) but don't fit into the category of CORRACTS, TSDs, or Generators. They include hazardous waste Transporters, Non-Notifiers (facilities suspected of handling hazardous waste without proper authorization), former Generators, and others.

Agency Name: US EPA - United States Environmental Protection Agency, Office of Solid Waste

Agency Website: www.epa.gov/epaoswer/hazwaste/ca/facility.htm

Agency Updated:	03/15/05	Updated by Agency:	Monthly
Satisfi Obtained:	03/15/05	Agency Contact:	Tony Selle
Last Requested:	03/15/05		

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY GEOTECHNICAL ENGINEERING GROUP, INC., DATED APRIL 16, 2002 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET 3.
6. HOUSES CONSTRUCTED ON LOTS 28-29 AND LOTS 55-72 SHALL HAVE SPRINKLER SYSTEMS INSTALLED. A 1" CUSTOMER WATER SERVICE LINE AND ¾" WATER METER WILL BE UTILIZED IN ACCORDANCE WITH UTE WATER CONSERVANCY DISTRICT STANDARDS & SPECIFICATIONS.

FILING NOTES

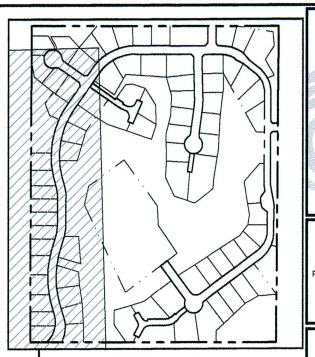
1. INSTALL SANITARY SEWER FROM SSMH-A1 TO SSMH-B4, LOCATED ON EAS SIDE OF INTERSECTION WITH SPIRE CT.
2. END WATER LINE CONSTRUCTION JUST PAST THE INTERSECTION WITH SPIRE CT.

N

SCALE IN FEET

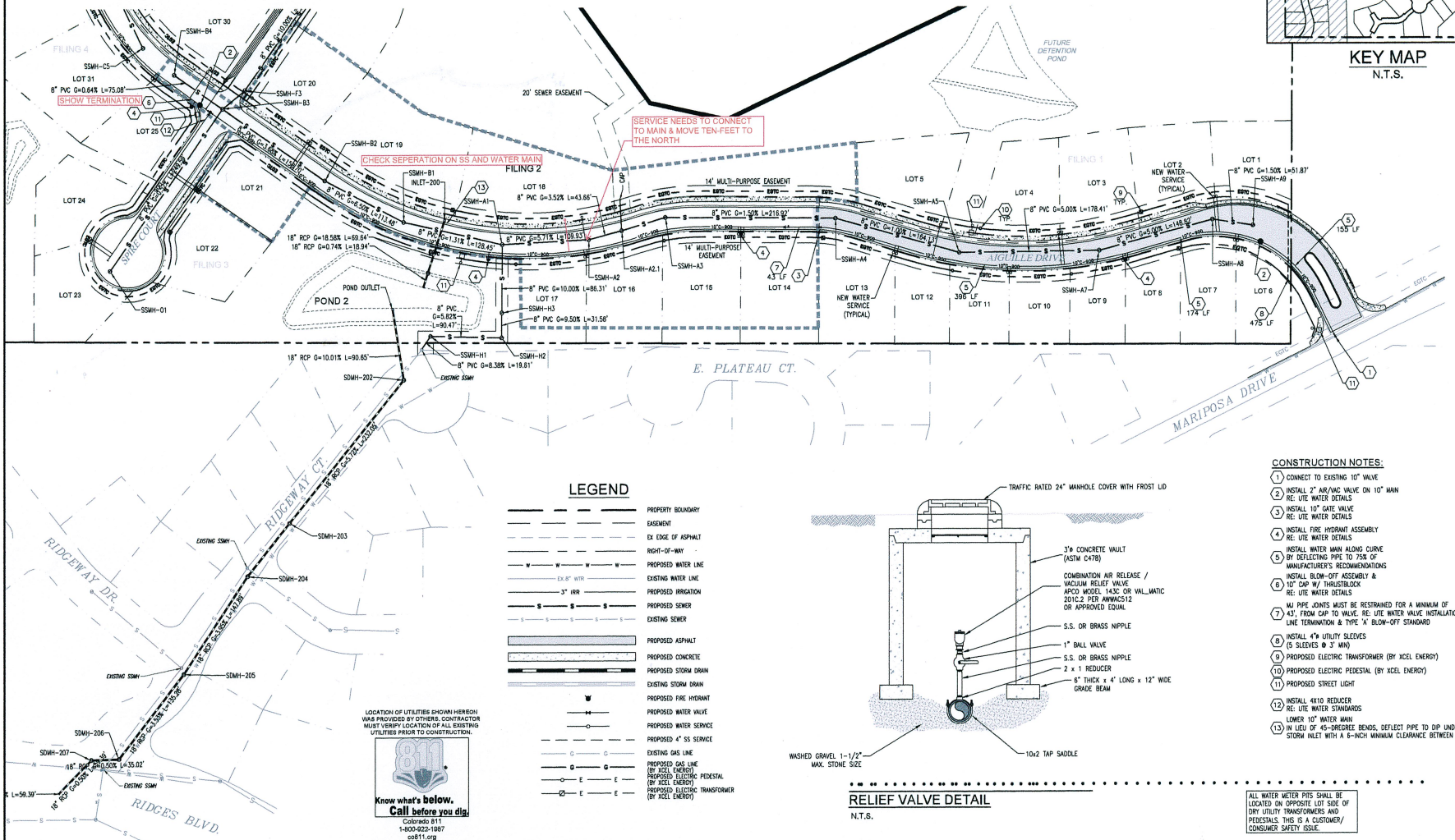
60 30 0 60 120

1" = 60'



KEY MAP

N.T.S.



LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE
- EXISTING WATER LINE
- PROPOSED IRRIGATION
- PROPOSED SEWER
- EXISTING SEWER
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER SERVICE
- PROPOSED 4" SS SERVICE
- EXISTING GAS LINE
- PROPOSED GAS LINE (BY XCEL ENERGY)
- PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
- PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

Know what's below. Call before you dig.

Colorado 811
1-800-922-1987
co811.org

RELIEF VALVE DETAIL

N.T.S.

CONSTRUCTION NOTES:

1. CONNECT TO EXISTING 10" VALVE
2. INSTALL 2" AIR/VAC VALVE ON 10" MAIN RE: UTE WATER DETAILS
3. INSTALL 10" GATE VALVE RE: UTE WATER DETAILS
4. INSTALL FIRE HYDRANT ASSEMBLY RE: UTE WATER DETAILS
5. INSTALL WATER MAIN ALONG CURVE BY DEFLECTING PIPE TO 75% OF MANUFACTURER'S RECOMMENDATIONS
6. INSTALL BLOW-OFF ASSEMBLY & 10" CAP W/ THRUSTBLOCK RE: UTE WATER DETAILS
7. WJ PIPE JOINTS MUST BE RESTRAINED FOR A MINIMUM OF 43', FROM CAP TO VALVE. RE: UTE WATER VALVE INSTALLATION, LINE TERMINATION & TYPE 'A' BLOW-OFF STANDARD
8. INSTALL 4"ø UTILITY SLEEVES (5 SLEEVES @ 3' MIN)
9. PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)
10. PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
11. PROPOSED STREET LIGHT
12. INSTALL 4X10 REDUCER RE: UTE WATER STANDARDS
13. LOWER 10" WATER MAIN IN LIEU OF 45-DREGREE BENDS, DEFLECT PIPE TO DIP UNDER STORM INLET WITH A 6-INCH MINIMUM CLEARANCE BETWEEN PIPES.

ALL WATER METER PITS SHALL BE LOCATED ON OPPOSITE LOT SIDE OF DRY UTILITY TRANSFORMERS AND PEDESTALS. THIS IS A CUSTOMER/ CONSUMER SAFETY ISSUE.

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & SCHOOL BUS ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE NO. 19459

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

REV DATE	COMMENT	BY

Composite Site Plan - Utility and Water Plan

Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: 1"= 80'
CAD ID: 3.0utility-f2.dwg

~SHEET~
C3.0

Water Analysis Supplement
For
Pinnacle Ridge Subdivision
Grand Junction, Colorado

Date: November 11, 2016
Revised:

Prepared by: Robert W. Jones II, P.E.
Vortex Engineering, Inc.
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
970-245-9051
VEI# F04-006

Submitted to: City of Grand Junction
250 N. 5th Street
Grand Junction, CO 81501

Type of Design: Single Family Units

Owners: Two R & D, LLC
Fruita, CO

Property Address: East of Mariposa Drive
Grand Junction, CO

Tax Schedule No.: Numerous

Water Analysis Supplement

The purpose of this supplemental report is to present you with an alternate fire flow analysis based on pump curve input for the system's potential energy at the boundary conditions, as requested in Ute Water Conservancy District comments for the Pinnacle Ridge project, dated February 29, 2016. Although, there are no pumps in this portion of the Ute Water System, this analysis is based on a pump curve that best fits the system requirements as it is derived from fire hydrant flow test data. There is an existing fire hydrant located at 2398 Mariposa Dr. near the entrance to the Pinnacle Subdivision. This hydrant is labeled as Fire Hydrant #738 and was flow tested on April 14, 2014. The results of the flow test are the basis for the pump model input into the computer model.

Another change to the previous computer model is the base hydrant fire flow to the upper hydrants in the East and Southest portion of the project (top of the hill).

Fire flow requirements for new hydrants FH-7 to FH-12 (within the site) have been reduced to 1,000 gpm in this study. The houses within the vicinity of these hydrants will be equipped with internal fire sprinkler systems, thus reducing the fire flow requirement from the hydrants to 1000 gpm.

This report does not supersede the already approved "Fire Flow Water System Report for Pinnacle Ridge Subdivision, Vortex Engineering, Inc., dated July 6, 2015. That report was modeled using a reservoir boundary condition, and is also an accurate representation of the Ute water system in the area.

Attached are the results of the above described analysis, for your consideration. Please call if you have further questions, or need clarification on the analysis.

Fire Flow Hydrant Master
With Graph

Company Name: Ute Water Conservancy District
Address: 2190 H 1/4 Rd
City: Grand Junction
State: Colorado
Zip: 81505

Work Order: 147
Operator: Nick/Robert

Test Date: 4/14/15 1:00 pm

NFPA Classification:

Blue	AA
2043.72	

Test Hydrant: 738
Address: 2398 MARIPOSA DR
Cross Street:
Location:
District:
Sub-Division:

Latitude: 706960.304
Longitude: 4325735.005
Elevation: 4788.95
State X / Y: _____ / _____

Pumpers: **Nozzles:** **Open Dir:**

Manuf: Mueller
Model: Centurion 5 1/4

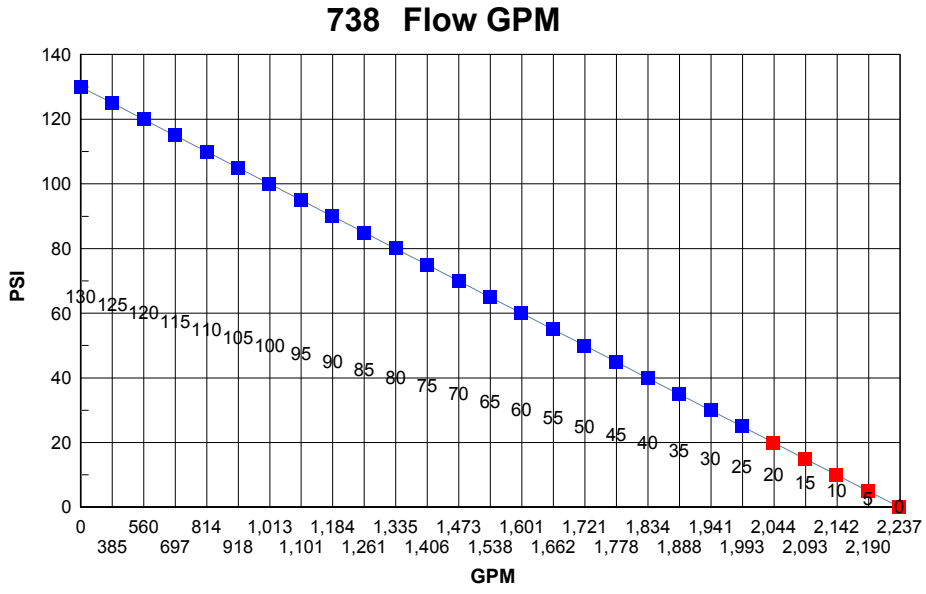
Installed: 01/01/2014
Main Size: 0.00

Vandal Proof:
Bury Depth: 0.00

	Flow Hydrant	Flow Device	Diameter	GPM	Gallon Used
1:	3096	2.5" Hose Monster	2.50	1066.76	5333.81
2:					
3:					
4:					
5:					

Pitot / Nozzle PSI: 40.00
Static PSI: 130.00
Residual PSI: 97.00
Percent Drop: 25.38

Total Gallons Used: 5333.81
Max GPM during test: 1,066.76
Elapsed Time Min:Sec: 5 : 0
Predicted GPM @ 20 PSI: 2043.72



GPM rounded to nearest gallon

Values inside grid below flow line are PSI @ predicted flow

Pinnacle Ridge Subdivision
System and Pump Curve
Grand Junction, CO

Vortex Engineering
November 10, 2016

Elevation of Discharge Point	4880	ft.
Elevation of Proposed Pump:	4790.00	ft.

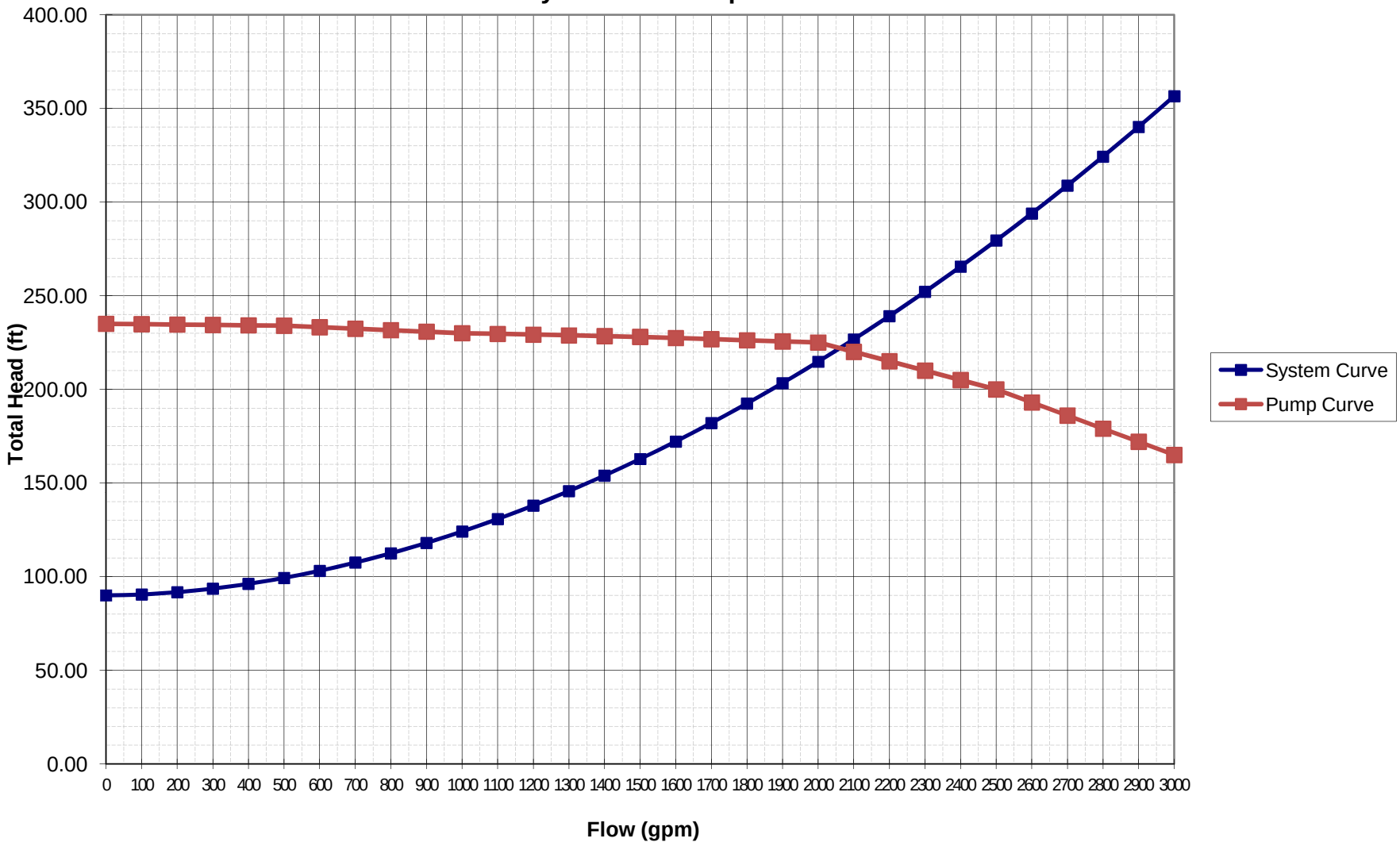
1st Pipe Section
Proposed On-Site Force Main

Diam	Pipe		Length	'K' Factors for Minor Losses						
(in.)	Type	'C'	(ft.)	Inlet	Ells	Entrance	ChkValve	Red/Exp	Valves	Total 'K'
10	PVC	130	4400	0.8	4.5	0.5	0	0.88	10	16.68

Pressure at discharge = 0 psi

Pump Flow GPM	Velocity ft/sec	Required Pump Head (ft)	Mnfg. Curve for Pump (ft)
0	0.00	90.00	235.00
100	0.41	90.46	234.80
200	0.82	91.69	234.60
300	1.23	93.59	234.40
400	1.63	96.15	234.20
500	2.04	99.33	234.00
600	2.45	103.12	233.20
700	2.86	107.50	232.40
800	3.27	112.47	231.60
900	3.68	118.00	230.80
1000	4.09	124.10	230.00
1100	4.49	130.76	229.60
1200	4.90	137.96	229.20
1300	5.31	145.71	228.80
1400	5.72	153.99	228.40
1500	6.13	162.81	228.00
1600	6.54	172.16	227.40
1700	6.94	182.03	226.80
1800	7.35	192.42	226.20
1900	7.76	203.32	225.60
2000	8.17	214.75	225.00
2100	8.58	226.68	220.00
2200	8.99	239.11	215.00
2300	9.40	252.06	210.00
2400	9.80	265.50	205.00
2500	10.21	279.44	200.00
2600	10.62	293.88	193.00
2700	11.03	308.81	186.00
2800	11.44	324.24	179.00
2900	11.85	340.15	172.00
3000	12.26	356.55	165.00

Pinnacle Ridge Subdivision
Potable Water System and Pump Curves



Pump Data Sheet - Griswold Pump Company

Company: Vortex Engineering
Name: Sylvester
Date: 10/24/2016

Ute Water Exercise

Pump:

Size: 8x6-17 A110

Type: 811-ANSI
Synch Speed: 1800 rpm

Speed: 1780 rpm
Dia: 14.875 in

Curve: G-1828

Impeller:

Specific Speeds:

Ns: 1500
Nss: 11525

Dimensions:

Suction: 8 in
Discharge: 6 in

Pump Limits:

Temperature: ---
Pressure: ---
Sphere Size: ---

Power: ---
Eye Area: ---

Search Criteria:

Flow: 2200 US gpm

Head: 210 ft

Fluid:

Water
Density: 62.37 lb/ft³
Viscosity: 1.105 cP

Temperature: 60 °F
Vapor Pressure: 0.2563 psi a
Atm Pressure: 14.7 psi a

NPSHa: ---

Motor:

Standard: NEMA
Enclosure: TEFC

Size: 200 hp
Speed: 1800 rpm
Frame: 447T

Sizing Criteria: Max Power on Design Curve

---- Duty Point ----

Flow:	2208 US gpm
Head:	212 ft
Eff:	76%
Power:	156 hp
NPSHr:	13.2 ft

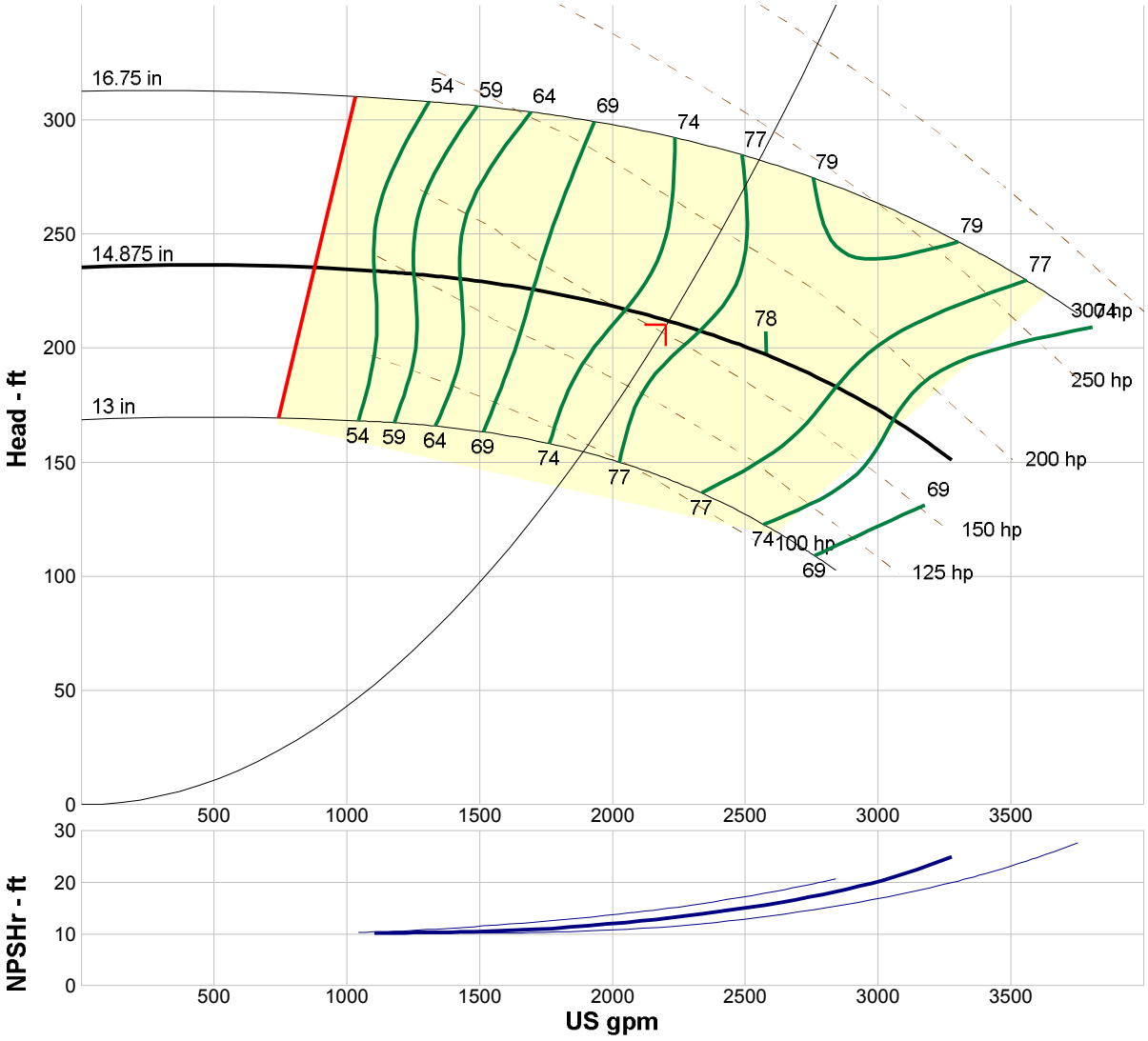
---- Design Curve ----

Shutoff Head:	235 ft
Shutoff dP:	102 psi
Min Flow:	876 US gpm
BEP:	78% @ 2577 US gpm

NOL Power:
178 hp @ 3275 US gpm

-- Max Curve --

Max Power:
273 hp @ 3750 US gpm

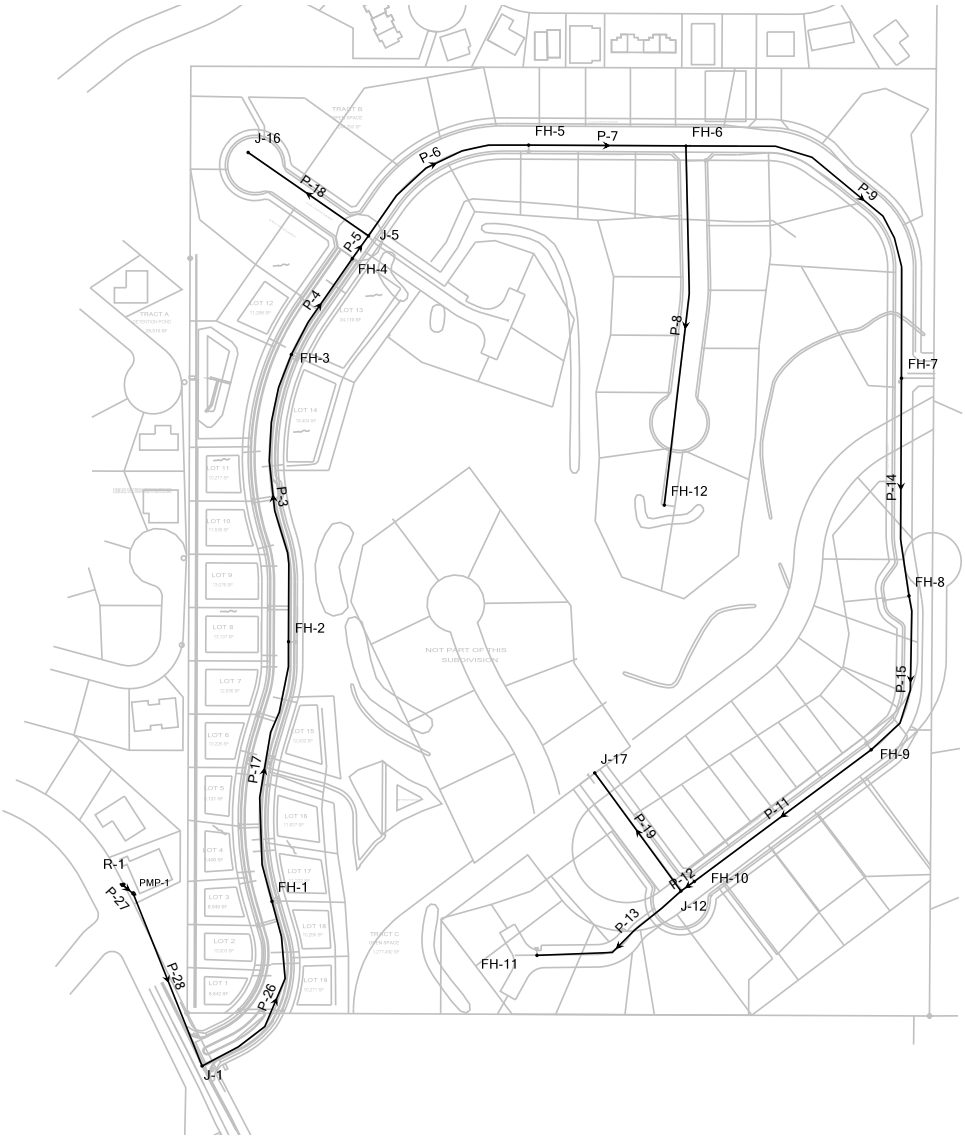


Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
2640	1780	194	78	166	16.3
2200	1780	212	76	155	13.1
1760	1780	224	70	142	11.1
1320	1780	232	61	126	10.3
880	1780	234	47	114	10.2

Selected from catalog: Griswold Pumps.60 Vers: 1.9

Scenario: Automated Fire Flow



Fire Flow Node FlexTable: Fire Flow Report

Label	Satisfies Fire Flow Constraints?	Fire Flow (Needed) (gpm)	Fire Flow (Available) (gpm)	Pressure (Residual Lower Limit) (psi)	Static Pressure @ Peak Domestic Demand (psi)	Residual Pressure (Calculated @ FH Junction) (psi)	Is Fire Flow Run Balanced?	Velocity of Maximum Pipe (ft/s)	Pipe w/ Maximum Velocity	Fire Flow (Total Upper Limit) (gpm)
J-1	(N/A)	2,000.0	(N/A)	20.0	102.3	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
FH-2	True	2,000.0	2,123.3	20.0	106.2	87.4	True	10.00	P-26	2,503.5
FH-3	True	2,000.0	2,123.3	20.0	110.5	85.4	True	10.00	P-26	2,503.5
FH-4	True	2,000.0	2,123.3	20.0	103.6	76.0	True	10.00	P-26	2,500.0
J-5	(N/A)	2,000.0	(N/A)	20.0	106.2	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
FH-5	True	2,000.0	2,123.3	20.0	113.6	81.2	True	10.00	P-26	2,503.5
FH-6	True	2,000.0	2,105.0	20.0	120.0	84.3	True	9.92	P-26	2,503.5
FH-12	True	2,000.0	2,105.0	20.0	103.6	60.4	True	9.92	P-26	2,503.5
FH-7	True	1,750.0	1,925.2	20.0	91.5	58.5	True	9.09	P-26	2,003.5
FH-9	True	1,000.0	1,750.0	20.0	60.3	46.8	True	8.28	P-26	1,753.5
FH-10	True	1,000.0	1,707.4	20.0	60.8	45.9	True	8.09	P-26	1,750.0
J-12	(N/A)	2,000.0	(N/A)	20.0	63.8	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
FH-11	True	1,000.0	1,701.2	20.0	63.4	47.5	True	8.06	P-26	1,753.5
FH-8	True	1,000.0	1,750.0	20.0	65.5	53.0	True	8.28	P-26	1,753.5
FH-1	True	2,000.0	2,123.3	20.0	100.2	87.2	True	10.00	P-26	2,503.5
J-16	(N/A)	2,000.0	(N/A)	20.0	108.8	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)
J-17	(N/A)	2,000.0	(N/A)	20.0	65.5	(N/A)	(N/A)	(N/A)	(N/A)	(N/A)

Pump Definition Detailed Report: Pump-150HP

Element Details			
ID	96	Notes	
Label	Pump-150HP		

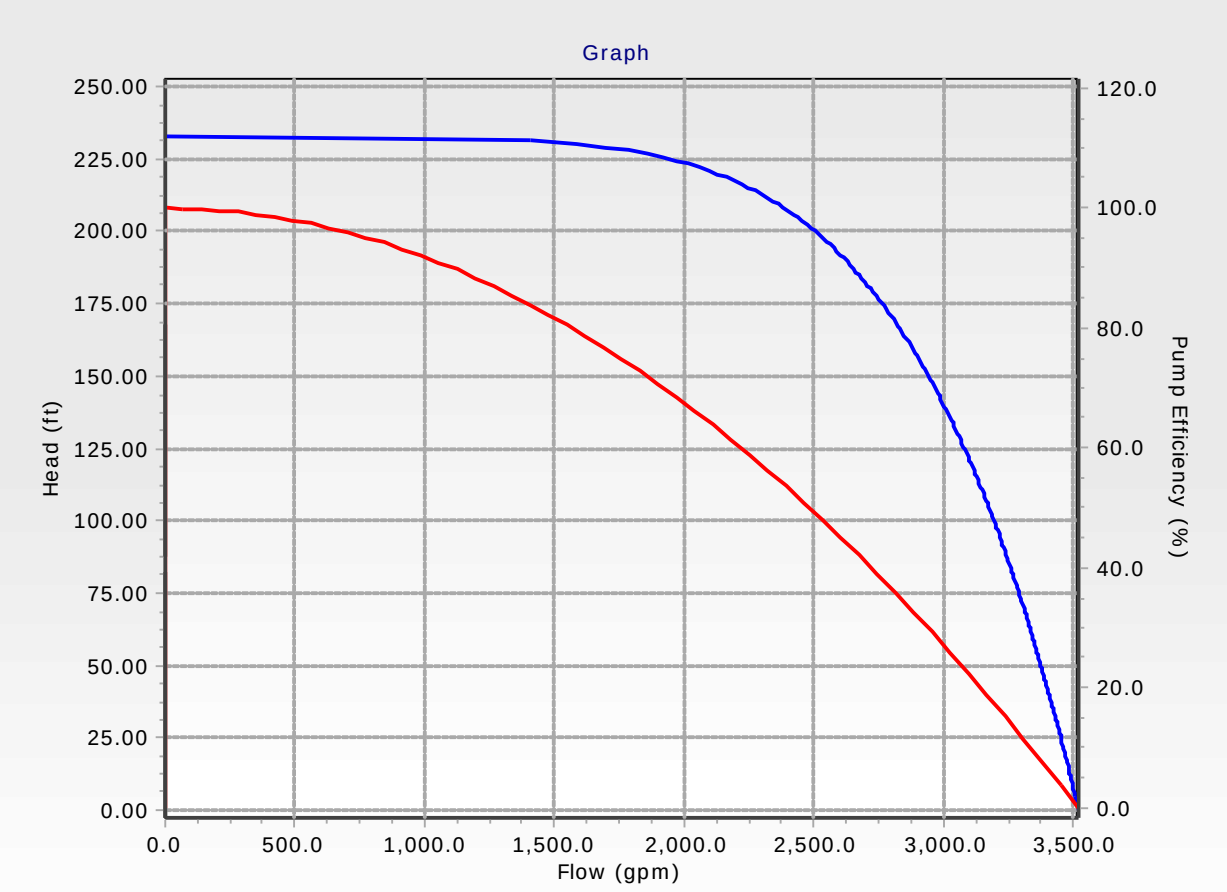
Pump Curve

Flow (gpm)	Head (ft)
0.0	235.00
500.0	234.00
1,000.0	230.00
1,500.0	228.00
2,000.0	225.00
2,500.0	200.00

Pump Efficiency Type			
Pump Efficiency Type	Best Efficiency Point	Motor Efficiency	100.0 %
BEP Efficiency	100.0 %	Is Variable Speed Drive?	False
BEP Flow	0.0 gpm		

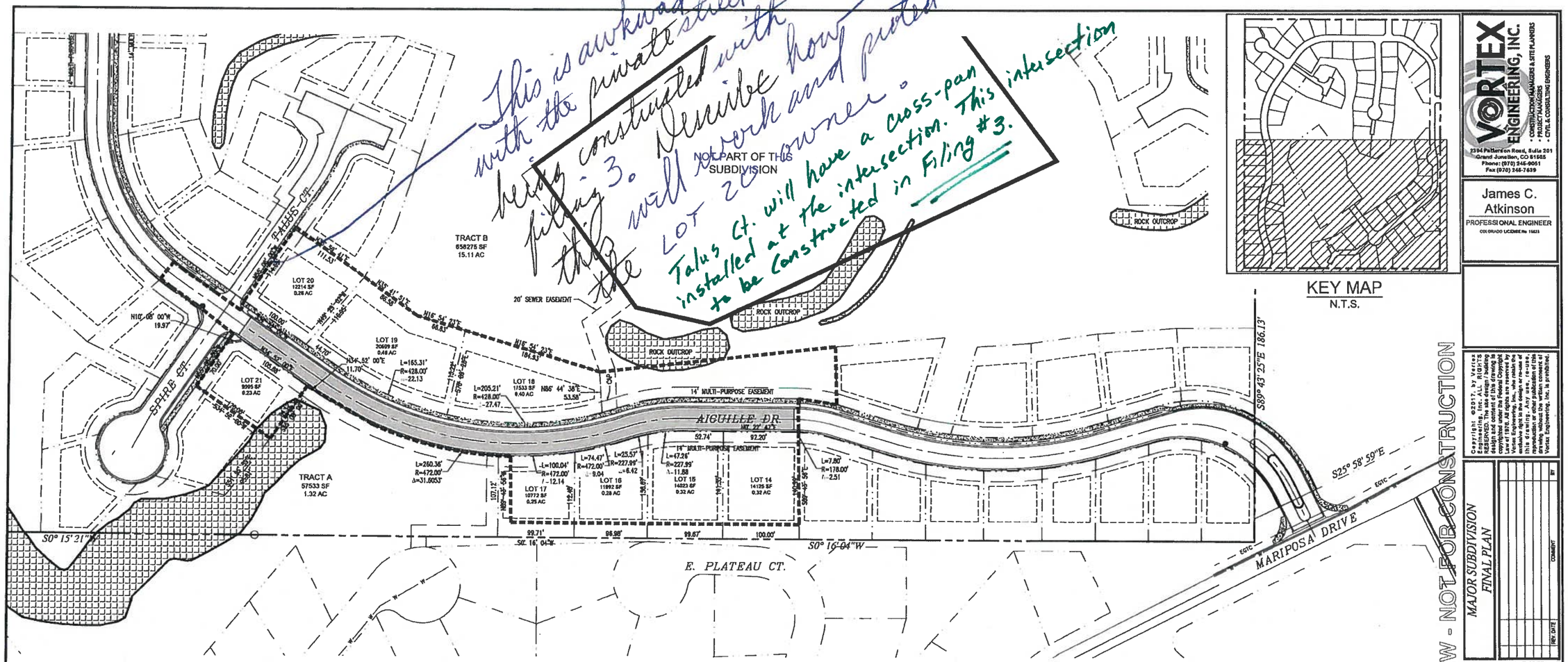
Transient (Physical)			
Inertia (Pump and Motor)	0.000 lb·ft²	Specific Speed	SI=25, US=1280
Speed (Full)	0 rpm	Reverse Spin Allowed?	True

Pump Definition Detailed Report: Pump-150HP



This is awkward with the private street being constructed with filing 3. Decide how this will work and protect LOT 20 owner.

Talus Ct. will have a cross-pan installed at the intersection. This intersection to be constructed in Filing #3.



UTILITY PROVIDERS INFORMATION		
UTILITY	*PROVIDER*	*PHONE NUMBER*
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

PROPOSED LAND USE TABLE			
SINGLE FAMILY LOTS (72 TOTAL)	934,944 S.F. – 21.46 AC	47.58%	OWNER: PRIVATE
TRACT A:	57,533 S.F. – 1.32 AC	2.93%	OWNER: HOA
TRACT B: OPEN SPACE	658,275 S.F. – 15.11 AC	33.50%	OWNER: HOA
FUTURE TRACTS	122,887 S.F. – 2.82 AC	6.24%	OWNER: HOA
RIGHT-OF-WAY:	191,434 S.F. – 4.39 AC	9.74%	OWNER: PUBLIC
TOTAL SITE AREA:	1,964,873 S.F. – 45.11 AC		

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

Know what's **below.** **Call** before you dig.
Colorado 811
1-800-922-1987
co811.org

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY GEOTECHNICAL ENGINEERING GROUP, INC., DATED APRIL 16, 2002 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET C0.2

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____

FOR REVIEW - NOT FOR CONSTRUCTION

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 16433

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MAJOR SUBDIVISION
FINAL PLAN

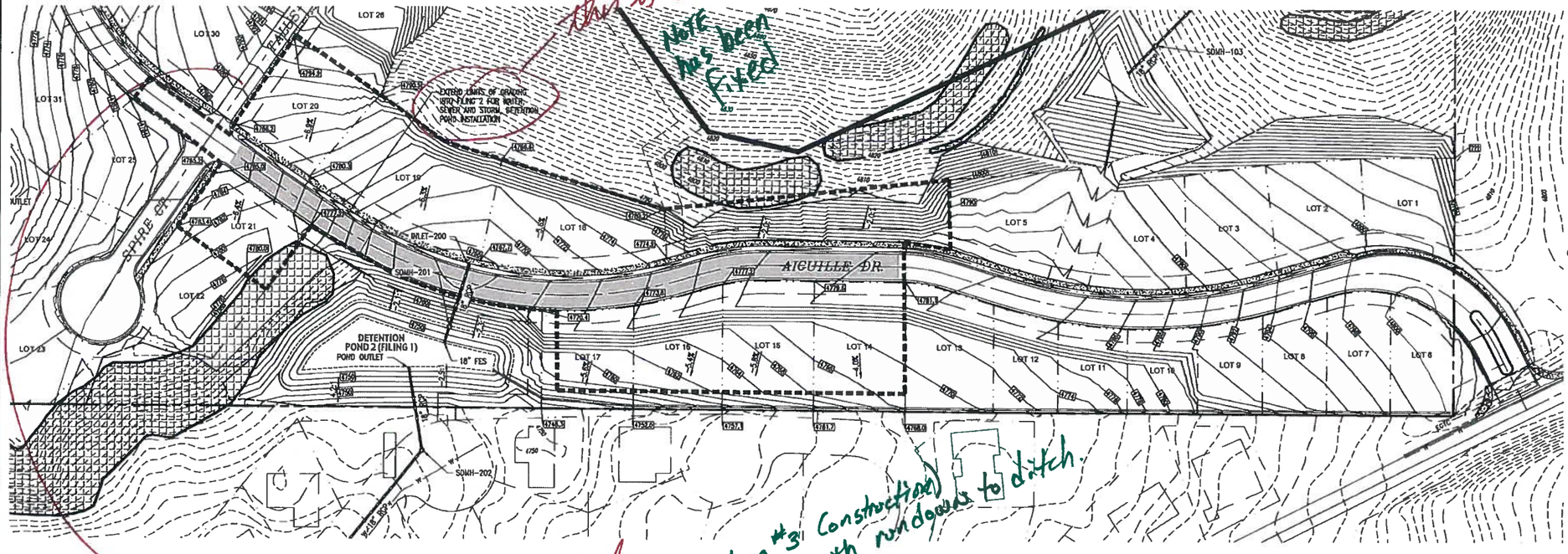
REV.	DATE	BY

Composite Site Plan - Layout and Geometry Plan

Filing 2
Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO. F04-006
DATE 04/24/17
SCALE see plan
CAD ID 1.0layout-f2.dwg

SHEET
C1.0



Phase 2

Note has been Fixed

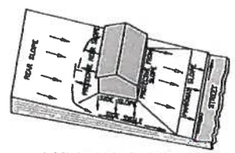
Address how runoff is collected and conveyed to the ditch. (Filing #3 Construction plan with rundowns to ditch.

Drainage will be an issue in here: Pay careful attention & Design the solution.

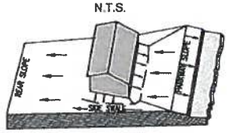
FILING 2 TOF TABLE			
Lot	Grading	Min. TOF	Max. TOF
14	Type C	4781.40	4781.90
15	Type C	4779.40	4779.90
16	Type C	4776.50	4777.00
17	Type C	4773.40	4773.90
18	Type A	4773.00	4773.50
19	Type A	4774.50	4775.50
20	Type A	4782.50	4784.50
21	Type C	4784.50	4788.50

GENERAL NOTES:

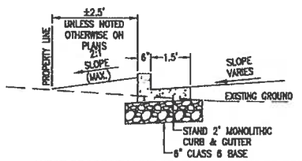
1. ALL CONSTRUCTION TO CONFORM TO THE CURRENT CITY OF GRAND JUNCTION DEPARTMENT OF PUBLIC WORKS AND PLANNING STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR MUST CONTACT CITY OF GRAND JUNCTION TRAFFIC OPERATIONS SUPERVISOR PRIOR TO CONSTRUCTION OR PLACEMENT OF TRAFFIC CONTROL DEVICES/FEATURES (STRIPING, SIGNALS, MEDIANS, ETC.) FOR CONSTRUCTION IN THE RIGHT-OF-WAY ONLY.
3. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY, DATED 8/2/12 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE SANITARY SEWER, SEE SANITARY SEWER PLAN & PROFILE.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE SHEETS C2.2



LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.

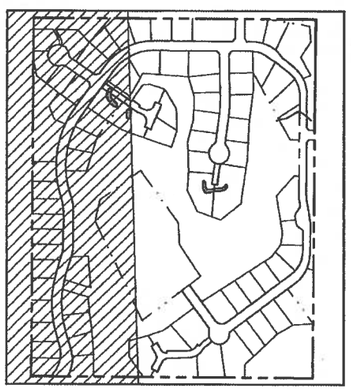


LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.



WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

CONCRETE CURB DETAIL
N.T.S.



KEY MAP
N.T.S.

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____

FOR REVIEW - NOT FOR CONSTRUCTION

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James C. Atkinson
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COLORADO LICENSE No. 13251

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MAJOR SUBDIVISION
FINAL PLAN

REV. DATE	COMMENT	BY

Grading Plan Filing 2
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado

PROJECT NO F04-006
DATE 05/12/17
SCALE 1" = 60'
CAD ID 2.0grad-f2.dwg

~SHEET~
C2.1

CONSTRUCTION NOTES:

1. INSTALL STOP SIGN & STREET SIGN RE: MUTCD
2. CONSTRUCT HANDICAPPED RAMP RE: CITY OF GJ DETAILS
3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT RE: UTE WATER DETAILS

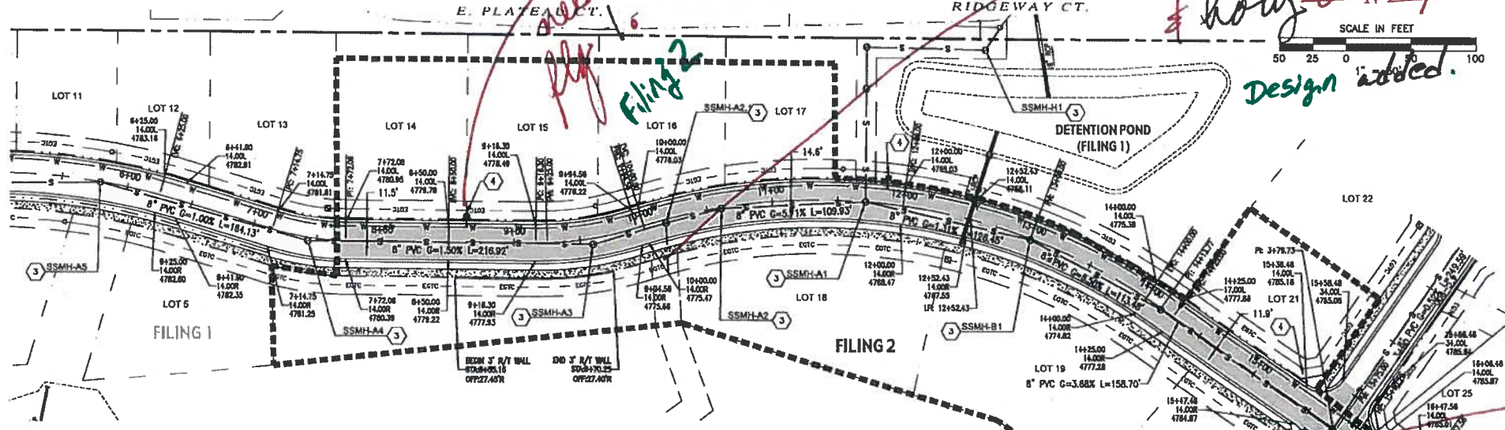
GENERAL NOTES:

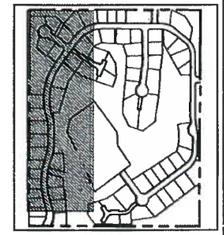
1. REFERENCE SHEET 2 FOR ADDITIONAL NOTES.
2. ALL DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET C0.2 FOR STREET SECTIONS
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION

I suspect needed with ph 2

call out as 8" & provide vertical & horiz design.

Design added.





ROAD AND SAN. SEWER PLAN - AIGUILLE DRIVE

SCALE: 1" = 50'

show water & sewer services on filing 1 too.

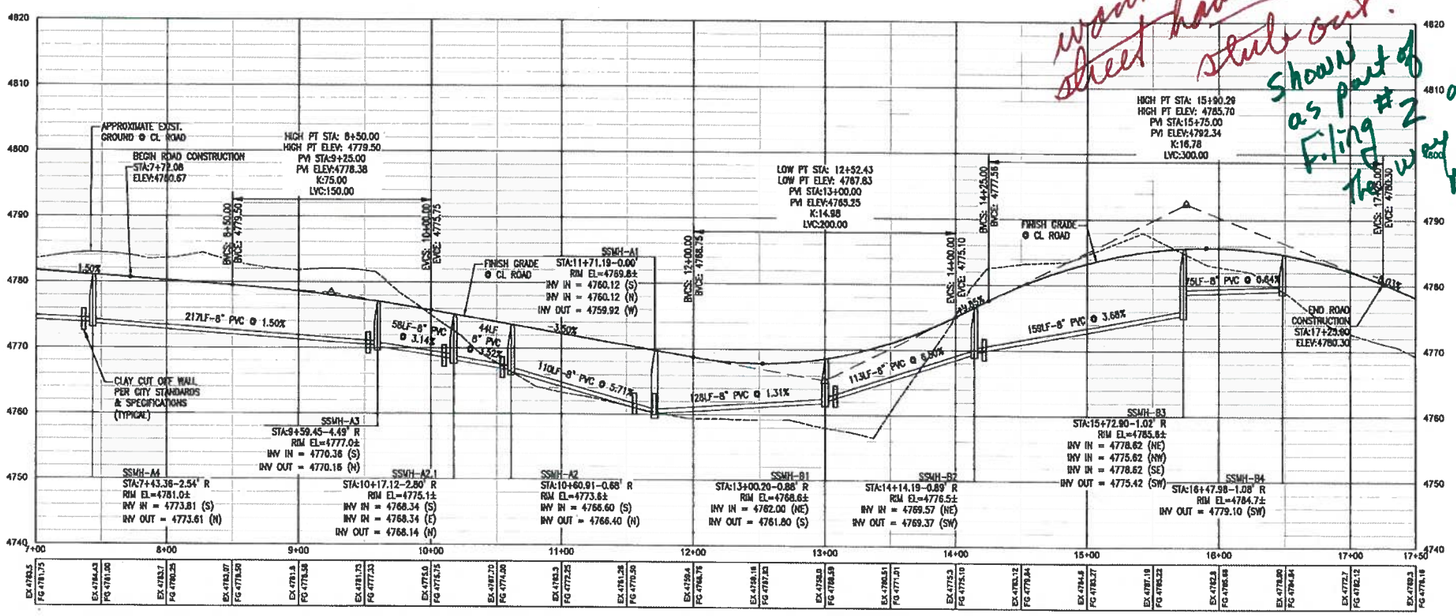
OK

FH will be needed with Filing 2

Yes, part of F.2

Do not the private street have sanitary stub out.

Shown as part of Filing #2 all the way to MH F.3



ROAD AND SAN. SEWER PROFILE - AIGUILLE DRIVE

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

C2.2 has shading to S. side intersection.

Yes, pavement ends so. side of intersection, utilities continue through intersection. Paving will occur in Filing #3.

FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

Road & Sanitary Sewer Plan & Profile
Aiguille Drive
Pinnacle Ridge Subdivision Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO F04-006
DATE 08/12/17
SCALE 1" = 50'
CAD ID 4.0ss-road-f2.dwg

SHEET
C4.0

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James C. Atkinson
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Final Plan of Subdivision

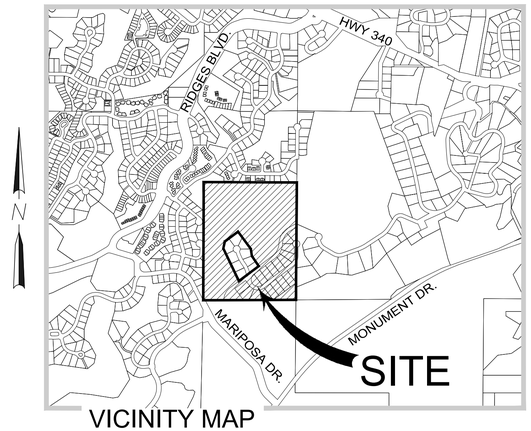
Pinnacle Ridge Subdivision

Filing 2

Grand Junction, Colorado

LEGEND

- EXISTING CONTOUR (4560)
- PROPERTY BOUNDARY
- OLD PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE (W)
- EXISTING WATER LINE (W)
- EXISTING FENCE (X)
- PROPOSED DRY UTILITIES (BY OTHERS) (EGTC)
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- LOT CORNER SPOT ELEVATION (4550.00)
- PROPOSED SWALE/BERM ELEVATION (G 4550.00)
- PROPOSED FL CURB/V-PAN (FL 4550.00)
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER METER
- EXISTING CONTOUR LABEL (4550)
- PROPOSED CONTOUR LABEL (4550.00)



VICINITY MAP

SHEET NUMBER	SHEET TITLE
C0.0	COVER
C0.1	PROJECT NOTES
C0.2	OVERALL SITE PLAN AND FILING PLAN
C1.0	COMPOSITE SITE PLAN - LAYOUT AND GEOMETRY PLAN
C1.1	COMPOSITE SITE PLAN - SIGNAGE □ LIGHTING PLAN
C2.0 - C2.2	COMPOSITE SITE PLAN - GRADING PLAN
C3.0	COMPOSITE SITE PLAN - OVERALL UTILITY AND WATER PLAN
C4.0	ROAD AND SEWER PLAN AND PROFILE - AIGUILLE DRIVE
C6.0 - 6.2	CONSTRUCTION STORM WATER MANAGEMENT PLAN

UTILITY PROVIDERS INFORMATION

UTILITY	*PROVIDER*	*PHONE NUMBER*
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

ABBREVIATION LEGEND

&	AND	MCSM	MESA COUNTY SURVEY MONUMENT
℄	CENTERLINE	MFG'S	MANUFACTURER'S
Ø	DIAMETER	M.P.E.	MULTI-PURPOSE EASEMENT
'	FEET	MPH	MILES PER HOUR
"	INCHES	NE COR	NORTHEAST CORNER
±	PLUS OR MINUS	N&S&E	NORTH AND SOUTH AND EAST
APPROX.	APPROXIMATELY	NO.	NUMBER
BRL	BUILDING RESTRICTION LINE	N.T.S.	NOT TO SCALE
BVCS	BEGIN VERTICAL CURVE STATION	PROP.	PROPOSED
BVCE	BEGIN VERTICAL CURVE ELEVATION	PRV	PRESSURE REDUCING VALVE
CB	CATCH BASIN	PSI	POUNDS PER SQUARE INCH
CL. III	CLASS 3	PVC	POLYVINYL CHLORIDE
CMP	CORRUGATED METAL PIPE	PVI	POINT OF VERTICAL INTERSECTION
CR	CURB RETURN	PVMT	PAVEMENT
CT.	COURT	O.C. E.W.	ON CENTER EACH WAY
DR.	DRIVE	RCP	REINFORCED CONCRETE PIPE
EL.	ELEVATION	RD	ROAD
ELEV	ELEVATION	RET. WALL	RETAINING WALL
EX.	EXISTING	R.O.W.	RIGHT-OF-WAY
EXIST.	EXISTING	RT	RIGHT
EVCS	END VERTICAL CURVE STATION	SCH	SCHEDULE
EVCE	END VERTICAL CURVE ELEVATION	SD	STORM DRAIN
FL	FLOWLINE	SEC	SECTION
FH	FIRE HYDRANT	SF	SQUARE FEET
FT	FEET	SQ. FT.	SQUARE FEET
GPM	GALLONS PER MINUTE	SS	SANITARY SEWER
GV	GAS VALVE	ST.	STREET
G.V.A.L.C.S.	GRAND VALLEY ALIQUOT LOCAL COORDINATE SYSTEM	STA	STATION
		THRU	THROUGH
HGL	HYDRAULIC GRADE LINE	TYP.	TYPICAL
HI PT	HIGH POINT	TW	TOP OF WALL
HP	HORSE POWER	U.W.C.D.	UTE WATER CONSERVANCY DISTRICT
INV	INVERT	VC	VERTICAL CURVE
LT	LEFT	VCP	VITRIFIED CLAY PIPE
MAX	MAXIMUM	W/	WITH
MIN	MINIMUM	WM	WATER METER
MH	MANHOLE	WV	WATER VALVE

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21. TOWNSHIP 1 SOUTH. RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM. LOTS 1 – 9. BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK 8 AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = RSF-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'
   REAR = 25'
   SIDE = 7'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

this note needs to also go on the site plan to be recorded.

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL E: ISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.

Colorado 811
1-800-922-1987
co811.org

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
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James C. Atkinson
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COLORADO LICENSE No. 18828

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/18/17	REVISED PER CITY COMMENT ROUND 1, DATED 7/18/17	DLS

Cover
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE:
CAD ID: 0.0cover-f2.dwg

SHEET □
C0.0

LOCAL CONTACT INFORMATION
GRAND JUNCTION DEVELOPMENT INSPECTOR: MARK BARSLUND
970-201-1362

GENERAL NOTES:

1. THESE GENERAL NOTES SHALL BE APPLICABLE TO ALL SHEETS WITHIN THIS SET OF DRAWINGS.
2. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE GOVERNING AGENCY. CONTRACTOR MUST CONTACT THE APPROPRIATE AGENCY PRIOR TO CONSTRUCTION IN THE RIGHT-OF-WAY.
3. PLANNING PERMIT APPROVAL MUST BE OBTAINED BY INDIVIDUAL LOT OWNERS PRIOR TO CONSTRUCTION. THE LOT OWNER MUST SUBMIT A PROPOSED DRAINAGE PLAN OF EACH SITE TO THE GOVERNING AGENCY FOR REVIEW.
4. EXISTING WATER, SANITARY, AND STORM SEWER LINES ARE SHOWN BASED ON BEST AVAILABLE INFORMATION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS SPECIFICALLY AT CONNECTION POINTS AND AT POTENTIAL POINTS OF CONFLICT. ALL INFORMATION SHALL BE SUPPLIED TO THE ENGINEER PRIOR TO CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR:
   (A) CONTACTING THE APPROPRIATE AGENCY TO ARRANGE A PRE-CONSTRUCTION MEETING AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
   (B) OBTAINING ALL PERMITS FOR STREET CUTS, UTILITIES CONSTRUCTION AND GRADING. THE COST OF ALL PERMITS SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S BID.
   (C) COORDINATING WITH ALL UTILITY COMPANIES INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. ADVANCE COORDINATION BY THE CONTRACTOR TO ALL UTILITY COMPANIES INVOLVED SHALL BE REQUIRED FOR ANY SERVICE INTERRUPTIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER, PROJECT MANAGER AND THE UTILITY COMPANY 48 HOURS PRIOR TO START OF CONSTRUCTION. NO UTILITY TAPS SHALL BE MADE WITHOUT WRITTEN AUTHORIZATION BY THE UTILITY COMPANY AND THE CITY.
   (D) VERIFICATION OF ALL OTHER UNDERGROUND FACILITIES WHICH MAY BE AFFECTED BY THIS PROJECT AND REPAIR THEREOF IN CASE OF DAMAGE.
   (E) CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO OBTAIN TEMPORARY POWER AND TELEPHONE SERVICE DURING CONSTRUCTION. ALL COST FOR TEMPORARY SERVICES SHALL BE THE CONTRACTORS RESPONSIBILITY.
   (F) RESTORATION OF DISTURBED STREET PAVEMENT AS REQUIRED BY THE CITY AND THE STATE'S DEPARTMENT OF TRANSPORTATION.
   (G) ALL PROJECT SAFETY INCLUDING, BUT NOT LIMITED TO, TRENCH EXCAVATION AND SHORINGS, TRAFFIC CONTROL, AND SECURITY.
   (H) COORDINATING ALL WORK AND INSPECTIONS AS REQUIRED BY THE CITY OR THE STATE.
   (I) OBTAINING NECESSARY PERMITS FROM THE DEPARTMENT OF TRANSPORTATION FOR ALL WORK IN AND ADJACENT TO STATE RIGHT-OF-WAY.
   (J) RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE. AS-BUILTS SHALL INCLUDE UNDERGROUND UTILITIES AS WELL AS ANY FIELD MODIFICATIONS OF THE PLANS.
   (K) KEEPING ADJACENT STREETS FREE AND CLEAN OF ALL DEBRIS AND DIRT FROM THE JOB SITE.
   (L) THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED AT THE JOB SITE AT ALL TIMES. EACH SUBCONTRACTOR (INCLUDING THE SURVEYOR) SHALL HAVE A SIGNED COPY OF THE PLANS AND THE APPROPRIATE STANDARDS AND SPECIFICATIONS IN HIS POSSESSION AT ALL TIMES WHEN IMPROVEMENTS ARE BEING INSTALLED.
   (M) THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR COMPLETION OF INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED BY NOTE TO BE "PROVIDED," "INSTALLED" OR "CONSTRUCTED" UNLESS SPECIFICALLY NOTED OTHERWISE.
   (N) CONTRACTOR WILL HAVE A COPY OF APPROVED SOILS REPORTS FOR PAVEMENT DESIGN AND COMPACTION REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL RECOMMENDATIONS CONTAINED WITHIN THE SOILS REPORT.
   (O) VERIFYING THE ACCURACY OF THE VERTICAL BENCHMARK INFORMATION. CONTRACTOR SHALL USE BENCHMARKS AND DATUMS SHOWN HEREON TO SET PROJECT BENCHMARK(S), BY RUNNING A LEVEL LOOP BETWEEN AT LEAST TWO BENCHMARKS, AND SHALL PROVIDE SURVEY NOTES OF SUCH TO PROJECT ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
6. IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
7. TWO WORKING DAYS BEFORE YOU DIG, GRADE, OR EXCAVATE, CALL THE APPROPRIATE UTILITY NOTIFICATION CENTER FOR THE MARKING OF MEMBER UNDERGROUND UTILITIES. THE UTILITIES SHOWN ON THESE PLANS ARE PLOTTED BASED ON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION, AND REPAIR OF ANY EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. ANY UTILITY DAMAGED BY CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
8. THIS PLAN WAS PREPARED BASED ON SURVEY INFORMATION PROVIDED BY A LICENSED SURVEYOR. VORTEX ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR ERRORS DUE TO INCOMPLETE OR INACCURATE SURVEY INFORMATION.
9. SUBGRADE DENSITY SHALL BE TESTED BY A PRIVATE SOILS TESTING FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING BASE COURSE OR CONCRETE. BASE COURSE DENSITY SHALL ALSO BE TESTED BY THE PRIVATE GEOTECHNICAL FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING PAVEMENT.
10. THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM ALL UTILITY COMPANIES PRIOR TO ANY DEMOLITION WORK OR DISCONNECTION OF ANY SERVICE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANIES.
2. ALL UTILITIES INCLUDING STORM SEWER, SANITARY SEWER AND WATER MAINS SHALL BE COMPLETELY REMOVED FROM THE GROUND UNLESS OTHERWISE SPECIFIED. NO EXISTING UTILITY, STRUCTURES OR UNDERGROUND IMPROVEMENT SHALL BE ABANDONED IN PLACE WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER, OWNER AND GOVERNING AGENCY.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES WHICH ARE TO REMAIN IN SERVICE. INCLUDING BUT NOT LIMITED TO GAS, ELECTRIC, CABLE AND TELEPHONE SERVICES.
4. ALL STRUCTURE INCLUDING BASEMENT WALLS AND FLOOR SLABS SHALL BE COMPLETELY REMOVED FROM THE SITE.
5. ALL DEMOLITION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS INCLUDING BUT NOT LIMITED TO HAZARDOUS MATERIALS, DISPOSAL, HOURS OF OPERATION.
6. ALL EROSION CONTROL MEASURES DESIGNED FOR THE SITE PERIMETER OR TO PROTECT EXISTING IMPROVEMENTS SHALL BE IN PLACE PRIOR TO THE START OF ANY DEMOLITION ACTIVITIES.
7. THE CONTRACTOR SHALL OBTAIN AND REVIEW THE ENVIRONMENTAL STUDIES PROVIDED BY THE OWNER AND TAKE ALL NECESSARY PRECAUTIONS FOR ENVIRONMENTAL SAFETY DURING DEMOLITION ACTIVITIES. IT SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE EXISTING STRUCTURES FOR ANY OTHER CONDITIONS WHICH MAY AFFECT THE DEMOLITION PROCEDURES.
8. ANY CONDITIONS WHICH MAY BE UNCOVERED DURING THE PROCESS OF DEMOLITION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER IMMEDIATELY. ADDITIONAL EXPENSES INCURRED BY UNFORESEEN CONDITIONS SHALL BE APPROVED BY THE OWNER PRIOR TO THE ADDITIONAL WORK.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE PROPERTY FOR THE TYPE AND QUANTITY OF DEMOLITION REQUIRED, PRIOR TO SUBMISSION OF A BID.
10. THE CONTRACTOR SHALL HAVE WATER ON SITE FOR DUST ABATEMENT AT ALL TIMES DURING DEMOLITION ACTIVITIES.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF ALL DEBRIS. BURNING ON SITE SHALL NOT BE PERMITTED. NO DEBRIS INCLUDING CONCRETE OR ASPHALT MAY BE PLACED IN ANY FILL AREA.
12. ANY DAMAGE TO PUBLIC UTILITIES OR ADJACENT PROPERTIES AS A RESULT OF THE DEMOLITION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. REPAIRS SHALL BE MADE IN A TIMELY MANNER TO THE SATISFACTION OF THE DAMAGED PARTY.
13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH DOCUMENTATION OF THE CONDITION OF EXISTING IMPROVEMENTS TO REMAIN IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS NOT DOCUMENTED AS PRE-EXISTING. DOCUMENTATION SHALL BE PROVIDED PRIOR TO COMMENCEMENT OF WORK.
14. ALL EXISTING UTILITY SERVICES SHALL BE COMPLETELY REMOVED FROM THE SITE. SERVICE SHALL BE CUT AND PLUGGED AT THE PROPERTY LINE IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS. THE DEMOLITION CONTRACTOR SHALL CLEARLY MARK ALL STUBS AT THE PROPERTY LINE WITH A 4 X 4 WOOD POST (MINIMUM 4' ABOVE GRADE, 4' BELOW GRADE) MARKED WITH THE SERVICE TYPE.
15. ALL EXISTING WELLS SHALL BE CAPPED AND ABANDONED IN ACCORDANCE WITH ALL STATE REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL REQUIRED PROCEDURES, FILE ALL REQUIRED FORMS, APPLICATIONS AND REPORTS, AND OBTAIN ALL REQUIRED APPROVALS FROM THE STATE ENGINEER'S OFFICE.
16. DURING THE COURSE OF DEMOLITION, CONTRACTOR SHALL PROVIDE SECURITY FENCING AND OTHER PRECAUTIONARY SAFETY MEASURE AS NECESSARY.

EROSION CONTROL NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL FACILITIES SHOWN.
3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORESEEN PROBLEMS OR IF THE PLAN DOES NOT FUNCTION AS INTENDED. A JURISDICTION REPRESENTATIVE MAY REQUIRE ADDITIONAL CONTROL DEVICES UPON INSPECTION OF PROPOSED FACILITIES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED, STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM TRAFFIC FROM THE SITE.
5. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE PAVED, SEEDED WITH NATIVE VEGETATION OR LANDSCAPED. REFER TO LANDSCAPE PLANS FOR SEED MIX AND PLANTING SPECIFICATIONS.
6. EROSION CONTROL STRUCTURES BELOW SODDED AREAS MAY BE REMOVED ONCE SOD AND FINAL LANDSCAPING IS IN PLACE. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION. EROSION CONTROL IN PROPOSED PAVED AREAS SHALL REMAIN IN PLACE UNTIL PAVEMENT IS COMPLETE.
7. THIS PLAN IS ONLY TO BE USED FOR INSTALLATION OF EROSION CONTROL FACILITIES. DO NOT USE THIS PLAN FOR GRADING OR STORM SEWER CONSTRUCTION.
8. CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLE WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES WILL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS, MOVED WHEN NECESSARY AND REMOVED WHEN THE SITE IS PAVED.
9. INLET PROTECTION DEVICES SHALL BE INSTALLED IMMEDIATELY UPON INDIVIDUAL INLET'S BECOMING FUNCTIONAL.
10. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH GRADING AND/OR UTILITY CONSTRUCTION SHALL OBTAIN A COPY OF THE STORM WATER MANAGEMENT PLAN (SWMP) AND ANY OTHER DOCUMENTATION REGARDING "STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY" AND BECOME FAMILIAR WITH THEIR CONTENTS.
11. THE TEMPORARY PARKING AND STORAGE AREA SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AREA, EQUIPMENT CLEANING AREA. EMPLOYEE BREAK AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
12. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, ETC.) SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT WITH STORM WATER DISCHARGES FROM THE SITE.
13. MAINTAIN ON THE SITE OR HAVE READILY AVAILABLE SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
14. FUGITIVE DUST BLOWING FROM THE SITE SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS ABSOLUTELY PROHIBITED.
15. NO RUBBISH, TRASH, GARBAGE, OR OTHER SUCH MATERIALS SHALL BE DISCHARGED INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
16. ALL MEASURES PRESENTED IN THE SWMP SHALL BE INITIATED AS SOON AS PRACTICABLE.
17. IF THE GRAVEL CONSTRUCTION ENTRANCES ARE NOT EFFECTIVE IN REMOVING THE MAJORITY OF DIRT OR MUD FROM THE TIRES OF THE CONSTRUCTION VEHICLES, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP AND THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.
18. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
19. IF SOIL STOCKPILING IS EMPLOYED ON THE SITE, SILT FENCES SHALL BE USED TO HELP CONTAIN THE SEDIMENT.
20. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
21. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN 30 DAYS AFTER FINAL STABILIZATION. FINAL STABILIZATION HAS OCCURRED WHEN ALL SOIL DISTURBING ACTIVITIES ARE COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OF THE COVER FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES HAS BEEN EMPLOYED.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) DUE TO GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT.
23. ALL OFF-SITE CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR STORM DRAIN CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.

EROSION CONTROL MAINTENANCE NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL MEASURES CONTAINED IN THIS PLAN SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT, AND SHOULD BE CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:
3. STRAW BALE INLET PROTECTION DEVICES AND BARRIERS SHALL BE FIXED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR SHALL BE REPLACED IF THEY SHOW SIGNS OF DETERIORATION.
4. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, RE-SEEDED, AND WATERED AS NEEDED.
5. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-THIRD TO ONE-HALF THE HEIGHT OF THE SILT FENCE.
6. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
7. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
8. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES, SEDIMENT IN THE SEDIMENTATION BASINS SHALL NOT EXCEED THE SEDIMENTATION CLEANOUT LEVEL.
9. IF THE STONES IN THE GRAVEL CURB INLET SEDIMENT FILTERS BECOME CLOGGED WITH SEDIMENT, THE STONES MUST BE PULLED AWAY, CLEANED AND REPLACED.
10. THE EMBANKMENT OF THE SEDIMENTATION BASIN SHALL BE CHECKED REGULARLY TO INSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
11. THE TEMPORARY SEDIMENT TRAP AND SEDIMENTATION BASIN STRUCTURES SHALL BE CHECKED REGULARLY TO INSURE THAT THEY ARE STRUCTURALLY SOUND AND HAVE NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. SEDIMENT DEPOSITION SHALL BE REMOVED PERIODICALLY TO ENSURE FULL VOLUME IS AVAILABLE IN THE POND.

GRADING NOTES:

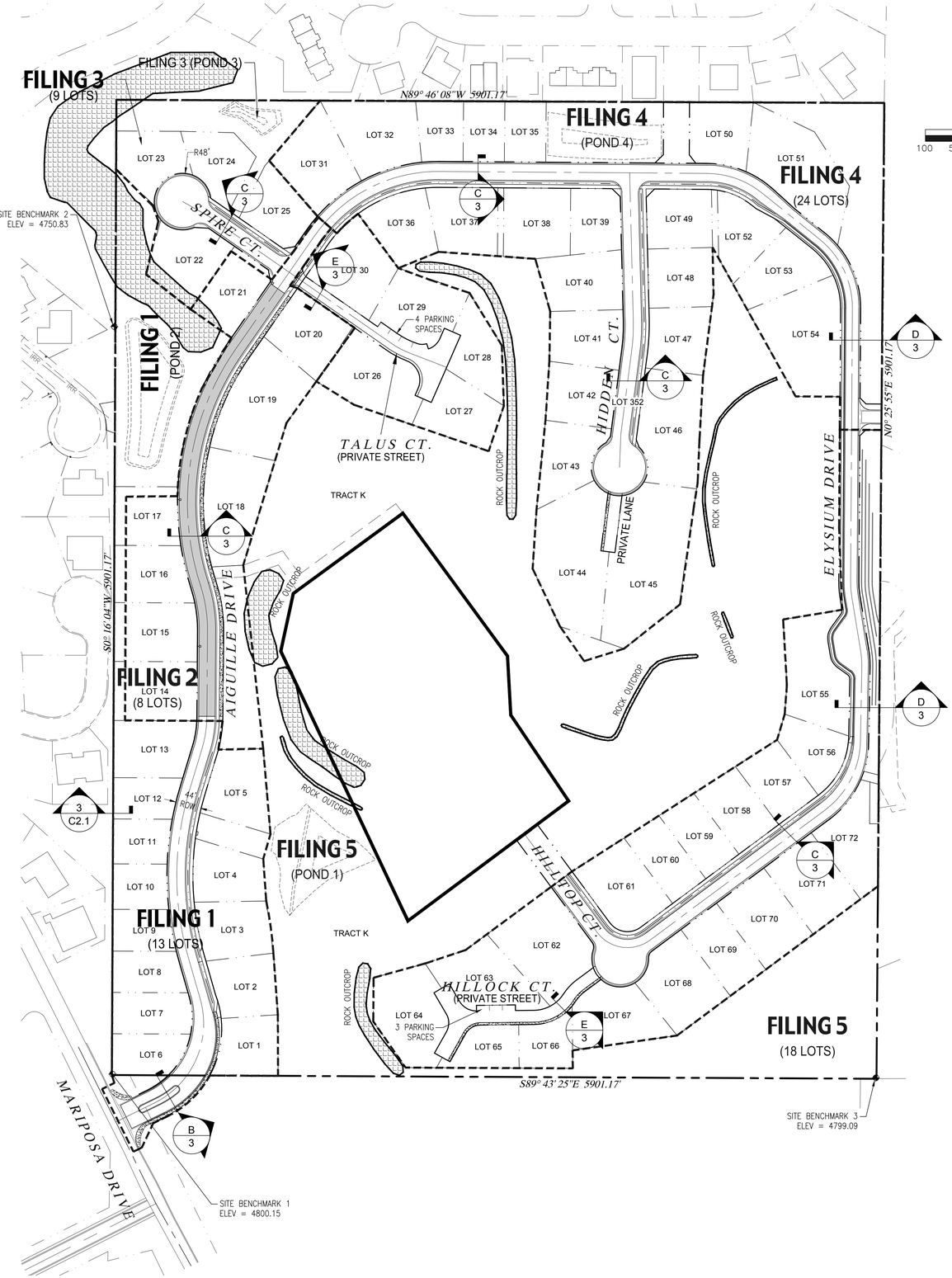
1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. CONTOURS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY. CONTOUR INTERVAL = 1 FOOT UNLESS OTHERWISE NOTED ON PLANS.
3. ALL DISTURBED AREAS THAT ARE UNSURFACED OR ARE NOT DESIGNATED AS LANDSCAPE AREAS ARE TO BE RE-SEEDED WITH DRY NATIVE GRASS SEED MIX.
4. IF DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE SOILS ENGINEER SHALL BE CONTACTED FOR RECOMMENDATIONS.
5. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND STANDARDS OF THE GOVERNING AGENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED AS SPECIFIED BY THE GEOTECH REPORT. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED, LICENSED, SOILS ENGINEER, CERTIFYING THAT THE SUBBASE WITHIN THE AREAS TO BE PAVED HAS BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECS.
6. NO PROPOSED SLOPE SHALL EXCEED TWO (2) HORIZONTAL TO ONE (1) VERTICAL. ALL SLOPED AREAS MUST BE PROTECTED FROM EROSION.
7. IF STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS ARE STOCKPILED ON THE SITE. TOPSOIL MAY BE PLACED TO A HEIGHT OF FIVE FEET. SILT FENCE SHALL BE PLACED AROUND THE BASE OF THE STOCKPILE AND THE STOCKPILE SHALL BE SEEDED WITH NATIVE SEED MIX IMMEDIATELY AFTER STRIPPING OPERATIONS ARE COMPLETE.
8. ON-SITE MATERIALS SUITABLE FOR FILL BENEATH DRIVES, AND PARKING AREAS BEYOND 5' OF THE BUILDING SHALL BE COMPACTED IN ACCORDANCE WITH THE GUIDELINES PRESENTED IN THE SOILS REPORT.
9. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHY AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO ENSURE 0.75% MIN. SLOPE AGAINST ALL GUTTERS TO PREVENT PUDDLING. ANY DISCREPANCIES SHALL BE PROVIDED TO THE ENGINEER IN WRITING IMMEDIATELY.
10. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED AS SPECIFIED IN THE GEOTECH REPORT.
11. SPOT ELEVATIONS REPRESENT FLOWLINE OR TOP OF ASPHALT UNLESS OTHERWISE NOTED.
12. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS WHICH DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB AND GUTTER AND UTILITIES.
13. ALL UTILITIES (MANHOLES, VALVE COVERS, CLEANOUTS, VAULTS, BOXES, ETC.) SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
14. ALL EARTH MOVING AND PLACEMENT OPERATIONS SHALL BE IN CONFORMANCE WITH THE RECOMMENDATIONS IDENTIFIED IN THE SOILS REPORT. THE CONTRACTOR SHALL HAVE A SIGNED AND SEALED COPY OF THE SOILS REPORT ON THE SITE AT ALL TIMES.
15. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.
16. WHERE NEW CURB AND GUTTER IS BEING CONSTRUCTED ADJACENT TO EXISTING ASPHALT, THE FOLLOWING SHALL APPLY: PRIOR TO PLACEMENT OF ANY CONCRETE THE CONTRACTOR SHALL HAVE A LICENSED SURVEYOR VERIFY GRADE AND CROSS SLOPE OF THE CURB AND GUTTER FORMS. THE CONTRACTOR SHALL SUBMIT THE SLOPES AND GRADES TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY SECTION WHICH DOES NOT CONFORM TO THE DESIGN OR TYPICAL CROSS SECTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CURB AND GUTTER POURS WITHOUT APPROVAL OF THE ENGINEER.
17. MAINTENANCE OF ANY STORMWATER MANAGEMENT FACILITY SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL GUIDELINES FOR PRIVATE STORMWATER MANAGEMENT FACILITIES AND SHALL BE THE RESPONSIBILITY OF THE OWNER AND THE ASSIGNEES.
18. SURFACE RESTORATION SHALL BE AS FOLLOWS:
   (A) FINE GRADE ALL AREAS DISTURBED BY THE CONSTRUCTION OPERATIONS AFTER COMPLETION OF BACKFILLING AND COMPACTING. AREAS WHICH ARE TO RECEIVE PAVEMENTS, SURFACING, TOPSOIL OR LANDSCAPING SHALL BE GRADED AS REQUIRED TO ALLOW INSTALLATION OF THE SPECIFIC SURFACE TREATMENT. GRADE ALL OTHER AREAS TO MATCH THE EXISTING GROUND LINE.
   (B) REPLACE AND REPAIR ANY SURFACE IMPROVEMENTS DAMAGED OR REMOVED. CONFORM TO CITY STANDARDS & SPECIFICATIONS.
19. BITUMINOUS PAVEMENT
   (A) BITUMINOUS PAVEMENT SHALL BE REMOVED TO CLEAN STRAIGHT LINES AT THE LOCATIONS INDICATED ON PLANS. WIDTH OF REMOVAL FOR PIPELINES SHALL BE KEPT TO A MINIMUM AS DICTATED BY TRENCHING OPERATIONS, BUT SHALL EXTEND AT LEAST 6 INCHES BEYOND THE LIMITS OF TRENCH EXCAVATION.
   (B) THE CUT SHALL BE MADE WITH PAVEMENT CUTTING WHEEL, SAW OR OTHER APPROVED METHOD, SO AS TO PROVIDE A REASONABLY STRAIGHT AND SQUARE EDGE.

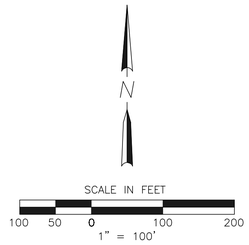
SANITARY SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL GRAVITY SANITARY SEWER LINES SHALL BE POLYVINYL CHLORIDE PIPE (PVC), ASTM D-3034 SDR.35, SEWER LINE MATERIALS AND CONSTRUCTION SHALL CONFORM TO ASTM STANDARDS AND SPECIFICATIONS.
3. DISTANCES FOR SANITARY SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. THEREFORE, DISTANCES SHOWN ON PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT.
4. RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATION. PIPELINE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT AND STEEL SHIMS TO ADJUST THE MANHOLE FRAME TO THE REQUIRED FINAL GRADE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS. ALL FRAMES SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
5. ALL SANITARY SEWER MAINS TESTING SHALL BE IN ACCORDANCE WITH LOCAL SPECIFICATIONS. COPIES OF ALL TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER, THE OWNER AND THE GOVERNING AUTHORITY PRIOR TO THE START OF THE WARRANTY PERIOD.
6. COMPACTION OF ALL TRENCHES WITHIN THE PROJECT SITE MUST BE ATTAINED AND COMPACTION RESULTS SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE. .
7. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING STRUCTURES AND IMPROVEMENTS DURING INSTALLATION OF THE SANITARY SEWER LINE.
8. THE CONTRACTOR SHALL POTHOLE THE EXISTING SEWER MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
9. SANITARY SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.

STORM SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING:
   (A) OBTAINING ALL REQUIRED PERMITS FROM THE CITY, THE DOT, OR ANY REGULATORY AUTHORITY AT THE CONTRACTOR'S COST INCLUDING PERMITS REQUIRED FOR WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
   (B) RESTORATION OF ANY EXISTING IMPROVEMENTS INCLUDING (BUT NOT LIMITED TO) FENCES, SOD, LANDSCAPING, PAVEMENT, SPRINKLER SYSTEMS.
   (C) VERIFICATION AND PROTECTION OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF THE PROJECT.
   (D) PROVIDING AS-BUILT DRAWINGS TO THE CITY AND ENGINEER.
   (E) ALL PERMITTING, DEVELOPMENT, CONNECTION, LOCATION INSPECTION AND TESTING FEES REQUIRED FOR STORM SEWER CONSTRUCTION.
   (F) VERIFYING ALL STANDARD DETAILS CONFORM TO CURRENT CITY/COUNTY STANDARDS AND SPECIFICATIONS.
   (G) FOR OBTAINING AND UNDERSTANDING ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THE CONSTRUCTION OF THE STORM SEWER IMPROVEMENTS.
   (H) FOR SCHEDULING ALL REQUIRED INSPECTIONS.
3. THE CONTRACTOR SHALL POTHOLE THE EXISTING STORM MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
4. STORM SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.
5. THE CONTRACTOR SHALL COORDINATE HIS WORK SCHEDULE WITH THE DITCH COMPANY TO ENSURE ALL DITCH FACILITIES ARE CONSTRUCTED WITHOUT DISRUPTION TO DITCH COMPANY OPERATIONS.
6. ALL STORM SEWER CONSTRUCTION SHALL BE IN CONFORMANCE WITH LOCAL STANDARDS AND SPECIFICATIONS.
7. DISTANCES FOR STORM SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE OR INLET TO CENT





PROPOSED LAND USE TABLE

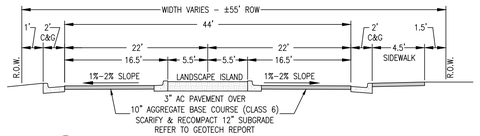
USE	AREA	AC	% OF TOTAL	OWNER
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. = 45.11 AC			

PROJECT NOTES:

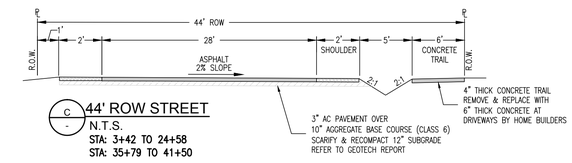
1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM: LOTS 1 – 9, BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK 8 AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = RSF-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'
   REAR = 25'
   SIDE = 7'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

LEGEND

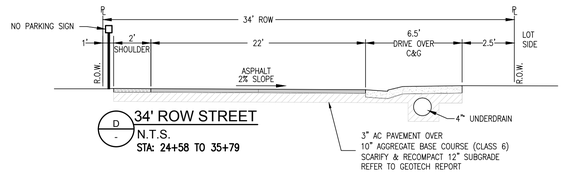
FILING & LIMITS OF DEVELOPMENT DESIGNATION



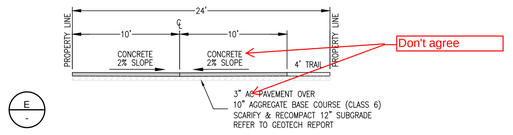
B
MARIPOSA DRIVE ENTRANCE
N.T.S.
STA: 0+24 TO STA: 1+52
(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 3+42)



C
44' ROW STREET
N.T.S.
STA: 3+42 TO 24+58
STA: 35+79 TO 41+50



D
34' ROW STREET
N.T.S.
STA: 24+58 TO 35+79



E
PRIVATE STREET □ LANE DETAIL
N.T.S.
TRACTS C,F,J

PROJECT BENCHMARK

PROJECT BENCHMARK #1
LOCATED AT THE SOUTHWEST CORNER OF THE SITE.
MONUMENT ID: PLS 18480, THE W1/4 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31563.18 EASTING: 78944.74 ELEV: 4800.15 (NAVD88)

PROJECT BENCHMARK #2
LOCATED AT THE WEST PROPERTY LINE, NEAR OUTLOOK COURT.
MONUMENT ID: NCSN #1210, THE N1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 32880.35 EASTING: 78949.85 ELEV: 4750.83 (NAVD88)

PROJECT BENCHMARK #3
LOCATED AT THE SOUTHEAST CORNER OF THE SITE.
MONUMENT ID: NCSN #642, THE W1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31558.05 EASTING: 80239.95 ELEV: 4799.09 (NAVD88)

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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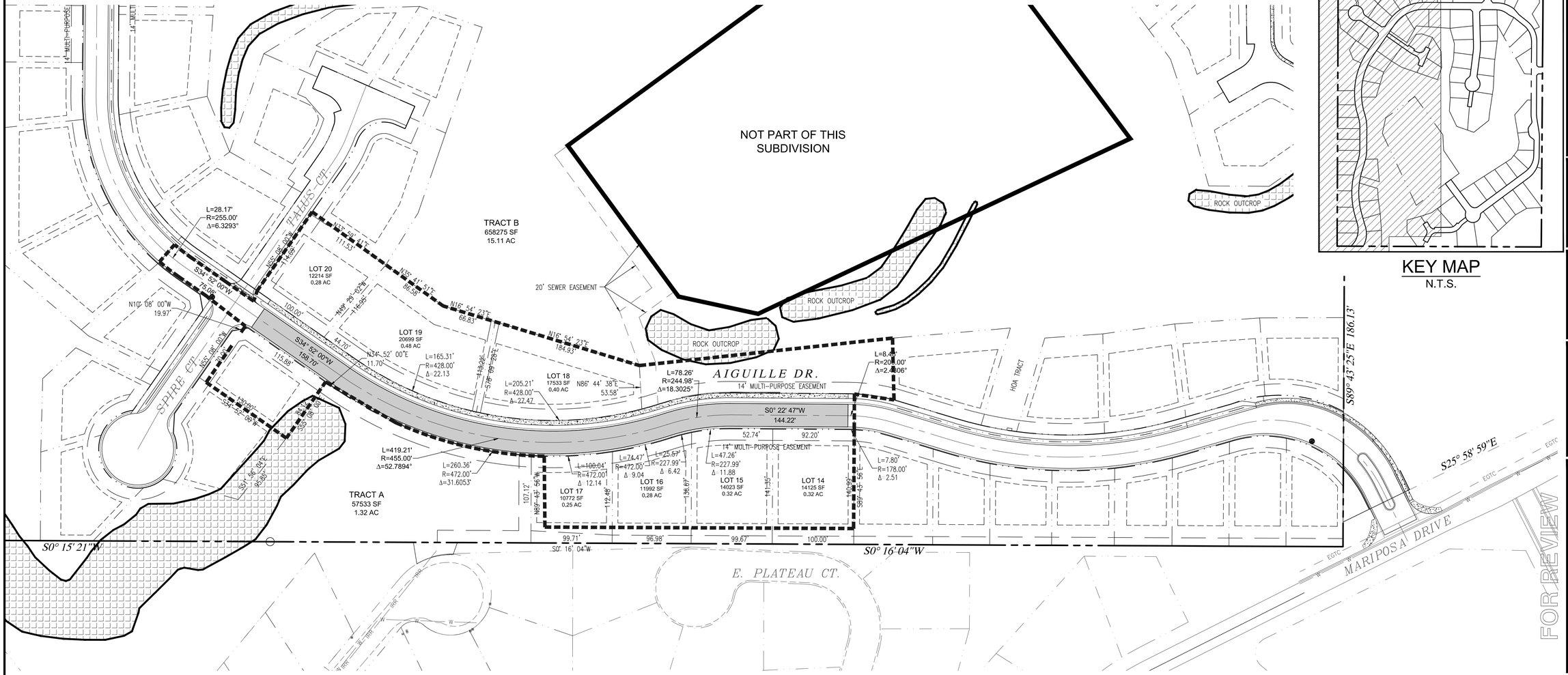
MAJOR SUBDIVISION
FINAL PLAN

	REV. DATE	COMMENT	BY
1	8/18/17	REVISED PER CITY COMMENT ROUND 1, DATED 7/18/17	DLS

Filing Plan
Pinnacle Ridge Subdivision Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: 1" = 100'
CAD ID: 0.0cover-f2.dwg

SHEET
C0.2



KEY MAP
N.T.S.

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL E ISTING UTILITIES PRIOR TO CONSTRUCTION.

Know what's below. Call before you dig.
Colorado 811
1-800-922-1987
co811.org

UTILITY PROVIDERS INFORMATION

UTILITY	*PROVIDER*	*PHONE NUMBER*
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

PROPOSED LAND USE TABLE

USE	*AREA*	*AC*	*% OF TOTAL*	*OWNER*
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. - 45.11 AC			

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET C0.2

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

CITY PLANNER DATE

FOR REVIEW

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
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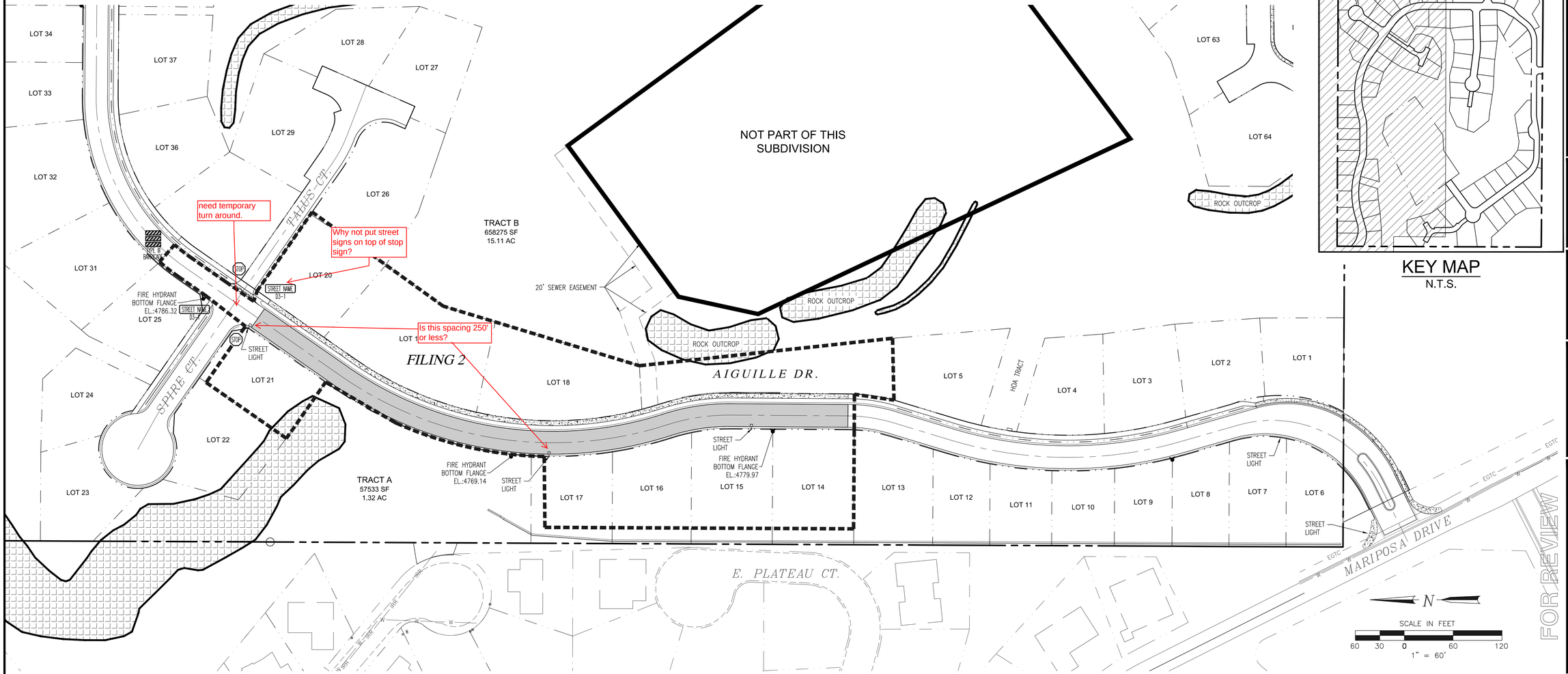
MAJOR SUBDIVISION
FINAL PLAN

REV	REV DATE	REVISED PER CITY COMMENT ROUND 1, DATED 7/18/17	BY
1	8/18/17	COMMENT	DLS

Composite Site Plan - Layout and Geometry Plan
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 04/24/17
SCALE: see plan
CAD ID: 1.0layout-f2.dwg

SHEET
C1.0



KEY MAP
N.T.S.

