damage associated with these soil conditions, CGS recommends lot specific geotechnical investigations be completed within the building envelopes at the time of building permit, to determine the engineering properties of these soils. In soils of this type, properly engineered foundation systems are necessary for adequate foundation performance.

Site Drainage. Consolidating and/or swelling soils are generally poor performers in excessively wet conditions. Considering that, an effort should be made to maintain positive drainage away from the proposed structures by elevating the building pads. Foundation perimeter drains should also be considered with subgrade construction to prevent excessive wetting and resulting failure of foundation subsoils.

In summary, the existing soil conditions on this site will constrain the designs for site development, but should not preclude the approval of the project. Provided that the foundations constructed on this property are designed based on lot-specific geotechnical investigations, standard mitigation designs for residential construction should accommodate the site conditions. Please feel free to contact me at (303) 866-2611 if you have any questions or concerns.

Comments not available as of 5/13/03:
City Attorney
Police Department
Qwest
Urban Trails
Xcel

Lisa

PP
6/30/03

June 30, 2003

Re: **PP-2003-067**
FORREST GLEN SUBDIVISION

REVIEW COMMENTS

No additional comments at this time.

By: Peter T. Krick
Professional Land Surveyor for
The City of Grand Junction

Memorandum

DATE: June 24, 2003

TO: Eric Hahn, Community Development Engineer
Norm Noble, City Fire Department
Faye Gibson, City Addressing
George Miller, City Transportation Engineer
Peter Krick, City Property Agent
Trent Prall, City Utility Engineer
John Ballagh, Grand Junction Drainage District
Stephen LaBonde, Central Grand Valley Sanitation
Perry Rupp, Grand Valley Rural Power
Lou Grasso, Mesa County School District #51
Chuck Wiedman, Bresnan Communications
Edward Tolen, Ute Water
Wayne Bain, Palisade Irrigation
Nathan Keever, Palisade Irrigation
Sean Gaffney, Colorado Geologic Survey

FROM: Lisa Cox, Senior Planner

SUBJECT: Response to Comments – Forrest Glen Subdivision (PP-2003-067).

Attached are the revised comments for this project. Please review and return any further comments you have to me by Tuesday, July 1, 2003.

If you have any questions please contact me at:
Phone #: 256-4039
Fax #: 256-4038
E-mail: lisac@ci.grandjct.co.us

6/30/03
No Comments
Peter T. Krick

RESPONSE TO REVIEW COMMENTS 6/20/03

Forrest Glen Subdivision
FILE #PP-2003-067

LOCATION:	658 29 Road
PETITIONER:	Maxwell Sneddon
PETITIONER'S ADDRESS/TELEPHONE:	895 24½ Road 245-0688
PETITIONER'S REPRESENTATIVE:	Development Concepts Inc – Mike Joyce, AICP 255-1131 MDY Consulting Engineers, Inc.–Mark Young, PE 241-2122
STAFF REPRESENTATIVE:	Lisa Cox

NOTE: THE PETITIONER IS REQUIRED TO SUBMIT AND LABEL A RESPONSE TO COMMENT FOR EACH AGENCY OR INDIVIDUAL WHO HAS REQUESTED ADDITIONAL INFORMATION OR REVISED PLANS, INCLUDING THE CITY, ON OR BEFORE 5:00 P.M., AUGUST 13, 2003.

CITY COMMUNITY DEVELOPMENT	5/13/03
Lisa Cox	256-4039

GENERAL:

1. Please submit and label a Response to Comment for each agency or individual that has requested additional information or revised plans. Distribution and review of the applicant's Response to Comments may be delayed if they are not labeled for distribution to each agency or individual.

   Response: All Response to Comments packets have been labeled for each review agency.

2. Note the revision date and nature of change on each plan or plat sheet that has been revised.

   Response: The revision date and nature of change on each plan or plat sheet that has been revised is noted.

3. Include an 11 x 17 reduction of the revised plat/plan.

   Response: An 11 x 17 reduction of the revised plat/plan is submitted with each Response to Comments packet.

PRELIMINARY PLAN:

1. One of the discussion items during the General Meeting centered around the high number of double and triple frontage lots that the original concept plan contained. The Preliminary Plan that has been submitted has been reconfigured from the first sketch plan that staff saw, but still contains 12 (out of 19) double frontage lots. Lots with double frontage are often very frustrating to lots owners because of fencing restrictions. The Zoning Code does not allow a 6' privacy fence along a street frontage unless the fence is set back 20' from the property line. Lot owners frequently find this upsetting because they do not have full enjoyment and use of their lot. (The exception to that fencing restriction would be double frontage lots that front on an arterial or major collector when a 5' landscaping strip is provided between the sidewalk and fence.)

   During the weekly Development Review Meeting where the Community Development Department, Fire Department and Public Works review projects jointly, there was a consensus of those present during the meeting that the developer should attempt to reduce the high number of double frontage lots. While double frontage lots are permissible, they are discouraged by the subdivision design standards and guidelines of Chapter 6 of the Zoning Code. One suggestion that was made to reduce the number of double frontage lots was to move Kaylee Court south to the southern property line. This would allow a reduction in the number of double frontage lots and still maintain the total number of lots in the current Preliminary Plan design.

   Please revise the Preliminary Plan to reduce the number of double frontage lots, or show how there is no other alternate design possible. Contact the project Planner or Development Engineer should you have any questions concerning this matter.

   Response: The Preliminary Plan has been revised to eliminate all triple fronted lots. The only double fronted lots are at intersections and two lots along 29 Road.

2. The developer may want to consider placing the 5' landscape easement along 29 Road in a Tract so that those lots fronting on 29 Road do not have a 20' setback requirement for future houses/structures.

   Response: This comment has been noted, however, the developer prefers to leave the 5' landscape strip in an easement rather than a tract. The developer is prepared to have a 20' side yard setback on Lots 1, 11 and 19 and a 25' rear yard setback on Lot 10.

3. The building envelopes shown on the Preliminary Plan are not compliant with the RMF-5 zone district. Please revise the plans to reconfigure the setbacks to meet the minimum bulk standards for the RMF-5 zone district.

   Response: No building envelopes were illustrated on the submitted Preliminary Plan as per the SSID manual requirements. Easements, however, were illustrated around each lot and may be construed as building envelopes. This matter has been addressed and building envelopes are illustrated on the revised submittal.

CITY DEVELOPMENT ENGINEER 5/12/03
Eric Hahn 244-1443

GENERAL COMMENTS

1. The Colorado Department of Public Health & Environment (CDPH&E), Water Quality Control Division, requires that a General Stormwater Discharge Permit be obtained for any construction site that will disturb 1 acre or more. At Final Plan submittal, the developer must submit a copy of the signed permit application and, once it is approved and issued, a copy of the signed permit.

   Response: Petitioner agrees to abide by this review comment.

2. The developer must demonstrate that the subdivision designs honor all existing easements, including the easement referenced by the Palisade Irrigation District.

TRANSACTION SCREEN PROCESS

3. The Report indicates that no evidence of environmental conditions were identified, and that no further investigation is warranted.

   Response: No additional response is required.

PRELIMINARY DRAINAGE REPORT

4. This Report is very well-prepared and comprehensive.

   Response: We agree, and no additional response is required.

5. Since this development will not detain the developed stormwater runoff, the future development of the adjacent property to the east will be required to over-detain. Essentially, the future pond to the east will serve both developments.

   Response: We agree, and no additional response is required.

6. At Final, the design of the storm sewer system for this development must be closely coordinated with the City's drainage studies and designs for the future 29 Road improvements.

   Response: We agree, and no additional response is required.

GEOTECH REPORT

7. It is suggested that the Final Geotech report include an analysis of a road section that utilizes geogrid products. The use of such products may be more cost effective by allowing a shallower depth of aggregate base course or subgrade.