FOR REVIEW

SIGN SCHEDULE

- STOP SIGN (30"x30")
- NO OUTLET SIGN W14-2
- FIXED TYPE III CDOT ROAD BARRICADES (3' x 8' SECTIONS, SEE STD. S-630-2)
- NO TRESPASSING SIGN
- STREET NAME SIGN D3-1
- SPEED LIMIT SIGN R2-1

ALL SIGN POST MOUNTING AND PLACEMENT SHALL BE PER MUTCD OR MESA COUNTY SPECIFICATIONS. CONTRACTOR TO CONTACT MESA COUNTY TRAFFIC PRIOR TO INSTALLATION OF SIGNS. (ph. 970-244-1817)

UTILITY PROVIDERS INFORMATION

UTILITY	PROVIDER	PHONE NUMBER
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DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
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	THE REDLANDS WATER & POWER CO.	970-243-2173
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5. FOR BENCHMARK SEE SHEET C0.2

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL E. ISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.
Colorado 811
1-800-922-1987
co811.org

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/18/17	REVISED PER CITY COMMENT ROUND 1, DATED 7/18/17	DLS

Signage & Lighting Plan
Pinnacle Ridge Subdivision Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

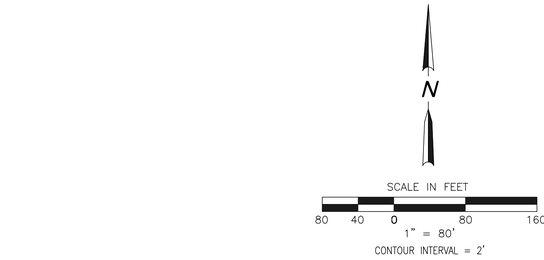
PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1" = 60'
CAD ID: 1.0layout-f2.dwg

SHEET
C1.1

What is this?

Also see filing 1 redline.





GRADING NOTE:

FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

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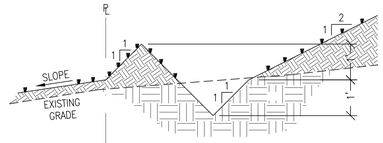
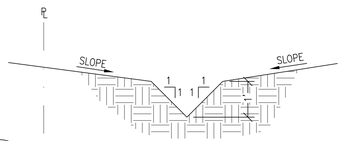
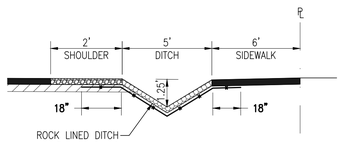
4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE STORM SEWER, SEE SHEET C5.0 & C5.1.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE FILING PLAN.
8. REFER TO SHEETS C0.1, C6.0, THRU C6.2 FOR STORMWATER MANAGEMENT CONTROL PLANS AND EROSION CONTROL NOTES.
9. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
10. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL.



DIVERSION DITCH SECTION
N.T.S.



DIVERSION DITCH SECTION
N.T.S.



ROCK LINED ROADSIDE DITCH
N.T.S.

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER _____ DATE _____

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James C. Atkinson
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FOR REVIEW - NOT FOR CONSTRUCTION

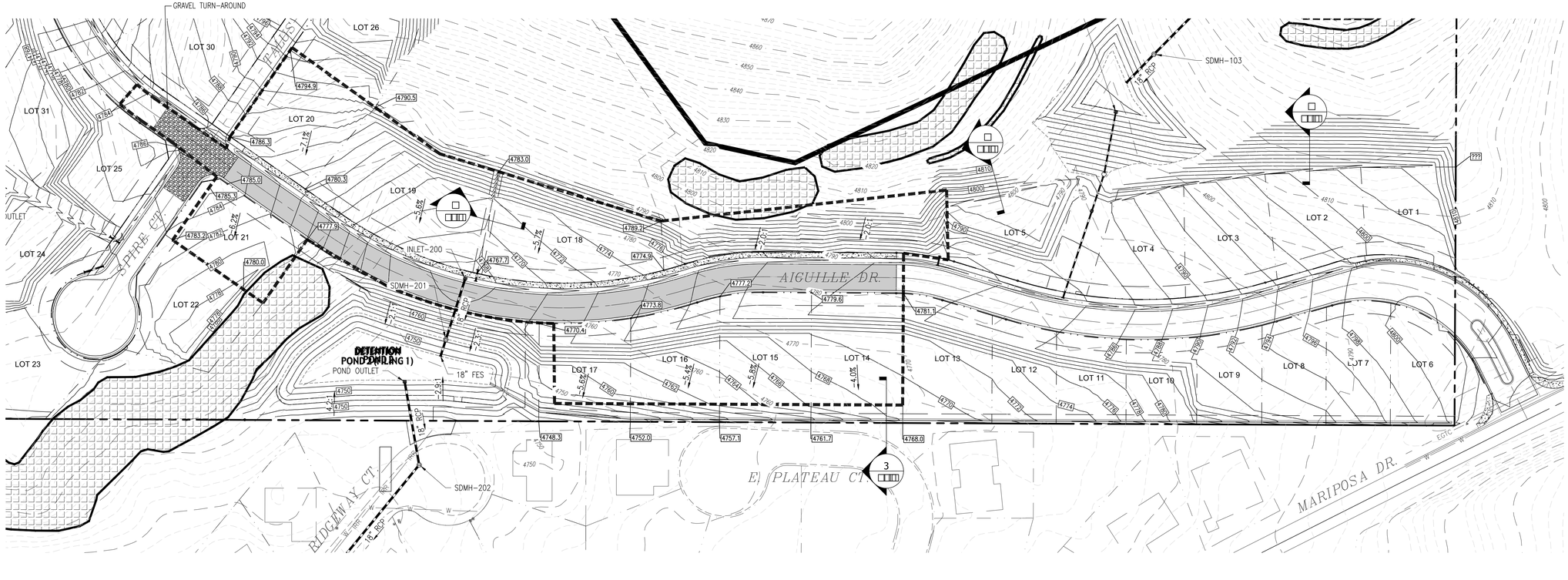
MAJOR SUBDIVISION
FINAL PLAN

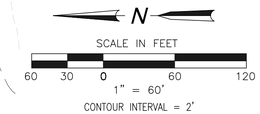
REV	DATE	COMMENT
1	8/18/17	REVISED PER CITY COMMENT ROUND 1, DATED 7/18/17 DLS BY

Overall Grading Plan Filings 1 - 5
Pinnacle Ridge Subdivision Filing 2
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: 1"= 80'
CAD ID: 2.0grad-f2.dwg

SHEET
C2.0





FILING 2 TOF TABLE			
Lot	*Grading*	*Min. TOF*	*Max. TOF*
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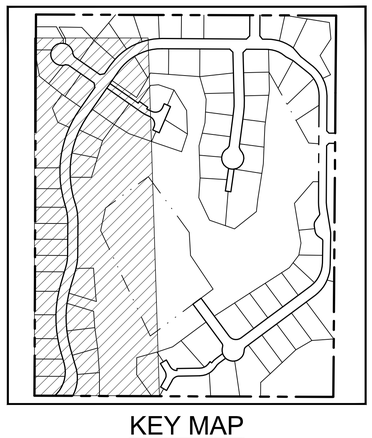
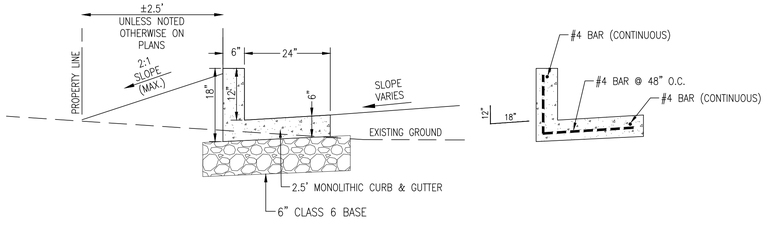
15	Type C	4779.40	4779.90
16	Type C	4776.50	4777.00
17	Type C	4773.40	4773.90
18	Type A	4773.00	4773.50
19	Type A	4774.50	4775.50
20	Type A	4782.50	4784.50
21	Type C	4784.50	4786.50



KEY MAP
N.T.S.



WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

CONCRETE CURB & GUTTER DETAIL
N.T.S.

GRADING NOTE:

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4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE SANITARY SEWER, SEE SANITARY SEWER PLAN & PROFILE.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE FILING PLAN.
8. REFER TO SHEETS C0.1, C6.0, THRU C6.2 FOR STORMWATER MANAGEMENT CONTROL PLANS AND EROSION CONTROL NOTES.
9. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
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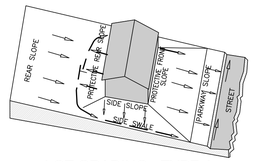
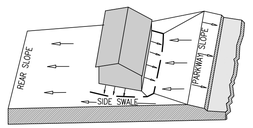


LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.



LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.

ACCEPTANCE BLOCK

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PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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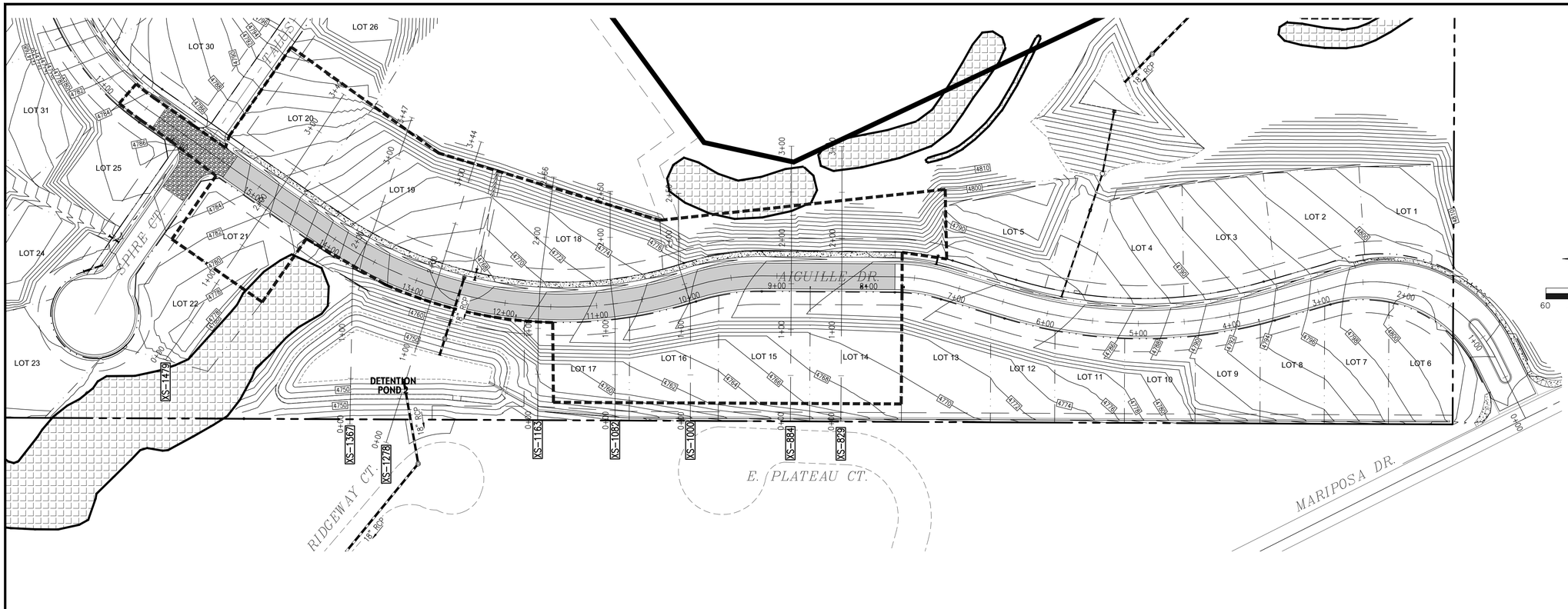
MAJOR SUBDIVISION
FINAL PLAN

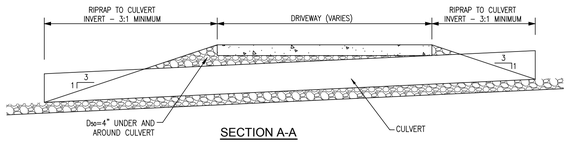
REV.	DATE	COMMENT	BY
1	8/18/17	REVISED PER CITY COMMENT ROUND 1, DATED 7/18/17	DLS

Grading Plan Filing 2
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: 1" = 60'
CAD ID: 2.0grad-f2.dwg

SHEET
C2.1





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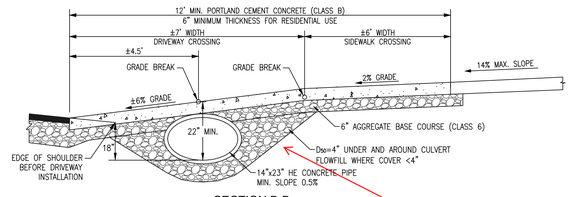

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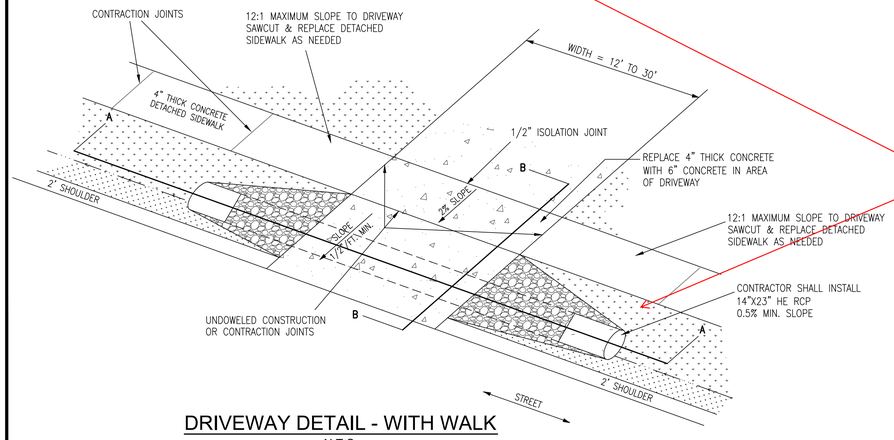
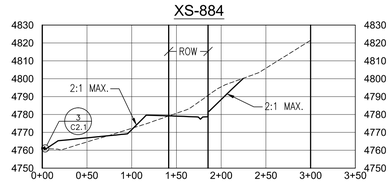
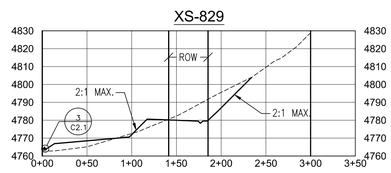


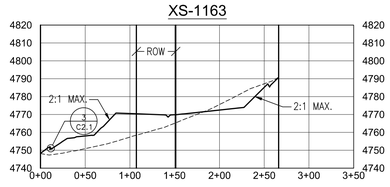
see comments on filing 1 redlines

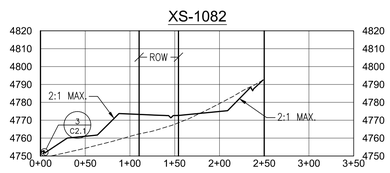
DRIVEWAY DETAIL - WITH WALK

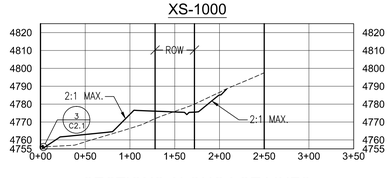
N.T.S.





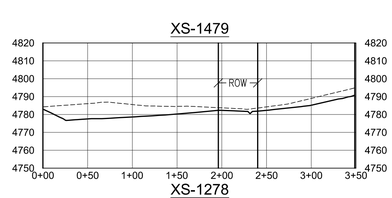


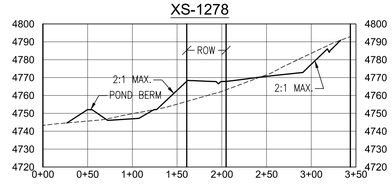


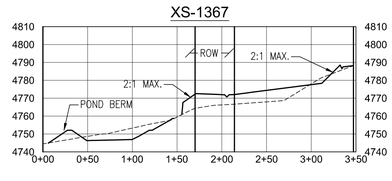


SECTIONS ALONG LOT LINES

SCALE: 1" = 80' HORIZONTAL
1" = 40' VERTICAL







ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

FOR REVIEW - NOT FOR CONSTRUCTION

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
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James C. Atkinson
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NO	REV. DATE	COMMENT	BY
1	8/18/17	REVISED PER CITY COMMENT ROUND 1, DATED 7/18/17	DLS

MAJOR SUBDIVISION
FINAL PLAN

Grading Plan Filing 2 - Road Cross Sections
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: SEE PLAN
CAD ID: 2.0grad-f2.dwg

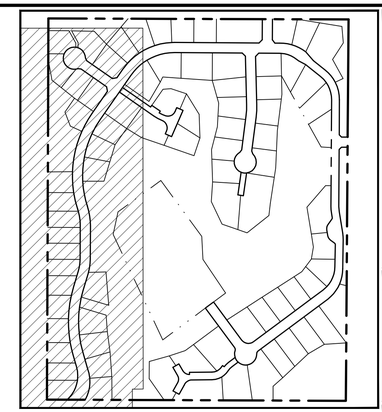
SHEET
C2.2

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET 3
6. HOUSES CONSTRUCTED ON LOTS 26-29 AND LOTS 55-72 SHALL HAVE SPRINKLER SYSTEMS INSTALLED. A 1" CUSTOMER WATER SERVICE LINE AND ¾" WATER METER WILL BE UTILIZED IN ACCORDANCE WITH UTE WATER CONSERVANCY DISTRICT STANDARDS & SPECIFICATIONS.
7. ALL WATER SERVICES SHALL HAVE A PRESSURE REGULATED YOKE INSTALLED BASED ON PRESSURE LIMITS AS DETERMINED IN THE HYDRAULIC ANALYSIS.

FILING NOTES

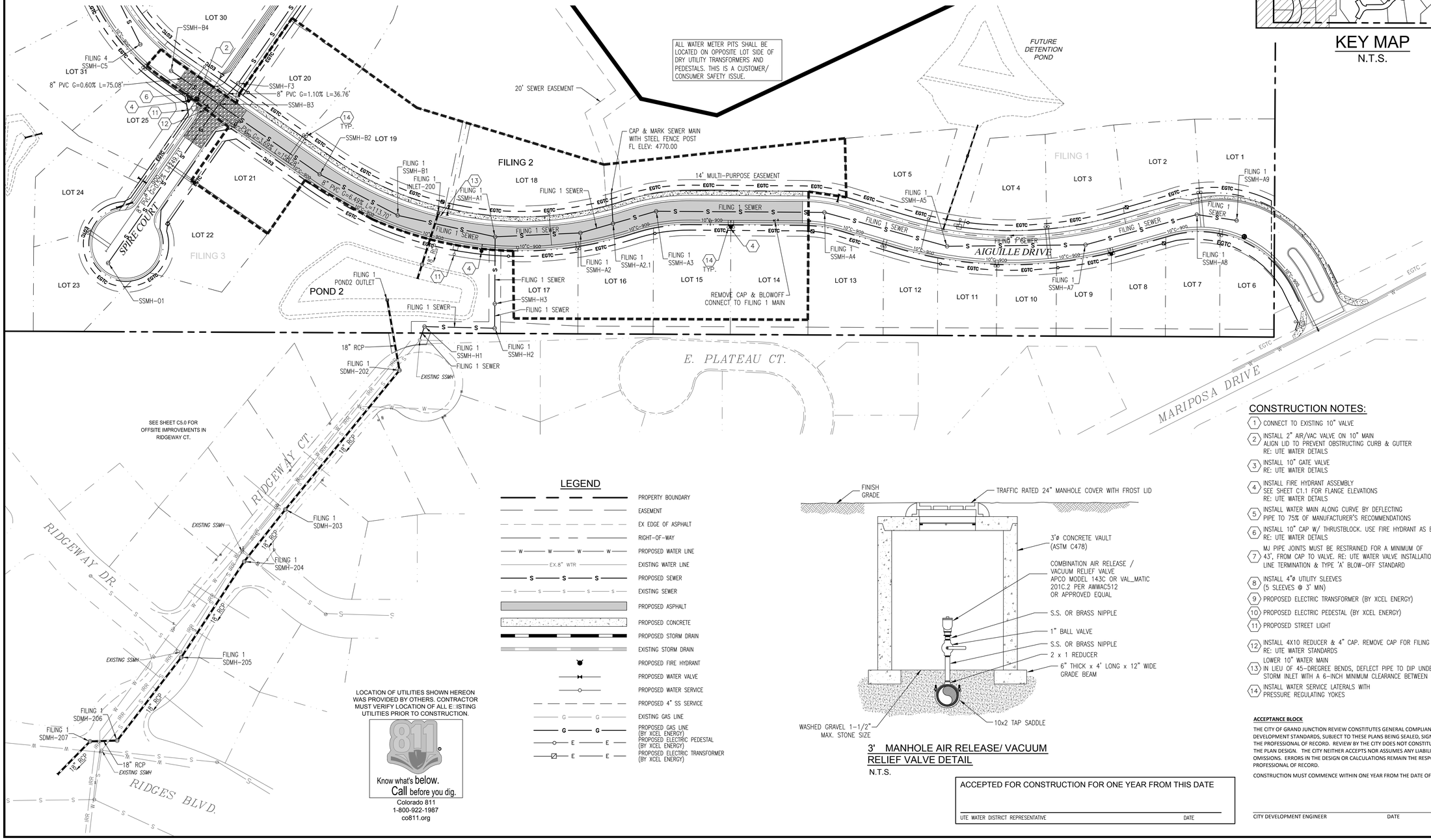
1. NO STORM DRAINS TO BE CONSTRUCTED AS PART OF FILING 2.
2. INSTALL SANITARY SEWER FROM STATION 13+00 TO MANHOLE B4 IN AIGUILLE DRIVE; INCLUDE MANHOLE F3 AS NOTED ON PLANS.
3. END WATER LINE CONSTRUCTION AT THE FIRE HYDRANT JUST NORTH OF THE INTERSECTION OF AIGUILLE DRIVE AND SPIRE COURT.
4. ASPHALT PAVEMENT TO END AT THE NORTH END OF LOT 21 FOR FILING 2.
5. INSTALL GRAVEL TURN-AROUND ON AIGUILLE DRIVE AND SPIRE COURT AS SHOWN ON THIS PLAN.



KEY MAP
N.T.S.

N

SCALE IN FEET
60 30 0 60 120
1" = 60'



CONSTRUCTION NOTES:

1. CONNECT TO EXISTING 10" VALVE
2. INSTALL 2" AIR/VAC VALVE ON 10" MAIN ALIGN LID TO PREVENT OBSTRUCTING CURB & GUTTER RE: UTE WATER DETAILS
3. INSTALL 10" GATE VALVE RE: UTE WATER DETAILS
4. INSTALL FIRE HYDRANT ASSEMBLY SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL WATER MAIN ALONG CURVE BY DEFLECTING PIPE TO 75% OF MANUFACTURER'S RECOMMENDATIONS
6. INSTALL 10" CAP W/ THRUSTBLOCK. USE FIRE HYDRANT AS BLOW-OFF. RE: UTE WATER DETAILS
7. MJ PIPE JOINTS MUST BE RESTRAINED FOR A MINIMUM OF 43', FROM CAP TO VALVE. RE: UTE WATER VALVE INSTALLATION, LINE TERMINATION & TYPE 'A' BLOW-OFF STANDARD
8. INSTALL 4"ø UTILITY SLEEVES (5 SLEEVES @ 3' MIN)
9. PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)
10. PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
11. PROPOSED STREET LIGHT
12. INSTALL 4X10 REDUCER & 4" CAP. REMOVE CAP FOR FILING 3 CONSTRUCTION. RE: UTE WATER STANDARDS
13. LOWER 10" WATER MAIN IN LIEU OF 45-DREGREE BENDS, DEFLECT PIPE TO DIP UNDER STORM INLET WITH A 6-INCH MINIMUM CLEARANCE BETWEEN PIPES.
14. INSTALL WATER SERVICE LATERALS WITH PRESSURE REGULATING YOKES

LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE
- EXISTING WATER LINE
- PROPOSED SEWER
- EXISTING SEWER
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER SERVICE
- PROPOSED 4" SS SERVICE
- EXISTING GAS LINE
- PROPOSED GAS LINE (BY XCEL ENERGY)
- PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
- PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)

3' MANHOLE AIR RELEASE/ VACUUM RELIEF VALVE DETAIL
N.T.S.

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL E ISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.
Colorado 811
1-800-922-1987
co811.org

ACCEPTED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE

UTE WATER DISTRICT REPRESENTATIVE DATE

CITY DEVELOPMENT ENGINEER DATE

ACCEPTANCE BLOCK

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	REVISED PER CITY COMMENT ROUND 1, DATED 7/18/17	BY
1	8/18/17	COMMENT	DLS

Composite Site Plan - Utility and Water Plan

Pinnacle Ridge Subdivision Filing 2

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: 1"= 60'
CAD ID: 3.0utility-f2.dwg

SHEET
C3.0

FILING NOTES

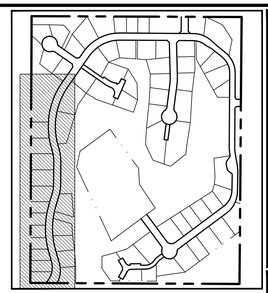
1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
2. INSTALL SANITARY SEWER FROM SSMH-A9 TO EXISTING MAN-HOLE IN RIDGEWAY COURT AS SHOWN INCLUDING LINE TO MAN-HOLE B-1.
3. END WATER LINE CONSTRUCTION AT THE MIDDLE OF LOT 14 AS SHOWN.
4. ASPHALT PAVEMENT TO END AT THE NORTH END OF LOT 13 FOR FILING 1.
5. ROAD ALIGNMENT TO BE GRADED AND BASE COURSE INSTALLED TO THE NORTH END OF LOTS 20 & 21.

CONSTRUCTION NOTES:

1. INSTALL STOP SIGN & STREET SIGN RE: MUTCD
2. CONSTRUCT HANDICAPPED RAMP RE: CITY OF GJ DETAILS
3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL 6" STANDARD CURB & GUTTER W/ATTACHED SIDEWALK – 87 LF
6. INSTALL 6" DRIVE-OVER CURB & GUTTER W/ATTACHED SIDEWALK – 158 LF
7. INSTALL 6" STANDARD CURB & GUTTER 74 LF
8. SAWCUT & REMOVE ±106 LF EXISTING CONCRETE CURB USE CARE TO ENSURE PAVEMENT EDGE PROVIDES A CLEAN JOIN FOR INSTALL OF NEW CONCRETE VALLEY PAN
9. 15' SIDEWALK TRANSITION FROM ATTACHED TO DETACHED

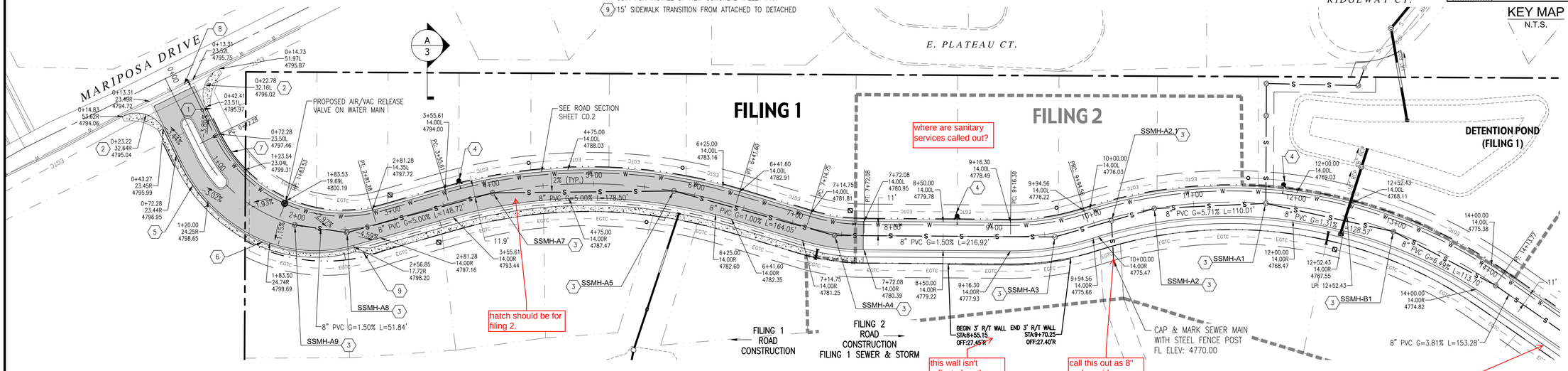
GENERAL NOTES:

1. REFERENCE SHEET CO.1 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET CO.2 FOR STREET SECTIONS
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION



ROAD AND SAN. SEWER PLAN - AIGUILLE DRIVE

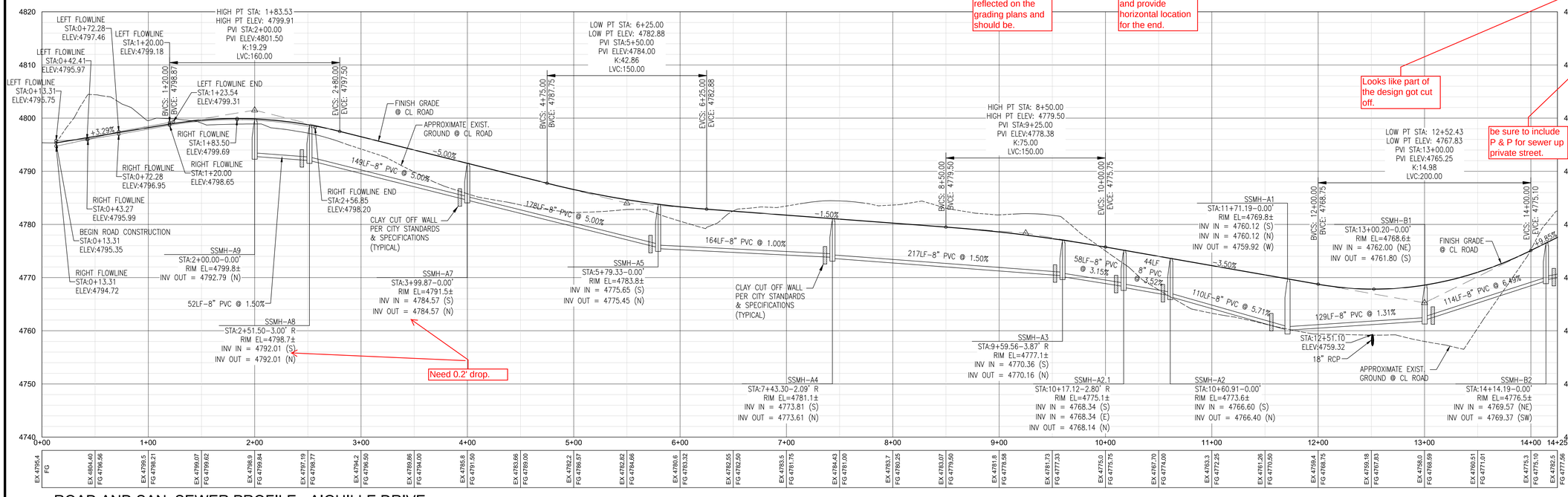
SCALE: 1" = 50'



ROAD AND SAN. SEWER PROFILE - AIGUILLE DRIVE

HORIZONTAL SCALE: 1" = 50'

VERTICAL SCALE: 1" = 5'



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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/15/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

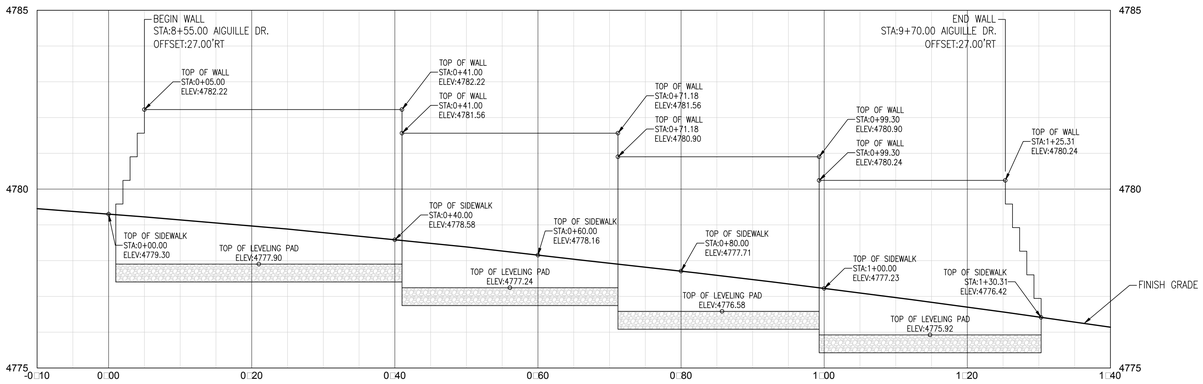
Road & Sanitary Sewer Plan & Profile

Aiguille Drive
Pinnacle Ridge Subdivision Filing 1

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/02/17**
SCALE: **1" = 50'**
CAD ID: **4.0ss-road-f1.dwg**

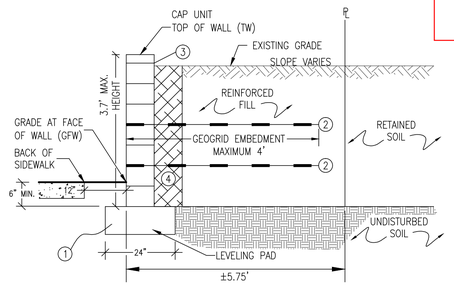
~SHEET~
C4.0



RETAINING WALL PROFILE

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 4'

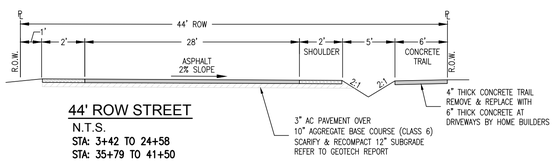
where does this retaining wall go. Didn't find it callout out in plan view anywhere.



1. LEVELING PAD SHALL BE A MINIMUM OF 6" CONCRETE OR CRUSHED ROCK
2. TENSAR STRUCTURAL GEOGRID
3. BLOCKS SHALL BE MESA STANDARD UNITS OR APPROVED EQUAL
4. 12" DRAIN ROCK

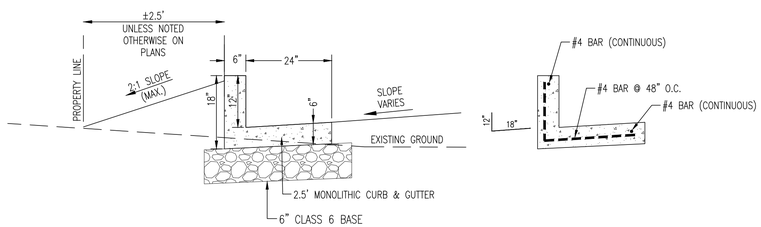
BLOCK WALL DETAIL

N.T.S.



44' ROW STREET

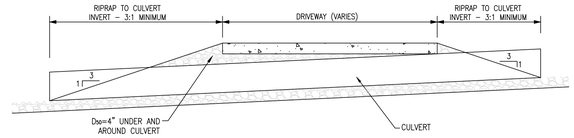
N.T.S.
STA: 3+42 TO 24+58
STA: 35+79 TO 41+50



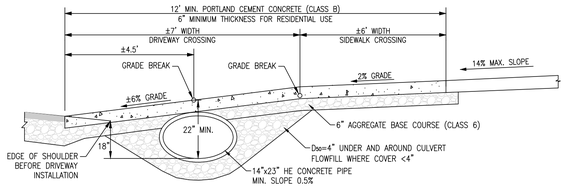
WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

CONCRETE CURB □ GUTTER DETAIL

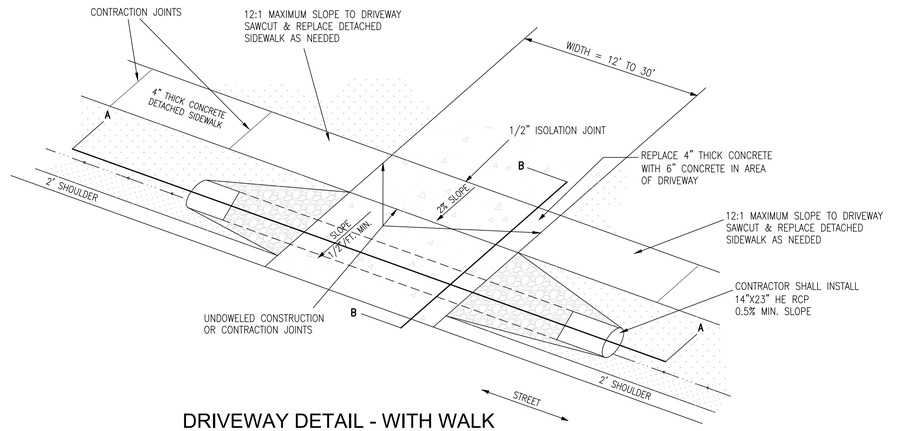
N.T.S.



SECTION A-A



SECTION B-B



DRIVEWAY DETAIL - WITH WALK

N.T.S.

NOTE:
CARE SHALL BE TAKEN TO REMOVE EXISTING ROCK LINING AND GEOTEXTILE FABRIC PRIOR TO NEW CULVERT INSTALLATION. FABRIC AND ROCK TO BE CAREFULLY REPLACED AROUND NEW CULVERT.

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COLORADO LICENSE No. 18828

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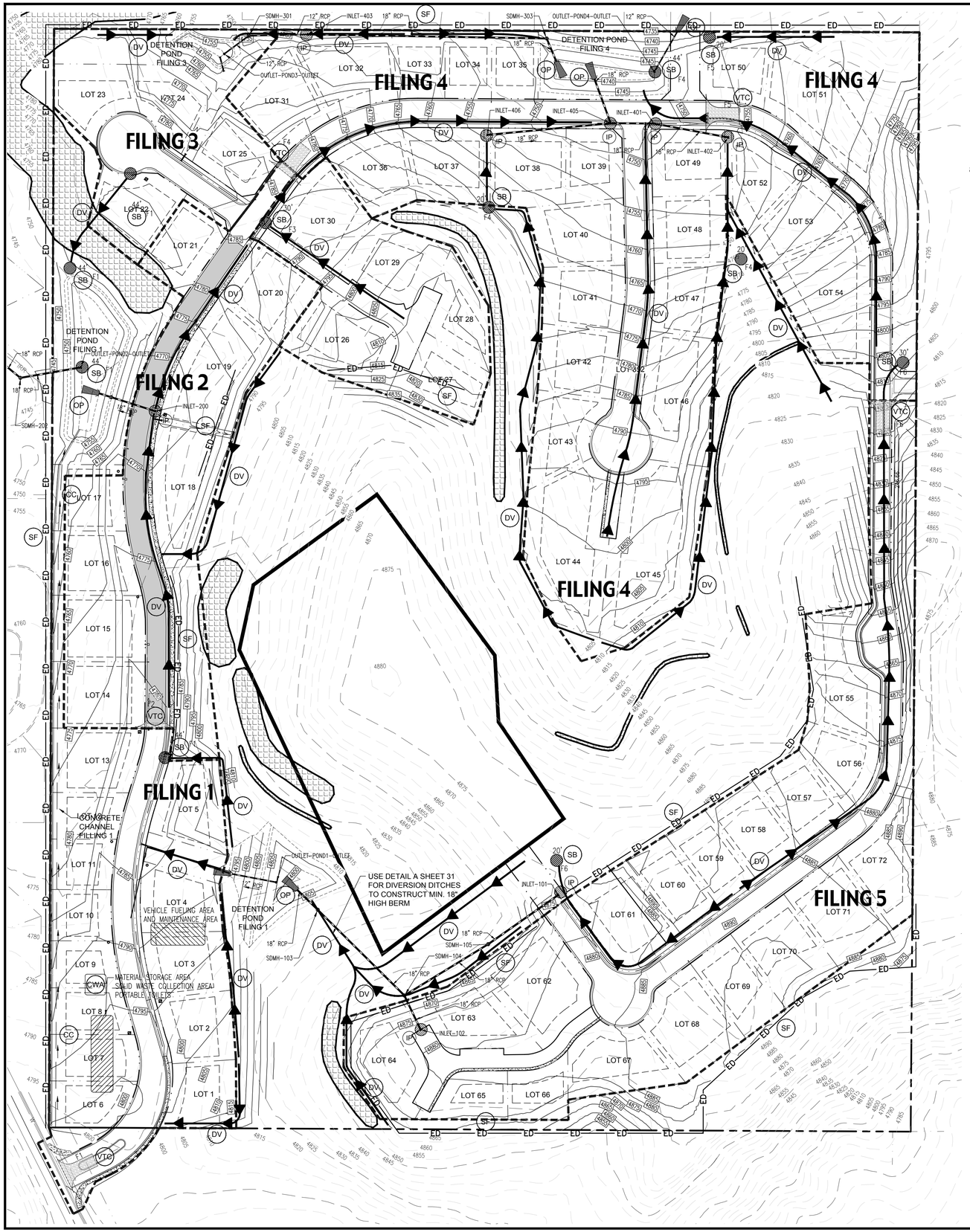
MAJOR SUBDIVISION FINAL PLAN

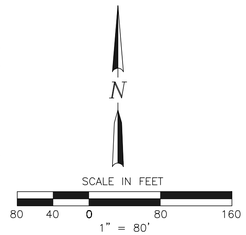
REV.	DATE	COMMENT	BY
1	8/15/17	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017	DLS

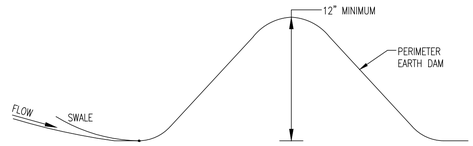
Retaining Wall Profile & Road Details
Pinnacle Ridge Subdivision Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/02/17**
SCALE: **1" = 50'**
CAD ID: **4.0ss-road-f2.dwg**

~SHEET~
C4.1







EARTH DAM SECTION
SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
EARTHEN DAM	ED	ED
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
SEDIMENT BASIN	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

GRADING NOTE:

FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

GENERAL NOTES:

1. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL REQUIRED EASEMENTS, RIGHT AND/OR RIGHTS-OF-WAY PURSUANT TO THE DISCHARGE FROM THE SEDIMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS AND GRADING OR OTHER WORK TO BE PERFORMED ON ADJACENT OR DOWNSTREAM PROPERTIES AFFECTED BY THE PLAN.
2. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1); FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE, THE IN-PLACE SEDIMENT CONTROL MEASURES WILL BE MAINTAINED ON A CONTINUING BASIS UNTIL THE SITE IS PERMANENTLY STABILIZED AND ALL PERMIT REQUIREMENTS ARE MET.
3. REFER TO CITY OF GRAND JUNCTION STANDARD DRAWINGS AND SPECIFICATIONS.
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE 5-2-1 DRAINAGE AUTHORITY. CONTACT MARK BARSLUND 970-201-1362

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

FOR REVIEW - NOT FOR CONSTRUCTION

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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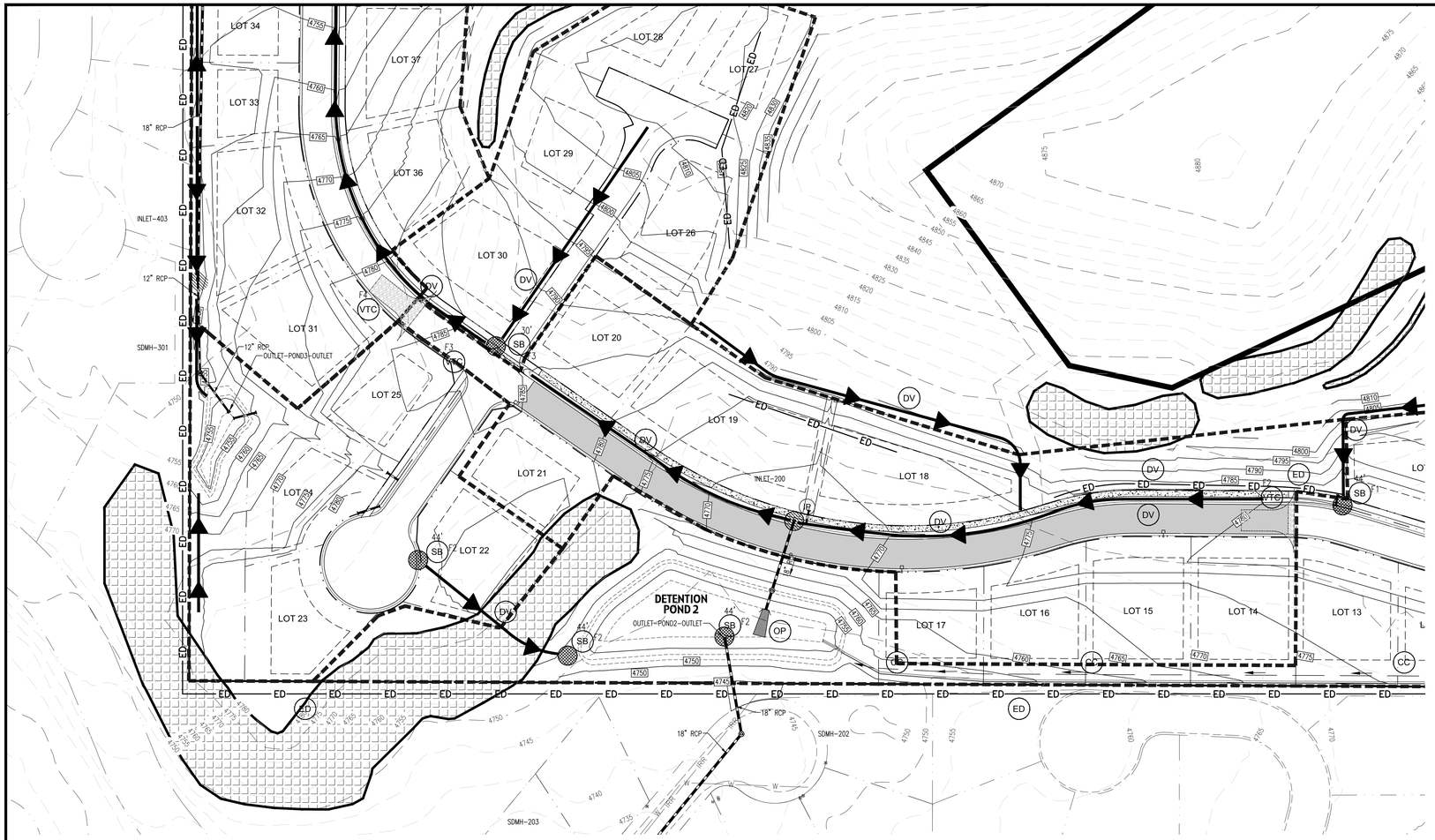
MAJOR SUBDIVISION
FINAL PLAN

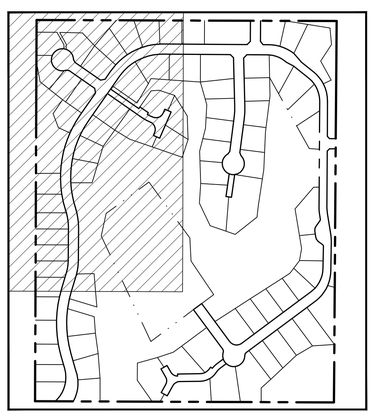
REV. DATE	COMMENT	BY

Overall Construction Stormwater Management Plan
Pinnacle Ridge Subdivison
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE:
CAD ID: 6.0swm-f2.dwg

SHEET:
C6.0





KEY MAP
N.T.S.

GENERAL NOTES:

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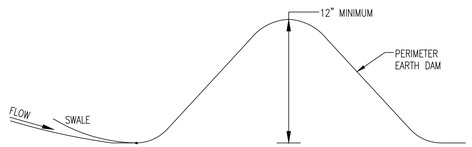
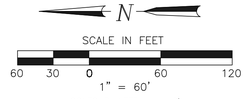


EARTH DAM SECTION
SCALE: N.T.S.



TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	DV
STORM DRAIN INLET PROTECTION	IP	IP
OUTLET PROTECTION	OP	OP
EARTHEN DAM	ED	ED
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
SEDIMENT BASIN	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

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CITY DEVELOPMENT ENGINEER DATE

FOR REVIEW

MAJOR SUBDIVISION
FINAL PLAN

REV. DATE	COMMENT	BY

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• PROJECT MANAGERS
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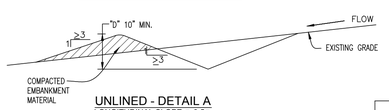
Construction Stormwater Management Plan
Pinnacle Ridge Subdivison
Filing 2
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: SEE PLAN
CAD ID: 6.0swm-f2.dwg

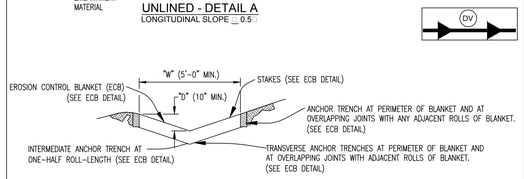
SHEET
C6.1

DIVERSION DITCH DETAIL A

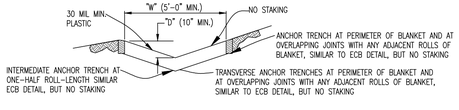
DV



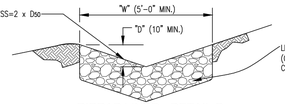
UNLINED - DETAIL A
LONGITUDINAL SLOPE ≤ 0.5%



EROSION CONTROL BLANKET (ECB) LINED - DETAIL B
LONGITUDINAL SLOPE 0.5% TO 3%



PLASTIC LINED - DETAIL C
LONGITUDINAL SLOPE 3% TO 33%



RIPRAP LINED - DETAIL D
LONGITUDINAL SLOPE 3% TO 33%

DIVERSION DITCH INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF DIVERSION DITCH.
   - TYPE OF DITCH (UNLINED, ECB PLASTIC LINED OR RIPRAP LINED).
   - LENGTH OF EACH TYPE OF DITCH.
   - DEPTH, "D", AND WIDTH, "W" DIMENSIONS.
   - FOR ECB LINED DITCH, EROSION CONTROL BLANKET TYPE (SEE ECB DETAIL).
   - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, "D 50 ".
2. SEE DRAINAGE PLANS FOR DETAILS OF ANY PERMANENT CONVEYANCE FACULTIES OR DIVERSION DITCHES EXCEEDING A 2 YEAR FLOOD 10 CFS.
3. DIVERSION DITCHES INDICATED ON INITIAL SWMP PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES..
4. FOR ECB LINED DITCHES, INSTALLATION OF EROSION CONTROL BLANKET SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.
5. IN LOCATIONS WHERE CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION DITCH, THE PERMITTEES SHALL INSTALL A TEMPORARY CULVERT WITH A MINUM DIAMETER OF 12-INCHES.

DIVERSION DITCH MAINTENANCE NOTES

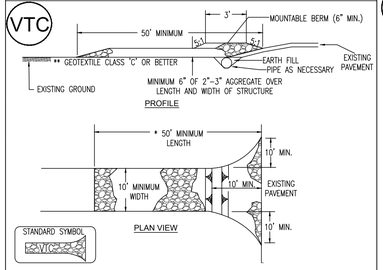
1. THE SWMP MANAGER SHALL INSPECT DIVERSION DITCHES WEEKLY AND DURING AND AFTER ANY STORM. MAKE REPAIRS AS NECESSARY.
2. DIVERSION DITCHES ARE TO REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION, OR IF APPROVED BY LOCAL JURISDICTION MAY BE LEFT IN PLACE.
3. IF DIVERSION DITCHES ARE REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, DRILL SEEDED, HAY CRIMPED MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

DETAIL BASED ON DETAILS PROVIDED BY DOUGLAS COUNTY

Urban Drainage and Flood Control District Drainage Criteria Manual (V.3)	Figure C5-3 DIVERSION DITCH AND DIKE

STABILIZED CONSTRUCTION ENTRANCE

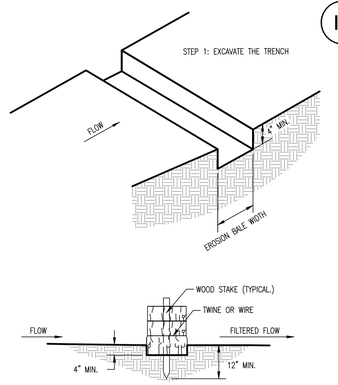
VTC



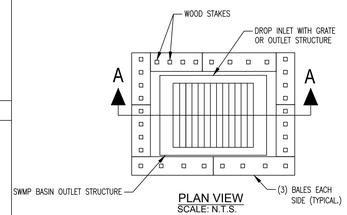
Construction Specification

1. Length – minimum of 50' (*30' for single residence lot).
2. Width – 10' minimum, should be flared at the existing road to provide a tuning radius
3. Geotextile fabric (filter cloth) shall placed over the exiting around prior to placing stone. **This plan approval authority may not require single family residence to use geotextile.
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water – all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location – A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

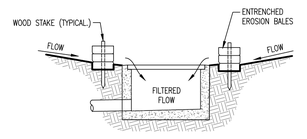
IP



EROSION BALE TRENCHING AND STAKING
SCALE: N.T.S.



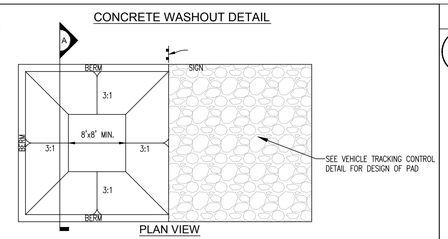
PLAN VIEW
SCALE: N.T.S.



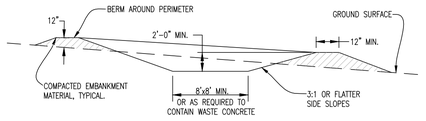
SECTION A-A
EROSION FILTER AT DROP INLET
SCALE: N.T.S.

CONCRETE WASHOUT DETAIL

CWA



PLAN VIEW



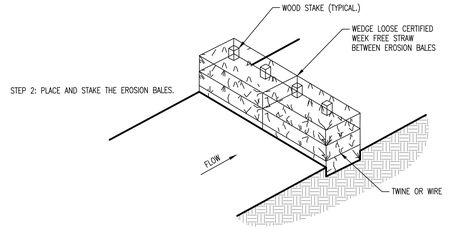
SECTION A

CONCRETE WASHOUT AREA INSTALLATION NOTES

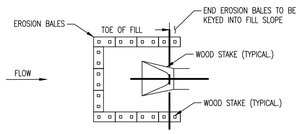
1. SEE PLAN VIEW FOR LOCATIONS OF CONCRETE WASHOUT AREA
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL IS REQUIRED AT THE ACCESS POINT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION

CONCRETE WASHOUT AREA MAINTENANCE NOTES

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, DRILL SEED AND CRIMP MULCH OR OTHERWISE STABILIZE IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
4. INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.



EROSION BALE BMP
SCALE: N.T.S.



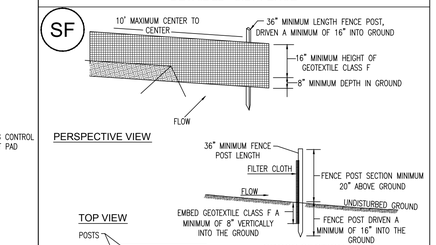
PLAN VIEW
EROSION BALE CULVERT INLET PROTECTION
SCALE: N.T.S.

NOTES

1. STAKES SHALL BE WOOD AND SHALL BE 2" X 2" NOMINAL.
2. EROSION BALES SHALL BE 18" X 18" X 36".
3. EROSION BALES SHALL BE ENTRENCHED 4 IN. MINIMUM INTO THE SOIL TIGHTLY ABUTTED WITH NO GAPS, STAKED, AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERIMETER.

DETAIL 22 - SILT FENCE

SF



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength:	50 lbs./in. (min.)	Test: MSMT 509
Tensile Modulus:	20 lbs./in. (min.)	Test: MSMT 509
Flow Rate	0.3 gal. ft. / minute (max.)	Test MSMT 322
Efficiency	75% (min.)	Test: MSMT 322

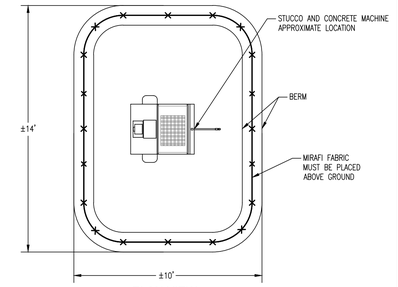
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

SILT FENCE

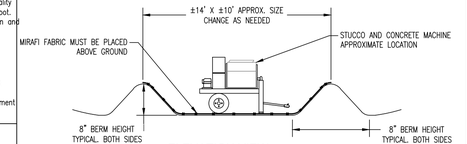
Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

NOTE:
In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.



PLAN VIEW
SCALE: N.T.S.



ELEVATION VIEW
SCALE: N.T.S.

STUCCO □ CONCRETE MACHINE BMP
SCALE N.T.S.

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FOR REVIEW

MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY

Construction Stormwater Management Plan Details

Pinnacle Ridge Subdivison Filing 2

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE:
CAD ID: 6.0swm-f2.dwg

SHEET□
C6.2

Final Plan of Subdivision

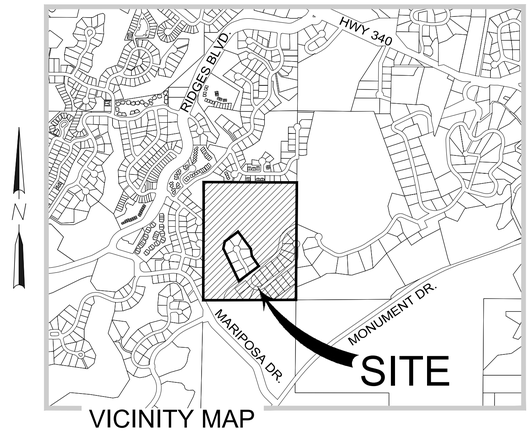
Pinnacle Ridge Subdivision

Filing 2

Grand Junction, Colorado

LEGEND

- 4560 — EXISTING CONTOUR
- PROPERTY BOUNDARY
- OLD PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- W W W — PROPOSED WATER LINE
- W W W — EXISTING WATER LINE
- X X X — EXISTING FENCE
- EGTC — PROPOSED DRY UTILITIES (BY OTHERS)
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- 4550.00 — LOT CORNER SPOT ELEVATION
- G 4550.00 — PROPOSED SWALE/BERM ELEVATION
- FL 4550.00 — PROPOSED FL CURB/V-PAN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER METER
- 4550 — EXISTING CONTOUR LABEL
- 4550.00 — PROPOSED CONTOUR LABEL



VICINITY MAP

SHEET NUMBER	SHEET TITLE
C0.0	COVER
C0.1	PROJECT NOTES
C0.2	OVERALL SITE PLAN AND FILING PLAN
C1.0	COMPOSITE SITE PLAN - LAYOUT AND GEOMETRY PLAN
C1.1	COMPOSITE SITE PLAN - SIGNAGE □ LIGHTING PLAN
C2.0 - C2.2	COMPOSITE SITE PLAN - GRADING PLAN
C3.0	COMPOSITE SITE PLAN - OVERALL UTILITY AND WATER PLAN
C4.0	ROAD AND SEWER PLAN AND PROFILE - AIGUILLE DRIVE
C6.0 - 6.2	CONSTRUCTION STORM WATER MANAGEMENT PLAN

ABBREVIATION LEGEND

&	AND	MCSM	MESA COUNTY SURVEY MONUMENT
℄	CENTERLINE	MFG'S	MANUFACTURER'S
ø	DIAMETER	M.P.E.	MULTI-PURPOSE EASEMENT
'	FEET	MPH	MILES PER HOUR
"	INCHES	NE COR	NORTHEAST CORNER
±	PLUS OR MINUS	N&S&E	NORTH AND SOUTH AND EAST
APPROX.	APPROXIMATELY	NO.	NUMBER
BRL	BUILDING RESTRICTION LINE	N.T.S.	NOT TO SCALE
BVCS	BEGIN VERTICAL CURVE STATION	PROP.	PROPOSED
BVCE	BEGIN VERTICAL CURVE ELEVATION	PRV	PRESSURE REDUCING VALVE
CB	CATCH BASIN	PSI	POUNDS PER SQUARE INCH
CL. III	CLASS 3	PVC	POLYVINYL CHLORIDE
CMP	CORRUGATED METAL PIPE	PVI	POINT OF VERTICAL INTERSECTION
CR	CURB RETURN	PVMT	PAVEMENT
CT.	COURT	O.C. E.W.	ON CENTER EACH WAY
DR.	DRIVE	RCP	REINFORCED CONCRETE PIPE
EL.	ELEVATION	RD	ROAD
ELEV	ELEVATION	RET. WALL	RETAINING WALL
EX.	EXISTING	R.O.W.	RIGHT-OF-WAY
EXIST.	EXISTING	RT	RIGHT
EVCS	END VERTICAL CURVE STATION	SCH	SCHEDULE
EVCE	END VERTICAL CURVE ELEVATION	SD	STORM DRAIN
FL	FLOWLINE	SEC	SECTION
FH	FIRE HYDRANT	SF	SQUARE FEET
FT	FEET	SQ. FT.	SQUARE FEET
GPM	GALLONS PER MINUTE	SS	SANITARY SEWER
GV	GAS VALVE	ST.	STREET
G.V.A.L.C.S.	GRAND VALLEY ALIQUOT LOCAL COORDINATE SYSTEM	STA	STATION
		THRU	THROUGH
HGL	HYDRAULIC GRADE LINE	TYP.	TYPICAL
HI PT	HIGH POINT	TW	TOP OF WALL
HP	HORSE POWER	U.W.C.D.	UTE WATER CONSERVANCY DISTRICT
INV	INVERT	VC	VERTICAL CURVE
LT	LEFT	VCP	VITRIFIED CLAY PIPE
MAX	MAXIMUM	W/	WITH
MIN	MINIMUM	WM	WATER METER
MH	MANHOLE	WV	WATER VALVE

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21. TOWNSHIP 1 SOUTH. RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM. LOTS 1 – 9. BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK 8 AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = RSF-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'
   REAR = 25'
   SIDE = 7'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

UTILITY PROVIDERS INFORMATION

UTILITY	*PROVIDER*	*PHONE NUMBER*
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL E: ISTING UTILITIES PRIOR TO CONSTRUCTION.

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ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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MAJOR SUBDIVISION
FINAL PLAN

REV. DATE	COMMENT	BY
1 8/18/17	REVISED PER CITY COMMENT ROUND 1, DATED 7/18/17	DLS

Cover
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE:
CAD ID: 0.0cover-f2.dwg

SHEET
C0.0

LOCAL CONTACT INFORMATION
GRAND JUNCTION DEVELOPMENT INSPECTOR: MARK BARSLUND
970-201-1362

GENERAL NOTES:

1. THESE GENERAL NOTES SHALL BE APPLICABLE TO ALL SHEETS WITHIN THIS SET OF DRAWINGS.
2. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE GOVERNING AGENCY. CONTRACTOR MUST CONTACT THE APPROPRIATE AGENCY PRIOR TO CONSTRUCTION IN THE RIGHT-OF-WAY.
3. PLANNING PERMIT APPROVAL MUST BE OBTAINED BY INDIVIDUAL LOT OWNERS PRIOR TO CONSTRUCTION. THE LOT OWNER MUST SUBMIT A PROPOSED DRAINAGE PLAN OF EACH SITE TO THE GOVERNING AGENCY FOR REVIEW.
4. EXISTING WATER, SANITARY, AND STORM SEWER LINES ARE SHOWN BASED ON BEST AVAILABLE INFORMATION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS SPECIFICALLY AT CONNECTION POINTS AND AT POTENTIAL POINTS OF CONFLICT. ALL INFORMATION SHALL BE SUPPLIED TO THE ENGINEER PRIOR TO CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR:
   (A) CONTACTING THE APPROPRIATE AGENCY TO ARRANGE A PRE-CONSTRUCTION MEETING AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
   (B) OBTAINING ALL PERMITS FOR STREET CUTS, UTILITIES CONSTRUCTION AND GRADING. THE COST OF ALL PERMITS SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S BID.
   (C) COORDINATING WITH ALL UTILITY COMPANIES INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. ADVANCE COORDINATION BY THE CONTRACTOR TO ALL UTILITY COMPANIES INVOLVED SHALL BE REQUIRED FOR ANY SERVICE INTERRUPTIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER, PROJECT MANAGER AND THE UTILITY COMPANY 48 HOURS PRIOR TO START OF CONSTRUCTION. NO UTILITY TAPS SHALL BE MADE WITHOUT WRITTEN AUTHORIZATION BY THE UTILITY COMPANY AND THE CITY.
   (D) VERIFICATION OF ALL OTHER UNDERGROUND FACILITIES WHICH MAY BE AFFECTED BY THIS PROJECT AND REPAIR THEREOF IN CASE OF DAMAGE.
   (E) CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO OBTAIN TEMPORARY POWER AND TELEPHONE SERVICE DURING CONSTRUCTION. ALL COST FOR TEMPORARY SERVICES SHALL BE THE CONTRACTORS RESPONSIBILITY.
   (F) RESTORATION OF DISTURBED STREET PAVEMENT AS REQUIRED BY THE CITY AND THE STATE'S DEPARTMENT OF TRANSPORTATION.
   (G) ALL PROJECT SAFETY INCLUDING, BUT NOT LIMITED TO, TRENCH EXCAVATION AND SHORINGS, TRAFFIC CONTROL, AND SECURITY.
   (H) COORDINATING ALL WORK AND INSPECTIONS AS REQUIRED BY THE CITY OR THE STATE.
   (I) OBTAINING NECESSARY PERMITS FROM THE DEPARTMENT OF TRANSPORTATION FOR ALL WORK IN AND ADJACENT TO STATE RIGHT-OF-WAY.
   (J) RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE. AS-BUILTS SHALL INCLUDE UNDERGROUND UTILITIES AS WELL AS ANY FIELD MODIFICATIONS OF THE PLANS.
   (K) KEEPING ADJACENT STREETS FREE AND CLEAN OF ALL DEBRIS AND DIRT FROM THE JOB SITE.
   (L) THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED AT THE JOB SITE AT ALL TIMES. EACH SUBCONTRACTOR (INCLUDING THE SURVEYOR) SHALL HAVE A SIGNED COPY OF THE PLANS AND THE APPROPRIATE STANDARDS AND SPECIFICATIONS IN HIS POSSESSION AT ALL TIMES WHEN IMPROVEMENTS ARE BEING INSTALLED.
   (M) THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR COMPLETION OF INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED BY NOTE TO BE "PROVIDED," "INSTALLED" OR "CONSTRUCTED" UNLESS SPECIFICALLY NOTED OTHERWISE.
   (N) CONTRACTOR WILL HAVE A COPY OF APPROVED SOILS REPORTS FOR PAVEMENT DESIGN AND COMPACTION REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL RECOMMENDATIONS CONTAINED WITHIN THE SOILS REPORT.
   (O) VERIFYING THE ACCURACY OF THE VERTICAL BENCHMARK INFORMATION. CONTRACTOR SHALL USE BENCHMARKS AND DATUMS SHOWN HEREON TO SET PROJECT BENCHMARK(S), BY RUNNING A LEVEL LOOP BETWEEN AT LEAST TWO BENCHMARKS, AND SHALL PROVIDE SURVEY NOTES OF SUCH TO PROJECT ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
6. IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
7. TWO WORKING DAYS BEFORE YOU DIG, GRADE, OR EXCAVATE, CALL THE APPROPRIATE UTILITY NOTIFICATION CENTER FOR THE MARKING OF MEMBER UNDERGROUND UTILITIES. THE UTILITIES SHOWN ON THESE PLANS ARE PLOTTED BASED ON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION, AND REPAIR OF ANY EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. ANY UTILITY DAMAGED BY CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
8. THIS PLAN WAS PREPARED BASED ON SURVEY INFORMATION PROVIDED BY A LICENSED SURVEYOR. VORTEX ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR ERRORS DUE TO INCOMPLETE OR INACCURATE SURVEY INFORMATION.
9. SUBGRADE DENSITY SHALL BE TESTED BY A PRIVATE SOILS TESTING FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING BASE COURSE OR CONCRETE. BASE COURSE DENSITY SHALL ALSO BE TESTED BY THE PRIVATE GEOTECHNICAL FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING PAVEMENT.
10. THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM ALL UTILITY COMPANIES PRIOR TO ANY DEMOLITION WORK OR DISCONNECTION OF ANY SERVICE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANIES.
2. ALL UTILITIES INCLUDING STORM SEWER, SANITARY SEWER AND WATER MAINS SHALL BE COMPLETELY REMOVED FROM THE GROUND UNLESS OTHERWISE SPECIFIED. NO EXISTING UTILITY, STRUCTURES OR UNDERGROUND IMPROVEMENT SHALL BE ABANDONED IN PLACE WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER, OWNER AND GOVERNING AGENCY.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES WHICH ARE TO REMAIN IN SERVICE. INCLUDING BUT NOT LIMITED TO GAS, ELECTRIC, CABLE AND TELEPHONE SERVICES.
4. ALL STRUCTURE INCLUDING BASEMENT WALLS AND FLOOR SLABS SHALL BE COMPLETELY REMOVED FROM THE SITE.
5. ALL DEMOLITION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS INCLUDING BUT NOT LIMITED TO HAZARDOUS MATERIALS, DISPOSAL, HOURS OF OPERATION.
6. ALL EROSION CONTROL MEASURES DESIGNED FOR THE SITE PERIMETER OR TO PROTECT EXISTING IMPROVEMENTS SHALL BE IN PLACE PRIOR TO THE START OF ANY DEMOLITION ACTIVITIES.
7. THE CONTRACTOR SHALL OBTAIN AND REVIEW THE ENVIRONMENTAL STUDIES PROVIDED BY THE OWNER AND TAKE ALL NECESSARY PRECAUTIONS FOR ENVIRONMENTAL SAFETY DURING DEMOLITION ACTIVITIES. IT SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE EXISTING STRUCTURES FOR ANY OTHER CONDITIONS WHICH MAY AFFECT THE DEMOLITION PROCEDURES.
8. ANY CONDITIONS WHICH MAY BE UNCOVERED DURING THE PROCESS OF DEMOLITION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER IMMEDIATELY. ADDITIONAL EXPENSES INCURRED BY UNFORESEEN CONDITIONS SHALL BE APPROVED BY THE OWNER PRIOR TO THE ADDITIONAL WORK.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE PROPERTY FOR THE TYPE AND QUANTITY OF DEMOLITION REQUIRED, PRIOR TO SUBMISSION OF A BID.
10. THE CONTRACTOR SHALL HAVE WATER ON SITE FOR DUST ABATEMENT AT ALL TIMES DURING DEMOLITION ACTIVITIES.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF ALL DEBRIS. BURNING ON SITE SHALL NOT BE PERMITTED. NO DEBRIS INCLUDING CONCRETE OR ASPHALT MAY BE PLACED IN ANY FILL AREA.
12. ANY DAMAGE TO PUBLIC UTILITIES OR ADJACENT PROPERTIES AS A RESULT OF THE DEMOLITION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. REPAIRS SHALL BE MADE IN A TIMELY MANNER TO THE SATISFACTION OF THE DAMAGED PARTY.
13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH DOCUMENTATION OF THE CONDITION OF EXISTING IMPROVEMENTS TO REMAIN IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS NOT DOCUMENTED AS PRE-EXISTING. DOCUMENTATION SHALL BE PROVIDED PRIOR TO COMMENCEMENT OF WORK.
14. ALL EXISTING UTILITY SERVICES SHALL BE COMPLETELY REMOVED FROM THE SITE. SERVICE SHALL BE CUT AND PLUGGED AT THE PROPERTY LINE IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS. THE DEMOLITION CONTRACTOR SHALL CLEARLY MARK ALL STUBS AT THE PROPERTY LINE WITH A 4 X 4 WOOD POST (MINIMUM 4' ABOVE GRADE, 4' BELOW GRADE) MARKED WITH THE SERVICE TYPE.
15. ALL EXISTING WELLS SHALL BE CAPPED AND ABANDONED IN ACCORDANCE WITH ALL STATE REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL REQUIRED PROCEDURES, FILE ALL REQUIRED FORMS, APPLICATIONS AND REPORTS, AND OBTAIN ALL REQUIRED APPROVALS FROM THE STATE ENGINEER'S OFFICE.
16. DURING THE COURSE OF DEMOLITION, CONTRACTOR SHALL PROVIDE SECURITY FENCING AND OTHER PRECAUTIONARY SAFETY MEASURE AS NECESSARY.

EROSION CONTROL NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL FACILITIES SHOWN.
3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORESEEN PROBLEMS OR IF THE PLAN DOES NOT FUNCTION AS INTENDED. A JURISDICTION REPRESENTATIVE MAY REQUIRE ADDITIONAL CONTROL DEVICES UPON INSPECTION OF PROPOSED FACILITIES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED, STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM TRAFFIC FROM THE SITE.
5. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE PAVED, SEEDED WITH NATIVE VEGETATION OR LANDSCAPED. REFER TO LANDSCAPE PLANS FOR SEED MIX AND PLANTING SPECIFICATIONS.
6. EROSION CONTROL STRUCTURES BELOW SODDED AREAS MAY BE REMOVED ONCE SOD AND FINAL LANDSCAPING IS IN PLACE. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION. EROSION CONTROL IN PROPOSED PAVED AREAS SHALL REMAIN IN PLACE UNTIL PAVEMENT IS COMPLETE.
7. THIS PLAN IS ONLY TO BE USED FOR INSTALLATION OF EROSION CONTROL FACILITIES. DO NOT USE THIS PLAN FOR GRADING OR STORM SEWER CONSTRUCTION.
8. CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLE WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES WILL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS, MOVED WHEN NECESSARY AND REMOVED WHEN THE SITE IS PAVED.
9. INLET PROTECTION DEVICES SHALL BE INSTALLED IMMEDIATELY UPON INDIVIDUAL INLET'S BECOMING FUNCTIONAL.
10. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH GRADING AND/OR UTILITY CONSTRUCTION SHALL OBTAIN A COPY OF THE STORM WATER MANAGEMENT PLAN (SWMP) AND ANY OTHER DOCUMENTATION REGARDING "STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY" AND BECOME FAMILIAR WITH THEIR CONTENTS.
11. THE TEMPORARY PARKING AND STORAGE AREA SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AREA, EQUIPMENT CLEANING AREA. EMPLOYEE BREAK AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
12. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, ETC.) SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT WITH STORM WATER DISCHARGES FROM THE SITE.
13. MAINTAIN ON THE SITE OR HAVE READILY AVAILABLE SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
14. FUGITIVE DUST BLOWING FROM THE SITE SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS ABSOLUTELY PROHIBITED.
15. NO RUBBISH, TRASH, GARBAGE, OR OTHER SUCH MATERIALS SHALL BE DISCHARGED INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
16. ALL MEASURES PRESENTED IN THE SWMP SHALL BE INITIATED AS SOON AS PRACTICABLE.
17. IF THE GRAVEL CONSTRUCTION ENTRANCES ARE NOT EFFECTIVE IN REMOVING THE MAJORITY OF DIRT OR MUD FROM THE TIRES OF THE CONSTRUCTION VEHICLES, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP AND THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.
18. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
19. IF SOIL STOCKPILING IS EMPLOYED ON THE SITE, SILT FENCES SHALL BE USED TO HELP CONTAIN THE SEDIMENT.
20. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
21. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN 30 DAYS AFTER FINAL STABILIZATION. FINAL STABILIZATION HAS OCCURRED WHEN ALL SOIL DISTURBING ACTIVITIES ARE COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OF THE COVER FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES HAS BEEN EMPLOYED.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) DUE TO GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT.
23. ALL OFF-SITE CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR STORM DRAIN CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.

EROSION CONTROL MAINTENANCE NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL MEASURES CONTAINED IN THIS PLAN SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT, AND SHOULD BE CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:
3. STRAW BALE INLET PROTECTION DEVICES AND BARRIERS SHALL BE FIXED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR SHALL BE REPLACED IF THEY SHOW SIGNS OF DETERIORATION.
4. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, RE-SEEDED, AND WATERED AS NEEDED.
5. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-THIRD TO ONE-HALF THE HEIGHT OF THE SILT FENCE.
6. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
7. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
8. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES, SEDIMENT IN THE SEDIMENTATION BASINS SHALL NOT EXCEED THE SEDIMENTATION CLEANOUT LEVEL.
9. IF THE STONES IN THE GRAVEL CURB INLET SEDIMENT FILTERS BECOME CLOGGED WITH SEDIMENT, THE STONES MUST BE PULLED AWAY, CLEANED AND REPLACED.
10. THE EMBANKMENT OF THE SEDIMENTATION BASIN SHALL BE CHECKED REGULARLY TO INSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
11. THE TEMPORARY SEDIMENT TRAP AND SEDIMENTATION BASIN STRUCTURES SHALL BE CHECKED REGULARLY TO INSURE THAT THEY ARE STRUCTURALLY SOUND AND HAVE NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. SEDIMENT DEPOSITION SHALL BE REMOVED PERIODICALLY TO ENSURE FULL VOLUME IS AVAILABLE IN THE POND.

GRADING NOTES:

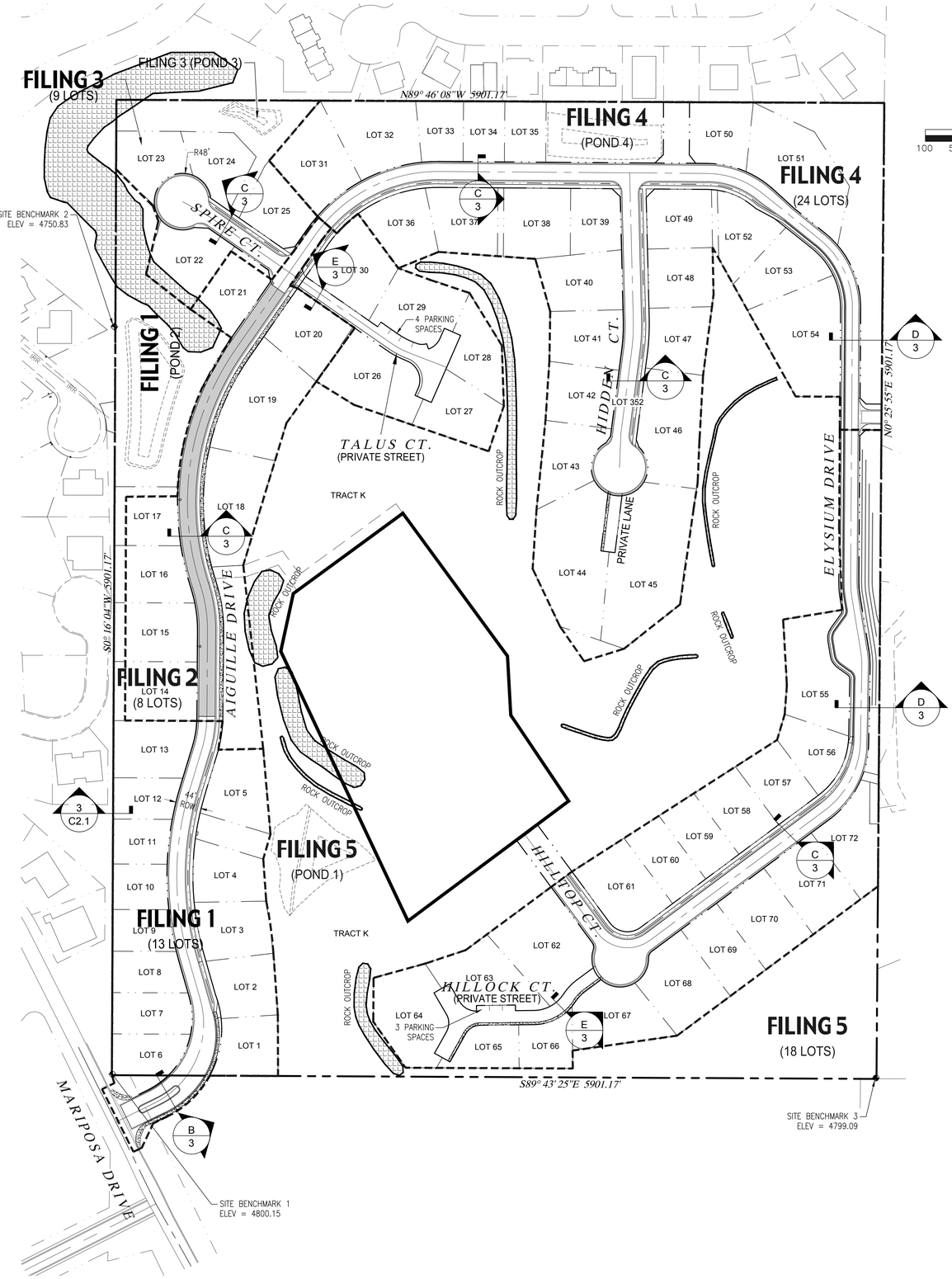
1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. CONTOURS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY. CONTOUR INTERVAL = 1 FOOT UNLESS OTHERWISE NOTED ON PLANS.
3. ALL DISTURBED AREAS THAT ARE UNSURFACED OR ARE NOT DESIGNATED AS LANDSCAPE AREAS ARE TO BE RE-SEEDED WITH DRY NATIVE GRASS SEED MIX.
4. IF DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE SOILS ENGINEER SHALL BE CONTACTED FOR RECOMMENDATIONS.
5. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND STANDARDS OF THE GOVERNING AGENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED AS SPECIFIED BY THE GEOTECH REPORT. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED, LICENSED, SOILS ENGINEER, CERTIFYING THAT THE SUBBASE WITHIN THE AREAS TO BE PAVED HAS BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECS.
6. NO PROPOSED SLOPE SHALL EXCEED TWO (2) HORIZONTAL TO ONE (1) VERTICAL. ALL SLOPED AREAS MUST BE PROTECTED FROM EROSION.
7. IF STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS ARE STOCKPILED ON THE SITE. TOPSOIL MAY BE PLACED TO A HEIGHT OF FIVE FEET. SILT FENCE SHALL BE PLACED AROUND THE BASE OF THE STOCKPILE AND THE STOCKPILE SHALL BE SEEDED WITH NATIVE SEED MIX IMMEDIATELY AFTER STRIPPING OPERATIONS ARE COMPLETE.
8. ON-SITE MATERIALS SUITABLE FOR FILL BENEATH DRIVES, AND PARKING AREAS BEYOND 5' OF THE BUILDING SHALL BE COMPACTED IN ACCORDANCE WITH THE GUIDELINES PRESENTED IN THE SOILS REPORT.
9. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHY AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO ENSURE 0.75% MIN. SLOPE AGAINST ALL GUTTERS TO PREVENT PUDDLING. ANY DISCREPANCIES SHALL BE PROVIDED TO THE ENGINEER IN WRITING IMMEDIATELY.
10. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED AS SPECIFIED IN THE GEOTECH REPORT.
11. SPOT ELEVATIONS REPRESENT FLOWLINE OR TOP OF ASPHALT UNLESS OTHERWISE NOTED.
12. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS WHICH DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB AND GUTTER AND UTILITIES.
13. ALL UTILITIES (MANHOLES, VALVE COVERS, CLEANOUTS, VAULTS, BOXES, ETC.) SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
14. ALL EARTH MOVING AND PLACEMENT OPERATIONS SHALL BE IN CONFORMANCE WITH THE RECOMMENDATIONS IDENTIFIED IN THE SOILS REPORT. THE CONTRACTOR SHALL HAVE A SIGNED AND SEALED COPY OF THE SOILS REPORT ON THE SITE AT ALL TIMES.
15. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.
16. WHERE NEW CURB AND GUTTER IS BEING CONSTRUCTED ADJACENT TO EXISTING ASPHALT, THE FOLLOWING SHALL APPLY: PRIOR TO PLACEMENT OF ANY CONCRETE THE CONTRACTOR SHALL HAVE A LICENSED SURVEYOR VERIFY GRADE AND CROSS SLOPE OF THE CURB AND GUTTER FORMS. THE CONTRACTOR SHALL SUBMIT THE SLOPES AND GRADES TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY SECTION WHICH DOES NOT CONFORM TO THE DESIGN OR TYPICAL CROSS SECTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CURB AND GUTTER POURS WITHOUT APPROVAL OF THE ENGINEER.
17. MAINTENANCE OF ANY STORMWATER MANAGEMENT FACILITY SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL GUIDELINES FOR PRIVATE STORMWATER MANAGEMENT FACILITIES AND SHALL BE THE RESPONSIBILITY OF THE OWNER AND THE ASSIGNEES.
18. SURFACE RESTORATION SHALL BE AS FOLLOWS:
   (A) FINE GRADE ALL AREAS DISTURBED BY THE CONSTRUCTION OPERATIONS AFTER COMPLETION OF BACKFILLING AND COMPACTING. AREAS WHICH ARE TO RECEIVE PAVEMENTS, SURFACING, TOPSOIL OR LANDSCAPING SHALL BE GRADED AS REQUIRED TO ALLOW INSTALLATION OF THE SPECIFIC SURFACE TREATMENT. GRADE ALL OTHER AREAS TO MATCH THE EXISTING GROUND LINE.
   (B) REPLACE AND REPAIR ANY SURFACE IMPROVEMENTS DAMAGED OR REMOVED. CONFORM TO CITY STANDARDS & SPECIFICATIONS.
19. BITUMINOUS PAVEMENT
   (A) BITUMINOUS PAVEMENT SHALL BE REMOVED TO CLEAN STRAIGHT LINES AT THE LOCATIONS INDICATED ON PLANS. WIDTH OF REMOVAL FOR PIPELINES SHALL BE KEPT TO A MINIMUM AS DICTATED BY TRENCHING OPERATIONS, BUT SHALL EXTEND AT LEAST 6 INCHES BEYOND THE LIMITS OF TRENCH EXCAVATION.
   (B) THE CUT SHALL BE MADE WITH PAVEMENT CUTTING WHEEL, SAW OR OTHER APPROVED METHOD, SO AS TO PROVIDE A REASONABLY STRAIGHT AND SQUARE EDGE.

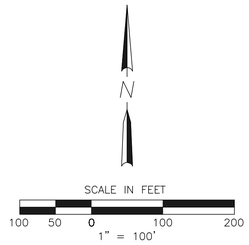
SANITARY SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL GRAVITY SANITARY SEWER LINES SHALL BE POLYVINYL CHLORIDE PIPE (PVC), ASTM D-3034 SDR.35, SEWER LINE MATERIALS AND CONSTRUCTION SHALL CONFORM TO ASTM STANDARDS AND SPECIFICATIONS.
3. DISTANCES FOR SANITARY SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. THEREFORE, DISTANCES SHOWN ON PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT.
4. RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATION. PIPELINE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT AND STEEL SHIMS TO ADJUST THE MANHOLE FRAME TO THE REQUIRED FINAL GRADE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS. ALL FRAMES SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
5. ALL SANITARY SEWER MAINS TESTING SHALL BE IN ACCORDANCE WITH LOCAL SPECIFICATIONS. COPIES OF ALL TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER, THE OWNER AND THE GOVERNING AUTHORITY PRIOR TO THE START OF THE WARRANTY PERIOD.
6. COMPACTION OF ALL TRENCHES WITHIN THE PROJECT SITE MUST BE ATTAINED AND COMPACTION RESULTS SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE. .
7. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING STRUCTURES AND IMPROVEMENTS DURING INSTALLATION OF THE SANITARY SEWER LINE.
8. THE CONTRACTOR SHALL POTHOLE THE EXISTING SEWER MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
9. SANITARY SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.