   Response: The suggestion has been noted.

PRELIMINARY PLAN

8. In an effort to minimize double-frontage lots, staff suggests that the cul-de-sac, Kaylee Court, be moved to the south property line. This would eliminate double-frontage lots along Arran Blvd., and may allow the developer to build only a partial street section by eliminating the curb, gutter, and walk along the south side of the cul-de-sac.

Response: The Preliminary Plan has been revised to eliminate all triple fronted lots. The only double fronted lots are at intersections and two lots along 29 Road.

9. Dimension and/or label the proposed and existing right-of-way and pavement widths, referenced from the section line.

Response: The dimensions have been added to 29 Road.

10. Where does the proposed 8" main in 29 Road tie-in to an existing main?

Response: The proposed sanitary sewer connection is made at the existing Central Grand Valley Sanitation District manhole in the intersection of F ½ and 29 Roads. The proposed domestic water line will connect with the existing 8-inch water line also in the intersection of F ½ and 29 Roads. These connection points are illustrated on the revised Preliminary Plan.

11. In order to adequately serve the proposed lots as well as future lots in adjacent properties, the water district may require 8" mains throughout the subdivision.

Response: As per Norm Noble and Ed Tolen's review comments, the proposed waterline in McCaldon Way has been increased to 8-inch.

GRADING & DRAINAGE PLAN

12. At Final, after all Development Engineering comments have been addressed, the developers engineer must submit a copy of the final grading and drainage plan along with a table of Top of Foundation Elevations to the Mesa County Building Dept. This information must be accompanied by a letter to the City Development Engineer stating that the plan and TOF data has been received by the Building Dept. This letter must include a co-signature block for Bob Lee, Mesa County Building Dept. After the letter has been signed by the design engineer and Mr. Lee, the letter must be provided to the City Development Engineer at which time final plans will be signed and released.

Response: The comment has been noted and will be addressed during the Final Plan phase.

CITY FIRE DEPARTMENT 4/30/03
Norm Noble 244-1473

1. Available fire flow is acceptable

   Response: Agreed, no additional response required.

2. Add Fire Hydrant to the NE corner of Arran Blvd. and McCaldon Way. Other Fire Hydrant locations are acceptable

   Response: A Fire Hydrant has been added to the NE corner of Arran Blvd., now Brodick Way, and McCaldon Way.

3. Water line in McCaldon Way shall be 8 inch.

   Response: The preliminary plan has been revised for an 8" water line in McCaldon Way.

CITY ADDRESSING 5/5/03
Faye Gibson 256-4043

1. Subdivision name, Kaylee Ct., and McCaldon Way street names are fine.

   Response: Agreed, no additional response required.

2. Arran Blvd. will need to be changed since there is an existing Aaron Ct. nearby and the sounds are too similar. Also, Blvd are designated for roads which have a landscape median running down the middle.

   Response: Arran Boulevard has been renamed Brodick Way.

3. Please be aware that double frontage lots will not be allowed to have 6 foot fences along the street frontages and that they are also considered "FRONTS" and require the front yard setback requirement for structures. Lot 15 in particular will have three front setback requirements.

   Response: The comment has been noted. The geometry of the subdivision has been revised to reduce the amount of double frontage lots.

CITY TRANSPORTATION ENGINEER 5/2/03
George Miller 256-4123

This site was reviewed during the General Meeting process. In that regard, it appears that most concerns presented then have been included in this plan set, with the exception of the guidance that the access road be placed mid way between F½ and the future F¾ (which would place it about 250' north of the site's south property line, and opposite the property line on the west side of 29 Rd). The proposed placement, however, will still comply with access spacing requirements between F½, and future F¾ Rds with today's TEDS standards for 29 Rd.

Response: Agreed, no additional response required.

Attached are the General Meeting comments for this site.

DevRev 29 Rd 658 Gen Mtg Housing Sub 12-9-02 Miller
This site was apparently reviewed in a pre-app in 4-02, but Transportation was not involved in the meeting.

Proposal is to develop a single parcel, with the larger perspective in mind that this parcel, and its entering roadway will serve as the entry way for development to the east and north. This road, or its connections are intended to extend to what will be F ¾ Rd to the north.
This site is traversed by two ditches, both of which are slated for Bike-Ped easements by the 2001 Urban Trails Master Plan. Urban Trails also requires development of both walk and bike lane development along the site's 29 Rd frontage.

The proposal is to develop 19 single family lots on this 5 acre site.
Proposal Comments:

1. It is appreciated that the developer envisions the larger area development picture, realizing the reality of the development of F ¾ and this original parcels role in connection to that development.

   Response: No additional response required.

2. In light of that development scenario, and 29 Rd's role, as a principal arterial, this site's access road (from 29 Rd) will be established as a full movement interchange, but may have to restricted to limited movement as F¾ develops, and volumes increase on 29 Rd. With respect to intersection placement, it would be desirable that the access intersection be placed midway between F½ and the future F¾.

3. Additionally, in support of the expected volume increases on 29 Rd, and the resulting need to limit access points, this site will be required to provide connection links to adjacent undeveloped parcels.

   Response: Inter-connectivity road stubs have been provided to the east, north and south property lines.

4. At current 29 Rd volumes (approx. 500 adt), and site development levels, no 29 Rd turn lane improvements are required, though (as noted above) Urban Trails improvements requirements do exist.

   Response: The petitioner is aware of the Urban Trail requirements along 29 Road. The petitioner has dedicated additional right-of-way along 29 Road for the provisions of an on-street bicycle lane with the future construction of 29 Road.

5. Developer should keep road link point concerns in mind in viewing future development options for adjacent parcels. There are City limitations to the allowed dead end lengths for road sections. Ideally, the property boundaries to the east of this site's east boundary would serve well as north-south link routes, in concert with F¾ development. Along the same line, F¾, itself, should develop simultaneously, being available for outside connection as these north-south routes develop.

   Response: This comment will be taken into consideration to determine its applicability to the design of future subdivisions on land owned by the petitioner.

CITY PROPERTY AGENT 5/6/03
Peter Krick 256-4003

REVIEW COMMENTS
No comments at this time.

The subdivision plat, when submitted, shall be in accordance with the City of Grand Junction Platting Standards. A signed and sealed copy of a boundary survey of the parcel to be platted is required with the submittal.

Response: Agreed, no additional response required.

CITY UTILITY ENGINEER 5/9/03
Trent Prall 244-1590

As this proposal falls within the Central Grand Valley Sanitation District as well as the Ute Water District, please contact those utilities directly for a full review of proposed utilities.

Response: Agreed, no additional response required.

GRAND JUNCTION DRAINAGE DISTRICT 4/28/03
John Ballagh 242-4343

The proposed subdivision is within the District. The drainage report recognizes the existing drainage patterns in the neighborhood (as understood by the District) and explains them clearly.

The District and the developer and engineer have discussed plans for improving the surface drainage in the general area. It is understood that coordination with the City on 29 Road improvement plans will be required. The plan is to extend the District's 29 Road Drain to the north from the point south of Music Avenue.

The Drainage District does have an existing subsurface drain east of 29 Road through the site. The District and the developer have discussed plans to relocate the facility to the west in a better alignment. Neither the alignment nor the timing has been finally decided.

The plans do not require change as far as the Drainage District is concerned.

If there are any questions please contact the office.

Response: Agreed, no additional response required.

CENTRAL GRAND VALLEY SANITATION 5/6/03
Stephen LaBonde 241-7076

REVIEW COMMENTS FOR FOREST GLENN SUBDIVISION PRELIMINARY PLAN - CENTRAL GRAND VALLEY SANITATION DISTRICT (FILE #PP-2003-067), 05/05/03.

The following are the Central Grand Valley Sanitation District's review comments on the Preliminary Plan for the proposed Forest Glenn Subdivision:

1. It will be necessary to extend a sewerline from the District's existing system that presently terminates at MH-OR134 at the intersection of 29 Road and F½ Road. The sewerline extension along 29 Road will need to be incorporated with the improvements for the proposed development that will be the responsibility of the Petitioner. The sewerline along 29 Road should be located with the City/County's proposed street section in mind that will ultimately be constructed along 29 Road in the future.

Because of potential development along the 29 Road corridor, the minimum pipe size should be 10- or 12-inches depending on the available grade for the proposed sewerline that will need to be determined as part of the final design.

Response: Agreed, no additional response required.

2. It appears that the 29 Road sewer line shown on the Preliminary Plan is in conflict with the existing gas line.

   Response: The position of the proposed sanitary sewer and storm drain have been revised to minimized the conflict between existing and proposed utilities. This matter has been discussed with Stephen LaBonde.

3. The proposed sewer line along Arran Boulevard should be sized to accommodate future peak flows from potential development to the east. The sewerline along Arran Boulevard may need to be upsized from the minimum 8-inch diameter to 10-inch diameter. A capacity analysis and potential future flows need to be developed as part of the final design, once sewerline grades along Arran Boulevard are determined.

   Response: Agreed, no additional response required.

4. There is some questions as to what is proposed with the irrigation canal and how it could impact the sewerline.

   Response: The Palisade Irrigation Board of Directors has agreed to abandon the existing easement that is believed to encumber the subject parcel in exchange for a 20' drainage and irrigation easement along the south property line of the subject parcel as indicated on the Preliminary Plan, revised 6-20-03. The PID Board will act on the matter at their next meeting on July 9, 2003.

5. All of the District's requirements for sewerline extensions within new subdivisions will need to be met as part of final platting of the subdivision if the preliminary Plan is approved.

   Response: Agreed, no additional response required.

Please make the petitioner aware of the District' s requirements for providing sewer service to the subdivision that will require an extension of the District's system from 29 and F½ Road approximately 600-feet to the north.

Response: The comment has been noted.

GRAND VALLEY RURAL POWER 4/17/03
Perry Rupp 242-0040
Need easement along 29 Road , to relocate existing G.V. Power overhead 3 ·phase feeder line.

Response: A 14-foot multi-purpose easement has been provided along 29 Road on the revised Preliminary Plan.

MESA COUNTY SCHOOL DISTRICT #51 4/29/03
Lou Grasso 242-8500

Following are estimated student impacts for three developments. I have identified the development and then listed the Program/Schedule Capacity, 2/03 enrollment and estimated student impact at the attendance area schools for the development. Please contact me at 242-8500 if you have questions or need additional information.

Forrest Glen: Thunder Mt. Ele: 562/615/4 Bookcliff Middle: 475/520/2 CHS: 1470/1652/2

Response: No additional response required.

Bresnan Communication 5/5/03
Chuck Wiedman 263-2313

We are in receipt of the plat map for your new subdivision, Forest Glen Subdivision. I would like to notify you that we will be working with the other utilities to provide service to this subdivision in a timely manner.

I would like to take this opportunity to bring to your attention a few details that will help both of us provide the services you wish available to the new home purchasers. The items are as follows:

1. We require the developers to provide, at no charge to Bresnan Communications, an open trench for cable service where underground service is needed and when a roadbore is required, that too must be provided by the developer. The trench may be the same one used by other utilities, however the roadbore must provide a 2" conduit for the sole use of cable TV.
2. We require developers to provide, at no charge to Bresnan Communications, fill-in of the trench once cable has been installed in the trench.
3. We require developers to provide, at no charge to Bresnan Communications, a 4" PVC conduit at all utility road crossings where cable TV will be installed. The cable TV crossing will be in the same location as power and telephone crossings. If the conduit is not installed, we will be unable to place our lines until one is installed. This 4" conduit will be for the sole use of cable TV.
4. Should your subdivision contain cul-de-sacs, the driveways and property lines (pins) must be clearly marked prior to the installation of underground cable. Any need to relocate pedestals or lines will be billed directly back to your company.
5. Bresnan Communications will provide service to your subdivision so long as it is within the normal cable TV service area. Any subdivision that is out of the existing cable TV area may require a construction assist charge, paid by the developer, to Bresnan Communications in order to extend the cable TV service to that subdivision.
6. Should Bresnan Communications be required to perform work on any existing aerial or underground cable TV lines to provide service to the subdivision, Bresnan Communications may require a construction assist charge, to be paid by the developer.

Should you have any other questions or concerns please feel free to contact me at any time. If I am out of the office when you call please leave your name and phone number with out office and I will get back in contact with you as soon as I can.

Response: The petitioner will take the Bresnan Communication's comments into consideration during the final design of the subdivision.

UTE WATER 4/21/03
Edward Tolen 242-7491

COMMENT

* McCaldon Wy. water line must be 8".
* Petitioner must provide an engineered drawing of off site improvements.

* Developer must provide a drawing that shows valve and water meter locations.
* Water mains shall be C900, Class 150 PVC. Installation of pipe, fittings, valves, and services, including testing and disinfection shall be in accordance with Ute Water standard specifications and drawings
* Developer is responsible for installing meter pits and yokes (pits and yokes supplied by Ute Water).
* Construction plans required 48 hours before construction begins. If plans are changed the developer must submit a new set of plans.
* Electronic drawings of the utility composite for the subdivision, in Autocad.dwg format, must be provided prior to final acceptance of water infrastructure.
* Water meters will not be sold until final acceptance of the water infrastructure.
* 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.

Response: McCaldon Way's water line has been revised as an 8" line on the preliminary plan. The petitioner will take the Ute Water's comments into consideration during the final design of the subdivision..

PALISADE IRRIGATION 5/5/03
Wayne Bain 243-6246

Palisade Irrigation District has a canal easement through the bottom third of this parcel. This 50 foot wide easement must be honored if any construction is proposed in this area. Written acknowledgement of this easement must be made by the developer to Palisade Irrigation District prior to any approval of development on or near this area.

In the event details in this regard are approved by Palisade Irrigation District then the District recommends that a storage reservoir of appropriate size be placed in the subdivision to reduce the impact of residential water users competing for water at the same time as all other water users of the entire canal system. The water right is insufficient to serve all users at the same time.

Failure to construct such storage reservoir may result in the subdivision being provided with an opening sized to the actual water right which is 1/3 to ½ a miners inch of continuous flow per acre. This equates to approximately 5.6 gallons per minute per acre in the subdivision at the ½ inch maximum rate. The average lawn pump output ranges from 30 GPM to 50 GPM.

A setback of 15 feet from canal easement edge is recommended on all subdivisions.

Response: The Palisade Irrigation Board of Directors has agreed to abandon the existing easement that is believed to encumber the subject parcel in exchange for a 20' drainage and irrigation easement along the south property line of the subject parcel as indicated on the Preliminary Plan, revised 6-20-03. The PID Board will act on the matter at their next meeting on July 9, 2003.

It has been determined that there is adequate irrigation water supply from the Mesa County Irrigation District rights that belong with the land. Representatives of both the Palisade Irrigation District and the Mesa County Irrigation District have met with the subdivision developer and have determined that water will be provided by MCID.