STORM SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING:
   (A) OBTAINING ALL REQUIRED PERMITS FROM THE CITY, THE DOT, OR ANY REGULATORY AUTHORITY AT THE CONTRACTOR'S COST INCLUDING PERMITS REQUIRED FOR WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
   (B) RESTORATION OF ANY EXISTING IMPROVEMENTS INCLUDING (BUT NOT LIMITED TO) FENCES, SOD, LANDSCAPING, PAVEMENT, SPRINKLER SYSTEMS.
   (C) VERIFICATION AND PROTECTION OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF THE PROJECT.
   (D) PROVIDING AS-BUILT DRAWINGS TO THE CITY AND ENGINEER.
   (E) ALL PERMITTING, DEVELOPMENT, CONNECTION, LOCATION INSPECTION AND TESTING FEES REQUIRED FOR STORM SEWER CONSTRUCTION.
   (F) VERIFYING ALL STANDARD DETAILS CONFORM TO CURRENT CITY/COUNTY STANDARDS AND SPECIFICATIONS.
   (G) FOR OBTAINING AND UNDERSTANDING ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THE CONSTRUCTION OF THE STORM SEWER IMPROVEMENTS.
   (H) FOR SCHEDULING ALL REQUIRED INSPECTIONS.
3. THE CONTRACTOR SHALL POTHOLE THE EXISTING STORM MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
4. STORM SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.
5. THE CONTRACTOR SHALL COORDINATE HIS WORK SCHEDULE WITH THE DITCH COMPANY TO ENSURE ALL DITCH FACILITIES ARE CONSTRUCTED WITHOUT DISRUPTION TO DITCH COMPANY OPERATIONS.
6. ALL STORM SEWER CONSTRUCTION SHALL BE IN CONFORMANCE WITH LOCAL STANDARDS AND SPECIFICATIONS.
7. DISTANCES FOR STORM SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE OR INLET TO CENT





PROPOSED LAND USE TABLE

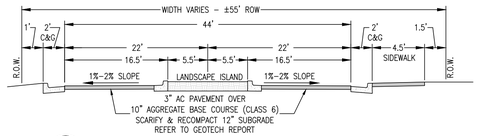
USE	AREA	AC	% OF TOTAL	OWNER
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. – 45.11 AC			

PROJECT NOTES:

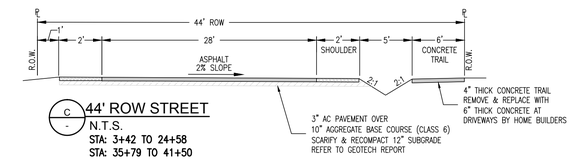
1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM: LOTS 1 – 9, BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK 8 AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = RSF-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'
   REAR = 25'
   SIDE = 7'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

LEGEND

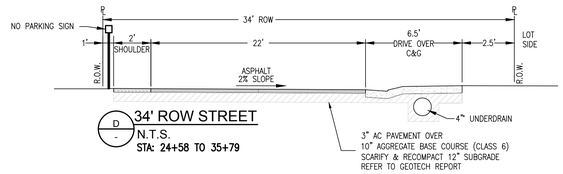
FILING & LIMITS OF DEVELOPMENT DESIGNATION



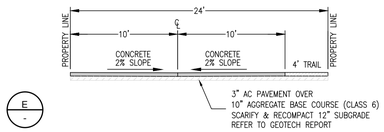
B
MARIPOSA DRIVE ENTRANCE
N.T.S.
STA: 0+24 TO STA: 1+52
(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 3+42)



C
44' ROW STREET
N.T.S.
STA: 3+42 TO 24+58
STA: 35+79 TO 41+50



D
34' ROW STREET
N.T.S.
STA: 24+58 TO 35+79



E
PRIVATE STREET □ LANE DETAIL
N.T.S.
TRACTS C,F,J

PROJECT BENCHMARK

PROJECT BENCHMARK #1
LOCATED AT THE SOUTHWEST CORNER OF THE SITE.
MONUMENT ID: PLS 18480, THE W1/4 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31563.18 EASTING: 78944.74 ELEV: 4800.15 (NAVD88)

PROJECT BENCHMARK #2
LOCATED AT THE WEST PROPERTY LINE, NEAR OUTLOOK COURT.
MONUMENT ID: NCSN #1210, THE N1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 32880.35 EASTING: 78949.85 ELEV: 4750.83 (NAVD88)

PROJECT BENCHMARK #3
LOCATED AT THE SOUTHEAST CORNER OF THE SITE.
MONUMENT ID: NCSN #842, THE W1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31558.05 EASTING: 80239.95 ELEV: 4799.09 (NAVD88)

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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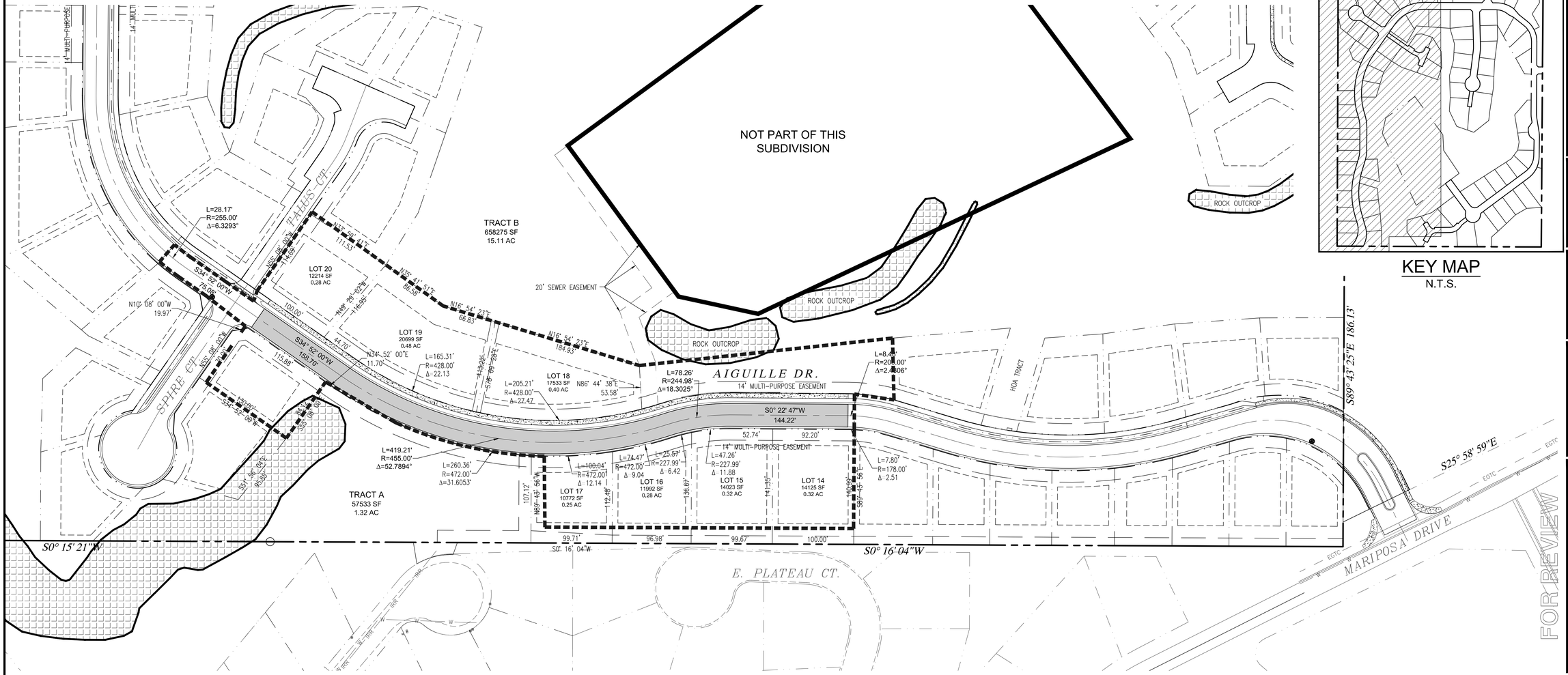
MAJOR SUBDIVISION
FINAL PLAN

	REV. DATE	COMMENT	BY
1	8/18/17	REVISED PER CITY COMMENT ROUND 1, DATED 7/18/17	DLS

Filing Plan
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: 1" = 100'
CAD ID: 0.0cover-f2.dwg

SHEET
C0.2



KEY MAP
N.T.S.

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL E ISTING UTILITIES PRIOR TO CONSTRUCTION.

Know what's below. Call before you dig.
Colorado 811
1-800-922-1987
co811.org

UTILITY PROVIDERS INFORMATION

UTILITY	*PROVIDER*	*PHONE NUMBER*
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

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2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET C0.2

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

CITY PLANNER DATE

FOR REVIEW

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• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
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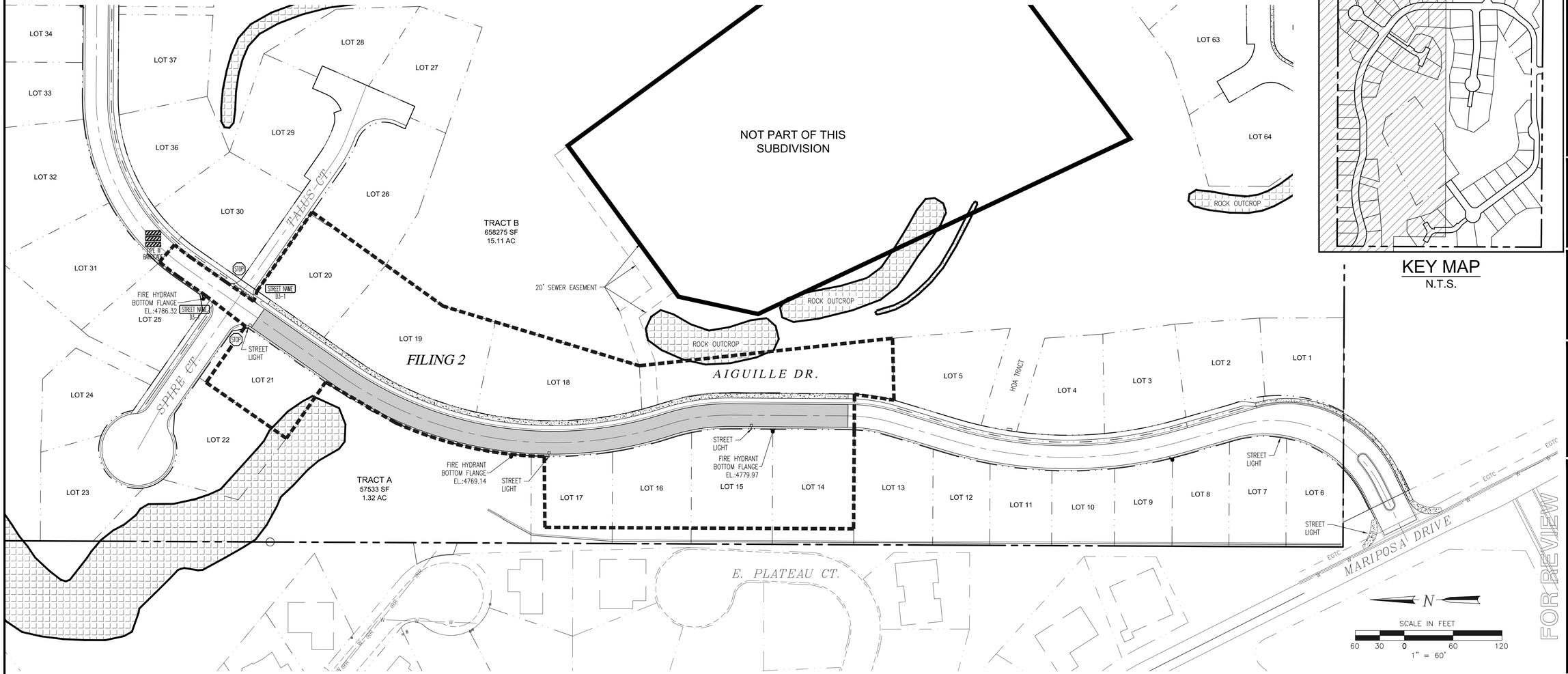
MAJOR SUBDIVISION
FINAL PLAN

REV	REV DATE	REVISED PER CITY COMMENT ROUND 1, DATED 7/18/17	BY
1	8/18/17	COMMENT	DLS

Composite Site Plan - Layout and Geometry Plan
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 04/24/17
SCALE: see plan
CAD ID: 1.0layout-f2.dwg

SHEET
C1.0



KEY MAP
N.T.S.

FOR REVIEW

SIGN SCHEDULE

- STOP SIGN (30"x30")
- NO OUTLET SIGN W14-2
- FIXED TYPE III CDOT ROAD BARRICADES (3' x 8' SECTIONS, SEE STD. S-630-2)
- NO TRESPASSING SIGN
- STREET NAME SIGN D3-1
- SPEED LIMIT SIGN R2-1

ALL SIGN POST MOUNTING AND PLACEMENT SHALL BE PER MUTCD OR MESA COUNTY SPECIFICATIONS. CONTRACTOR TO CONTACT MESA COUNTY TRAFFIC PRIOR TO INSTALLATION OF SIGNS. (ph. 970-244-1817)

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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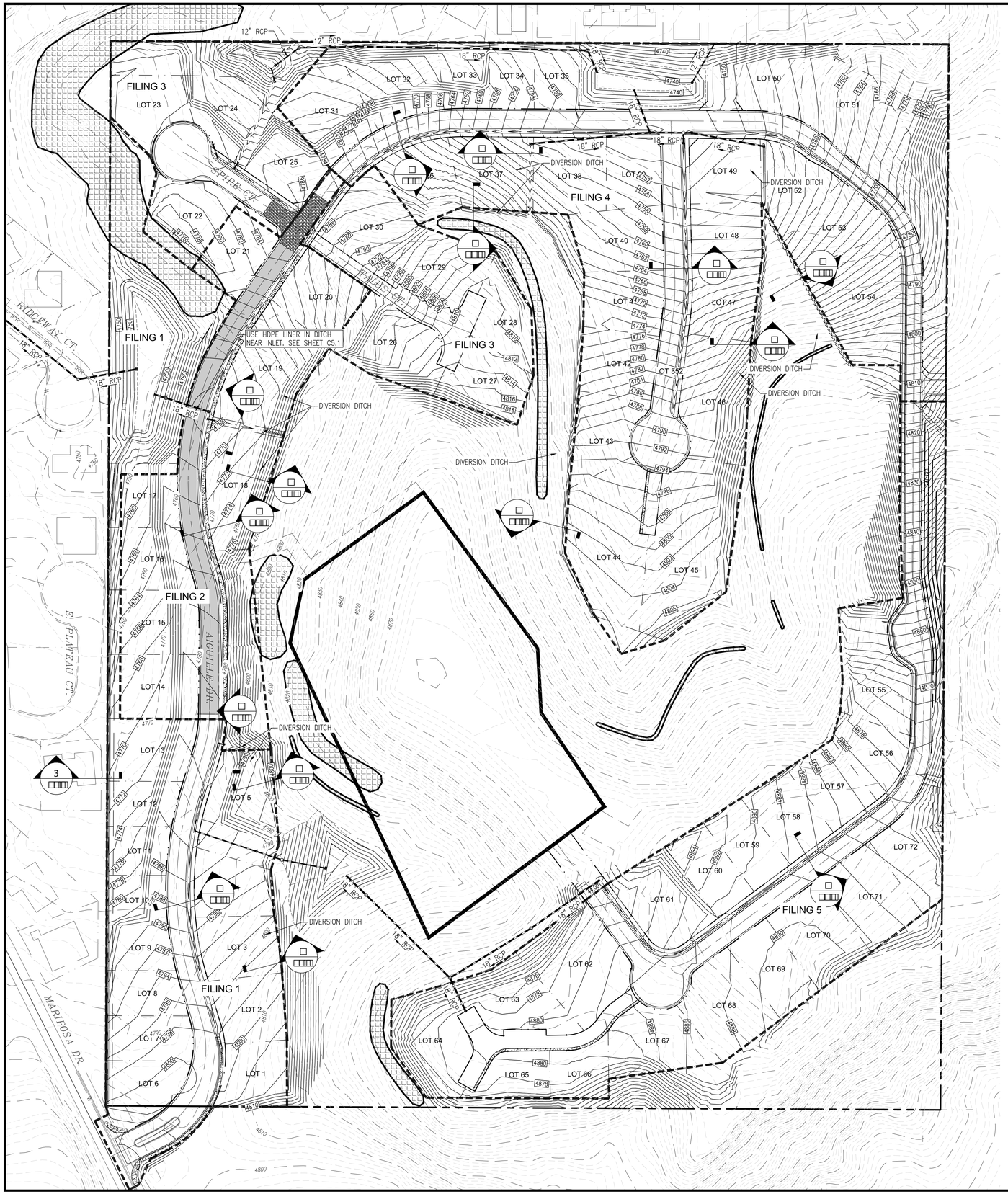
MAJOR SUBDIVISION
FINAL PLAN

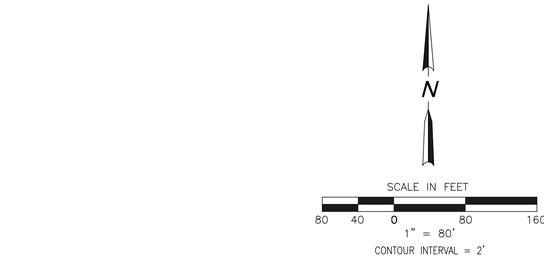
REV.	DATE	COMMENT	BY
1	8/18/17	REVISED PER CITY COMMENT ROUND 1, DATED 7/18/17	DLS

Signage & Lighting Plan
Pinnacle Ridge Subdivision Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1" = 60'
CAD ID: 1.0layout-f2.dwg

SHEET
C1.1



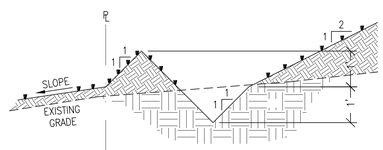


GRADING NOTE:

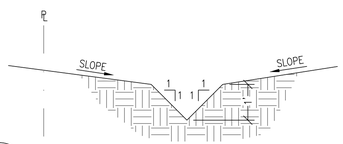
FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

GENERAL NOTES

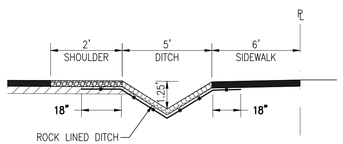
1. ALL CONSTRUCTION TO CONFORM TO THE CURRENT CITY OF GRAND JUNCTION DEPARTMENT OF PUBLIC WORKS AND PLANNING STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR MUST CONTACT CITY OF GRAND JUNCTION TRAFFIC OPERATIONS SUPERVISOR PRIOR TO CONSTRUCTION OR PLACEMENT OF TRAFFIC CONTROL DEVICES/FEATURES (STRIPING, SIGNALS, MEDIANS, ETC.) FOR CONSTRUCTION IN THE RIGHT-OF-WAY ONLY.
3. REFER TO THE GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE STORM SEWER, SEE SHEET C5.0 & C5.1.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE FILING PLAN.
8. REFER TO SHEETS C0.1, C6.0, THRU C6.2 FOR STORMWATER MANAGEMENT CONTROL PLANS AND EROSION CONTROL NOTES.
9. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
10. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL.



DIVERSION DITCH SECTION
N.T.S.



DIVERSION DITCH SECTION
N.T.S.



ROCK LINED DITCH
d50=4" NOMINAL SIZE, 8" DEEP (MIN.) WITH GEOTEXTILE FABRIC LINER MIRAFI 180N OR APPROVED EQUAL

ROCK LINED ROADSIDE DITCH
N.T.S.

ACCEPTANCE BLOCK

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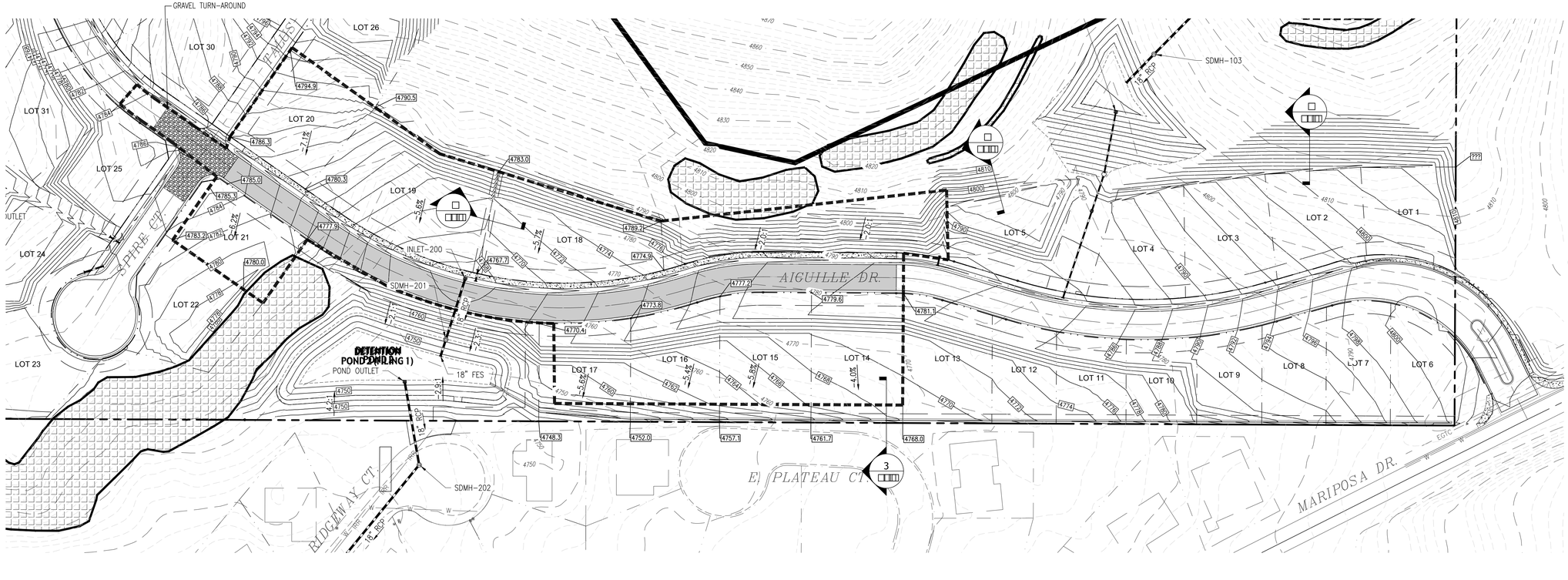
MAJOR SUBDIVISION
FINAL PLAN

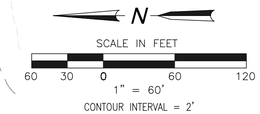
REV	DATE	COMMENT	BY
1	8/18/17	REVISED PER CITY COMMENT ROUND 1, DATED 7/18/17	DLS

Overall Grading Plan Filings 1 - 5
Pinnacle Ridge Subdivision Filing 2
Mariposa Drive
Grand Junction, Colorado

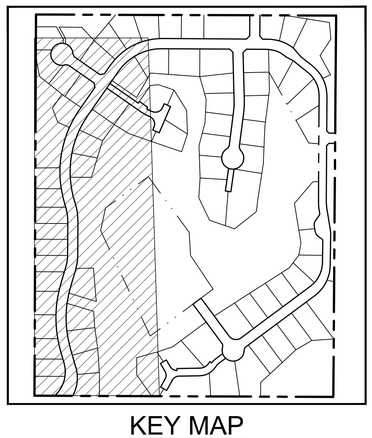
PROJECT NO: F04-006
DATE: 06/12/17
SCALE: 1"= 80'
CAD ID: 2.0grad-f2.dwg

SHEET
C2.0

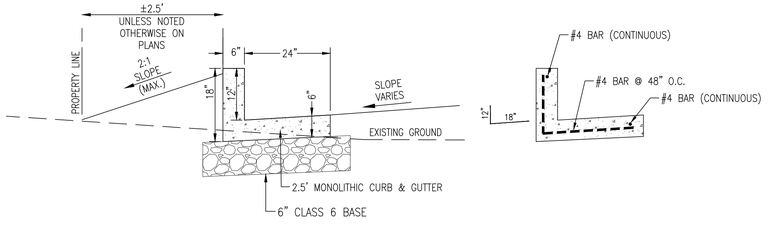




FILING 2 TOF TABLE			
Lot	*Grading*	*Min. TOF*	*Max. TOF*
14	Type C	4781.40	4781.90
15	Type C	4779.40	4779.90
16	Type C	4776.50	4777.00
17	Type C	4773.40	4773.90
18	Type A	4773.00	4773.50
19	Type A	4774.50	4775.50
20	Type A	4782.50	4784.50
21	Type C	4784.50	4786.50



KEY MAP
N.T.S.



WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

CONCRETE CURB & GUTTER DETAIL
N.T.S.

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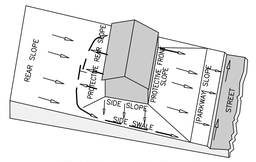
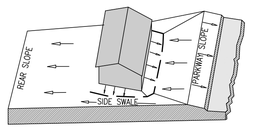


LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.



LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.

ACCEPTANCE BLOCK

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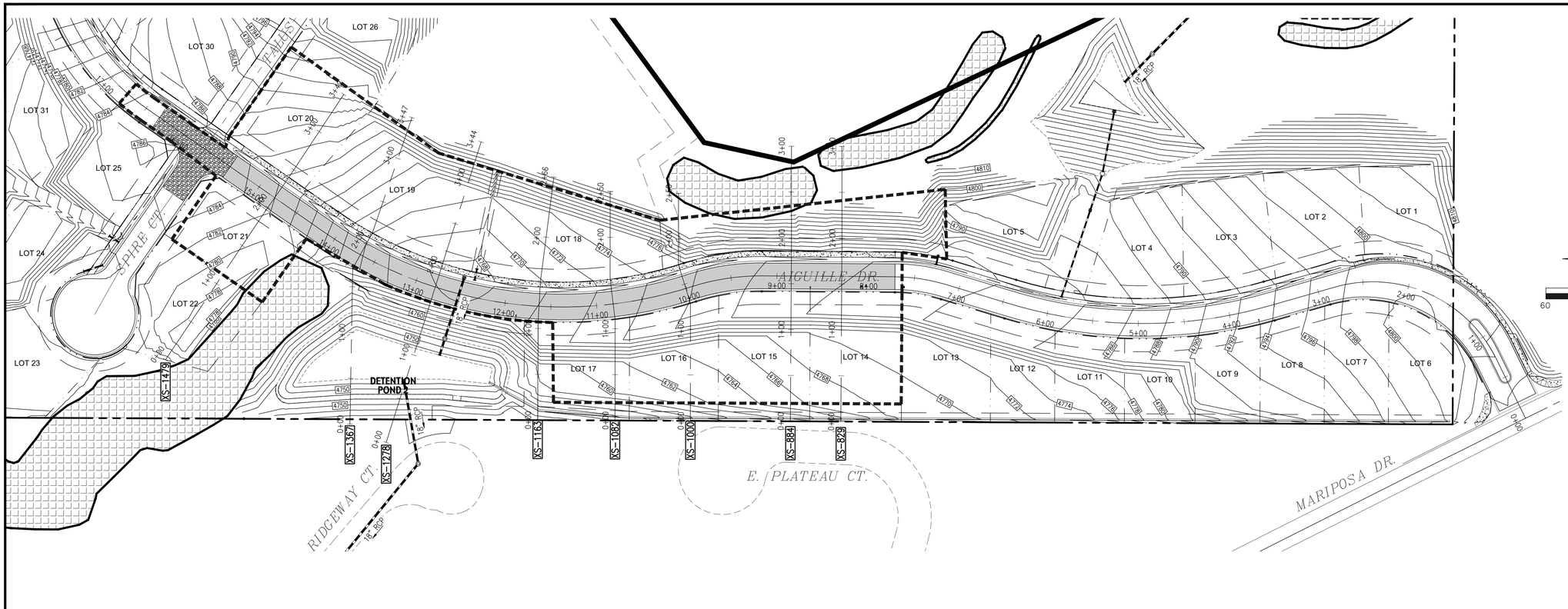
MAJOR SUBDIVISION
FINAL PLAN

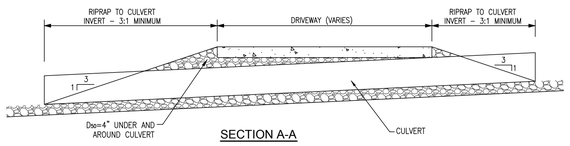
REV.	DATE	COMMENT	BY
1	8/18/17	REVISED PER CITY COMMENT ROUND 1, DATED 7/18/17	DLS

Grading Plan Filing 2
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado

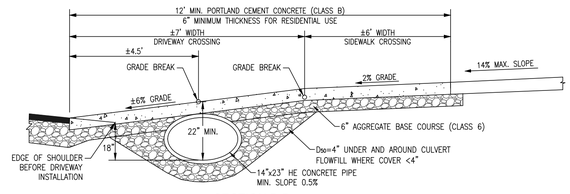
PROJECT NO: F04-006
DATE: 06/12/17
SCALE: 1" = 60'
CAD ID: 2.0grad-f2.dwg

SHEET
C2.1

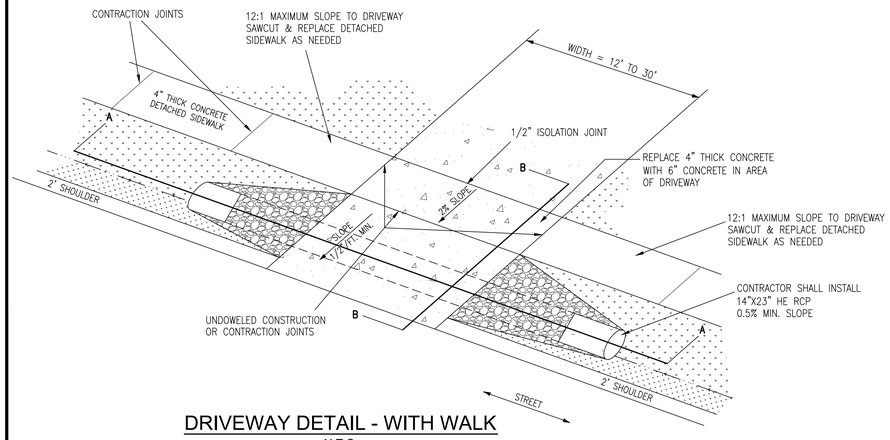




SECTION A-A

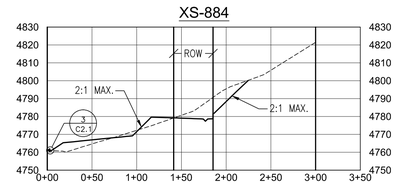


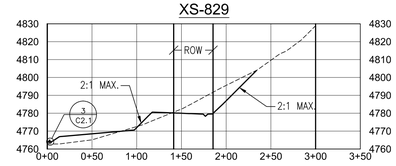
SECTION B-B

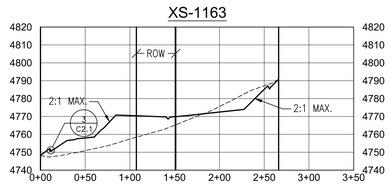


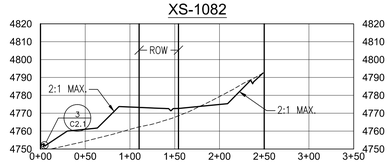
DRIVEWAY DETAIL - WITH WALK

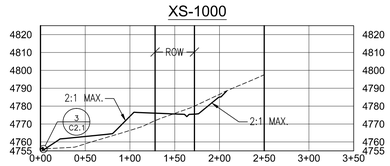
N.T.S.





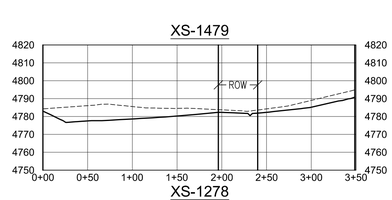


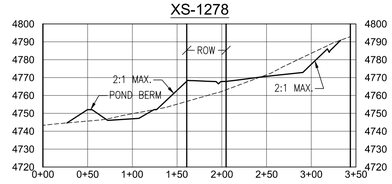


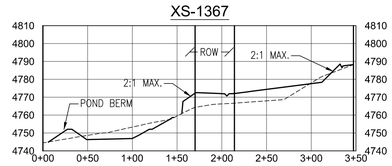


SECTIONS ALONG LOT LINES

SCALE: 1" = 80' HORIZONTAL
1" = 40' VERTICAL







ACCEPTANCE BLOCK

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/18/17	REVISED PER CITY COMMENT ROUND 1, DATED 7/18/17	DLS

Grading Plan Filing 2 - Road Cross Sections
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: SEE PLAN
CAD ID: 2.0grad-f2.dwg

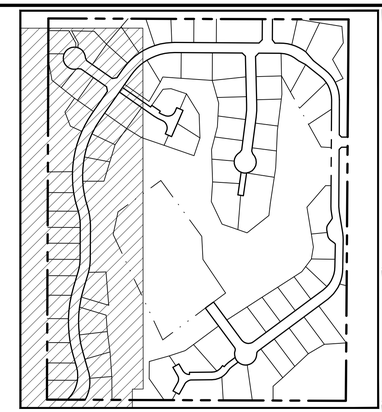
SHEET
C2.2

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET 3
6. HOUSES CONSTRUCTED ON LOTS 26-29 AND LOTS 55-72 SHALL HAVE SPRINKLER SYSTEMS INSTALLED. A 1" CUSTOMER WATER SERVICE LINE AND ¾" WATER METER WILL BE UTILIZED IN ACCORDANCE WITH UTE WATER CONSERVANCY DISTRICT STANDARDS & SPECIFICATIONS.
7. ALL WATER SERVICES SHALL HAVE A PRESSURE REGULATED YOKE INSTALLED BASED ON PRESSURE LIMITS AS DETERMINED IN THE HYDRAULIC ANALYSIS.

FILING NOTES

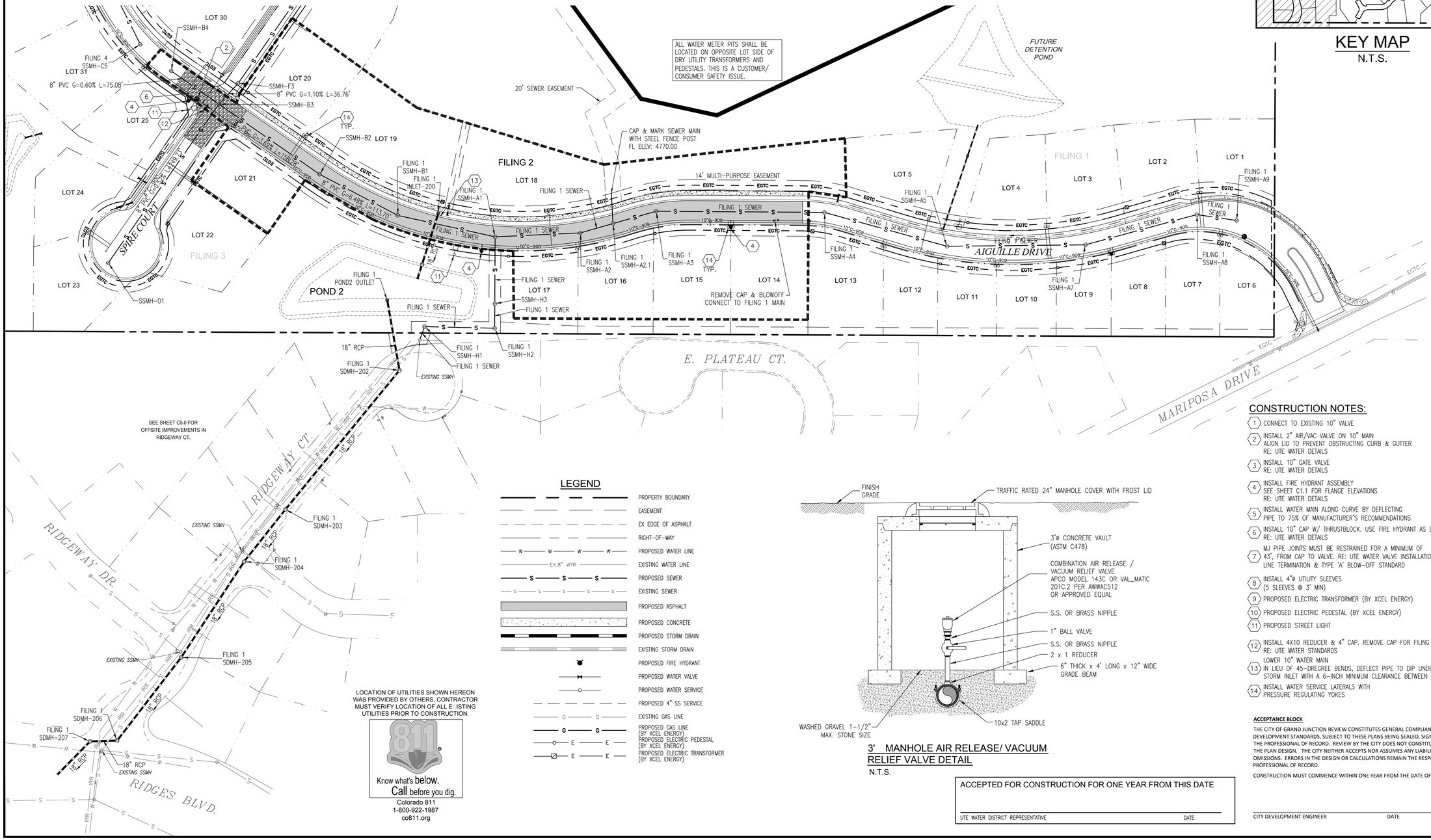
1. NO STORM DRAINS TO BE CONSTRUCTED AS PART OF FILING 2.
2. INSTALL SANITARY SEWER FROM STATION 13+00 TO MANHOLE B4 IN AIGUILLE DRIVE; INCLUDE MANHOLE F3 AS NOTED ON PLANS.
3. END WATER LINE CONSTRUCTION AT THE FIRE HYDRANT JUST NORTH OF THE INTERSECTION OF AIGUILLE DRIVE AND SPIRE COURT.
4. ASPHALT PAVEMENT TO END AT THE NORTH END OF LOT 21 FOR FILING 2.
5. INSTALL GRAVEL TURN-AROUND ON AIGUILLE DRIVE AND SPIRE COURT AS SHOWN ON THIS PLAN.



KEY MAP
N.T.S.

N

SCALE IN FEET
60 30 0 60 120
1" = 60'



CONSTRUCTION NOTES:

1. CONNECT TO EXISTING 10" VALVE
2. INSTALL 2" AIR/VAC VALVE ON 10" MAIN ALIGN LID TO PREVENT OBSTRUCTING CURB & GUTTER RE: UTE WATER DETAILS
3. INSTALL 10" GATE VALVE RE: UTE WATER DETAILS
4. INSTALL FIRE HYDRANT ASSEMBLY SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL WATER MAIN ALONG CURVE BY DEFLECTING PIPE TO 75% OF MANUFACTURER'S RECOMMENDATIONS
6. INSTALL 10" CAP W/ THRUSTBLOCK. USE FIRE HYDRANT AS BLOW-OFF. RE: UTE WATER DETAILS
7. MJ PIPE JOINTS MUST BE RESTRAINED FOR A MINIMUM OF 43', FROM CAP TO VALVE. RE: UTE WATER VALVE INSTALLATION, LINE TERMINATION & TYPE 'A' BLOW-OFF STANDARD
8. INSTALL 4"ø UTILITY SLEEVES (5 SLEEVES @ 3' MIN)
9. PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)
10. PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
11. PROPOSED STREET LIGHT
12. INSTALL 4X10 REDUCER & 4" CAP. REMOVE CAP FOR FILING 3 CONSTRUCTION. RE: UTE WATER STANDARDS
13. LOWER 10" WATER MAIN IN LIEU OF 45-DREGREE BENDS, DEFLECT PIPE TO DIP UNDER STORM INLET WITH A 6-INCH MINIMUM CLEARANCE BETWEEN PIPES.
14. INSTALL WATER SERVICE LATERALS WITH PRESSURE REGULATING YOKES

LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE
- EXISTING WATER LINE
- PROPOSED SEWER
- EXISTING SEWER
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER SERVICE
- PROPOSED 4" SS SERVICE
- EXISTING GAS LINE
- PROPOSED GAS LINE (BY XCEL ENERGY)
- PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
- PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)

3' MANHOLE AIR RELEASE/ VACUUM RELIEF VALVE DETAIL
N.T.S.

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL E ISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.
Colorado 811
1-800-922-1987
co811.org

ACCEPTED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE

UTE WATER DISTRICT REPRESENTATIVE DATE

CITY DEVELOPMENT ENGINEER DATE

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

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VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	REVISED PER CITY COMMENT ROUND 1, DATED 7/18/17	BY
1	8/18/17	COMMENT	DLS

Composite Site Plan - Utility and Water Plan

Pinnacle Ridge Subdivision Filing 2

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: 1"= 60'
CAD ID: 3.0utility-f2.dwg

SHEET
C3.0

FILING NOTES

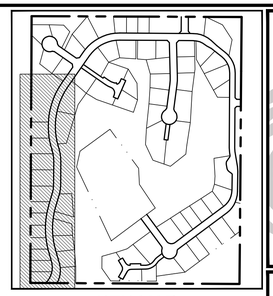
1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
2. INSTALL SANITARY SEWER FROM SSMH-A9 TO EXISTING MAN-HOLE IN RIDGEWAY COURT AS SHOWN INCLUDING LINE TO MAN-HOLE B-1.
3. END WATER LINE CONSTRUCTION AT THE MIDDLE OF LOT 14 AS SHOWN.
4. ASPHALT PAVEMENT TO END AT THE NORTH END OF LOT 13 FOR FILING 1.
5. ROAD ALIGNMENT TO BE GRADED AND BASE COURSE INSTALLED TO THE NORTH END OF LOTS 20 & 21.

CONSTRUCTION NOTES:

1. INSTALL STOP SIGN & STREET SIGN RE: MUTCD
2. CONSTRUCT HANDICAPPED RAMP RE: CITY OF GJ DETAILS
3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL 6" STANDARD CURB & GUTTER W/ATTACHED SIDEWALK – 87 LF
6. INSTALL 6" DRIVE-OVER CURB & GUTTER W/ATTACHED SIDEWALK – 158 LF
7. INSTALL 6" STANDARD CURB & GUTTER 74 LF
8. SAWCUT & REMOVE ±106 LF EXISTING CONCRETE CURB USE CARE TO ENSURE PAVEMENT EDGE PROVIDES A CLEAN JOIN FOR INSTALL OF NEW CONCRETE VALLEY PAN
9. 15' SIDEWALK TRANSITION FROM ATTACHED TO DETACHED

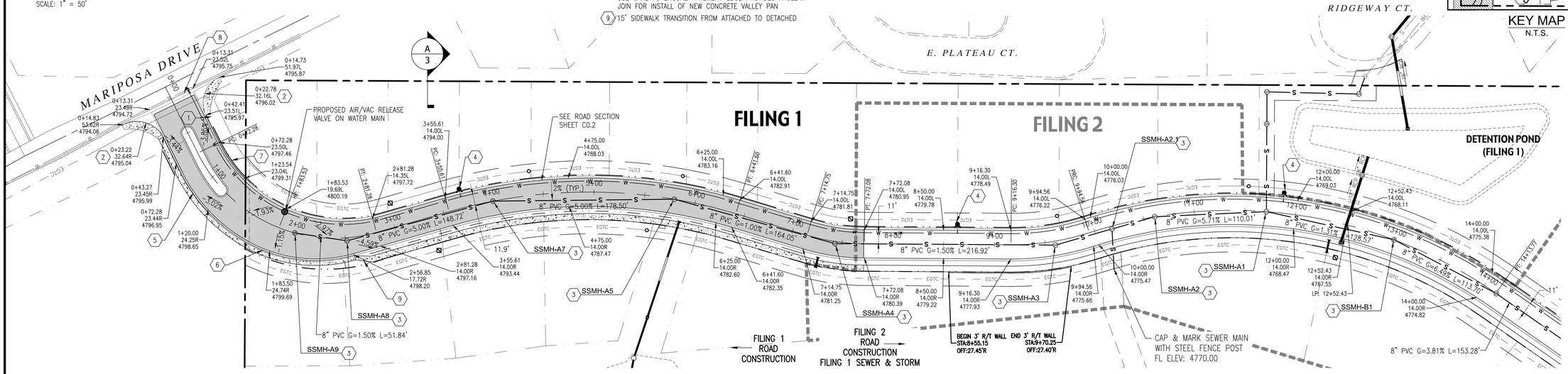
GENERAL NOTES:

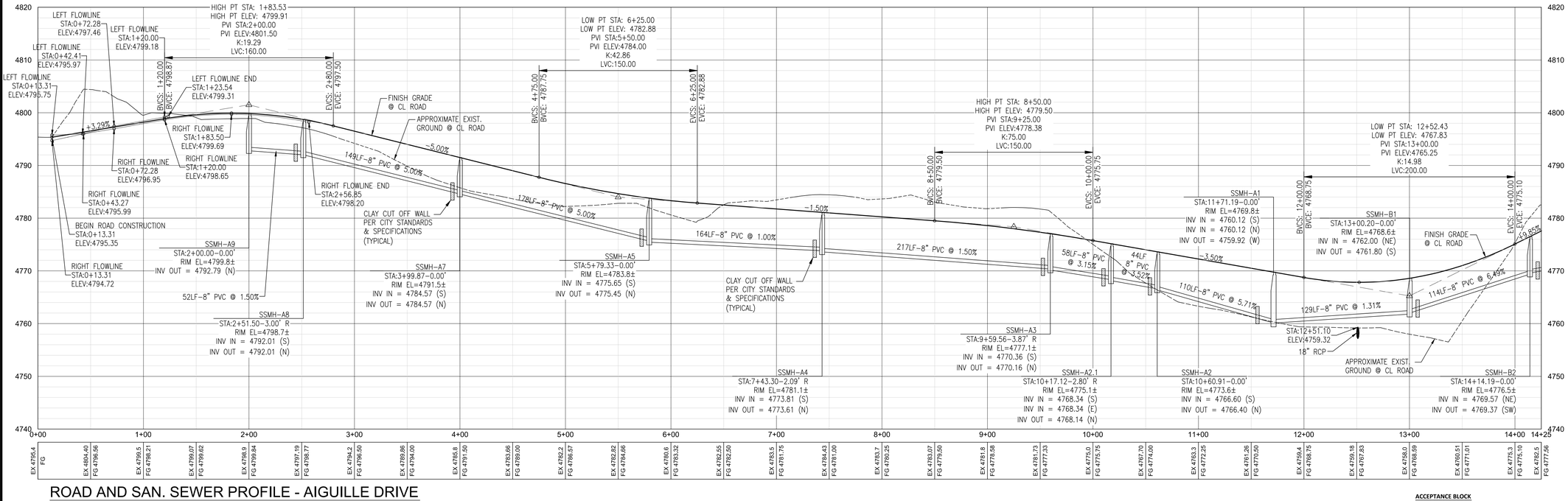
1. REFERENCE SHEET C0.1 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET C0.2 FOR STREET SECTIONS
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION



ROAD AND SAN. SEWER PLAN - AIGUILLE DRIVE

SCALE: 1" = 50'





ROAD AND SAN. SEWER PROFILE - AIGUILLE DRIVE

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER _____ DATE _____

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MAJOR SUBDIVISION
FINAL PLAN

NO.	REV. DATE	COMMENT	BY
1	8/15/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

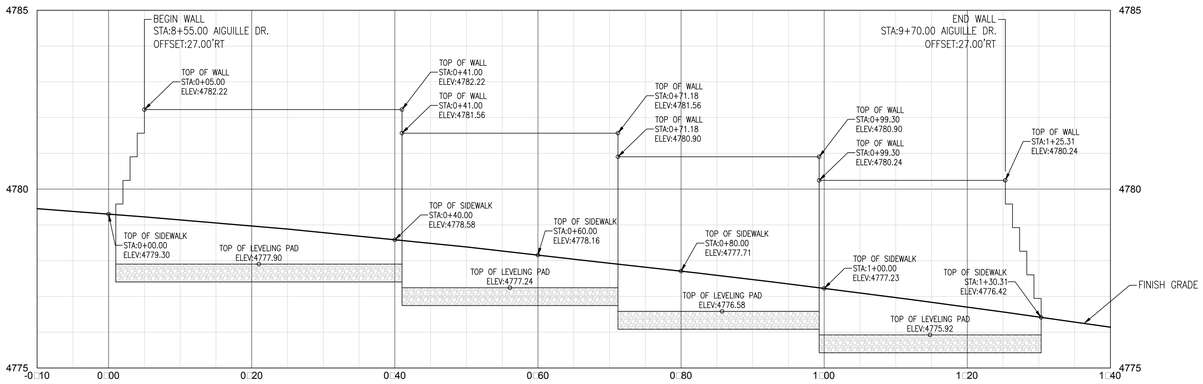
Road & Sanitary Sewer Plan & Profile

Aiguille Drive
Pinnacle Ridge Subdivision Filing 1

Mariposa Drive
Grand Junction, Colorado 81507

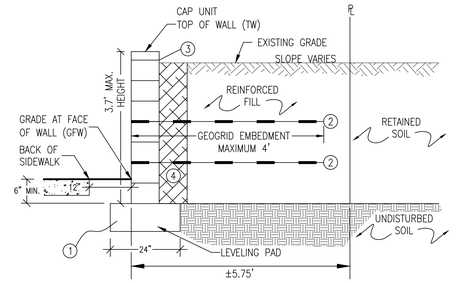
PROJECT NO: **F04-006**
DATE: **06/02/17**
SCALE: **1" = 50'**
CAD ID: **4.0ss-road-f1.dwg**

~SHEET~
C4.0



RETAINING WALL PROFILE

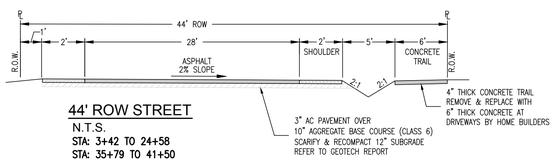
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 4'



1. LEVELING PAD SHALL BE A MINIMUM OF 6" CONCRETE OR CRUSHED ROCK
2. TENSAR STRUCTURAL GEOGRID
3. BLOCKS SHALL BE MESA STANDARD UNITS OR APPROVED EQUAL
4. 12" DRAIN ROCK

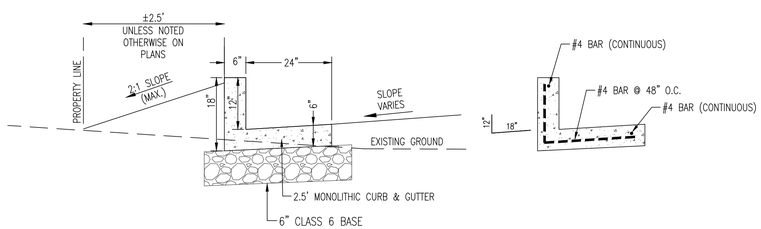
BLOCK WALL DETAIL

N.T.S.



44' ROW STREET

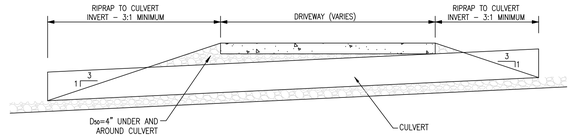
N.T.S.
STA: 3+42 TO 24+58
STA: 35+79 TO 41+50



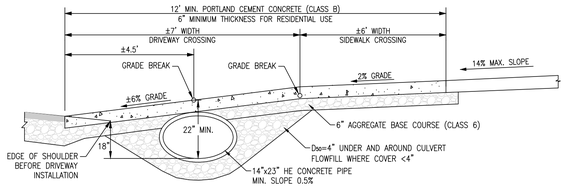
WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

CONCRETE CURB □ GUTTER DETAIL

N.T.S.



SECTION A-A



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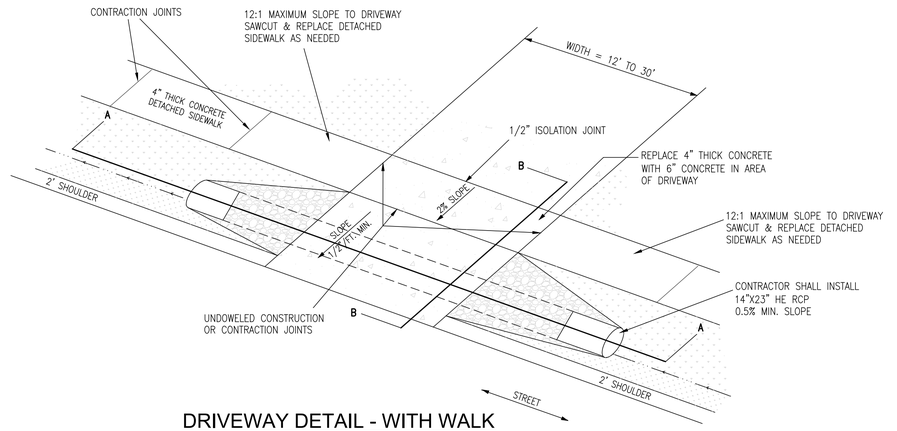

DRIVEWAY DETAIL - WITH WALK

N.T.S.

NOTE:

CARE SHALL BE TAKEN TO REMOVE EXISTING ROCK LINING AND GEOTEXTILE FABRIC PRIOR TO NEW CULVERT INSTALLATION. FABRIC AND ROCK TO BE CAREFULLY REPLACED AROUND NEW CULVERT.

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

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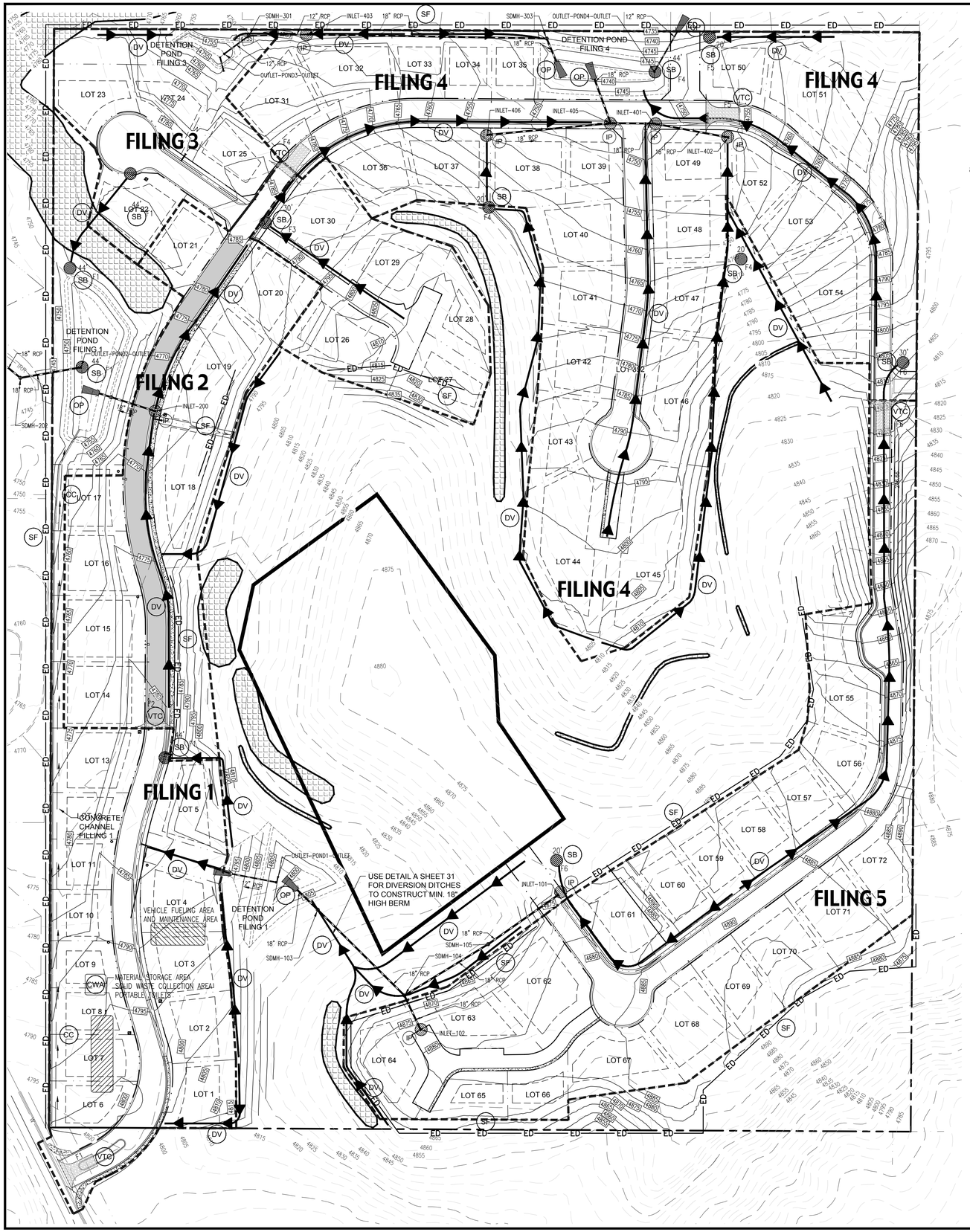
MAJOR SUBDIVISION
FINAL PLAN

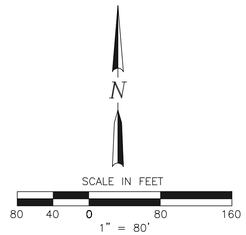
REV.	DATE	COMMENT	BY
1	8/15/17	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017	DLS

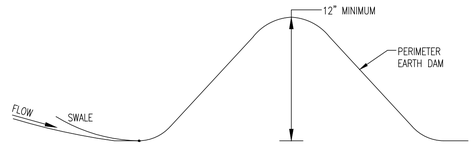
Retaining Wall Profile & Road Details
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/02/17**
SCALE: **1" = 50'**
CAD ID: **4.0ss-road-f2.dwg**

~SHEET~
C4.1







EARTH DAM SECTION
SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
EARTHEN DAM	ED	ED
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
SEDIMENT BASIN	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

GRADING NOTE:

FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

GENERAL NOTES:

1. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL REQUIRED EASEMENTS, RIGHT AND/OR RIGHTS-OF-WAY PURSUANT TO THE DISCHARGE FROM THE SEDIMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS AND GRADING OR OTHER WORK TO BE PERFORMED ON ADJACENT OR DOWNSTREAM PROPERTIES AFFECTED BY THE PLAN.
2. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1); FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE, THE IN-PLACE SEDIMENT CONTROL MEASURES WILL BE MAINTAINED ON A CONTINUING BASIS UNTIL THE SITE IS PERMANENTLY STABILIZED AND ALL PERMIT REQUIREMENTS ARE MET.
3. REFER TO CITY OF GRAND JUNCTION STANDARD DRAWINGS AND SPECIFICATIONS.
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE 5-2-1 DRAINAGE AUTHORITY. CONTACT MARK BARSLUND 970-201-1362

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

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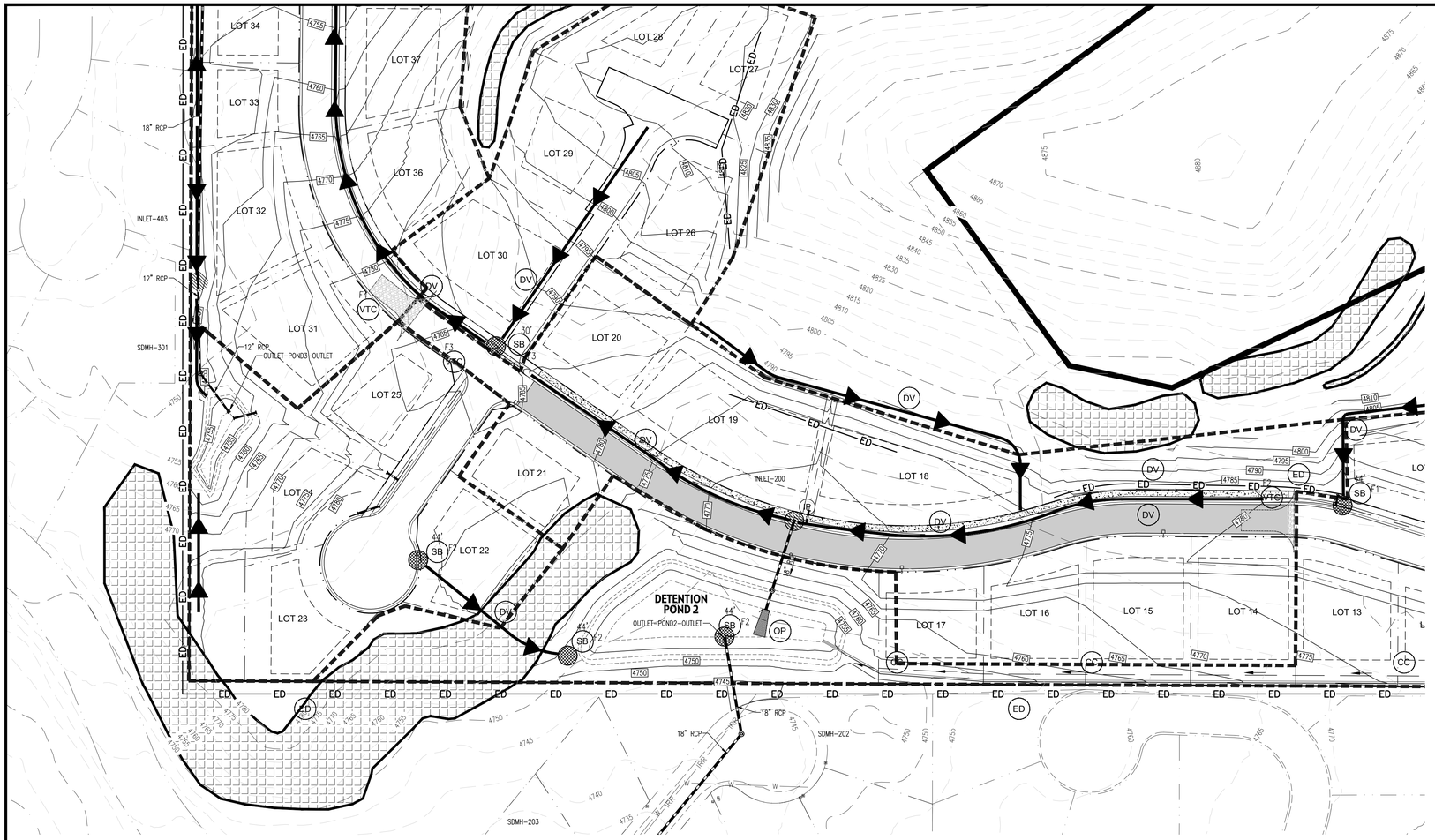
MAJOR SUBDIVISION
FINAL PLAN

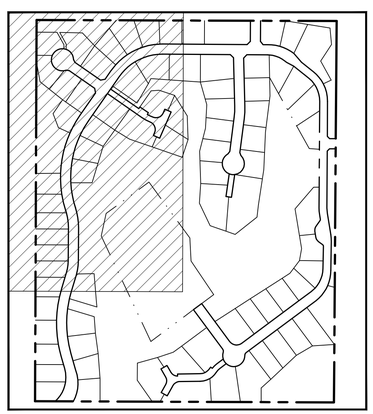
REV. DATE	COMMENT	BY

Overall Construction Stormwater Management Plan
Pinnacle Ridge Subdivison
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE:
CAD ID: 6.0swm-f2.dwg

SHEET:
C6.0





KEY MAP
N.T.S.

GENERAL NOTES:

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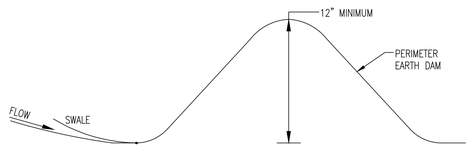
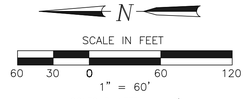


EARTH DAM SECTION
SCALE: N.T.S.



TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	DV
STORM DRAIN INLET PROTECTION	IP	IP
OUTLET PROTECTION	OP	OP
EARTHEN DAM	ED	ED
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
SEDIMENT BASIN	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

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CITY DEVELOPMENT ENGINEER DATE

FOR REVIEW

MAJOR SUBDIVISION
FINAL PLAN

REV. DATE	COMMENT	BY

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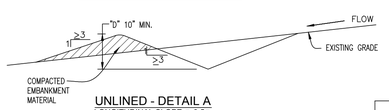
Construction Stormwater Management Plan
Pinnacle Ridge Subdivison
Filing 2
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: SEE PLAN
CAD ID: 6.0swm-f2.dwg

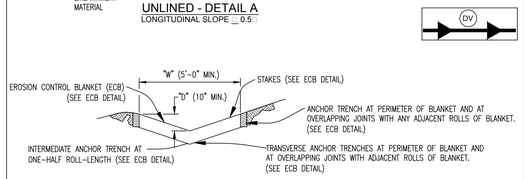
SHEET
C6.1

DIVERSION DITCH DETAIL A

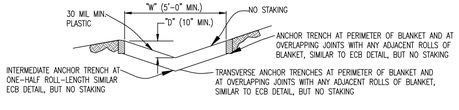
DV



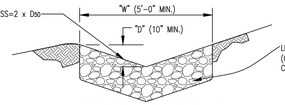
UNLINED - DETAIL A
LONGITUDINAL SLOPE ≤ 0.5%



EROSION CONTROL BLANKET (ECB) LINED - DETAIL B
LONGITUDINAL SLOPE 0.5% TO 3%



PLASTIC LINED - DETAIL C
LONGITUDINAL SLOPE 3% TO 33%



RIPRAP LINED - DETAIL D
LONGITUDINAL SLOPE 3% TO 33%

DIVERSION DITCH INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF DIVERSION DITCH.
   - TYPE OF DITCH (UNLINED, ECB PLASTIC LINED OR RIPRAP LINED).
   - LENGTH OF EACH TYPE OF DITCH.
   - DEPTH, "D", AND WIDTH, "W" DIMENSIONS.
   - FOR ECB LINED DITCH, EROSION CONTROL BLANKET TYPE (SEE ECB DETAIL).
   - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, "D 50 ".
2. SEE DRAINAGE PLANS FOR DETAILS OF ANY PERMANENT CONVEYANCE FACULTIES OR DIVERSION DITCHES EXCEEDING A 2 YEAR FLOOD 10 CFS.
3. DIVERSION DITCHES INDICATED ON INITIAL SWMP PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES..
4. FOR ECB LINED DITCHES, INSTALLATION OF EROSION CONTROL BLANKET SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.
5. IN LOCATIONS WHERE CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION DITCH, THE PERMITTEES SHALL INSTALL A TEMPORARY CULVERT WITH A MINUM DIAMETER OF 12-INCHES.

DIVERSION DITCH MAINTENANCE NOTES

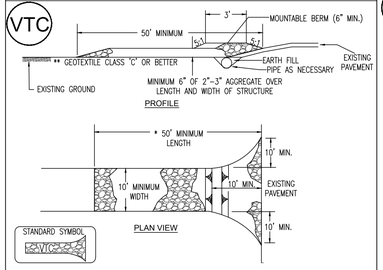
1. THE SWMP MANAGER SHALL INSPECT DIVERSION DITCHES WEEKLY AND DURING AND AFTER ANY STORM. MAKE REPAIRS AS NECESSARY.
2. DIVERSION DITCHES ARE TO REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION, OR IF APPROVED BY LOCAL JURISDICTION MAY BE LEFT IN PLACE.
3. IF DIVERSION DITCHES ARE REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, DRILL SEEDED, HAY CRIMPED MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

DETAIL BASED ON DETAILS PROVIDED BY DOUGLAS COUNTY

Urban Drainage and Flood Control District Drainage Criteria Manual (V.3)	Figure C5-3 DIVERSION DITCH AND DIKE

STABILIZED CONSTRUCTION ENTRANCE

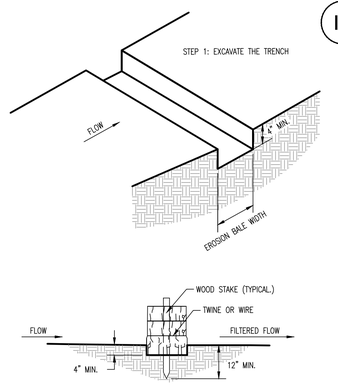
VTC



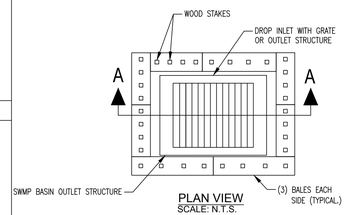
Construction Specification

1. Length – minimum of 50' (*30' for single residence lot).
2. Width – 10' minimum, should be flared at the existing road to provide a tuning radius
3. Geotextile fabric (filter cloth) shall placed over the exiting around prior to placing stone. **This plan approval authority may not require single family residence to use geotextile.
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water – all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location – A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

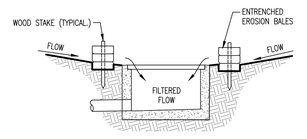
IP



EROSION BALE TRENCHING AND STAKING
SCALE: N.T.S.



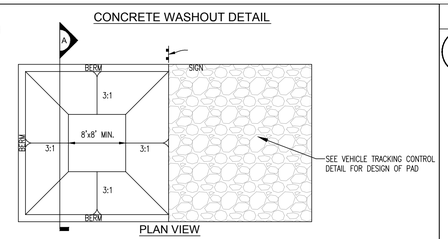
PLAN VIEW
SCALE: N.T.S.



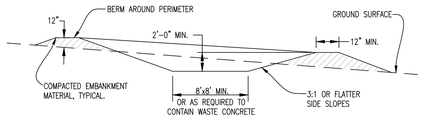
SECTION A-A
EROSION FILTER AT DROP INLET
SCALE: N.T.S.

CONCRETE WASHOUT DETAIL

CWA



PLAN VIEW



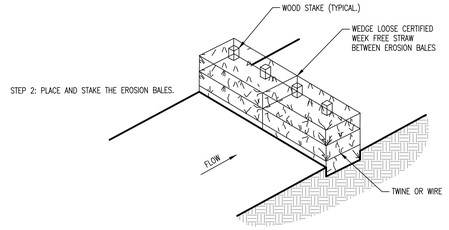
SECTION A

CONCRETE WASHOUT AREA INSTALLATION NOTES

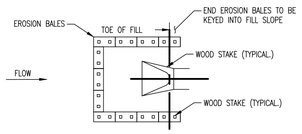
1. SEE PLAN VIEW FOR LOCATIONS OF CONCRETE WASHOUT AREA
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL IS REQUIRED AT THE ACCESS POINT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION

CONCRETE WASHOUT AREA MAINTENANCE NOTES

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, DRILL SEED AND CRIMP MULCH OR OTHERWISE STABILIZE IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
4. INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.



EROSION BALE BMP
SCALE: N.T.S.



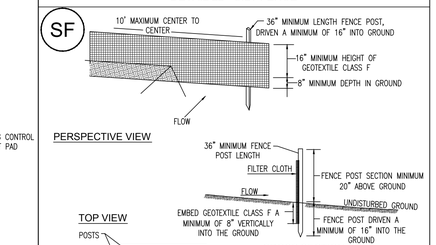
PLAN VIEW
EROSION BALE CULVERT INLET PROTECTION
SCALE: N.T.S.

NOTES

1. STAKES SHALL BE WOOD AND SHALL BE 2" X 2" NOMINAL.
2. EROSION BALES SHALL BE 18" X 18" X 36".
3. EROSION BALES SHALL BE ENTRENCHED 4 IN. MINIMUM INTO THE SOIL TIGHTLY ABUTTED WITH NO GAPS, STAKED, AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERIMETER.

DETAIL 22 - SILT FENCE

SF



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength:	50 lbs./in. (min.)	Test: MSMT 509
Tensile Modulus:	20 lbs./in. (min.)	Test: MSMT 509
Flow Rate	0.3 gal. ft. / minute (max.)	Test MSMT 322
Efficiency	75% (min.)	Test: MSMT 322

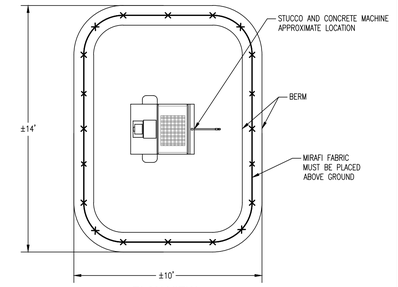
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

SILT FENCE

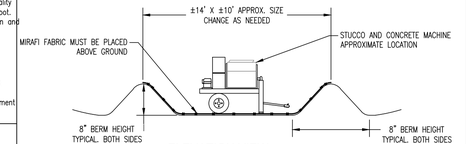
Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

NOTE:
In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.



PLAN VIEW
SCALE: N.T.S.



ELEVATION VIEW
SCALE: N.T.S.

STUCCO □ CONCRETE MACHINE BMP
SCALE N.T.S.

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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FOR REVIEW

MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY

Construction Stormwater Management Plan Details

Pinnacle Ridge Subdivison Filing 2

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE:
CAD ID: 6.0swm-f2.dwg

SHEET□
C6.2

EXHIBIT B

IMPROVEMENTS COST ESTIMATE

DATE: August 22, 2017
DEVELOPMENT NAME: **PINNACLE RIDGE FILING 2**
LOCATION: Mariposa Drive, Grand Junction, CO
PERSON PREPARING:

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
A.	**SANITARY SEWER**				
1	8" PVC Sanitary Sewer Main	LF	384	$ 25.00	$ 9,600.00
2	10" PVC Sanitary Sewer Main	LF		$ 30.00	$ -
3	____ " PVC Sanitary Sewer Main	LF		$ 618.00	$ -
4	Sewer services	EA	8	$ 400.00	$ 3,200.00
5	Sanitary Sewer Manhole	EA	3	$ 3,000.00	$ 9,000.00
6	Sanitary Sewer Drop Manhole	EA	1	$ 9,000.00	$ 9,000.00
7	Connection to Existing Manhole	EA		$ 1,000.00	$ -
8	Concrete Encasement	LF		$ 20.00	$ -
	Subtotal Part A Sanitary Sewer				**$ 30,800.00**
B.	**DOMESTIC WATER**				
1	Air Vacuum Release Valve	EA	1	$ 5,000.00	$ 5,000.00
2	8" PVC Water Main	LF		$ 30.00	$ -
3	10" PVC Water Main	LF	753	$ 35.00	$ 26,355.00
4	_4__" Gatevalve	EA			$ -
5	8" Gatevalve	EA		$ 1,200.00	$ -
6	10" Gatevalve	EA	3	$ 2,250.00	$ 6,750.00
7	Water Services (copper)	EA	8	$ 500.00	$ 4,000.00
8	Connect to Existing Water Line	EA		$ 1,500.00	$ -
9	Fire Hydrant with Valve	EA	2	$ 4,000.00	$ 8,000.00
10	Utility Adjustments	EA			$ -
11	Blowoff	EA		$ 500.00	$ -
12	UTE Water Tap Fee	EA			$ -
	Subtotal Part B - Domestic Water				**$ 50,105.00**
C1	**STREETS**				
1	4" PVC Utility sleeves	LF		$ 15.00	$ -
2	8" & 12" PVC irr. Sleeves	LF		$ 20.00	$ -
3	Xcel (Gas & Electric) Services	EA	8		$ -
4	Qwest and Charter Services	EA	8		$ -
5	Aggregate Base Course (Class 6) (_6" Compacted Thickness - under walk)	TON	161	$ 22.00	$ 3,542.00
6	Aggregate Base Course (Class 6) (road base & shoulders)	TON	1,258	$ 22.00	$ 27,676.00
7	Hot Bituminous Paving, Grading (3" thick)	TON	371	$ 92.00	$ 34,132.00
8	Hot Bituminous Paving, Grading__ (5" thick)	TON		$ 92.00	$ -
9	Hot Bituminous Paving, Patching (___" Thick)	SY			$ -
10	Geotextile	SY		$ 2.00	$ -
11	Concrete Curb (__" Wide by __" High)	LF			$ -

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
12	Concrete Curb and Gutter (2' wide)	LF		$ 22.00	$ -
13	Concrete Curb and Gutter (1.5' wide)	LF		$ 22.00	$ -
14	Monolithic, Vertical Curb, Gutter and Sidewalk (7.0' Wide)	LF		$ 43.00	$ -
15	Drive Over Curb, Gutter, and Sidewalk (6.5' Wide)	LF		$ 43.00	$ -
16	Concrete Sidewalk (6' Wide)	LF	775	$ 28.00	$ 21,700.00
17	Concrete Gutter and Driveway Section (6" Thick)	SY			
18	Concrete Drainage Pan (6' Wide, 6" Thick)	LF		$ 15.00	$ -
19	Concrete Corner Fillet	EA		$ 10,000.00	$ -
20	Concrete Curb Ramp	SY			$ -
21	8" Comb. Cross pans, Fillets & ADA Ramps	SF			$ -
22	Concrete Driveway (_6" Thick)	SY			$ -
23	Driveway/Concrete Repair	SY			$ -
24	Retaining Walls	LF			$ -
25	Street Signs	EA	2	$ 400.00	$ 800.00
26	Striping (New, Remove/Replace)	LF			$ -
27	Street Lights	EA	3	$ 1,500.00	$ 4,500.00
28	Signal Construction or Reconstruction	LS			$ -
29	Flowable Fill	CY			$ -
30	End of the Road Barrier	EA		$ 1,000.00	$ -
C2	**BRIDGES**				
					$ -
1	Box Culvert Pre-Cast	LS			$ -
2	Box Culvert Cast-in-Place	LS			$ -
3	Wingwalls	LS			$ -
4	Parapet Wall	LS			$ -
5	Railing (handrail, guardrail)	LS			$ -
	Subtotal Part C - Streets and Bridges				**$ 92,350.00**
D1	**EARTHWORK**				
1	Mobilization	LS	1	$ 5,000.00	$ 5,000.00
2	Clearing and Grubbing	AC	3	$ 500.00	$ 1,500.00
3	Unclassified Excavation	CY	19,304	$ 4.00	$ 77,216.00
4	Unclassified Embankment	CY	9,046	$ 4.00	$ 36,184.00
5	Import Material	CY	0	$ 3.00	$ -
D2	**REMOVALS AND RESETTING**				
1	Removal of Asphalt	SY			$ -
2	Removal of Miscellaneous Concrete	SY			$ -
3	Remove Curb and Gutter	LF			$ -
4	Removal of Culverts	LF			$ -
5	Remove Structures	EA		$ 400.00	$ -
6	Remove Signs	EA			$ -
7	Remove Fence	LF			$ -
8	Adjust Manhole	EA	2	$ 500.00	$ 1,000.00
9	Adjust Valvebox	EA	3	$ 100.00	$ 300.00
10	Relocate or Adjust Utilities	LS		$ 1,000.00	$ -
11	House & Garage Demo	LS			$ -

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
D3	**EROSION CONTROL, SEEDING, AND SOIL RETENTION**				
1	Sod	SY			$ -
2	Seeding (Native)	AC	2	$ 500.00	$ 1,000.00
3	Seeding (Bluegrass/Lawn)	SY or AC			$ -
4	Hydraulic Seed and Mulching	SY or AC			$ -
5	Soil Retention Blanket	SY			$ -
6	Silt Fence	LF		$ 2.00	$ -
7	Straw Waddles	LF		$ 3.00	$ -
8	Temporary Berms	LF	200	$ 2.00	$ 400.00
9	Inlet Protection	EA		$ 500.00	$ -
10	Sediment Trap/Basin	EA			$ -
11	Monthly Maintenance/Inspection	Month			$ -
12	Watering (Dust Control)	LS	1	$ 2,000.00	$ 2,000.00
13	Temporary Irrigation				$ -
D4	**STORM DRAINAGE FACILITIES**				
1	Finish Grading (incl. Swales, and Ponds)	LS	1	$ 5,000.00	$ 5,000.00
2	18" ADS Storm Drain Pipe	LF		$ 20.00	$ -
3	15" RCP Storm Drain Pipe	LF		$ 35.00	$ -
4	18" RCP Storm Drain Pipe	LF		$ 40.00	$ -
5	24" RCP Storm Drain Pipe	LF		$ 40.00	$ -
6	30" RCP Storm Drain Pipe	LF		$ 50.00	$ -
7	12" ADS Flared End Section	EA		$ 680.00	$ -
8	30" Flared End Section	EA		$ 2,000.00	$ -
9	48" Storm Drain Manhole	EA		$ 3,000.00	$ -
10	60" Storm Drain Manhole	EA		$ 3,500.00	$ -
11	72" Storm Drain Manhole	EA		$ 4,000.00	$ -
12	Manhole with Box Base	EA			$ -
13	Connection to Existing MH	EA			$ -
14	Single Curb Opening Storm Drain Inlet	EA		$ 1,000.00	$ -
15	Double Curb Opening Storm Drain Inlet	EA		$ 2,000.00	$ -
16	Triple Curb Opening Storm Drain Inlet	EA		$ 3,000.00	$ -
17	Area Inlet	EA		$ 2,000.00	$ -
18	Detention Area Outlet structure	EA		$ 5,000.00	$ -
19	Sidewalk Trough Drain	EA		$ 500.00	$ -
20	Pump Systems including Electrical	LS		$ 2,000.00	$ -
21	Concrete V-pan (2' wide x 6" thick)	LF		$ 4.00	$ -
22	seep drains	LF		$ -	$ -
	Subtotal Part D - Grading and Drainage				**$ 129,600.00**
E1	**IRRIGATION**				
1	Connect to Existing Pipe	LS			$ -
2	4" PVC Irrigation Pipe	LF		$ 3.00	$ -
3	8" PVC Irrigation Pipe	LF		$ 4.00	$ -
4	Fittings and Valves	LS			$ -
5	Services	EA		$ 10.00	$ -
6	Pump System and Concrete Vault	LS			$ -
7	Irrigation Structure	EA		$ 1,800.00	$ -
8	Vacuum Relief and/or Air Release Valve	EA			$ -
E2	**LANDSCAPING**				
1	Design/Architecture	LS			$ -
2	Earthwork	CY			$ -
3	Hardscape Features	LS			$ -
4	Plant Material & Planting	LS	1	$ 6,000.00	$ 6,000.00
5	Irrigation System	LS			$ -

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
6	Curbing	LF			$ -
7	Retaining Walls & Structures	LF			$ -
8	1 Year Maintenance Agrmnt.	LS			$ -
9	Topsoil	CY			$ -
	Subtotal Part E - Landscaping and Irrigation				**$ 6,000.00**
	Subtotal Construction Costs				**$ 308,855.00**
F.	**MISCELLANEOUS ITEMS**				
1	Construction staking/surveying	%	2.00%	$ 308,855.00	$ 6,177.10
2	Developer's inspection cost	%		$ 308,855.00	$ -
3	General construction supervsion	%		$ 308,855.00	$ -
4	Quality control testing	%	2.00%	$ 308,855.00	$ 6,177.10
5	Construction traffic control	%	0.00%	$ 308,855.00	$ -
6	City inspection fees	%	0.50%	$ 308,855.00	$ 1,544.28
7	As-builts	%	2.00%	$ 308,855.00	$ 6,177.10
	Subtotal Part F - Miscellaneous Items				**$ 20,075.58**
% = Percentage of total site construction costs					
G.	**COST SUMMARY**				
1	**Total Improvement Costs**				**$ 328,930.58**
2	**City Security (20%)**				**$ 65,786.12**
3	**Total Guarantee Amount**				**$ 394,716.69**

NOTES
1. All prices shall be for items complete in place and accepted.
2. All pipe prices shall include excavation, pipe, bedding, backfill, and compaction.
3. Water main shall include pipe, excavation, bedding, backfill, bends, and appurtenances not itemized elsewhere.
4. All concrete items shall include Aggregate Base Course where required by the drawings.
5. Fill in the pipe type for irrigation pipe and sleeves.
6. Reconditioning shall be calculated to at least 6" outside of back of walk on both sides.
7. Units can be changed if desired, simply annotate what is used.
8. Additional lines or items may be added as needed.

_____
Signature of Developer Date
(If corporation, to be signed by President and attested to by Secretary together with the corporate seals.)

I have reviewed the estimated costs and time schedule shown above and, based on the construction drawings submitted to date and the current cost of construction, I take no exception to the above.

_____
City Development Engineer Date

_____
Community Development Date

August 23, 2017

City of Grand Junction – Planning Department
Attn: Scott Peterson, Senior Planner
250 North 5th Street
Grand Junction, CO 81501

RE: Pinnacle Ridge Subdivision Filing 2
Response to Comments – Round 1
East of Mariposa Drive
Grand Junction, CO
VEAI #: F04-006
FILE #: SUB-2017-273

Dear Mr. Peterson,

Pinnacle Ridge Subdivision is proposed at the above-referenced location in the City of Grand Junction. The following information is provided in response to Round 1 Review Comments dated July 18, 2017 from various City Departments and outside agencies.

CITY PLANNING –Scott Peterson

1. Request is for Final Subdivision Plan review for Filing 2 of Pinnacle Ridge Subdivision in order to develop 8 single-family detached residential lots that would be developed in accordance with the approved Preliminary Plan (City file # SUB-2015-120) on 3.37 +/- acres in an existing R-2 (Residential – 2 du/ac) zoning district. Proposed residential density for all filings within the subdivision would be 1.58 +/- dwelling units/acre (72 lots total). The Comprehensive Plan Future Land Use Map identifies the area as Residential Low (.5 - 2 dwelling units/acre). No further response required.

Response:
Comment acknowledged.

2. Subdivision Plat (Sheets 1):
a. FYI. The Preliminary Plan application approved the use of the cluster provisions for the subdivision, therefore the bulk requirements, building setbacks, etc., for the subdivision will need to meet the standards of the R-4 zone district (Section 21.03.060 (c) (4) of the Zoning and Development Code); minimum lot width of 70', building setbacks of 20' front, 7' side and 25' rear and maximum lot coverage of 50%. Please design house plans accordingly within these parameters.

Response:
Comments acknowledged. Homes sites will be designed utilizing the R4 bulk standards.

b. Are private Drainage Easements needed to be identified at the rear of the properties located along the west property line of the subdivision? If so, please identify and label locations on the plat. Same comment for the properties located on the eastside of Aiguille Drive. Are private Irrigation Easements also needed to serve each individual lot?

Response:
Comments acknowledged. Drainage easements have been delineated and labeled on the final plat. A separate conveyance document for the drainage easements to the HOA will be submitted for review

prior to recordation. There are no public or private irrigation easements associated with this development because there is no irrigation water available or being provided.

c. Correct misspelling of “Aiguille” on Sheet 2.

Response:
Comments acknowledged. The spelling has been corrected.

d. In the Dedication Block, revise Multi-Purpose Easement paragraph to the correct Model Dedication Language (April 2008).

Response:
Comments acknowledged. The language has been revised to reflect the Model Dedication Language.

e. Surveyor’s Title Block in lower right corner of the plat indicates that this is a two sheet plat. Please revise to be Sheet 1 of 1 since a second sheet has not been proposed.

Response:
Comments acknowledged. The Surveyor’s Block has been revised.

3. Fencing:
Is the applicant proposing any subdivision perimeter fencing? If so, please label location within construction documents and include overall height of fencing (Section 21.04.040 (i) (4) of the Zoning and Development Code).

Response:
Comment acknowledged. There is no perimeter fencing proposed for this development.

4. Covenants and Dedication Documents, etc.:
a. Senior City Staff Attorney is currently reviewing submitted CCR’s. City Project Manager will email applicant with the requested changes once review is complete.

Response:
Comments acknowledged. City Senior Staff Attorney comments have been incorporated into the CC&Rs and were submitted for review with the Response to Comments for Filing 1. Upon final review and approval of the CC&Rs by the City, a fully revised copy of the final document will be submitted for recordation with the final plat for Filing 1.

b. All proposed private drainage and irrigation easements etc., dedicated to the HOA shall be conveyed by separate document(s). Please submit proposed conveyance documents, legal descriptions and map exhibits for review prior to recording.

Response:
Comments acknowledged. A separate conveyance document for the drainage easements to the HOA will be submitted for review prior to recordation. There are no private irrigation easements associated with the Pinnacle Ridge development.

c. Submit Statement of Authority document (either previously recorded or proposed) which authorizes Robert W. Jones II to sign as Managing Member (or other Title) on behalf of Two R & D LLC. If not previously recorded, submit original document at time of final subdivision plan recording.
Code Reference: IV-2 of the SSIDS Manual.

Response:
Comments acknowledged. A new Statement of Authority has been executed and will be recorded with a copy provided to the City.

5. Fees:
a. City Park Fee: $1,800.00 (8 new lots @ $225 per new lot payable at time of subdivision plat recording).

Response:
Comments acknowledged.

b. City Open Space Fee: 10% of the value of the raw land payable at time of subdivision plat recording. Senior City Staff Attorney is currently reviewing submitted MAI Appraisal Report and will let City Project Manager know if acceptable in determination of this fee. It appears that the applicant will be paying the required 10% fee for all phases of development, rather than on a per filing basis, since the appraisal report included all 45 acres.

Response:
Comments acknowledged. The developer has offered to dedicate the open space shown as Tract B with Filing 1 to the City of Grand Junction Parks and Recreation Department. Please see information and graphics in the project General Report for information supporting the proposed dedication. The Open Space fee will not be applicable with the dedication of Tract B to the City.

c. School Impact Fee: $560 per dwelling unit payable at time of Planning Clearance issuance.

Response:
Comments acknowledged.

d. Plant Investment Fees: Contact City Customer Service Division for sewer fees payable at time of Planning Clearance issuance. Contact Ute Water Conservancy District for water tap fees payable at time of Planning Clearance issuance.

Response:
Comments acknowledged.

e. See City Development Engineer comments for other applicable fees.
Code Reference: Section 21.06.020 and 030 of the Zoning and Development Code.

Response:
Comments acknowledged.

CITY DEVELOPMENT ENGINEER

Fees:

Transportation Capacity Payment (TCP) – To be determined and collected at the time of planning clearance for individual building permits.

Storm Drainage Fee (in lieu of detention) – None, detention provided.

Inspection Fee – 8 residential units x $90/unit = $720.

Fee In Lieu of Utility Undergrounding – None, no overhead utilities to underground.

Response:
Comments acknowledged.

General:

1. Discuss the construction approach to Filing 1 and 2. How and when will they be built?

Response:
Comments acknowledged. Filing 2 construction will follow along with and be done concurrently with Filing 1 work.

2. The applicant is requesting a grading permit. The City will support issuing a grading permit in concept. The plans and reports aren't clear what will be graded at this time. Is it the entire project, filings 1 and 2, or something else? The Stormwater management drawing and/or plan need to describe how disturbed areas will be stabilized if allowed to sit for an extended period of time. Dust and erosion will be prevalent if disturbed ground protected. Prepare a grading plan showing the desired limits of grading, construction erosion control measures, and permanent or temporary dust and erosion control measures. If revegetation is the chosen measure, appropriate soil preparation and probably temporary irrigation will be necessary to establish growth.

Response:
Comments acknowledged. The site disturbance will be minimized as much as possible. The owner and contractor will work with Mark Barslund and City staff to maintain erosion and storm water management controls during construction activities. Notes have been added to the plans for erosion and re-vegetation measures.

3. When the grading plan is complete, provide a letter from the building department stating they have received hard copies of 1) the geotechnical report, 2) the final grading plan, and 3) a tabulation of the minimum and maximum finished floor elevations by lot. Also reference the individual lot specific grading and drainage plan requirement. This must be the final grading plan and tabulation after all revisions. Include the revision date for the grading plan on the letter: this date must match the revision date on the final plans to be approved by the City.

Response:
Comments acknowledged. Notes have been added to the plans referencing the need for an individual lot drainage and grading plan. The TOF tables and grading plans will be provided to Mesa County Building Dept. when the final plans are approved.

4. Provide easement description and exhibit for the storm and sanitary sewers crossing City property. The City will prepare the easement document.

Response:
The description and exhibit were submitted for review with the Response to Comments for Filing 1.

5. Street lights are not shown at the required TEDS manual spacing of every 250' and at all intersections. Either install per standards or submit a TED's exception requesting something different.

Response:
Comments acknowledged. A new site plan Sheet C1.1 depicting street lights and street signage with fire hydrant flange elevations has been added to the plan set. Street lights are also shown on Sheet C4.0.

6. Record a site plan establishing the unusual CC&R responsibilities, lot grading plans, engineered foundations, etc.

Response:
Comments acknowledged. A new site plan to be recorded with the requested notes has been added to the plan set.

Plans:

1. See redlined plans. Respond in different color ink next to each comment and return with written response.

Response:
Comments acknowledged. See the "green lines" on the revised plans.

2. The plans need a thorough quality control check and many details have not been

Response:
Comments acknowledged.

3. Include a sheet that shows all filing 2 construction and any grading or utilities outside of filing 2. Show what was installed with filing 1.

Response:
Comments acknowledged.

4. Please include a benchmark with the appropriate description and coordinates on the construction drawings. Include the horizontal and vertical datum source. It shall be located on or close to the site for

ease of use, where it won't be destroyed, and shown graphically. Also include on the construction drawings coordinates on a minimum of two of the exterior boundary corners.

Response:
These are shown on Sheet CO.2

5. Make sure acceptance blocks are on all sheets except the outside agency detail sheets and 521 sheets.

Response:
Acceptance Blocks are shown on all sheets.

6. There have been recent problems with fire hydrants set to the wrong elevations and having to be raised after the fact. Call out flange elevations for all fire hydrants according to the appropriate water utility providers details. The hydrants shall be as-built prior to concrete.