PALISADE IRRIGATION 5/6/03
Nathan Keever 241-5500
DUFFORD, WALDECK, MILBURN & KROHN, LLP
ATTORNEYS AT LAW
(Letter to Maxwell and Carole M. Sneddon)

Our firm represents Palisade Irrigation District ("PID"). PID has a historic ditch easement that runs across your property at 658 29 Road. A survey, which was created and recorded by Western Engineers, shows the exact location of this 50 foot wide easement from the east boundary to the west boundary of your property. Based on the drawings PID has reviewed as part of your preliminary plan for the Forrest Glen Subdivision, it appears that there are planned improvements that would substantially infringe on those easement rights. Please note that PID considers its easements to be an important part of its water delivery system, and as such, it must insist that no permanent improvements or facilities be built over its canal easement. If you have questions regarding the easement, please contact PID directly. That you for your attention to this matter.

Nathan A. Keever

Response: The Palisade Irrigation Board of Directors has agreed to abandon the existing easement that is believed to encumber the subject parcel in exchange for a 20' drainage and irrigation easement along the south property line of the subject parcel as indicated on the Preliminary Plan, revised 6-20-03. The PID Board will act on the matter at their next meeting on July 9, 2003.

COLORADO GEOLOGIC SURVEY 5/12/03
Sean Gaffney 303-866-2611
In response to your request, I visited this property to review the plat. A Preliminary Drainage Report (4-9-03), prepared MDY Consulting, Inc.; Preliminary Geotechnical Investigation (4-9-03), prepared by Geotechnical Engineering, Inc.; and a Preliminary Plan Set (4-9-03) prepared by MDY Consulting Engineers; were included in the referral.

The proposed nineteen lot residential subdivision is located on approximately 4.68 acres of topographically flat land. The referral indicates that water and sanitary sewer service will be provided by the local district. The site geology consists of Holocene and late Pleistocene alluvium and colluvium.

The following conditions were described in the referral and observed during the site visit:

Soils. I am in general agreement with the observations contained in the Geotechnical Engineering Group report. The soils identified on this site. Due to the possibility for property damage associated with these soil conditions, CGS recommends lot specific geotechnical investigations be completed within the building envelopes at the time of building permit, to determine the engineering properties of these soils. In soils of this type, properly engineered foundation systems are necessary for adequate foundation performance.

Site Drainage. Consolidating and/or swelling soils are generally poor performers in excessively wet conditions. Considering that, an effort should be made to maintain positive drainage away from the proposed structures by elevating the building pads. Foundation perimeter drains should also be considered with subgrade construction to prevent excessive wetting and resulting failure of foundation subsoils.
In summary, the existing soil conditions on this site will constrain the designs for site development, but should not preclude the approval of the project. Provided that the foundations constructed on this property are designed based on lot-specific geotechnical investigations, standard mitigation designs for residential construction should accommodate the site conditions. Please feel free to contact me at (303) 866-2611 if you have any questions or concerns.

Response: The petitioner will take the Colorado Geologic Survey's comments into consideration during the final design of the subdivision.

Comments not available as of 5/13/03:
City Attorney
Police Department
Qwest
Urban Trails
Xcel

Review Comment Note: Although not listed above, Mesa County Irrigation District received a Preliminary Plan submittal package and responded, "Plans acceptable to MCID" on 5/5/03.

Memorandum

DATE: June 24, 2003

TO: Eric Hahn, Community Development Engineer
Norm Noble, City Fire Department
Faye Gibson, City Addressing
George Miller, City Transportation Engineer
Peter Krick, City Property Agent
Trent Prall, City Utility Engineer
John Ballagh, Grand Junction Drainage District
Stephen LaBonde, Central Grand Valley Sanitation
Perry Rupp, Grand Valley Rural Power
Lou Grasso, Mesa County School District #51
Chuck Wiedman, Bresnan Communications
Edward Tolen, Ute Water
Wayne Bain, Palisade Irrigation
Nathan Keever, Palisade Irrigation
Sean Gaffney, Colorado Geologic Survey

FROM: Lisa Cox, Senior Planner

SUBJECT: Response to Comments – Forrest Glen Subdivision (PP-2003-067).

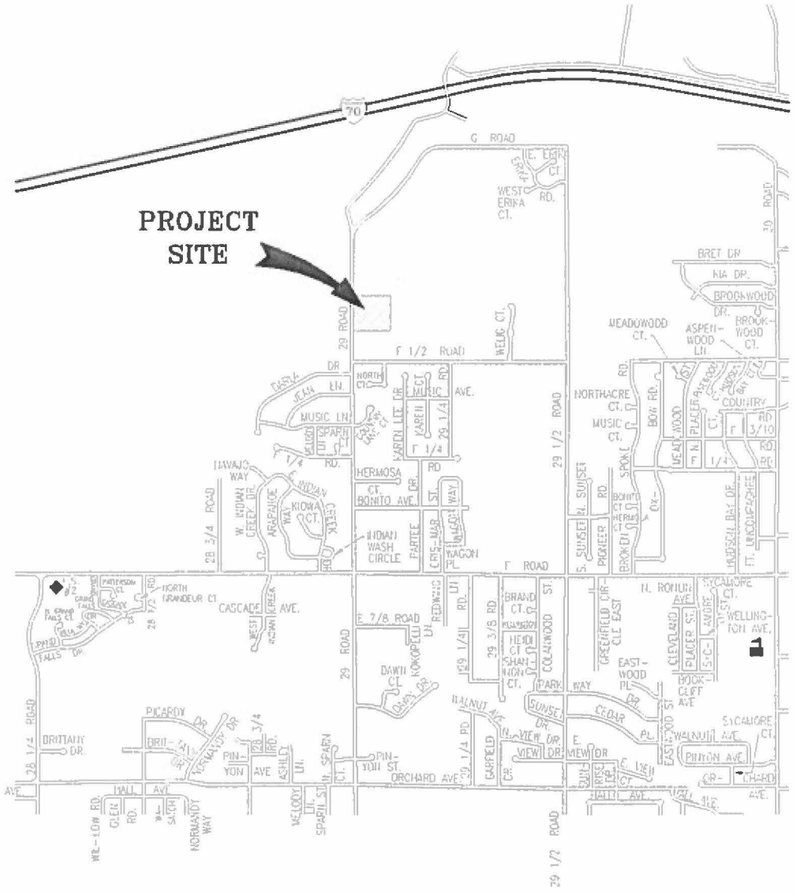
Attached are the revised comments for this project. Please review and return any further comments you have to me by Tuesday, July 1, 2003.

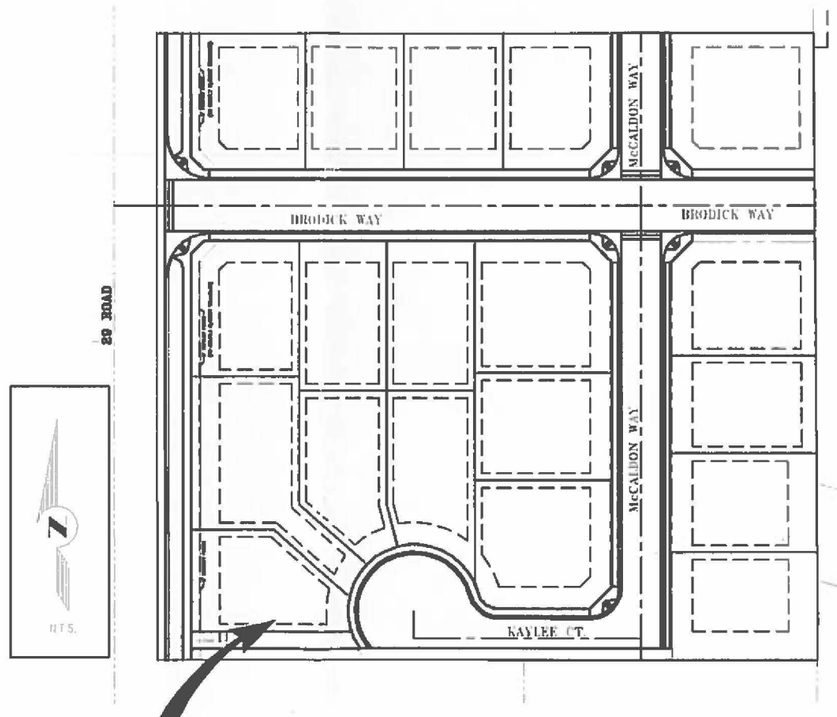
If you have any questions please contact me at:
Phone #: 256-4039
Fax #: 256-4038
E-mail: lisac@ci.grandjct.co.us