Response:
Fire hydrant top of bottom flange elevations are shown on Sheet C1.1 and referenced on Sheet C3.0

7. The grading for the diversion ditches needs to be reflected on the grading plan and the cross sections. Currently, they are only shown on the Stormwater management plan. They are shown as unlined on sheet C6.0. I suspect there will be a lot of sediment in these ditches and it will deposit a lot of sediment in the roadside ditches. The City will be maintaining the roadside ditches and all grading must be designed to minimize sedimentation and erosion in these ditches. The drainage report must design these ditches including design flow velocity erosion and sedimentation.

Response:
The ditches are shown on the grading plans. Design flows, velocities, and depths are included in the drainage report. The roadside ditches will be lined with filter fabric and rock.

8. Address driveway culverts and how they will be handled on the plans.

Response:
A typical detail for future driveway culverts and sidewalk replacement has been added to Sheet C4.1.

9. It is critical to establish areas of no disturbance so construction traffic doesn't travel on open spaces. The desert pavement is pretty well established in many areas and erosion is fairly small. Any disturbance of these areas will increase erosion.

Response:
Minimal disruption to areas not needed for grading purposes will be enforced. Defined haul and access roads for circulation will be clearly marked in the field and used exclusively for site circulation.

10. Review the signage memo from a few months ago. No outlet or dead end signs are required. May be others. Include in DIA.

Response:

Signage Sheet C1.1 has been added to the plan set.

11. Provide a temporary turn around and easement at the end of filing 2.

Response:
Comments acknowledged. The temporary turnaround is shown in the ingress/egress and utility easement on Lot 101 and is dedicated with Filing 1.

Drainage Report:

1. All detention basins and infiltration-based retention basins must be registered on the State of Colorado Stormwater Detention and Infiltration Facility portal. The design engineer must visit the website and follow the directions to register the new basin. The web portal address is:
https://maperture.digitaldataservices.com/gvh/?viewer=cswdif
This must be complete and accepted prior to plan approval.

Response:
Comments acknowledged. The drainage ponds will be registered on the State website.

2. Refer to section 404.2, Design Storm Events, in the SWMM. The street must be designed to carry the 100 event with less than 1.0' of ponding at the flowline. Given the roadside ditches and no crown in the street plus the street is in cut on the uphill side and fill on the downhill a new criterion should be proposed. Also, every time a driveway culvert is encountered, the ditch hydraulics are likely reduced. Propose a method to evaluate the 100 yr street capacity. Also evaluate how the ditches and driveway culverts work and the culverts don't wash out. We should discuss this.

Response:
The proposed ditches are designed to convey the 100 year flows. The driveway culvert has been detailed on Sheet C2.2. The 100 yr. event is contained within the ditches and does not inundate the roadway surface. Calculations for the flows, depths, and velocities are contained in the drainage report.

3. The report mentions ditch velocity, check dams, and hydraulic structures but doesn't discuss and none are proposed on the plans. The report must discuss ditch velocities and how they will be designed to prevent both sedimentation and erosion as was discussed in the Preliminary Plan review. The report shows velocities for the 2-yr storm in excess of 6 fps which will erode site soils.

Response:
The ditches and velocities are detailed in the drainage report. The roadside ditches will be lined with filter fabric and rock. All velocities are below the permissible velocities shown in Table 805 of the SWMM manual.

4. The curb and gutter on the west side must be designed to carry the 100 yr event.

Response:
The height of the curb has been raised….the calculations are shown in the drainage report.

5. The pipe down Ridgeway Court was designed but the pipes on site conveying water from the ditches to the ponds were not.

Response:
Plan schematics of the storm piping, and HGL calculations are shown in the drainage report for inlets, pipe segments and culverts.

6. Section 3D, report talks about checking street and inlet capacities to be done in the final drainage report. This is the final. No inlets were sized or designed.

Response:
The sizing has been included in the drainage report, see Appendix D and the inlet capacity chart. Only one type of inlet is proposed for this project. It is a 2x3 area inlet. Also, to increase the capacity of inlet 200 to accept the 100 year flows, the inlet has been modified with weir openings in the side.

7. The report says the runoff from basin DD2 will be routed to the lot at the pond 4 outfall. The plan doesn't show how to accomplish this.

Response:
A drainage swale has been added to the grading plan that intercepts the runoff and directs it to the outfall.

8. The outflow from pond 1 appears to travel in an open ditch down a steep slope to the roadside ditch. This will deposit sediment quickly in the roadside ditch.

Response:
We have revised the design to run a pipe to the bottom of the hill and discharge directly to the roadside ditch.

9. I don't understand the HGEGL2y table although it looks like the 18" pipe will easily handle the pond 2 100 yr discharge. Let's visit.

Response:
A more descriptive piping schematic and table have been added to the drainage report. The HGL calculations and HGL have been added to the pipe segment profiles for clarity. These are also located in the drainage report.

10. The report needs to address the diversion ditches on the hillside behind all houses, see comment under plans.

Response:
The drainage ditches have been shown on the grading plans and are detailed in the drainage report.

Stormwater:

1. Obtain the 521 permit.

Response:
Comments acknowledged. A 5-2-1 permit will be obtained for the entire site with the final plat and plans for Filing 1.

Geotechnical Report:

1. General note 9 says the contractor shall provide testing. To ensure the requirements of the geotech report and the materials testing plan are correctly implemented, the owner should be providing testing and on-site geotechnical engineering.

Response:
The owner will provide the construction testing.

2. Address the water quality and detention basins uphill of existing houses. The water quality component will keep water in the basins for up to 40 hours whenever it rains. Will this water infiltrate and cause problems for downhill structures? Do the ponds need to be lined up to the water quality capture volume elevation plus a little freeboard? Any other concerns about this situation?

Response:
A pond liner has been added to the detention ponds to the elevation of the WQ ponding volume.

3. The report mentions underdrains below the sidewalk where it is attached. This filing has very little attached walk. Is an underdrain necessary.

Response:
No underdrain is provided in the first filings. It will be installed in Filing 4 & 5 on Elysium Drive.

4. The report mentions to excavate rock to provide gradual transition from rock to soil. This may not apply on Filing 1 but show on the plans in filings where it does apply.

Response:
This work will be coordinated in the field with the Geotech Engineer during construction.

5. The lab work focuses mostly on test pits #1 and #4. What is the reason other test pits weren't tested?

Response:
I believe they encountered the rock material.

6. Will grading in the areas of filing 4 and 5 occur with filing 1? If so, we need geotechnical info. to assess viability.

Response:
The Geotechnical Engineer will be on site as Grading operations are commencing. We will also be preparing and completing the Final Geotechnical Report for Filings 4 & 5 as the Filing 1 & 2 construction is commencing. Some borrow will occur in Filing 5 area, some filling will occur in the Filing 4 cul-de-sac.

7. What about benching details for fill placement? Are they needed? What about cut areas?

Response:
These details are not needed. Benching is not anticipated, however, if recommended by the Geotech during construction, it will be performed.

8. Is there any value in bedding the utilities in low permeability materials similar to Summer Hill?

Response:
There is merit to this suggestion. We will discuss in further detail as trenching is occurring with the Engineer of Record, City Inspector & Development Engineer after we are able to assess actual conditions. Sanitary sewer will have cut-off walls installed.

Testing Plan:

1. In the reporting section, The City will require a report from HBET stating construction was done in accordance with the geotechnical report, City standards, and the materials testing plan. It shall also summarize site issues encountered and how they were resolved.

Response:
Comments acknowledged.

2. I didn't see subgrade proof rolling prior to basecourse placement. Shouldn't this be done?

Response:
Yes, subgrade proof rolling will be conducted prior to placement of base.

3. Is trench compaction to be 98% of modified like fill placement?

Response:
Recommendations by the Geotech will be followed.

4. Reference benching if required.

Response:
Benching is not anticipated, however will be conducted if required by Geotech.

5. Reference underdrain construction.

Response:
Under drain construction does not occur until Filing 5.

6. In section 2.2 where it identifies 1 test per 300 SY or fill, include a depth requirement. I.e. 1 test per 300 SY per 2' rise or whatever is appropriate.

Response:

We will have this incorporated into the testing plan as we commence construction.

DIA:

1. Exhibit B was not reviewed in detail because the same types of comment from the Filing 1 also apply to Filing 2.

Response:
Comments acknowledged. A revised Exhibit B has been provided with this re-submittal.

2. $20 per foot for sanitary sewer seems pretty light.

Response:
The unit price has been increased.

3. The 8" gate valves should be 10".

Response:
Valve has been changed to 10".

4. Aren't two fire hydrants needed?

Response:
Yes, two (2) are now shown.

5. Fire hydrant seems light.

Response:
Unit price has been increased.

6. What are the irrigation sleeves for? Is irrigation being provided?

Response:
The 4" sleeving are for dry utilities. Irrigation sleeves are not needed.

7. $20 per yard is real light for basecourse.

Response:
The unit price for base is shown as $22.00/ton.

8. Asphalt seems light at $90 per ton. Include reconditioning for subgrade prep.

Response:
The unit price has been increased to $92.00/ton. The prices are obtained from hard bids for the project.

9. $20 for curb, gutter, and walk is light.

Response:
Unit price has been increased to $43.00/ft for combination curb gutter and walk.

10. Include street lights.

Response:
Comments acknowledged. Street lights have been added.

11. Include end of road barriers.

Response:
Barrier has been added.

12. Are $2 and $3 real numbers for excavation and backfill?

Response:
Unit price has been increased to $4.00/yd.

13. Section D3 needs more items.

Response:
Addition items have been added.

14. Include street repair for the storm sewer in the street. Also, there will likely be many services affected that will cost money.

Response:
Asphalt patch/repair has been added. The unit price of the storm line has been increased to account for any services that are encountered.

15. Where is the money for the curb and gutter on the west side?

Response:
This is shown under item #13 in Section C.1.

16. Delete City inspection fees.

Response:
City inspection fees have been eliminated.

17. Is this a good quality control testing number given the added geotechnical presence?

Response:
A 2% cost of construction cost for inspection services seems appropriate.

18. Include money for the Developer's inspection cost.

Response:
What is the purpose of this?

19. Include dry utilities and trenching.

Response:
Dry utility trenching has been added to Section D-1, line item 6.

CC&R'S

1. Complete section 1.10.

Response:
Comments acknowledged. Section 1.10 has been completed to reflect Tracts A and B and was submitted for review with the Response to Comments for Filing 1. Upon final review and approval of the CC&Rs by the City, a fully revised copy of the final document will be submitted for recordation with the final plat and warranty deed.

2. Add diversion ditches to 1.18.

Response:
Comments acknowledged. Diversion ditches have been added to the CC&Rs in Section 1.18. Revised CC&Rs were submitted for review with the Response to Comments for Filing 1.

3. The CC & Rs talk about irrigation water provided by the City. Is irrigation water really being provided? It isn't shown on the plans.

Response:
Comments acknowledged. The CC&Rs have been revised to remove this section. There will not be any irrigation water provided to the Pinnacle Ridge subdivision. Revised CC&Rs were submitted for review with the Response to Comments for Filing 1.

4. A condition of the preliminary plan approval is for the HOA to provide snow removal on Elysium Drive and to post signs stating such in conspicuous locations. Include in the CCRs.

Response:
Comments acknowledged. These provisions are contained within the CC&Rs. See Section 9.12 for details. Revised CC&Rs were submitted for review with the Response to Comments for Filing 1.

CITY SURVEYOR – Peter Krick – peterk@gjcity.org (970) 256-4003

Comments:

1. Please follow up directly with City Surveyor regarding Filing 2 requested plat changes if any.

Response:
See revised final plat for Filing 2.

CITY FIRE DEPARTMENT – Mike Gazdak – mikega@gjcity.org 970) 549-5852

Comments:

1. Fire flow form (Ute Water dated 5/31/17) submitted shows 3621 gpm at 20 psi available at test hydrant. The Fire Flow Water System Report (Vortex) provided on January 12, 2015 Appendix B indicates a predicted fire flow of 2001 gpm at 20 psi for all proposed fire hydrants which is acceptable for the proposed residential structures (V-B construction) up to 6000 square feet.

Response:
Comments acknowledged.

2. The fire department has no other comments or objections to this Major Subdivision (Filing 2).

Response:
Comments acknowledged.

CITY TRANSPORTATION ENGINEER – Sandy Mallory – sandym@gjcity.org (970) 244-1567

Comments:

Filing 2 has the Stop sign & Street name sign listed under construction notes...These signs and the additional signs listed in comments for filing 1 need to be shown in plan for filing 1. "stop sign (R1-1), Street Name signs (D3-1), No outlet sign (W14-2a) at intersection of Mariposa Dr. & Auguille Dr. and 20 MPH Speed Limit sign (R2-1) on Aiguille Dr."

Response:
Required signage has been shown on the revised plans.

CITY ADDRESSING – Pat Dunlap – patd@gjcity.org (970) 256-4030

Comments:

1. Addresses to be assigned at time of final plat recording.

Response:
Comments acknowledged.

OUTSIDE REVIEW AGENCY COMMENTS (Non-City Agencies)

5-2-1 Drainage Authority - Mark Barslund - markb@gjcity.org (970) 256-4106

Comment:

The SWMP is accepted as submitted. Prior to the issuance of a 521 storm water permit the following items must be submitted.

1. A copy of the CDPHE permit.
2. An ORIGINAL signed and notarized 521 O&M agreement.

3. A $900.00 permit fee.

Response:
Comment acknowledged. The above mentioned items were submitted with the Response to Comments for Filing 1.

Mesa County Development Engineer - Dana Brosig - dana.brosig@mesacounty.us (970) 255-5035

Complete annexation required of parcels surrounded by Pinnacle Ridge Subdivision per the Persigo Agreement Section E.

Response:
Comments acknowledged. The City of Grand Junction initiated annexation for the Energy Center Enclave Annexation on November 3, 2009 (ANX-2009-224). The annexation is classified as "withdrawn" as of July 12, 2011 with a note in the file that states "Annexation on hold due to legal boundary issues. No response from City Attorney."

Ute Water Conservancy District - Jim Daugherty - jdaugherty@utewater.org (970) 242-7491

Comments:

1. The water main in Monument Rd is a Contract Water Line (CWL) assessments for the CWL will need to be paid prior to wet tap or tap and meter sales.

Response:
Comments acknowledged.

2. Note 17 needs to read OF 250 "MINIMUM" AND SHALL

Response:
Wording of Note 17 has been revised.

3. If the alternative of regulated yokes were installed during construction for Filing 1, then regulated yokes at services based on pressure limits as determined in the hydraulic analysis for Filing 2 should be installed. Developer will reimburse the District for materials required for this work.

Response:
Comments acknowledged. Note has been added to install regulated yokes.

4. Lot 18's service needs to connect to water main not the SS. Move service 10-feet the north of the manhole SSMH-A2.

Response:
Comments acknowledged. The service line has been adjusted and moved north of SSMH-A2.

5. Check separation on SS and water main.

Response:
Comments acknowledged. The separation has been checked.

6. Show termination for filing two.

Response:
Comments acknowledged. The end of Filing 2 construction is shown just past the fire hydrant.

7. Change AV/AR as in filing one redline.

Response:
Comments acknowledged. The note has been provided.

8. See redline drawing for further comment.

Response:
Comments acknowledged.

9. ALL FEES AND POLICIES IN EFFECT AT TIME OF APPLICATION WILL APPLY.

Response:
Comments acknowledged.

10. If you have any questions concerning any of this, please feel free to contact Ute Water.

Response:
Comments acknowledged.

United States Postal Service - Christopher Buzzell - Christopher.w.buzzell@usps.gov (970) 858-7715

Comments:

1. All new development must be centralized with the cost of mailbox purchase and installation the sole responsibility of the developer.

Response:
Comments acknowledged.

2. Mailbox equipment may be purchased from www.florencemailboxes.com but is only a recommendation, other vendors may also be used.

Response:
Comments acknowledged.

3. Location of mailbox equipment must be pre-approved by local USPS management. For any questions, please contact:

Chris Buzzell
(970) 260-3719
Plat maps can be submitted to:
Christopher.w.buzzell@usps.gov
To determine mailbox placement.

Response:
Comments acknowledged. The final plat has been sent to the USPS for approval of the mailbox equipment location.

Colorado Geological Survey - Jill Carlson - carlson@mines.edu (303) 384-2643

Comments:
CGS has reviewed the Pinnacle Ridge Subdivision Filing 2 final subdivision plan referral, for eight single family detached lots in the southwestern corner of the overall Pinnacle Ridge property, two HOA tracts, and four reserve lots for future development. The referral documents include:

- Pinnacle Ridge Subdivision, Filing 2 plat sheet 1 of 2 (D H Surveys Inc., May 2017),
- General Project Report for Pinnacle Ridge Final Plat and Plan – Filing 2 (Vortex Engineering & Architecture, Inc. [Vortex], June 8, 2017)
- Final Geotechnical Report, Pinnacle Ridge Subdivision, Filings 1, 2, and 3 (Huddleston-Berry Engineering & Testing, LLC [HBET], June 7, 2017),
- Construction Materials Testing and Engineering Oversight Plan, Pinnacle Ridge Subdivision Filings 1, 2, and 3 (HBET, June 7, 2017),
- Improvement Survey Plat (DH Surveys, January 2008),
- Set of 12 construction plans (Vortex, June 12, 2017),
- Final Drainage Report (Vortex, June 9, 2017),
- and other documents.

HBET has satisfactorily addressed CGS's concerns regarding slope stability and rockfall in the western portion of the site, corresponding to proposed Filings 1, 2, and 3.

1. CGS agrees with HBET's recommendations for construction materials testing and engineering oversight to (1) evaluate cut slopes during construction to confirm that soil conditions are consistent with assumptions and to verify long term stability of cut slopes in rock, and (2) evaluate rockfall hazards after completion of site grading. Inconsistencies may require stabilization or other mitigation.

Response:
Comments acknowledged.

2. Provided the recommendations in HBET's Final Geotechnical Report and Construction Materials Testing and Engineering Oversight for Filings 1, 2, and 3 are strictly adhered to, CGS has no objection to approval of Filing 1 as proposed. A similar level of slope and roadway analysis will be needed prior to platting individual lots within proposed Filings 4 and 5 (reserve Lots 102 and 103). CGS looks forward to reviewing this when available.

Response:
Comments acknowledged.

3. As HBET notes on page 14 of their Final Geotechnical Report, lot-specific geotechnical investigations will be needed for use in design of individual foundations, floor slabs, slope stability, grading, drainage, etc.

Response:
Comments acknowledged.

Thank you for the opportunity to review and comment on this project. If you have questions or require further review, please call me at (303) 384-2643, or e-mail carlson@mines.edu.

Mesa County Building Department - Darrell Bay - Darrell.bay@mesacounty.us (970) 244-1651

Comments:
MCBD has no objections.
Provide a soil report, drainage plan and TOF tabulation sheet to our office in paper form.

Response:
Comments acknowledged.

Review Agency: Xcel Energy
Contact Name: Dan Steinkirchner/Danny Moore
Email / Telephone Number: danny.moore@xcelenergy.com (970) 244-2690

Comments:
I have no objections at this time.

Response:
Comments acknowledged.

REVIEW AGENCY
(Responding with "No Comment" or have not responded as of the due date)

The following Review Agencies have responded with "No Comment."

1. Regional Transportation Planning Office (RTPO)

The following Review Agencies have not responded as of the comment due date.

1. Mesa County Valley School District #51
2. Mesa County Assessor's Office
3. Redlands Water & Power
4. Urban Trails Committee

The Petitioner is required to submit electronic responses, labeled as "**Response to Comments**" for the following agencies:

1. **City Planning**
2. **City Development Engineer**
3. **City Surveyor**
4. **City Transportation Engineer**

5. **Ute Water Conservancy District**
6. **5-2-1 Drainage Authority**
7. **Xcel Energy**

Date due: **October 18, 2017**

Please provide a written response for each comment and, for any changes made to other plans or documents indicate specifically where the change was made.

Vortex Engineering, Inc. looks forward to working successfully with the City of Grand Junction to permit this project.

Upon your review of this information, should you have any questions or require additional information, please do not hesitate to contact me at 970-245-9051. Thank you.

Sincerely,
Vortex Engineering, Inc.



Robert W. Jones, II, P.E.

Cc: File

City of Grand Junction
Review Comments

Date: September 13, 2017 **Comment Round No.** 2 **Page No.** 1 of 5
Project Name: Pinnacle Ridge Subdivision, Filing 2 **File No:** SUB-2017-273
Project Location: East of Mariposa Drive

Check appropriate [X] **if comments were mailed, emailed, and/or picked up.**

Property Owner(s): Two R & D LLC – Attn: Robert Jones II
[ ] **Mailing Address:** P. O. Box 39, Fruita, CO 81521
[X] **Email:** rjones@vortexeng.us **Telephone:** (970) 245-9051
[ ] **Date Picked Up:** _____ **Signature:** _____

Representative(s): Vortex Engineering Inc. – Attn: Robert Jones II
[ ] **Mailing Address:** 2394 Patterson Road, Suite 201, Grand Junction, CO 81505
[X] **Email:** rjones@vortexeng.us **Telephone:** (970) 245-9051
[ ] **Date Picked Up:** _____ **Signature:** _____

Developer(s):
[ ] **Mailing Address:**
[ ] **Email:** **Telephone:**
[ ] **Date Picked Up:** _____ **Signature:** _____

CITY CONTACTS

Project Manager: Scott D. Peterson, Senior Planner
Email: scottp@gjcity.org **Telephone:** (970) 244-1447

Dev. Engineer: Rick Dorris
Email: rickdo@gjcity.org **Telephone:** (970) 256-4034

City of Grand Junction
REQUIREMENTS
(with appropriate Code citations)

CITY PLANNING

1. Subdivision Plat (Sheet 1):

a. See City Surveyor review comments and revise as applicable.

b. Provide temporary turn-around easement at the end of Lots 20 & 21.

c. For the signature and notary blocks, Robert W. Jones II, Managing Member will be signing the plat on behalf of Two R & D LLC in accordance with the submitted Statement of Authority document. Revise subdivision plat as necessary.

d. Submit separate legal description and map exhibit for proposed temporary turn-around easement located at the end of Filing 2. Senior City Staff Attorney will prepare dedication document for property owner's signature to be recorded at time of final subdivision plan recording.

e. In the City of Grand Junction Use Block, add recording information for proposed dedication document for private Drainage Easements to the HOA.

Code Reference: V-15 of the SSIDS Manual.

Applicant's Response:

Document Reference:

2. Covenants and Dedication Documents, etc.:
a. Senior City Staff Attorney is currently reviewing re-submitted CCR's. City Project Manager will email applicant with the requested changes once review is complete.
b. Submit conveyance document for proposed private drainage easement to the HOA, along with legal description and map exhibit for review prior to recording.
Code Reference: IV-2 of the SSIDS Manual.
Applicant's Response:
Document Reference:

3. Site Plan for Recording:
Delete Board of County Commissioner's certificate block, as this property is located within the City and no official signatures are required.
Applicant's Response:
Document Reference:

CITY DEVELOPMENT ENGINEER

These comments are very repetitive of filing 1.

GENERAL

Review Comment: When the grading plan is complete, provide a letter from the building department stating they have received hard copies of 1) the geotechnical report, 2) the final grading plan, and 3) a tabulation of the minimum and maximum finished floor elevations by lot. Also reference the individual lot specific grading and drainage plan requirement. This must be the final grading plan and tabulation after all revisions. Include the revision date for the grading plan on the letter: this date must match the revision date on the final plans to be approved by the City.

Applicant's Response:
Document Reference:

PLANS

Review Comment: See redlined plans. Respond in different color ink next to each comment and return with written response.

Also, refer to filing 1 redlines for comments that apply to round 2. To save time, the repetitive comments were not redlined on filing 2.

Applicant's Response:
Document Reference:

Review Comment: See redlined site plan to be recorded. Show all filing 2 construction including utility and drainage work on Talus and Spire courts.

Applicant's Response:
Document Reference:

Review Comment: I suspect there will be a lot of sediment in the diversion ditches which will likely be deposited in the roadside ditches. The City will be maintaining the roadside ditches and all grading and ditches must be designed to minimize sedimentation and erosion. The drainage report must design these ditches including design flow velocity erosion and sedimentation. The revised drainage report did address hydraulics on the roadside ditches and shows rock lining but only included hydraulics on one diversion ditch and didn't address erosion, sedimentation, or revegetation. Include the necessary calculations and include a discussion in the body of the report how the ditches have been addressed and erosion and sedimentation controlled.

Applicant's Response:
Document Reference:

Review Comment: Provide a temporary turn around and easement at the end of filing 2.
Applicant's Response:
Document Reference:

Review Comment: I didn't find sanitary sewer services called out.
Applicant's Response:
Document Reference:

Review Comment: There are steep slopes uphill of lots in several locations on this overall project. These must be revegetated and protected against erosion the keep them from filling the diversion ditches and eroding into the future back yards. This is a critical item for the successful development of this project.

This comment also applies to filing 1 and all future filings.

Applicant's Response:
Document Reference:

DRAINAGE REPORT

See filing 1 comments.

GEOTECHNICAL REPORT

See filing 1 comments.

TESTING PLAN

See filing 1 comments.

DIA

Review Comment: Include reconditioning for subgrade prep.
Applicant's Response:
Document Reference:

Review Comment: The quantities in Section D3 need to cover all areas to be disturbed by overlot grading, not just filing 1; however, this doesn't need to double dip with filing 1. Money should be included for soil prep, mulching, other additives, etc. There is no way simply seeding will grow. Temporary irrigation may be required too.
Applicant's Response:
Document Reference:

Review Comment: It seems the quality control testing number should be higher given they will be covering overlot grading for much of the site. This doesn't need to double dip with filing 1.
Applicant's Response:
Document Reference:

Review Comment: From round 1: "Include money for the Developer's inspection cost." This is for the developer's engineering onsite inspection.
Applicant's Response:
Document Reference:

Review Comment: Include money for the dry utilities, not just the trenching.
Applicant's Response:
Document Reference:

Review Comment: Include money for the diversion ditches.
Applicant's Response:
Document Reference:

Review Comment: Include the retaining wall.
Applicant's Response:
Document Reference:

Review Comment: Include money for the rock in the roadside ditches. This applies to filing 1 too.
Applicant's Response:
Document Reference:

CITY SURVEYOR – Peter Krick – peterk@gjcity.org (970) 256-4003

1. Depict and label City parcel #2945-201-09-061 adjoining this subject site.

2. The Area Summary is incorrect and shall be revised.
Applicant's Response:
Document Reference:

CITY TRANSPORTATION ENGINEER – Sandy Mallory – sandym@gjcity.org (970) 244-1567

Filing 2 has the Stop sign & Street name sign listed under construction notes. These signs and the additional signs listed in comments for filing 1 need to be shown in plan for filing 1. "stop sign (R1-1), Street Name signs (D3-1), No outlet sign (W14-2a) at intersection of Mariposa Dr. & Auguille Dr. and 20 MPH Speed Limit sign (R2-1) on Aiguille Dr."
Applicant's Response:
Document Reference:

OUTSIDE REVIEW AGENCY COMMENTS

(Non-City Agencies)

Review Agency: 5-2-1 Drainage Authority
Contact Name: Mark Barslund
Email / Telephone Number: markb@gjcity.org (970) 256-4106

All requirements have been met. A 5-2-1 D.A. permit may be issued.
Applicant's Response:

Review Agency: Ute Water Conservancy District
Contact Name: Jim Daugherty
Email / Telephone Number: jdaugherty@utewater.org (970) 242-7491

- Show BO at the end of FL 2, ten-inch BO's require a four-inch valve for flushing.
- If lot 21's service is on the four inch main it will not be installed until FL 3.
- See updated configuration on AR/AV detail.
- Provide FL 2 SS P&P for review.
- Show line terminus at the north end of lot 25, not at the FH.

Applicant's Response:

REVIEW AGENCIES

(Responding with "No Comment" or have not responded as of the due date)

The following Review Agencies have not responded as of the comment due date.

1. N/A.

The Petitioner is required to submit electronic responses, labeled as "**Response to Comments**" for the following agencies:

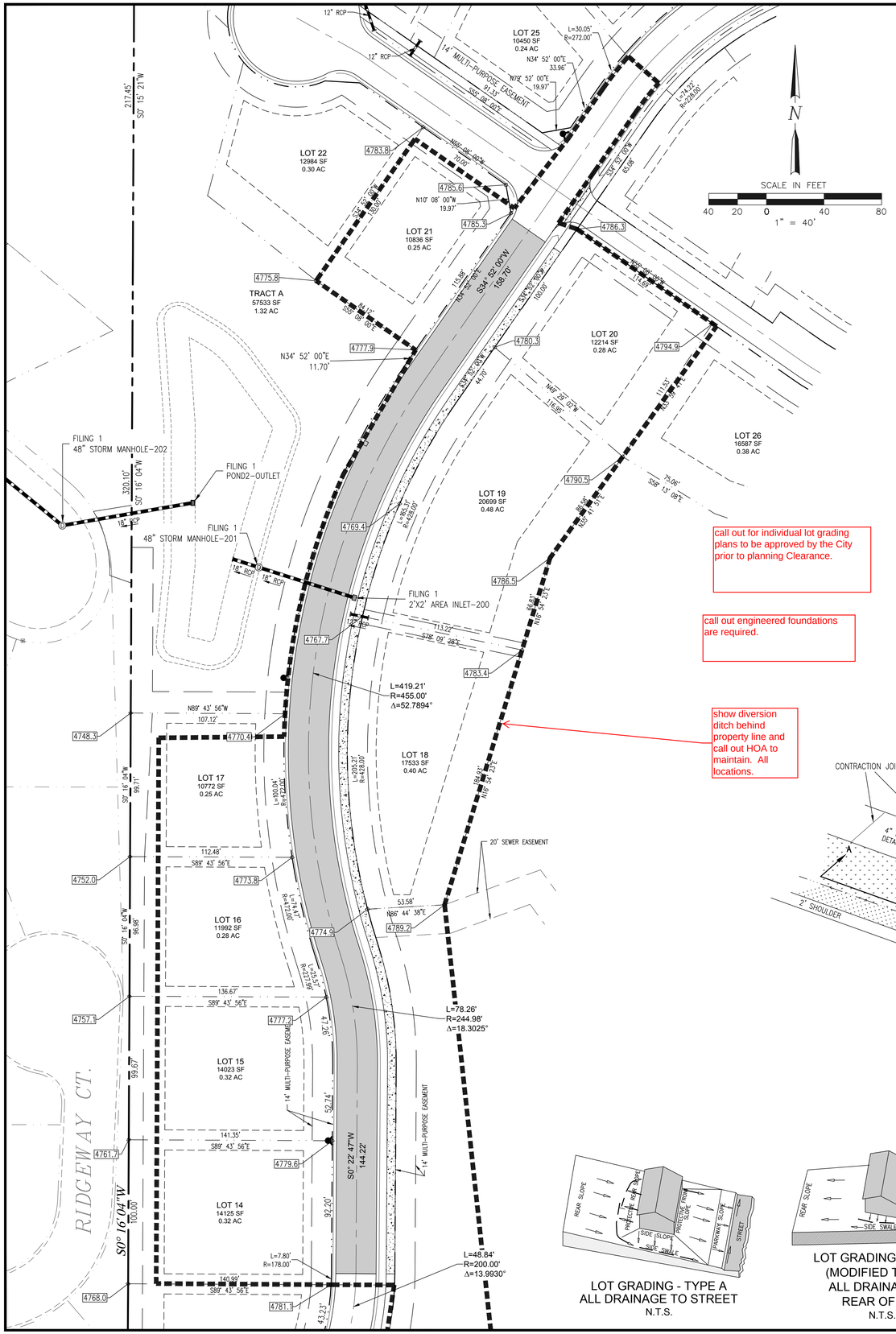
1. **City Planning**
2. **City Development Engineer**
3. **City Surveyor**
4. **City Transportation Engineer**
5. **Ute Water Conservancy District**

Date due: **December 13, 2017**

Please provide a written response for each comment and, for any changes made to other plans or documents indicate specifically where the change was made.

I certify that all of the changes noted above have been made to the appropriate documents and plans and there are no other changes other than those noted in the response.

Applicant's Signature **Date**



call out for individual lot grading plans to be approved by the City prior to planning Clearance.

call out engineered foundations are required.

show diversion ditch behind property line and call out HOA to maintain. All locations.

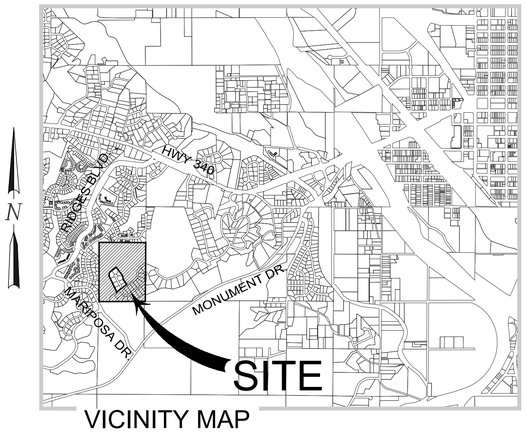
FES or miter to slope.

CONSTRUCTION NOTES:

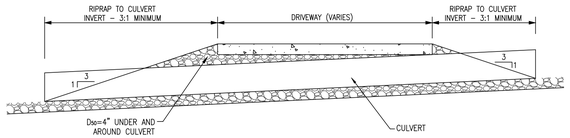
1. PROPOSED FIRE HYDRANT
2. PROPOSED MAILBOX PAD
3. 15' TRANSITION FROM ATTACHED SIDEWALK TO DETACHED SIDEWALK
4. PROPOSED ELECTRIC TRANSFORMER BY XCEL ENERGY
5. PROPOSED ELECTRIC PEDESTAL BY XCEL ENERGY
6. PROPOSED DIVERSION DITCHES DO NOT DISTURB

FILING 2 TOF TABLE

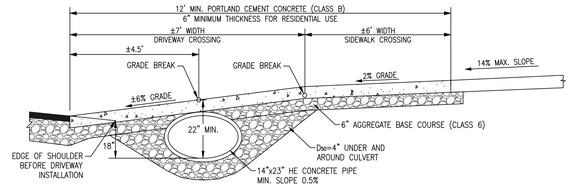
Lot	Grading	Min. TOF	Max. TOF
14	Type C	4781.40	4781.90
15	Type C	4779.40	4779.90
16	Type C	4776.50	4777.00
17	Type C	4773.40	4773.90
18	Type A	4773.00	4773.50
19	Type A	4774.50	4775.50
20	Type A	4782.50	4784.50
21	Type C	4784.50	4786.50



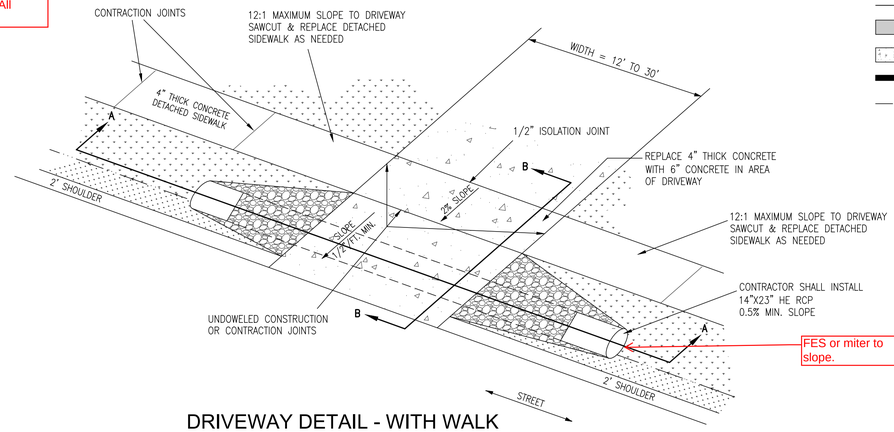
VICINITY MAP



SECTION A-A



SECTION B-B



DRIVEWAY DETAIL - WITH WALK
N.T.S.

LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.

LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.

PROPOSED LAND USE TABLE

USE	AREA	AC	% OF TOTAL	OWNER
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. – 45.11 AC			

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. ALL LOTS MUST HAVE AN INDIVIDUAL GEOTECHNICAL INVESTIGATION PERFORMED AND A SITE SPECIFIC ENGINEERING FOUNDATION.
10. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL.
9. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
10. ALL WATER SERVICES SHALL HAVE A PRESSURE REGULATED YOKE INSTALLED BASED ON PRESSURE LIMITS AS DETERMINED IN THE HYDRAULIC ANALYSIS.
11. DIVERSION DITCHES SHOWN ON THIS PLAN SHALL NOT BE DISTURBED AT ANY TIME.
12. DRIVEWAYS SHALL CONFORM TO THE DETAIL SHOWN ON THIS PLAN.

LEGEND

- PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- 4550.00 LOT CORNER SPOT ELEVATION
- PROPOSED FIRE HYDRANT

BOARD OF COUNTY COMMISSIONERS CERTIFICATE

Approved this_____day of_____A.D. 2017, by the Board of County Commissioners of the County of Mesa, State of Colorado.

Chairman_____

CLERK AND RECORDER'S CERTIFICATE

STATE OF COLORADO } ss
COUNTY OF MESA }

I hereby certify that this instrument was filed in my office at _____o'clock__M., this ____ day of _____ A.D. 2017, and is duly recorded in Book No. _____, at page _____, Reception No. _____, Drawer No. _____ Fees $ _____

_____
Clerk and Recorder

By:_____
Deputy

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY
1	8/09/17	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017	DLS

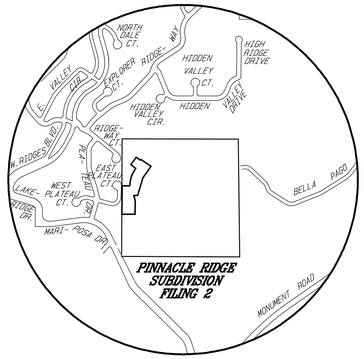
Site Plan for Recording
Filing 2
Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 60'**
CAD ID: **pinnacle-sfr-f2.dwg**

~SHEET~
C1.0

PINNACLE RIDGE SUBDIVISION, FILING 2

A REPLAT OF LOT 100, PINNACLE RIDGE SUBDIVISION FILING 1, Reception No. *******, W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.
City of Grand Junction, Mesa County, Colorado



VICINITY MAP
N.T.S.

LEGEND & ABBREVIATIONS

- FD MESA COUNTY SURVEY MARKER
- FD 3.25" ALUMINUM CAP STAMPED THOMPSON LANGFORD CORP LS 18480
- FD #5 REBAR W/1.5" ALUMINUM CAP STAMPED LS 5933
- SET #5 REBAR W/2" ALUM. CAP STAMPED D H SURVEYS LS 20677

M.C.S.M. = MESA COUNTY SURVEY MARKER
G.V.A.L.C.S. = GRAND VALLEY AREA LOCAL COORDINATE SYSTEM
M.P.E. = MULTIPURPOSE EASEMENT
SEC. = SECTION
SQ.FT. = SQUARE FEET

To be completed by the City of Grand Junction personnel. The accuracy of this information is the responsibility of the City of Grand Junction.

Declaration of Covenants, Restrictions and Conditions of the Pinnacle Ridge Homeowner's Association, Inc.

recorded under Reception No. _____.

CITY APPROVAL

This plat of PINNACLE RIDGE SUBDIVISION, FILING 2, a subdivision of the City of Grand Junction, County of Mesa, State of Colorado, is approved and accepted

on the ____ day of _____, 2017 A.D.

_____ City Manager

_____ City Mayor

CLERK AND RECORDER'S CERTIFICATE

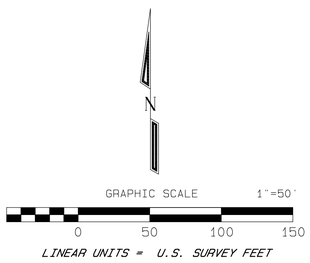
This plat was accepted for filing in the office of the Clerk and Recorder of Mesa County, Colorado at _____ o'clock__M., on this ____ day of _____ 2017 A.D., and was recorded at Reception No. _____, Drawer No. _____, and Fees _____.

_____ Clerk and Recorder

_____ Deputy

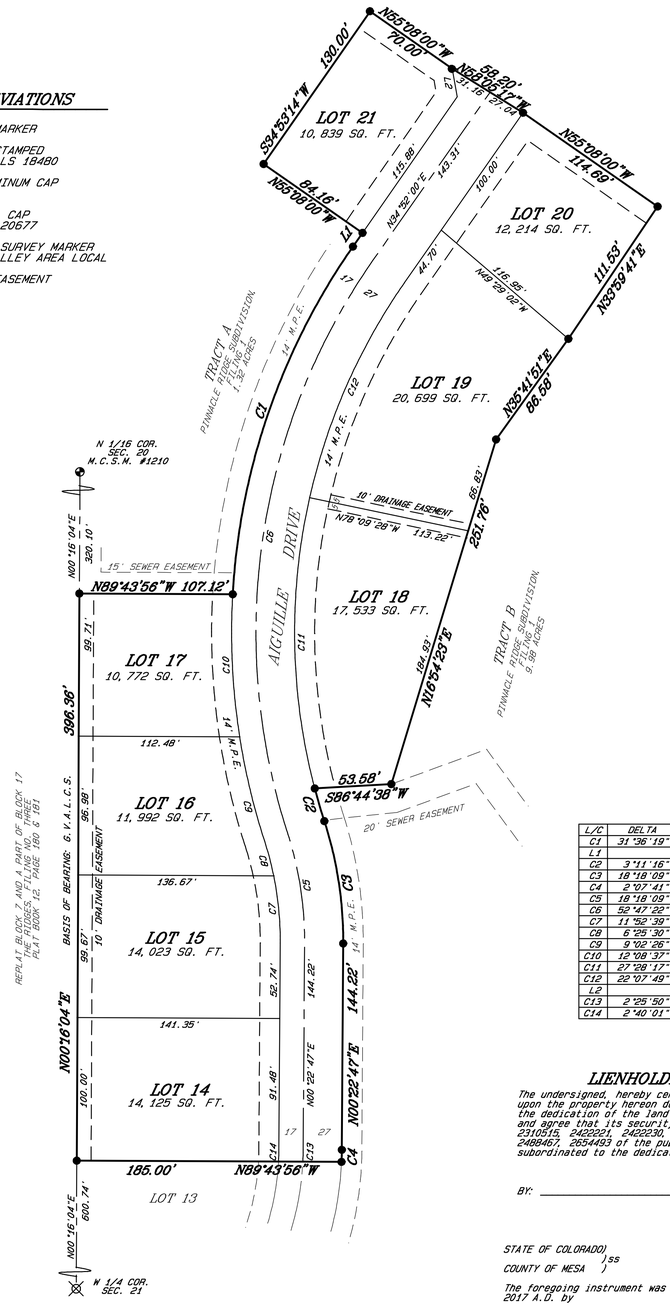
AREA SUMMARY

LOTS	= 2.58 AC./ 77%
DED. ROADS	= 0.79 AC./ 13%
TOTAL	= 3.37 AC./100%



LINEAR UNITS = U.S. SURVEY FEET

NOTICE: According to Colorado law you must commence any legal action based upon any defect in the survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of this certification/statement shown hereon.



L/C	DELTA	ARC/TANG	RADIUS	CHORD	CHORD BEARING
C1	31°36'19"	260.36'	472.00'	257.07'	N19°03'51"E
L1		11.70'			S34°52'00"W
C2	3°11'16"	23.81'	428.00'	23.81'	S16°19'43"E
C3	18°18'09"	86.88'	271.98'	86.51'	S08°46'17"E
C4	2°07'41"	8.43'	227.00'	8.43'	S01°26'37"W
C5	18°18'09"	78.26'	244.98'	77.93'	S08°46'17"E
C6	52°47'28"	419.21'	455.00'	404.54'	S08°28'20"W
C7	11°52'39"	47.26'	227.98'	47.18'	N05°33'32"W
C8	6°25'30"	25.57'	227.98'	25.55'	N14°42'35"W
C9	9°02'26"	74.48'	472.00'	74.40'	N13°24'08"W
C10	12°08'37"	100.04'	472.00'	99.85'	N02°48'37"W
C11	27°28'17"	205.21'	428.00'	203.25'	S00°59'57"E
C12	22°07'49"	165.31'	428.00'	164.29'	S23°48'06"W
L2		19.97'			S10°08'00"E
C13	2°25'50"	8.48'	200.00'	8.48'	S01°35'42"W
C14	2°40'01"	8.52'	183.00'	8.52'	N01°42'47"E

DEDICATION

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, TWO R & D, LLC a Colorado limited liability company is the owner of that real property situate in the W 1/2 NW 1/4 of Section 21, Township 1 South, Range 1 of the Ute Meridian, City of Grand Junction, Mesa County, Colorado; being more particularly described as follows:

Lot 100, Pinnacle Ridge Subdivision, Filing 1, Reception No.

Said parcel contains 3.37 acres more or less.

Said Owner has by these presents laid out, platted and subdivided the above-described real property into Lots, and Tracts as shown hereon, and designated the same as PINNACLE RIDGE SUBDIVISION, FILING 2 in the City of Grand Junction, County of Mesa, State of Colorado, and does hereby offer the following dedications and grants:

All streets, roads and Rights-of-Way are dedicated to the City of Grand Junction for the use of the public forever.

All Multipurpose Easements are dedicated to the City of Grand Junction as perpetual easements for City approved utilities including the installation, operation, maintenance and repair of said utilities and appurtenances which may include but are not limited to, electric lines, cable TV lines, natural gas pipelines, sanitary sewer lines, storm sewers, water lines, telephone lines, traffic control facilities, street lighting, landscaping, trees and grade structures.

All Drainage Easements are granted to the Homeowner's Association by separate instrument.

_____ TWO R & D, LLC, Member

STATE OF COLORADO)
) ss
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____ 2017 A.D. by TWO R & D, LLC, Member _____

Witness my hand and official seal: _____ Notary Public

My commission expires: _____

TITLE CERTIFICATION

State of Colorado
County of Mesa

We, Heritage Title Company, a title insurance company, as duly licensed in the State of Colorado, hereby certify that we have examined the title to the hereon described property, that we find the title to the property is vested to Two R & D, LLC, a Colorado limited liability company ; that the current taxes have been paid; that all mortgages not satisfied or released of record or otherwise terminated by law are shown hereon and that there are no other encumbrances of record; that all easements, reservations and right-of-ways of record are shown hereon.

Date: _____ By: _____

SURVEYOR'S STATEMENT

I, Michael W. Drissel, a registered Professional Land Surveyor in the State of Colorado, do hereby state that this survey was performed by me or under my direct responsibility, supervision, and checking. It is based upon my professional knowledge, information and belief according to applicable standards of practice. This is not a guarantee or warranty, either expressed or implied. Title research was supplied by Heritage Title Company under FILE NUMBER: 598-H0502823-900-GTO.

LIENHOLDERS RATIFICATION OF PLAT

The undersigned, hereby certifies that it is a holder of a security interest upon the property hereon described and does hereby join in and consent to the dedication of the land described in said dedication by the owners thereof and agree that its security interest which is recorded under Reception No. 2236040, 2310515, 2422221, 2422230, 2439195, 2486454, 2654494, 2351449, 2351450, 2439196, 2489457, 2654493 of the public records of Mesa County, Colorado shall be subordinated to the dedications shown hereon.

BY: _____ FOR: Alpine Bank

STATE OF COLORADO)
) ss
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____ 2017 A.D. by

Witness my hand and official seal: _____ Notary Public

My commission expires: _____

FOR REVIEW

REVISED 07/28/17

PINNACLE RIDGE SUBDIVISION FILING 2

LOCATED IN THE
W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.

D H SURVEYS INC.
118 OURAY AVE. – GRAND JUNCTION, CO.
(970) 245-8749

Designed By M.W.D.	Checked By E.E.B.	Job No.	129-04-03
Drawn By TMODEL	Date MAY 2017	Sheet	1 OF 1

Final Plan of Subdivision

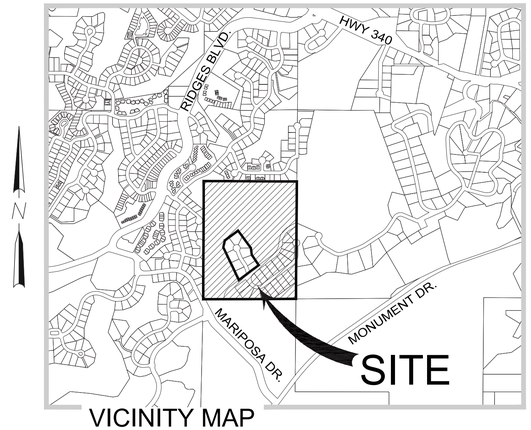
Pinnacle Ridge Subdivision

Filing 2

Grand Junction, Colorado

LEGEND

- EXISTING CONTOUR (4560)
- PROPERTY BOUNDARY
- OLD PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE (W)
- EXISTING WATER LINE (W)
- EXISTING FENCE (X)
- PROPOSED DRY UTILITIES (BY OTHERS) (EGTC)
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- LOT CORNER SPOT ELEVATION (4550.00)
- PROPOSED SWALE/BERM ELEVATION (G 4550.00)
- PROPOSED FL CURB/V-PAN (FL 4550.00)
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER METER
- EXISTING CONTOUR LABEL (4550)
- PROPOSED CONTOUR LABEL (4550.00)



VICINITY MAP

SHEET NUMBER	SHEET TITLE
C0.0	COVER
C0.1	PROJECT NOTES
C0.2	OVERALL SITE PLAN AND FILING PLAN
C1.0	COMPOSITE SITE PLAN - LAYOUT AND GEOMETRY PLAN
C1.1	COMPOSITE SITE PLAN - SIGNAGE & LIGHTING PLAN
C2.0 - C2.2	COMPOSITE SITE PLAN - GRADING PLAN
C3.0	COMPOSITE SITE PLAN - OVERALL UTILITY AND WATER PLAN
C4.0 - C4.1	ROAD AND SEWER PLAN AND PROFILE - AIGUILLE DRIVE
C6.0 - C6.2	CONSTRUCTION STORM WATER MANAGEMENT PLAN

ABBREVIATION LEGEND

&	AND	MCSM	MESA COUNTY SURVEY MONUMENT
℄	CENTERLINE	MFG'S	MANUFACTURER'S
Ø	DIAMETER	M.P.E.	MULTI-PURPOSE EASEMENT
'	FEET	MPH	MILES PER HOUR
"	INCHES	NE COR	NORTHEAST CORNER
±	PLUS OR MINUS	N&S&E	NORTH AND SOUTH AND EAST
APPROX.	APPROXIMATELY	NO.	NUMBER
BRL	BUILDING RESTRICTION LINE	N.T.S.	NOT TO SCALE
BVCS	BEGIN VERTICAL CURVE STATION	PROP.	PROPOSED
BVCE	BEGIN VERTICAL CURVE ELEVATION	PRV	PRESSURE REDUCING VALVE
CB	CATCH BASIN	PSI	POUNDS PER SQUARE INCH
CL III	CLASS 3	PVC	POLYVINYL CHLORIDE
CMP	CORRUGATED METAL PIPE	PVI	POINT OF VERTICAL INTERSECTION
CR	CURB RETURN	PVMT	PAVEMENT
CT.	COURT	O.C. E.W.	ON CENTER EACH WAY
DR.	DRIVE	RCP	REINFORCED CONCRETE PIPE
EL.	ELEVATION	RD	ROAD
ELEV	ELEVATION	RET. WALL	RETAINING WALL
EX.	EXISTING	R.O.W.	RIGHT-OF-WAY
EXIST.	EXISTING	RT	RIGHT
EVCS	END VERTICAL CURVE STATION	SCH	SCHEDULE
EVCE	END VERTICAL CURVE ELEVATION	SD	STORM DRAIN
FL	FLOWLINE	SEC	SECTION
FH	FIRE HYDRANT	SF	SQUARE FEET
FT	FEET	SQ. FT.	SQUARE FEET
GPM	GALLONS PER MINUTE	SS	SANITARY SEWER
GV	GAS VALVE	ST.	STREET
G.V.A.L.C.S.	GRAND VALLEY ALIQUOT LOCAL COORDINATE SYSTEM	STA	STATION
		THRU	THROUGH
HGL	HYDRAULIC GRADE LINE	TYP.	TYPICAL
HI. PT	HIGH POINT	TW	TOP OF WALL
HP	HORSE POWER	U.W.C.D.	UTE WATER CONSERVANCY DISTRICT
INV	INVERT	VC	VERTICAL CURVE
LT	LEFT	VCP	VITRIFIED CLAY PIPE
MAX	MAXIMUM	W/	WITH
MIN	MINIMUM	WM	WATER METER
MH	MANHOLE	WV	WATER VALVE

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21. TOWNSHIP 1 SOUTH. RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM. LOTS 1 – 9. BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK 8 AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = R-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'/25'
   REAR = 30'/5'
   SIDE = 15'/3'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

UTILITY PROVIDERS INFORMATION

UTILITY	PROVIDER	PHONE NUMBER
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

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ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 10-12-17 PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

2	10/11/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS
	REV. DATE	COMMENT	BY

Cover
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE:
CAD ID: 0.0cover-f2.dwg

~SHEET~
C0.0

LOCAL CONTACT INFORMATION
GRAND JUNCTION DEVELOPMENT INSPECTOR: MARK BARSLUND
970-201-1362

GENERAL NOTES:

1. THESE GENERAL NOTES SHALL BE APPLICABLE TO ALL SHEETS WITHIN THIS SET OF DRAWINGS.
2. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE GOVERNING AGENCY. CONTRACTOR MUST CONTACT THE APPROPRIATE AGENCY PRIOR TO CONSTRUCTION IN THE RIGHT-OF-WAY.
3. PLANNING PERMIT APPROVAL MUST BE OBTAINED BY INDIVIDUAL LOT OWNERS PRIOR TO CONSTRUCTION. THE LOT OWNER MUST SUBMIT A PROPOSED DRAINAGE PLAN OF EACH SITE TO THE GOVERNING AGENCY FOR REVIEW.
4. EXISTING WATER, SANITARY, AND STORM SEWER LINES ARE SHOWN BASED ON BEST AVAILABLE INFORMATION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS SPECIFICALLY AT CONNECTION POINTS AND AT POTENTIAL POINTS OF CONFLICT. ALL INFORMATION SHALL BE SUPPLIED TO THE ENGINEER PRIOR TO CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR:
   (A) CONTACTING THE APPROPRIATE AGENCY TO ARRANGE A PRE-CONSTRUCTION MEETING AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
   (B) OBTAINING ALL PERMITS FOR STREET CUTS, UTILITIES CONSTRUCTION AND GRADING. THE COST OF ALL PERMITS SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S BID.
   (C) COORDINATING WITH ALL UTILITY COMPANIES INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. ADVANCE COORDINATION BY THE CONTRACTOR TO ALL UTILITY COMPANIES INVOLVED SHALL BE REQUIRED FOR ANY SERVICE INTERRUPTIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER, PROJECT MANAGER AND THE UTILITY COMPANY 48 HOURS PRIOR TO START OF CONSTRUCTION. NO UTILITY TAPS SHALL BE MADE WITHOUT WRITTEN AUTHORIZATION BY THE UTILITY COMPANY AND THE CITY.
   (D) VERIFICATION OF ALL OTHER UNDERGROUND FACILITIES WHICH MAY BE AFFECTED BY THIS PROJECT AND REPAIR THEREOF IN CASE OF DAMAGE.
   (E) CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO OBTAIN TEMPORARY POWER AND TELEPHONE SERVICE DURING CONSTRUCTION. ALL COST FOR TEMPORARY SERVICES SHALL BE THE CONTRACTORS RESPONSIBILITY.
   (F) RESTORATION OF DISTURBED STREET PAVEMENT AS REQUIRED BY THE CITY AND THE STATE'S DEPARTMENT OF TRANSPORTATION.
   (G) ALL PROJECT SAFETY INCLUDING, BUT NOT LIMITED TO, TRENCH EXCAVATION AND SHORINGS, TRAFFIC CONTROL, AND SECURITY.
   (H) COORDINATING ALL WORK AND INSPECTIONS AS REQUIRED BY THE CITY OR THE STATE.
   (I) OBTAINING NECESSARY PERMITS FROM THE DEPARTMENT OF TRANSPORTATION FOR ALL WORK IN AND ADJACENT TO STATE RIGHT-OF-WAY.
   (J) RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE. AS-BUILTS SHALL INCLUDE UNDERGROUND UTILITIES AS WELL AS ANY FIELD MODIFICATIONS OF THE PLANS.
   (K) KEEPING ADJACENT STREETS FREE AND CLEAN OF ALL DEBRIS AND DIRT FROM THE JOB SITE.
   (L) THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED AT THE JOB SITE AT ALL TIMES. EACH SUBCONTRACTOR (INCLUDING THE SURVEYOR) SHALL HAVE A SIGNED COPY OF THE PLANS AND THE APPROPRIATE STANDARDS AND SPECIFICATIONS IN HIS POSSESSION AT ALL TIMES WHEN IMPROVEMENTS ARE BEING INSTALLED.
   (M) THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR COMPLETION OF INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED BY NOTE TO BE "PROVIDED," "INSTALLED" OR "CONSTRUCTED" UNLESS SPECIFICALLY NOTED OTHERWISE.
   (N) CONTRACTOR WILL HAVE A COPY OF APPROVED SOILS REPORTS FOR PAVEMENT DESIGN AND COMPACTION REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL RECOMMENDATIONS CONTAINED WITHIN THE SOILS REPORT.
   (O) VERIFYING THE ACCURACY OF THE VERTICAL BENCHMARK INFORMATION. CONTRACTOR SHALL USE BENCHMARKS AND DATUMS SHOWN HEREON TO SET PROJECT BENCHMARK(S), BY RUNNING A LEVEL LOOP BETWEEN AT LEAST TWO BENCHMARKS, AND SHALL PROVIDE SURVEY NOTES OF SUCH TO PROJECT ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
6. IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
7. TWO WORKING DAYS BEFORE YOU DIG, GRADE, OR EXCAVATE, CALL THE APPROPRIATE UTILITY NOTIFICATION CENTER FOR THE MARKING OF MEMBER UNDERGROUND UTILITIES. THE UTILITIES SHOWN ON THESE PLANS ARE PLOTTED BASED ON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION, AND REPAIR OF ANY EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. ANY UTILITY DAMAGED BY CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
8. THIS PLAN WAS PREPARED BASED ON SURVEY INFORMATION PROVIDED BY A LICENSED SURVEYOR. VORTEX ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR ERRORS DUE TO INCOMPLETE OR INACCURATE SURVEY INFORMATION.
9. SUBGRADE DENSITY SHALL BE TESTED BY A PRIVATE SOILS TESTING FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING BASE COURSE OR CONCRETE. BASE COURSE DENSITY SHALL ALSO BE TESTED BY THE PRIVATE GEOTECHNICAL FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING PAVEMENT.
10. THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM ALL UTILITY COMPANIES PRIOR TO ANY DEMOLITION WORK OR DISCONNECTION OF ANY SERVICE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANIES.
2. ALL UTILITIES INCLUDING STORM SEWER, SANITARY SEWER AND WATER MAINS SHALL BE COMPLETELY REMOVED FROM THE GROUND UNLESS OTHERWISE SPECIFIED. NO EXISTING UTILITY, STRUCTURES OR UNDERGROUND IMPROVEMENT SHALL BE ABANDONED IN PLACE WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER, OWNER AND GOVERNING AGENCY.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES WHICH ARE TO REMAIN IN SERVICE. INCLUDING BUT NOT LIMITED TO GAS, ELECTRIC, CABLE AND TELEPHONE SERVICES.
4. ALL STRUCTURE INCLUDING BASEMENT WALLS AND FLOOR SLABS SHALL BE COMPLETELY REMOVED FROM THE SITE.
5. ALL DEMOLITION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS INCLUDING BUT NOT LIMITED TO HAZARDOUS MATERIALS, DISPOSAL, HOURS OF OPERATION.
6. ALL EROSION CONTROL MEASURES DESIGNED FOR THE SITE PERIMETER OR TO PROTECT EXISTING IMPROVEMENTS SHALL BE IN PLACE PRIOR TO THE START OF ANY DEMOLITION ACTIVITIES.
7. THE CONTRACTOR SHALL OBTAIN AND REVIEW THE ENVIRONMENTAL STUDIES PROVIDED BY THE OWNER AND TAKE ALL NECESSARY PRECAUTIONS FOR ENVIRONMENTAL SAFETY DURING DEMOLITION ACTIVITIES. IT SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE EXISTING STRUCTURES FOR ANY OTHER CONDITIONS WHICH MAY AFFECT THE DEMOLITION PROCEDURES.
8. ANY CONDITIONS WHICH MAY BE UNCOVERED DURING THE PROCESS OF DEMOLITION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER IMMEDIATELY. ADDITIONAL EXPENSES INCURRED BY UNFORESEEN CONDITIONS SHALL BE APPROVED BY THE OWNER PRIOR TO THE ADDITIONAL WORK.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE PROPERTY FOR THE TYPE AND QUANTITY OF DEMOLITION REQUIRED, PRIOR TO SUBMISSION OF A BID.
10. THE CONTRACTOR SHALL HAVE WATER ON SITE FOR DUST ABATEMENT AT ALL TIMES DURING DEMOLITION ACTIVITIES.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF ALL DEBRIS. BURNING ON SITE SHALL NOT BE PERMITTED. NO DEBRIS INCLUDING CONCRETE OR ASPHALT MAY BE PLACED IN ANY FILL AREA.
12. ANY DAMAGE TO PUBLIC UTILITIES OR ADJACENT PROPERTIES AS A RESULT OF THE DEMOLITION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. REPAIRS SHALL BE MADE IN A TIMELY MANNER TO THE SATISFACTION OF THE DAMAGED PARTY.
13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH DOCUMENTATION OF THE CONDITION OF EXISTING IMPROVEMENTS TO REMAIN IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS NOT DOCUMENTED AS PRE-EXISTING. DOCUMENTATION SHALL BE PROVIDED PRIOR TO COMMENCEMENT OF WORK.
14. ALL EXISTING UTILITY SERVICES SHALL BE COMPLETELY REMOVED FROM THE SITE. SERVICE SHALL BE CUT AND PLUGGED AT THE PROPERTY LINE IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS. THE DEMOLITION CONTRACTOR SHALL CLEARLY MARK ALL STUBS AT THE PROPERTY LINE WITH A 4 X 4 WOOD POST (MINIMUM 4' ABOVE GRADE, 4' BELOW GRADE) MARKED WITH THE SERVICE TYPE.
15. ALL EXISTING WELLS SHALL BE CAPPED AND ABANDONED IN ACCORDANCE WITH ALL STATE REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL REQUIRED PROCEDURES, FILE ALL REQUIRED FORMS, APPLICATIONS AND REPORTS, AND OBTAIN ALL REQUIRED APPROVALS FROM THE STATE ENGINEER'S OFFICE.
16. DURING THE COURSE OF DEMOLITION, CONTRACTOR SHALL PROVIDE SECURITY FENCING AND OTHER PRECAUTIONARY SAFETY MEASURE AS NECESSARY.

EROSION CONTROL NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL FACILITIES SHOWN.
3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORESEEN PROBLEMS OR IF THE PLAN DOES NOT FUNCTION AS INTENDED. A JURISDICTION REPRESENTATIVE MAY REQUIRE ADDITIONAL CONTROL DEVICES UPON INSPECTION OF PROPOSED FACILITIES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED, STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM TRAFFIC FROM THE SITE.
5. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE PAVED, SEEDED WITH NATIVE VEGETATION OR LANDSCAPED. REFER TO LANDSCAPE PLANS FOR SEED MIX AND PLANTING SPECIFICATIONS.
6. EROSION CONTROL STRUCTURES BELOW SODDED AREAS MAY BE REMOVED ONCE SOD AND FINAL LANDSCAPING IS IN PLACE. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION. EROSION CONTROL IN PROPOSED PAVED AREAS SHALL REMAIN IN PLACE UNTIL PAVEMENT IS COMPLETE.
7. THIS PLAN IS ONLY TO BE USED FOR INSTALLATION OF EROSION CONTROL FACILITIES. DO NOT USE THIS PLAN FOR GRADING OR STORM SEWER CONSTRUCTION.
8. CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLE WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES WILL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS, MOVED WHEN NECESSARY AND REMOVED WHEN THE SITE IS PAVED.
9. INLET PROTECTION DEVICES SHALL BE INSTALLED IMMEDIATELY UPON INDIVIDUAL INLET'S BECOMING FUNCTIONAL.
10. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH GRADING AND/OR UTILITY CONSTRUCTION SHALL OBTAIN A COPY OF THE STORM WATER MANAGEMENT PLAN (SWMP) AND ANY OTHER DOCUMENTATION REGARDING "STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY" AND BECOME FAMILIAR WITH THEIR CONTENTS.
11. THE TEMPORARY PARKING AND STORAGE AREA SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AREA, EQUIPMENT CLEANING AREA. EMPLOYEE BREAK AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
12. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, ETC.) SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT WITH STORM WATER DISCHARGES FROM THE SITE.
13. MAINTAIN ON THE SITE OR HAVE READILY AVAILABLE SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
14. FUGITIVE DUST BLOWING FROM THE SITE SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS ABSOLUTELY PROHIBITED.
15. NO RUBBISH, TRASH, GARBAGE, OR OTHER SUCH MATERIALS SHALL BE DISCHARGED INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
16. ALL MEASURES PRESENTED IN THE SWMP SHALL BE INITIATED AS SOON AS PRACTICABLE.
17. IF THE GRAVEL CONSTRUCTION ENTRANCES ARE NOT EFFECTIVE IN REMOVING THE MAJORITY OF DIRT OR MUD FROM THE TIRES OF THE CONSTRUCTION VEHICLES, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP AND THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.
18. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
19. IF SOIL STOCKPILING IS EMPLOYED ON THE SITE, SILT FENCES SHALL BE USED TO HELP CONTAIN THE SEDIMENT.
20. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
21. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN 30 DAYS AFTER FINAL STABILIZATION. FINAL STABILIZATION HAS OCCURRED WHEN ALL SOIL DISTURBING ACTIVITIES ARE COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OF THE COVER FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES HAS BEEN EMPLOYED.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) DUE TO GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT.
23. ALL OFF-SITE CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR STORM DRAIN CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.

EROSION CONTROL MAINTENANCE NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL MEASURES CONTAINED IN THIS PLAN SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT, AND SHOULD BE CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:
3. STRAW BALE INLET PROTECTION DEVICES AND BARRIERS SHALL BE FIXED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR SHALL BE REPLACED IF THEY SHOW SIGNS OF DETERIORATION.
4. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, RE-SEEDED, AND WATERED AS NEEDED.
5. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-THIRD TO ONE-HALF THE HEIGHT OF THE SILT FENCE.
6. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
7. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
8. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES, SEDIMENT IN THE SEDIMENTATION BASINS SHALL NOT EXCEED THE SEDIMENTATION CLEANOUT LEVEL.
9. IF THE STONES IN THE GRAVEL CURB INLET SEDIMENT FILTERS BECOME CLOGGED WITH SEDIMENT, THE STONES MUST BE PULLED AWAY, CLEANED AND REPLACED.
10. THE EMBANKMENT OF THE SEDIMENTATION BASIN SHALL BE CHECKED REGULARLY TO INSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
11. THE TEMPORARY SEDIMENT TRAP AND SEDIMENTATION BASIN STRUCTURES SHALL BE CHECKED REGULARLY TO INSURE THAT THEY ARE STRUCTURALLY SOUND AND HAVE NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. SEDIMENT DEPOSITION SHALL BE REMOVED PERIODICALLY TO ENSURE FULL VOLUME IS AVAILABLE IN THE POND.

GRADING NOTES:

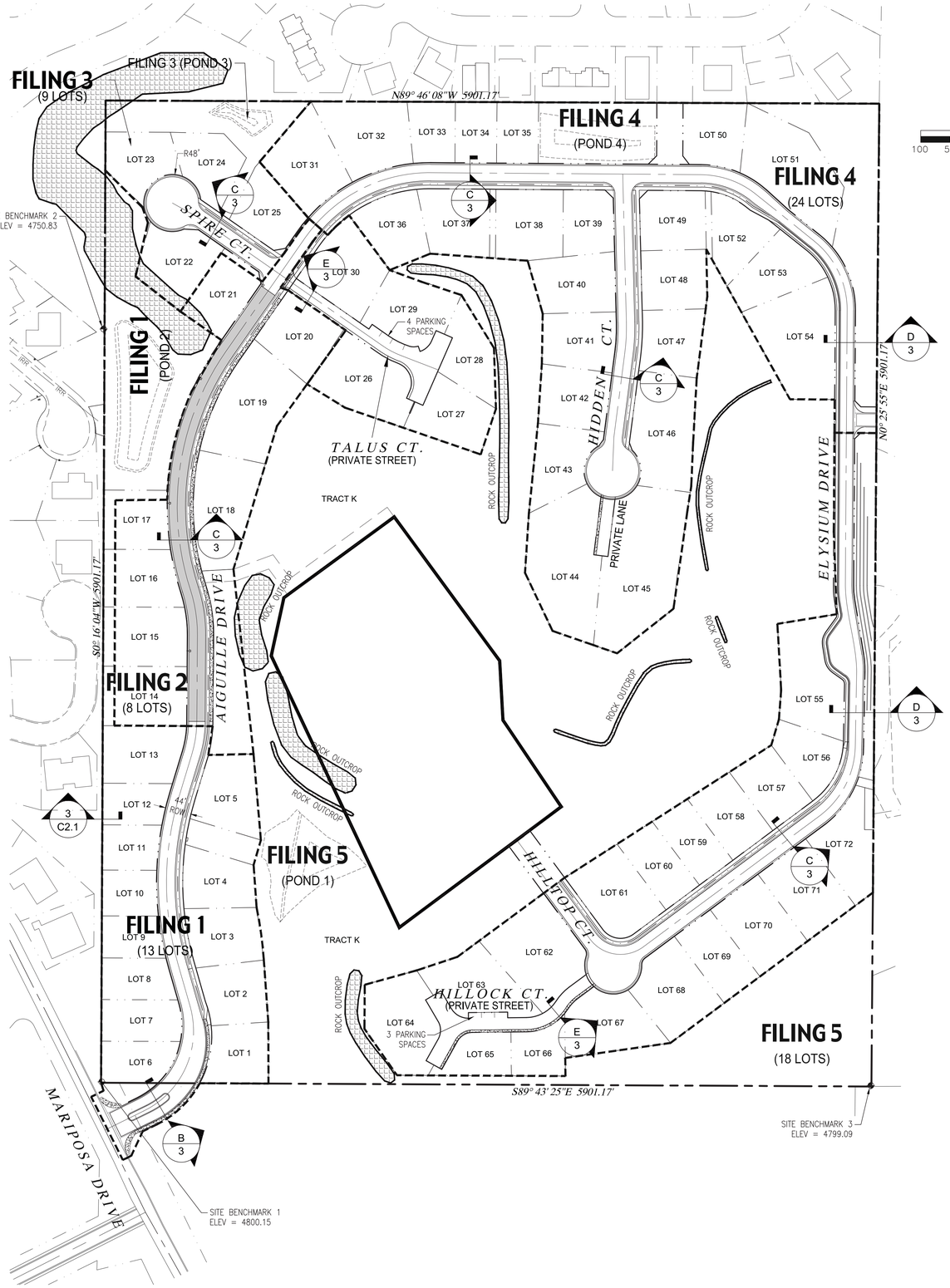
1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. CONTOURS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY. CONTOUR INTERVAL = 1 FOOT UNLESS OTHERWISE NOTED ON PLANS.
3. ALL DISTURBED AREAS THAT ARE UNSURFACED OR ARE NOT DESIGNATED AS LANDSCAPE AREAS ARE TO BE RE-SEEDED WITH DRY NATIVE GRASS SEED MIX.
4. IF DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE SOILS ENGINEER SHALL BE CONTACTED FOR RECOMMENDATIONS.
5. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND STANDARDS OF THE GOVERNING AGENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED AS SPECIFIED BY THE GEOTECH REPORT. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED, LICENSED, SOILS ENGINEER, CERTIFYING THAT THE SUBBASE WITHIN THE AREAS TO BE PAVED HAS BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECS.
6. NO PROPOSED SLOPE SHALL EXCEED TWO (2) HORIZONTAL TO ONE (1) VERTICAL. ALL SLOPED AREAS MUST BE PROTECTED FROM EROSION.
7. IF STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS ARE STOCKPILED ON THE SITE. TOPSOIL MAY BE PLACED TO A HEIGHT OF FIVE FEET. SILT FENCE SHALL BE PLACED AROUND THE BASE OF THE STOCKPILE AND THE STOCKPILE SHALL BE SEEDED WITH NATIVE SEED MIX IMMEDIATELY AFTER STRIPPING OPERATIONS ARE COMPLETE.
8. ON-SITE MATERIALS SUITABLE FOR FILL BENEATH DRIVES, AND PARKING AREAS BEYOND 5' OF THE BUILDING SHALL BE COMPACTED IN ACCORDANCE WITH THE GUIDELINES PRESENTED IN THE SOILS REPORT.
9. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHY AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO ENSURE 0.75% MIN. SLOPE AGAINST ALL GUTTERS TO PREVENT PUDDLING. ANY DISCREPANCIES SHALL BE PROVIDED TO THE ENGINEER IN WRITING IMMEDIATELY.
10. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED AS SPECIFIED IN THE GEOTECH REPORT.
11. SPOT ELEVATIONS REPRESENT FLOWLINE OR TOP OF ASPHALT UNLESS OTHERWISE NOTED.
12. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS WHICH DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB AND GUTTER AND UTILITIES.
13. ALL UTILITIES (MANHOLES, VALVE COVERS, CLEANOUTS, VAULTS, BOXES, ETC.) SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
14. ALL EARTH MOVING AND PLACEMENT OPERATIONS SHALL BE IN CONFORMANCE WITH THE RECOMMENDATIONS IDENTIFIED IN THE SOILS REPORT. THE CONTRACTOR SHALL HAVE A SIGNED AND SEALED COPY OF THE SOILS REPORT ON THE SITE AT ALL TIMES.
15. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.
16. WHERE NEW CURB AND GUTTER IS BEING CONSTRUCTED ADJACENT TO EXISTING ASPHALT, THE FOLLOWING SHALL APPLY: PRIOR TO PLACEMENT OF ANY CONCRETE THE CONTRACTOR SHALL HAVE A LICENSED SURVEYOR VERIFY GRADE AND CROSS SLOPE OF THE CURB AND GUTTER FORMS. THE CONTRACTOR SHALL SUBMIT THE SLOPES AND GRADES TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY SECTION WHICH DOES NOT CONFORM TO THE DESIGN OR TYPICAL CROSS SECTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CURB AND GUTTER POURS WITHOUT APPROVAL OF THE ENGINEER.
17. MAINTENANCE OF ANY STORMWATER MANAGEMENT FACILITY SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL GUIDELINES FOR PRIVATE STORMWATER MANAGEMENT FACILITIES AND SHALL BE THE RESPONSIBILITY OF THE OWNER AND THE ASSIGNEES.
18. SURFACE RESTORATION SHALL BE AS FOLLOWS:
   (A) FINE GRADE ALL AREAS DISTURBED BY THE CONSTRUCTION OPERATIONS AFTER COMPLETION OF BACKFILLING AND COMPACTING. AREAS WHICH ARE TO RECEIVE PAVEMENTS, SURFACING, TOPSOIL OR LANDSCAPING SHALL BE GRADED AS REQUIRED TO ALLOW INSTALLATION OF THE SPECIFIC SURFACE TREATMENT. GRADE ALL OTHER AREAS TO MATCH THE EXISTING GROUND LINE.
   (B) REPLACE AND REPAIR ANY SURFACE IMPROVEMENTS DAMAGED OR REMOVED. CONFORM TO CITY STANDARDS & SPECIFICATIONS.
19. BITUMINOUS PAVEMENT
   (A) BITUMINOUS PAVEMENT SHALL BE REMOVED TO CLEAN STRAIGHT LINES AT THE LOCATIONS INDICATED ON PLANS. WIDTH OF REMOVAL FOR PIPELINES SHALL BE KEPT TO A MINIMUM AS DICTATED BY TRENCHING OPERATIONS, BUT SHALL EXTEND AT LEAST 6 INCHES BEYOND THE LIMITS OF TRENCH EXCAVATION.
   (B) THE CUT SHALL BE MADE WITH PAVEMENT CUTTING WHEEL, SAW OR OTHER APPROVED METHOD, SO AS TO PROVIDE A REASONABLY STRAIGHT AND SQUARE EDGE.

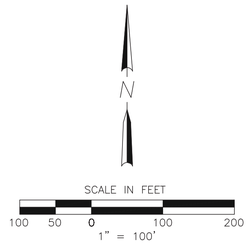
SANITARY SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL GRAVITY SANITARY SEWER LINES SHALL BE POLYVINYL CHLORIDE PIPE (PVC), ASTM D-3034 SDR.35, SEWER LINE MATERIALS AND CONSTRUCTION SHALL CONFORM TO ASTM STANDARDS AND SPECIFICATIONS.
3. DISTANCES FOR SANITARY SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. THEREFORE, DISTANCES SHOWN ON PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT.
4. RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATION. PIPELINE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT AND STEEL SHIMS TO ADJUST THE MANHOLE FRAME TO THE REQUIRED FINAL GRADE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS. ALL FRAMES SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
5. ALL SANITARY SEWER MAINS TESTING SHALL BE IN ACCORDANCE WITH LOCAL SPECIFICATIONS. COPIES OF ALL TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER, THE OWNER AND THE GOVERNING AUTHORITY PRIOR TO THE START OF THE WARRANTY PERIOD.
6. COMPACTION OF ALL TRENCHES WITHIN THE PROJECT SITE MUST BE ATTAINED AND COMPACTION RESULTS SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE. .
7. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING STRUCTURES AND IMPROVEMENTS DURING INSTALLATION OF THE SANITARY SEWER LINE.
8. THE CONTRACTOR SHALL POTHOLE THE EXISTING SEWER MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
9. SANITARY SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.

STORM SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING:
   (A) OBTAINING ALL REQUIRED PERMITS FROM THE CITY, THE DOT, OR ANY REGULATORY AUTHORITY AT THE CONTRACTOR'S COST INCLUDING PERMITS REQUIRED FOR WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
   (B) RESTORATION OF ANY EXISTING IMPROVEMENTS INCLUDING (BUT NOT LIMITED TO) FENCES, SOD, LANDSCAPING, PAVEMENT, SPRINKLER SYSTEMS.
   (C) VERIFICATION AND PROTECTION OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF THE PROJECT.
   (D) PROVIDING AS-BUILT DRAWINGS TO THE CITY AND ENGINEER.
   (E) ALL PERMITTING, DEVELOPMENT, CONNECTION, LOCATION INSPECTION AND TESTING FEES REQUIRED FOR STORM SEWER CONSTRUCTION.
   (F) VERIFYING ALL STANDARD DETAILS CONFORM TO CURRENT CITY/COUNTY STANDARDS AND SPECIFICATIONS.
   (G) FOR OBTAINING AND UNDERSTANDING ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THE CONSTRUCTION OF THE STORM SEWER IMPROVEMENTS.
   (H) FOR SCHEDULING ALL REQUIRED INSPECTIONS.
3. THE CONTRACTOR SHALL POTHOLE THE EXISTING STORM MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
4. STORM SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.
5. THE CONTRACTOR SHALL COORDINATE HIS WORK SCHEDULE WITH THE DITCH COMPANY TO ENSURE ALL DITCH FACILITIES ARE CONSTRUCTED WITHOUT DISRUPTION TO DITCH COMPANY OPERATIONS.
6. ALL STORM SEWER CONSTRUCTION SHALL BE IN CONFORMANCE WITH LOCAL STANDARDS AND SPECIFICATIONS.
7. DISTANCES FOR STORM SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE OR INLET TO CENT





PROPOSED LAND USE TABLE

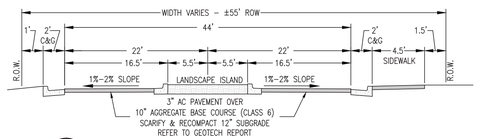
USE	AREA	AC	% OF TOTAL	OWNER
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. = 45.11 AC			

PROJECT NOTES:

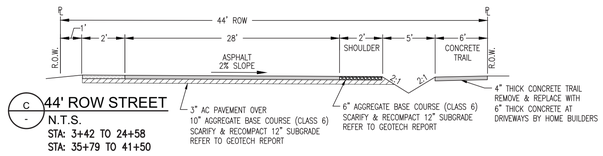
1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM: LOTS 1 – 9. BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK 8 AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = R-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'/25'
   REAR = 30'/5'
   SIDE = 15'/3'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

LEGEND

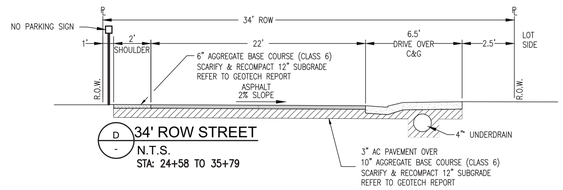
FILING & LIMITS OF DEVELOPMENT DESIGNATION



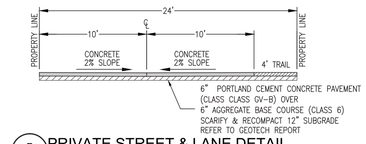
B - MARIPOSA DRIVE ENTRANCE
N.T.S.
STA: 0+24 TO STA: 1+52
(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 3+42)



C - 44' ROW STREET
N.T.S.
STA: 3+42 TO 24+58
STA: 35+79 TO 41+50



D - 34' ROW STREET
N.T.S.
STA: 24+58 TO 35+79



E - PRIVATE STREET & LANE DETAIL
N.T.S.
TRACTS C,F,J

PROJECT BENCHMARK

PROJECT BENCHMARK #1
LOCATED AT THE SOUTHWEST CORNER OF THE SITE.
MONUMENT ID: PLS 18480, THE W1/4 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31563.18 EASTING: 78944.74 ELEV: 4800.15 (NAVD88)

PROJECT BENCHMARK #2
LOCATED AT THE WEST PROPERTY LINE, NEAR OUTLOOK COURT.
MONUMENT ID: NCSN #1210, THE N1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 32880.35 EASTING: 78949.85 ELEV: 4750.83 (NAVD88)

PROJECT BENCHMARK #3
LOCATED AT THE SOUTHEAST CORNER OF THE SITE.
MONUMENT ID: NCSN #642, THE W1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31558.05 EASTING: 80239.95 ELEV: 4799.09 (NAVD88)

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED
CIVIL ENGINEER
18828
10-17-17
PROFESSIONAL ENGINEER

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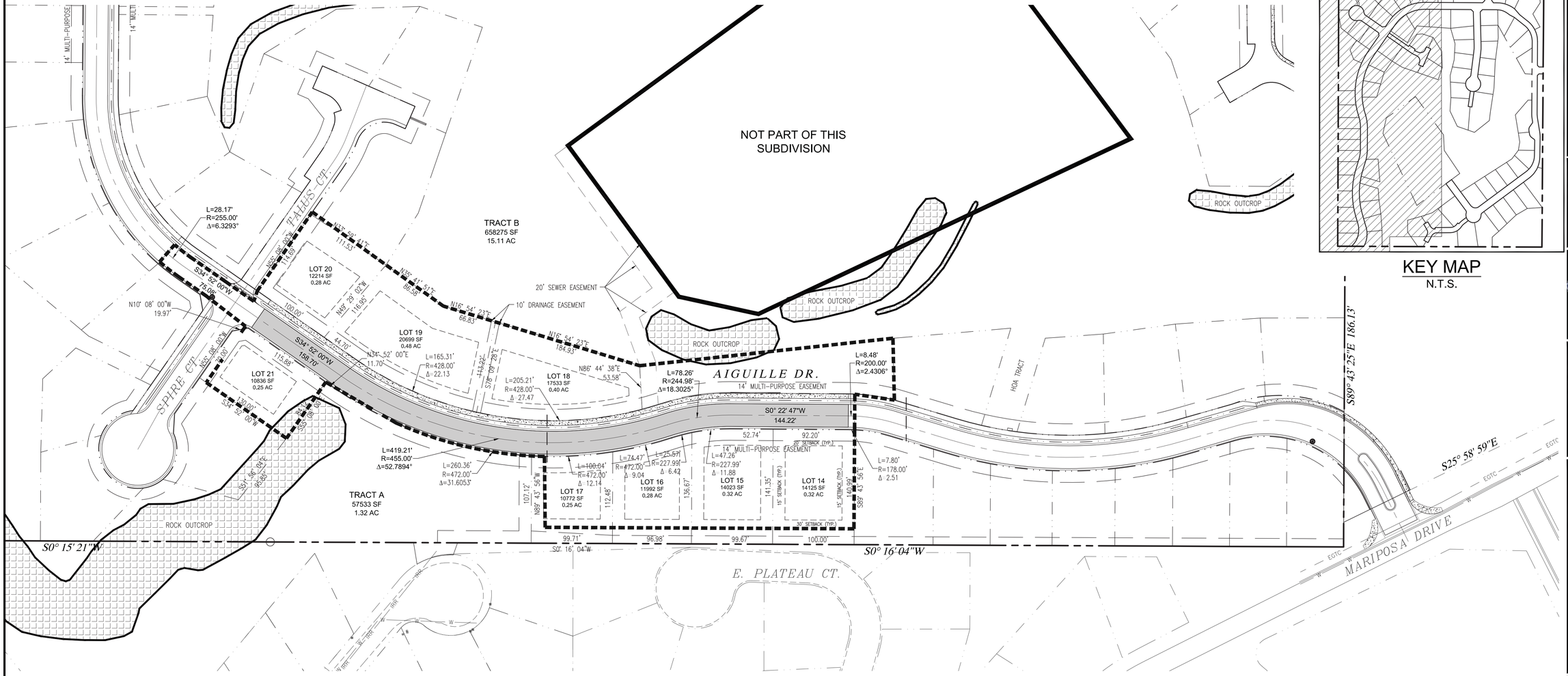
MAJOR SUBDIVISION
FINAL PLAN

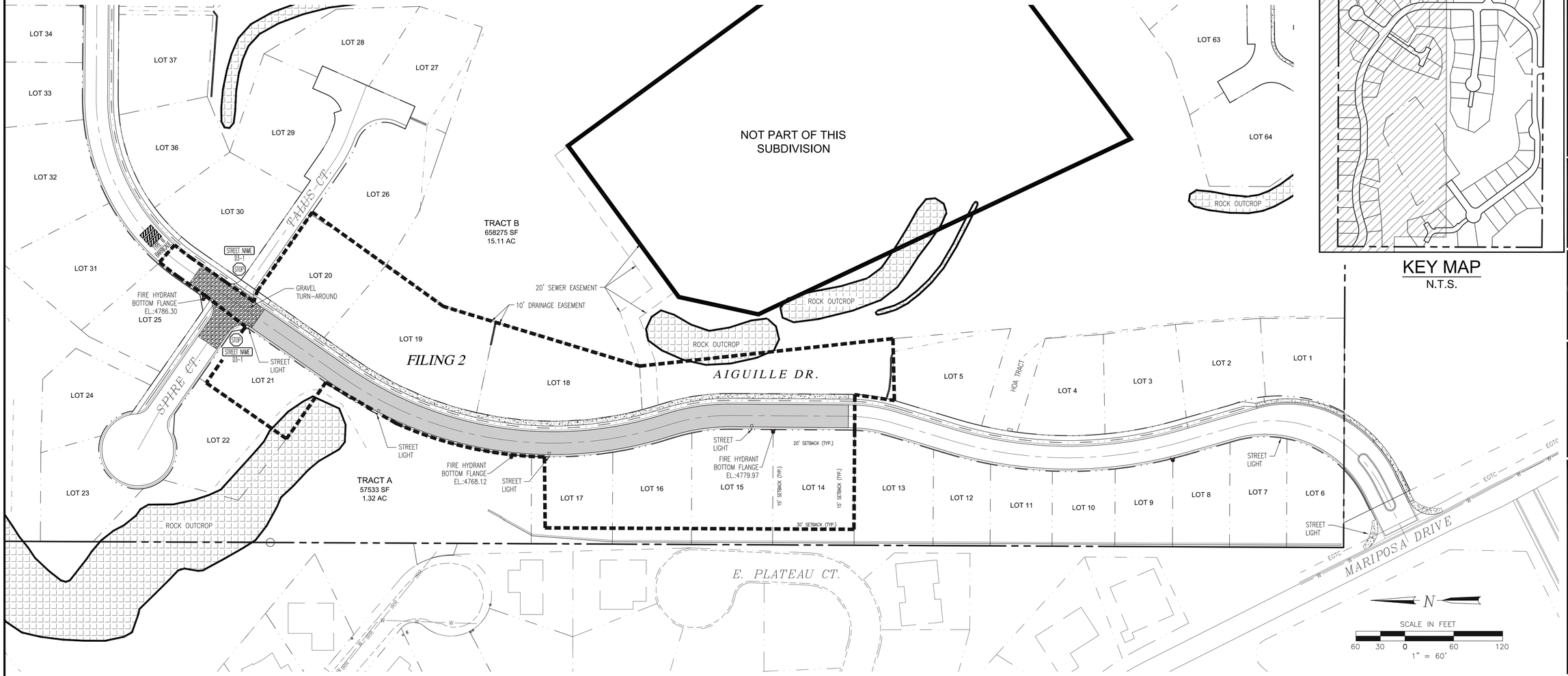
REV	DATE	COMMENT	BY
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS
2	10/11/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS

Filing Plan
Pinnacle Ridge Subdivision Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: 1" = 100'
CAD ID: 0.0cover-f2.dwg

~SHEET~
C0.2


NOT PART OF THIS SUBDIVISION
TRACT B
658275 SF
15.11 AC
TRACT A
57533 SF
1.32 AC
LOT 20
12214 SF
0.28 AC
LOT 19
20699 SF
0.48 AC
LOT 21
10836 SF
0.25 AC
LOT 18
17533 SF
0.40 AC
LOT 17
10772 SF
0.25 AC
LOT 16
11992 SF
0.28 AC
LOT 15
14023 SF
0.32 AC
LOT 14
14125 SF
0.32 AC
TALUS CT.
SPIRE CT.
AIGUILLE DR.
E. PLATEAU CT.
MARIPOSA DRIVE
14' MULTI-PURPOSE
20' SEWER EASEMENT
10' DRAINAGE EASEMENT
14' MULTI-PURPOSE EASEMENT
HOA TRACT
ROCK OUTCROP
L=28.17'
R=255.00'
Δ=6.3293°
S34° 52' 00"W
75.08'
N10° 08' 00"W
19.97'
N55° 08' 00"W
11.69'
N35° 52' 44"E
111.53'
N35° 41' 51"E
86.55'
N49° 29' 02"W
116.95'
N16° 54' 23"E
66.83'
184.93'
S34° 52' 00"W
156.70'
N34° 52' 00"E
11.70'
L=165.31'
R=428.00'
Δ=22.13
S18° 09' 28"E
113.42'
L=205.21'
R=428.00'
Δ=27.47
N86° 44' 38"E
53.58'
L=78.26'
R=244.98'
Δ=18.3025°
L=8.49'
R=200.00'
Δ=2.4306°
S0° 22' 47"W
144.22'
S80° 43' 25"E 186.13'
S25° 58' 59"E
L=7.80'
R=178.00'
Δ=2.51
52.74'
92.20'
20' SETBACK (TYP.)
30' SETBACK (TYP.)
15' SETBACK (TYP.)
L=47.26'
R=227.99'
Δ=11.88
L=100.04'
R=472.00'
Δ=12.14
L=74.47'
R=472.00'
Δ=9.04
L=25.87'
R=227.99'
Δ=6.42
107.12'
N89° 43' 56"W
112.48'
136.67'
141.35'
140.69'
S89° 43' 56"E
L=419.21'
R=455.00'
Δ=52.7894°
L=260.36'
R=472.00'
Δ=31.6053°
S0° 15' 21"W
S0° 16' 04"W
99.71'
96.98'
99.67'
100.00'
EGTC
W
W-RR
W-RR
W
W
W



KEY MAP
N.T.S.

SIGN SCHEDULE

- STOP SIGN (30"x30")
- NO OUTLET SIGN W14-2
- FIXED TYPE III CDOT ROAD BARRICADES (3' x 8' SECTIONS, SEE STD. S-630-2)
- NO TRESPASSING SIGN
- STREET NAME SIGN D3-1
- SPEED LIMIT SIGN R2-1

ALL SIGN POST MOUNTING AND PLACEMENT SHALL BE PER MUTCD OR MESA COUNTY SPECIFICATIONS. CONTRACTOR TO CONTACT MESA COUNTY TRAFFIC PRIOR TO INSTALLATION OF SIGNS. (ph. 970-244-1817)

UTILITY PROVIDERS INFORMATION

UTILITY	*PROVIDER*	*PHONE NUMBER*
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

PROPOSED LAND USE TABLE

USE	*AREA*	*AC*	*% OF TOTAL*	*OWNER*
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
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OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. - 45.11 AC			

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET C0.2

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.
Colorado 811
1-800-922-1987
co811.org

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

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COLORADO LICENSED JAMES C. ATKINSON 18828 10-12-17 PROFESSIONAL ENGINEER

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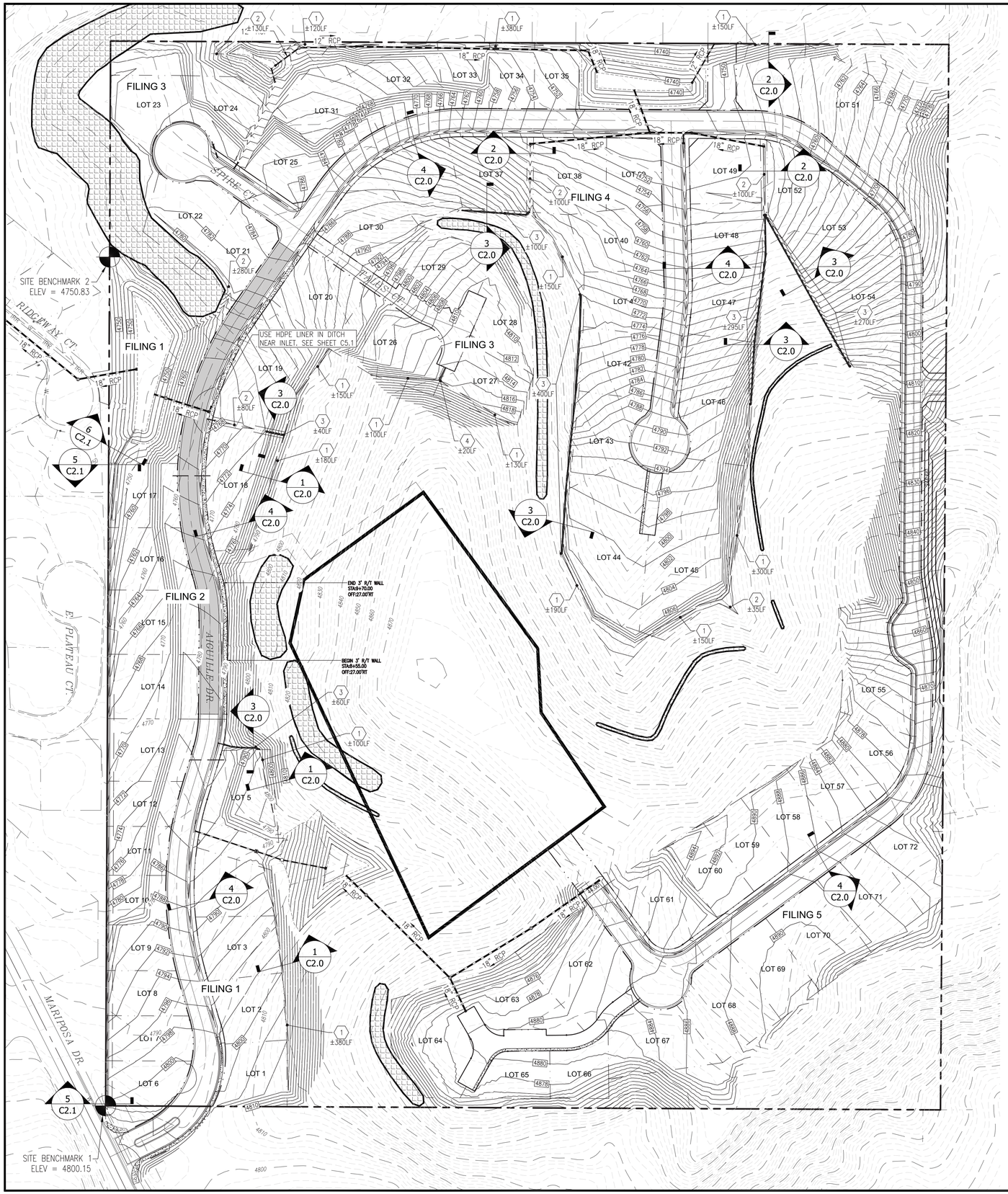
MAJOR SUBDIVISION FINAL PLAN

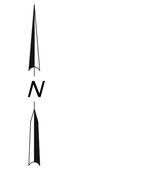
REV.	DATE	COMMENT	BY
1	8/09/17	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017	DLS
2	10/11/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS

Signage & Lighting Plan
Pinnacle Ridge Subdivision Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1" = 60'
CAD ID: **1.0layout-f2.dwg**

~SHEET~
C1.1





CONSTRUCTION NOTES:

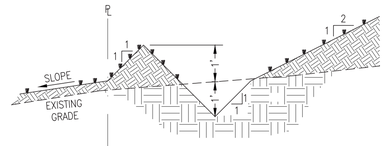
1. CONSTRUCT DIVERSION DITCH W/ BERM SEE DETAIL 1 THIS SHEET
2. CONSTRUCT DIVERSION DITCH SEE DETAIL 2 THIS SHEET
3. CONSTRUCT ROCK LINED DIVERSION DITCH SEE DETAIL 3 THIS SHEET
4. CONSTRUCT 2' CONCRETE V-PAN (FILING 3)

GRADING NOTE:

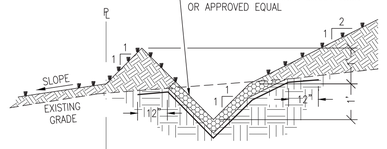
FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

GENERAL NOTES

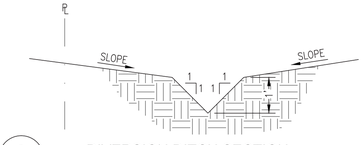
1. ALL CONSTRUCTION TO CONFORM TO THE CURRENT CITY OF GRAND JUNCTION DEPARTMENT OF PUBLIC WORKS AND PLANNING STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR MUST CONTACT CITY OF GRAND JUNCTION TRAFFIC OPERATIONS SUPERVISOR PRIOR TO CONSTRUCTION OR PLACEMENT OF TRAFFIC CONTROL DEVICES/FEATURES (STRIPING, SIGNALS, MEDIANS, ETC.) FOR CONSTRUCTION IN THE RIGHT-OF-WAY ONLY.
3. REFER TO THE GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE STORM SEWER, SEE SHEET C5.0 & C5.1.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE FILING PLAN.
8. REFER TO SHEETS C0.1, C6.0, THRU C6.2 FOR STORMWATER MANAGEMENT CONTROL PLANS AND EROSION CONTROL NOTES.
9. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
10. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL.



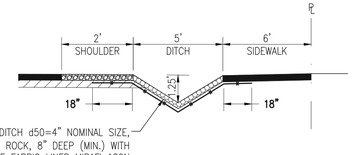
1 C2.0 DIVERSION DITCH SECTION W/ BERM N.T.S.



3 C2.0 ROCK LINED DIVERSION DITCH SECTION N.T.S.



2 C2.0 DIVERSION DITCH SECTION N.T.S.



ROCK LINED DITCH d50=4" NOMINAL SIZE, ANGULAR ROCK, 8" DEEP (MIN.) WITH GEOTEXTILE FABRIC LINER MIRAFI 180N OR APPROVED EQUAL

4 C2.0 ROCK LINED ROADSIDE DITCH N.T.S.

ACCEPTANCE BLOCK

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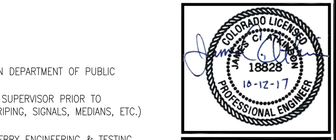
CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828



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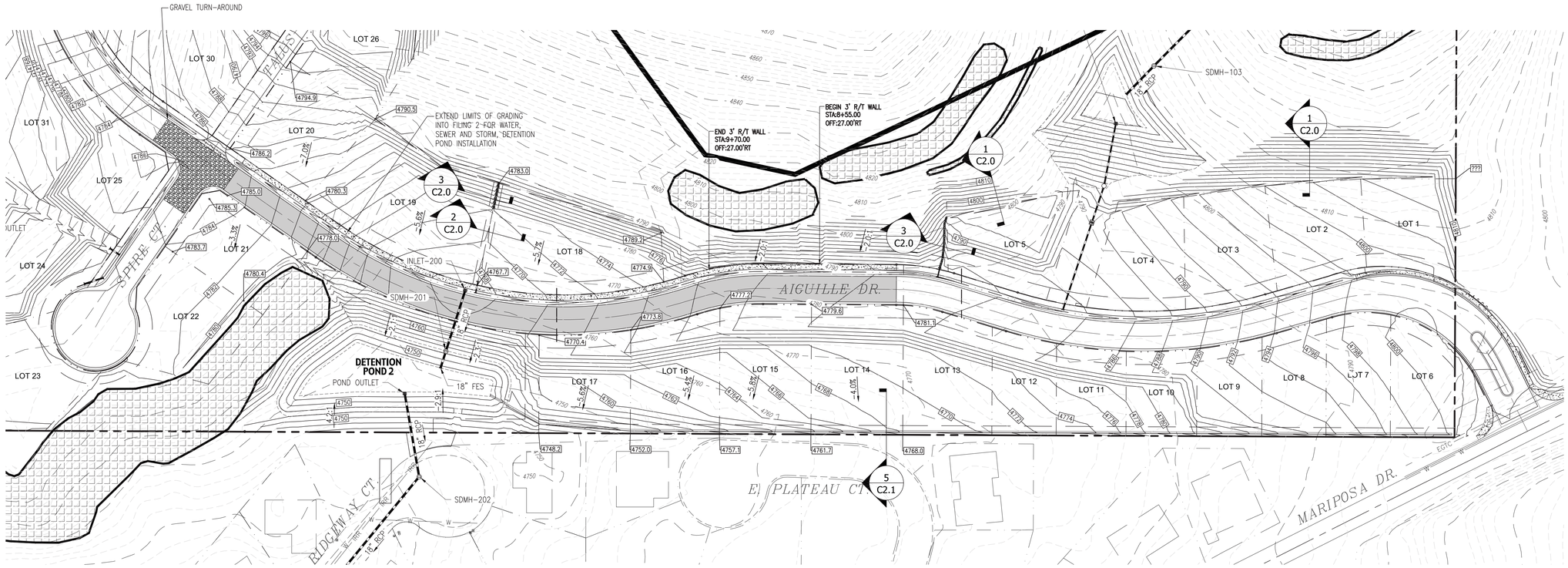
MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS
2	10/11/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS

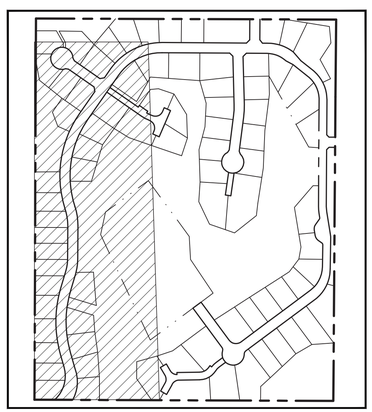
Overall Grading Plan Filings 1 - 5
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: 1"= 80'
CAD ID: 2.0grad-f2.dwg

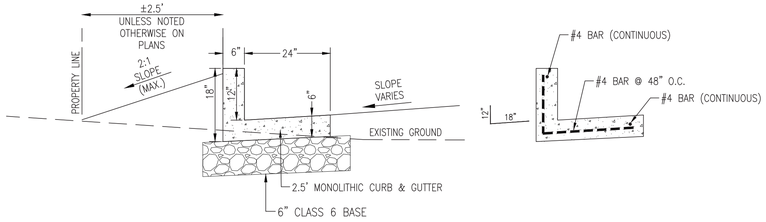
~SHEET~
C2.0



FILING 2 TOF TABLE			
Lot	*Grading*	*Min. TOF*	*Max. TOF*
14	Type C	4781.40	4781.90
15	Type C	4779.40	4779.90
16	Type C	4776.50	4777.00
17	Type C	4773.40	4773.90
18	Type A	4773.00	4773.50
19	Type A	4774.50	4775.50
20	Type A	4782.50	4784.50
21	Type C	4784.50	4786.50



KEY MAP
N.T.S.



WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

5 / C2.1 CONCRETE CURB & GUTTER DETAIL
N.T.S.
CONSTRUCTED DURING FILING 1

GRADING NOTE:

FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

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4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE SANITARY SEWER, SEE SANITARY SEWER PLAN & PROFILE.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE FILING PLAN.
8. REFER TO SHEETS C0.1, C6.0, THRU C6.2 FOR STORMWATER MANAGEMENT CONTROL PLANS AND EROSION CONTROL NOTES.
9. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
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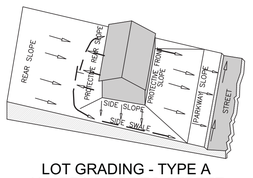
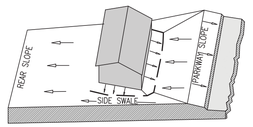


LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.



LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 10-12-17 PROFESSIONAL ENGINEER

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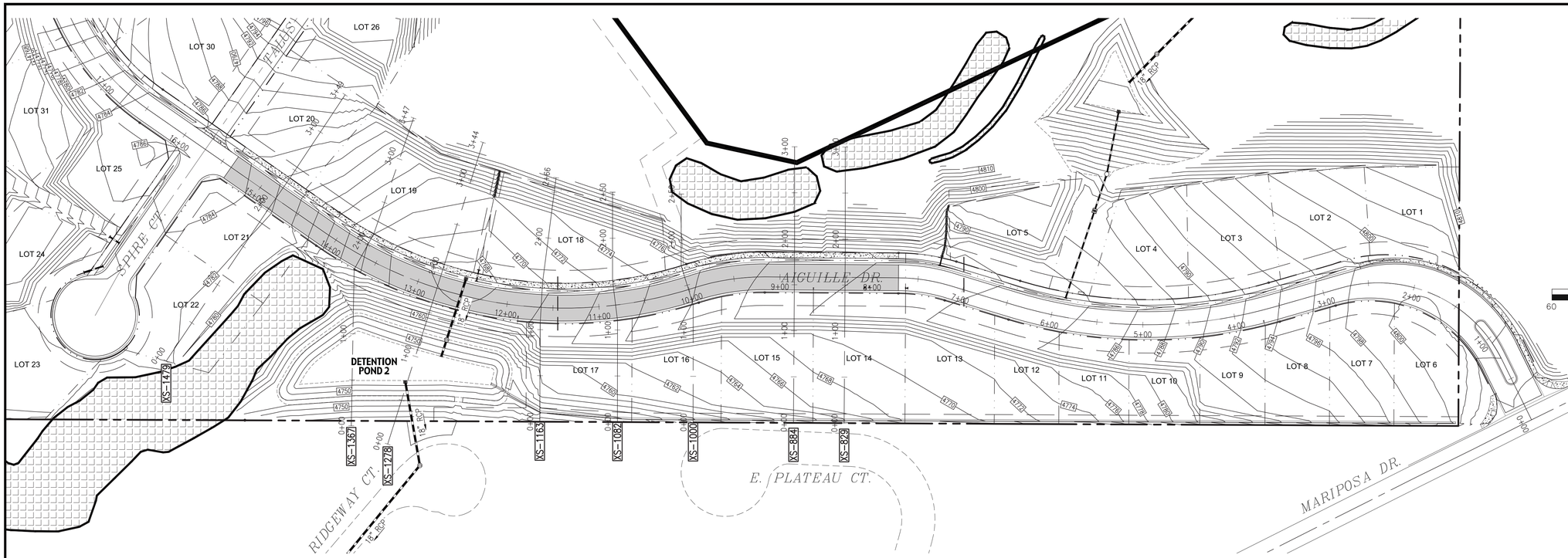
MAJOR SUBDIVISION
FINAL PLAN

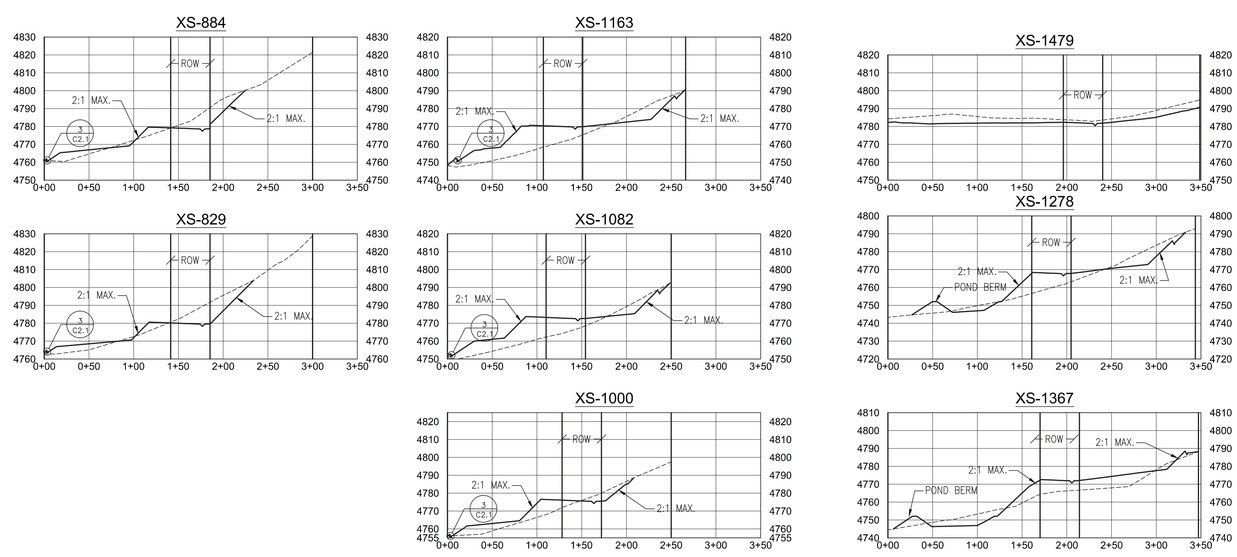
REV.	DATE	COMMENT	BY
2	10/11/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

Grading Plan Filing 2
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: 1" = 60'
CAD ID: 2.0grad-f2.dwg

~SHEET~
C2.1





SECTIONS ALONG LOT LINES

SCALE: 1" = 80' HORIZONTAL
1" = 40' VERTICAL

ACCEPTANCE BLOCK

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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
2	10/11/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

Grading Plan Filing 2 - Road Cross Sections
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: SEE PLAN
CAD ID: 2.0grad-f2.dwg

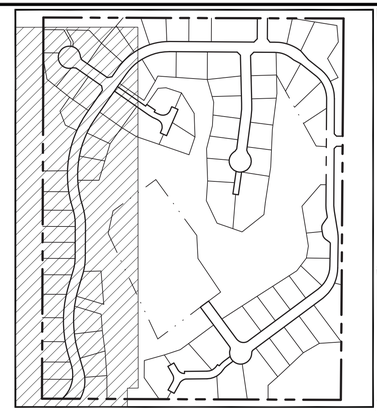
~SHEET~
C2.2

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON–BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X–OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET 3
6. HOUSES CONSTRUCTED ON LOTS 26–29 AND LOTS 55–72 SHALL HAVE SPRINKLER SYSTEMS INSTALLED. A 1" CUSTOMER WATER SERVICE LINE AND ¾" WATER METER WILL BE UTILIZED IN ACCORDANCE WITH UTE WATER CONSERVANCY DISTRICT STANDARDS & SPECIFICATIONS.
7. ALL WATER SERVICES SHALL HAVE A PRESSURE REGULATED YOKE INSTALLED BASED ON PRESSURE LIMITS AS DETERMINED IN THE HYDRAULIC ANALYSIS.

FILING NOTES

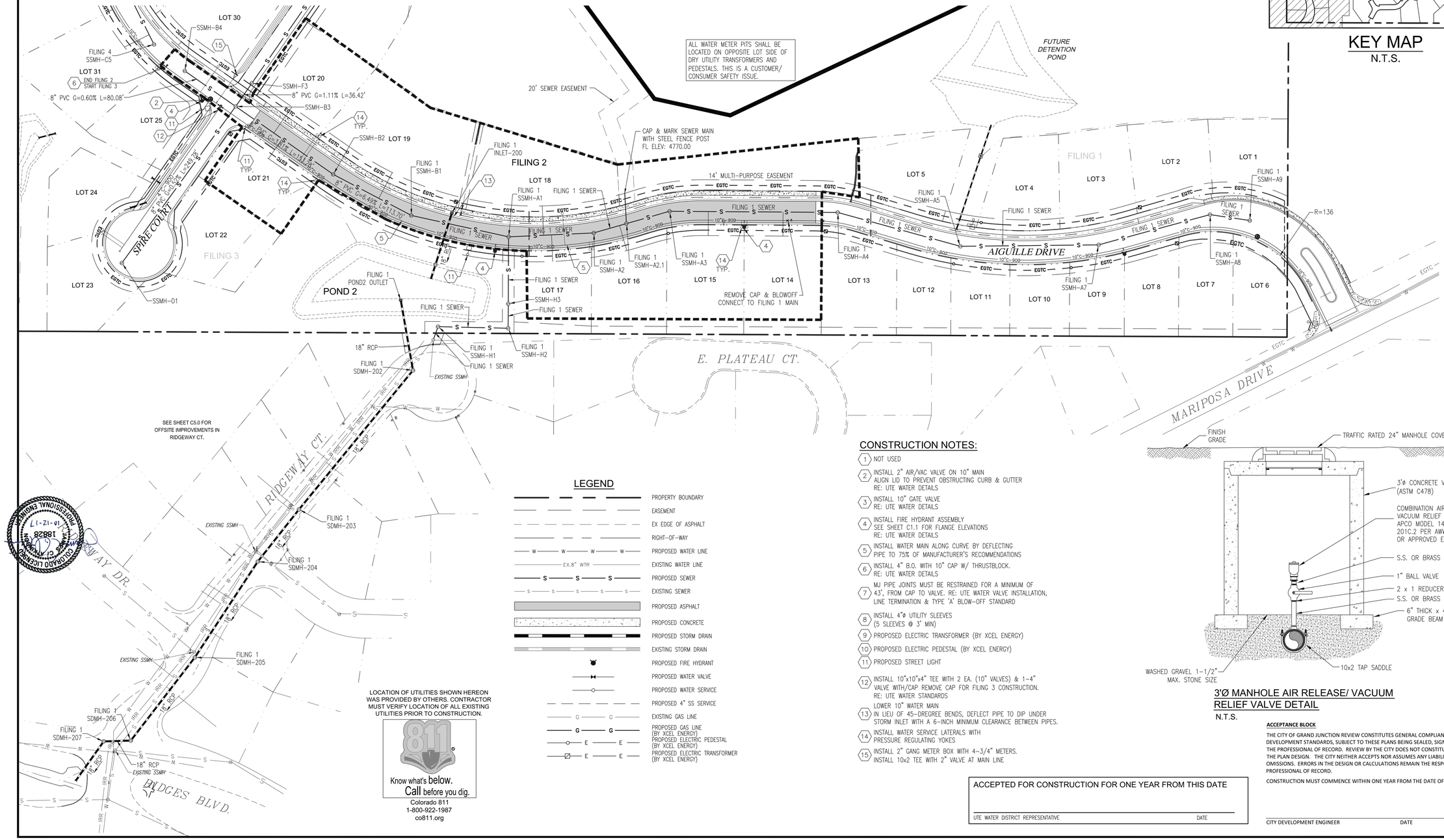
1. NO STORM DRAINS TO BE CONSTRUCTED AS PART OF FILING 2.
2. INSTALL SANITARY SEWER FROM STATION 13+00 TO MANHOLE B4 IN AIGUILLE DRIVE; INCLUDE MANHOLE F3 AS NOTED ON PLANS.
3. END WATER LINE CONSTRUCTION NEAR THE NORTHEAST CORNER OF LOT 25. SEE CONSTRUCTION NOTE #6
4. ASPHALT PAVEMENT TO END AT THE NORTH END OF LOT 21 FOR FILING 2.
5. INSTALL GRAVEL TURN–AROUND ON AIGUILLE DRIVE AND SPIRE COURT AS SHOWN ON THIS PLAN.



KEY MAP
N.T.S.

N

SCALE IN FEET
60 30 0 60 120
1" = 60'



LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT–OF–WAY
- PROPOSED WATER LINE
- EXISTING WATER LINE
- PROPOSED SEWER
- EXISTING SEWER
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER SERVICE
- PROPOSED 4" SS SERVICE
- EXISTING GAS LINE
- PROPOSED GAS LINE (BY XCEL ENERGY)
- PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
- PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

Know what's below. Call before you dig.
Colorado 811
1-800-922-1987
co811.org

CONSTRUCTION NOTES:

1. NOT USED
2. INSTALL 2" AIR/VAC VALVE ON 10" MAIN ALIGN LID TO PREVENT OBSTRUCTING CURB & GUTTER RE: UTE WATER DETAILS
3. INSTALL 10" GATE VALVE RE: UTE WATER DETAILS
4. INSTALL FIRE HYDRANT ASSEMBLY SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL WATER MAIN ALONG CURVE BY DEFLECTING PIPE TO 75% OF MANUFACTURER'S RECOMMENDATIONS
6. INSTALL 4" B.O. WITH 10" CAP W/ THRUSTBLOCK. RE: UTE WATER DETAILS
7. MJ PIPE JOINTS MUST BE RESTRAINED FOR A MINIMUM OF 43', FROM CAP TO VALVE. RE: UTE WATER VALVE INSTALLATION, LINE TERMINATION & TYPE 'A' BLOW–OFF STANDARD
8. INSTALL 4"ø UTILITY SLEEVES (5 SLEEVES @ 3' MIN)
9. PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)
10. PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
11. PROPOSED STREET LIGHT
12. INSTALL 10"x10"x4" TEE WITH 2 EA. (10" VALVES) & 1–4" VALVE WITH/CAP REMOVE CAP FOR FILING 3 CONSTRUCTION. RE: UTE WATER STANDARDS
13. LOWER 10" WATER MAIN IN LIEU OF 45–DREGREE BENDS, DEFLECT PIPE TO DIP UNDER STORM INLET WITH A 6–INCH MINIMUM CLEARANCE BETWEEN PIPES.
14. INSTALL WATER SERVICE LATERALS WITH PRESSURE REGULATING YOKES
15. INSTALL 2" GANG METER BOX WITH 4–3/4" METERS. INSTALL 10x2 TEE WITH 2" VALVE AT MAIN LINE

3'Ø MANHOLE AIR RELEASE/ VACUUM RELIEF VALVE DETAIL
N.T.S.

ACCEPTED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE

UTE WATER DISTRICT REPRESENTATIVE DATE

CITY DEVELOPMENT ENGINEER DATE

ACCEPTANCE BLOCK

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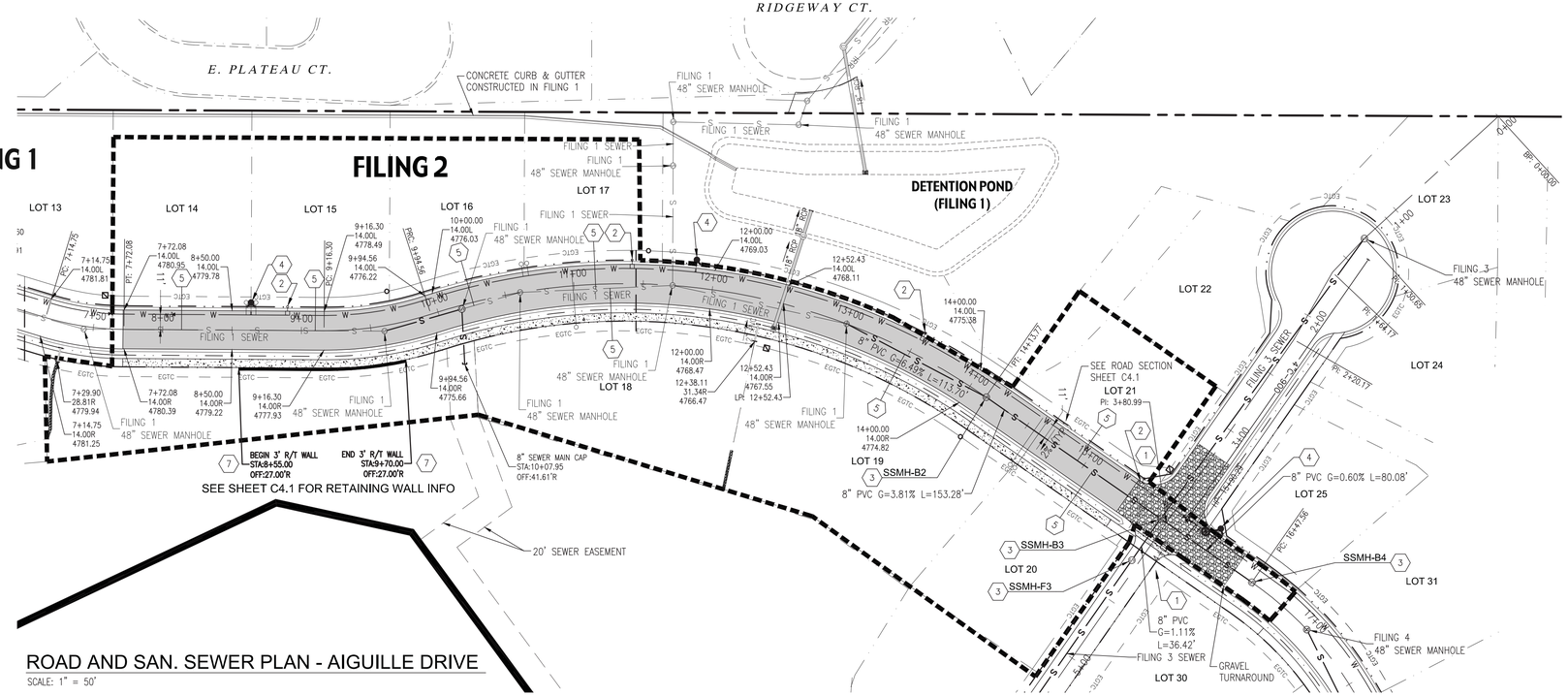
MAJOR SUBDIVISION
FINAL PLAN

BY	REV. DATE	COMMENT
DLS	1	9/08/17	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017
DLS	2	10/11/17	REVISED PER CITY COMMENT ROUND 2 DATED SEPT. 13, 2017

Composite Site Plan - Utility and Water Plan
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

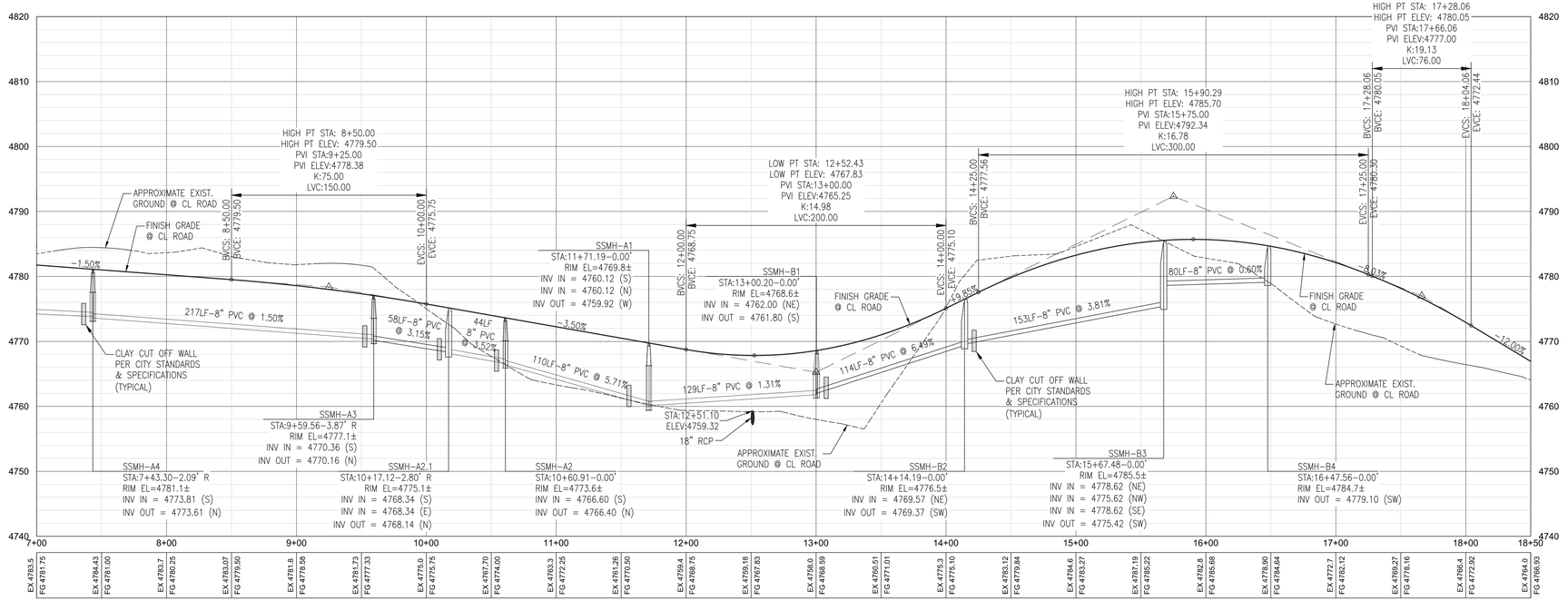
PROJECT NO: F04-006
DATE: 06/12/17
SCALE: 1"= 60'
CAD ID: **3.0utility-f2.dwg**

~SHEET~
C3.0



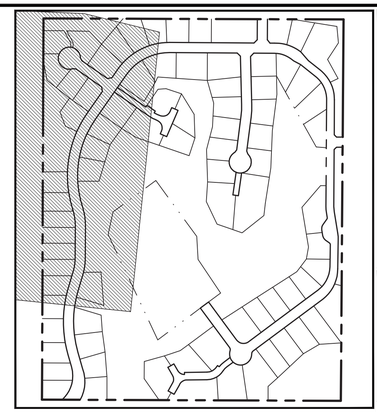
ROAD AND SAN. SEWER PLAN - AIGUILLE DRIVE

SCALE: 1" = 50'



ROAD AND SAN. SEWER PROFILE - AIGUILLE DRIVE

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



KEY MAP

N.T.S.

N

SCALE IN FEET
50 25 0 50 100
1" = 50'

FILING NOTES

1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2. INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
2. INSTALL SANITARY SEWER FROM SSMH-A9 TO EXISTING MAN-HOLE IN RIDGEWAY COURT AS SHOWN INCLUDING LINE TO MAN-HOLE B-1.
3. END WATER LINE CONSTRUCTION AT THE MIDDLE OF LOT 14 AS SHOWN.
4. ASPHALT PAVEMENT TO END AT THE NORTH END OF LOT 13 FOR FILING 1.
5. ROAD ALIGNMENT TO BE GRADED AND BASE COURSE INSTALLED TO THE NORTH END OF LOTS 20 & 21.

GENERAL NOTES:

1. REFERENCE SHEET C0.1 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET C0.2 FOR STREET SECTIONS
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION

CONSTRUCTION NOTES:

1. INSTALL STOP SIGN & STREET SIGN RE: MUTCD. SEE SHEET C1.1
2. STREET LIGHT (BY OTHERS) SEE SHEET C1.1
3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL SEWER SERVICE RE:CITY STANDARDS & SPECS.
6. INSTALL SEWER SERVICE RE:CITY STANDARDS & SPECS.
7. INSTALL RETAINING WALL SEE SHEET C4.1

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 10-12-17 PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS
2	10/11/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS

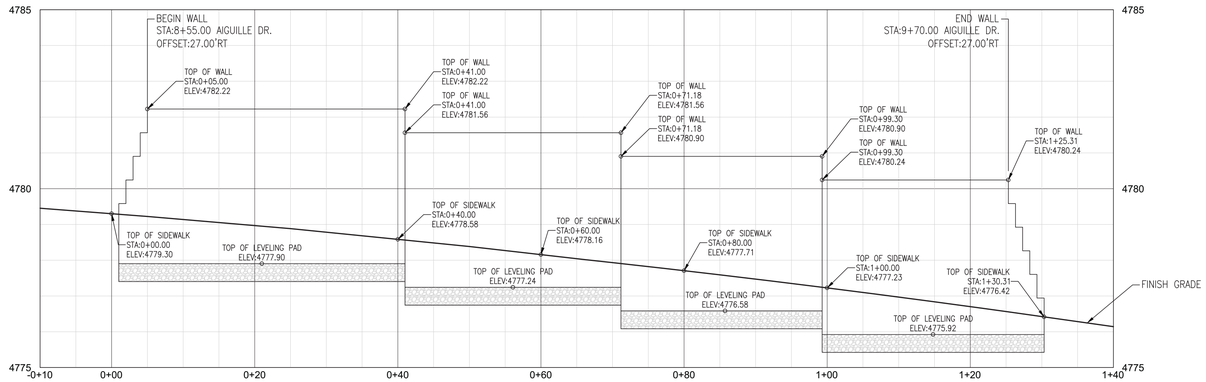
Road & Sanitary Sewer Plan & Profile

Aiguille Drive
Pinnacle Ridge Subdivision Filing 2

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/02/17**
SCALE: **1" = 50'**
CAD ID: **4.0ss-road-f2.dwg**

~SHEET~
C4.0



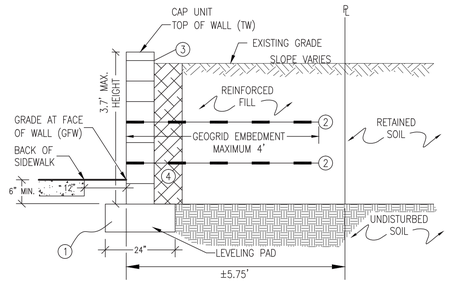
RETAINING WALL PROFILE

STA:8+55.00 TO 9+70.00 - AIGUILLE DR.

SEE SHEET C4.0 FOR HORIZONTAL INFO.

HORIZONTAL SCALE: 1" = 10'

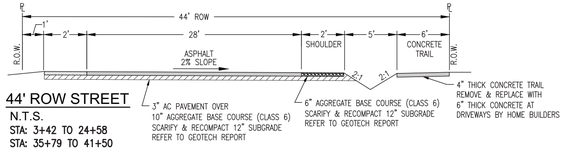
VERTICAL SCALE: 1" = 4'



1. LEVELING PAD SHALL BE A MINIMUM OF 6" CONCRETE OR CRUSHED ROCK
2. TENSAR STRUCTURAL GEOGRID
3. BLOCKS SHALL BE MESA STANDARD UNITS OR APPROVED EQUAL
4. 12" DRAIN ROCK

BLOCK WALL DETAIL

N.T.S.

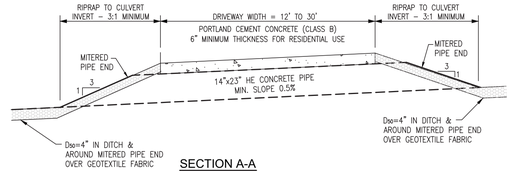


44' ROW STREET

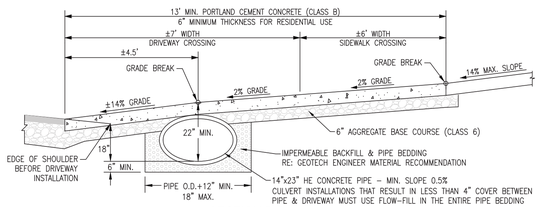
N.T.S.

STA: 3+42 TO 24+58

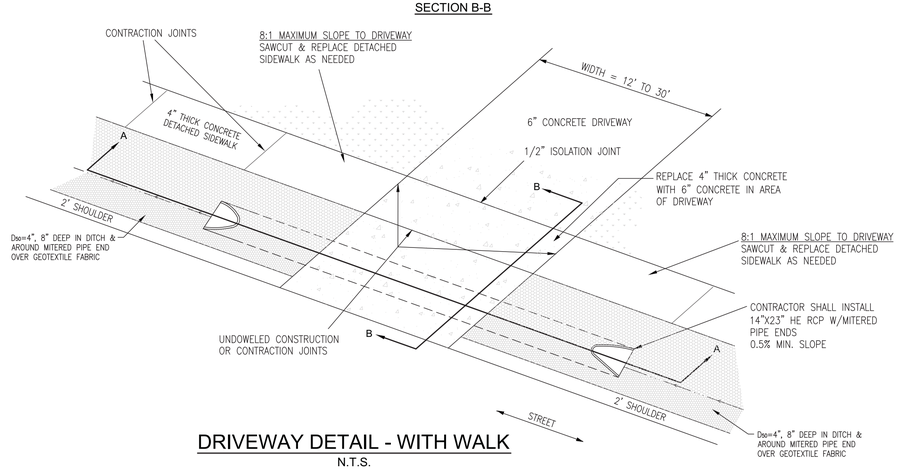
STA: 35+79 TO 41+50



SECTION A-A



SECTION B-B



DRIVEWAY DETAIL - WITH WALK

N.T.S.

NOTE:

CARE SHALL BE TAKEN TO REMOVE EXISTING ROCK LINING AND GEOTEXTILE FABRIC PRIOR TO NEW CULVERT INSTALLATION. FABRIC AND ROCK TO BE CAREFULLY REPLACED AROUND NEW CULVERT.

ACCEPTANCE BLOCK

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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY
2	10/11/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
1	8/28/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

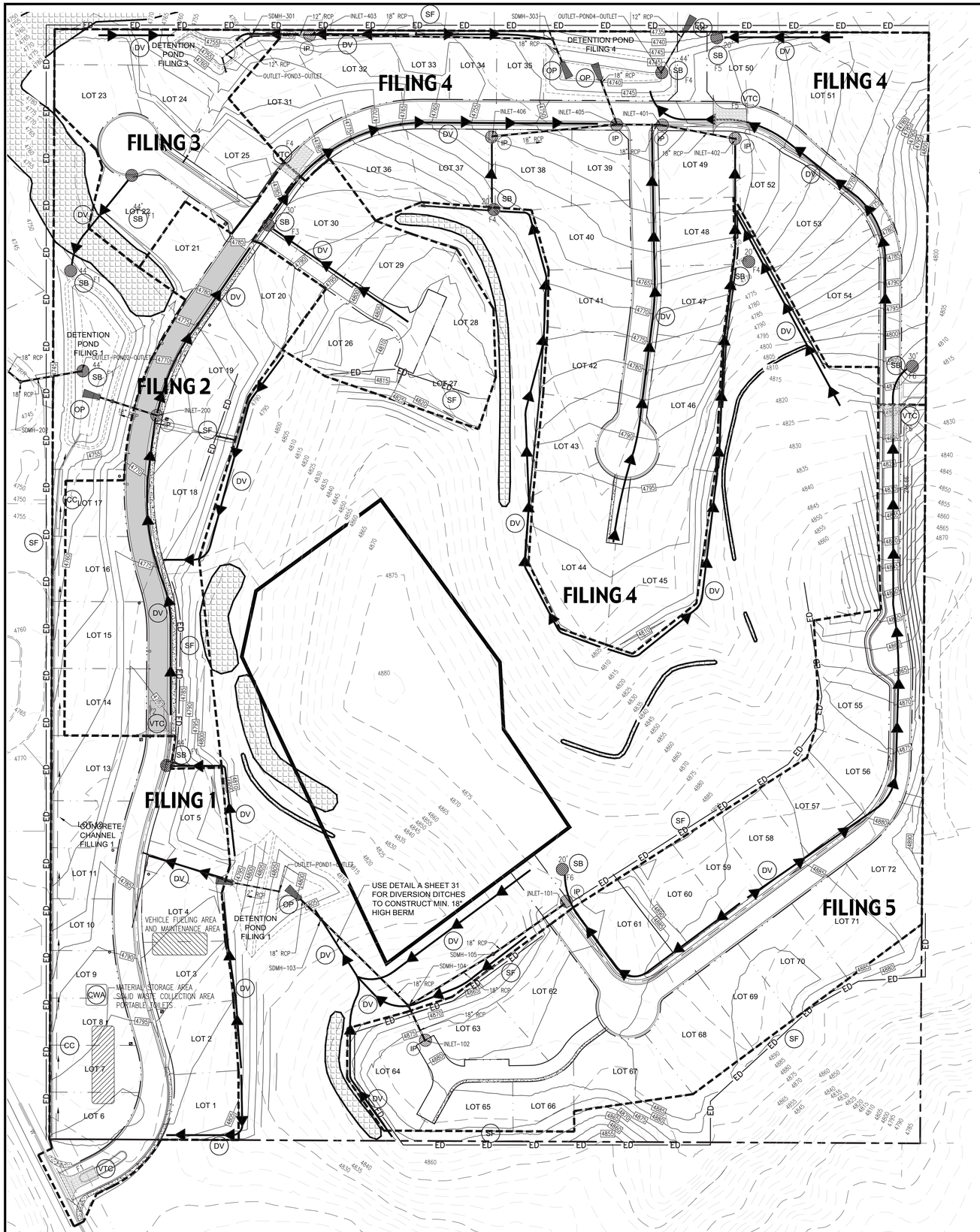
Retaining Wall Profile & Road Details

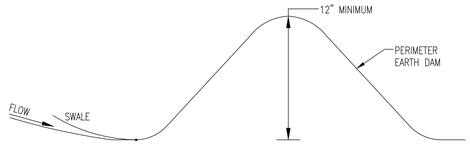
Pinnacle Ridge Subdivision
Filing 2

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/02/17**
SCALE: **1" = 50'**
CAD ID: **4.0ss-road-f2.dwg**

~SHEET~
C4.1





EARTH DAM SECTION
SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
EARTHEN DAM	ED	ED
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
SEDIMENT BASIN	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

GRADING NOTE:

FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

GENERAL NOTES:

1. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL REQUIRED EASEMENTS, RIGHT AND/OR RIGHTS-OF-WAY PURSUANT TO THE DISCHARGE FROM THE SEDIMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS AND GRADING OR OTHER WORK TO BE PERFORMED ON ADJACENT OR DOWNSTREAM PROPERTIES AFFECTED BY THE PLAN.
2. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1); FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE, THE IN-PLACE SEDIMENT CONTROL MEASURES WILL BE MAINTAINED ON A CONTINUING BASIS UNTIL THE SITE IS PERMANENTLY STABILIZED AND ALL PERMIT REQUIREMENTS ARE MET.
3. REFER TO CITY OF GRAND JUNCTION STANDARD DRAWINGS AND SPECIFICATIONS.
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE 5-2-1 DRAINAGE AUTHORITY. CONTACT MARK BARSLUND 970-201-1362

ACCEPTANCE BLOCK

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MAJOR SUBDIVISION
FINAL PLAN

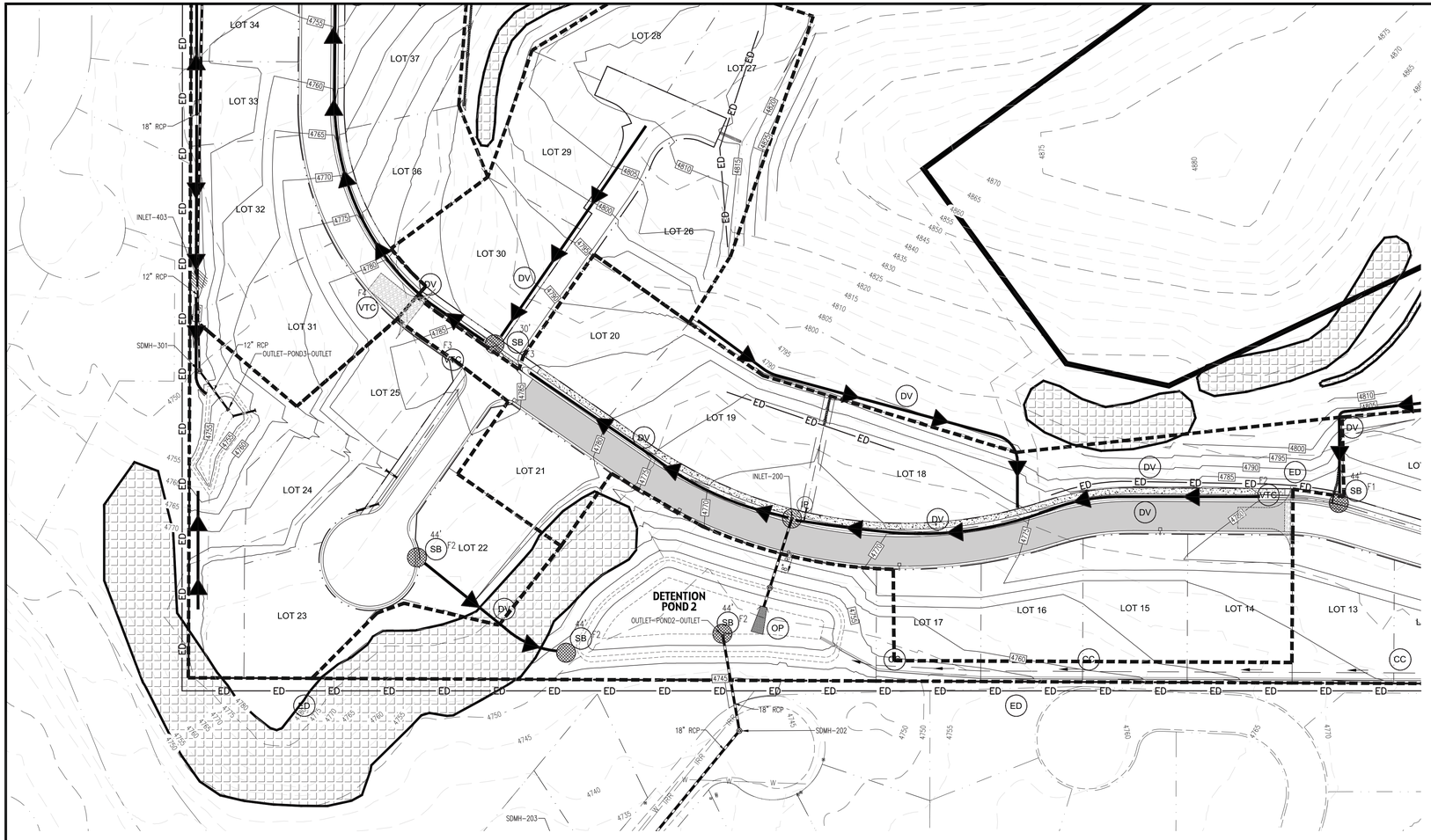
REV.	DATE	COMMENT	BY

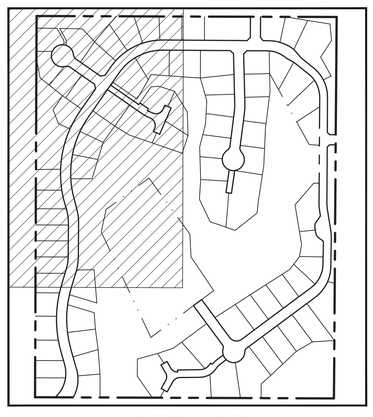
Overall Construction Stormwater Management Plan

Pinnacle Ridge Subdivison
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE:
CAD ID: 6.0swm-f2.dwg

~SHEET~
C6.0





KEY MAP
N.T.S.

GENERAL NOTES:

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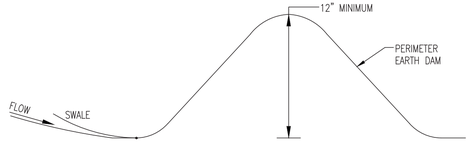

EARTH DAM SECTION
SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
EARTHEN DAM	ED	ED
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
SEDIMENT BASIN	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

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Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

N

SCALE IN FEET
60 30 0 60 120
1" = 60'
CONTOUR INTERVAL = 2'

COLORADO LICENSED
JAMES C. ATKINSON
18828
10-12-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

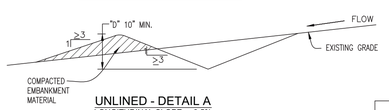
REV.	DATE	COMMENT	BY

Construction Stormwater Management Plan
Pinnacle Ridge Subdivison
Filing 2
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: **F04-006**
DATE: **06/12/17**
SCALE: **SEE PLAN**
CAD ID: **6.0swm-f2.dwg**

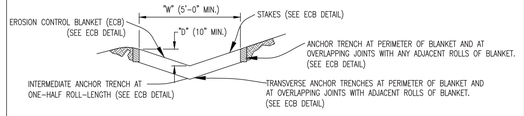
~SHEET~
C6.1

DIVERSION DITCH DETAIL A

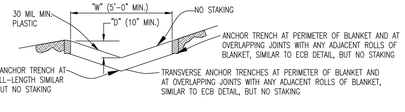


UNLINED - DETAIL A
LONGITUDINAL SLOPE ≤ 0.5%

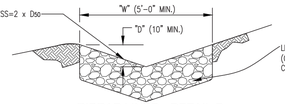
DV



EROSION CONTROL BLANKET (ECB) LINED - DETAIL B
LONGITUDINAL SLOPE 0.5% TO 3 %



PLASTIC LINED - DETAIL C
LONGITUDINAL SLOPE 3% TO 33%



RIPRAP LINED - DETAIL D
LONGITUDINAL SLOPE 3% TO 33%

DIVERSION DITCH INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF DIVERSION DITCH.
   - TYPE OF DITCH (UNLINED, ECB PLASTIC LINED OR RIPRAP LINED).
   - LENGTH OF EACH TYPE OF DITCH.
   - DEPTH, "D", AND WIDTH, "W" DIMENSIONS.
   - FOR ECB LINED DITCH, EROSION CONTROL BLANKET TYPE (SEE ECB DETAIL).
   - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, "D 50 ".
2. SEE DRAINAGE PLANS FOR DETAILS OF ANY PERMANENT CONVEYANCE FACULTIES OR DIVERSION DITCHES EXCEEDING A 2 YEAR FLOOD 10 CFS.
3. DIVERSION DITCHES INDICATED ON INITIAL SWMP PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES..
4. FOR ECB LINED DITCHES, INSTALLATION OF EROSION CONTROL BLANKET SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.
5. IN LOCATIONS WHERE CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION DITCH, THE PERMITTEES SHALL INSTALL A TEMPORARY CULVERT WITH A MINUM DIAMETER OF 12-INCHES.

DIVERSION DITCH MAINTENANCE NOTES

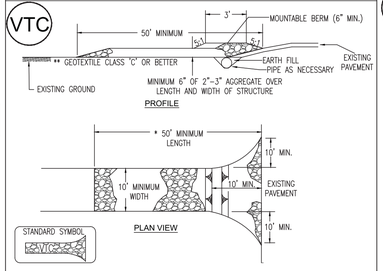
1. THE SWMP MANAGER SHALL INSPECT DIVERSION DITCHES WEEKLY AND DURING AND AFTER ANY STORM. MAKE REPAIRS AS NECESSARY.
2. DIVERSION DITCHES ARE TO REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION, OR IF APPROVED BY LOCAL JURISDICTION MAY BE LEFT IN PLACE.
3. IF DIVERSION DITCHES ARE REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, DRILL SEEDED, HAY CRIMPED MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

DETAIL BASED ON DETAILS PROVIDED BY DOUGLAS COUNTY

Urban Drainage and Flood Control District Drainage Criteria Manual (V.3)	Figure C5-3 DIVERSION DITCH AND DIKE

STABILIZED CONSTRUCTION ENTRANCE

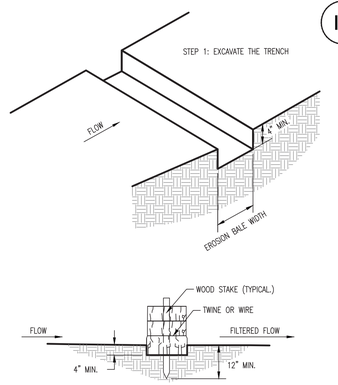
VTC



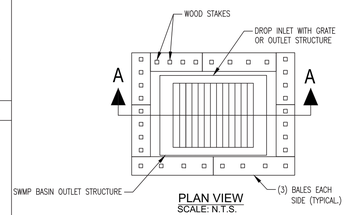
Construction Specification

1. Length – minimum of 50' (*30' for single residence lot).
2. Width – 10' minimum, should be flared at the existing road to provide a tuning radius
3. Geotextile fabric (filter cloth) shall placed over the exiting around prior to placing stone. **This plan approval authority may not require single family residence to use geotextile.
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water – all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location – A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

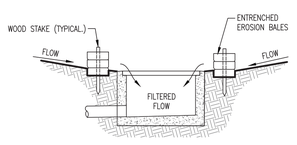
IP



EROSION BALE TRENCHING AND STAKING
SCALE: N.T.S.



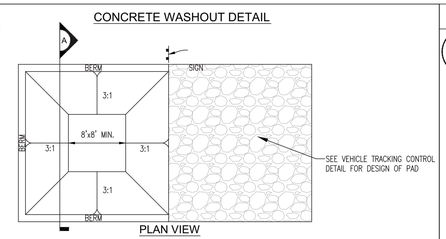
PLAN VIEW
SCALE: N.T.S.



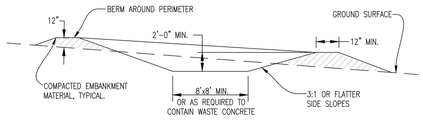
SECTION A-A
EROSION FILTER AT DROP INLET
SCALE: N.T.S.

CONCRETE WASHOUT DETAIL

CWA



PLAN VIEW



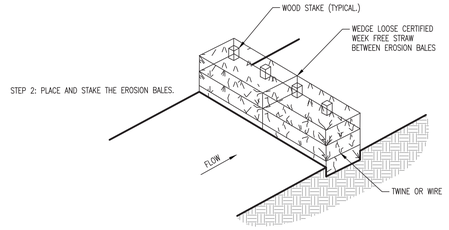
SECTION A

CONCRETE WASHOUT AREA INSTALLATION NOTES

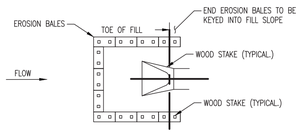
1. SEE PLAN VIEW FOR LOCATIONS OF CONCRETE WASHOUT AREA
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL IS REQUIRED AT THE ACCESS POINT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION

CONCRETE WASHOUT AREA MAINTENANCE NOTES

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, DRILL SEED AND CRIMP MULCH OR OTHERWISE STABILIZE IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
4. INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.



EROSION BALE BMP
SCALE: N.T.S.



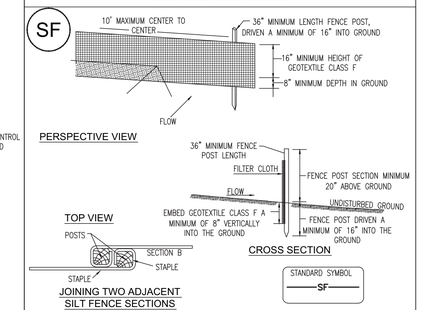
PLAN VIEW
EROSION BALE CULVERT INLET PROTECTION
SCALE: N.T.S.

NOTES

1. STAKES SHALL BE WOOD AND SHALL BE 2" X 2" NOMINAL.
2. EROSION BALES SHALL BE 18" X 18" X 36".
3. EROSION BALES SHALL BE ENTRENCHED 4 IN. MINIMUM INTO THE SOIL TIGHTLY ABUTTED WITH NO GAPS, STAKED, AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERIMETER.

DETAIL 22 - SILT FENCE

SF



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength:	50 lbs./in. (min.)	Test: MSMT 509
Tensile Modulus:	20 lbs./in. (min.)	Test: MSMT 509
Flow Rate	0.3 gal. ft. / minute (max.)	Test MSMT 322
Efficiency	75% (min.)	Test: MSMT 322

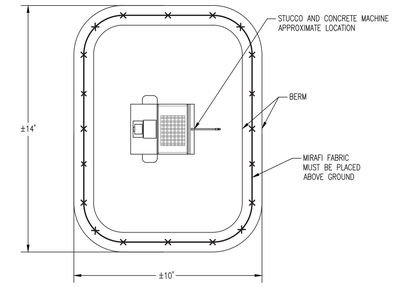
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

SILT FENCE

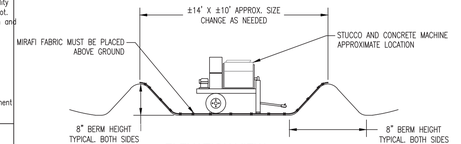
Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

NOTE:
In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.



PLAN VIEW
SCALE: N.T.S.



ELEVATION VIEW
SCALE: N.T.S.

STUCCO & CONCRETE MACHINE BMP
SCALE N.T.S.

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED
JAMES C. ATKINSON
18828
10-12-17
PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

BY	COMMENT	REV. DATE

Construction Stormwater Management Plan Details

Pinnacle Ridge Subdivison
Filing 2

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/12/17**
SCALE:
CAD ID: **6.0swm-f2.dwg**

~SHEET~
C6.2

EXHIBIT B

IMPROVEMENTS COST ESTIMATE

DATE: October 2, 2017
DEVELOPMENT NAME: **PINNACLE RIDGE FILING 2**
LOCATION: Mariposa Drive, Grand Junction, CO
PERSON PREPARING:

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
A.	**SANITARY SEWER**				
1	8" PVC Sanitary Sewer Main	LF	383	$ 25.00	$ 9,575.00
2	10" PVC Sanitary Sewer Main	LF		$ 30.00	$ -
3	____ " PVC Sanitary Sewer Main	LF		$ 618.00	$ -
4	Sewer services	EA	8	$ 400.00	$ 3,200.00
5	Sanitary Sewer Manhole	EA	4	$ 3,000.00	$ 12,000.00
6	Sanitary Sewer Drop Manhole	EA	1	$ 9,000.00	$ 9,000.00
7	Connection to Existing Manhole	EA		$ 1,000.00	$ -
8	Concrete Encasement	LF		$ 20.00	$ -
	Subtotal Part A Sanitary Sewer				**$ 33,775.00**
B.	**DOMESTIC WATER**				
1	Air Vacuum Release Valve	EA	1	$ 5,000.00	$ 5,000.00
2	8" PVC Water Main	LF		$ 30.00	$ -
3	10" PVC Water Main	LF	753	$ 35.00	$ 26,355.00
4	_4__ " Gatevalve	EA			$ -
5	8" Gatevalve	EA		$ 1,200.00	$ -
6	10" Gatevalve	EA	3	$ 2,250.00	$ 6,750.00
7	Water Services (copper)	EA	8	$ 500.00	$ 4,000.00
8	Connect to Existing Water Line	EA		$ 1,500.00	$ -
9	Fire Hydrant with Valve	EA	2	$ 4,000.00	$ 8,000.00
10	Utility Adjustments	EA			$ -
11	Blowoff	EA		$ 500.00	$ -
12	UTE Water Tap Fee	EA			$ -
	Subtotal Part B - Domestic Water				**$ 50,105.00**
C1	**STREETS**				
1	4" PVC Utility sleeves	LF		$ 15.00	$ -
2	8" & 12" PVC irr. Sleeves	LF		$ 20.00	$ -
3	Xcel (Gas & Electric) Services	EA	8		$ -
4	Qwest and Charter Services	EA	8		$ -
5	Aggregate Base Course (Class 6) (_6" Compacted Thickness - under walk)	TON	161	$ 22.00	$ 3,542.00
6	Aggregate Base Course (Class 6) (road base & shoulders)	TON	1,258	$ 22.00	$ 27,676.00
7	Hot Bituminous Paving, Grading (3" thick)	TON	371	$ 92.00	$ 34,132.00
8	Hot Bituminous Paving, Grading__ (5" thick)	TON		$ 92.00	$ -
9	Hot Bituminous Paving, Patching (___" Thick)	SY			$ -
10	Geotextile	SY		$ 2.00	$ -
11	Concrete Curb (__" Wide by __" High)	LF			$ -

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
12	Concrete Curb and Gutter (2' wide)	LF		$ 22.00	$ -
13	Concrete Curb and Gutter (1.5' wide)	LF		$ 22.00	$ -
14	Monolithic, Vertical Curb, Gutter and Sidewalk (7.0' Wide)	LF		$ 43.00	$ -
15	Drive Over Curb, Gutter, and Sidewalk (6.5' Wide)	LF		$ 43.00	$ -
16	Concrete Sidewalk (6' Wide)	LF	775	$ 28.00	$ 21,700.00
17	Concrete Gutter and Driveway Section (6" Thick)	SY			
18	Concrete Drainage Pan (6' Wide, 6" Thick)	LF		$ 15.00	$ -
19	Concrete Corner Fillet	EA		$ 10,000.00	$ -
20	Concrete Curb Ramp	SY			$ -
21	8" Comb. Cross pans, Fillets & ADA Ramps	SF			$ -
22	Concrete Driveway (_6" Thick)	SY			$ -
23	Driveway/Concrete Repair	SY			$ -
24	Retaining Walls	LF	121	$ 70.00	$ 8,470.00
25	Street Signs	EA	2	$ 400.00	$ 800.00
26	Striping (New, Remove/Replace)	LF			$ -
27	Street Lights	EA	3	$ 1,500.00	$ 4,500.00
28	Signal Construction or Reconstruction	LS			$ -
29	Flowable Fill	CY			$ -
30	End of the Road Barrier	EA		$ 1,000.00	$ -
C2	**BRIDGES**				
					$ -
1	Box Culvert Pre-Cast	LS			$ -
2	Box Culvert Cast-in-Place	LS			$ -
3	Wingwalls	LS			$ -
4	Parapet Wall	LS			$ -
5	Railing (handrail, guardrail)	LS			$ -
	Subtotal Part C - Streets and Bridges				**$ 100,820.00**
D1	**EARTHWORK**				
1	Mobilization	LS	1	$ 5,000.00	$ 5,000.00
2	Clearing and Grubbing	AC	3	$ 500.00	$ 1,500.00
3	Unclassified Excavation	CY	19,304	$ 4.00	$ 77,216.00
4	Unclassified Embankment	CY	9,046	$ 4.00	$ 36,184.00
5	Import Material	CY	0	$ 3.00	$ -
6	Dry utilities trenching	LF		$ 4.00	$ -
7	Re-condition / Subgrade Prep.	SY	371	$ 1.25	$ 463.75
8	Rock in Ditch	LF	768	$ 2.50	$ 1,920.00
D2	**REMOVALS AND RESETTING**				
1	Removal of Asphalt	SY			$ -
2	Removal of Miscellaneous Concrete	SY			$ -
3	Remove Curb and Gutter	LF			$ -
4	Removal of Culverts	LF			$ -
5	Remove Structures	EA		$ 400.00	$ -
6	Remove Signs	EA			$ -
7	Remove Fence	LF			$ -
8	Adjust Manhole	EA	2	$ 500.00	$ 1,000.00
9	Adjust Valvebox	EA	3	$ 100.00	$ 300.00
10	Relocate or Adjust Utilities	LS		$ 1,000.00	$ -
11	House & Garage Demo	LS			$ -

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
D3	**EROSION CONTROL, SEEDING, AND SOIL RETENTION**				
1	Sod	SY			$ -
2	Seeding (Native)	AC	2	$ 500.00	$ 1,000.00
3	Seeding (Bluegrass/Lawn)	SY or AC			$ -
4	Hydraulic Seed and Mulching	SY or AC			$ -
5	Soil Retention Blanket	SY			$ -
6	Silt Fence	LF		$ 2.00	$ -
7	Straw Waddles	LF		$ 3.00	$ -
8	Temporary Berms	LF	200	$ 2.00	$ 400.00
9	Inlet Protection	EA		$ 500.00	$ -
10	Sediment Trap/Basin	EA			$ -
11	Monthly Maintenance/Inspection	Month			$ -
12	Watering (Dust Control)	LS	1	$ 2,000.00	$ 2,000.00
13	Temporary Irrigation				$ -
D4	**STORM DRAINAGE FACILITIES**				
1	Finish Grading (incl. Swales, and Ponds)	LS	1	$ 5,000.00	$ 5,000.00
2	18" ADS Storm Drain Pipe	LF		$ 20.00	$ -
3	15" RCP Storm Drain Pipe	LF		$ 35.00	$ -
4	18" RCP Storm Drain Pipe	LF		$ 40.00	$ -
5	24" RCP Storm Drain Pipe	LF		$ 40.00	$ -
6	30" RCP Storm Drain Pipe	LF		$ 50.00	$ -
7	12" ADS Flared End Section	EA		$ 680.00	$ -
8	30" Flared End Section	EA		$ 2,000.00	$ -
9	48" Storm Drain Manhole	EA		$ 3,000.00	$ -
10	60" Storm Drain Manhole	EA		$ 3,500.00	$ -
11	72" Storm Drain Manhole	EA		$ 4,000.00	$ -
12	Manhole with Box Base	EA			$ -
13	Connection to Existing MH	EA			$ -
14	Single Curb Opening Storm Drain Inlet	EA		$ 1,000.00	$ -
15	Double Curb Opening Storm Drain Inlet	EA		$ 2,000.00	$ -
16	Triple Curb Opening Storm Drain Inlet	EA		$ 3,000.00	$ -
17	Area Inlet	EA		$ 2,000.00	$ -
18	Detention Area Outlet structure	EA		$ 5,000.00	$ -
19	Sidewalk Trough Drain	EA		$ 500.00	$ -
20	Pump Systems including Electrical	LS		$ 2,000.00	$ -
21	Concrete V-pan (2' wide x 6" thick)	LF		$ 4.00	$ -
22	seep drains	LF		$ -	$ -
23	Install Diversion Ditches	LF	1,500	$ 1.25	$ 1,875.00
	Subtotal Part D - Grading and Drainage				**$ 133,858.75**
E1	**IRRIGATION**				
1	Connect to Existing Pipe	LS			$ -
2	4" PVC Irrigation Pipe	LF		$ 3.00	$ -
3	8" PVC Irrigation Pipe	LF		$ 4.00	$ -
4	Fittings and Valves	LS			$ -
5	Services	EA		$ 10.00	$ -
6	Pump System and Concrete Vault	LS			$ -
7	Irrigation Structure	EA		$ 1,800.00	$ -
8	Vacuum Relief and/or Air Release Valve	EA			$ -
E2	**LANDSCAPING**				
1	Design/Architecture	LS			$ -
2	Earthwork	CY			$ -
3	Hardscape Features	LS			$ -
4	Plant Material & Planting	LS	1	$ 6,000.00	$ 6,000.00
5	Irrigation System	LS			$ -

Item #	Item Description	Unit	Quantity	Unit Price	Extended Price
6	Curbing	LF			$ -
7	Retaining Walls & Structures	LF			$ -
8	1 Year Maintenance Agrmnt.	LS			$ -
9	Topsoil	CY			$ -
	Subtotal Part E - Landscaping and Irrigation				**$ 6,000.00**
	Subtotal Construction Costs				**$ 324,558.75**
F.	**MISCELLANEOUS ITEMS**				
1	Construction staking/surveying	%	2.00%	$ 324,558.75	$ 6,491.18
2	Developer's inspection cost	%	2.00%	$ 324,558.75	$ 6,491.18
3	General construction supervsion	%		$ 324,558.75	$ -
4	Quality control testing	%	2.00%	$ 324,558.75	$ 6,491.18
5	Construction traffic control	%	0.00%	$ 324,558.75	$ -
6	City inspection fees	%	0.50%	$ 324,558.75	$ 1,622.79
7	As-builts	%	2.00%	$ 324,558.75	$ 6,491.18
	Subtotal Part F - Miscellaneous Items				**$ 27,587.49**
% = Percentage of total site construction costs					
G.	**COST SUMMARY**				
1	**Total Improvement Costs**				**$ 352,146.24**
2	**City Security (20%)**				**$ 70,429.25**
3	**Total Guarantee Amount**				**$ 422,575.49**

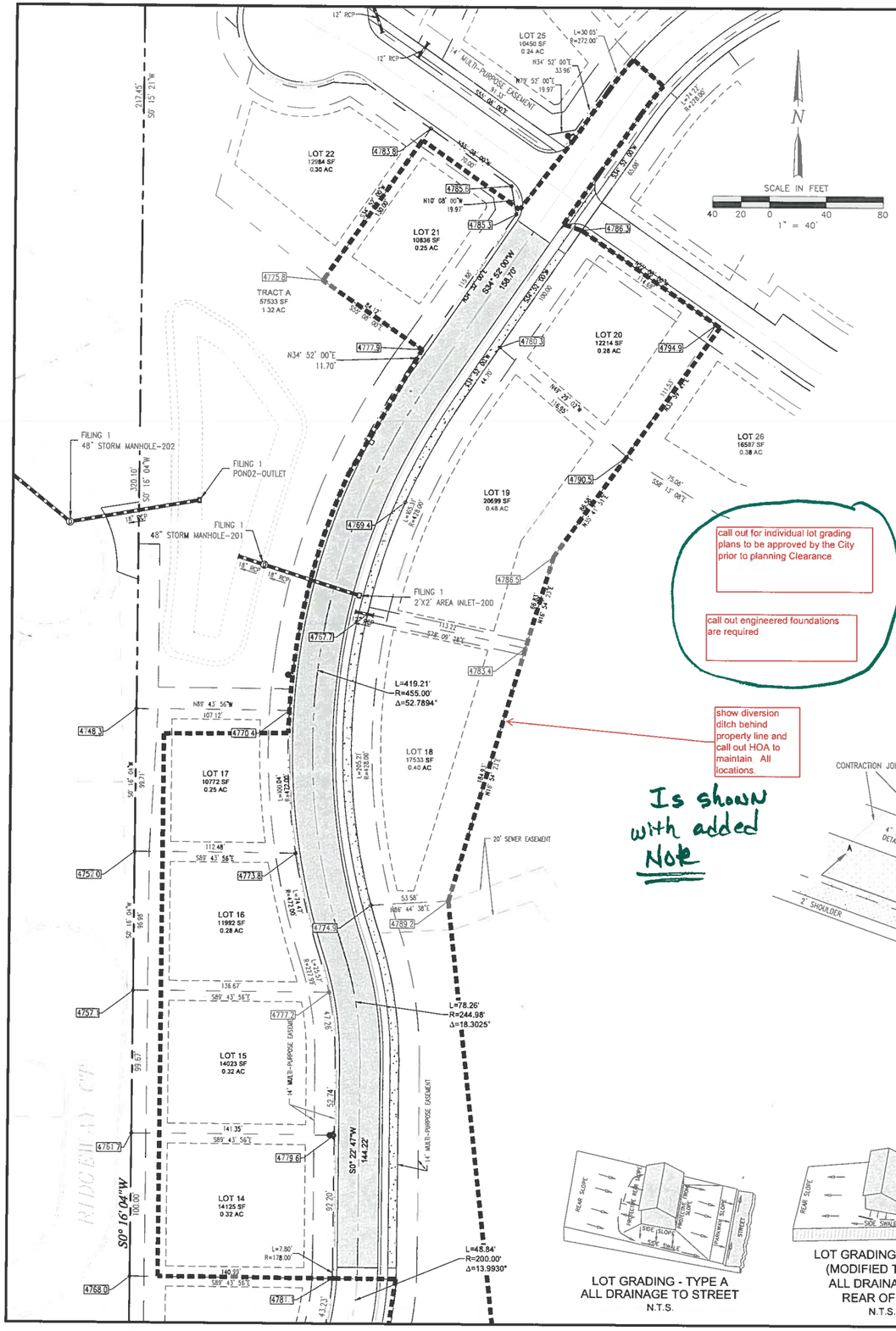
NOTES
1. All prices shall be for items complete in place and accepted.
2. All pipe prices shall include excavation, pipe, bedding, backfill, and compaction.
3. Water main shall include pipe, excavation, bedding, backfill, bends, and appurtenances not itemized elsewhere.
4. All concrete items shall include Aggregate Base Course where required by the drawings.
5. Fill in the pipe type for irrigation pipe and sleeves.
6. Reconditioning shall be calculated to at least 6" outside of back of walk on both sides.
7. Units can be changed if desired, simply annotate what is used.
8. Additional lines or items may be added as needed.

_____
Signature of Developer Date
(If corporation, to be signed by President and attested to by Secretary together with the corporate seals.)

I have reviewed the estimated costs and time schedule shown above and, based on the construction drawings submitted to date and the current cost of construction, I take no exception to the above.

_____
City Development Engineer Date

_____
Community Development Date

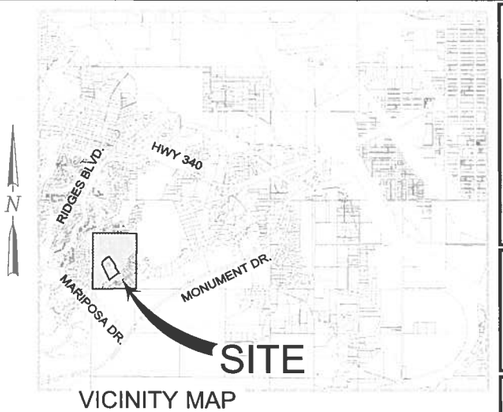


CONSTRUCTION NOTES:

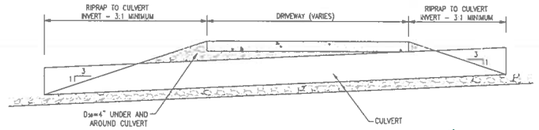
1. PROPOSED FIRE HYDRANT
2. PROPOSED MAILBOX PAD
3. 15' TRANSITION FROM ATTACHED SIDEWALK TO DETACHED SIDEWALK
4. PROPOSED ELECTRIC TRANSFORMER BY XCEL ENERGY
5. PROPOSED ELECTRIC PEDESTAL BY XCEL ENERGY
6. PROPOSED DIVERSION DITCHES DO NOT DISTURB

FILING 2 TOF TABLE

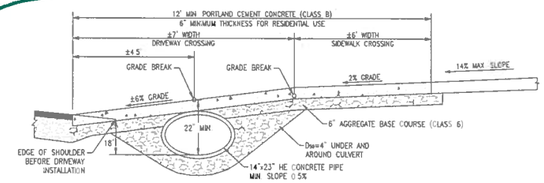
Lot	Grading	Min TOF	Max TOF
14	Type C	4781.40	4781.90
15	Type C	4779.40	4779.90
16	Type C	4776.50	4777.00
17	Type C	4773.40	4773.90
18	Type A	4773.00	4773.50
19	Type A	4774.50	4775.50
20	Type A	4782.50	4784.50
21	Type C	4784.50	4786.50



VICINITY MAP



SECTION A-A



SECTION B-B

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. ALL LOTS MUST HAVE AN INDIVIDUAL GEOTECHNICAL INVESTIGATION PERFORMED AND A SITE SPECIFIC ENGINEERING FOUNDATION.
10. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL.
9. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
10. ALL WATER SERVICES SHALL HAVE A PRESSURE REGULATED YOKE INSTALLED BASED ON PRESSURE LIMITS AS DETERMINED IN THE HYDRAULIC ANALYSIS.
11. DIVERSION DITCHES SHOWN ON THIS PLAN SHALL NOT BE DISTURBED AT ANY TIME.
12. DRIVEWAYS SHALL CONFORM TO THE DETAIL SHOWN ON THIS PLAN.

these have been revised IN NOTES

call out for individual lot grading plans to be approved by the City prior to planning Clearance

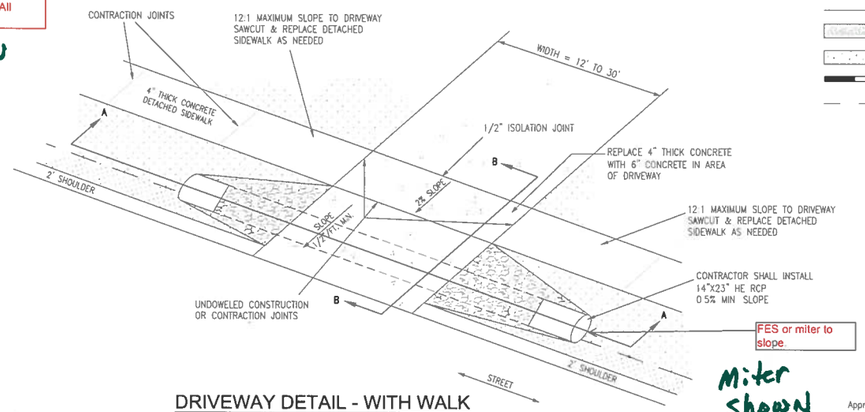
call out engineered foundations are required

show diversion ditch behind property line and call out HOA to maintain All locations.

Is shown with added Note

LEGEND

- PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- 4550.00 LOT CORNER SPOT ELEVATION
- PROPOSED FIRE HYDRANT



DRIVEWAY DETAIL - WITH WALK
N.T.S.

Miter Shown

LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.

LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.

PROPOSED LAND USE TABLE

USE	AREA	AC	% OF TOTAL	OWNER
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA	1,965,025.56 S.F. = 45.11 AC			

BOARD OF COUNTY COMMISSIONERS CERTIFICATE

Approved this_____day of_____A.D. 2017, by the Board of County Commissioners of the County of Mesa, State of Colorado.

Chairman_____

CLERK AND RECORDER'S CERTIFICATE

STATE OF COLORADO } ss
COUNTY OF MESA }

I hereby certify that this instrument was filed in my office at _____o'clock__M., this ____ day of _____ A.D. 2017, and is duly recorded in Book No. _____, at page _____, Reception No _____, Drawer No _____, Fees $ _____

Clerk and Recorder

By _____
Deputy

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone. (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	
1	8/9/17	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017
		COMMENT

DES BY
DR BY CKS

Site Plan for Recording
Filing 2
Pinnacle Ridge Subdivision
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO. **F04-006**
DATE: **06/08/17**
SCALE: **1" = 60'**
CAD ID: **pinnacle-sfr-f2.dwg**

SHEET
C1.0

Final Plan of Subdivision

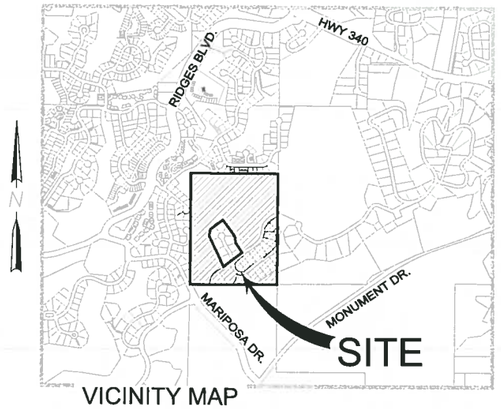
Pinnacle Ridge Subdivision

Filing 2

Grand Junction, Colorado

LEGEND

- EXISTING CONTOUR (4560)
- PROPERTY BOUNDARY
- OLD PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE (W)
- EXISTING WATER LINE
- EXISTING FENCE
- PROPOSED DRY UTILITIES (BY OTHERS) (EGTC)
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- LOT CORNER SPOT ELEVATION (4550.00)
- PROPOSED SWALE/BERM ELEVATION (G 4550.00)
- PROPOSED FL CURB/V-PAN (FL 4550.00)
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER METER
- EXISTING CONTOUR LABEL (4550)
- PROPOSED CONTOUR LABEL (4550.00)



VICINITY MAP

SHEET NUMBER	SHEET TITLE
C0.0	COVER
C0.1	PROJECT NOTES
C0.2	OVERALL SITE PLAN AND FILING PLAN
C1.0	COMPOSITE SITE PLAN - LAYOUT AND GEOMETRY PLAN
C1.1	COMPOSITE SITE PLAN - SIGNAGE & LIGHTING PLAN
C2.0 - C2.2	COMPOSITE SITE PLAN - GRADING PLAN
C3.0	COMPOSITE SITE PLAN - OVERALL UTILITY AND WATER PLAN
C4.0	ROAD AND SEWER PLAN AND PROFILE - AIGUILLE DRIVE
C6.0 - 6.2	CONSTRUCTION STORM WATER MANAGEMENT PLAN

ABBREVIATION LEGEND

&	AND	MCSM	MESA COUNTY SURVEY MONUMENT
℄	CENTERLINE	MFG'S	MANUFACTURER'S
Ø	DIAMETER	M.P.E.	MULTI-PURPOSE EASEMENT
'	FEET	MPH	MILES PER HOUR
"	INCHES	NE COR	NORTHEAST CORNER
±	PLUS OR MINUS	N&S&E	NORTH AND SOUTH AND EAST
APPROX.	APPROXIMATELY	NO	NUMBER
BRL	BUILDING RESTRICTION LINE	N.T.S.	NOT TO SCALE
BVCS	BEGIN VERTICAL CURVE STATION	PROP.	PROPOSED
BVCE	BEGIN VERTICAL CURVE ELEVATION	PRV	PRESSURE REDUCING VALVE
CB	CATCH BASIN	PSI	POUNDS PER SQUARE INCH
CL III	CLASS 3	PVC	POLYVINYL CHLORIDE
CMP	CORRUGATED METAL PIPE	PVI	POINT OF VERTICAL INTERSECTION
CR	CURB RETURN	PVMT	PAVEMENT
CT	COURT	O.C. E.W	ON CENTER EACH WAY
DR	DRIVE	RCP	REINFORCED CONCRETE PIPE
EL.	ELEVATION	RD	ROAD
ELEV	ELEVATION	RET. WALL	RETAINING WALL
EX	EXISTING	R.O.W	RIGHT-OF-WAY
EXIST.	EXISTING	RT	RIGHT
EVCS	EXIT VERTICAL CURVE STATION	SCH	SCHEDULE
EVCE	EXIT VERTICAL CURVE ELEVATION	SD	STORM DRAIN
FL	FLOWLINE	SEC	SECTION
FH	FIRE HYDRANT	SF	SQUARE FEET
FT	FEET	SQ. FT	SQUARE FEET
GPM	GALLONS PER MINUTE	SS	SANITARY SEWER
GV	GAS VALVE	ST.	STREET
G.V.A.L.C.S	GRAND VALLEY ALIQUOT LOCAL COORDINATE SYSTEM	STA	STATION
		THRU	THROUGH
HGL	HYDRAULIC GRADE LINE	TYP.	TYPICAL
HI PT	HIGH POINT	TW	TOP OF WALL
HP	HORSE POWER	U.W.C.D	UTE WATER CONSERVANCY DISTRICT
INV	INVERT	VC	VERTICAL CURVE
LT	LEFT	VCP	VITRIFIED CLAY PIPE
MAX	MAXIMUM	W/	WITH
MIN	MINIMUM	WM	WATER METER
MH	MANHOLE	WV	WATER VALVE

UTILITY PROVIDERS INFORMATION

UTILITY	PROVIDER	PHONE NUMBER
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.

Colorado 811
1-800-922-1987
co811.org

PROJECT NOTES:

1. THIS DRAWING REFERENCES AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM, LOTS 1 – 9, BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE 1 AS PLATTED AND RECORDED IN PLAT BOOK 8 AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = RSF-2
6. MINIMUM BUILDING SETBACKS (PRINCIPAL/ACCESSORY)
   STREET = 20'
   REAR = 25'
   SIDE = 7'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

this note needs to also go on the site plan to be recorded.

Note has been added to recorded site plan

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
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James C. Atkinson
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COLORADO LICENSE No. 19829

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MAJOR SUBDIVISION FINAL PLAN

REV.	DATE	COMMENT	BY
1	8/18/17	REVISED PER CITY COMMENT ROUND 1, DATED 7/18/17	DLS

Cover
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE:
CAD ID: 0.0cover-f2.dwg

-SHEET-
C0.0

LOCAL CONTACT INFORMATION
GRAND JUNCTION DEVELOPMENT INSPECTOR: MARK BARSLUND
970-201-1362

GENERAL NOTES:

1 THESE GENERAL NOTES SHALL BE APPLICABLE TO ALL SHEETS WITHIN THIS SET OF DRAWINGS.
2 ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE GOVERNING AGENCY. CONTRACTOR MUST CONTACT THE APPROPRIATE AGENCY PRIOR TO CONSTRUCTION IN THE RIGHT-OF-WAY
3 PLANNING PERMIT APPROVAL MUST BE OBTAINED BY INDIVIDUAL LOT OWNERS PRIOR TO CONSTRUCTION. THE LOT OWNER MUST SUBMIT A PROPOSED DRAINAGE PLAN OF EACH SITE TO THE GOVERNING AGENCY FOR REVIEW.
4 EXISTING WATER, SANITARY, AND STORM SEWER LINES ARE SHOWN BASED ON BEST AVAILABLE INFORMATION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS SPECIFICALLY AT CONNECTION POINTS AND AT POTENTIAL POINTS OF CONFLICT. ALL INFORMATION SHALL BE SUPPLIED TO THE ENGINEER PRIOR TO CONSTRUCTION
5 CONTRACTOR SHALL BE RESPONSIBLE FOR:
(A) CONTACTING THE APPROPRIATE AGENCY TO ARRANGE A PRE-CONSTRUCTION MEETING AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
(B) OBTAINING ALL PERMITS FOR STREET CUTS, UTILITIES CONSTRUCTION AND GRADING. THE COST OF ALL PERMITS SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S BID
(C) COORDINATING WITH ALL UTILITY COMPANIES INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. ADVANCE COORDINATION BY THE CONTRACTOR TO ALL UTILITY COMPANIES INVOLVED SHALL BE REQUIRED FOR ANY SERVICE INTERRUPTIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER, PROJECT MANAGER AND THE UTILITY COMPANY 48 HOURS PRIOR TO START OF CONSTRUCTION. NO UTILITY TAPS SHALL BE MADE WITHOUT WRITTEN AUTHORIZATION BY THE UTILITY COMPANY AND THE CITY.
(D) VERIFICATION OF ALL OTHER UNDERGROUND FACILITIES WHICH MAY BE AFFECTED BY THIS PROJECT AND REPAIR THEREOF IN CASE OF DAMAGE.
(E) CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO OBTAIN TEMPORARY POWER AND TELEPHONE SERVICE DURING CONSTRUCTION. ALL COST FOR TEMPORARY SERVICES SHALL BE THE CONTRACTORS RESPONSIBILITY.
(F) RESTORATION OF DISTURBED STREET PAVEMENT AS REQUIRED BY THE CITY AND THE STATE'S DEPARTMENT OF TRANSPORTATION.
(G) ALL PROJECT SAFETY INCLUDING, BUT NOT LIMITED TO, TRENCH EXCAVATION AND SHORINGS, TRAFFIC CONTROL, AND SECURITY.
(H) COORDINATING ALL WORK AND INSPECTIONS AS REQUIRED BY THE CITY OR THE STATE.
(I) OBTAINING NECESSARY PERMITS FROM THE DEPARTMENT OF TRANSPORTATION FOR ALL WORK IN AND ADJACENT TO STATE RIGHT-OF-WAY.
(J) RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE AS-BUILTS SHALL INCLUDE UNDERGROUND UTILITIES AS WELL AS ANY FIELD MODIFICATIONS OF THE PLANS.
(K) KEEPING ADJACENT STREETS FREE AND CLEAN OF ALL DEBRIS AND DIRT FROM THE JOB SITE.
(L) THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED AT THE JOB SITE AT ALL TIMES. EACH SUBCONTRACTOR (INCLUDING THE SURVEYOR) SHALL HAVE A SIGNED COPY OF THE PLANS AND THE APPROPRIATE STANDARDS AND SPECIFICATIONS IN HIS POSSESSION AT ALL TIMES WHEN IMPROVEMENTS ARE BEING INSTALLED.
(M) THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR COMPLETION OF INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED BY NOTE TO BE "PROVIDED," "INSTALLED" OR "CONSTRUCTED" UNLESS SPECIFICALLY NOTED OTHERWISE.
(N) CONTRACTOR WILL HAVE A COPY OF APPROVED SOILS REPORTS FOR PAVEMENT DESIGN AND COMPACTION REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL RECOMMENDATIONS CONTAINED WITHIN THE SOILS REPORT.
(O) VERIFYING THE ACCURACY OF THE VERTICAL BENCHMARK INFORMATION. CONTRACTOR SHALL USE BENCHMARKS AND DATUMS SHOWN HEREON TO SET PROJECT BENCHMARK(S), BY RUNNING A LEVEL LOOP BETWEEN AT LEAST TWO BENCHMARKS, AND SHALL PROVIDE SURVEY NOTES OF SUCH TO PROJECT ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
6 IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY
7 TWO WORKING DAYS BEFORE YOU DIG, GRADE, OR EXCAVATE, CALL THE APPROPRIATE UTILITY NOTIFICATION CENTER FOR THE MARKING OF MEMBER UNDERGROUND UTILITIES. THE UTILITIES SHOWN ON THESE PLANS ARE PLOTTED BASED ON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION, AND REPAIR OF ANY EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. ANY UTILITY DAMAGED BY CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
8 THIS PLAN WAS PREPARED BASED ON SURVEY INFORMATION PROVIDED BY A LICENSED SURVEYOR. VORTEX ENGINEERING, INC ASSUMES NO RESPONSIBILITY FOR ERRORS DUE TO INCOMPLETE OR INACCURATE SURVEY INFORMATION.
9 SUBGRADE DENSITY SHALL BE TESTED BY A PRIVATE SOILS TESTING FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING BASE COURSE OR CONCRETE. BASE COURSE DENSITY SHALL ALSO BE TESTED BY THE PRIVATE GEOTECHNICAL FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING PAVEMENT.
10 THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT.