C

FORREST GLEN SUBDIVISION

A Subdivision of a Part of the
South West 1/4 North West 1/4
Section 5, T1S, R1E,
Ute Meridian, Mesa County, Colorado





PROPOSED DEVELOPMENT FORREST GLEN SUBDIVISION

CONTRACTOR SHALL CALL UTILITY NOTIFICATION CENTER OF COLORADO
1-800-922-1987
CALL 2 BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, EXCAVATE, OR GRADE FOR THE MARKING OF UNDERGROUND UTILITIES

BENCHMARK

BENCHMARK is the top of a MCSM located at the W 1/4 corner Section 5, Township 1 South, Range 1 East, Ute Meridian located at the intersection of 29 Road and F.5 Road
Benchmark Elevation=4718.96

SHEET INDEX

No.	TITLE
1	COVER SHEET
2	PRELIMINARY PLAN
3	ROAD SECTIONS
4	PRELIMINARY MAJOR BASIN DRAINAGE MAP

FORREST GLEN
PRELIMINARY PLAN RESUBMITTAL SET

FORREST GLEN
PRELIMINARY PLAN SUBMITTAL SET

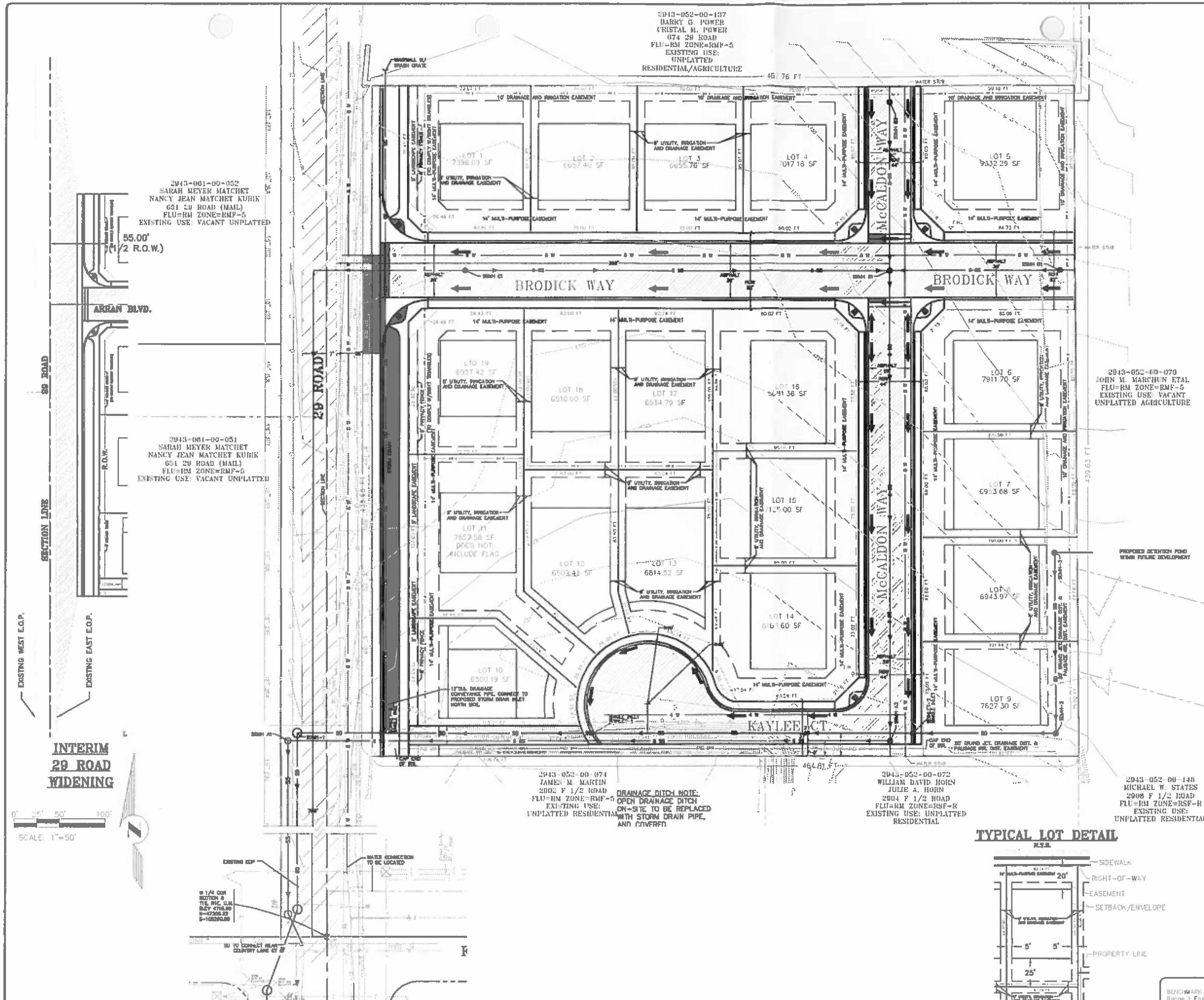
A Subdivision of a Part of the
South West 1/4 North West 1/4
Section 5, T1S, R1E,
Ute Meridian, Mesa County, Colorado

CLIENT
MAXWELL SNEDDON
CAROLE M. SNEDDON
CAL-MAC PROPERTIES LLC
895 24 1/2 ROAD
GRAND JUNCTION, CO 81505

MDY Consulting Engineers, Inc.
HORIZON PARK PLAZA
743 Horizon Court, Suite 311
Grand Junction, CO 81506
PH: (970) 241-2122
FAX: (970) 241-2662