DEMOLITION NOTES:

1 THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM ALL UTILITY COMPANIES PRIOR TO ANY DEMOLITION WORK OR DISCONNECTION OF ANY SERVICE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANIES.
2 ALL UTILITIES INCLUDING STORM SEWER, SANITARY SEWER AND WATER MAINS SHALL BE COMPLETELY REMOVED FROM THE GROUND UNLESS OTHERWISE SPECIFIED. NO EXISTING UTILITY, STRUCTURES OR UNDERGROUND IMPROVEMENT SHALL BE ABANDONED IN PLACE WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER, OWNER AND GOVERNING AGENCY
3 THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES WHICH ARE TO REMAIN IN SERVICE, INCLUDING BUT NOT LIMITED TO GAS, ELECTRIC, CABLE AND TELEPHONE SERVICES
4 ALL STRUCTURE (INCLUDING BASEMENT WALLS AND FLOOR SLABS SHALL BE COMPLETELY REMOVED FROM THE SITE
5 ALL DEMOLITION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS INCLUDING BUT NOT LIMITED TO HAZARDOUS MATERIALS, DISPOSAL, HOURS OF OPERATION.
6 ALL EROSION CONTROL MEASURES DESIGNED FOR THE SITE PERIMETER OR TO PROTECT EXISTING IMPROVEMENTS SHALL BE IN PLACE PRIOR TO THE START OF ANY DEMOLITION ACTIVITIES
7 THE CONTRACTOR SHALL OBTAIN AND REVIEW THE ENVIRONMENTAL STUDIES PROVIDED BY THE OWNER AND TAKE ALL NECESSARY PRECAUTIONS FOR ENVIRONMENTAL SAFETY DURING DEMOLITION ACTIVITIES. IT SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE EXISTING STRUCTURES FOR ANY OTHER CONDITIONS WHICH MAY AFFECT THE DEMOLITION PROCEDURES
8 ANY CONDITIONS WHICH MAY BE UNCOVERED DURING THE PROCESS OF DEMOLITION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER IMMEDIATELY. ADDITIONAL EXPENSES INCURRED BY UNFORESEEN CONDITIONS SHALL BE APPROVED BY THE OWNER PRIOR TO THE ADDITIONAL WORK.
9 IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE PROPERTY FOR THE TYPE AND QUANTITY OF DEMOLITION REQUIRED, PRIOR TO SUBMISSION OF A BID.
10 THE CONTRACTOR SHALL HAVE WATER ON SITE FOR DUST ABATEMENT AT ALL TIMES DURING DEMOLITION ACTIVITIES
11 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF ALL DEBRIS. BURNING ON SITE SHALL NOT BE PERMITTED. NO DEBRIS INCLUDING CONCRETE OR ASPHALT MAY BE PLACED IN ANY FILL AREA
12 ANY DAMAGE TO PUBLIC UTILITIES OR ADJACENT PROPERTIES AS A RESULT OF THE DEMOLITION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. REPAIRS SHALL BE MADE IN A TIMELY MANNER TO THE SATISFACTION OF THE DAMAGED PARTY
13 THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH DOCUMENTATION OF THE CONDITION OF EXISTING IMPROVEMENTS TO REMAIN IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS NOT DOCUMENTED AS PRE-EXISTING. DOCUMENTATION SHALL BE PROVIDED PRIOR TO COMMENCEMENT OF WORK.
14 ALL EXISTING UTILITY SERVICES SHALL BE COMPLETELY REMOVED FROM THE SITE. SERVICE SHALL BE CUT AND PLUGGED AT THE PROPERTY LINE IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS. THE DEMOLITION CONTRACTOR SHALL CLEARLY MARK ALL STUBS AT THE PROPERTY LINE WITH A 4 X 4 WOOD POST (MINIMUM 4' ABOVE GRADE, 4' BELOW GRADE) MARKED WITH THE SERVICE TYPE.
15 ALL EXISTING WELLS SHALL BE CAPPED AND ABANDONED IN ACCORDANCE WITH ALL STATE REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL REQUIRED PROCEDURES, FILE ALL REQUIRED FORMS, APPLICATIONS AND REPORTS, AND OBTAIN ALL REQUIRED APPROVALS FROM THE STATE ENGINEER'S OFFICE.
16 DURING THE COURSE OF DEMOLITION, CONTRACTOR SHALL PROVIDE SECURITY FENCING AND OTHER PRECAUTIONARY SAFETY MEASURE AS NECESSARY

EROSION CONTROL NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL FACILITIES SHOWN.
3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORESEEN PROBLEMS OR IF THE PLAN DOES NOT FUNCTION AS INTENDED. A JURISDICTION REPRESENTATIVE MAY REQUIRE ADDITIONAL CONTROL DEVICES UPON INSPECTION OF PROPOSED FACILITIES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED. STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM TRAFFIC FROM THE SITE.
5. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE PAVED, SEEDED WITH NATIVE VEGETATION OR LANDSCAPED. REFER TO LANDSCAPE PLANS FOR SEED MIX AND PLANTING SPECIFICATIONS
6. EROSION CONTROL STRUCTURES BELOW SODDED AREAS MAY BE REMOVED ONCE SOD AND FINAL LANDSCAPING IS IN PLACE. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION. EROSION CONTROL IN PROPOSED PAVED AREAS SHALL REMAIN IN PLACE UNTIL PAVEMENT IS COMPLETE
7. THIS PLAN IS ONLY TO BE USED FOR INSTALLATION OF EROSION CONTROL FACILITIES. DO NOT USE THIS PLAN FOR GRADING OR STORM SEWER CONSTRUCTION.
8. CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLE WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES WILL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS, MOVED WHEN NECESSARY AND REMOVED WHEN THE SITE IS PAVED.
9 INLET PROTECTION DEVICES SHALL BE INSTALLED IMMEDIATELY UPON INDIVIDUAL INLET'S BECOMING FUNCTIONAL.
10. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH GRADING AND/OR UTILITY CONSTRUCTION SHALL OBTAIN A COPY OF THE STORM WATER MANAGEMENT PLAN (SWMP) AND ANY OTHER DOCUMENTATION REGARDING "STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY" AND BECOME FAMILIAR WITH THEIR CONTENTS.
11. THE TEMPORARY PARKING AND STORAGE AREA SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AREA, EQUIPMENT CLEANING AREA, EMPLOYEE BREAK AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
12. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, ETC.) SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT WITH STORM WATER DISCHARGES FROM THE SITE
13 MAINTAIN ON THE SITE OR HAVE READILY AVAILABLE SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS
14. FUGITIVE DUST BLOWING FROM THE SITE SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS ABSOLUTELY PROHIBITED.
15 NO RUBBISH, TRASH, GARBAGE, OR OTHER SUCH MATERIALS SHALL BE DISCHARGED INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
16. ALL MEASURES PRESENTED IN THE SWMP SHALL BE INITIATED AS SOON AS PRACTICABLE
17. IF THE GRAVEL CONSTRUCTION ENTRANCES ARE NOT EFFECTIVE IN REMOVING THE MAJORITY OF DIRT OR MUD FROM THE TIRES OF THE CONSTRUCTION VEHICLES, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP AND THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.
18. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
19. IF SOIL STOCKPILING IS EMPLOYED ON THE SITE, SILT FENCES SHALL BE USED TO HELP CONTAIN THE SEDIMENT
20. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
21. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN 30 DAYS AFTER FINAL STABILIZATION. FINAL STABILIZATION HAS OCCURRED WHEN ALL SOIL DISTURBING ACTIVITIES ARE COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OF THE COVER FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES HAS BEEN EMPLOYED
22 THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) DUE TO GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT
23 ALL OFF-SITE CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR STORM DRAIN CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION

EROSION CONTROL MAINTENANCE NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS
2. ALL MEASURES CONTAINED IN THIS PLAN SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT, AND SHOULD BE CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:
3. STRAW BALE INLET PROTECTION DEVICES AND BARRIERS SHALL BE FIXED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR SHALL BE REPLACED IF THEY SHOW SIGNS OF DETERIORATION
4. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, RE-SEEDED, AND WATERED AS NEEDED.
5. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-THIRD TO ONE-HALF THE HEIGHT OF THE SILT FENCE.
6. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
7. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE) THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
8. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES. SEDIMENT IN THE SEDIMENTATION BASINS SHALL NOT EXCEED THE SEDIMENTATION CLEANOUT LEVEL
9. IF THE STONES IN THE GRAVEL CURB INLET SEDIMENT FILTERS BECOME CLOGGED WITH SEDIMENT, THE STONES MUST BE PULLED AWAY, CLEANED AND REPLACED.
10 THE EMBANKMENT OF THE SEDIMENTATION BASIN SHALL BE CHECKED REGULARLY TO INSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
11. THE TEMPORARY SEDIMENT TRAP AND SEDIMENTATION BASIN STRUCTURES SHALL BE CHECKED REGULARLY TO INSURE THAT THEY ARE STRUCTURALLY SOUND AND HAVE NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. SEDIMENT DEPOSITION SHALL BE REMOVED PERIODICALLY TO ENSURE FULL VOLUME IS AVAILABLE IN THE POND.

GRADING NOTES:

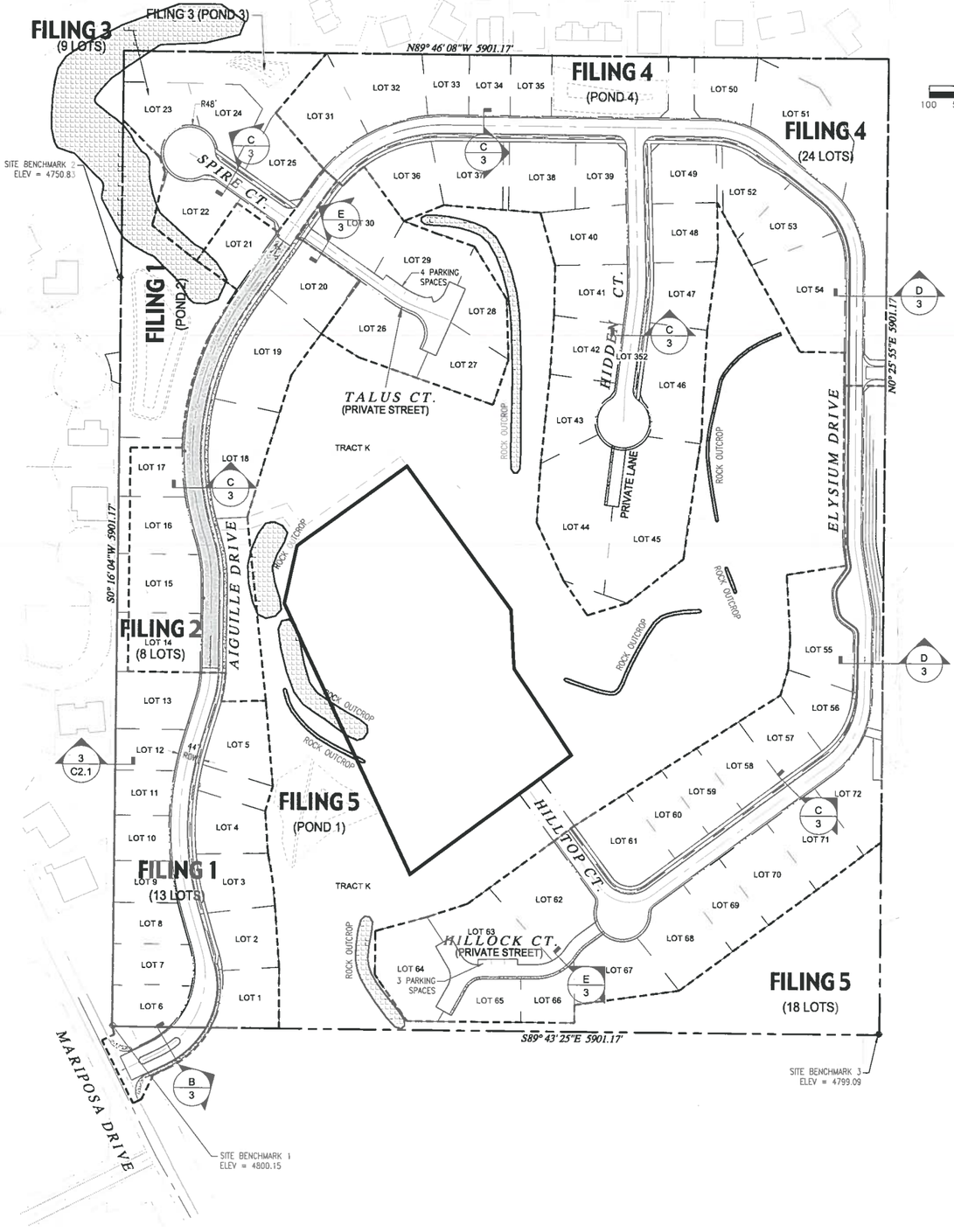
1 REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS
2. CONTOURS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY. CONTOUR INTERVAL = 1 FOOT UNLESS OTHERWISE NOTED ON PLANS
3. ALL DISTURBED AREAS THAT ARE UNSURFACED OR ARE NOT DESIGNATED AS LANDSCAPE AREAS ARE TO BE RE-SEEDED WITH DRY NATIVE GRASS SEED MIX
4. IF DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE SOILS ENGINEER SHALL BE CONTACTED FOR RECOMMENDATIONS.
5. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND STANDARDS OF THE GOVERNING AGENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED AS SPECIFIED BY THE GEOTECH REPORT. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED, LICENSED, SOILS ENGINEER, CERTIFYING THAT THE SUBBASE WITHIN THE AREAS TO BE PAVED HAS BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECS
6. NO PROPOSED SLOPE SHALL EXCEED TWO (2) HORIZONTAL TO ONE (1) VERTICAL. ALL SLOPED AREAS MUST BE PROTECTED FROM EROSION
7 IF STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS ARE STOCKPILED ON THE SITE, TOPSOIL MAY BE PLACED TO A HEIGHT OF FIVE FEET. SILT FENCE SHALL BE PLACED AROUND THE BASE OF THE STOCKPILE AND THE STOCKPILE SHALL BE SEEDED WITH NATIVE SEED MIX IMMEDIATELY AFTER STRIPPING OPERATIONS ARE COMPLETE
8 ON-SITE MATERIALS SUITABLE FOR FILL BENEATH DRIVES, AND PARKING AREAS BEYOND 5' OF THE BUILDING SHALL BE COMPACTED IN ACCORDANCE WITH THE GUIDELINES PRESENTED IN THE SOILS REPORT.
9. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHY AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO ENSURE 0.75% MIN SLOPE AGAINST ALL GUTTERS TO PREVENT PUDDLING. ANY DISCREPANCIES SHALL BE PROVIDED TO THE ENGINEER IN WRITING IMMEDIATELY
10. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED AS SPECIFIED IN THE GEOTECH REPORT
11 SPOT ELEVATIONS REPRESENT FLOWLINE OR TOP OF ASPHALT UNLESS OTHERWISE NOTED
12 SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS WHICH DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB AND GUTTER AND UTILITIES.
13 ALL UTILITIES (MANHOLES, VALVE COVERS, CLEANOUTS, VAULTS, BOXES, ETC.) SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT
14 ALL EARTH MOVING AND PLACEMENT OPERATIONS SHALL BE IN CONFORMANCE WITH THE RECOMMENDATIONS IDENTIFIED IN THE SOILS REPORT. THE CONTRACTOR SHALL HAVE A SIGNED AND SEALED COPY OF THE SOILS REPORT ON THE SITE AT ALL TIMES
15 THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES
16. WHERE NEW CURB AND GUTTER IS BEING CONSTRUCTED ADJACENT TO EXISTING ASPHALT, THE FOLLOWING SHALL APPLY PRIOR TO PLACEMENT OF ANY CONCRETE THE CONTRACTOR SHALL HAVE A LICENSED SURVEYOR VERIFY GRADE AND CROSS SLOPE OF THE CURB AND GUTTER FORMS. THE CONTRACTOR SHALL SUBMIT THE SLOPES AND GRADES TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY SECTION WHICH DOES NOT CONFORM TO THE DESIGN OR THE TYPICAL CROSS SECTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CURB AND GUTTER POURED WITHOUT APPROVAL OF THE ENGINEER
17 MAINTENANCE OF ANY STORMWATER MANAGEMENT FACILITY SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL GUIDELINES FOR PRIVATE STORMWATER MANAGEMENT FACILITIES AND SHALL BE THE RESPONSIBILITY OF THE OWNER AND THE ASSIGNEES
18. SURFACE RESTORATION SHALL BE AS FOLLOWS:
(A) FINE GRADE ALL AREAS DISTURBED BY THE CONSTRUCTION OPERATIONS AFTER COMPLETION OF BACKFILLING AND COMPACTING. AREAS WHICH ARE TO RECEIVE PAVEMENTS, SURFACING, TOPSOIL OR LANDSCAPING SHALL BE GRADED AS REQUIRED TO ALLOW INSTALLATION OF THE SPECIFIC SURFACE TREATMENT. GRADE ALL OTHER AREAS TO MATCH THE EXISTING GROUND LINE
(B) REPLACE AND REPAIR ANY SURFACE IMPROVEMENTS DAMAGED OR REMOVED. CONFORM TO CITY STANDARDS & SPECIFICATIONS
19 BITUMINOUS PAVEMENT
(A) BITUMINOUS PAVEMENT SHALL BE REMOVED TO CLEAN STRAIGHT LINES AT THE LOCATIONS INDICATED ON PLANS. WIDTH OF REMOVAL FOR PIPELINES SHALL BE KEPT TO A MINIMUM AS DICTATED BY TRENCHING OPERATIONS, BUT SHALL EXTEND AT LEAST 6 INCHES BEYOND THE LIMITS OF TRENCH EXCAVATION.
(B) THE CUT SHALL BE MADE WITH PAVEMENT CUTTING WHEEL, SAW OR OTHER APPROVED METHOD. SO AS TO PROVIDE A REASONABLY STRAIGHT AND SQUARE EDGE

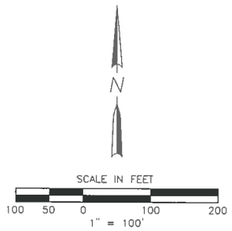
SANITARY SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS
2. ALL GRAVITY SANITARY SEWER LINES SHALL BE POLYVINYL CHLORIDE PIPE (PVC), ASTM D-3034 SDR 35. SEWER LINE MATERIALS AND CONSTRUCTION SHALL CONFORM TO ASTM STANDARDS AND SPECIFICATIONS
3 DISTANCES FOR SANITARY SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. THEREFORE, DISTANCES SHOWN ON PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT
4. RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATION. PIPELINE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT AND STEEL SHIMS TO ADJUST THE MANHOLE FRAME TO THE REQUIRED FINAL GRADE IN CONFORMANCE WITH STANDARD SPECIFICATIONS
5. ALL SANITARY SEWER MAINS TESTING SHALL BE IN ACCORDANCE WITH LOCAL SPECIFICATIONS. COPIES OF ALL TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER, THE OWNER AND THE GOVERNING AUTHORITY PRIOR TO THE START OF THE WARRANTY PERIOD.
6. COMPACTION OF ALL TRENCHES WITHIN THE PROJECT SITE MUST BE ATTAINED AND COMPACTION RESULTS SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE
7 THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING STRUCTURES AND IMPROVEMENTS DURING INSTALLATION OF THE SANITARY SEWER LINE
8. THE CONTRACTOR SHALL POTHOLE THE EXISTING SEWER MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION
9 SANITARY SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY

STORM SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS
2 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING
(A) OBTAINING ALL REQUIRED PERMITS FROM THE CITY, THE DOT, OR ANY REGULATORY AUTHORITY AT THE CONTRACTOR'S COST INCLUDING PERMITS REQUIRED FOR WORK WITHIN THE PUBLIC RIGHT-OF-WAY
(B) RESTORATION OF ANY EXISTING IMPROVEMENTS INCLUDING (BUT NOT LIMITED TO) FENCES, SOD, LANDSCAPING, PAVEMENT, SPRINKLER SYSTEMS.
(C) VERIFICATION AND PROTECTION OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF THE PROJECT
(D) PROVIDING AS-BUILT DRAWINGS TO THE CITY AND ENGINEER.
(E) ALL PERMITTING, DEVELOPMENT, CONNECTION, LOCATION INSPECTION AND TESTING FEES REQUIRED FOR STORM SEWER CONSTRUCTION
(F) VERIFYING ALL STANDARD DETAILS CONFORM TO CURRENT CITY/COUNTY STANDARDS AND SPECIFICATIONS
(G) FOR OBTAINING AND UNDERSTANDING ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THE CONSTRUCTION OF THE STORM SEWER IMPROVEMENTS
(H) FOR SCHEDULING ALL REQUIRED INSPECTIONS
3 THE CONTRACTOR SHALL POTHOLE THE EXISTING STORM MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION
4 STORM SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.
5 THE CONTRACTOR SHALL COORDINATE HIS WORK SCHEDULE WITH THE DITCH COMPANY TO ENSURE ALL DITCH FACILITIES ARE CONSTRUCTED WITHOUT DISRUPTION TO DITCH COMPANY OPERATIONS
6 ALL STORM SEWER CONSTRUCTION SHALL BE IN CONFORMANCE WITH LOCAL STANDARDS AND SPECIFICATIONS
7 DISTANCES FOR STORM SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE OR INLET TO CENTER OF MANHOLE OR INLET. THEREFORE, DISTANCES SHOWN ON PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT.
8 RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATION. PIPELINE CON

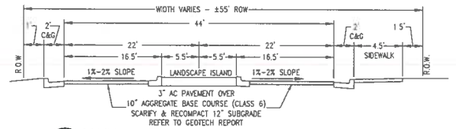




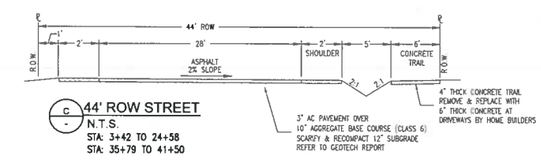
PROPOSED LAND USE TABLE				
USE	AREA	AC	% OF TOTAL	OWNER
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. = 45.11 AC			

PROJECT NOTES:

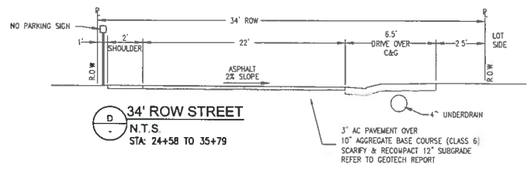
1. THIS DRAWING REFERENCES AN IMPROVEMENT SURVEY PLAT COMPLETED BY DH SURVEYS INC., DATED: JANUARY, 2008
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21 TOWNSHIP 1 SOUTH, RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21, EXCEPTING THEREFROM: LOTS 1 - 9, BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE 1 AS PLATTED AND RECORDED IN PLAT BOOK 18 AT PAGE 55 WITH A RECEPTION NUMBER 2449520 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = RSF-2
6. MINIMUM BUILDING SETBACKS (PRINCIPAL/ACCESSORY)
   STREET = 20'
   REAR = 25'
   SIDE = 7'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.



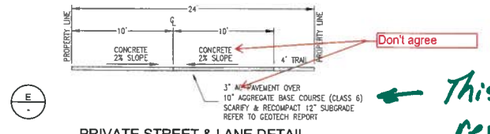
B - MARIPOSA DRIVE ENTRANCE
N.T.S.
STA: 0+24 TO STA: 1+52
(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 3+42)



C - 44' ROW STREET
N.T.S.
STA: 3+42 TO 24+58
STA: 35+79 TO 41+50



D - 34' ROW STREET
N.T.S.
STA: 24+58 TO 35+79



This note has been revised.

E - PRIVATE STREET & LANE DETAIL
N.T.S.
TRACTS C,F,J

LEGEND

FILING & LIMITS OF DEVELOPMENT DESIGNATION

PROJECT BENCHMARK

PROJECT BENCHMARK #1
LOCATED AT THE SOUTHWEST CORNER OF THE SITE.
MONUMENT ID: PLS 18480, THE W1/4 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO
NORTHING: 31563.18 EASTING: 78944.74 ELEV: 4800.15 (NAVD88)

PROJECT BENCHMARK #2
LOCATED AT THE WEST PROPERTY LINE, NEAR OUTLOOK COURT
MONUMENT ID: NCSN #1210, THE N1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO
NORTHING: 32880.35 EASTING: 78949.85 ELEV: 4750.83 (NAVD88)

PROJECT BENCHMARK #3
LOCATED AT THE SOUTHEAST CORNER OF THE SITE.
MONUMENT ID: NCSN #842, THE W1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO
NORTHING: 31558.05 EASTING: 80239.95 ELEV: 4799.09 (NAVD88)

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax: (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

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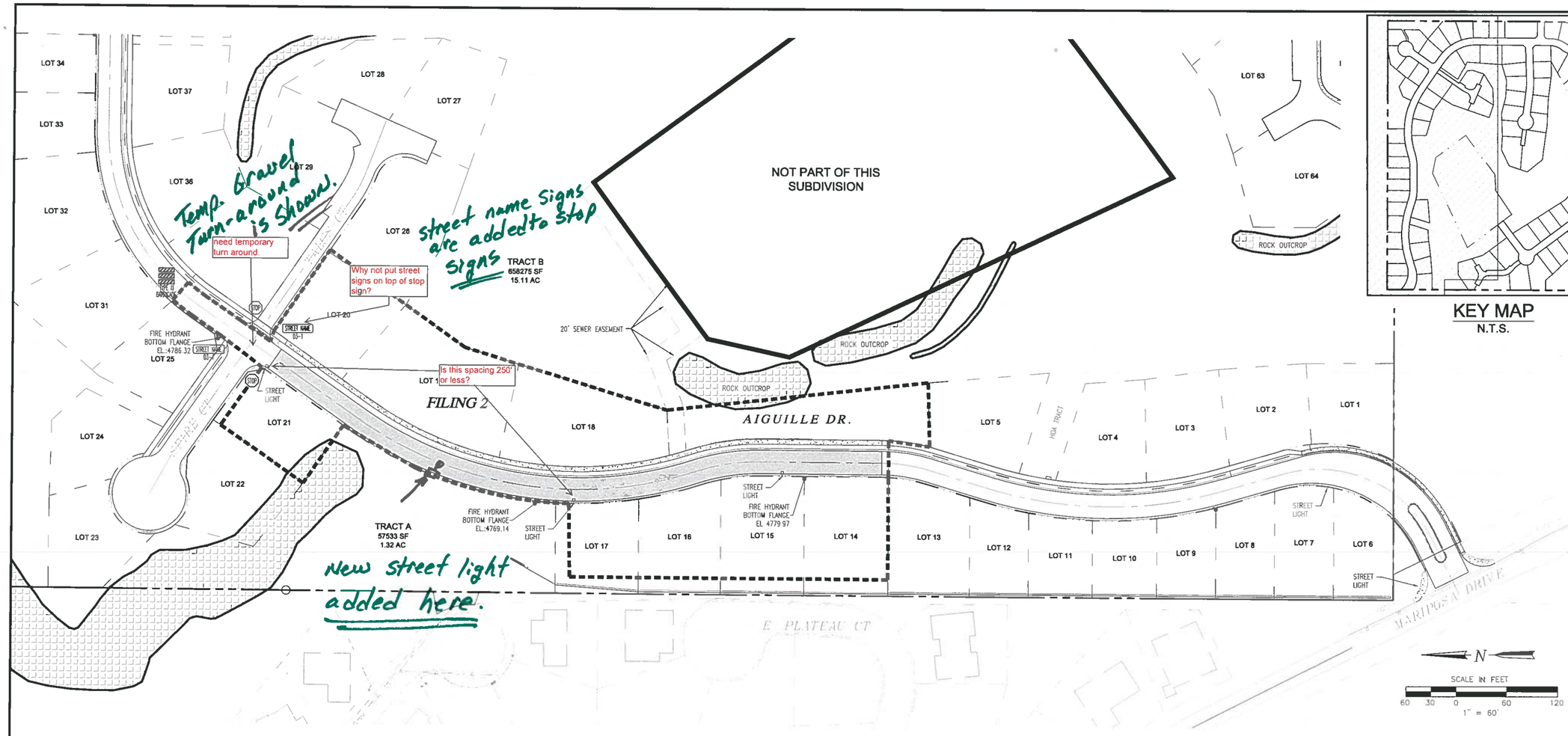
REV	DATE	COMMENT	BY
1	8/18/17	REVISED PER CITY COMMENT ROUND 1, DATED 7/18/17	DLS

MAJOR SUBDIVISION
FINAL PLAN

Filing Plan
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: 1" = 100'
CAD ID: 0.0cover-f2.dwg

~SHEET~
C0.2



KEY MAP
N.T.S.

SIGN SCHEDULE

- STOP SIGN (30"x30")
- NO OUTLET SIGN W14-2
- FIXED TYPE III CDOT ROAD BARRICADES (3' x 8' SECTIONS, SEE STD. S-630-2)
- NO TRESPASSING SIGN
- STREET NAME SIGN D3-1
- SPEED LIMIT SIGN R2-1

ALL SIGN POST MOUNTING AND PLACEMENT SHALL BE PER MUTCD OR MESA COUNTY SPECIFICATIONS. CONTRACTOR TO CONTACT MESA COUNTY TRAFFIC PRIOR TO INSTALLATION OF SIGNS. (ph 970-244-1817)

UTILITY PROVIDERS INFORMATION

UTILITY	PROVIDER	PHONE NUMBER
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

PROPOSED LAND USE TABLE

USE	AREA	AC	% OF TOTAL	OWNER
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
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GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET C0.2

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION

811 Know what's below. Call before you dig.
Colorado 811
1-800-922-1987
co811.org

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER _____ DATE _____

FOR REVIEW

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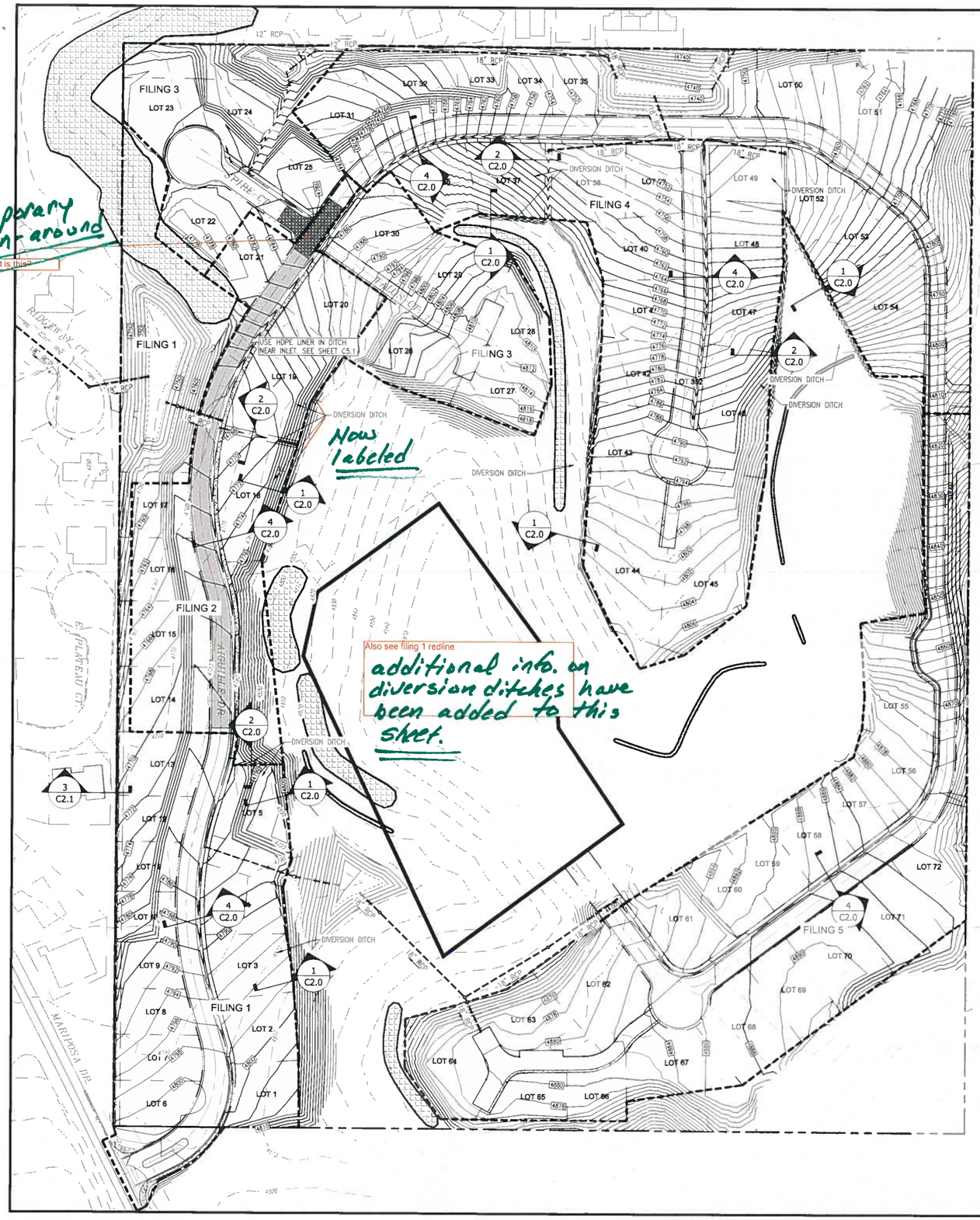
MAJOR SUBDIVISION
FINAL PLAN

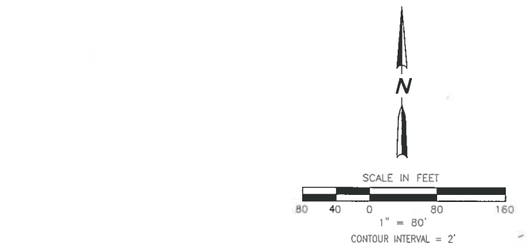
REV	DATE	REVISED PER CITY COMMENTS ROUND 1, DATED 7/18/17	BY
1	8/18/17	COMMENT	DLS

Signage & Lighting Plan
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1" = 60'
CAD ID: 1.0layout-f2.dwg

~SHEET~
C1.1



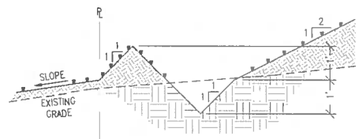


GRADING NOTE:

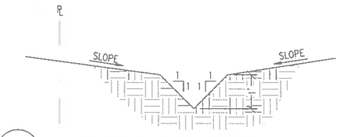
FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS

GENERAL NOTES

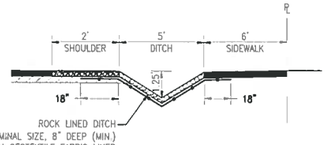
1. ALL CONSTRUCTION TO CONFORM TO THE CURRENT CITY OF GRAND JUNCTION DEPARTMENT OF PUBLIC WORKS AND PLANNING STANDARDS AND SPECIFICATIONS
2. CONTRACTOR MUST CONTACT CITY OF GRAND JUNCTION TRAFFIC OPERATIONS SUPERVISOR PRIOR TO CONSTRUCTION OR PLACEMENT OF TRAFFIC CONTROL DEVICES/FEATURES (STRIPING, SIGNALS, MEDIANS, ETC.) FOR CONSTRUCTION IN THE RIGHT-OF-WAY ONLY.
3. REFER TO THE GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE STORM SEWER, SEE SHEET C5.0 & C5.1.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE FILING PLAN.
8. REFER TO SHEETS C0.1, C6.0, THRU C6.2 FOR STORMWATER MANAGEMENT CONTROL PLANS AND EROSION CONTROL NOTES.
9. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
10. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL



1 / C2.0 DIVERSION DITCH SECTION
N.T.S.



2 / C2.0 DIVERSION DITCH SECTION
N.T.S.



4 / C2.0 ROCK LINED ROADSIDE DITCH
N.T.S.

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

FOR REVIEW - NOT FOR CONSTRUCTION

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
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Phone: (970) 245-9051
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James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No 18828

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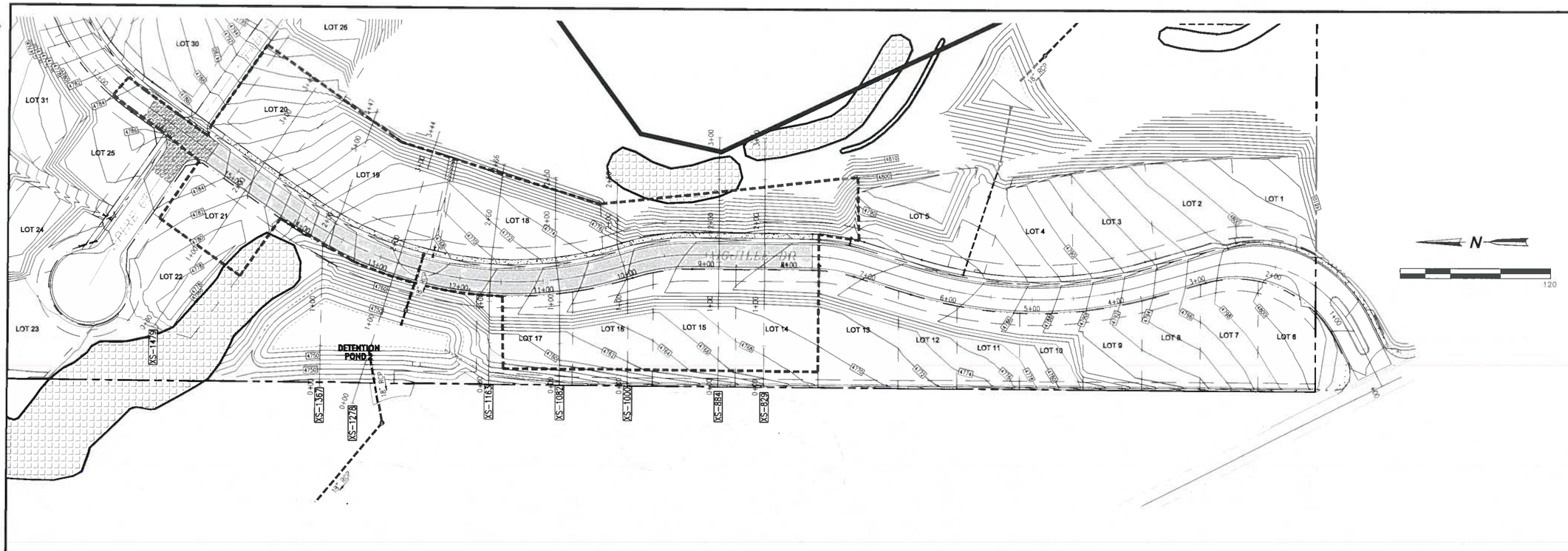
MAJOR SUBDIVISION
FINAL PLAN

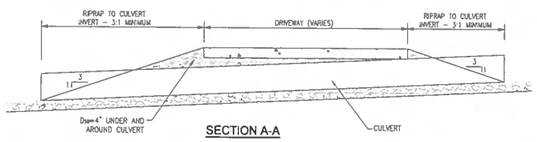
REV.	DATE	COMMENT	BY
1	8/18/17	REVISED PER CITY COMMENT ROUND 1, DATED 7/18/17	DLS

Overall Grading Plan Filings 1 - 5
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado

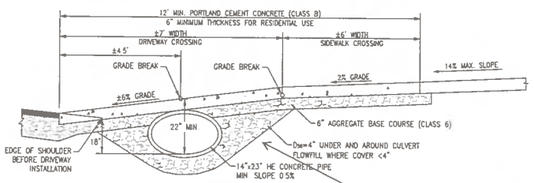
PROJECT NO: F04-006
DATE: 06/12/17
SCALE: 1"= 80'
CAD ID: 2.0grad-f2.dwg

-SHEET-
C2.0

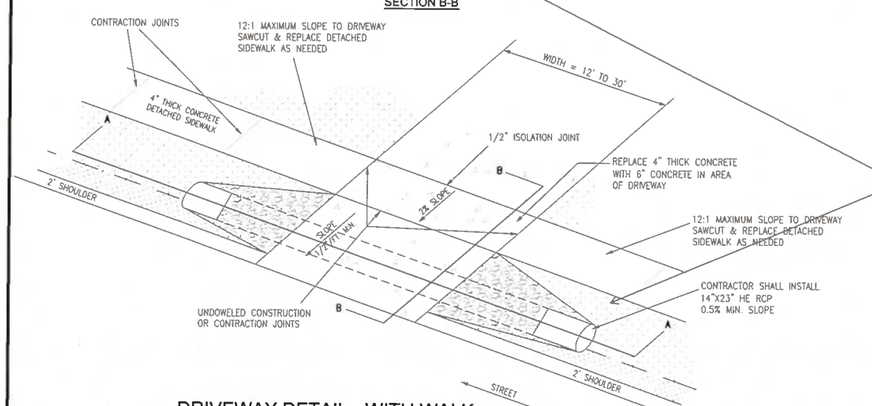




SECTION A-A



SECTION B-B

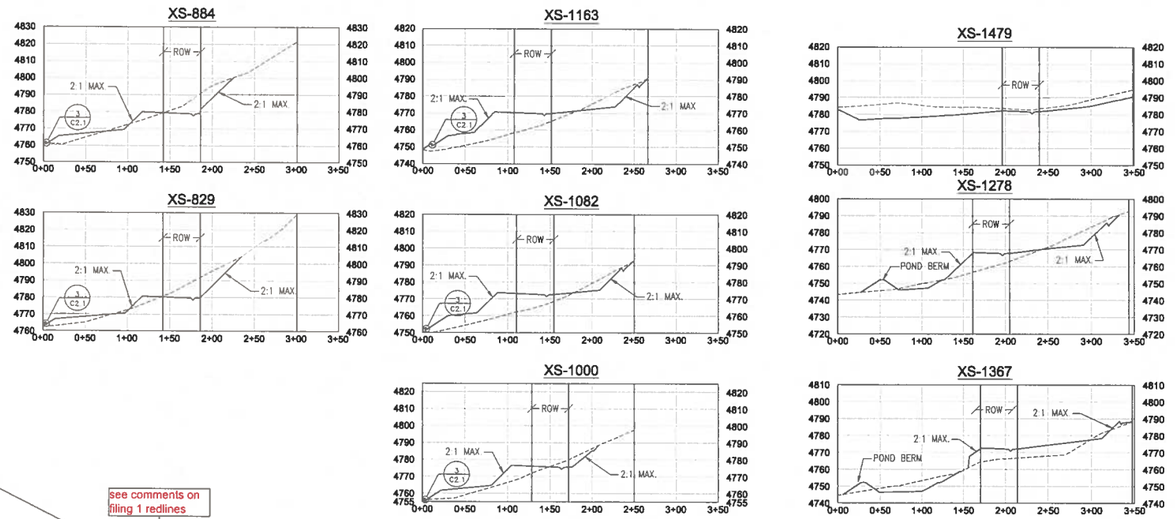


DRIVEWAY DETAIL - WITH WALK

N.T.S.

see comments on filing 1 redlines

This detail has been revised as part of Filing #1 revisions



SECTIONS ALONG LOT LINES

SCALE: 1" = 80' HORIZONTAL
1" = 40' VERTICAL

ACCEPTANCE BLOCK

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CITY DEVELOPMENT ENGINEER DATE

FOR REVIEW - NOT FOR CONSTRUCTION

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2394 Patterson Road, Suite 201
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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	DES	BY
1	8/16/17	REVISED PER CITY COMMENT ROUND 1, DATED 7/18/17	DES	BY

Grading Plan Filing 2 - Road Cross Sections
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: SEE PLAN
CAD ID: 2.0grad-f2.dwg

-SHEET-
C2.2

FILING NOTES

1. INSTALL CULVERT UNDER AIGUILLE DRIVE FOR DETENTION POND #2 INSTALL OUTLET STRUCTURE AND NEW 18" RCP IN RIDGEWAY COURT TO THE OUTFALL IN RIDGES BOULEVARD.
2. INSTALL SANITARY SEWER FROM SSMH-A9 TO EXISTING MAN-HOLE IN RIDGEWAY COURT AS SHOWN INCLUDING LINE TO MAN-HOLE B-1.
3. END WATER LINE CONSTRUCTION AT THE MIDDLE OF LOT 14 AS SHOWN.
4. ASPHALT PAVEMENT TO END AT THE NORTH END OF LOT 13 FOR FILING 1.
5. ROAD ALIGNMENT TO BE GRADED AND BASE COURSE INSTALLED TO THE NORTH END OF LOTS 20 & 21.

CONSTRUCTION NOTES:

1. INSTALL STOP SIGN & STREET SIGN
2. CONSTRUCT HANDICAPPED RAMP RE: CITY OF GJ DETAILS
3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL 6" STANDARD CURB & GUTTER W/ATTACHED SIDEWALK – 87 LF
6. INSTALL 6" DRIVE-OVER CURB & GUTTER W/ATTACHED SIDEWALK – 158 LF
7. INSTALL 6" STANDARD CURB & GUTTER 74 LF
8. SAWCUT & REMOVE ±106 LF EXISTING CONCRETE CURB USE CARE TO ENSURE PAVEMENT EDGE PROVIDES A CLEAN JOIN FOR INSTALL OF NEW CONCRETE VALLEY PAN
9. 15' SIDEWALK TRANSITION FROM ATTACHED TO DETACHED

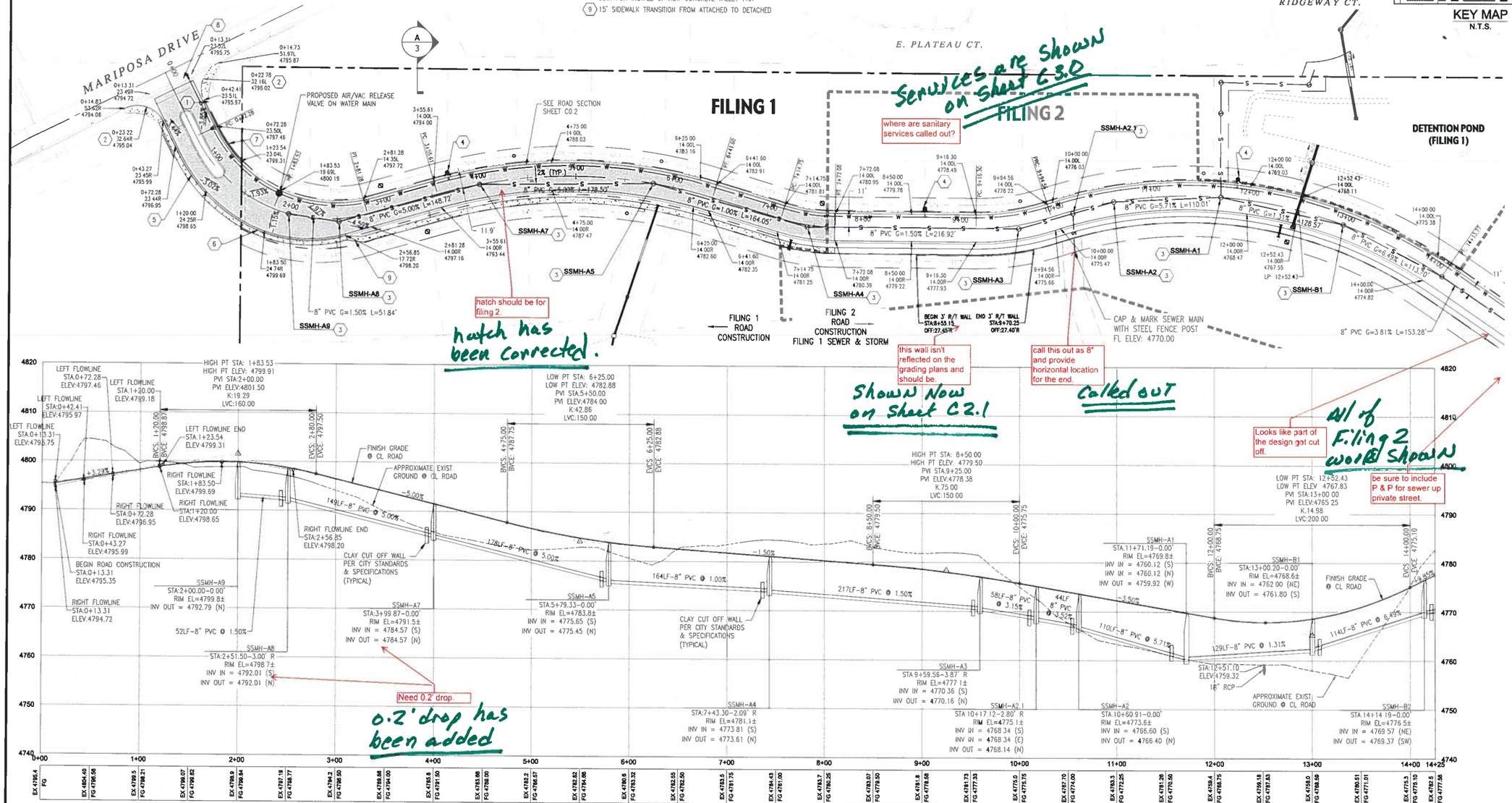
GENERAL NOTES:

1. REFERENCE SHEET C0.1 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET C0.2 FOR STREET SECTIONS
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION



ROAD AND SAN. SEWER PLAN - AIGUILLE DRIVE

SCALE: 1" = 50'



ROAD AND SAN. SEWER PROFILE - AIGUILLE DRIVE

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'

ACCEPTANCE BLOCK

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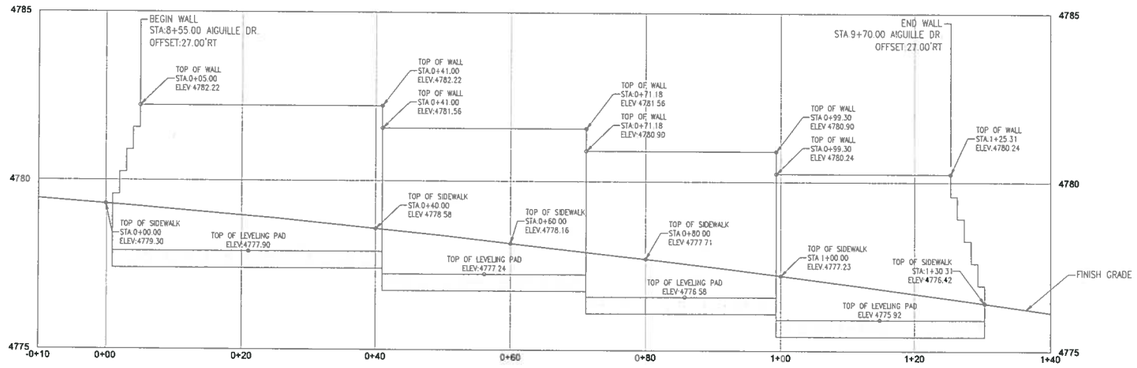
BY	DATE	REVISIONS
DLS	8/15/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017

MAJOR SUBDIVISION
FINAL PLAN

Road & Sanitary Sewer Plan & Profile
Aiguille Drive
Pinnacle Ridge Subdivision Filing 1
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/02/17
SCALE: 1" = 50'
CAD ID: 4.0ss-road-f1.dwg

SHEET
C4.0

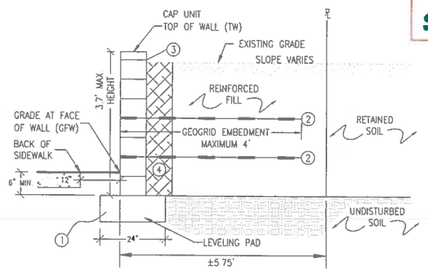


RETAINING WALL PROFILE

HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 4'

where does this retaining wall go Didn't find it callout out in plan view anywhere

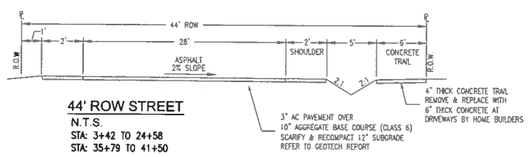
Shown by sta. on sheet C4.0
Sta. 8+55 to 9+70



1. LEVELING PAD SHALL BE A MINIMUM OF 6" CONCRETE OR CRUSHED ROCK
2. TENSAR STRUCTURAL GEOGRID
3. BLOCKS SHALL BE MESA STANDARD UNITS OR APPROVED EQUAL
4. 12" DRAIN ROCK

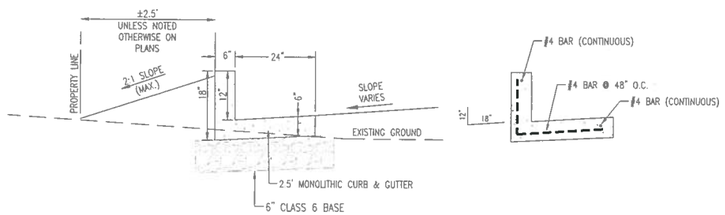
BLOCK WALL DETAIL

N.T.S.



44' ROW STREET

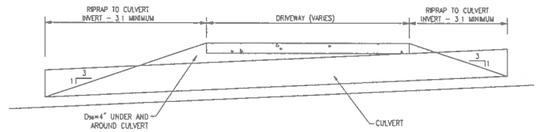
N.T.S.
STA: 3+42 TO 24+58
STA: 35+79 TO 41+50



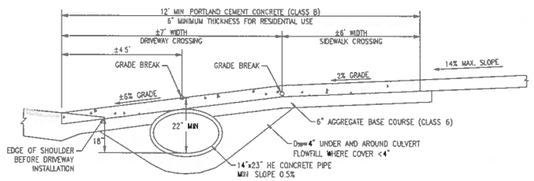
WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

CONCRETE CURB & GUTTER DETAIL

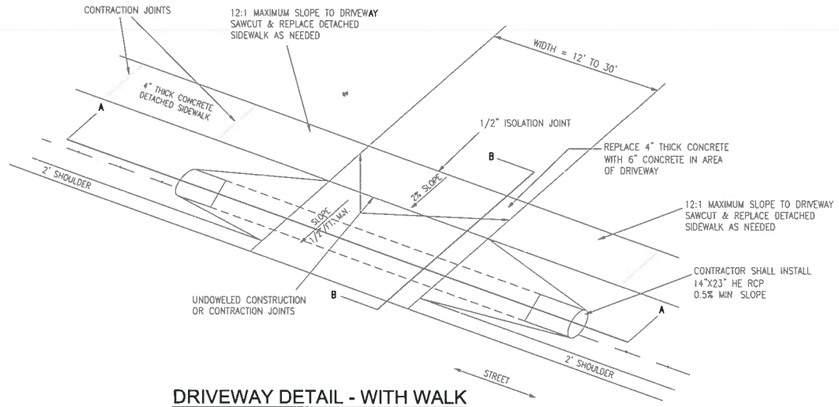
N.T.S.



SECTION A-A



SECTION B-B



DRIVEWAY DETAIL - WITH WALK

N.T.S.

NOTE:
CARE SHALL BE TAKEN TO REMOVE EXISTING ROCK LINING AND GEOTEXTILE FABRIC PRIOR TO NEW CULVERT INSTALLATION. FABRIC AND ROCK TO BE CAREFULLY REPLACED AROUND NEW CULVERT.

ACCEPTANCE BLOCK

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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY
1	8/15/17	REVISED PER CITY COMMENT ROUND 1 DATED JULY 14, 2017	DLS

Retaining Wall Profile & Road Details
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/02/17
SCALE: 1" = 50'
CAD ID: 4.0ss-road-f2.dwg

SHEET
C4.1

October 17, 2017

City of Grand Junction – Planning Department
Attn: Scott Peterson, Senior Planner
250 North 5th Street
Grand Junction, CO 81501

RE: Pinnacle Ridge Subdivision Filing 2
Response to Comments – Round 2
East of Mariposa Drive
Grand Junction, CO
VEAI #: F04-006
FILE #: SUB-2017-273

Dear Mr. Peterson,

Pinnacle Ridge Subdivision is proposed at the above-referenced location in the City of Grand Junction. The following information is provided in response to Round 2 Review Comments dated September 13, 2017 from various City Departments and outside agencies.

CITY PLANNING –Scott Peterson

1. Subdivision Plat (Sheet 1):

a) See City Surveyor review comments and revise as applicable.

Applicant's Response:
Comment acknowledged.

b) Provide temporary turn-around easement at the end of Lots 20 & 21.

Applicant's Response:
Temporary turn-around is to occur at the end of the Ingress/Egress drive at Spire Court at the end of Filing 2. No easement is required due to the Ingress/Egress being established with the Filing 1 Plat.

c) For the signature and notary blocks, Robert W. Jones II, Managing Member will be signing the plat on behalf of Two R & D LLC in accordance with the submitted Statement of Authority document. Revise subdivision plat as necessary.

Applicant's Response:
These corrections have been added.

d) Submit separate legal description and map exhibit for proposed temporary turn-around easement located at the end of Filing 2. Senior City Staff Attorney will prepare dedication document for property owner's signature to be recorded at time of final subdivision plan recording.

Applicant's Response:
No easement is required. See response above.

e) In the City of Grand Junction Use Block, add recording information for proposed dedication document for private Drainage Easements to the HOA.
Code Reference: V-15 of the SSIDS Manual.

Applicant's Response:
Additional recording information has been added.

2. Covenants and Dedication Documents, etc.:

a) Senior City Staff Attorney is currently reviewing re-submitted CCR's. City Project Manager will email applicant with the requested changes once review is complete.

Applicant's Response:
Comment acknowledged.

b) Submit conveyance document for proposed private drainage easement to the HOA, along with legal description and map exhibit for review prior to recording.
Code Reference: IV-2 of the SSIDS Manual.

Applicant's Response:
Documents have been included in the re-submittal.

3. Site Plan for Recording:

a) Delete Board of County Commissioner's certificate block, as this property is located within the City and no official signatures are required.

Applicant's Response:
Certificate has been removed.

CITY DEVELOPMENT ENGINEER

These comments are very repetitive of filing 1.

1. General:

a) When the grading plan is complete, provide a letter from the building department stating they have received hard copies of 1) the geotechnical report, 2) the final grading plan, and 3) a tabulation of the minimum and maximum finished floor elevations by lot. Also reference the individual lot specific grading and drainage plan requirement. This must be the final grading plan and tabulation after all revisions. Include the revision date for the grading plan on the letter: this date must match the revision date on the final plans to be approved by the City.

Applicant's Response:
Comment acknowledged.

2. Plans:

a) See redlined plans. Respond in different color ink next to each comment and return with written response.
Also, refer to filing 1 redlines for comments that apply to round 2. To save time, the repetitive comments were not redlined on filing 2.

Applicant's Response:
See attached "green line" responses.

b) See redlined site plan to be recorded. Show all filing 2 construction including utility and drainage work on Talus and Spire courts.

Applicant's Response:
The purpose of the Site Plan for recording is to outline restriction for future Lot owners. Filing 2 grading work is shown on the grading plans related to Talus and Spire. Filing 2 construction does not include these two streets; they will be built in Filing 3.

c) I suspect there will be a lot of sediment in the diversion ditches which will likely be deposited in the roadside ditches. The City will be maintaining the roadside ditches and all grading and ditches must be designed to minimize sedimentation and erosion. The drainage report must design these ditches including design flow velocity erosion and sedimentation. The revised drainage report did address hydraulics on the roadside ditches and shows rock lining but only included hydraulics on one diversion ditch and didn't address erosion, sedimentation, or revegetation. Include the necessary calculations and include a discussion in the body of the report how the ditches have been addressed and erosion and sedimentation controlled.

Applicant's Response:
Calculations have been added to Appendix D of the drainage report and discussion added to the narrative. In addition, typical diversion ditches have been added to the grading plans.

d) Provide a temporary turn around and easement at the end of filing 2.

Applicant's Response:
Temporary gravel turn-around is shown utilizing Spire Court.

e) I didn't find sanitary sewer services called out.

Applicant's Response:
Sanitary services have been added to all lots. See Sheet C3.0 and C4.0.

f) There are steep slopes uphill of lots in several locations on this overall project. These must be revegetated and protected against erosion the keep them from filling the diversion ditches and eroding into the future back yards. This is a critical item for the successful development of this project.

This comment also applies to filing 1 and all future filings.

Applicant's Response:
Native seed and temporary watering will be implemented to establish ground cover. Diversion ditches will protect lots from uphill runoff, with some being rock lined.

3. Drainage Report:

a) See filing 1 comments.

Applicant's Response:
Comments have been addressed as part of Filing 1.

4. **Geotechnical Report:**
   a) See filing 1 comments.

Applicant's Response:
Comments have been addressed as part of Filing 1 and the supplemental report submittal.

5. **Testing Plans:**
   a) See filing 1 comments.

Applicant's Response:
A supplemental response was provided with the Filing 1 re-submittal.

6. **DIA:**
   a) Include reconditioning for subgrade prep.

Applicant's Response:
Comment acknowledged.

b) The quantities in Section D3 need to cover all areas to be disturbed by overlot grading, not just filing 1; however, this doesn't need to double dip with filing 1. Money should be included for soil prep, mulching, other additives, etc. There is no way simply seeding will grow. Temporary irrigation may be required too.

Applicant's Response:
Comment acknowledged. The quantities have been updated in Exhibit B for the DIA. Temporary watering has been included.

c) It seems the quality control testing number should be higher given they will be covering overlot grading for much of the site. This doesn't need to double dip with filing 1.

Applicant's Response:
Comment acknowledged.

d) From round 1: "Include money for the Developer's inspection cost." This is for the developer's engineering onsite inspection.

Applicant's Response:
Comment acknowledged. Money for inspection cost has been added.

e) Include money for the dry utilities, not just the trenching.

Applicant's Response:
Comment acknowledged. The money for the dry utilities will be paid through an agreement with the individual providers. Receipts will be provided to the City once the agreements are finalized and paid.

f) Include money for the diversion ditches.

Applicant's Response:
Comment acknowledged. Money has been added to Exhibit B.

g) Include the retaining wall.

Applicant's Response:
Comment acknowledged. The retaining wall ahs been added.

h) Include money for the rock in the roadside ditches. This applies to filing 1 too.

Applicant's Response:
Comment acknowledged. Money for the rock lined ditches has been added.

CITY SURVEYOR – Peter Krick – peterk@gjcity.org (970) 256-4003

1. Comments:

a) Depict and label City parcel #2945-201-09-061 adjoining this subject site.

Applicant's Response:
Label has been added.

b) The Area Summary is incorrect and shall be revised.

Applicant's Response:
The Area Summary has been revised.

CITY TRANSPORTATION ENGINEER – Sandy Mallory – sandym@gjcity.org (970) 244-1567

1. Comments:

a) Filing 2 has the Stop sign & Street name sign listed under construction notes. These signs and the additional signs listed in comments for filing 1 need to be shown in plan for filing 1. "stop sign (R1-1), Street Name signs (D3-1), No outlet sign (W14-2a) at intersection of Mariposa Dr. & Auguille Dr. and 20 MPH Speed Limit sign (R2-1) on Aiguille Dr."

Applicant's Response:
All of these signs are shown on Sheet C1.1. The Filing 1 signs near Mariposa and Aiguille Drive are not shown on the Filing 2 plan set.

OUTSIDE REVIEW AGENCY COMMENTS (Non-City Agencies)

5-2-1 Drainage Authority - Mark Barslund - markb@gjcity.org (970) 256-4106

1. Comment:

a) All requirements have been met. A 5-2-1 D.A. permit may be issued.

Applicant's Response:
Comment acknowledged.

Ute Water Conservancy District - Jim Daugherty - jdaugherty@utewater.org (970) 242-7491

1. **Comments:**
   a) Show BO at the end of FL 2, ten-inch BO's require a four-inch valve for flushing.

   Applicant's Response:
   Comment acknowledged. The BO has been revised to 4", and the line has been extended to the end of Filing 2.

   b) If lot 21's service is on the four inch main it will not be installed until FL 3.

   Applicant's Response:
   Comment acknowledged. The service to Lot 21 has been moved to the far property line and will be installed in Filing 2.

   c) See updated configuration on AR/AV detail.

   Applicant's Response:
   Comment acknowledged. The detail has been updated to show the 2" riser with 1" reducer to the valve.

   d) Provide FL 2 SS P&P for review.

   Applicant's Response:
   Comment acknowledged. It is included as sheet C4.0 of the plan set.

   e) Show line terminus at the north end of lot 25, not at the FH.

   Applicant's Response:
   Comment acknowledged. The end of Filing 2 construction is now shown at the north end of Lot 25, not the FH.

REVIEW AGENCY
(Responding with "No Comment" or have not responded as of the due date)

The following Review Agencies have <u>not</u> responded as of the comment due date.

1. N/A

The Petitioner is required to submit electronic responses, labeled as "**Response to Comments**" for the following agencies:

1. **City Planning**
2. **City Development Engineer**

3. **City Surveyor**
4. **City Transportation Engineer**
5. **Ute Water Conservancy District**

Date due: **December 13, 2017**

Please provide a written response for each comment and, for any changes made to other plans or documents indicate specifically where the change was made.

Vortex Engineering, Inc. looks forward to working successfully with the City of Grand Junction to permit this project.

Upon your review of this information, should you have any questions or require additional information, please do not hesitate to contact me at 970-245-9051. Thank you.

Sincerely,
Vortex Engineering, Inc.



Robert W. Jones, II, P.E.

Cc: File

City of Grand Junction
Review Comments

Date: November 12, 2017 **Comment Round No.** 3 **Page No.** 1 of 3
Project Name: Pinnacle Ridge Subdivision, Filing 2 **File No:** SUB-2017-273
Project Location: East of Mariposa Drive

Check appropriate [X] **if comments were mailed, emailed, and/or picked up.**

Property Owner(s): Two R & D LLC – Attn: Robert Jones II
[ ] **Mailing Address:** P. O. Box 39, Fruita, CO 81521
[X] **Email:** rjones@vortexeng.us **Telephone:** (970) 245-9051
[ ] **Date Picked Up:** _____ **Signature:** _____

Representative(s): Vortex Engineering Inc. – Attn: Robert Jones II
[ ] **Mailing Address:** 2394 Patterson Road, Suite 201, Grand Junction, CO 81505
[X] **Email:** rjones@vortexeng.us **Telephone:** (970) 245-9051
[ ] **Date Picked Up:** _____ **Signature:** _____

Developer(s):
[ ] **Mailing Address:**
[ ] **Email:** **Telephone:**
[ ] **Date Picked Up:** _____ **Signature:** _____

CITY CONTACTS

Project Manager: Scott D. Peterson, Senior Planner
Email: scottp@gjcity.org **Telephone:** (970) 244-1447

Dev. Engineer: Rick Dorris
Email: rickdo@gjcity.org **Telephone:** (970) 256-4034

City of Grand Junction
REQUIREMENTS
(with appropriate Code citations)

CITY PLANNING

1. Subdivision Plat (Sheet 1):

a. Label Temporary Turn-Around Easement at the end of Lots 20 & 21 that is being provided on the Filing 1 plat. Senior City Staff Attorney will prepare dedication document for Temporary Turn-Around Easement for property owner's signature to be recorded at time of final subdivision plan recording for Filing 1. No separate legal description or map exhibit is necessary as proposed dedication document can refer to the plat. Applicant is responsible for all recording fees.

b. The off-site 15' Sewer Easement located within Tract A as dedicated on the Filing 1 plat should be a "15' Utility Easement", not "Sewer" to match the Filing 1 plat. Same comment for Tract B. Please revise as necessary.

Code Reference: V-15 of the SSIDS Manual.

Applicant's Response:

Document Reference:

2. Dedication Documents, etc.:
Submit conveyance document for proposed private drainage easement to the HOA, along with legal description and map exhibit, if applicable, for review prior to recording.
Code Reference: IV-2 of the SSIDS Manual.
Applicant's Response:
Document Reference:

CITY DEVELOPMENT ENGINEER

GENERAL

Review Comment: When the grading plan is complete, provide a letter from the building department stating they have received hard copies of 1) the geotechnical report, 2) the final grading plan, and 3) a tabulation of the minimum and maximum finished floor elevations by lot. Also reference the individual lot specific grading and drainage plan requirement. This must be the final grading plan and tabulation after all revisions. Include the revision date for the grading plan on the letter: this date must match the revision date on the final plans to be approved by the City.

Applicant's Response:
Document Reference:

Review Comment: Erosion control and revegetation are key elements to the successful development of this project. The City and Developer have agreed to be flexible to add/delete or change the plans as appropriate during construction to achieve necessary results.

Applicant's Response:
Document Reference:

PLANS

Review Comment: SSMH B3 is a drop manhole. Call out as such. Be aware, it must be epoxy coated and adds substantially to the cost.

Applicant's Response:
Document Reference:

DIA

Review Comment: The cost for the rock in the ditches looks very low. Look at the filing 1 exhibit B too.

Applicant's Response:
Document Reference:

Review Comment: Provide evidence of payment to the dry utility companies or include in the DIA.

Applicant's Response:
Document Reference:

CITY SURVEYOR – Peter Krick – peterk@gjcity.org (970) 256-4003

There are no additional comments or suggestions.
Applicant's Response:
Document Reference:

OUTSIDE REVIEW AGENCY COMMENTS

(Non-City Agencies)

Review Agency: Ute Water Conservancy District
Contact Name: Jim Daugherty
Email / Telephone Number: jdaugherty@utewater.org (970) 242-7491

For sewer Xings less than 18-in below watermains, please show cap on sewer per std detail.
Applicant's Response:

REVIEW AGENCIES

(Responding with "No Comment" or have not responded as of the due date)

The following Review Agencies have not responded as of the comment due date.

1. City Transportation Engineer

The Petitioner is required to submit electronic responses, labeled as "**Response to Comments**" for the following agencies:

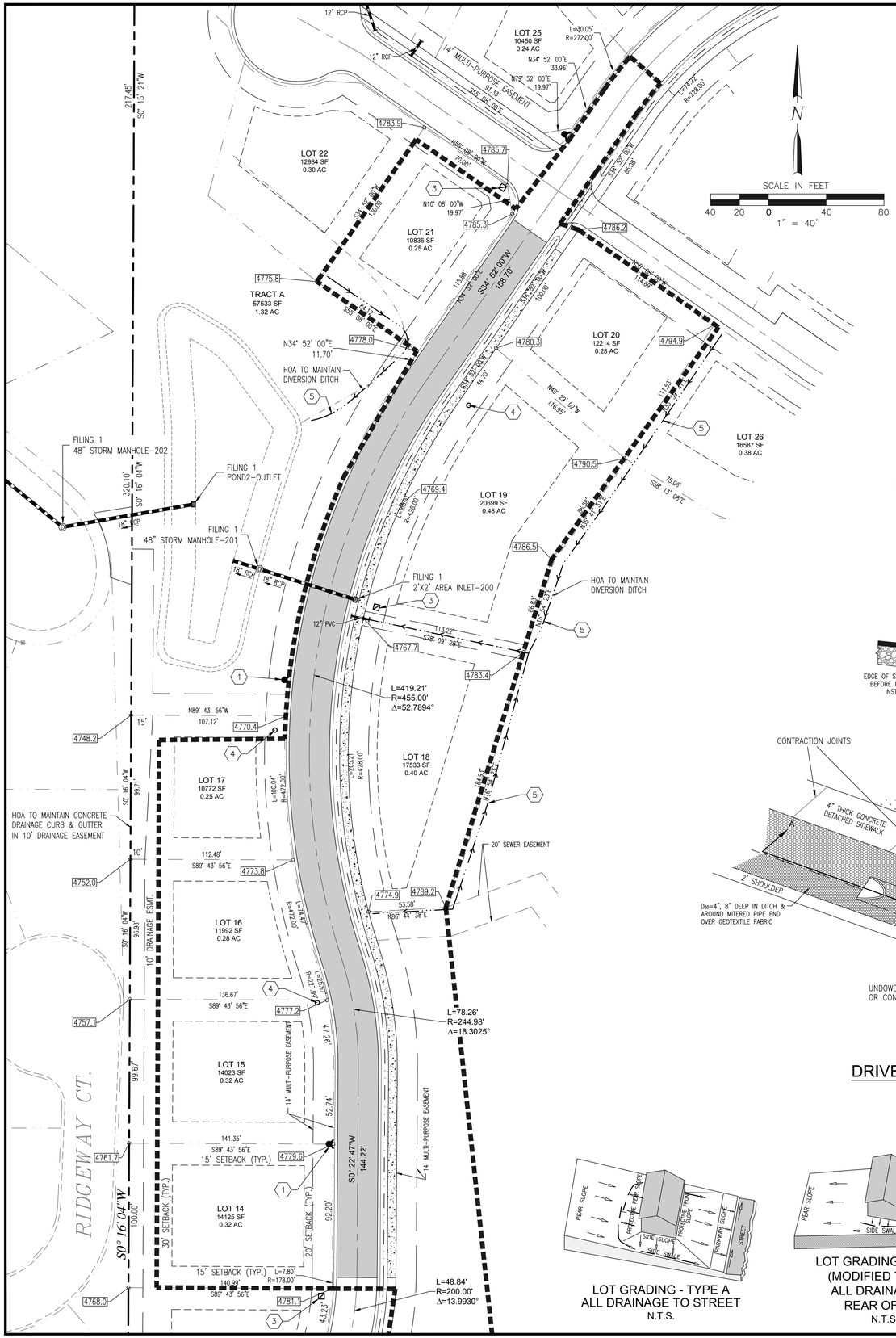
1. **City Planning**
2. **City Development Engineer**
3. **City Surveyor**
4. **Ute Water Conservancy District**

Date due: **February 12, 2017**

Please provide a written response for each comment and, for any changes made to other plans or documents indicate specifically where the change was made.

I certify that all of the changes noted above have been made to the appropriate documents and plans and there are no other changes other than those noted in the response.

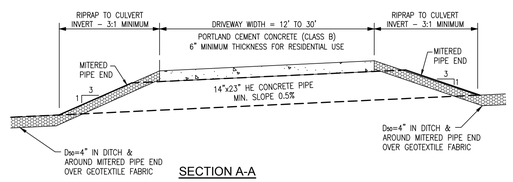
Applicant's Signature **Date**



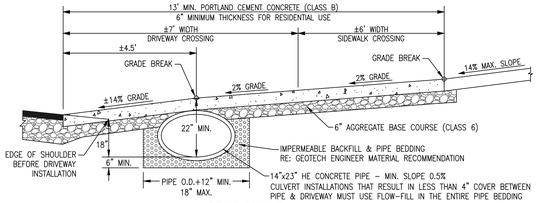
CONSTRUCTION NOTES:

1. PROPOSED FIRE HYDRANT
2. PROPOSED MAILBOX PAD
3. PROPOSED ELECTRIC TRANSFORMER BY XCEL ENERGY
4. PROPOSED ELECTRIC PEDESTAL BY XCEL ENERGY
5. PROPOSED DIVERSION DITCHES DO NOT DISTURB

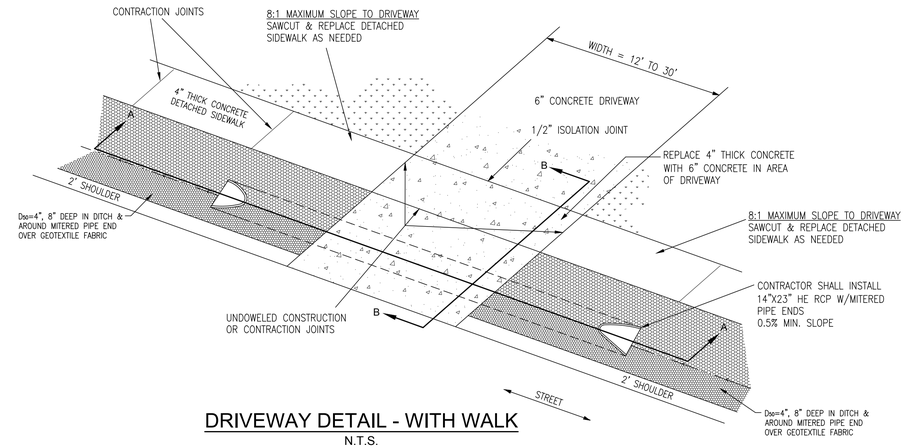
FILING 2 TOF TABLE			
Lot	*Grading*	*Min. TOF*	*Max. TOF*
14	Type C	4781.40	4781.90
15	Type C	4779.40	4779.90
16	Type C	4776.50	4777.00
17	Type C	4773.40	4773.90
18	Type A	4773.00	4773.50
19	Type A	4774.50	4775.50
20	Type A	4782.50	4784.50
21	Type C	4784.50	4786.50



SECTION A-A



SECTION B-B



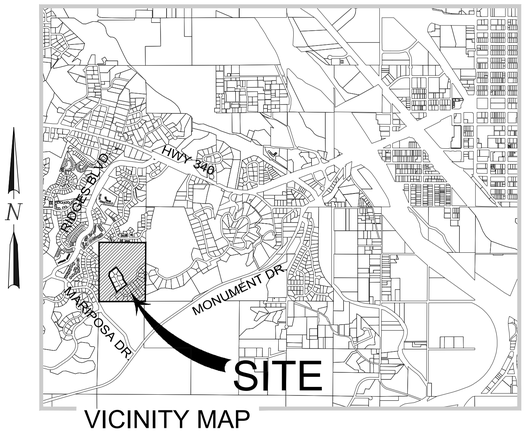
DRIVEWAY DETAIL - WITH WALK

N.T.S.

LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.

LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.

PROPOSED LAND USE TABLE				
USE	*AREA*	*AC*	*% OF TOTAL*	*OWNER*
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. – 45.11 AC			



VICINITY MAP

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. ALL LOTS MUST HAVE AN INDIVIDUAL GEOTECHNICAL INVESTIGATION PERFORMED AND A SITE SPECIFIC ENGINEERING FOUNDATION.
3. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL.
4. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
5. ALL WATER SERVICES SHALL HAVE A PRESSURE REGULATED YOKE INSTALLED BASED ON PRESSURE LIMITS AS DETERMINED IN THE HYDRAULIC ANALYSIS.
6. DIVERSION DITCHES SHOWN ON THIS PLAN SHALL NOT BE DISTURBED AT ANY TIME.
7. DRIVEWAYS SHALL CONFORM TO THE DETAIL SHOWN ON THIS PLAN.
8. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.
9. HOA SHALL MAINTAIN ALL CONCRETE CURBS, DETENTION PONDS, OUTLET STRUCTURES, RIPRAP, CULVERTS, DRAINAGE DITCHES, EASEMENTS AND TRACTS LOCATED OUTSIDE OF PUBLIC RIGHTS-OF-WAY. IMPROVEMENTS LOCATED WITHIN PUBLIC RIGHTS-OF-WAY ARE TO BE MAINTAINED BY THE CITY OF GRAND JUNCTION.

LEGEND

- PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- 4550.00 LOT CORNER SPOT ELEVATION
- PROPOSED FIRE HYDRANT

CLERK AND RECORDER'S CERTIFICATE

STATE OF COLORADO }
COUNTY OF MESA } ss

I hereby certify that this instrument was filed in my office at _____o'clock__M., this _____ day of _____ A.D. 2017, and is duly recorded in Book No. _____, at page _____, Reception No. _____, Drawer No. _____ Fees $ _____

_____
Clerk and Recorder

By:_____
Deputy

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 PROFESSIONAL ENGINEER
11-9-17

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MAJOR SUBDIVISION
FINAL PLAN

BY	DATE	REV	COMMENT
DLS	12/13/17	3	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017
DLS	10/31/17	2	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017
	8/08/17	1	

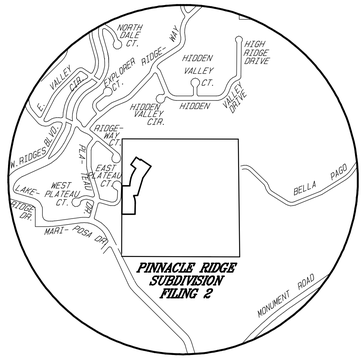
Site Plan for Recording
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 60'**
CAD ID: **pinnacle-sfr-f2.dwg**

~SHEET~
1 of 1

PINNACLE RIDGE SUBDIVISION, FILING 2

A REPLAT OF LOT 100, PINNACLE RIDGE SUBDIVISION FILING 1, Reception No. *******, W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.
City of Grand Junction, Mesa County, Colorado

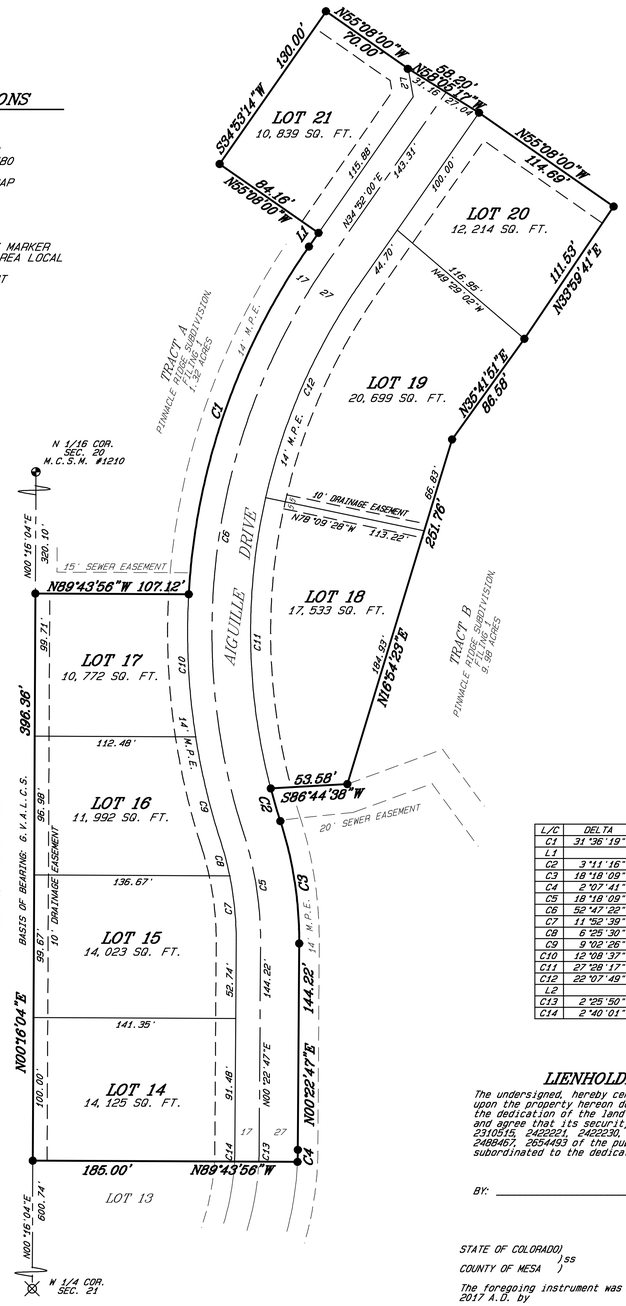


VICINITY MAP
N.T.S.

LEGEND & ABBREVIATIONS

- FD MESA COUNTY SURVEY MARKER
- FD 3.25" ALUMINUM CAP STAMPED THOMPSON LANGFORD CORP LS 18480
- FD #5 REBAR W/1.5" ALUMINUM CAP STAMPED LS 5933
- SET #5 REBAR W/2" ALUM. CAP STAMPED D H SURVEYS LS 20677

M.C.S.M. = MESA COUNTY SURVEY MARKER
G.V.A.L.C.S. = GRAND VALLEY AREA LOCAL COORDINATE SYSTEM
M.P.E. = MULTIPURPOSE EASEMENT
SEC. = SECTION
SQ.FT. = SQUARE FEET



L/C	DELTA	ARC/TANG	RADIUS	CHORD	CHORD BEARING
C1	31°36'19"	260.36'	472.00'	257.07'	N19°03'51"E
L1		11.70'			S34°52'00"W
C2	3°11'16"	23.81'	428.00'	23.81'	S16°19'43"E
C3	18°18'09"	86.88'	271.98'	86.51'	S08°46'17"E
C4	2°07'41"	8.43'	227.00'	8.43'	S01°26'37"W
C5	18°18'09"	78.26'	244.98'	77.93'	S08°46'17"E
C6	52°47'28"	419.21'	455.00'	404.54'	S08°28'20"W
C7	11°52'39"	47.26'	227.98'	47.18'	N05°33'32"W
C8	6°25'30"	25.57'	227.98'	25.55'	N14°42'35"W
C9	9°02'26"	74.48'	472.00'	74.40'	N13°24'08"W
C10	12°08'37"	100.04'	472.00'	99.85'	N02°48'37"W
C11	27°28'17"	205.21'	428.00'	203.25'	S00°59'57"E
C12	22°07'49"	165.31'	428.00'	164.29'	S23°48'06"W
L2		19.97'			S10°08'00"E
C13	2°25'50"	8.48'	200.00'	8.48'	S01°35'42"W
C14	2°40'01"	8.52'	183.00'	8.52'	N01°42'47"E

DEDICATION

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, TWO R & D, LLC a Colorado limited liability company is the owner of that real property situate in the W 1/2 NW 1/4 of Section 21, Township 1 South, Range 1 of the Ute Meridian, City of Grand Junction, Mesa County, Colorado; being more particularly described as follows:

Lot 100, Pinnacle Ridge Subdivision, Filing 1, Reception No.

Said parcel contains 3.37 acres more or less.

Said Owner has by these presents laid out, platted and subdivided the above-described real property into Lots, and Tracts as shown hereon, and designated the same as PINNACLE RIDGE SUBDIVISION, FILING 2 in the City of Grand Junction, County of Mesa, State of Colorado, and does hereby offer the following dedications and grants:

All streets, roads and Rights-of-Way are dedicated to the City of Grand Junction for the use of the public forever.

All Multipurpose Easements are dedicated to the City of Grand Junction as perpetual easements for City approved utilities including the installation, operation, maintenance and repair of said utilities and appurtenances which may include but are not limited to, electric lines, cable TV lines, natural gas pipelines, sanitary sewer lines, storm sewers, water lines, telephone lines, traffic control facilities, street lighting, landscaping, trees and grade structures.

All Drainage Easements are granted to the Homeowner's Association by separate instrument.

_____
Robert W. Jones II, Managing Member

STATE OF COLORADO)
)ss
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____ 2017 A.D. by TWO R & D, LLC, Robert W. Jones II, Managing Member.

Witness my hand and official seal: _____
Notary Public

My commission expires: _____

To be completed by the City of Grand Junction personnel. The accuracy of this information is the responsibility of the City of Grand Junction.

Declaration of Covenants, Restrictions and Conditions of the Pinnacle Ridge Homeowner's Association, Inc.

recorded under Reception No. _____.

Drainage Easements are conveyed to the Pinnacle Ridge Homeowner's Association

recorded under Reception No. _____.

CITY APPROVAL

This plat of PINNACLE RIDGE SUBDIVISION, FILING 2, a subdivision of the City of Grand Junction, County of Mesa, State of Colorado, is approved and accepted

on the ____ day of _____, 2017 A.D.

_____ City Manager

_____ City Mayor

CLERK AND RECORDER'S CERTIFICATE

This plat was accepted for filing in the office of the Clerk and Recorder of Mesa County, Colorado at _____ o'clock__M., on this ____ day of _____ 2017 A.D., and was recorded at Reception No. _____, Drawer No. _____, and Fees _____.

_____ Clerk and Recorder

_____ Deputy

AREA SUMMARY

LOTS	= 2.58 AC./ 77%
DED. ROADS	= 0.80 AC./ 13%
TOTAL	= 3.38 AC./100%

GRAPHIC SCALE 1"=50'
0 50 100 150
LINEAR UNITS = U.S. SURVEY FEET

NOTICE: According to Colorado law you must commence any legal action based upon any defect in the survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of this certification/statement shown hereon.

TITLE CERTIFICATION

State of Colorado
County of Mesa

We, Heritage Title Company, a title insurance company, as duly licensed in the State of Colorado, hereby certify that we have examined the title to the hereon described property, that we find the title to the property is vested to Two R & D, LLC, a Colorado limited liability company ; that the current taxes have been paid; that all mortgages not satisfied or released of record or otherwise terminated by law are shown hereon and that there are no other encumbrances of record; that all easements, reservations and right-of-ways of record are shown hereon.

Date: _____ By: _____

SURVEYOR'S STATEMENT

I, Michael W. Drissel, a registered Professional Land Surveyor in the State of Colorado, do hereby state that this survey was performed by me or under my direct responsibility, supervision, and checking. It is based upon my professional knowledge, information and belief according to applicable standards of practice. This is not a guarantee or warranty, either expressed or implied. Title research was supplied by Heritage Title Company under FILE NUMBER: 598-H0502823-900-GTO.

LIENHOLDERS RATIFICATION OF PLAT

The undersigned, hereby certifies that it is a holder of a security interest upon the property hereon described and does hereby join in and consent to the dedication of the land described in said dedication by the owners thereof and agree that its security interest which is recorded under Reception No. 2236040, 2310515, 2422221, 2422230, 2439195, 2486454, 2654494, 2351449, 2351450, 2439196, 2489457, 2654493 of the public records of Mesa County, Colorado shall be subordinated to the dedications shown hereon.

BY: _____ FOR: Alpine Bank

STATE OF COLORADO)
)SS
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____ 2017 A.D. by

Witness my hand and official seal: _____
Notary Public

My commission expires: _____

FOR REVIEW

REVISED 07/28/17
REVISED 09/27/17

PINNACLE RIDGE SUBDIVISION FILING 2

LOCATED IN THE

W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.