FGPPR6-20-03.DWG 6/20/03	PROJECT No. 02-716-1023	SHEET 1 OF 4

FORREST GLEN
PRELIMINARY PLAN RESUBMITTAL SET
PRELIMINARY PLAN



2943-052-00-137
BARRY G. POWER
CRISTAL M. POWER
674 29 ROAD
FLU=RM ZONE=RMF-5
EXISTING USE:
UNPLATTED
RESIDENTIAL/AGRICULTURE
2943-061-00-052
SARAH MEYER MATCHET
NANCY JEAN MATCHET KUBIK
651 29 ROAD (MAIL)
FLU=RM ZONE=RMF-5
EXISTING USE: VACANT UNPLATTED
2943-061-00-051
SARAH MEYER MATCHET
NANCY JEAN MATCHET KUBIK
651 29 ROAD (MAIL)
FLU=RM ZONE=RMF-5
EXISTING USE: VACANT UNPLATTED
2943-052-00-070
JOHN M. MARCHUN ETAL
FLU=RM ZONE=RMF-5
EXISTING USE: VACANT
UNPLATTED AGRICULTURE
2943-052-00-074
JAMES M. MARTIN
2902 F 1/2 ROAD
FLU=RM ZONE=RMF-5
EXISTING USE:
UNPLATTED RESIDENTIAL
2943-052-00-072
WILLIAM DAVID HORN
JULIE A. HORN
2904 F 1/2 ROAD
FLU=RM ZONE=RSF-R
EXISTING USE: UNPLATTED
RESIDENTIAL
2943-052-00-148
MICHAEL W. STATES
2906 F 1/2 ROAD
FLU=RM ZONE=RSF-R
EXISTING USE:
UNPLATTED RESIDENTIAL
DRAINAGE DITCH NOTE:
OPEN DRAINAGE DITCH
ON-SITE TO BE REPLACED
WITH STORM DRAIN PIPE,
AND COVERED
BRODICK WAY
McCALDON WAY
KAYLEE CT
29 ROAD
ARRAN BLVD.
SECTION LINE
55.00'
(1/2 R.O.W.)
LOT 1 7396.03 SF
LOT 2 6657.46 SF
LOT 3 6655.76 SF
LOT 4 7017.16 SF
LOT 5 9332.29 SF
LOT 6 7911.70 SF
LOT 7 6953.68 SF
LOT 8 6943.97 SF
LOT 9 7627.30 SF
LOT 10 6500.19 SF
LOT 11 7652.58 SF DOES NOT INCLUDE FLAG
LOT 12 6502.41 SF
LOT 13 6814.52 SF
LOT 14 8161.60 SF
LOT 15 7125.00 SF
LOT 16 5641.38 SF
LOT 17 6534.70 SF
LOT 18 6510.00 SF
LOT 19 6957.42 SF
10' DRAINAGE AND IRRIGATION EASEMENT
14' MULTI-PURPOSE EASEMENT
8' UTILITY, IRRIGATION AND DRAINAGE EASEMENT
PROPOSED DETENTION POND W/IN FUTURE DEVELOPMENT
461.76 FT
464.81 FT
439.63 FT
INTERIM 29 ROAD WIDENING
EXISTING WEST E.O.P.
EXISTING EAST E.O.P.
0' 25' 50' 100'
SCALE: 1"=50'
WATER CONNECTION TO BE LOCATED
TYPICAL LOT DETAIL
N.T.S.
SIDEWALK
RIGHT-OF-WAY
EASEMENT
SETBACK/ENVELOPE
PROPERTY LINE
20'
5'
5'
25'

LEGEND

EXISTING FEATURES — PROPOSED FEATURES

- EXISTING 2' INTERVAL CONTOUR
- PROPOSED GRADING CONTOUR
- TOP OF SLOPE
- TOE OF SLOPE
- BURIED TELEPHONE CABLE
- BURIED ELECTRIC CABLE
- GAS LINE
- WATER LINE
- SANITARY SEWERS
- STORM DRAIN
- FENCE LINE
- BENCH MARK
- CATCH BASIN
- CLEAN OUT
- FIRE HYDRANT
- GUY WIRE ANCHOR
- HEADSET
- PIPE INVERT
- PUMP
- POWER POLE
- MANHOLE (SANITARY)
- MANHOLE (TELEPHONE)
- MANHOLE (WATER)
- METER (GAS)
- METER (WATER)
- PEDESTAL (TELEPHONE)
- PROPERTY PIN
- PULL BOX
- REDUCER FITTING
- STREET LIGHT
- SURVEY MONUMENT (CITY)
- SURVEY MONUMENT (TYPE NOTED)
- UTILITY POLE
- VALVE (GAS)
- VALVE (WATER)
- DRAINAGE FLOW DIRECTION

AREA USE SUMMARY

USE	AREA	%
LOTS (19)	3.26	69.68
ROW	1.42	30.32
TOTAL	4.68	100.00

(19 DU)/(4.68 AC)=4.06 DU/AC

UTILITY PROVIDERS

SEWER: CENTRAL GRAND VALLEY SANITATION DIST
WATER: UTE WATER CONSERVANCY DIST
DRAINAGE: GRAND JUNCTION DRAINAGE DIST
IRRIGATION: MESA COUNTY IRR. DIST.
ELECTRIC: GRAND VALLEY POWER
GAS: EXCEL ENERGY
TELEPHONE: QWEST
CABLE TELEVISION: BRESHAN COMMUNICATIONS
FIRE PROTECTION: GRAND JUNCTION FIRE DEPT
POLICE: GRAND JUNCTION POLICE DEPT

0' 15' 30' 60'
SCALE: 1"=30'

BENCHMARK

BENCHMARK is the top of a MCSM located at the W 1/4 corner Section 5, Township 1 South, Range 1 East, Ute Meridian located at the intersection of 29 Road and F 1/2 Road. Benchmark Elevation=4718.96

REVISIONS:

No.	DATE	REMARKS	BY
1	8/20	PER RESPONSE TO REVIEW COMMENTS DATED 8/20/03	TC

DESIGNED BY: MDY
P.E. No. 29912

REVIEWED BY: MDY
P.E. No. 29912

SURVEYED BY: KRS
P.L.S. No.: 28682

SURVEY DATE:
NOVEMBER, 2002

DRAWN BY:
JMC

DATE DRAWN:
6/20/03

SCALE: HORZ. 1"=30'
VERT. N/A

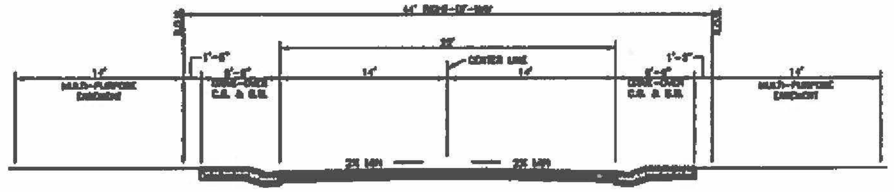
ACAD DRAWING NAME:
FGPPR6-20-03.DWG

PROJECT NUMBER:
02-718

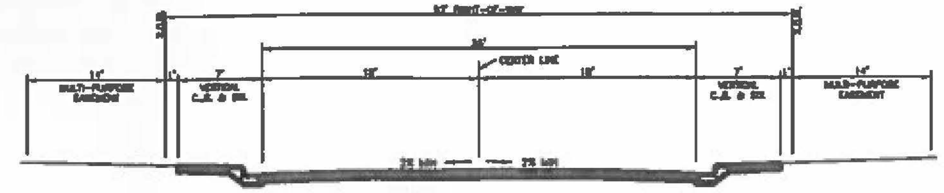
SHEET NUMBER:
2 OF 4

CLIENT:
MAXWELL SNEDDON
CAROLE M. SNEDDON
CAL-MAC PROPERTIES LLC
896 24 1/2 ROAD
GRAND JCT., CO
81505

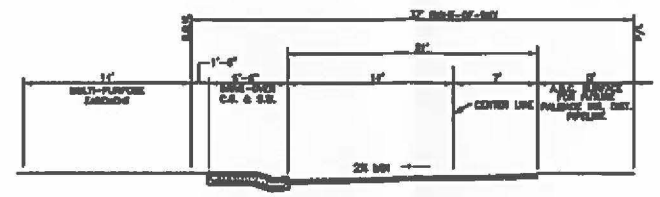
MDY CONSULTING ENGINEERS, INC.
HORIZON PARK PLAZA
743 Horizon Ct. Ste 311
Grand Junction, CO
81506
PH: (970) 241-2122
FAX: (970) 241-2082