D H SURVEYS INC.
118 OURAY AVE. – GRAND JUNCTION, CO.
(970) 245-8749

Designed By M.W.D.	Checked By E.E.B.	Job No.	129-04-03
Drawn By TMODEL	Date MAY 2017	Sheet	1 OF 1

Final Plan of Subdivision

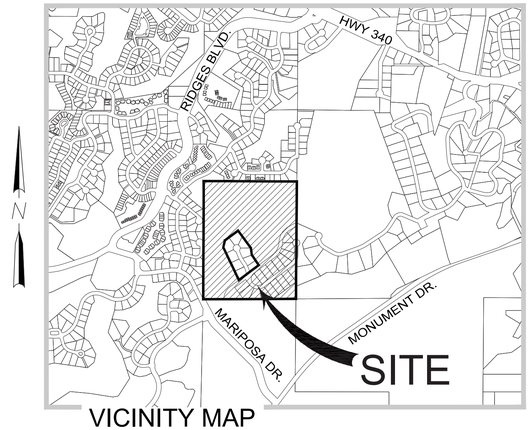
Pinnacle Ridge Subdivision

Filing 2

Grand Junction, Colorado

LEGEND

- EXISTING CONTOUR (4560)
- PROPERTY BOUNDARY
- OLD PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE (W)
- EXISTING WATER LINE (W)
- EXISTING FENCE (X)
- PROPOSED DRY UTILITIES (BY OTHERS) (EGTC)
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- LOT CORNER SPOT ELEVATION (4550.00)
- PROPOSED SWALE/BERM ELEVATION (G 4550.00)
- PROPOSED FL CURB/V-PAN (FL 4550.00)
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER METER
- EXISTING CONTOUR LABEL (4550)
- PROPOSED CONTOUR LABEL (4550.00)



VICINITY MAP

SHEET NUMBER	SHEET TITLE
C0.0	COVER
C0.1	PROJECT NOTES
C0.2	OVERALL SITE PLAN AND FILING PLAN
C1.0	COMPOSITE SITE PLAN - LAYOUT AND GEOMETRY PLAN
C1.1	COMPOSITE SITE PLAN - SIGNAGE & LIGHTING PLAN
C2.0 - C2.2	COMPOSITE SITE PLAN - GRADING PLAN
C3.0	COMPOSITE SITE PLAN - OVERALL UTILITY AND WATER PLAN
C4.0 - C4.1	ROAD AND SEWER PLAN AND PROFILE - AIGUILLE DRIVE
C6.0 - C6.2	CONSTRUCTION STORM WATER MANAGEMENT PLAN

ABBREVIATION LEGEND

&	AND	MCSM	MESA COUNTY SURVEY MONUMENT
℄	CENTERLINE	MFG'S	MANUFACTURER'S
Ø	DIAMETER	M.P.E.	MULTI-PURPOSE EASEMENT
'	FEET	MPH	MILES PER HOUR
"	INCHES	NE COR	NORTHEAST CORNER
±	PLUS OR MINUS	N&S&E	NORTH AND SOUTH AND EAST
APPROX.	APPROXIMATELY	NO.	NUMBER
BRL	BUILDING RESTRICTION LINE	N.T.S.	NOT TO SCALE
BVCS	BEGIN VERTICAL CURVE STATION	PROP.	PROPOSED
BVCE	BEGIN VERTICAL CURVE ELEVATION	PRV	PRESSURE REDUCING VALVE
CB	CATCH BASIN	PSI	POUNDS PER SQUARE INCH
CL III	CLASS 3	PVC	POLYVINYL CHLORIDE
CMP	CORRUGATED METAL PIPE	PVI	POINT OF VERTICAL INTERSECTION
CR	CURB RETURN	PVMT	PAVEMENT
CT.	COURT	O.C. E.W.	ON CENTER EACH WAY
DR.	DRIVE	RCP	REINFORCED CONCRETE PIPE
EL.	ELEVATION	RD	ROAD
ELEV	ELEVATION	RET. WALL	RETAINING WALL
EX.	EXISTING	R.O.W.	RIGHT-OF-WAY
EXIST.	EXISTING	RT	RIGHT
EVCS	END VERTICAL CURVE STATION	SCH	SCHEDULE
EVCE	END VERTICAL CURVE ELEVATION	SD	STORM DRAIN
FL	FLOWLINE	SEC	SECTION
FH	FIRE HYDRANT	SF	SQUARE FEET
FT	FEET	SQ. FT.	SQUARE FEET
GPM	GALLONS PER MINUTE	SS	SANITARY SEWER
GV	GAS VALVE	ST.	STREET
G.V.A.L.C.S.	GRAND VALLEY ALIQUOT LOCAL COORDINATE SYSTEM	STA	STATION
		THRU	THROUGH
HGL	HYDRAULIC GRADE LINE	TYP.	TYPICAL
HI. PT	HIGH POINT	TW	TOP OF WALL
HP	HORSE POWER	U.W.C.D.	UTE WATER CONSERVANCY DISTRICT
INV	INVERT	VC	VERTICAL CURVE
LT	LEFT	VCP	VITRIFIED CLAY PIPE
MAX	MAXIMUM	W/	WITH
MIN	MINIMUM	WM	WATER METER
MH	MANHOLE	WV	WATER VALVE

PROJECT NOTES:

1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21. TOWNSHIP 1 SOUTH. RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM. LOTS 1 - 9. BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK 8 AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = R-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'/25'
   REAR = 30'/5'
   SIDE = 15'/3'
7. PROPERTY APPLICANT:
   TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

UTILITY PROVIDERS INFORMATION

UTILITY	PROVIDER	PHONE NUMBER
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

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ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 11-20-17 PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

BY	DATE	COMMENT
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017
2	10/11/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017

Cover
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE:
CAD ID: 0.0cover-f2.dwg

~SHEET~
C0.0

LOCAL CONTACT INFORMATION
GRAND JUNCTION DEVELOPMENT INSPECTOR: MARK BARSLUND 970-201-1362

GENERAL NOTES:

1. THESE GENERAL NOTES SHALL BE APPLICABLE TO ALL SHEETS WITHIN THIS SET OF DRAWINGS.
2. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE GOVERNING AGENCY. CONTRACTOR MUST CONTACT THE APPROPRIATE AGENCY PRIOR TO CONSTRUCTION IN THE RIGHT-OF-WAY.
3. PLANNING PERMIT APPROVAL MUST BE OBTAINED BY INDIVIDUAL LOT OWNERS PRIOR TO CONSTRUCTION. THE LOT OWNER MUST SUBMIT A PROPOSED DRAINAGE PLAN OF EACH SITE TO THE GOVERNING AGENCY FOR REVIEW.
4. EXISTING WATER, SANITARY, AND STORM SEWER LINES ARE SHOWN BASED ON BEST AVAILABLE INFORMATION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS SPECIFICALLY AT CONNECTION POINTS AND AT POTENTIAL POINTS OF CONFLICT. ALL INFORMATION SHALL BE SUPPLIED TO THE ENGINEER PRIOR TO CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR:
   (A) CONTACTING THE APPROPRIATE AGENCY TO ARRANGE A PRE-CONSTRUCTION MEETING AT LEAST 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
   (B) OBTAINING ALL PERMITS FOR STREET CUTS, UTILITIES CONSTRUCTION AND GRADING. THE COST OF ALL PERMITS SHALL BE INCLUDED AS PART OF THE CONTRACTOR'S BID.
   (C) COORDINATING WITH ALL UTILITY COMPANIES INVOLVED WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION AND WITH A MINIMUM DISRUPTION OF SERVICE. ADVANCE COORDINATION BY THE CONTRACTOR TO ALL UTILITY COMPANIES INVOLVED SHALL BE REQUIRED FOR ANY SERVICE INTERRUPTIONS. CONTRACTOR SHALL NOTIFY THE ENGINEER, PROJECT MANAGER AND THE UTILITY COMPANY 48 HOURS PRIOR TO START OF CONSTRUCTION. NO UTILITY TAPS SHALL BE MADE WITHOUT WRITTEN AUTHORIZATION BY THE UTILITY COMPANY AND THE CITY.
   (D) VERIFICATION OF ALL OTHER UNDERGROUND FACILITIES WHICH MAY BE AFFECTED BY THIS PROJECT AND REPAIR THEREOF IN CASE OF DAMAGE.
   (E) CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO OBTAIN TEMPORARY POWER AND TELEPHONE SERVICE DURING CONSTRUCTION. ALL COST FOR TEMPORARY SERVICES SHALL BE THE CONTRACTORS RESPONSIBILITY.
   (F) RESTORATION OF DISTURBED STREET PAVEMENT AS REQUIRED BY THE CITY AND THE STATE'S DEPARTMENT OF TRANSPORTATION.
   (G) ALL PROJECT SAFETY INCLUDING, BUT NOT LIMITED TO, TRENCH EXCAVATION AND SHORINGS, TRAFFIC CONTROL, AND SECURITY.
   (H) COORDINATING ALL WORK AND INSPECTIONS AS REQUIRED BY THE CITY OR THE STATE.
   (I) OBTAINING NECESSARY PERMITS FROM THE DEPARTMENT OF TRANSPORTATION FOR ALL WORK IN AND ADJACENT TO STATE RIGHT-OF-WAY.
   (J) RECORDING AS-BUILT INFORMATION ON A SET OF RECORD DRAWINGS KEPT ON THE CONSTRUCTION SITE. AS-BUILTS SHALL INCLUDE UNDERGROUND UTILITIES AS WELL AS ANY FIELD MODIFICATIONS OF THE PLANS.
   (K) KEEPING ADJACENT STREETS FREE AND CLEAN OF ALL DEBRIS AND DIRT FROM THE JOB SITE.
   (L) THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS AND A COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED AT THE JOB SITE AT ALL TIMES. EACH SUBCONTRACTOR (INCLUDING THE SURVEYOR) SHALL HAVE A SIGNED COPY OF THE PLANS AND THE APPROPRIATE STANDARDS AND SPECIFICATIONS IN HIS POSSESSION AT ALL TIMES WHEN IMPROVEMENTS ARE BEING INSTALLED.
   (M) THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR COMPLETION OF INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED BY NOTE TO BE "PROVIDED," "INSTALLED" OR "CONSTRUCTED" UNLESS SPECIFICALLY NOTED OTHERWISE.
   (N) CONTRACTOR WILL HAVE A COPY OF APPROVED SOILS REPORTS FOR PAVEMENT DESIGN AND COMPACTION REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL RECOMMENDATIONS CONTAINED WITHIN THE SOILS REPORT.
   (O) VERIFYING THE ACCURACY OF THE VERTICAL BENCHMARK INFORMATION. CONTRACTOR SHALL USE BENCHMARKS AND DATUMS SHOWN HEREON TO SET PROJECT BENCHMARK(S), BY RUNNING A LEVEL LOOP BETWEEN AT LEAST TWO BENCHMARKS, AND SHALL PROVIDE SURVEY NOTES OF SUCH TO PROJECT ENGINEER PRIOR TO COMMENCING CONSTRUCTION.
6. IF DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED WHICH INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.
7. TWO WORKING DAYS BEFORE YOU DIG, GRADE, OR EXCAVATE, CALL THE APPROPRIATE UTILITY NOTIFICATION CENTER FOR THE MARKING OF MEMBER UNDERGROUND UTILITIES. THE UTILITIES SHOWN ON THESE PLANS ARE PLOTTED BASED ON AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION, AND REPAIR OF ANY EXISTING UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. ANY UTILITY DAMAGED BY CONSTRUCTION SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
8. THIS PLAN WAS PREPARED BASED ON SURVEY INFORMATION PROVIDED BY A LICENSED SURVEYOR. VORTEX ENGINEERING, INC. ASSUMES NO RESPONSIBILITY FOR ERRORS DUE TO INCOMPLETE OR INACCURATE SURVEY INFORMATION.
9. SUBGRADE DENSITY SHALL BE TESTED BY A PRIVATE SOILS TESTING FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING BASE COURSE OR CONCRETE. BASE COURSE DENSITY SHALL ALSO BE TESTED BY THE PRIVATE GEOTECHNICAL FIRM AND APPROVED BY THE SOILS ENGINEER PRIOR TO INSTALLING PAVEMENT.
10. THIS DRAWING DOES NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY. ALL CONSTRUCTION MUST BE DONE IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ACT OF 1970 AND ALL RULES AND REGULATIONS THERETO APPURTENANT.

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL OBTAIN WRITTEN PERMISSION FROM ALL UTILITY COMPANIES PRIOR TO ANY DEMOLITION WORK OR DISCONNECTION OF ANY SERVICE. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANIES.
2. ALL UTILITIES INCLUDING STORM SEWER, SANITARY SEWER AND WATER MAINS SHALL BE COMPLETELY REMOVED FROM THE GROUND UNLESS OTHERWISE SPECIFIED. NO EXISTING UTILITY, STRUCTURES OR UNDERGROUND IMPROVEMENT SHALL BE ABANDONED IN PLACE WITHOUT THE WRITTEN PERMISSION OF THE ENGINEER, OWNER AND GOVERNING AGENCY.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING UTILITIES WHICH ARE TO REMAIN IN SERVICE. INCLUDING BUT NOT LIMITED TO GAS, ELECTRIC, CABLE AND TELEPHONE SERVICES.
4. ALL STRUCTURE INCLUDING BASEMENT WALLS AND FLOOR SLABS SHALL BE COMPLETELY REMOVED FROM THE SITE.
5. ALL DEMOLITION WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND REQUIREMENTS. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR COMPLIANCE WITH ALL REQUIREMENTS INCLUDING BUT NOT LIMITED TO HAZARDOUS MATERIALS, DISPOSAL, HOURS OF OPERATION.
6. ALL EROSION CONTROL MEASURES DESIGNED FOR THE SITE PERIMETER OR TO PROTECT EXISTING IMPROVEMENTS SHALL BE IN PLACE PRIOR TO THE START OF ANY DEMOLITION ACTIVITIES.
7. THE CONTRACTOR SHALL OBTAIN AND REVIEW THE ENVIRONMENTAL STUDIES PROVIDED BY THE OWNER AND TAKE ALL NECESSARY PRECAUTIONS FOR ENVIRONMENTAL SAFETY DURING DEMOLITION ACTIVITIES. IT SHALL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE EXISTING STRUCTURES FOR ANY OTHER CONDITIONS WHICH MAY AFFECT THE DEMOLITION PROCEDURES.
8. ANY CONDITIONS WHICH MAY BE UNCOVERED DURING THE PROCESS OF DEMOLITION SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER IMMEDIATELY. ADDITIONAL EXPENSES INCURRED BY UNFORESEEN CONDITIONS SHALL BE APPROVED BY THE OWNER PRIOR TO THE ADDITIONAL WORK.
9. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT THE PROPERTY FOR THE TYPE AND QUANTITY OF DEMOLITION REQUIRED, PRIOR TO SUBMISSION OF A BID.
10. THE CONTRACTOR SHALL HAVE WATER ON SITE FOR DUST ABATEMENT AT ALL TIMES DURING DEMOLITION ACTIVITIES.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE APPROPRIATE DISPOSAL OF ALL DEBRIS. BURNING ON SITE SHALL NOT BE PERMITTED. NO DEBRIS INCLUDING CONCRETE OR ASPHALT MAY BE PLACED IN ANY FILL AREA.
12. ANY DAMAGE TO PUBLIC UTILITIES OR ADJACENT PROPERTIES AS A RESULT OF THE DEMOLITION ACTIVITIES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. REPAIRS SHALL BE MADE IN A TIMELY MANNER TO THE SATISFACTION OF THE DAMAGED PARTY.
13. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE OWNER WITH DOCUMENTATION OF THE CONDITION OF EXISTING IMPROVEMENTS TO REMAIN IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REPAIRS NOT DOCUMENTED AS PRE-EXISTING. DOCUMENTATION SHALL BE PROVIDED PRIOR TO COMMENCEMENT OF WORK.
14. ALL EXISTING UTILITY SERVICES SHALL BE COMPLETELY REMOVED FROM THE SITE. SERVICE SHALL BE CUT AND PLUGGED AT THE PROPERTY LINE IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS. THE DEMOLITION CONTRACTOR SHALL CLEARLY MARK ALL STUBS AT THE PROPERTY LINE WITH A 4 X 4 WOOD POST (MINIMUM 4' ABOVE GRADE, 4' BELOW GRADE) MARKED WITH THE SERVICE TYPE.
15. ALL EXISTING WELLS SHALL BE CAPPED AND ABANDONED IN ACCORDANCE WITH ALL STATE REQUIREMENTS. IT IS THE CONTRACTORS RESPONSIBILITY TO FOLLOW ALL REQUIRED PROCEDURES, FILE ALL REQUIRED FORMS, APPLICATIONS AND REPORTS, AND OBTAIN ALL REQUIRED APPROVALS FROM THE STATE ENGINEER'S OFFICE.
16. DURING THE COURSE OF DEMOLITION, CONTRACTOR SHALL PROVIDE SECURITY FENCING AND OTHER PRECAUTIONARY SAFETY MEASURE AS NECESSARY.

EROSION CONTROL NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. AT ALL TIMES DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DUE TO WIND AND RUNOFF. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR MAINTAINING EROSION CONTROL FACILITIES SHOWN.
3. ADDITIONAL EROSION CONTROL MEASURES MAY BE REQUIRED DUE TO UNFORESEEN PROBLEMS OR IF THE PLAN DOES NOT FUNCTION AS INTENDED. A JURISDICTION REPRESENTATIVE MAY REQUIRE ADDITIONAL CONTROL DEVICES UPON INSPECTION OF PROPOSED FACILITIES.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DRAINAGE AND EROSION CONTROL FACILITIES AS REQUIRED, STREETS SHALL BE KEPT CLEAN OF DEBRIS FROM TRAFFIC FROM THE SITE.
5. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE PAVED, SEEDED WITH NATIVE VEGETATION OR LANDSCAPED. REFER TO LANDSCAPE PLANS FOR SEED MIX AND PLANTING SPECIFICATIONS.
6. EROSION CONTROL STRUCTURES BELOW SODDED AREAS MAY BE REMOVED ONCE SOD AND FINAL LANDSCAPING IS IN PLACE. EROSION CONTROL STRUCTURES BELOW SEEDED AREAS MUST REMAIN IN PLACE UNTIL THE ENTIRE AREA HAS ESTABLISHED A MATURE COVERING OF HEALTHY VEGETATION. EROSION CONTROL IN PROPOSED PAVED AREAS SHALL REMAIN IN PLACE UNTIL PAVEMENT IS COMPLETE.
7. THIS PLAN IS ONLY TO BE USED FOR INSTALLATION OF EROSION CONTROL FACILITIES. DO NOT USE THIS PLAN FOR GRADING OR STORM SEWER CONSTRUCTION.
8. CONTRACTOR SHALL USE VEHICLE TRACKING CONTROL AT ALL LOCATIONS WHERE VEHICLE WILL ENTER OR EXIT THE SITE. CONTROL FACILITIES WILL BE MAINTAINED WHILE CONSTRUCTION IS IN PROGRESS, MOVED WHEN NECESSARY AND REMOVED WHEN THE SITE IS PAVED.
9. INLET PROTECTION DEVICES SHALL BE INSTALLED IMMEDIATELY UPON INDIVIDUAL INLET'S BECOMING FUNCTIONAL.
10. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH GRADING AND/OR UTILITY CONSTRUCTION SHALL OBTAIN A COPY OF THE STORM WATER MANAGEMENT PLAN (SWMP) AND ANY OTHER DOCUMENTATION REGARDING "STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY" AND BECOME FAMILIAR WITH THEIR CONTENTS.
11. THE TEMPORARY PARKING AND STORAGE AREA SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AREA, EQUIPMENT CLEANING AREA, EMPLOYEE BREAK AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.
12. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, ETC.) SHALL BE DISPOSED OF IN A MANNER THAT PREVENTS CONTACT WITH STORM WATER DISCHARGES FROM THE SITE.
13. MAINTAIN ON THE SITE OR HAVE READILY AVAILABLE SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.
14. FUGITIVE DUST BLOWING FROM THE SITE SHALL BE CONTROLLED BY SPRAYING WATER ON DRY AREAS OF THE SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS ABSOLUTELY PROHIBITED.
15. NO RUBBISH, TRASH, GARBAGE, OR OTHER SUCH MATERIALS SHALL BE DISCHARGED INTO DRAINAGE DITCHES OR WATERS OF THE STATE.
16. ALL MEASURES PRESENTED IN THE SWMP SHALL BE INITIATED AS SOON AS PRACTICABLE.
17. IF THE GRAVEL CONSTRUCTION ENTRANCES ARE NOT EFFECTIVE IN REMOVING THE MAJORITY OF DIRT OR MUD FROM THE TIRES OF THE CONSTRUCTION VEHICLES, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP AND THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.
18. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.
19. IF SOIL STOCKPILING IS EMPLOYED ON THE SITE, SILT FENCES SHALL BE USED TO HELP CONTAIN THE SEDIMENT.
20. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.
21. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE DISPOSED OF WITHIN 30 DAYS AFTER FINAL STABILIZATION. FINAL STABILIZATION HAS OCCURRED WHEN ALL SOIL DISTURBING ACTIVITIES ARE COMPLETED AND A UNIFORM PERENNIAL VEGETATIVE COVER WITH A DENSITY OF 70% OF THE COVER FOR UNPAVED AREAS AND AREAS NOT COVERED BY PERMANENT STRUCTURES HAS BEEN EMPLOYED.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, STRAW BALES, ETC.) DUE TO GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT.
23. ALL OFF-SITE CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY. THIS INCLUDES BACKFILLING OF TRENCHES FOR STORM DRAIN CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.

EROSION CONTROL MAINTENANCE NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL MEASURES CONTAINED IN THIS PLAN SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A RAINFALL EVENT, AND SHOULD BE CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:
3. STRAW BALE INLET PROTECTION DEVICES AND BARRIERS SHALL BE FIXED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR SHALL BE REPLACED IF THEY SHOW SIGNS OF DETERIORATION.
4. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, RE-SEEDED, AND WATERED AS NEEDED.
5. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-THIRD TO ONE-HALF THE HEIGHT OF THE SILT FENCE.
6. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.
7. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AREA AS CONDITIONS DEMAND.
8. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES, SEDIMENT IN THE SEDIMENTATION BASINS SHALL NOT EXCEED THE SEDIMENTATION CLEANOUT LEVEL.
9. IF THE STONES IN THE GRAVEL CURB INLET SEDIMENT FILTERS BECOME CLOGGED WITH SEDIMENT, THE STONES MUST BE PULLED AWAY, CLEANED AND REPLACED.
10. THE EMBANKMENT OF THE SEDIMENTATION BASIN SHALL BE CHECKED REGULARLY TO INSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
11. THE TEMPORARY SEDIMENT TRAP AND SEDIMENTATION BASIN STRUCTURES SHALL BE CHECKED REGULARLY TO INSURE THAT THEY ARE STRUCTURALLY SOUND AND HAVE NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. SEDIMENT DEPOSITION SHALL BE REMOVED PERIODICALLY TO ENSURE FULL VOLUME IS AVAILABLE IN THE POND.

GRADING NOTES:

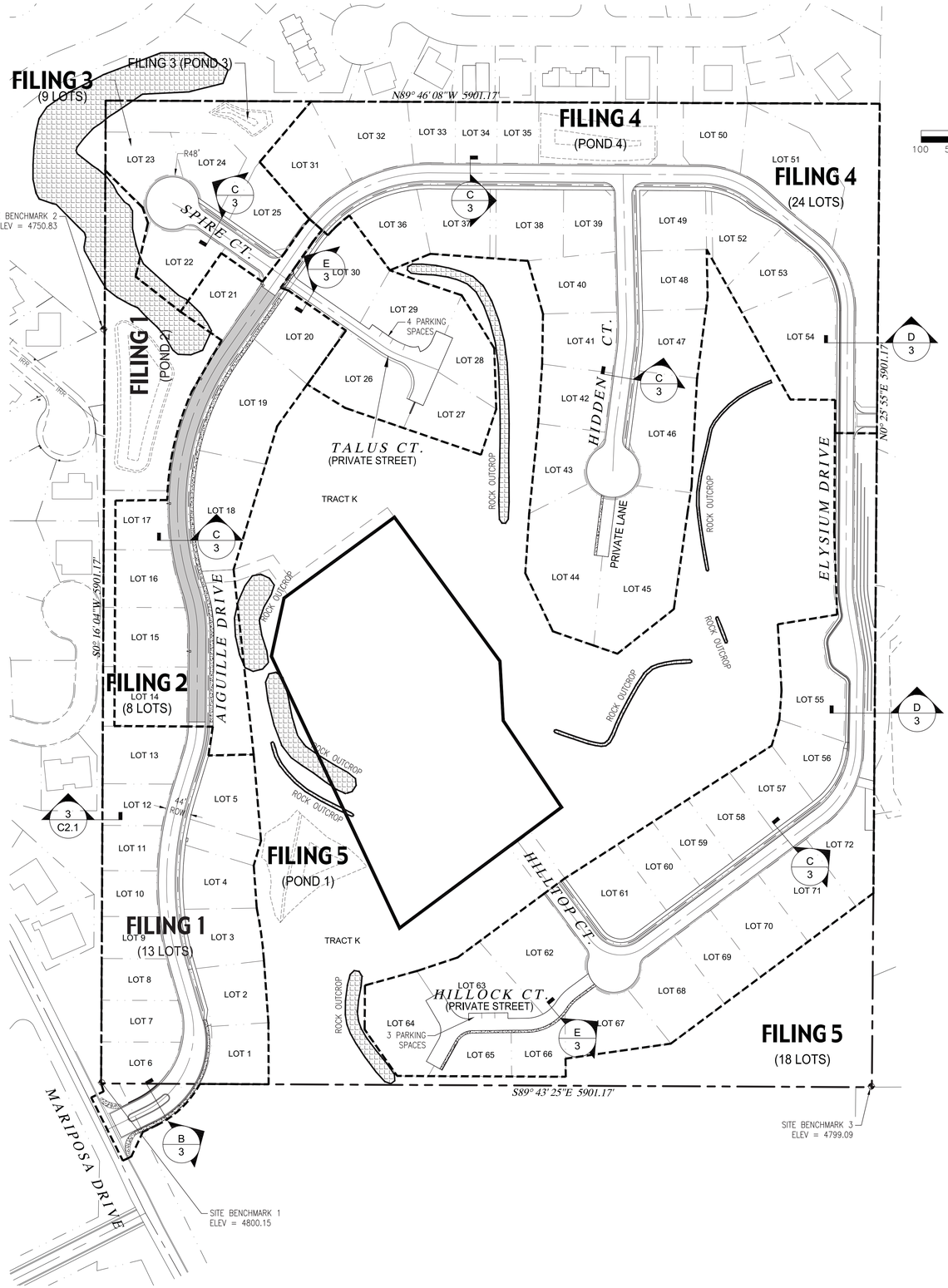
1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. CONTOURS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY. CONTOUR INTERVAL = 1 FOOT UNLESS OTHERWISE NOTED ON PLANS.
3. ALL DISTURBED AREAS THAT ARE UNSURFACED OR ARE NOT DESIGNATED AS LANDSCAPE AREAS ARE TO BE RE-SEEDED WITH DRY NATIVE GRASS SEED MIX.
4. IF DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE SOILS ENGINEER SHALL BE CONTACTED FOR RECOMMENDATIONS.
5. SITE GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND SPECIFICATIONS AND STANDARDS OF THE GOVERNING AGENCY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ALL SOFT, YIELDING OR UNSUITABLE MATERIALS AND REPLACING WITH SUITABLE MATERIALS. ALL EXCAVATED OR FILLED AREAS SHALL BE COMPACTED AS SPECIFIED BY THE GEOTECH REPORT. CONTRACTOR SHALL SUBMIT A COMPACTION REPORT PREPARED BY A QUALIFIED, LICENSED, SOILS ENGINEER, CERTIFYING THAT THE SUBBASE WITHIN THE AREAS TO BE PAVED HAS BEEN COMPACTED IN ACCORDANCE WITH THESE PLANS AND SPECS.
6. NO PROPOSED SLOPE SHALL EXCEED TWO (2) HORIZONTAL TO ONE (1) VERTICAL, EXCEPT FOR DIVERSION DITCHES. ALL SLOPED AREAS MUST BE PROTECTED FROM EROSION.
7. IF STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS ARE STOCKPILED ON THE SITE. TOPSOIL MAY BE PLACED TO A HEIGHT OF FIVE FEET. SILT FENCE SHALL BE PLACED AROUND THE BASE OF THE STOCKPILE AND THE STOCKPILE SHALL BE SEEDED WITH NATIVE SEED MIX IMMEDIATELY AFTER STRIPING OPERATIONS ARE COMPLETE.
8. ON-SITE MATERIALS SUITABLE FOR FILL BENEATH DRIVES, AND PARKING AREAS BEYOND 5' OF THE BUILDING SHALL BE COMPACTED IN ACCORDANCE WITH THE GUIDELINES PRESENTED IN THE SOILS REPORT.
9. CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING TOPOGRAPHY AND UTILITY INVERT ELEVATIONS PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION. CONTRACTOR TO ENSURE 0.75% MIN. SLOPE AGAINST ALL GUTTERS TO PREVENT PUDDLING. ANY DISCREPANCIES SHALL BE PROVIDED TO THE ENGINEER IN WRITING IMMEDIATELY.
10. SUBBASE MATERIAL FOR SIDEWALKS, CURB, OR ASPHALT SHALL BE FREE OF ORGANICS AND OTHER UNSUITABLE MATERIALS. SHOULD SUBBASE BE DEEMED UNSUITABLE, SUBBASE IS TO BE REMOVED AND FILLED WITH APPROVED FILL MATERIAL COMPACTED AS SPECIFIED IN THE GEOTECH REPORT.
11. SPOT ELEVATIONS REPRESENT FLOWLINE OR TOP OF ASPHALT UNLESS OTHERWISE NOTED.
12. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS WHICH DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB AND GUTTER AND UTILITIES.
13. ALL UTILITIES (MANHOLES, VALVE COVERS, CLEANOUTS, VAULTS, BOXES, ETC.) SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
14. ALL EARTH MOVING AND PLACEMENT OPERATIONS SHALL BE IN CONFORMANCE WITH THE RECOMMENDATIONS IDENTIFIED IN THE SOILS REPORT. THE CONTRACTOR SHALL HAVE A SIGNED AND SEALED COPY OF THE SOILS REPORT ON THE SITE AT ALL TIMES.
15. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.
16. WHERE NEW CURB AND GUTTER IS BEING CONSTRUCTED ADJACENT TO EXISTING ASPHALT, THE FOLLOWING SHALL APPLY: PRIOR TO PLACEMENT OF ANY CONCRETE THE CONTRACTOR SHALL HAVE A LICENSED SURVEYOR VERIFY GRADE AND CROSS SLOPE OF THE CURB AND GUTTER FORMS. THE CONTRACTOR SHALL SUBMIT THE SLOPES AND GRADES TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY SECTION WHICH DOES NOT CONFORM TO THE DESIGN OR TYPICAL CROSS SECTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CURB AND GUTTER POURS WITHOUT APPROVAL OF THE ENGINEER.
17. MAINTENANCE OF ANY STORMWATER MANAGEMENT FACILITY SHALL BE IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL GUIDELINES FOR PRIVATE STORMWATER MANAGEMENT FACILITIES AND SHALL BE THE RESPONSIBILITY OF THE OWNER AND THE ASSIGNEES.
18. SURFACE RESTORATION SHALL BE AS FOLLOWS:
   (A) FINE GRADE ALL AREAS DISTURBED BY THE CONSTRUCTION OPERATIONS AFTER COMPLETION OF BACKFILLING AND COMPACTING. AREAS WHICH ARE TO RECEIVE PAVEMENTS, SURFACING, TOPSOIL OR LANDSCAPING SHALL BE GRADED AS REQUIRED TO ALLOW INSTALLATION OF THE SPECIFIC SURFACE TREATMENT. GRADE ALL OTHER AREAS TO MATCH THE EXISTING GROUND LINE.
   (B) REPLACE AND REPAIR ANY SURFACE IMPROVEMENTS DAMAGED OR REMOVED. CONFORM TO CITY STANDARDS & SPECIFICATIONS.
19. BITUMINOUS PAVEMENT
   (A) BITUMINOUS PAVEMENT SHALL BE REMOVED TO CLEAN STRAIGHT LINES AT THE LOCATIONS INDICATED ON PLANS. WIDTH OF REMOVAL FOR PIPELINES SHALL BE KEPT TO A MINIMUM AS DICTATED BY TRENCHING OPERATIONS, BUT SHALL EXTEND AT LEAST 6 INCHES BEYOND THE LIMITS OF TRENCH EXCAVATION.
   (B) THE CUT SHALL BE MADE WITH PAVEMENT CUTTING WHEEL, SAW OR OTHER APPROVED METHOD, SO AS TO PROVIDE A REASONABLY STRAIGHT AND SQUARE EDGE.

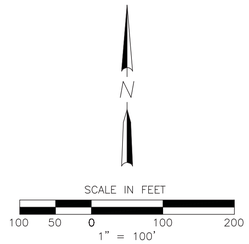
SANITARY SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. ALL GRAVITY SANITARY SEWER LINES SHALL BE POLYVINYL CHLORIDE PIPE (PVC), ASTM D-3034 SDR.35, SEWER LINE MATERIALS AND CONSTRUCTION SHALL CONFORM TO ASTM STANDARDS AND SPECIFICATIONS.
3. DISTANCES FOR SANITARY SEWER ARE THE HORIZONTAL DISTANCES FROM CENTER OF MANHOLE TO CENTER OF MANHOLE. THEREFORE, DISTANCES SHOWN ON PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT.
4. RIM ELEVATIONS SHOWN ARE APPROXIMATE ONLY AND ARE NOT TO BE TAKEN AS FINAL ELEVATION. PIPELINE CONTRACTOR SHALL USE PRECAST CONCRETE ADJUSTMENT RINGS, GROUT AND STEEL SHIMS TO ADJUST THE MANHOLE FRAME TO THE REQUIRED FINAL GRADE IN CONFORMANCE WITH THE STANDARD SPECIFICATIONS. ALL FRAMES SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.
5. ALL SANITARY SEWER MAINS TESTING SHALL BE IN ACCORDANCE WITH LOCAL SPECIFICATIONS. COPIES OF ALL TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER, THE OWNER AND THE GOVERNING AUTHORITY PRIOR TO THE START OF THE WARRANTY PERIOD.
6. COMPACTION OF ALL TRENCHES WITHIN THE PROJECT SITE MUST BE ATTAINED AND COMPACTION RESULTS SUBMITTED TO THE ENGINEER PRIOR TO FINAL ACCEPTANCE. .
7. THE CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL EXISTING STRUCTURES AND IMPROVEMENTS DURING INSTALLATION OF THE SANITARY SEWER LINE.
8. THE CONTRACTOR SHALL POTHOLE THE EXISTING SEWER MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
9. SANITARY SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.

STORM SEWER NOTES:

1. REFER TO APPLICABLE CITY OR COUNTY CONSTRUCTION STANDARDS & SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FOLLOWING:
   (A) OBTAINING ALL REQUIRED PERMITS FROM THE CITY, THE DOT, OR ANY REGULATORY AUTHORITY AT THE CONTRACTOR'S COST INCLUDING PERMITS REQUIRED FOR WORK WITHIN THE PUBLIC RIGHT-OF-WAY.
   (B) RESTORATION OF ANY EXISTING IMPROVEMENTS INCLUDING (BUT NOT LIMITED TO) FENCES, SOD, LANDSCAPING, PAVEMENT, SPRINKLER SYSTEMS.
   (C) VERIFICATION AND PROTECTION OF ALL EXISTING UTILITIES WITHIN THE LIMITS OF THE PROJECT.
   (D) PROVIDING AS-BUILT DRAWINGS TO THE CITY AND ENGINEER.
   (E) ALL PERMITTING, DEVELOPMENT, CONNECTION, LOCATION INSPECTION AND TESTING FEES REQUIRED FOR STORM SEWER CONSTRUCTION.
   (F) VERIFYING ALL STANDARD DETAILS CONFORM TO CURRENT CITY/COUNTY STANDARDS AND SPECIFICATIONS.
   (G) FOR OBTAINING AND UNDERSTANDING ALL STANDARDS AND SPECIFICATIONS PERTAINING TO THE CONSTRUCTION OF THE STORM SEWER IMPROVEMENTS.
   (H) FOR SCHEDULING ALL REQUIRED INSPECTIONS.
3. THE CONTRACTOR SHALL POTHOLE THE EXISTING STORM MAIN AND PROVIDE AN AS-BUILT ELEVATION OF THE MAIN TO THE ENGINEER PRIOR TO ANY NEW CONSTRUCTION.
4. STORM SEWER PIPES SHALL BE BEDDED IN ACCORDANCE WITH STANDARDS AND SPECIFICATIONS OF THE GOVERNING AGENCY.
5. THE CONTRACTOR SHALL COORDINATE HIS WORK SCHEDULE WITH THE DITCH COMPANY TO ENSURE ALL DITCH FACILITIES ARE CONSTRUCTED WITHOUT DISRUPTION TO DITCH COMPANY OPERATIONS.
6. ALL STORM SEWER CONSTRUCTION SHALL BE IN CONFORMANCE WITH LOCAL STANDARDS AND SPECIFICATIONS.
7. DISTANCES FOR STORM SEWER ARE THE HORIZONTAL DISTANCES FROM CEN





PROPOSED LAND USE TABLE

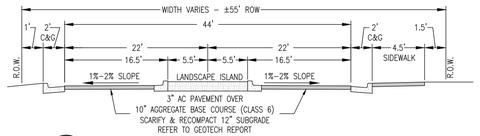
USE	AREA	AC	% OF TOTAL	OWNER
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. – 45.11 AC			

PROJECT NOTES:

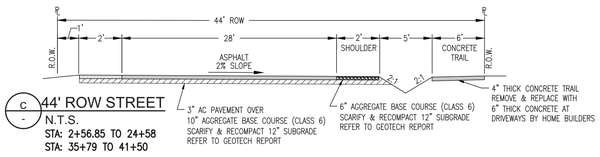
1. THIS DRAWING REFERENCES: AN IMPROVEMENT SURVEY PLAT COMPLETED BY: DH SURVEYS INC., DATED: JANUARY, 2008.
2. PROPERTY DESCRIPTION: A PARCEL OF LAND SITUATE IN THE W 1/2 NW 1/4 OF SECTION 21, TOWNSHIP 1 SOUTH, RANGE 1 WEST OF THE UTE MERIDIAN, MESA COUNTY, COLORADO, BEING DESCRIBED AS FOLLOWS: THE SOUTH 10 ACRES OF THE NW 1/4 NW 1/4 AND THE SW 1/4 NW 1/4 OF SAID SECTION 21. EXCEPTING THEREFROM: LOTS 1 – 9, BLOCK 3 AND THE ADJOINING DEDICATED RIGHT-OF-WAY KNOWN AS SPUR DRIVE, ENERGY CENTER SUBDIVISION, PHASE I AS PLATTED AND RECORDED IN PLAT BOOK 8 AT PAGE 55 WITH A RECEPTION NUMBER 644620 OF THE MESA COUNTY RECORDS. SAID PARCEL CONTAINS 45.11 ACRES MORE OR LESS
3. EXISTING USE = VACANT
4. PROPOSED USE = RESIDENTIAL
5. PROPERTY ZONED = R-2
6. MINIMUM BUILDING SETBACKS: (PRINCIPAL/ACCESSORY)
   STREET = 20'/25'
   REAR = 30'/5'
   SIDE = 15'/3'
7. PROPERTY APPLICANT: TWO R&D, LLC
   1880 K ROAD
   FRUITA, CO 81521
8. PROPERTY AREA: 1,965,025.56 S.F. (45.11 AC.)
   NUMBER OF LOTS: 72
9. GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. REFER TO REPORT DATED JUNE 07, 2017.
10. THIS PLAN IS THE SOLE PROPRIETY OF VORTEX ENGINEERING, INC. (V.E.I.) AND IS NOT TO BE UTILIZED WITHOUT WRITTEN CONSENT FROM V.E.I.
11. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.

LEGEND

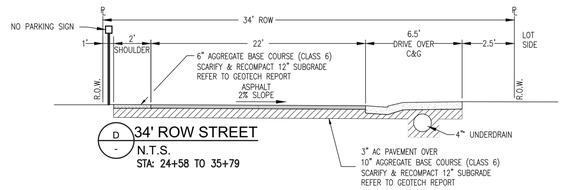
FILING & LIMITS OF DEVELOPMENT DESIGNATION



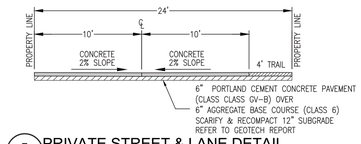
B - MARIPOSA DRIVE ENTRANCE
N.T.S.
STA: 0+24 TO STA: 1+52
(TRANSITIONS TO 44' ROW STREET FROM STA: 1+52 TO 2+56.85)



C - 44' ROW STREET
N.T.S.
STA: 2+56.85 TO 24+58
STA: 35+79 TO 41+50



D - 34' ROW STREET
N.T.S.
STA: 24+58 TO 35+79



E - PRIVATE STREET & LANE DETAIL
N.T.S.
TRACTS C,F,J

PROJECT BENCHMARK

PROJECT BENCHMARK #1
LOCATED AT THE SOUTHWEST CORNER OF THE SITE.
MONUMENT ID: PLS 18480, THE W1/4 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31563.18 EASTING: 78944.74 ELEV: 4800.15 (NAVD88)

PROJECT BENCHMARK #2
LOCATED AT THE WEST PROPERTY LINE, NEAR OUTLOOK COURT.
MONUMENT ID: NCSN #1210, THE N1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 32880.35 EASTING: 78949.85 ELEV: 4750.83 (NAVD88)

PROJECT BENCHMARK #3
LOCATED AT THE SOUTHEAST CORNER OF THE SITE.
MONUMENT ID: NCSN #642, THE W1/16 CORNER OF SECTION 21, T1S, R1W, UTE MERIDIAN, MESA COUNTY, COLORADO.
NORTHING: 31558.05 EASTING: 80239.95 ELEV: 4799.09 (NAVD88)

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED
JAMES C. ATKINSON
18828
11-20-17
PROFESSIONAL ENGINEER

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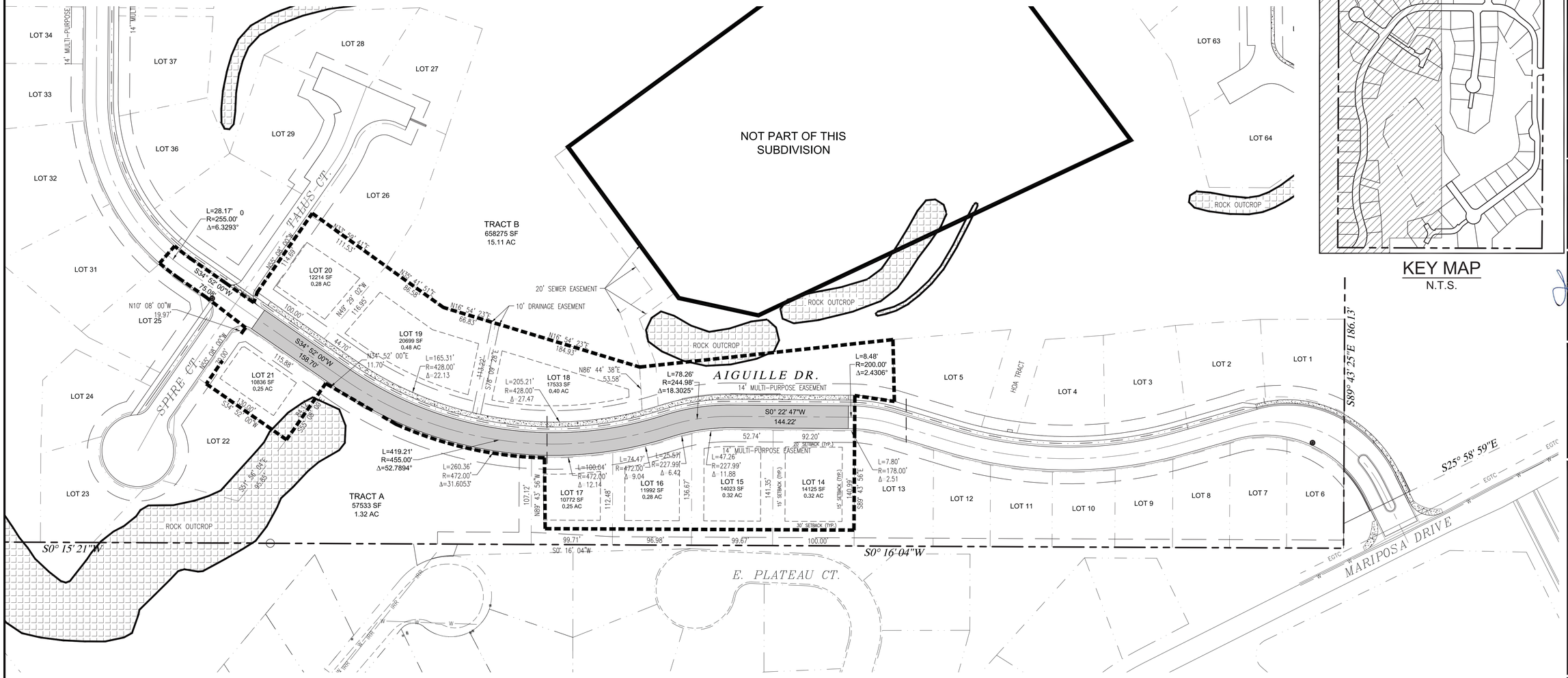
MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS
2	10/11/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	JSY

Filing Plan
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: 1" = 100'
CAD ID: **0.0cover-f2.dwg**

~SHEET~
C0.2



KEY MAP
N.T.S.

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT LEADERS
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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY
3	11/20/17	REVISED PER CITY COMMENT ROUND 3 DATED NOV. 12, 2017	JSY
2	10/11/17	REVISED PER CITY COMMENT ROUND 2 DATED SEPT. 13, 2017	DLS
1	9/08/17	REVISED PER CITY COMMENT ROUND 1 DATED JULY 18, 2017	DLS

Composite Site Plan - Layout and Geometry Plan

Pinnacle Ridge Subdivision Filing 2

Mariposa Drive
Grand Junction, Colorado 81507

UTILITY PROVIDERS INFORMATION

UTILITY	PROVIDER	PHONE NUMBER
SANITARY SEWER	CITY OF GRAND JUNCTION	970-244-1554
DOMESTIC WATER	UTE WATER CONSERVANCY DISTRICT	970-242-7491
DRAINAGE & IRRIGATION	RIDGES IRRIGATION DISTRICT	970-244-1572
	THE REDLANDS WATER & POWER CO.	970-243-2173
ELECTRICITY	XCEL ENERGY	800-895-4999
NATURAL GAS	XCEL ENERGY	800-895-4999
TELEPHONE	CENTURYLINK	800-603-6000
CABLE TELEVISION	CHARTER COMMUNICATIONS	877-273-7626

PROPOSED LAND USE TABLE

USE	AREA	AC	% OF TOTAL	OWNER
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TOTAL SITE AREA:	1,965,025.56 S.F. – 45.11 AC			

GENERAL NOTES

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2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET C0.2

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

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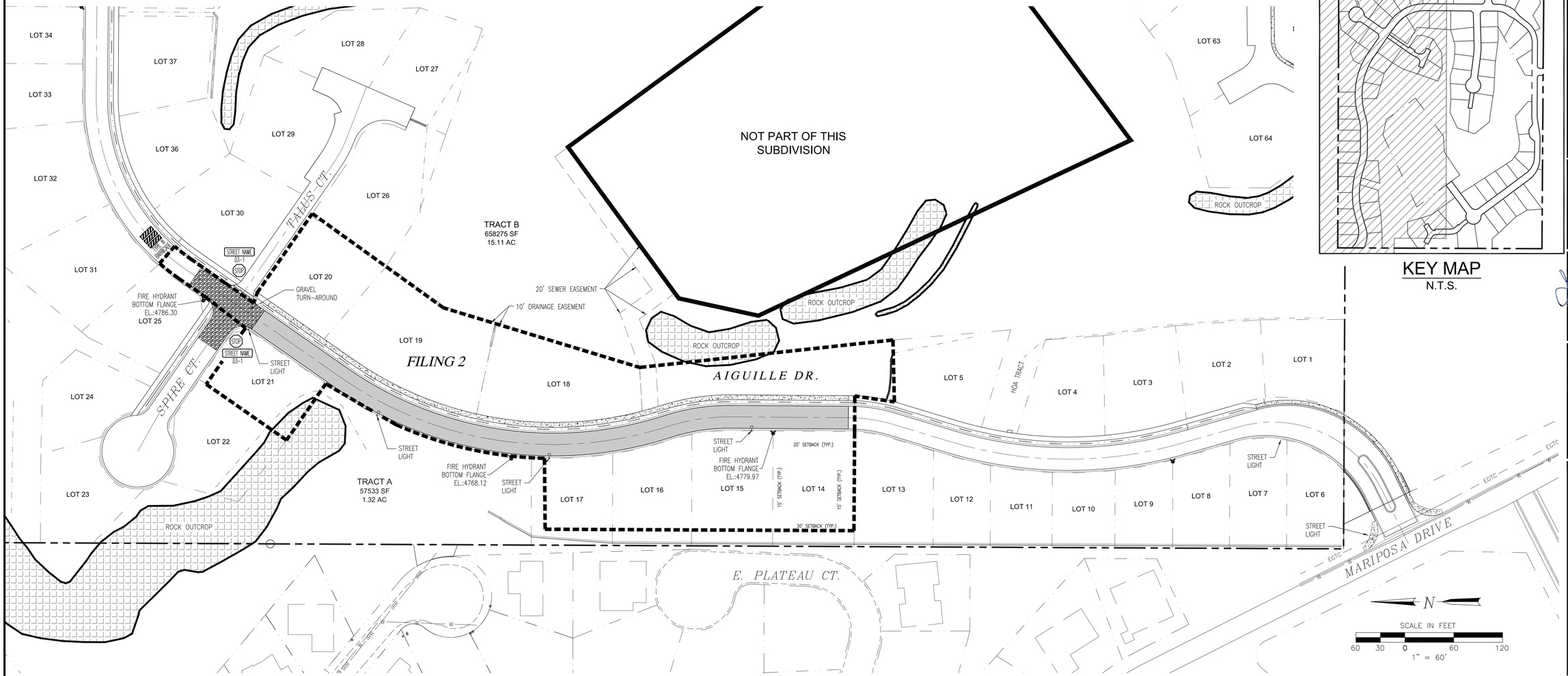
CITY DEVELOPMENT ENGINEER _____ DATE _____

PROJECT NO: F04-006
DATE: 04/24/17
SCALE: see plan
CAD ID: **1.0layout-f2.dwg**

~SHEET~
C1.0



KEY MAP
N.T.S.

SIGN SCHEDULE

- STOP SIGN (30"x30")
- NO OUTLET SIGN W14-2
- FIXED TYPE III CDOT ROAD BARRICADES (3' x 8' SECTIONS, SEE STD. S-630-2)
- NO TRESPASSING SIGN
- STREET NAME SIGN D3-1
- SPEED LIMIT SIGN R2-1

ALL SIGN POST MOUNTING AND PLACEMENT SHALL BE PER MUTCD OR MESA COUNTY SPECIFICATIONS. CONTRACTOR TO CONTACT MESA COUNTY TRAFFIC PRIOR TO INSTALLATION OF SIGNS. (ph. 970-244-1817)

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CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
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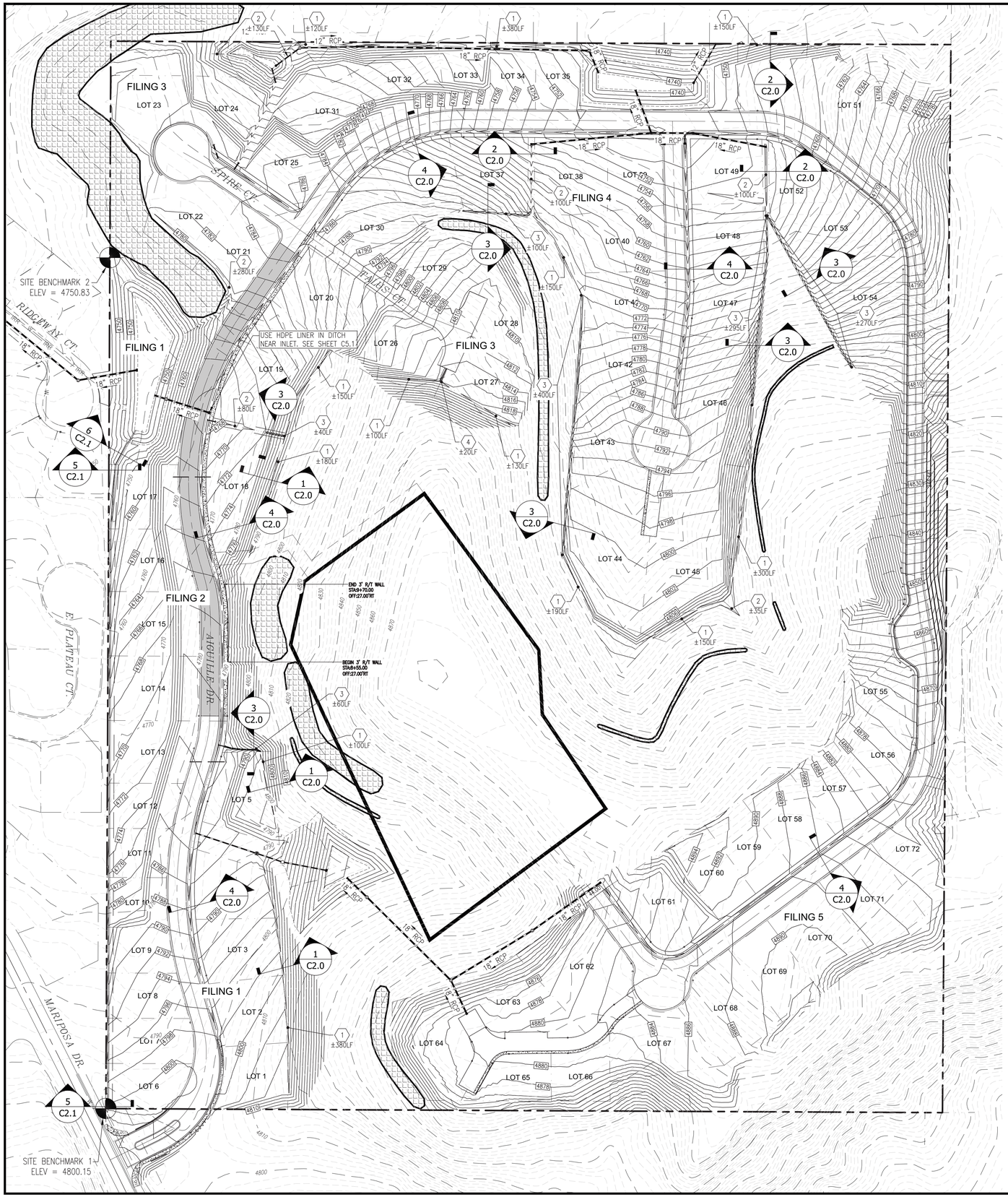
MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017 JSY
2	10/11/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017 DLS
1	8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017 DLS

Signage & Lighting Plan
Pinnacle Ridge Subdivision Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/08/17
SCALE: 1" = 60'
CAD ID: **1.0layout-f2.dwg**

~SHEET~
C1.1



CONSTRUCTION NOTES:

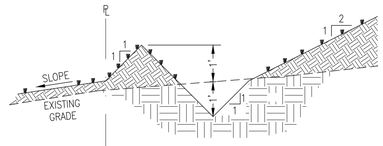
1. CONSTRUCT DIVERSION DITCH W/ BERM SEE DETAIL 1 THIS SHEET
2. CONSTRUCT DIVERSION DITCH SEE DETAIL 2 THIS SHEET
3. CONSTRUCT ROCK LINED DIVERSION DITCH SEE DETAIL 3 THIS SHEET
4. CONSTRUCT 2' CONCRETE V-PAN (FILING 3)

GRADING NOTE:

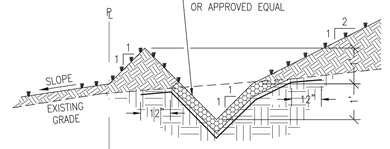
FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

GENERAL NOTES

1. ALL CONSTRUCTION TO CONFORM TO THE CURRENT CITY OF GRAND JUNCTION DEPARTMENT OF PUBLIC WORKS AND PLANNING STANDARDS AND SPECIFICATIONS.
2. CONTRACTOR MUST CONTACT CITY OF GRAND JUNCTION TRAFFIC OPERATIONS SUPERVISOR PRIOR TO CONSTRUCTION OR PLACEMENT OF TRAFFIC CONTROL DEVICES/FEATURES (STRIPING, SIGNALS, MEDIANS, ETC.) FOR CONSTRUCTION IN THE RIGHT-OF-WAY ONLY.
3. REFER TO THE GEOTECHNICAL INVESTIGATION PERFORMED BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
4. LIGHTING TO BE DESIGNED BY UTILITY PROVIDER. (XCEL ENERGY)
5. FOR OFFSITE STORM SEWER, SEE SHEET C5.0 & C5.1.
6. ALL SANITARY SEWER MANHOLES ARE 48" I.D.
7. FOR STREET SECTIONS SEE FILING PLAN.
8. REFER TO SHEETS C0.1, C6.0, THRU C6.2 FOR STORMWATER MANAGEMENT CONTROL PLANS AND EROSION CONTROL NOTES.
9. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
10. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL.



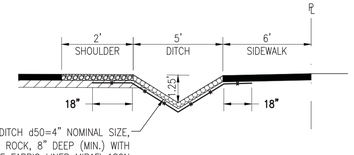
1 / C2.0 DIVERSION DITCH SECTION W/ BERM
N.T.S.



3 / C2.0 ROCK LINED DIVERSION DITCH SECTION
N.T.S.



2 / C2.0 DIVERSION DITCH SECTION
N.T.S.



4 / C2.0 ROCK LINED ROADSIDE DITCH
N.T.S.

ACCEPTANCE BLOCK

THE CITY OF GRAND JUNCTION REVIEW CONSTITUTES GENERAL COMPLIANCE WITH THE CITY'S DEVELOPMENT STANDARDS, SUBJECT TO THESE PLANS BEING SEALED, SIGNED, AND DATED BY THE PROFESSIONAL OF RECORD. REVIEW BY THE CITY DOES NOT CONSTITUTE APPROVAL OF THE PLAN DESIGN. THE CITY NEITHER ACCEPTS NOR ASSUMES ANY LIABILITY FOR ERRORS OR OMISSIONS. ERRORS IN THE DESIGN OR CALCULATIONS REMAIN THE RESPONSIBILITY OF THE PROFESSIONAL OF RECORD.

CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER _____ DATE _____

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 11-20-17 PROFESSIONAL ENGINEER

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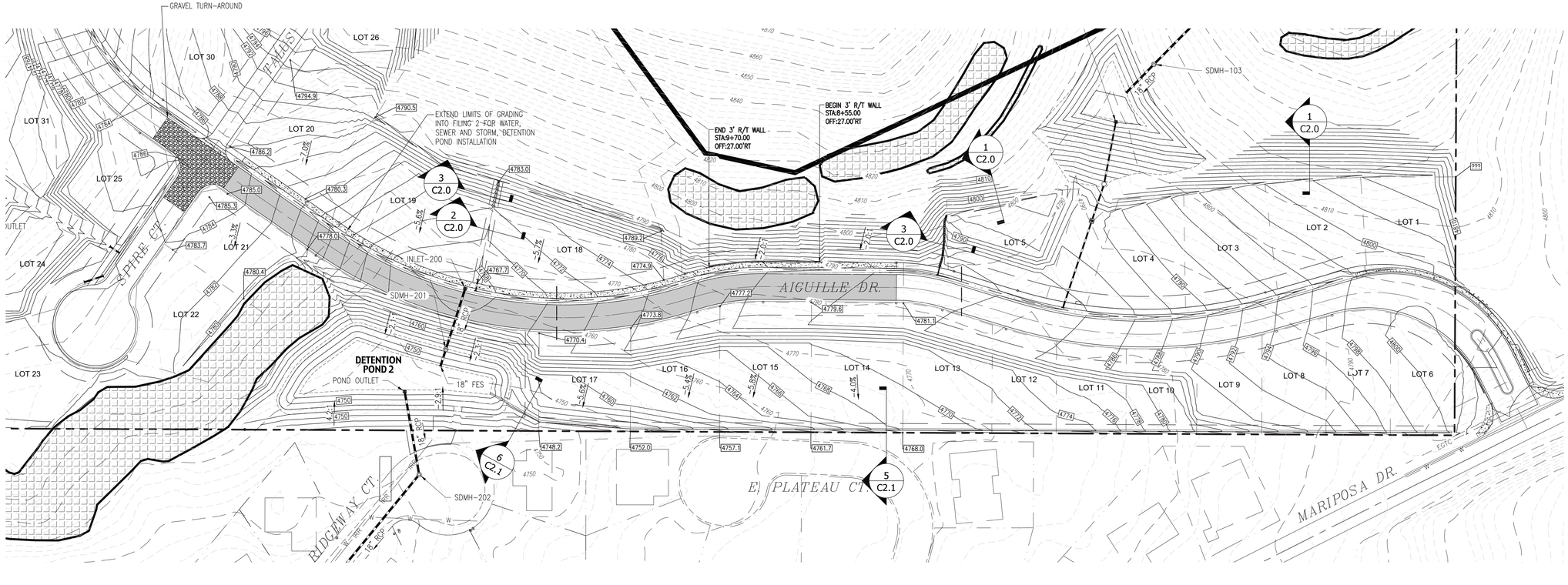
MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT	BY
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	JSY
2	10/11/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
1	8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

Overall Grading Plan Filings 1 - 5
Pinnacle Ridge Subdivision Filing 2
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: 1"= 80'
CAD ID: **2.0grad-f2.dwg**

~SHEET~
C2.0



FILING 2 TOF TABLE			
Lot	*Grading*	*Min. TOF*	*Max. TOF*
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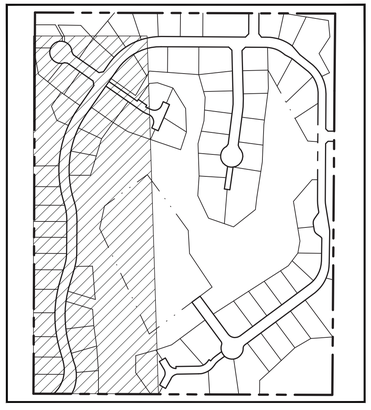
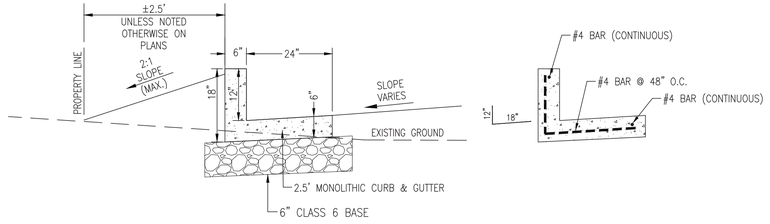
15	Type C	4779.40	4779.90
16	Type C	4776.50	4777.00
17	Type C	4773.40	4773.90
18	Type A	4773.00	4773.50
19	Type A	4774.50	4775.50
20	Type A	4782.50	4784.50
21	Type C	4784.50	4786.50

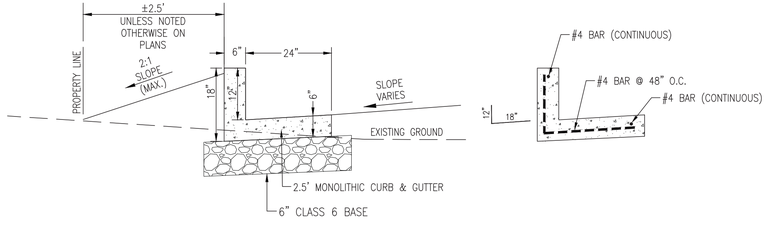


KEY MAP
N.T.S.



WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

5 C2.1 CONCRETE CURB & GUTTER DETAIL
N.T.S.
CONSTRUCTED DURING FILING 1



WEST PROPERTY LINE SECTION - DRAINS TO DETENTION POND

6 C2.1 CONCRETE CURB & GUTTER DETAIL
N.T.S.
CONSTRUCTED DURING FILING 1

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7. FOR STREET SECTIONS SEE FILING PLAN.
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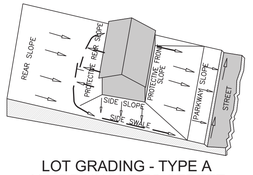
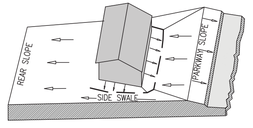


LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.



LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.

ACCEPTANCE BLOCK

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• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
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Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED
JAMES C. ATKINSON
18828
11-20-17
PROFESSIONAL ENGINEER

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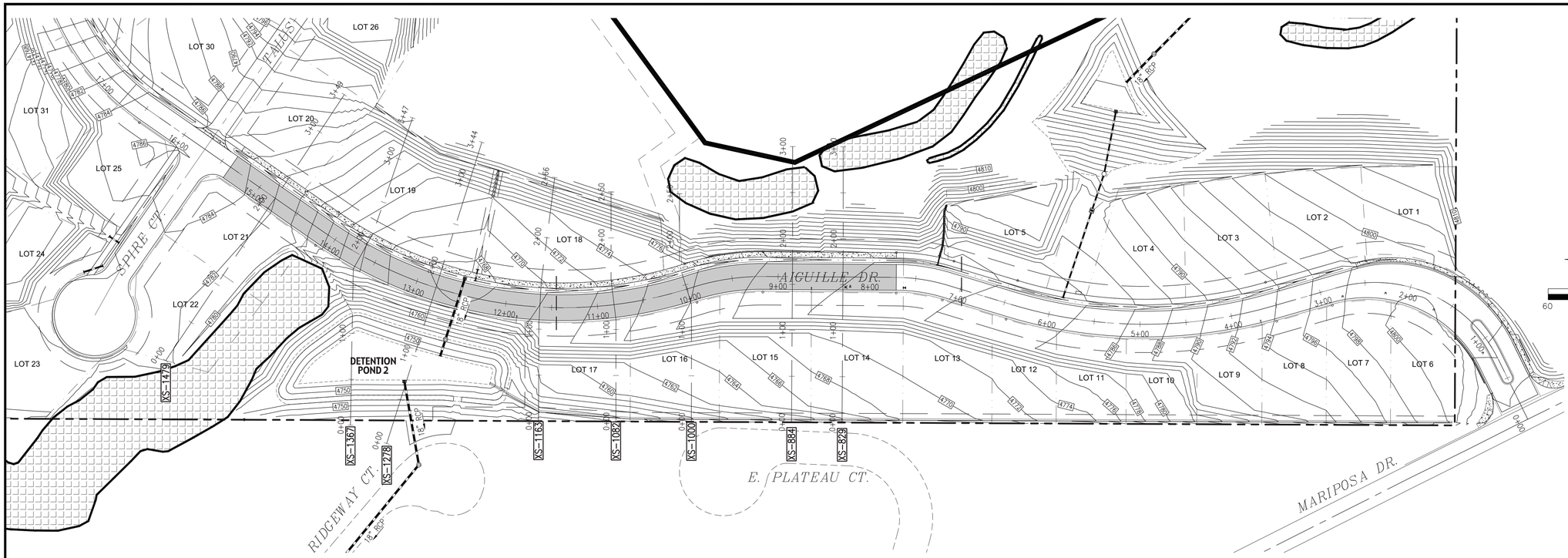
MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY
3	11/20/17	REVISED PER CITY COMMENT ROUND 2, DATED NOV. 12, 2017	JSY
2	10/11/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
1	8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

Grading Plan Filing 2
Pinnacle Ridge Subdivision Filing 2
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: 1" = 60'
CAD ID: 2.0grad-f2.dwg

~SHEET~
C2.1



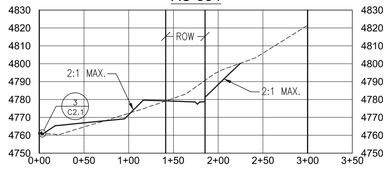
N

SCALE IN FEET

60 30 0 60 120

1" = 60'

XS-884



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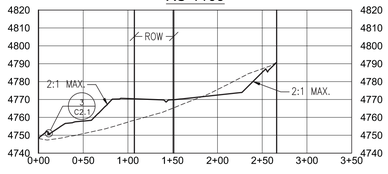

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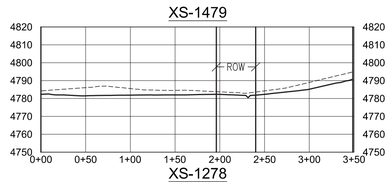

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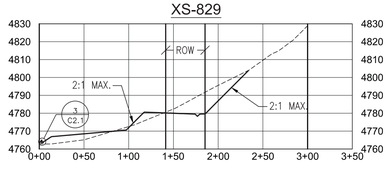

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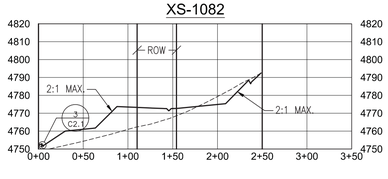

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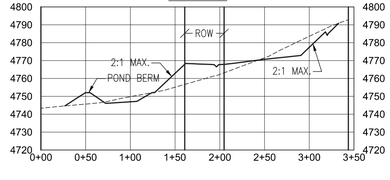
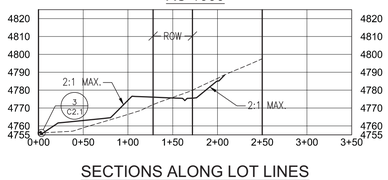


XS-1000



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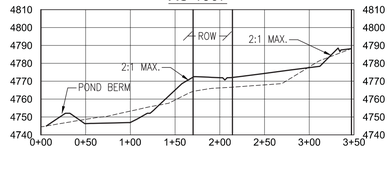

SECTIONS ALONG LOT LINES

SCALE: 1" = 80' HORIZONTAL
1" = 40' VERTICAL

ACCEPTANCE BLOCK

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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY
3	11/20/17	REVISED PER CITY COMMENT ROUND 2, DATED NOV. 12, 2017	JSY
2	10/11/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
1	8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

Grading Plan Filing 2 - Road Cross Sections
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: SEE PLAN
CAD ID: 2.0grad-f2.dwg

~SHEET~
C2.2

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. THERE ARE NO WETLANDS SITUATED ON THIS PROPERTY ACCORDING TO THE U.S. FISH & WILDLIFE SERVICE NATIONAL WETLANDS INVENTORY.
3. PROPERTY LIES WITHIN FEMA FLOOD ZONE X-OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.
4. NO OPEN SPACE IMPROVEMENTS ARE INCLUDED IN THIS PROJECT.
5. FOR BENCHMARK SEE SHEET 3
6. HOUSES CONSTRUCTED ON LOTS 26-29 AND LOTS 55-72 SHALL HAVE SPRINKLER SYSTEMS INSTALLED. A 1" CUSTOMER WATER SERVICE LINE AND ¾" WATER METER WILL BE UTILIZED IN ACCORDANCE WITH UTE WATER CONSERVANCY DISTRICT STANDARDS & SPECIFICATIONS.
7. ALL WATER SERVICES SHALL HAVE A PRESSURE REGULATED YOKE INSTALLED BASED ON PRESSURE LIMITS AS DETERMINED IN THE HYDRAULIC ANALYSIS.

FILING NOTES

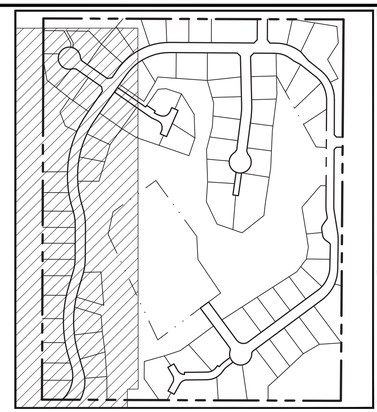
1. NO STORM DRAINS TO BE CONSTRUCTED AS PART OF FILING 2.
2. INSTALL SANITARY SEWER FROM STATION 13+00 TO MANHOLE B4 IN AIGUILLE DRIVE; INCLUDE MANHOLE F3 AS NOTED ON PLANS.
3. END WATER LINE CONSTRUCTION NEAR THE NORTHEAST CORNER OF LOT 25. SEE CONSTRUCTION NOTE #6
4. ASPHALT PAVEMENT TO END AT THE NORTH END OF LOT 21 FOR FILING 2.
5. INSTALL GRAVEL TURN-AROUND ON AIGUILLE DRIVE AND SPIRE COURT AS SHOWN ON THIS PLAN.

N

SCALE IN FEET

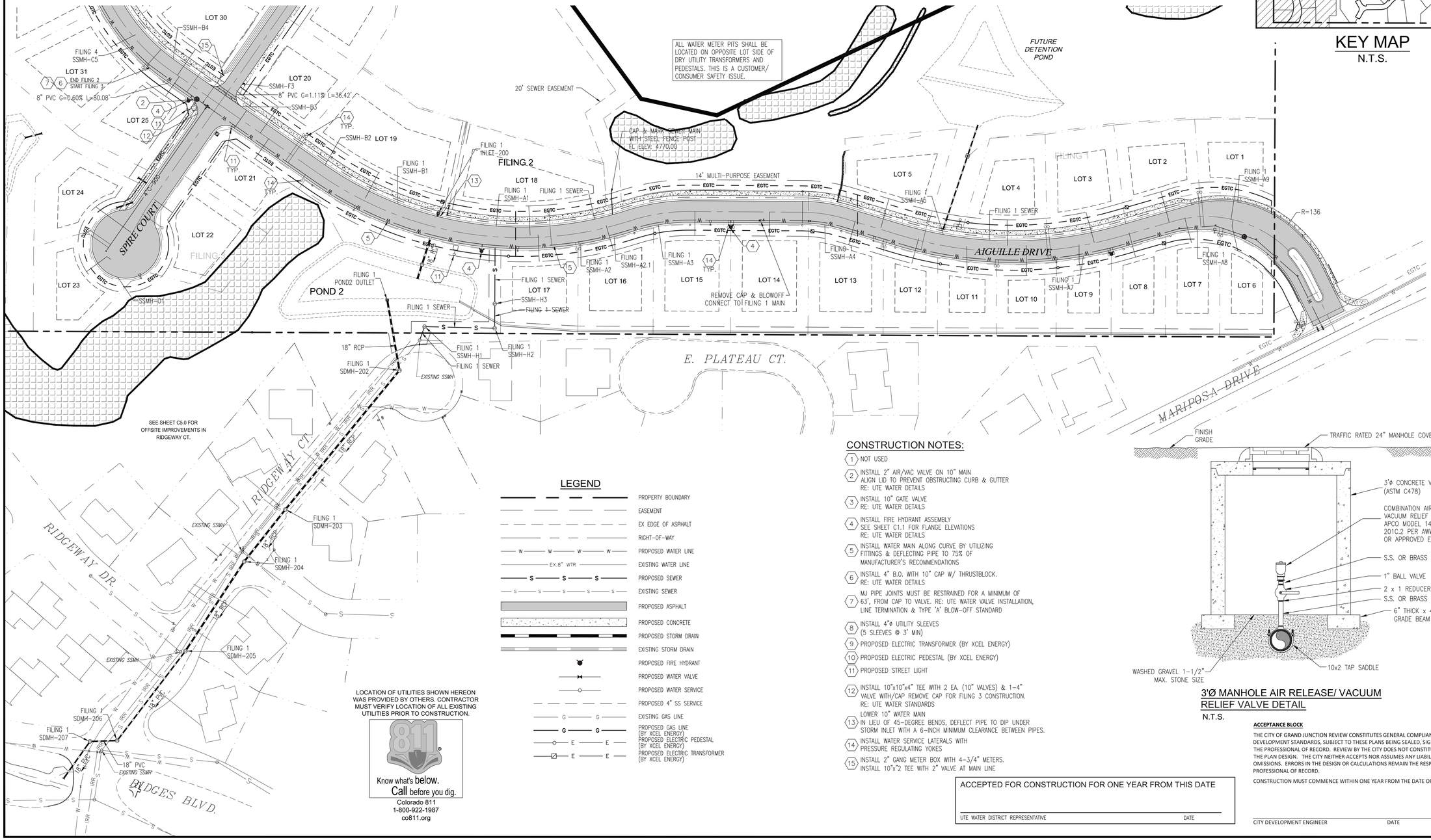
60 30 0 60 120

1" = 60'



KEY MAP

N.T.S.



LEGEND

- PROPERTY BOUNDARY
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED WATER LINE
- EXISTING WATER LINE
- PROPOSED SEWER
- EXISTING SEWER
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORM DRAIN
- EXISTING STORM DRAIN
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- PROPOSED WATER SERVICE
- PROPOSED 4" SS SERVICE
- EXISTING GAS LINE
- PROPOSED GAS LINE (BY XCEL ENERGY)
- PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
- PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)

LOCATION OF UTILITIES SHOWN HEREON WAS PROVIDED BY OTHERS. CONTRACTOR MUST VERIFY LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

811 Know what's below. Call before you dig.

Colorado 811
1-800-922-1987
co811.org

CONSTRUCTION NOTES:

1. NOT USED
2. INSTALL 2" AIR/VAC VALVE ON 10" MAIN ALIGN LID TO PREVENT OBSTRUCTING CURB & GUTTER RE: UTE WATER DETAILS
3. INSTALL 10" GATE VALVE RE: UTE WATER DETAILS
4. INSTALL FIRE HYDRANT ASSEMBLY SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL WATER MAIN ALONG CURVE BY UTILIZING FITTINGS & DEFLECTING PIPE TO 75% OF MANUFACTURER'S RECOMMENDATIONS
6. INSTALL 4" B.O. WITH 10" CAP W/ THRUSTBLOCK. RE: UTE WATER DETAILS
7. MJ PIPE JOINTS MUST BE RESTRAINED FOR A MINIMUM OF 63', FROM CAP TO VALVE. RE: UTE WATER VALVE INSTALLATION, LINE TERMINATION & TYPE 'A' BLOW-OFF STANDARD
8. INSTALL 4"ø UTILITY SLEEVES (5 SLEEVES @ 3' MIN)
9. PROPOSED ELECTRIC TRANSFORMER (BY XCEL ENERGY)
10. PROPOSED ELECTRIC PEDESTAL (BY XCEL ENERGY)
11. PROPOSED STREET LIGHT
12. INSTALL 10"x10"x4" TEE WITH 2 EA. (10" VALVES) & 1-4" VALVE WITH/CAP REMOVE CAP FOR FILING 3 CONSTRUCTION. RE: UTE WATER STANDARDS
13. LOWER 10" WATER MAIN IN LIEU OF 45-DEGREE BENDS, DEFLECT PIPE TO DIP UNDER STORM INLET WITH A 6-INCH MINIMUM CLEARANCE BETWEEN PIPES.
14. INSTALL WATER SERVICE LATERALS WITH PRESSURE REGULATING YOKES
15. INSTALL 2" GANG METER BOX WITH 4-3/4" METERS. INSTALL 10"x"2 TEE WITH 2" VALVE AT MAIN LINE

ACCEPTED FOR CONSTRUCTION FOR ONE YEAR FROM THIS DATE

UTE WATER DISTRICT REPRESENTATIVE DATE

3'Ø MANHOLE AIR RELEASE/ VACUUM RELIEF VALVE DETAIL

N.T.S.

ACCEPTANCE BLOCK

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CONSTRUCTION MUST COMMENCE WITHIN ONE YEAR FROM THE DATE OF PLAN SIGNATURE.

CITY DEVELOPMENT ENGINEER DATE

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 11-20-17 PROFESSIONAL ENGINEER

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MAJOR SUBDIVISION
FINAL PLAN

BY	DATE	REV	COMMENT
	1/20/17	3	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017
DLS	9/31/17	2	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017
DLS	9/08/17	1	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017
JSY			

Composite Site Plan - Utility and Water Plan

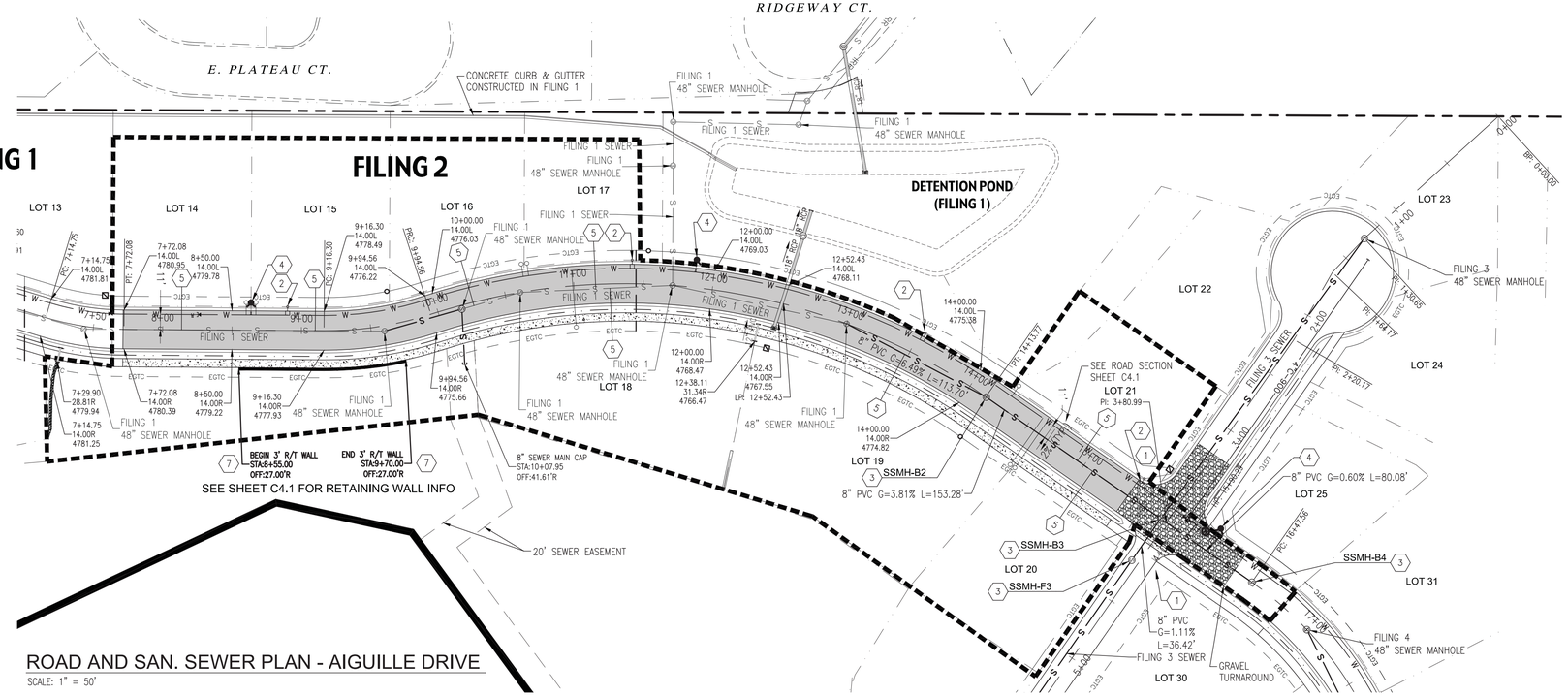
Pinnacle Ridge Subdivision Filing 2

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: 1"= 60'
CAD ID: **3.0utility-f2.dwg**

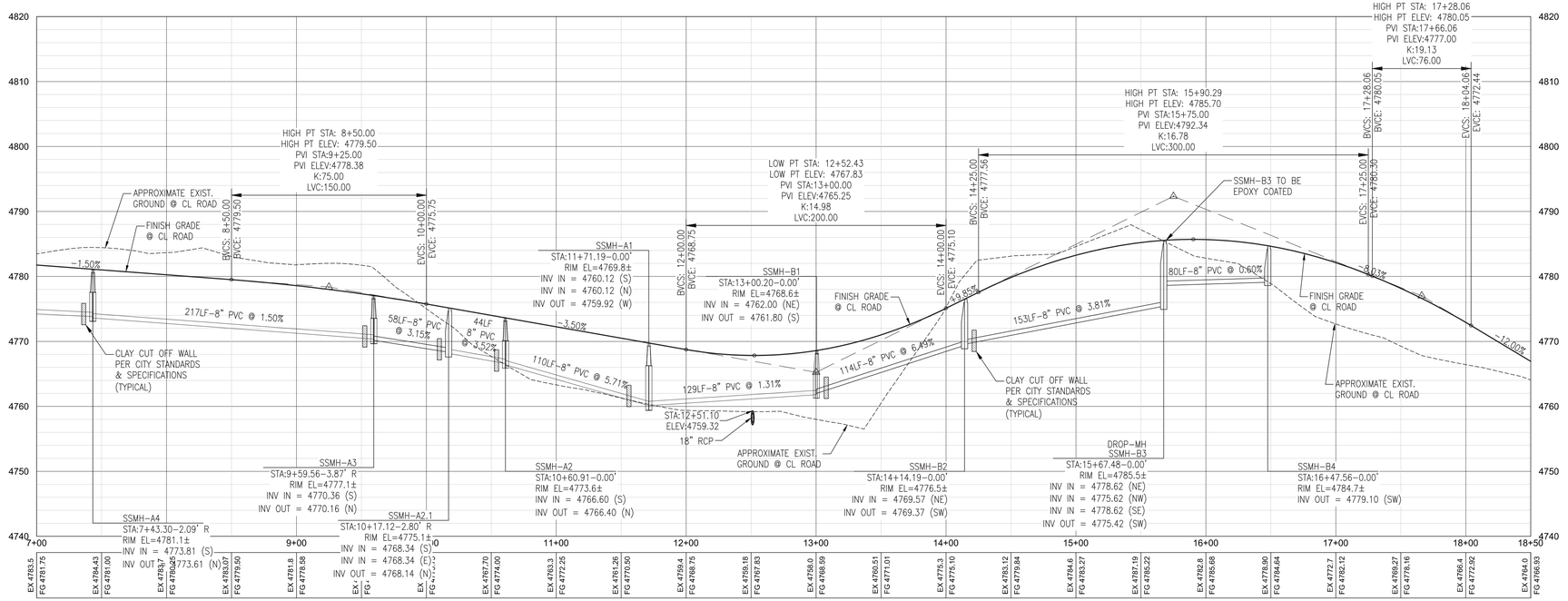
~SHEET~

C3.0



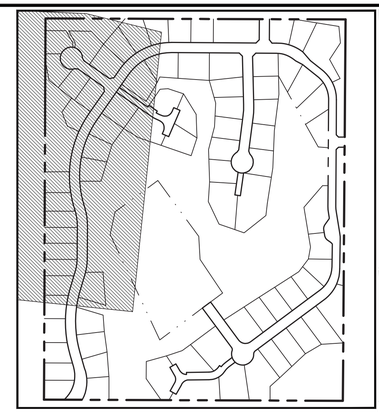
ROAD AND SAN. SEWER PLAN - AIGUILLE DRIVE

SCALE: 1" = 50'



ROAD AND SAN. SEWER PROFILE - AIGUILLE DRIVE

HORIZONTAL SCALE: 1" = 50'
VERTICAL SCALE: 1" = 5'



KEY MAP

N.T.S.

SCALE IN FEET
50 25 0 50 100
1" = 50'

FILING NOTES

1. NO STORM DRAINS TO BE CONSTRUCTED AS PART OF FILING 2.
2. INSTALL SANITARY SEWER FROM STATION 13+00 TO MANHOLE B4 IN AIGUILLE DRIVE; INCLUDE MANHOLE F3 AS NOTED ON PLANS.
3. END WATER LINE CONSTRUCTION NEAR THE NORTHEAST CORNER OF LOT 25. SEE CONSTRUCTION NOTE #6
4. ASPHALT PAVEMENT TO END AT THE NORTH END OF LOT 21 FOR FILING 2.
5. INSTALL GRAVEL TURN-AROUND ON AIGUILLE DRIVE AND SPIRE COURT AS SHOWN ON THIS PLAN.

GENERAL NOTES:

1. REFERENCE SHEET C0.1 FOR ADDITIONAL NOTES.
2. NO DIMENSIONS TO BE SCALED FROM THESE DRAWINGS.
3. ALL MANHOLE RIM ELEVATIONS ARE APPROXIMATE. CONTRACTOR SHALL ADJUST RIMS & VALVE COVERS TO FINISH GRADE BEFORE FINAL LIFT OF PAVEMENT.
4. REFER TO GRAND JUNCTION STANDARDS AND SPECIFICATIONS.
5. ALL DIMENSIONS ARE REFER TO FLOW LINE OF CURB AND GUTTER, UNLESS OTHERWISE INDICATED.
6. SEWER MANHOLES ARE 4'ø, UNLESS NOTED OTHERWISE.
7. SEWER SERVICE SHALL BE 4" DIAMETER. SEWER SERVICE SHALL EXTEND AT LEAST 14' PAST RIGHT OF WAY LINE
8. ALL CURB RETURN FLOW LINE RADII ARE 20' UNLESS OTHERWISE SPECIFIED
9. SEE SHEET C0.2 FOR STREET SECTIONS
10. SEE SHEET C1.0 FOR ALL EASEMENT INFORMATION

CONSTRUCTION NOTES:

1. INSTALL STOP SIGN & STREET SIGN RE: MUTCD. SEE SHEET C1.1
2. STREET LIGHT (BY OTHERS) SEE SHEET C1.1
3. CONSTRUCT 48"ø SEWER MANHOLE RE: PER CITY OF GJ DETAILS
4. PROPOSED FIRE HYDRANT SEE SHEET C1.1 FOR FLANGE ELEVATIONS RE: UTE WATER DETAILS
5. INSTALL SEWER SERVICE RE:CITY STANDARDS & SPECS.
6. INSTALL SEWER SERVICE RE:CITY STANDARDS & SPECS.
7. INSTALL RETAINING WALL SEE SHEET C4.1

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MAJOR SUBDIVISION FINAL PLAN

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1	8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	BY
REV.	DATE	COMMENT	

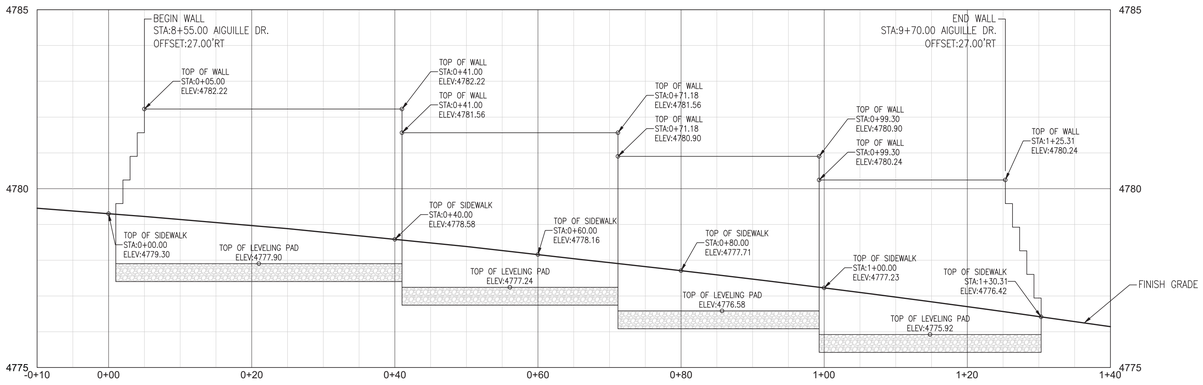
Road & Sanitary Sewer Plan & Profile

Aiguille Drive
Pinnacle Ridge Subdivision Filing 2

Mariposa Drive
Grand Junction, Colorado 81507

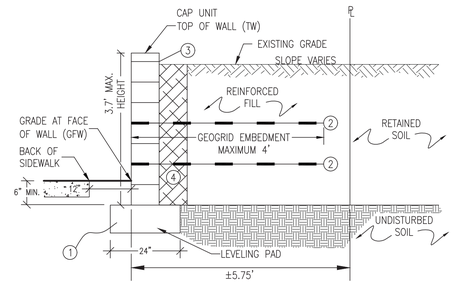
PROJECT NO: **F04-006**
DATE: **06/02/17**
SCALE: **1" = 50'**
CAD ID: **4.0ss-road-f2.dwg**

~SHEET~
C4.0



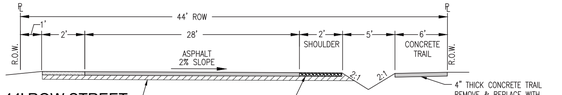
RETAINING WALL PROFILE

STA:8+55.00 TO 9+70.00 - AIGUILLE DR.
SEE SHEET C4.0 FOR HORIZONTAL INFO.
HORIZONTAL SCALE: 1" = 10'
VERTICAL SCALE: 1" = 4'



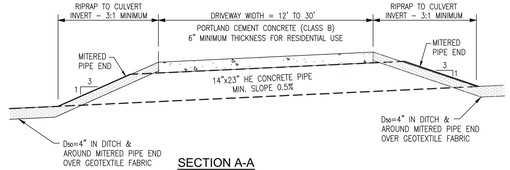
BLOCK WALL DETAIL

N.T.S.

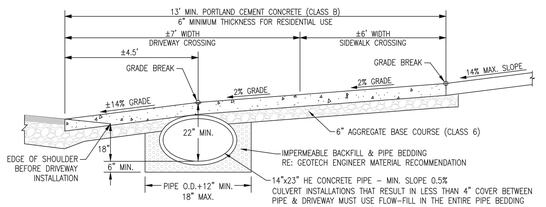


44' ROW STREET

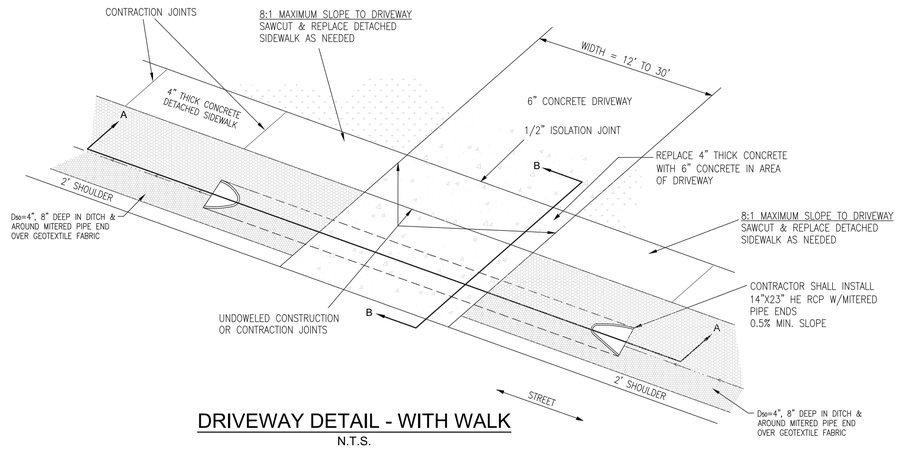
N.T.S.
STA: 3+42 TO 24+58
STA: 35+79 TO 41+50



SECTION A-A



SECTION B-B



DRIVEWAY DETAIL - WITH WALK

N.T.S.

NOTE:
CARE SHALL BE TAKEN TO REMOVE EXISTING ROCK LINING AND GEOTEXTILE FABRIC PRIOR TO NEW CULVERT INSTALLATION. FABRIC AND ROCK TO BE CAREFULLY REPLACED AROUND NEW CULVERT.

ACCEPTANCE BLOCK

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MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY
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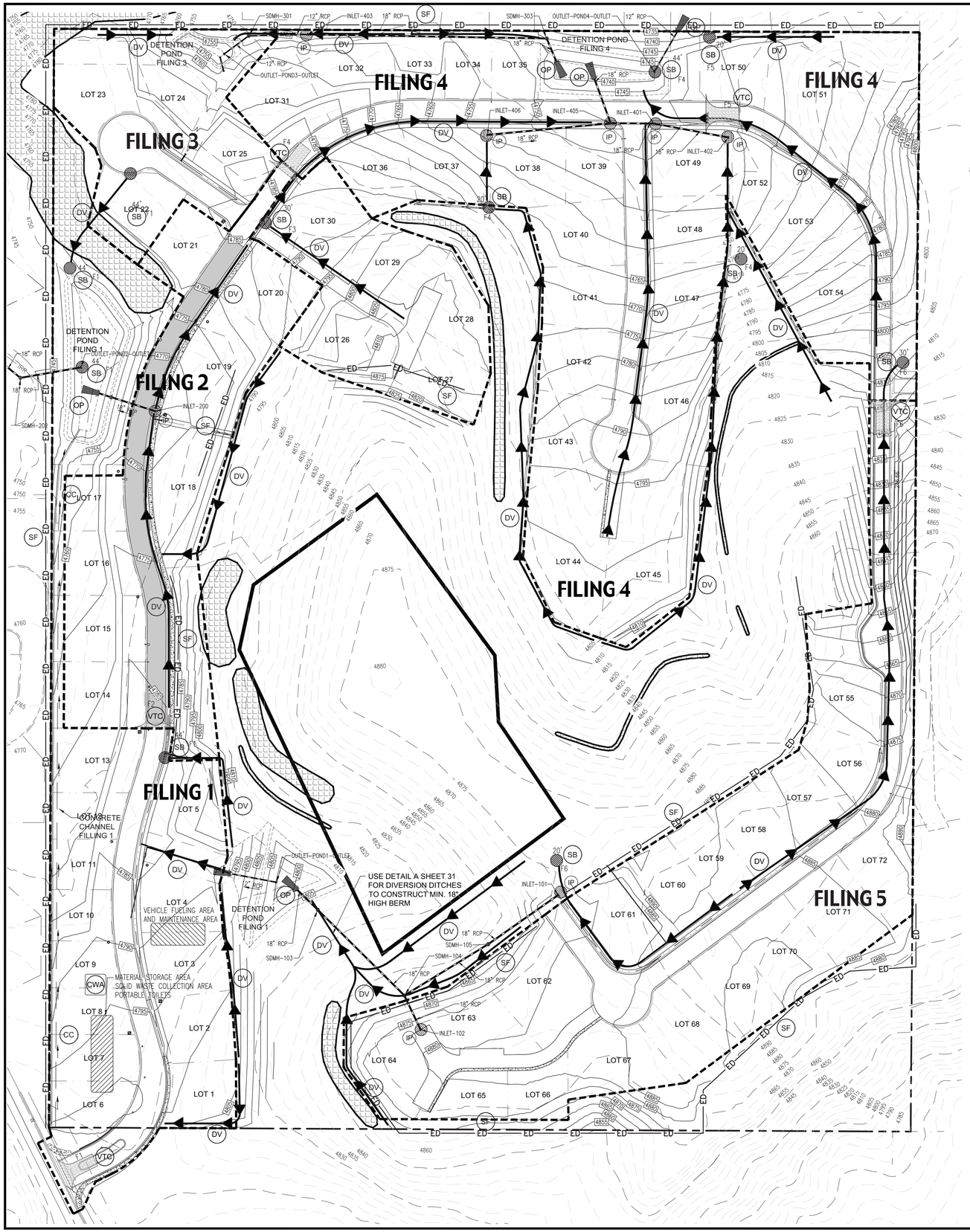
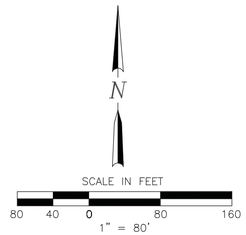
2	10/11/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
1	8/28/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS

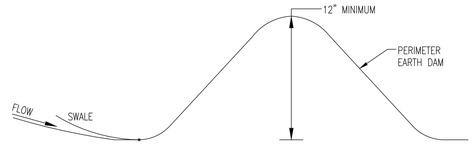
Retaining Wall Profile & Road Details
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/02/17**
SCALE: **1" = 50'**
CAD ID: **4.0ss-road-f2.dwg**

~SHEET~
C4.1







EARTH DAM SECTION
SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
EARTHEN DAM	ED	
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
SEDIMENT BASIN	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

GRADING NOTE:

FILING 1 & FILING 2 GRADING WILL INCLUDE PORTIONS OF THE ENTIRE SITE DEPENDING ON "BORROW MATERIAL" AND CUT/FILL OPERATIONS. EROSION CONTROL, DUST CONTROL AND STORMWATER MANAGEMENT CONTROLS TO BE IMPLEMENTED IN ALL DISTURBED AREAS. REVEGETATION TO OCCUR IN AREAS LEFT "UN-WORKED" OR FINISHED FOR MORE THAN 30 DAYS.

GENERAL NOTES:

1. THE DEVELOPER IS RESPONSIBLE FOR THE ACQUISITION OF ALL REQUIRED EASEMENTS, RIGHT AND/OR RIGHTS-OF-WAY PURSUANT TO THE DISCHARGE FROM THE SEDIMENT AND EROSION CONTROL PRACTICES, STORMWATER MANAGEMENT PRACTICES AND THE DISCHARGE OF STORMWATER ONTO OR ACROSS AND GRADING OR OTHER WORK TO BE PERFORMED ON ADJACENT OR DOWNSTREAM PROPERTIES AFFECTED BY THE PLAN.
2. FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN SEVEN CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN THREE HORIZONTAL TO ONE VERTICAL (3:1); FOURTEEN DAYS FOR ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE, THE IN-PLACE SEDIMENT CONTROL MEASURES WILL BE MAINTAINED ON A CONTINUING BASIS UNTIL THE SITE IS PERMANENTLY STABILIZED AND ALL PERMIT REQUIREMENTS ARE MET.
3. REFER TO CITY OF GRAND JUNCTION STANDARD DRAWINGS AND SPECIFICATIONS.
4. ALL CONSTRUCTION WITHIN THE PUBLIC RIGHT-OF-WAY REQUIRES INSPECTION BY THE 5-2-1 DRAINAGE AUTHORITY. CONTACT MARK BARSLUND 970-201-1362

ACCEPTANCE BLOCK

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MAJOR SUBDIVISION
FINAL PLAN

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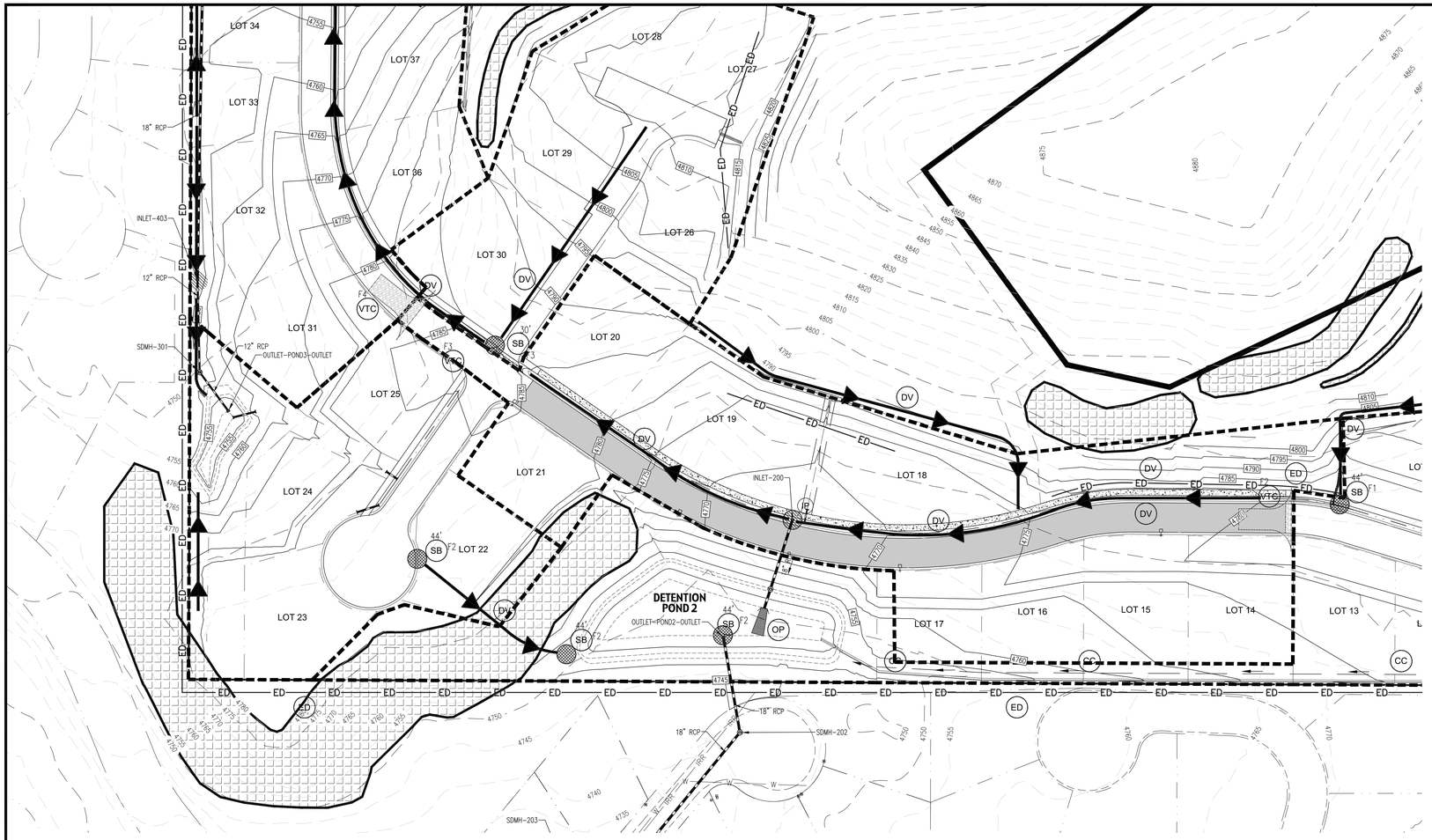
Overall Construction Stormwater Management Plan

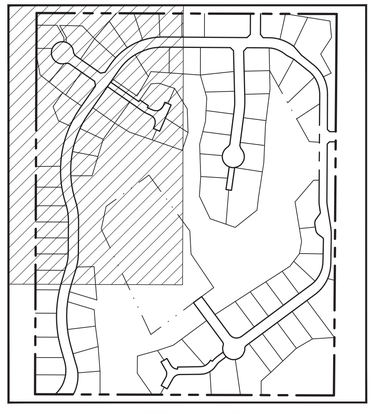
Pinnacle Ridge Subdivison
Filing 2

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: F04-006
DATE: 06/12/17
SCALE:
CAD ID: 6.0swm-f2.dwg

~SHEET~
C6.0





KEY MAP
N.T.S.

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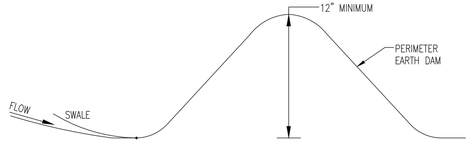

EARTH DAM SECTION
SCALE: N.T.S.

TITLE	KEY	SYMBOL
CONCRETE WASHOUT AREA	CWA	CWA
DIVERSION CHANNEL UNLINED DETAIL A, SHEET C6.2	DV	
STORM DRAIN INLET PROTECTION	IP	
OUTLET PROTECTION	OP	
EARTHEN DAM	ED	ED
VEHICLE TRACKING CONTROL	VTC	F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
SEDIMENT BASIN	SB	25' — INVERT DIAMETER; F2 — PHASE/FILING IN WHICH TO BE CONSTRUCTED
CONCRETE CHANNEL	CC	

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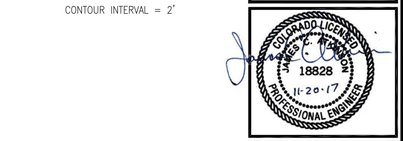

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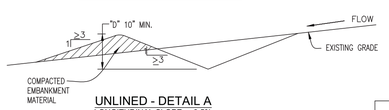
Construction Stormwater Management Plan
Pinnacle Ridge Subdivison
Filing 2
Mariposa Drive
Grand Junction, Colorado

PROJECT NO: F04-006
DATE: 06/12/17
SCALE: SEE PLAN
CAD ID: 6.0swm-f2.dwg

~SHEET~
C6.1

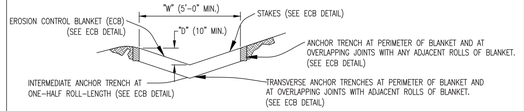
DIVERSION DITCH DETAIL A

DV

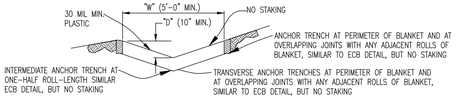


UNLINED - DETAIL A
LONGITUDINAL SLOPE ≤ 0.5%

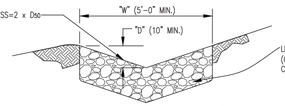




EROSION CONTROL BLANKET (ECB) LINED - DETAIL B
LONGITUDINAL SLOPE 0.5% TO 3 %



PLASTIC LINED - DETAIL C
LONGITUDINAL SLOPE 3% TO 33%



RIPRAP LINED - DETAIL D
LONGITUDINAL SLOPE 3% TO 33%

DIVERSION DITCH INSTALLATION NOTES

1. SEE PLAN VIEW FOR:
   - LOCATION OF DIVERSION DITCH.
   - TYPE OF DITCH (UNLINED, ECB PLASTIC LINED OR RIPRAP LINED).
   - LENGTH OF EACH TYPE OF DITCH.
   - DEPTH, "D", AND WIDTH, "W" DIMENSIONS.
   - FOR ECB LINED DITCH, EROSION CONTROL BLANKET TYPE (SEE ECB DETAIL).
   - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP, "D 50 ".
2. SEE DRAINAGE PLANS FOR DETAILS OF ANY PERMANENT CONVEYANCE FACULTIES OR DIVERSION DITCHES EXCEEDING A 2 YEAR FLOOD 10 CFS.
3. DIVERSION DITCHES INDICATED ON INITIAL SWMP PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES..
4. FOR ECB LINED DITCHES, INSTALLATION OF EROSION CONTROL BLANKET SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.
5. IN LOCATIONS WHERE CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION DITCH, THE PERMITTEES SHALL INSTALL A TEMPORARY CULVERT WITH A MINUM DIAMETER OF 12-INCHES.

DIVERSION DITCH MAINTENANCE NOTES

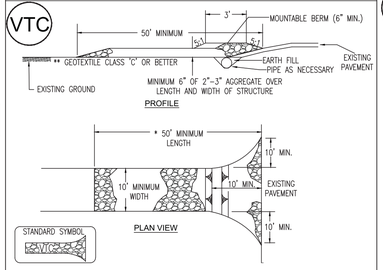
1. THE SWMP MANAGER SHALL INSPECT DIVERSION DITCHES WEEKLY AND DURING AND AFTER ANY STORM. MAKE REPAIRS AS NECESSARY.
2. DIVERSION DITCHES ARE TO REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION, OR IF APPROVED BY LOCAL JURISDICTION MAY BE LEFT IN PLACE.
3. IF DIVERSION DITCHES ARE REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, DRILL SEEDED, HAY CRIMPED MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

DETAIL BASED ON DETAILS PROVIDED BY DOUGLAS COUNTY

Urban Drainage and Flood Control District Drainage Criteria Manual (V.3)	Figure C5-3 DIVERSION DITCH AND DIKE

STABILIZED CONSTRUCTION ENTRANCE

VTC

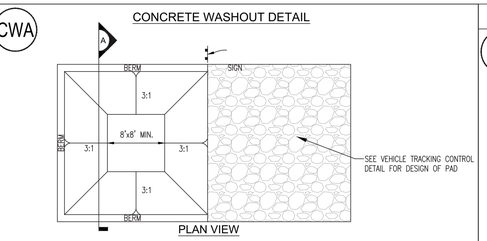


Construction Specification

1. Length – minimum of 50' (*30' for single residence lot).
2. Width – 10' minimum, should be flared at the existing road to provide a tuning radius
3. Geotextile fabric (filter cloth) shall placed over the exiting around prior to placing stone. **This plan approval authority may not require single family residence to use geotextile.
4. Stone – crushed aggregate (2" to 3") or reclaimed or recycled concrete equivalent shall be placed at least 6" deep over the length and width of the entrance.
5. Surface Water – all surface water flowing to or diverted toward construction entrances shall be piped through the entrance, maintaining positive drainage. Pipe installed through the stabilized construction entrance shall be protected with a mountable berm with 5:1 slopes and a minimum of 6" of stone over the pipe. Pipe has to be sized according to the drainage. When the SCE is located at a high spot and has no drainage to convey a pipe will not be necessary. Pipe should be sized according to the amount of runoff to be conveyed. A 6" minimum will be required.
6. Location – A stabilized construction entrance shall be located at every point where construction traffic enters or leaves a construction site. Vehicles leaving the site must travel over the entire length of the stabilized construction entrance.

CONCRETE WASHOUT DETAIL

CWA



SECTION A

CONCRETE WASHOUT AREA INSTALLATION NOTES

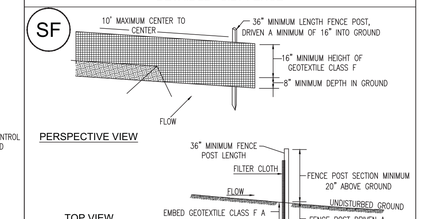
1. SEE PLAN VIEW FOR LOCATIONS OF CONCRETE WASHOUT AREA
2. THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT ON SITE.
3. VEHICLE TRACKING CONTROL IS REQUIRED AT THE ACCESS POINT.
4. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
5. EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION

CONCRETE WASHOUT AREA MAINTENANCE NOTES

1. THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
2. AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
3. WHEN THE CONCRETE WASHOUT AREA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, DRILL SEED AND CRIMP MULCH OR OTHERWISE STABILIZE IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
4. INSPECT WEEKLY, DURING AND AFTER ANY STORM EVENT.

DETAIL 22 - SILT FENCE

SF



Construction Specifications

1. Fence posts shall be a minimum of 36" long driven 16" minimum into the ground. Wood posts shall be 11/2" x 11/2" square (minimum) cut, or 13/4" diameter (minimum) round and shall be of sound quality hardwood. Steel posts will be standard T or U section weighting not less than 1.00 pound per linear foot.
2. Geotextile shall be fastened securely to each fence post with wire ties or staples at top and mid-section and shall meet the following requirements for Geotextile Class F:

Tensile Strength:	50 lbs./in. (min.)	Test: MSMT 509
Tensile Modulus:	20 lbs./in. (min.)	Test: MSMT 509
Flow Rate	0.3 gal. ft. / minute (max.)	Test MSMT 322
Efficiency	75% (min.)	Test: MSMT 322

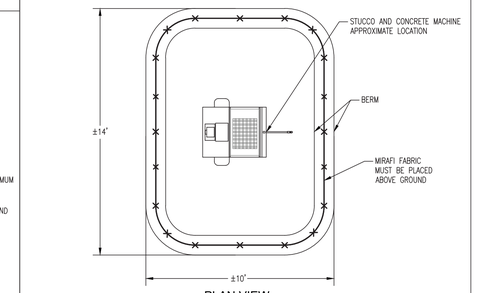
3. Where ends of geotextile fabric come together, they shall be overlapped, folded and stapled to prevent sediment bypass.
4. Silt Fence shall be inspected after each rainfall event and maintained when bulges occur or when sediment accumulation reached 50% of the fabric height.

SILT FENCE

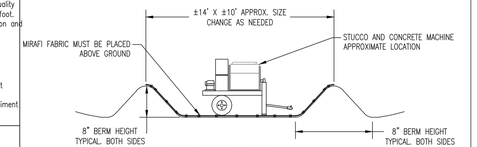
Silt Fence Design Criteria

Slope Steepness	(Maximum) Slope Length	(Maximum) Silt Fence Length
Flatter than 50:1	unlimited	unlimited
50:1 to 10:1	125 feet	1,000 feet
10:1 to 5:1	100 feet	750 feet
5:1 to 3:1	60 feet	500 feet
3:1 to 2:1	40 feet	250 feet
2:1 and steeper	20 feet	125 feet

NOTE:
In areas of less than 2% slope and sandy soils (USDA general classification system, soil Class A) maximum slope length and silt fence length will be unlimited. In these areas a silt fence may be the only perimeter control required.



PLAN VIEW
SCALE: N.T.S.

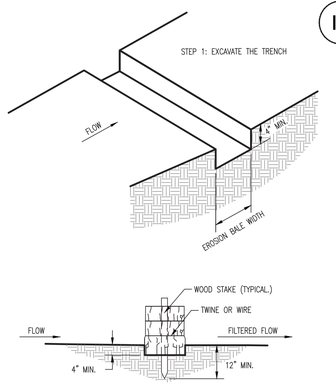


ELEVATION VIEW
SCALE: N.T.S.

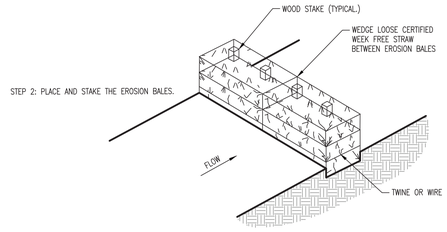
STUCCO & CONCRETE MACHINE BMP
SCALE N.T.S.

EROSION BALE BMP

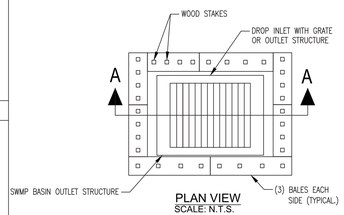
IP



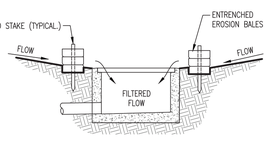
EROSION BALE TRENCHING AND STAKING
SCALE: N.T.S.



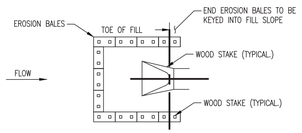
EROSION BALE BMP
SCALE: N.T.S.



PLAN VIEW
SCALE: N.T.S.



SECTION A-A
EROSION FILTER AT DROP INLET
SCALE: N.T.S.



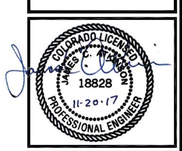
PLAN VIEW
EROSION BALE CULVERT INLET PROTECTION
SCALE: N.T.S.

NOTES

1. STAKES SHALL BE WOOD AND SHALL BE 2" X 2" NOMINAL.
2. EROSION BALES SHALL BE 18" X 18" X 36".
3. EROSION BALES SHALL BE ENTRENCHED 4 IN. MINIMUM INTO THE SOIL TIGHTLY ABUTTED WITH NO GAPS, STAKED, AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERIMETER.

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828



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MAJOR SUBDIVISION
FINAL PLAN

REV.	DATE	COMMENT
1	8/09/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017 BY
2	10/11/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017 DLS
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017 JSY

Construction Stormwater Management Plan Details

Pinnacle Ridge Subdivison
Filing 2

Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/12/17**
SCALE:
CAD ID: **6.0swm-f2.dwg**

~SHEET~
C6.2

VORTEX
ENGINEERING & ARCHITECTURE, INC.

LETTER OF TRANSMITTAL

VIA: Hand Delivered

TO: Mesa County Building Department
Attn: Darrell Bay
200 South Spruce Street
Grand Junction, CO 81501

RE: Pinnacle Ridge – Filing 2
Mariposa Drive
Grand Junction, CO

DATE: November 10, 2017
VEI #: F04-006

WE ARE SENDING YOU ☐ Shop drawings ☐ Copy of letter ☒ Attached ☐ Prints ☐ Change order

COPIES	REVISION	REVISION DATE	SHEET NO.	DESCRIPTION
One (1)				Copy of the Final Geotechnical Report (Fillings 1, 2 & 3), prepared by Huddleston-Berry, dated 6/7/17
One (1)	2	10/11/17	C2.0	24"x36" Copy of the Overall Grading & Drainage Plan – Filings 1 – 5, prepared by Vortex Engineering, Inc., dated 6/12/17
One (1)	2	10/11/17	C2.1	24"x36" Copy of the Final Grading & Drainage Plan-Filing 2, prepared by Vortex Engineering, Inc., dated 6/12/17
One (1)	2	10/11/17	C2.2	24"x36" Copy of the Final Grading & Drainage Plan-Filing 2 – Road Cross Sections, prepared by Vortex Engineering, Inc., dated 6/12/17
One (1)				Copy of the T.O.F. Table, prepared by Vortex Engineering, Inc., dated 11/09/17

These Are Transmitted: ☐ For review and signature ☒ For your use ☐ As requested

REMARKS:

Dear Mr. Bay,

The above-referenced documents are provided for your use and records. The City of Grand Junction requires that a letter acknowledging your department's receipt of these documents be presented to the City's Engineering department prior to final plan approval by the City. Please affix your signature, or the signature of a representative from you department, to the signature line below as proof of receipt.

Upon your review, should you have any questions or require additional information, please do not hesitate to contact me at 970-245-9051 or by e-mail at jatkinson@vortexeng.us . Thank you.

Vortex Engineering, Inc.

James C. Atkinson, P.E.

Darrell Bay 11-13-17

Signature Date

Darrell Bay - Chief Building official

Print Name & Title – Mesa County Building Department

Cc: File

No Consideration

QUIT CLAIM DEED

Two R & D, LLC, of P.O. Box 39, Fruita, Co 81521 ("Grantor"), for the consideration of Ten Dollars and Other Good and Valuable Consideration, in hand paid, hereby sells and quit claims to Pinnacle Ridge Homeowners Association, Inc., of P.O. Box 39, Fruita, CO 81521 ("Grantee"), all right, title and interest in and to the drainage easements as set forth on the plat for Pinnacle Ridge Subdivision **Filing 2**

also known as street and number as: Vacant Land

with all its appurtenances, and subject to 2017 general taxes, payable in 2018, and all subsequent taxes; easements, right-of-way, restrictions, covenants, conditions and reservation of record or in use.

Signed on _____, 2017

_____
Robert W. Jones II, Managing Member
Two R & D, LLC

STATE OF COLORADO)
) ss.
COUNTY OF MESA)

The foregoing instrument was acknowledged before me on _____, 2017, by Robert W. Jones II, Managing Member of Two R & D, LLC.

_____
Notary Public

November 20, 2017

City of Grand Junction – Planning Department
Attn: Scott Peterson, Senior Planner
250 North 5th Street
Grand Junction, CO 81501

RE: Pinnacle Ridge Subdivision Filing 2
Response to Comments – Round 3
East of Mariposa Drive
Grand Junction, CO
VEAI #: F04-006
FILE #: SUB-2017-273

Dear Mr. Peterson,

Pinnacle Ridge Subdivision is proposed at the above-referenced location in the City of Grand Junction. The following information is provided in response to Round 2 Review Comments dated November 12, 2017 from various City Departments and outside agencies.

CITY PLANNING –Scott Peterson

1. Subdivision Plat (Sheet 1):

a. Label Temporary Turn-Around Easement at the end of Lots 20 & 21 that is being provided on the Filing 1 plat. Senior City Staff Attorney will prepare dedication document for Temporary Turn-Around Easement for property owner's signature to be recorded at time of final subdivision plan recording for Filing 1. No separate legal description or map exhibit is necessary as proposed dedication document can refer to the plat. Applicant is responsible for all recording fees.

Applicant's Response:
Comment acknowledged.

b. The off-site 15' Sewer Easement located within Tract A as dedicated on the Filing 1 plat should be a "15' Utility Easement", not "Sewer" to match the Filing 1 plat. Same comment for Tract B. Please revise as necessary.
Code Reference: V-15 of the SSIDS Manual.

Applicant's Response:
The revisions to the Final Plat have been made.

2. Dedication Documents, etc.:

Submit conveyance document for proposed private drainage easement to the HOA, along with legal description and map exhibit, if applicable, for review prior to recording.
Code Reference: IV-2 of the SSIDS Manual.

Applicant's Response:
The conveyance documents are included in this re-submittal.

CITY DEVELOPMENT ENGINEER

1. General:

a. When the grading plan is complete, provide a letter from the building department stating they have received hard copies of 1) the geotechnical report, 2) the final grading plan, and 3) a tabulation of

the minimum and maximum finished floor elevations by lot. Also reference the individual lot specific grading and drainage plan requirement. This must be the final grading plan and tabulation after all revisions. Include the revision date for the grading plan on the letter: this date must match the revision date on the final plans to be approved by the City.

Applicant's Response:
See attached Letter of Transmittal from Mesa County Building Department.

b. Erosion control and revegetation are key elements to the successful development of this project. The City and Developer have agreed to be flexible to add/delete or change the plans as appropriate during construction to achieve necessary results.

Applicant's Response:
Comment acknowledged.

2. Plans:
SSMH B3 is a drop manhole. Call out as such. Be aware, it must be epoxy coated and adds substantially to the cost.

Applicant's Response:
Note has been added to Sheet C4.0 calling out "drop manhole" and to epoxy coat the manhole.

3. DIA:

a. The cost for the rock in the ditches looks very low. Look at the filing 1 exhibit B too.

Applicant's Response:
The lower cost for the rock is due to the fact that a significant amount will be obtained on-site.

b. Provide evidence of payment to the dry utility companies or include in the DIA.

Applicant's Response:
Prior to start of construction, the evidence of payment to the dry utility companies will be provided.

CITY SURVEYOR – Peter Krick – peterk@gjcity.org (970) 256-4003

There are no additional comments or suggestions.

Applicant's Response:
Comment acknowledged.

OUTSIDE REVIEW AGENCY COMMENTS
(Non-City Agencies)

Ute Water Conservancy District - Jim Daugherty - jdaugherty@utewater.org (970) 242-7491

For sewer crossings less than 18-in below watermains, please show cap on sewer per std detail.

Applicant's Response:
Comment acknowledged.

REVIEW AGENCY
(Responding with "No Comment" or have not responded as of the due date)

The following Review Agencies have <u>not</u> responded as of the comment due date.

1. N/A

The Petitioner is required to submit electronic responses, labeled as "**Response to Comments**" for the following agencies:

1. **City Planning**
2. **City Development Engineer**
3. **City Surveyor**
4. **Ute Water Conservancy District**

Date due: **February 12, 2017**

Please provide a written response for each comment and, for any changes made to other plans or documents indicate specifically where the change was made.

Vortex Engineering, Inc. looks forward to working successfully with the City of Grand Junction to permit this project.

Upon your review of this information, should you have any questions or require additional information, please do not hesitate to contact me at 970-245-9051. Thank you.

Sincerely,
Vortex Engineering, Inc.

Robert W. Jones, II, P.E.

Cc: File

City of Grand Junction
Review Comments

Date: December 11, 2017 **Comment Round No.** 4 **Page No.** 1 of 3
Project Name: Pinnacle Ridge Subdivision, Filing 2 **File No:** SUB-2017-273
Project Location: East of Mariposa Drive

Check appropriate [X] **if comments were mailed, emailed, and/or picked up.**

Property Owner(s): Two R & D LLC – Attn: Robert Jones II
[ ] **Mailing Address:** P. O. Box 39, Fruita, CO 81521
[X] **Email:** rjones@vortexeng.us **Telephone:** (970) 245-9051
[ ] **Date Picked Up:** _____ **Signature:** _____

Representative(s): Vortex Engineering Inc. – Attn: Robert Jones II
[ ] **Mailing Address:** 2394 Patterson Road, Suite 201, Grand Junction, CO 81505
[X] **Email:** rjones@vortexeng.us **Telephone:** (970) 245-9051
[ ] **Date Picked Up:** _____ **Signature:** _____

Developer(s):
[ ] **Mailing Address:**
[ ] **Email:** **Telephone:**
[ ] **Date Picked Up:** _____ **Signature:** _____

CITY CONTACTS

Project Manager: Scott D. Peterson, Senior Planner
Email: scottp@gjcity.org **Telephone:** (970) 244-1447

Dev. Engineer: Rick Dorris
Email: rickdo@gjcity.org **Telephone:** (970) 256-4034

City of Grand Junction
REQUIREMENTS
(with appropriate Code citations)

CITY PLANNING

1. Dedication Documents, etc.:
Senior City Staff Attorney has reviewed and approved submitted Quit Claim Deed for the conveyance of proposed private drainage easements to the HOA. FYI. This document can be a Quit Claim Deed in this instance versus a Warranty Deed since the Deed is not dedicating any land to the HOA.
Code Reference: IV-2 of the SSIDS Manual.
Applicant's Response:
Document Reference:

2. Site Plan for Recording (Sheet 1):
a. Change name of Ridgeway Court to "E Plateau Court".
b. Add/Label typical Front, Side and Rear Yard Setbacks for a lot on the east side of Aiguille Drive.
c. Subdivision phasing line appears to not incorporate the entire property for Lots 14 through 17. Please revise.
Code Reference: V-22 of the SSIDS Manual.

Applicant's Response:
Document Reference:

CITY DEVELOPMENT ENGINEER

DIA

Review Comment: Provide evidence of payment to the dry utility companies or include in the DIA.

Applicant's Response:
Document Reference:

OUTSIDE REVIEW AGENCY COMMENTS

(Non-City Agencies)

Review Agency: Ute Water Conservancy District
Contact Name: Jim Daugherty
Email / Telephone Number: jdaugherty@utewater.org (970) 242-7491

- Show four-inch line in Spire Ct. constructed a minimum of 23 feet sat the intersection.
- Show the BO cap & TB for the filing line end two/start three.
- Provide FL three SS P&P for review of crossing at intersection of Spire and Aiguille.
- Remove second valve shown at the entrance to the subdivision.

Applicant's Response:

REVIEW AGENCIES

(Responding with "No Comment" or have not responded as of the due date)

The following Review Agencies have <u>not</u> responded as of the comment due date.

1. N/A.

The Petitioner is required to submit electronic responses, labeled as "**Response to Comments**" for the following agencies:

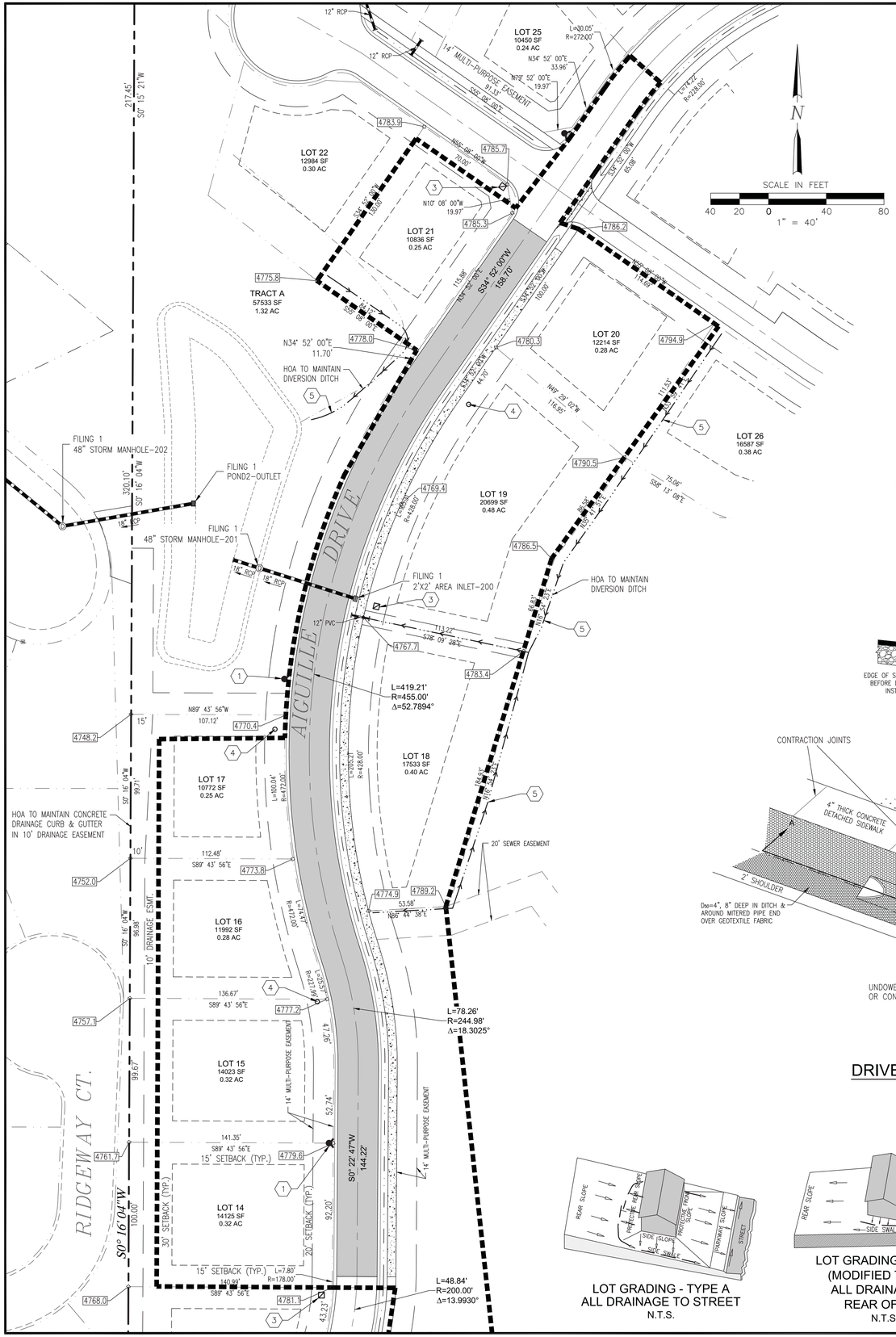
1. **N/A. Application is Approved. Please follow-up with City Project Manager and Ute Water Conservancy District for any remaining items yet to be completed as part of project approval.**

Date due: N/A.

Please provide a written response for each comment and, for any changes made to other plans or documents indicate specifically where the change was made.

I certify that all of the changes noted above have been made to the appropriate documents and plans and there are no other changes other than those noted in the response.

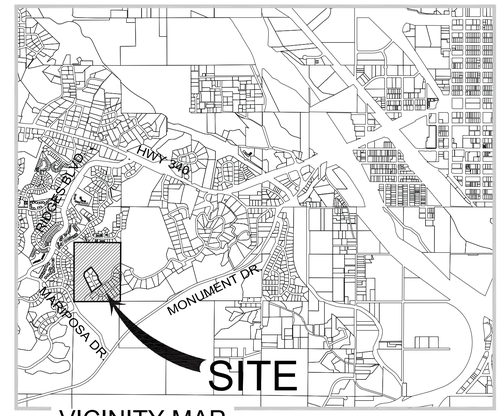
Applicant's Signature	Date



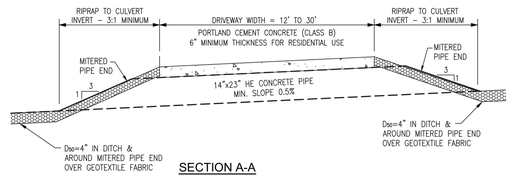
CONSTRUCTION NOTES:

1. PROPOSED FIRE HYDRANT
2. PROPOSED MAILBOX PAD
3. PROPOSED ELECTRIC TRANSFORMER BY XCEL ENERGY
4. PROPOSED ELECTRIC PEDESTAL BY XCEL ENERGY
5. PROPOSED DIVERSION DITCHES DO NOT DISTURB

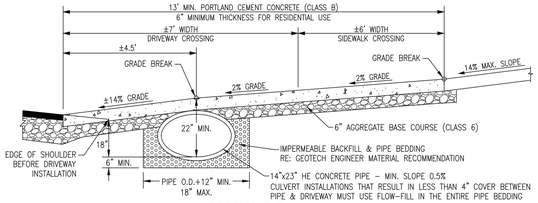
FILING 2 TOF TABLE			
Lot	*Grading*	*Min. TOF*	*Max. TOF*
14	Type C	4781.40	4781.90
15	Type C	4779.40	4779.90
16	Type C	4776.50	4777.00
17	Type C	4773.40	4773.90
18	Type A	4773.00	4773.50
19	Type A	4774.50	4775.50
20	Type A	4782.50	4784.50
21	Type C	4784.50	4786.50



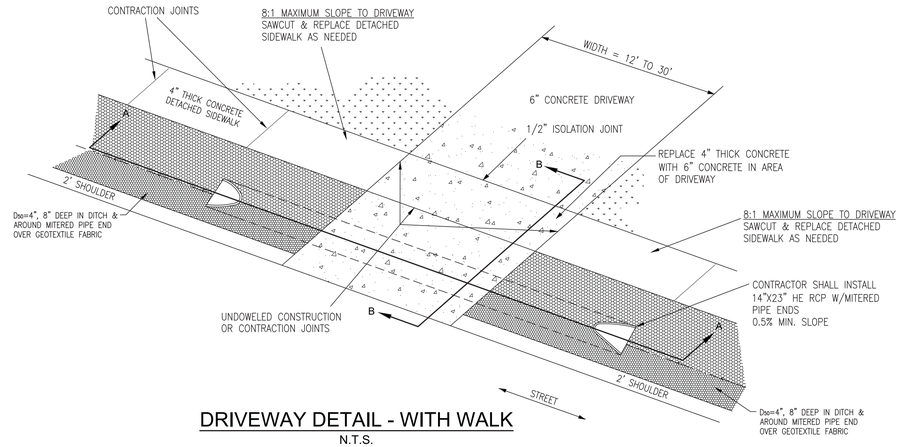
VICINITY MAP



SECTION A-A



SECTION B-B



DRIVEWAY DETAIL - WITH WALK
N.T.S.

LOT GRADING - TYPE A
ALL DRAINAGE TO STREET
N.T.S.

LOT GRADING - TYPE C
(MODIFIED TYPE A)
ALL DRAINAGE TO
REAR OF LOT
N.T.S.

PROPOSED LAND USE TABLE				
USE	*AREA*	*AC*	*% OF TOTAL*	*OWNER*
SINGLE FAMILY LOTS (79 TOTAL)	964,004.38 S.F.	22.13	49.06%	PRIVATE
RIGHT-OF-WAY:	249,584.38	5.73	12.70%	HOA
PRIVATE DRIVE	2,356.03 S.F.	0.05	0.12%	PRIVATE
TRACTS A, B, C, D, E, F & G	181,709.41 S.F.	4.17	9.25%	HOA
OPEN SPACE	567,371.36	13.03	28.87%	HOA
TOTAL SITE AREA:	1,965,025.56 S.F. – 45.11 AC			

GENERAL NOTES

1. REFER TO THE GEOTECHNICAL INVESTIGATION BY HUDDLESTON-BERRY ENGINEERING & TESTING, LLC. DATED JUNE 07, 2017 FOR RECOMMENDATIONS REGARDING PAVEMENT, SLABS, FOUNDATIONS AND GROUNDWATER MITIGATION REQUIREMENTS.
2. ALL LOTS MUST HAVE AN INDIVIDUAL GEOTECHNICAL INVESTIGATION PERFORMED AND A SITE SPECIFIC ENGINEERING FOUNDATION.
3. INDIVIDUAL LOT SPECIFIC GRADING AND DRAINAGE PLANS MUST BE SUBMITTED TO THE CITY FOR BUILDING PERMIT APPROVAL.
4. IN AREAS WHERE LOT GRADING EXPOSES THE UNDERLYING ROCK LAYERS, THE FINAL GRADING SHALL CONFORM TO THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER.
5. ALL WATER SERVICES SHALL HAVE A PRESSURE REGULATED YOKE INSTALLED BASED ON PRESSURE LIMITS AS DETERMINED IN THE HYDRAULIC ANALYSIS.
6. DIVERSION DITCHES SHOWN ON THIS PLAN SHALL NOT BE DISTURBED AT ANY TIME.
7. DRIVEWAYS SHALL CONFORM TO THE DETAIL SHOWN ON THIS PLAN.
8. LOTS 44 & 45 SHALL HAVE 3 CAR GARAGES (MINIMUM) TO MEET ON-SITE PARKING REQUIREMENT.
9. HOA SHALL MAINTAIN ALL CONCRETE CURBS, DETENTION PONDS, OUTLET STRUCTURES, RIPRAP, CULVERTS, DRAINAGE DITCHES, EASEMENTS AND TRACTS LOCATED OUTSIDE OF PUBLIC RIGHTS-OF-WAY. IMPROVEMENTS LOCATED WITHIN PUBLIC RIGHTS-OF-WAY ARE TO BE MAINTAINED BY THE CITY OF GRAND JUNCTION.

LEGEND

- PROPERTY BOUNDARY
- BUILDING ENVELOPE
- PROPOSED LOT LINE
- EASEMENT
- EX EDGE OF ASPHALT
- RIGHT-OF-WAY
- PROPOSED ASPHALT
- PROPOSED CONCRETE
- PROPOSED STORMDRAIN
- DIVERSION/INTERCEPT DITCH
- DRAINAGE DIRECTION
- 4550.00 LOT CORNER SPOT ELEVATION
- PROPOSED FIRE HYDRANT

CLERK AND RECORDER'S CERTIFICATE

STATE OF COLORADO } ss
COUNTY OF MESA }

I hereby certify that this instrument was filed in my office at _____o'clock__M., this _____ day of _____ A.D. 2017, and is duly recorded in Book No. _____, at page _____, Reception No. _____, Drawer No. _____ Fees $ _____

_____
Clerk and Recorder

By:_____
Deputy

VORTEX ENGINEERING, INC.
• CONSTRUCTION MANAGERS & SITE PLANNERS
• PROJECT MANAGERS
• CIVIL & CONSULTING ENGINEERS
2394 Patterson Road, Suite 201
Grand Junction, CO 81505
Phone: (970) 245-9051
Fax (970) 245-7639

James C. Atkinson
PROFESSIONAL ENGINEER
COLORADO LICENSE No. 18828

COLORADO LICENSED JAMES C. ATKINSON 18828 11-20-17 PROFESSIONAL ENGINEER

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FOR REVIEW - NOT FOR CONSTRUCTION

MAJOR SUBDIVISION
FINAL PLAN

REV	DATE	COMMENT	BY
1	8/08/17	REVISED PER CITY COMMENT ROUND 1, DATED JULY 18, 2017	DLS
2	10/11/17	REVISED PER CITY COMMENT ROUND 2, DATED SEPT. 13, 2017	DLS
3	11/20/17	REVISED PER CITY COMMENT ROUND 3, DATED NOV. 12, 2017	JSY

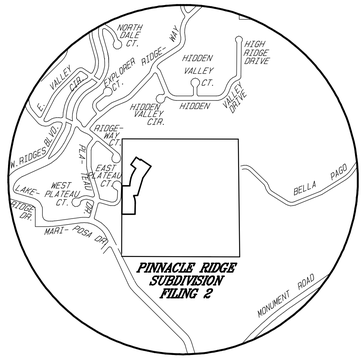
Site Plan for Recording
Pinnacle Ridge Subdivision
Filing 2
Mariposa Drive
Grand Junction, Colorado 81507

PROJECT NO: **F04-006**
DATE: **06/08/17**
SCALE: **1" = 60'**
CAD ID: **pinnacle-sfr-f2.dwg**

~SHEET~
1 of 1

PINNACLE RIDGE SUBDIVISION, FILING 2

A REPLAT OF LOT 100, PINNACLE RIDGE SUBDIVISION FILING 1, Reception No. *******, W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.
City of Grand Junction, Mesa County, Colorado



VICINITY MAP
N.T.S.

LEGEND & ABBREVIATIONS

- FD MESA COUNTY SURVEY MARKER
- FD 3.25" ALUMINUM CAP STAMPED THOMPSON LANGFORD CORP LS 18480
- FD #5 REBAR W/1.5" ALUMINUM CAP STAMPED LS 5933
- SET #5 REBAR W/2" ALUM. CAP STAMPED D H SURVEYS LS 20677

M.C.S.M. = MESA COUNTY SURVEY MARKER
G.V.A.L.C.S. = GRAND VALLEY AREA LOCAL COORDINATE SYSTEM
M.P.E. = MULTIPURPOSE EASEMENT
SEC. = SECTION
DED. = DEDICATED
SQ.FT. = SQUARE FEET

To be completed by the City of Grand Junction personnel.
The accuracy of this information is the responsibility of the City of Grand Junction.

Declaration of Covenants, Restrictions and Conditions of the Pinnacle Ridge Homeowner's Association, Inc.

recorded under Reception No. _____.

Drainage Easements are conveyed to the Pinnacle Ridge Homeowner's Association

recorded under Reception No. _____.

CITY APPROVAL

This plat of PINNACLE RIDGE SUBDIVISION, FILING 2, a subdivision of the City of Grand Junction, County of Mesa, State of Colorado, is approved and accepted

on the ____ day of _____, 2017 A.D.

_____ City Manager

_____ City Mayor

CLERK AND RECORDER'S CERTIFICATE

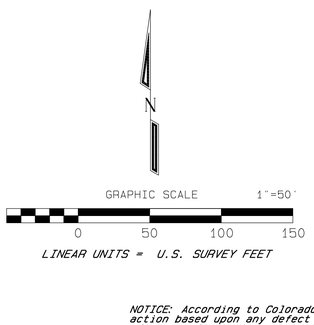
This plat was accepted for filing in the office of the Clerk and Recorder of Mesa County, Colorado at _____ o'clock__M., on this ____ day of _____ 2017 A.D., and was recorded at Reception No. _____, Drawer No. _____, and Fees _____.

_____ Clerk and Recorder

_____ Deputy

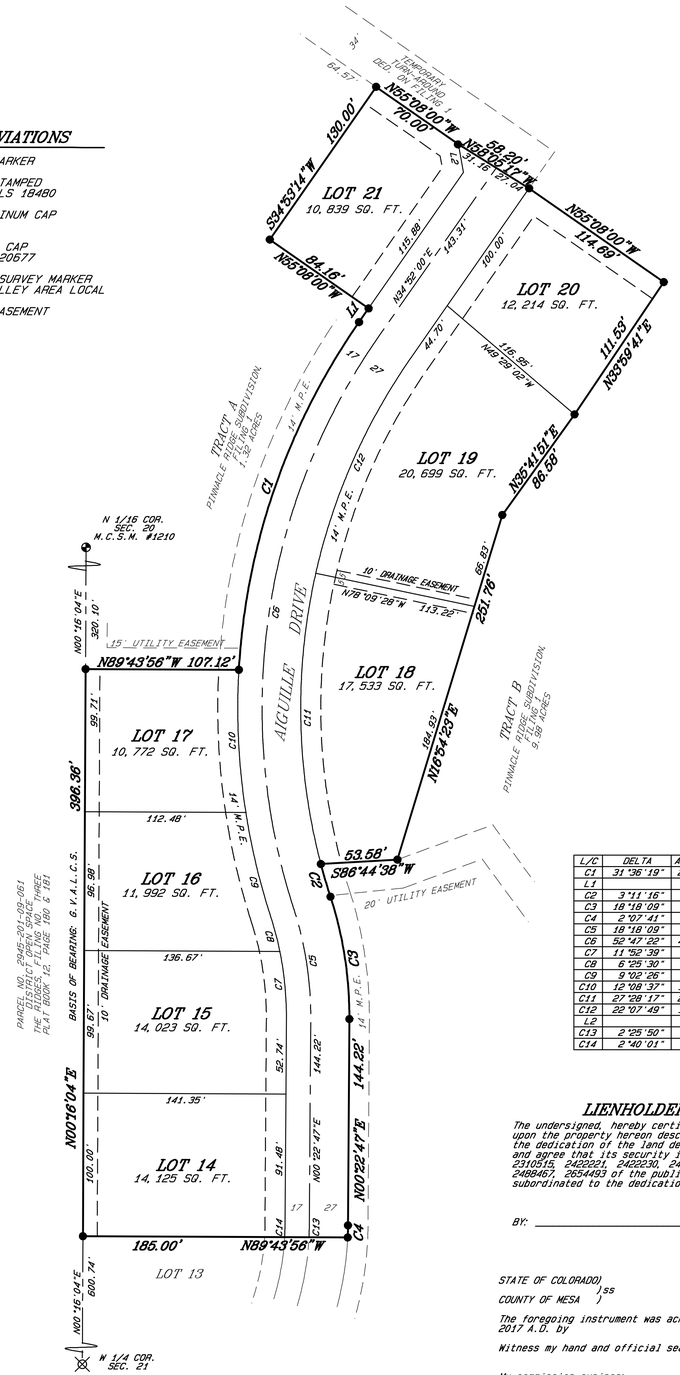
AREA SUMMARY

LOTS	= 2.58 AC./ 77%
DED. ROADS	= 0.80 AC./ 23%
TOTAL	= 3.38 AC./100%



LINEAR UNITS = U.S. SURVEY FEET

NOTICE: According to Colorado law you must commence any legal action based upon any defect in the survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of this certification/statement shown hereon.



L/C	DELTA	ARC/TANG	RADIUS	CHORD	CHORD BEARING
C1	31°36'19"	260.36'	472.00'	257.07'	N19°03'51"E
L1		11.70'			S34°52'00"W
C2	3°11'16"	23.81'	428.00'	23.81'	S16°19'43"E
C3	18°18'09"	86.88'	271.98'	86.51'	S08°46'17"E
C4	2°07'43"	8.43'	227.00'	8.43'	S01°26'37"W
C5	18°18'09"	78.26'	244.98'	77.93'	S08°46'17"E
C6	52°47'29"	419.21'	455.00'	404.54'	S08°29'29"W
C7	11°52'39"	47.26'	227.98'	47.18'	N05°33'32"W
C8	6°25'30"	25.57'	227.98'	25.55'	N14°42'35"W
C9	9°02'26"	74.48'	472.00'	74.40'	N13°24'08"W
C10	12°08'37"	100.04'	472.00'	99.85'	N02°48'37"W
C11	27°28'17"	205.21'	428.00'	203.26'	S00°59'52"E
C12	22°07'49"	165.31'	428.00'	164.29'	S23°48'06"W
L2		19.97'			S10°08'00"E
C13	2°25'50"	8.48'	200.00'	8.48'	S01°35'42"W
C14	2°40'01"	8.52'	183.00'	8.52'	N01°42'47"E

DEDICATION

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, TWO R & D, LLC a Colorado limited liability company is the owner of that real property situate in the W 1/2 NW 1/4 of Section 21, Township 1 South, Range 1 of the Ute Meridian, City of Grand Junction, Mesa County, Colorado; being more particularly described as follows:

Lot 100, Pinnacle Ridge Subdivision, Filing 1, Reception No.

Said parcel contains 3.37 acres more or less.

Said Owner has by these presents laid out, platted and subdivided the above-described real property into Lots, and Tracts as shown hereon, and designated the same as PINNACLE RIDGE SUBDIVISION, FILING 2 in the City of Grand Junction, County of Mesa, State of Colorado, and does hereby offer the following dedications and grants:

All streets, roads and Rights-of-Way are dedicated to the City of Grand Junction for the use of the public forever.

All Multipurpose Easements are dedicated to the City of Grand Junction as perpetual easements for City approved utilities including the installation, operation, maintenance and repair of said utilities and appurtenances which may include but are not limited to, electric lines, cable TV lines, natural gas pipelines, sanitary sewer lines, storm sewers, water lines, telephone lines, traffic control facilities, street lighting, landscaping, trees and grade structures.

All Drainage Easements are granted to the Homeowner's Association by separate instrument.

_____ Robert W. Jones II, Managing Member

STATE OF COLORADO)
)ss
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____ 2017 A.D. by TWO R & D, LLC, Robert W. Jones II, Managing Member.

Witness my hand and official seal: _____ Notary Public

My commission expires: _____

TITLE CERTIFICATION

State of Colorado
County of Mesa

We, Heritage Title Company, a title insurance company, as duly licensed in the State of Colorado, hereby certify that we have examined the title to the hereon described property, that we find the title to the property is vested to Two R & D, LLC, a Colorado limited liability company ; that the current taxes have been paid; that all mortgages not satisfied or released of record or otherwise terminated by law are shown hereon and that there are no other encumbrances of record; that all easements, reservations and right-of-ways of record are shown hereon.

Date: _____ By: _____

SURVEYOR'S STATEMENT

I, Michael W. Drissel, a registered Professional Land Surveyor in the State of Colorado, do hereby state that this survey was performed by me or under my direct responsibility, supervision, and checking. It is based upon my professional knowledge, information and belief according to applicable standards of practice. This is not a guarantee or warranty, either expressed or implied. Title research was supplied by Heritage Title Company under FILE NUMBER: 599-H0502823-900-GTO.

FOR REVIEW

LIENHOLDERS RATIFICATION OF PLAT

The undersigned, hereby certifies that it is a holder of a security interest upon the property hereon described and does hereby join in and consent to the dedication of the land described in said dedication by the owners thereof and agree that its security interest which is recorded under Reception No. 2236040, 2310515, 2420221, 2455030, 2439195, 2488454, 2654494, 2351455, 2351450, 2439196, 2488467, 2654493 of the public records of Mesa County, Colorado shall be subordinated to the dedications shown hereon.

BY: _____ FOR: Alpine Bank

STATE OF COLORADO)
)ss
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____ 2017 A.D. by

Witness my hand and official seal: _____ Notary Public

My commission expires: _____

REVISED 07/28/17
REVISED 09/27/17
REVISED 11/20/17

PINNACLE RIDGE SUBDIVISION FILING 2

LOCATED IN THE
W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.

D H SURVEYS INC.
118 OURAY AVE. - GRAND JUNCTION, CO.
(970) 245-8749

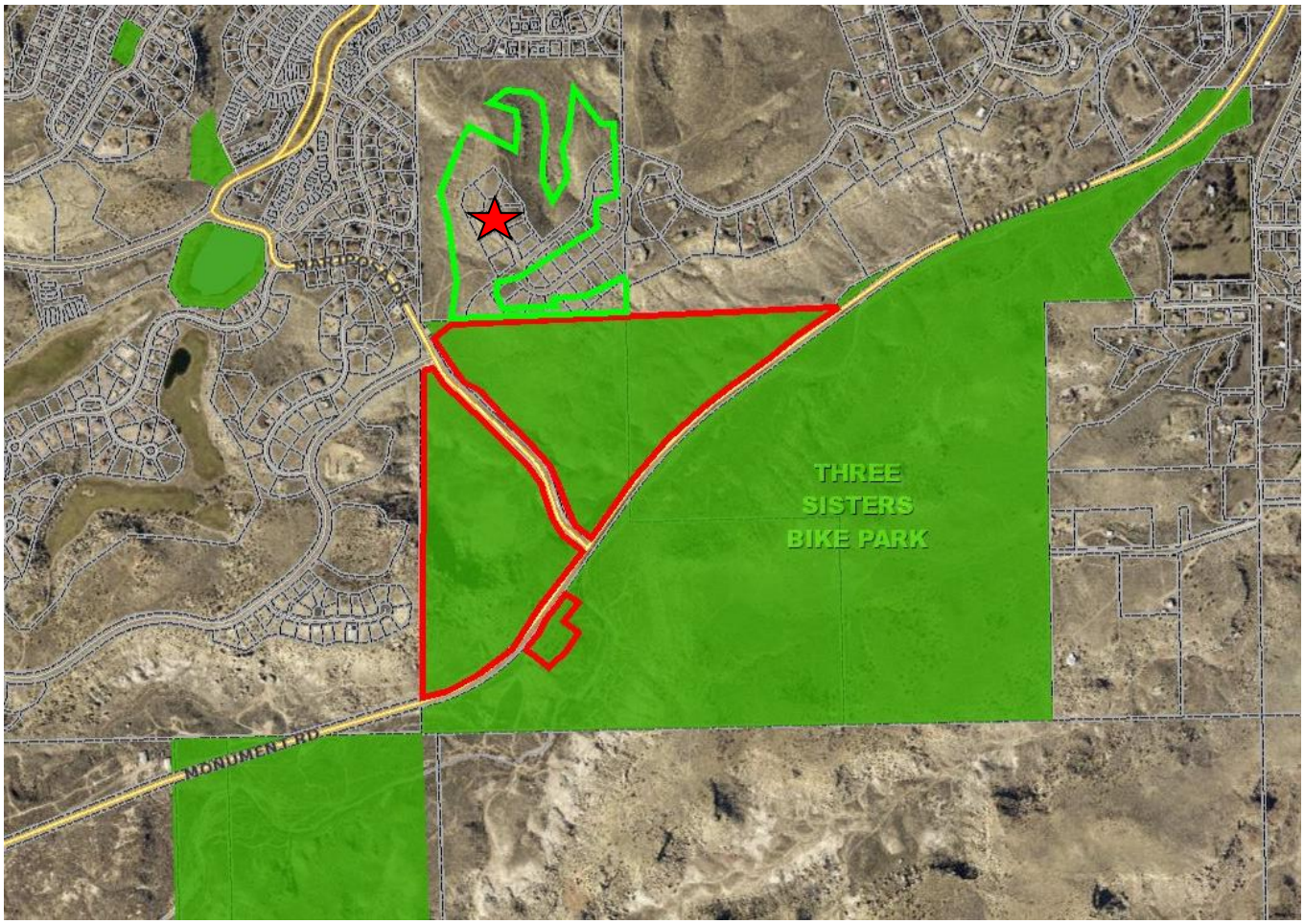
Designed By M.W.D.	Checked By E.E.B.	Job No.	129-04-03
Drawn By TMODEL	Date MAY 2017	Sheet	1 OF 1

Pinnacle Ridge Proposed Open Space Dedication

The majority of the open space in the Pinnacle Ridge subdivision will be platted as Tract B with Filing 1 (for a total of 11.12 acres). Ultimately, this tract will contain **15.06 acres** and will be accessed by public right-of-way upon construction of Aiguille Drive and Elysium Drive. Tract B (outlined in green on the map below*) is adjacent to open space land owned by the City of Grand Junction (the red areas are immediately adjacent to the Pinnacle Ridge open space and the green highlighted areas are also City owned). The City's open space land is contiguous with Mariposa Drive and Monument Road and provides parking and bathroom facilities for the Lunch Loop bike trail and Three Sisters Bike Park.

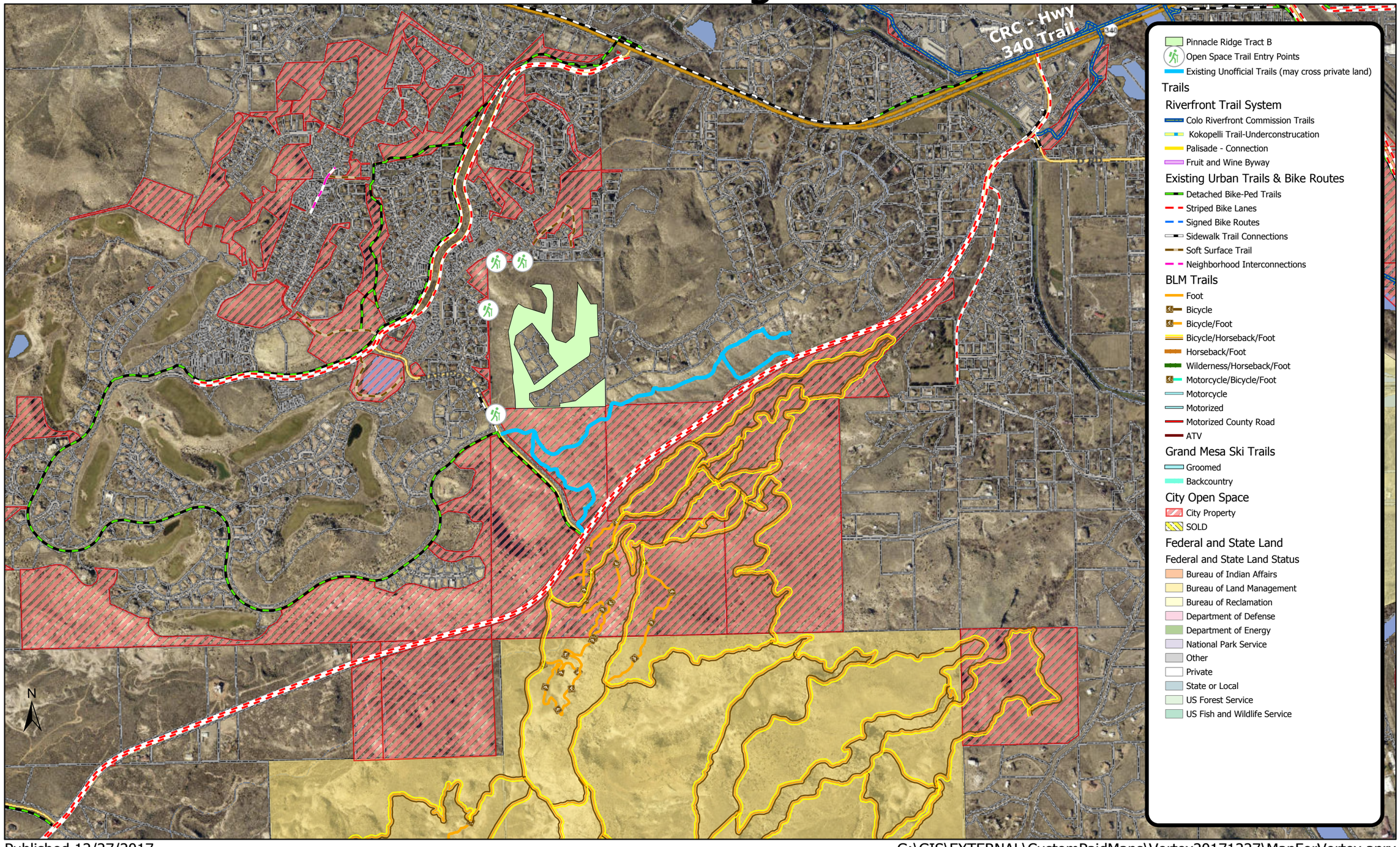
Adding the Pinnacle Ridge open space to the City's existing open space would be a natural extension of the City's park system. Picturesque views from the Pinnacle Ridge open space are unparalleled. Little to no maintenance for the open space is anticipated. In accordance with Section 21.06.020(b), Open Space, the applicant proposes to dedicate the 15.06 acres of open space to the City of Grand Junction for the use and enjoyment of the general public.

*No portion of the Foster Enclave, noted with the red star on the map below, will be included in the Pinnacle Ridge subdivision or open space dedication.




TRACT B
LOT 32
LOT 33
LOT 34
LOT 35
TRACT D
TRACT E
LOT 50
LOT 51
LOT 23
LOT 24
LOT 31
LOT 25
LOT 36
LOT 37
LOT 38
LOT 39
LOT 49
LOT 52
TRACT G
LOT 22
LOT 30
LOT 40
LOT 48
LOT 53
LOT 21
LOT 29
LOT 20
LOT 41
LOT 47
LOT 54
LOT 28
LOT 26
TRACT A
LOT 19
LOT 42
LOT 27
LOT 46
LOT 43
TRACT K
TRACT H
LOT 17
LOT 18
TRACT I
LOT 16
LOT 44
LOT 45
LOT 15
LOT 14
LOT 55
NOT PART OF THIS SUBDIVISION
LOT 13
LOT 56
LOT 5
LOT 57
LOT 12
LOT 58
LOT 11
LOT 59
LOT 72
LOT 60
LOT 4
LOT 61
LOT 71
LOT 10
LOT 70
LOT 9
LOT 3
LOT 62
LOT 69
LOT 8
LOT 63
LOT 68
LOT 2
LOT 7
LOT 64
TRACT J
LOT 67
LOT 65
LOT 66
LOT 1
LOT 6
Tract B proposed dedication to City of GJ Parks Dept.
City of Grand Junction Open Space

Pinnacle Ridge Area



Published 12/27/2017

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PINNACLE RIDGE SUBDIVISION, FILING 1

W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.
City of Grand Junction, Mesa County, Colorado

DEDICATION

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, TWO R & D, LLC a Colorado limited liability company is the owner of that real property situate in the SW 1/4 NW 1/4, the south 10 acres of the NW 1/4 NW 1/4, Section 21, Township 1 South, Range 1 West of the Ute Meridian and a portion of the Energy Center Subdivision recorded under Reception No. 644620, City of Grand Junction, Mesa County, Colorado; being more particularly described as follows:

Beginning at the W 1/4 corner of said Section 21;
thence N00°16'04"E, being the basis of bearing, a distance of 1317.18 feet to the N 1/16 corner of said Section 21;
thence N00°15'21"E a distance of 334.95 feet along the west line of said south 10 acres;
thence S89°46'08"E a distance of 1300.69 feet along the north line of said south 10 acres;
thence S00°32'00"W a distance of 335.15 feet to the NW 1/16 corner of said Section 21;
thence S00°25'55"W a distance of 240.76 feet along the east line of said SW 1/4 NW 1/4;
thence S61°16'33"W a distance of 124.51 feet;
thence along the arc of a curve to the left 266.66 feet, having a central angle of 61°00'00" and a radius of 250.47 feet, the chord of which bears S30°46'33"W a distance of 254.25 feet;
thence along the arc of a curve to the right 208.13 feet, having a central angle of 53°00'00" and a radius of 225.00 feet, the chord of which bears S26°46'33"W a distance of 200.79 feet;
thence S53°16'33"W a distance of 249.38 feet;
thence N33°55'49"W a distance of 175.52 feet;
thence N03°09'01"W a distance of 100.00 feet;
thence N36°13'28"W a distance of 300.00 feet;
thence S53°46'33"W a distance of 230.00 feet;
thence S12°16'33"W a distance of 100.00 feet;
thence S25°13'27"E a distance of 505.16 feet;
thence S53°16'33"W a distance of 157.53 feet;
thence along the arc of a curve to the left 195.51 feet, having a central angle of 53°00'29" and a radius of 211.33 feet, the chord of which bears S26°46'23"W a distance of 188.61 feet to the south line of said SW 1/4 NW 1/4;
thence N89°43'25"W a distance of 290.18 feet to the point of beginning.
Said parcel contains 32.70 acres more or less.

Said Owner has by these presents laid out, platted and subdivided the above-described real property into Lots, and Tracts as shown hereon, and designated the same as PINNACLE RIDGE SUBDIVISION, FILING 1 in the City of Grand Junction, County of Mesa, State of Colorado, and does hereby offer the following dedications and grants:

All streets, roads and Rights-of-Way are dedicated to the City of Grand Junction for the use of the public forever.

All Multipurpose Easements are dedicated to the City of Grand Junction as perpetual easements for City approved utilities including the installation, operation, maintenance and repair of said utilities and appurtenances which may include but are not limited to, electric lines, cable TV lines, natural gas pipelines, sanitary sewer lines, storm sewers, water lines, telephone lines, traffic control facilities, street lighting, landscaping, trees and grade structures.

All Utility Easements are dedicated to the City of Grand Junction as perpetual easements for City approved utilities including the installation, operation, maintenance and repair of said utilities and appurtenances which may include but are not limited to, electric lines, cable TV lines, natural gas pipelines, sanitary sewer lines, storm sewers, water lines, telephone lines, equivalent other public utility providers and appurtenant facilities.

A Drainage Easement over Tract A is dedicated to the City of Grand Junction as a perpetual easement for the inspection, installation, operation, maintenance and repair of detention and drainage facilities and appurtenants thereto. The City of Grand Junction is dedicated reasonable ingress/egress access to the drainage/detention easement areas. The owner(s) and/or the property owners' association, if one exists, is not relieved of its responsibility to inspect, install, operate, maintain and repair the detention and drainage facilities.

All other Drainage easement are granted to the Homeowner's Association by separate instrument.

_____
Robert W. Jones II, Managing Member

STATE OF COLORADO)
)ss
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____ 2017 A.D. by TWO R & D, LLC, Robert W. Jones II, Managing Member.

Witness my hand and official seal: _____
Notary Public

My commission expires: _____

CITY APPROVAL

This plat of PINNACLE RIDGE SUBDIVISION, FILING 1, a subdivision of the City of Grand Junction, County of Mesa, State of Colorado, is approved and accepted on the ____ day of _____, 2017 A.D.

_____ _____
City Manager City Mayor

NOTICE: According to Colorado law you must commence any legal action based upon any defect in the survey within three years after you first discover such defect. In no event may any action based upon any defect in this survey be commenced more than ten years from the date of this certification/statement shown hereon.

TITLE CERTIFICATION

State of Colorado
County of Mesa

We, Heritage Title Company, a title insurance company, as duly licensed in the State of Colorado, hereby certify that we have examined the title to the hereon described property, that we find the title to the property is vested to Two R & D, LLC, a Colorado limited liability company ; that the current taxes have been paid; that all mortgages not satisfied or released of record or otherwise terminated by law are shown hereon and that there are no other encumbrances of record; that all easements, reservations and right-of-ways of record are shown hereon.

Date: _____ By: _____

LIENHOLDERS RATIFICATION OF PLAT

The undersigned, hereby certifies that it is a holder of a security interest upon the property hereon described and does hereby join in and consent to the dedication of the land described in said dedication by the owners thereof and agree that its security interest which is recorded under Reception No. 2236040, 2310515, 2422221, 2422230, 2439195, 2488454, 2654494, 2351449, 2351450, 2439196, 2488467, 2654493 of the public records of Mesa County, Colorado shall be subordinated to the dedications shown hereon.

BY: _____ FOR: Alpine Bank

STATE OF COLORADO)
)ss
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this ____ day of _____ 2017 A.D. by

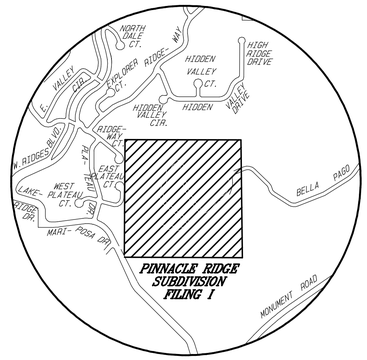
Witness my hand and official seal: _____
Notary Public

My commission expires: _____

CLERK AND RECORDER'S CERTIFICATE

This plat was accepted for filing in the office of the Clerk and Recorder of Mesa County, Colorado at _____ o'clock__M., on this ____ day of _____ 2017 A.D., and was recorded at Reception No. _____, Drawer No. _____, and Fees _____.

_____ _____
Clerk and Recorder Deputy



VICINITY MAP
N.T.S.

To be completed by the City of Grand Junction personnel. The accuracy of this information is the responsibility of the City of Grand Junction.

Declaration of Covenants, Restrictions and Conditions of the Pinnacle Ridge Homeowner's Association, Inc.

recorded under Reception No. _____.

Tracts A and B are conveyed to the Pinnacle Ridge Homeowner's Association, Inc.

recorded under Reception No. _____.

Drainage and Ingress & Egress Easements are conveyed to the Pinnacle Ridge Homeowner's Association

recorded under Reception No. _____.

SURVEYOR'S STATEMENT

I, Michael W. Drissel, a registered Professional Land Surveyor in the State of Colorado, do hereby state that this survey was performed by me or under my direct responsibility, supervision, and checking. It is based upon my professional knowledge, information and belief according to applicable standards of practice. This is not a guarantee or warranty, either expressed or implied. Title research was supplied by Heritage Title Company under FILE NUMBER: 598-H0502023-900-GTO.

FOR REVIEW

REVISED 07/27/17
REVISED 08/24/17
REVISED 09/27/17

PINNACLE RIDGE SUBDIVISION
FILING 1
LOCATED IN THE
W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M.

D H SURVEYS INC.
118 OURAY AVE. - GRAND JUNCTION, CO.
(970) 245-8749

Designed By M.W.D.	Checked By E.E.B.	Job No. 129-04-03
Drawn By TMODEL	Date MAY 2017	Sheet 1 OF 2

PINNACLE RIDGE SUBDIVISION, FILING 1

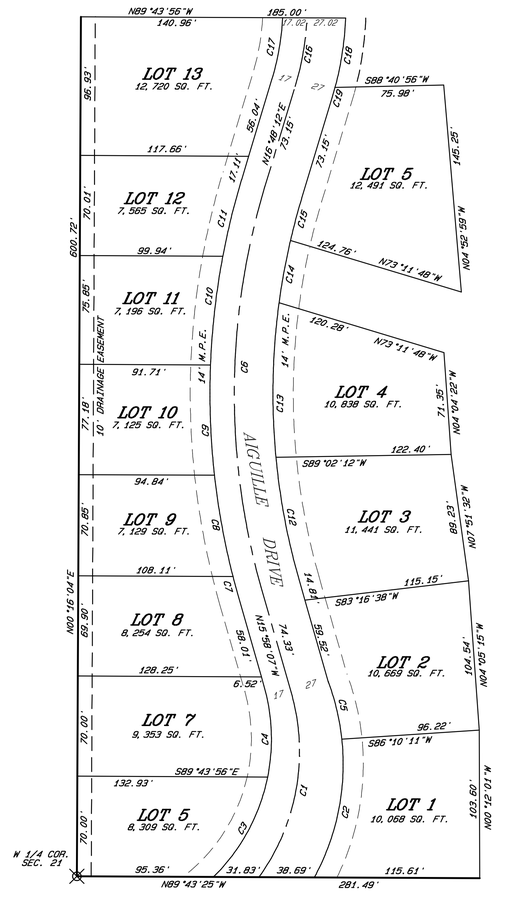
W 1/2 NW 1/4, SEC. 21, T1S, R1W, U.M., City of Grand Junction, Mesa County, Colorado



L	DELTA	ARC	RADIUS	CHORD	CHORD BEARING
L1	2°25'50"	8.48'	200.00'	8.48'	N01°35'42"E
L2		144.22'			S00°22'47"W
L3	18°18'09"	78.26'	244.98'	77.93'	S08°46'17"E
L4	52°47'22"	419.21'	455.00'	404.54'	S08°28'20"W
L5		233.78'			N34°52'00"E
L6	55°33'35"	247.27'	255.00'	237.70'	S62°38'48"W
L7		453.94'			S89°34'24"E
L8	38°23'02"	100.49'	150.00'	98.62'	N70°22'53"W
L9		125.09'			S51°11'22"E
L10	51°34'09"	134.11'	149.00'	129.63'	N25°24'18"W
L11		255.63'			S00°22'47"W

R	DELTA	ARC	RADIUS	CHORD	CHORD BEARING	
R1	33°48'13"	106.20'	180.00'	104.66'	S46°55'03"W	NON-TANGENT
R2	15°24'56"	32.29'	120.00'	32.19'	N56°06'42"E	NON-TANGENT

B	DELTA	ARC	RADIUS	CHORD	CHORD BEARING
B1	61°00'00"	266.66'	250.47'	254.25'	S30°46'33"W
B2	53°00'00"	208.13'	225.00'	200.79'	S26°46'33"W
B3	53°00'20"	195.51'	211.33'	188.61'	S26°46'23"W



SCALE 1" = 50'

LOT & CENTER LINE DIMENSIONS

L/C	DELTA	ARC	RADIUS	CHORD	CHORD BEARING	
C1	51°45'39"	135.51	150.00'	130.95'	S09°54'43"W	
C2	34°44'09"	100.03'	165.00'	98.51'	S11°15'38"W	NON-TANGENT
C3	34°13'41"	80.65'	135.00'	79.45'	N28°28'58"E	
C4	27°20'14"	64.41'	135.00'	63.80'	N02°18'00"W	
C5	14°18'25"	41.20'	165.00'	41.09'	S13°15'41"E	NON-TANGENT
C6	32°46'18"	285.99'	500.00'	282.11'	S00°25'03"W	
C7	1°38'41"	14.84'	517.00'	14.84'	N15°08'46"W	
C8	7°59'00"	72.04'	517.00'	71.98'	N10°19'55"W	
C9	8°33'07"	77.17'	517.00'	77.10'	N02°03'52"W	
C10	8°28'47"	76.51'	517.00'	76.44'	N06°27'05"E	
C11	6°06'43"	55.15'	517.00'	55.12'	N13°44'50"E	
C12	10°33'49"	87.21'	473.00'	87.08'	S10°41'12"E	
C13	13°06'47"	108.25'	473.00'	108.02'	S01°09'06"W	
C14	5°21'55"	44.29'	473.00'	44.28'	S10°23'27"W	
C15	3°43'47"	30.79'	473.00'	30.79'	S14°56'18"W	
C16	13°59'35"	48.84'	200.00'	48.72'	S09°48'24"W	
C17	13°45'24"	43.94'	183.00'	43.83'	N09°55'30"E	
C18	12°25'26"	49.22'	227.00'	49.13'	S08°43'11"W	
C19	1°52'18"	7.42'	227.00'	7.42'	N15°52'03"E	
C20	18°18'09"	86.88'	271.98'	86.51'	S08°46'17"E	
C21	31°36'19"	260.36'	472.00'	257.07'	S19°03'51"W	
L2		53.58'			S86°44'38"W	
C22	31°33'47"	26.44'	48.00'	26.11'	N24°00'53"W	
L3		11.70'			N34°52'00"E	
C23	14°45'44"	58.74'	228.00'	58.58'	S46°08'11"W	
C25	03°11'16"	23.81'	428.00'	23.81'	S16°19'43"E	

INGRESS/EGRESS EASEMENT (varied width)

#	DELTA	ARC	RADIUS	CHORD	CHORD BEARING
EC1	2°25'50"	8.48'	200.00'	8.48'	N01°35'42"E
E1		144.22'			S00°22'47"W
EC2	18°18'09"	78.26'	244.98'	77.93'	S08°46'17"E
EC3	52°47'22"	419.21'	455.00'	404.54'	S08°28'20"W
E2		233.78'			N34°52'00"E
EC4	55°33'35"	247.27'	255.00'	237.70'	S62°38'48"W
E3		453.94'			S89°34'24"E
EC5	38°23'02"	100.49'	150.00'	98.62'	N70°22'53"W
E4		125.09'			S51°11'22"E
EC6	51°34'09"	134.11'	149.00'	129.63'	N25°24'18"W
E9		255.63'			S00°22'47"W

LEGEND & ABBREVIATIONS

- FD MESA COUNTY SURVEY MARKER
- FD 3.25" ALUMINUM CAP STAMPED THOMPSON LANGFORD CORP LS 18480
- FD #5 REBAR W/1.5" ALUMINUM CAP STAMPED LS 5933
- SET #5 REBAR W/2" ALUM. CAP STAMPED D H SURVEYS LS 20677

M.C.S.M. = MESA COUNTY SURVEY MARKER
G.V.A.L.C.S. = GRAND VALLEY AREA LOCAL COORDINATE SYSTEM
SEC. = SECTION
SQ.FT. = SQUARE FEET
M.P.E. = MULTIPUAPOSE EASEMENT

AREA SUMMARY

LOTS	= 20.92 AC./64%
TRACTS	= 11.12 AC./34%
DED. ROADS	= 00.65 AC./02%
TOTAL	= 32.70 AC./100%

GRAPHIC SCALE 1"=100'

0 100 200 300

LINEAR UNITS = U.S. SURVEY FEET

FOR REVIEW

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Drawn By TMODEL	Date MAY 2017	Sheet 2 OF 2

REVISED 07/27/17
REVISED 09/27/17

Pinnacle Ridge Subdivision
Open Space to be dedicated to the City of Grand Junction



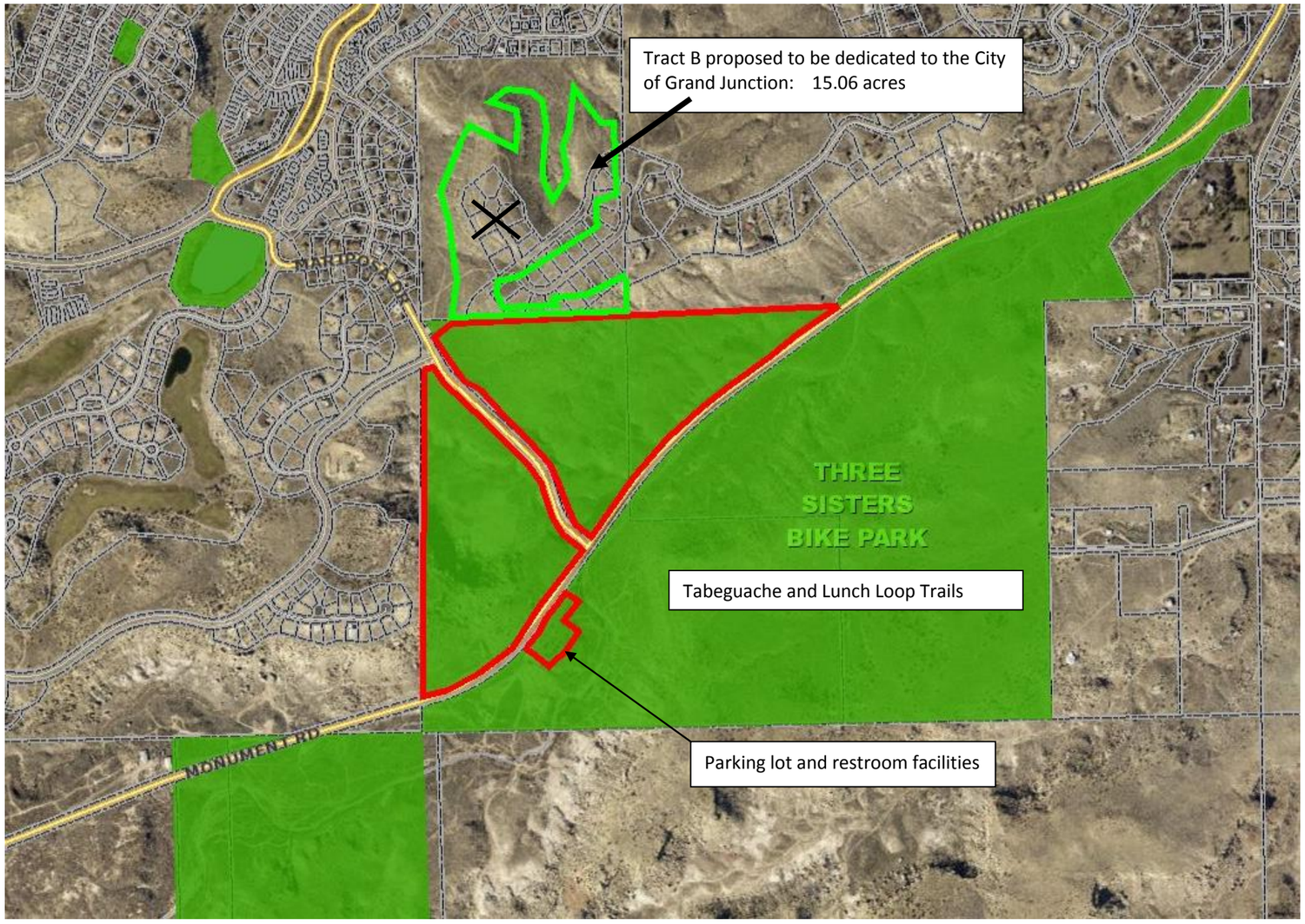
Panoramic view from the top of Tract B looking east to the Three Sisters Bike Park, parking lot and bathroom facilities



View looking west



View looking north



CITY COUNCIL MEETING CITIZEN PRESENTATION		Date 2/7/18
Citizen's Name	John Sinclair	
Subject	Washington Park Neighborhood Assoc.	
Phone Number **(optional)**	(-) -	Including your phone number is helpful if we would like to contact you in response to your questions, comments, or concerns. Thank you!

CITY COUNCIL MEETING CITIZEN PRESENTATION		Date FEB 7 2018
Citizen's Name	Bruce Lohmiller	
Subject	CASA "Denver Work"	
Phone Number **(optional)**		Including your phone number is helpful if we would like to contact you in response to your questions, comments, or concerns. Thank you!

CITY COUNCIL MEETING CITIZEN PRESENTATION		Date
Citizen's Name	DENNIS SIMPSON	
Subject	BONSAI	
Phone Number **(optional)**		Including your phone number is helpful if we would like to contact you in response to your questions, comments, or concerns. Thank you!