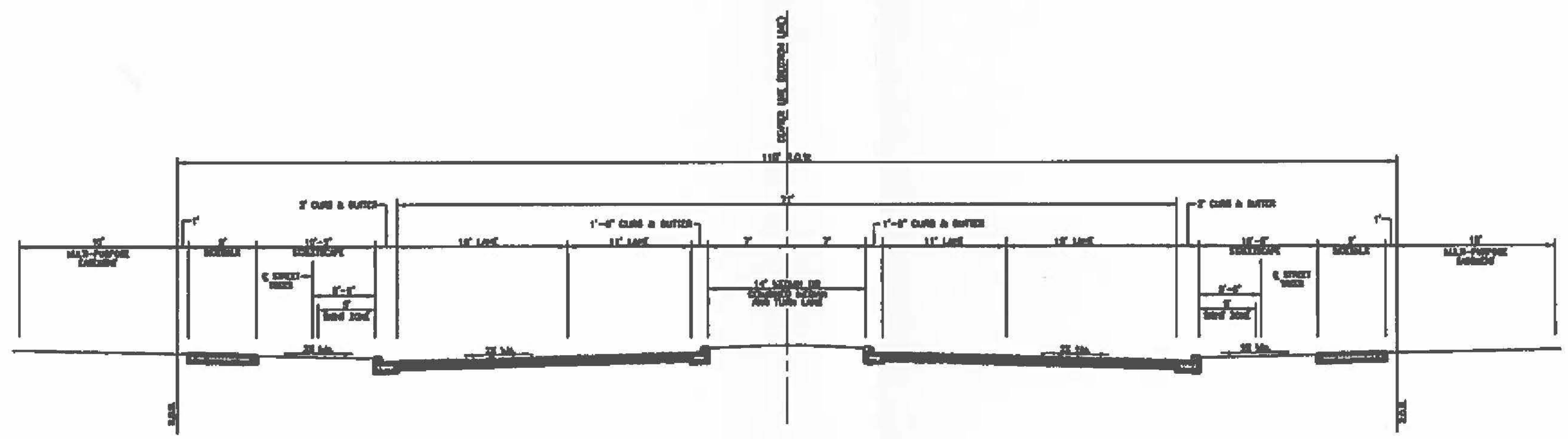
PROPOSED
McCALDON WAY
URBAN RESIDENTIAL STREET
(WITH DRIVE OVER CURB, GUTTER AND SIDEWALK)
N.T.S.



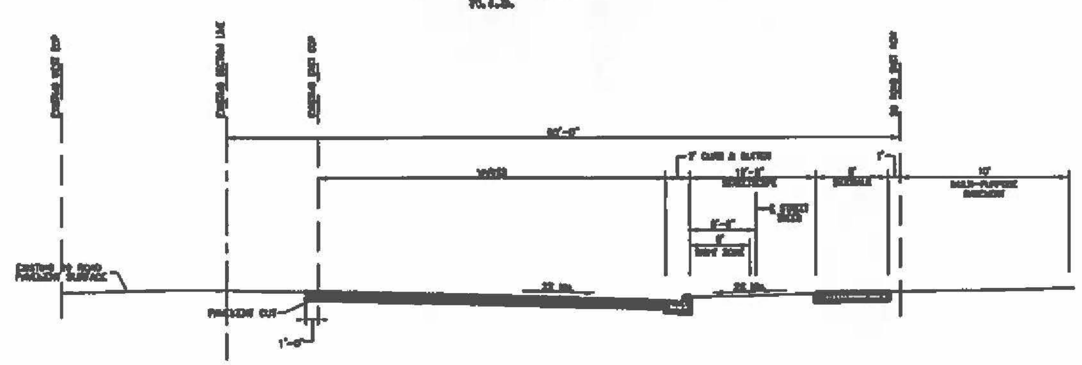
PROPOSED
ARRAN BLVD.
URBAN RESIDENTIAL COLLECTOR
ON STREET PARKING ALLOWED
ONLY WHERE LEFT TURN LANE IS NOT REQUIRED
N.T.S.



PROPOSED
KAYLEE CT.
URBAN RESIDENTIAL STREET
(WITH DRIVE OVER CURB, GUTTER AND SIDEWALK)
N.T.S.



FUTURE 29 ROAD IMPROVEMENTS
PRINCIPAL ARTERIAL
(NO ON-STREET PARKING)
N.T.S.



INTERIM 29 ROAD WIDENING IMPROVEMENTS
PER PRINCIPAL ARTERIAL SECTION
(NO ON-STREET PARKING)
N.T.S.

FORREST GLEN
PRELIMINARY PLAN RESUBMITTAL SET

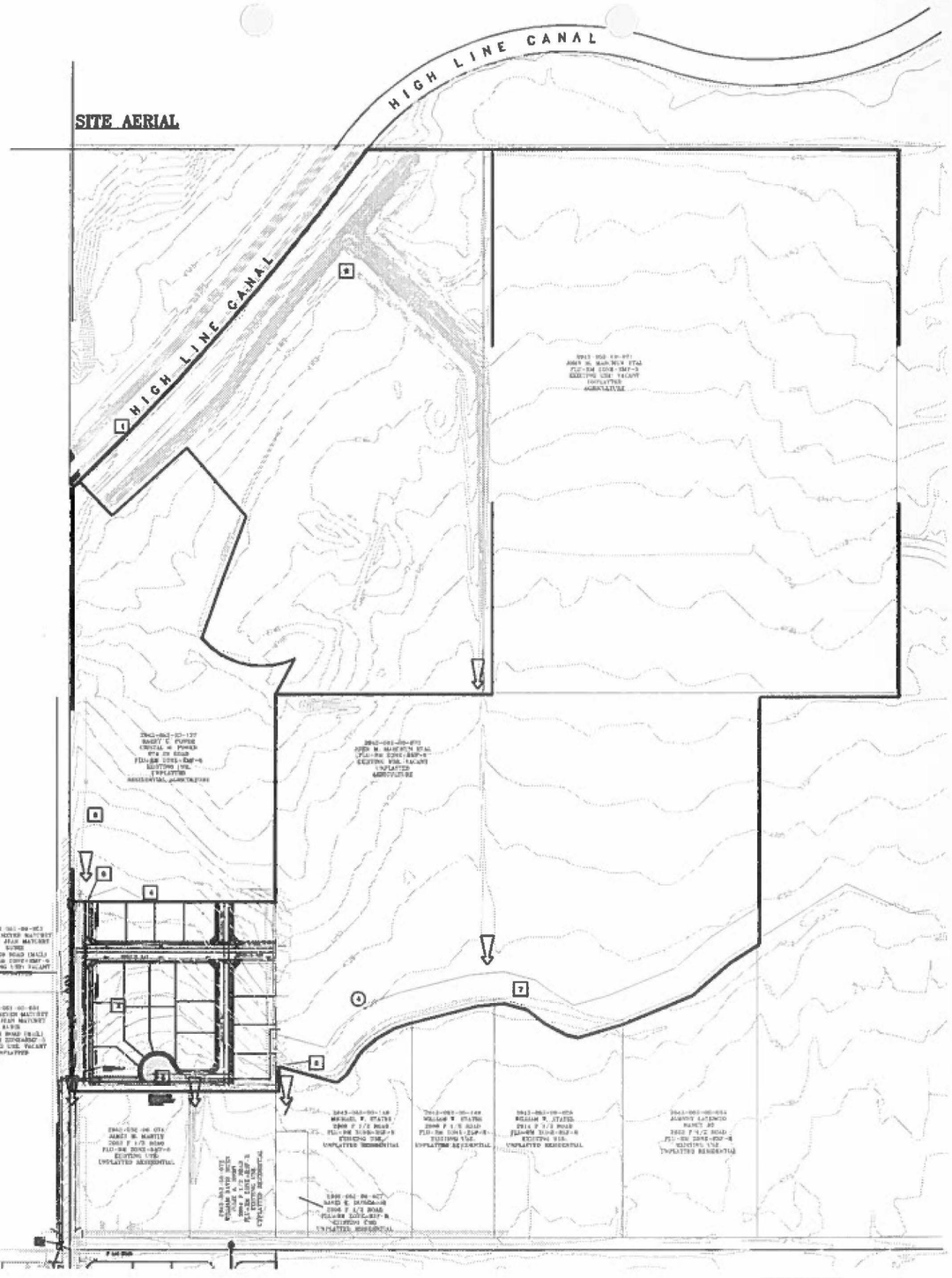
PRELIMINARY PLAN / STREET SECTIONS

REVISIONS:

No.	DATE	REMARKS	BY
1	8/20	PER RESPONSE TO REVIEW COMMENTS DATED 6/20/03	[illegible]

DESIGNED BY: MDY
P.E. No. 20012
REVISED BY: MDY
P.E. No. 20012
SURVEYED BY:
P.L.S. No.:
SURVEY DATE:
DRAWN BY: JJC
DATE DRAWN: 6/20/03
SCALE: HORIZ. N.T.S. VERT. N/A
ROAD SECTION NAME: [illegible]
PROJECT NUMBER: 03-713
SHEET NUMBER: 3 OF 4
CLIENT: [illegible]

MDY
CONSULTING
ENGINEERS, INC.
HORIZON PARK PLAZA
743 Horizon Ct., Ste. 311
Grand Junction, CO
81506
PH: (970) 241-2122
FAX: (970) 241-2682



MAJOR BASIN MAP

0' 75' 150' 300'
SCALE: HOR. 1"=150'

CONTOUR SOURCE NOTE
CONTOURS INDICATED ON THIS SHEET (PRELIMINARY MAJOR BASIN DRAINAGE MAP), ARE (2) FOOT CONTOURS PURCHASED FROM MESA COUNTY.

DRAINAGE DITCH NOTE:
OPEN DRAINAGE DITCH

FORREST GLEN DRAINAGE

0' 20' 40' 80'
SCALE: HOR. 1"=40'

SOIL TYPES AREA MAP

0' 250' 500' 1000'
SCALE: HOR. 1"=500'

DRAINAGE LEGEND

MAJOR BASIN
OFF-SITE SUB-BASIN
EXISTING 10' INTERVAL CONTOUR
EXISTING 2' INTERVAL CONTOUR
EXISTING ON-SITE DRAINAGE PATTERN
GENERAL IN-FLOW & OUT-FLOW ⇨
PROPOSED ON-SITE DRAINAGE PATTERN →

SOIL TYPES

▨	▨	☐	▨	▨	▨
PERSAYO SILTY CLAY LOAM	PERSAYO SILTY CLAY	TURNEY CLAY LOAM	SAGERLITE LOAM	BLACKSTON GRAVELLY LOAM	BACKUS SILTY CLAY LOAM

EXISTING DRAINAGE FEATURE 1
PROPOSED DRAINAGE FEATURE ①
REF) PRELIMINARY DRAINAGE REPORT

EXISTING DRAINAGE FEATURES

1 GOVERNMENT HIGH LINE CANAL
2 SHALLOW DITCH / SOUTH END OF PROPERTY / IRRIGATION TAIL WATER
3 MAN MADE DITCH / SOUTH END OF PROPERTY / 6-8' DP. / IRRIGATION TAIL WATER / SURFACE
4 SHALLOW DITCH / NORTH END OF FIELD / IRRIGATION TAIL WATER / SURFACE DRAINAGE
5 CONCRETE DITCH / WEST SIDE OF PROPERTY / IRRIGATION
6 8" PVC / WEST SIDE OF PROPERTY / IRRIGATION
7 SHALLOW DITCH / EAST OF PROPERTY / IRRIGATION TAIL WATER / SURFACE DRAINAGE
8 PIPE INVERT AT WEST END OF DITCH / ITEM 7
9 MAN MADE DRAINAGE DITCH SYSTEM (GJDD)

PROPOSED DRAINAGE FEATURES

① STORM DRAIN INLETS / McCALDON WAY
② STORM DRAIN INLET / 29 ROAD
③ STORM DRAIN PIPE
④ PROPOSED FUTURE DETENTION SITE
⑤ STORM DRAIN PIPE ACROSS 29 ROAD AND SOUTH
⑥ UPGRADED TAIL WATER PIPE
⑦ STORM DRAIN MANHOLE

GENERAL LEGEND

EXISTING FEATURES ▒ PROPOSED FEATURES ▬

EXISTING 10' INTERVAL CONTOUR
EXISTING 2' INTERVAL CONTOUR
PROPOSED GRADING CONTOUR
TOP OF SLOPE
TOE OF SLOPE
BURIED TELEPHONE CABLE
BURIED ELECTRIC CABLE
GAS LINE
WATER LINE
SANITARY SEWERS
STORM SEWERS

BENCH MARK	METER (WATER)
CATCH BASIN	PEDESTAL (TELEPHONE)
CLEAN OUT	PROPERTY PIN
FIRE HYDRANT	PULL BOX
GUY WIRE ANCHOR	REDUCER FITTING
HEADGATE	STREET LIGHT
PIPE INVERT	SURVEY MONUMENT (SITE) CSM
PUMP	SURVEY MONUMENT (TYPE NOTED) MCSM
POWER POLE	UTILITY POLE
MANHOLE	VALVE (GAS)
(SANITARY/STORM)	VALVE (WATER)
MANHOLE (TELEPHONE)	METER (GAS)
MANHOLE (WATER)	

FORREST GLEN
PRELIMINARY PLAN RESUBMITTAL SET

PRELIMINARY MAJOR BASIN DRAINAGE MAP

REVISIONS:

No.	DATE	REMARKS	BY
1	6/20	PER RESPONSE TO REVIEW COMMENTS DATED 6/20/03	TC

DESIGNED BY: MDY
P.E. No. 29912
REVIEWED BY: MDY
P.E. No. 29912
SURVEYED BY:
P.L.S. No.:
SURVEY DATE:
N/A
DRAWN BY:
MDY
DATE DRAWN:
6/20/03
SCALE: AS NOTED
VERT. N/A
ACAD DRAWING NAME:
FGPPR6-20-03.DWG
PROJECT NUMBER:
02-716
SHEET NUMBER:
4 OF 4

CLIENT:
MAXWELL SNEDDON
CAROLE M. SNEDDON
CAL-MAC PROPERTIES LLC
896 24 1/2 ROAD
GRAND JCT., CO
81505

MDY
CONSULTING
ENGINEERS, INC.
HORIZON PARK PLAZA
743 Horizon Ct., Ste. 311
Grand Junction, CO
81506
PH. (970) 241-2122
FAX (970) 241-2082

Travis J. Cox

From: "Lisa Cox" <lisac@ci.grandjct.co.us>
To: <TCoxMDY@attbi.com>
Sent: Sunday, July 13, 2003 2:22 PM
Subject: Forrest Glen Subdivision

Travis,

I wanted to follow up on my last email to you about the status of this project, and also Forrest Estates Subdivision.

It looks as though the Response to Comments for Forrest Glen was sufficient for those reviewing it. I would schedule it for the next Planning Commission meeting, but I will not be in the office in time to write the staff report and to be present for the meeting. I know that Max is anxious to get approval for this project. I have it scheduled for the August 12th Planning Commission meeting and will be recommending approval.

On the Forrest Estates project, it's possible that you may have already been contacted by Lori Bowers, another senior planner in the office. As I mentioned in my earlier email, I will be out of the office and some of my projects have been reassigned. To ensure that it moves forward in the review process, Lori will be the permanent planner assigned to this project.

As you know (because I was unable to attend a Neighborhood Meeting with you one night), my mother has been very ill. I sent you the earlier email thinking that her condition was worsening and that I needed to spend more time helping with her care. As it happens, my mother passed away from her illness 3 days ago. I will be out of the office helping with family matters until July 31st.

I regret any inconvenience that my absence may cause. The Forrest Glen project should not have any difficulites (that I am aware of) going through the public hearing process. The Forrest Estates project has been reassigned to avoid delays for you and your client.

Sincerely,

Lisa Cox, AICP
Senior Planner
970.256.4039

Travis J. Cox

From: "Lisa Cox" <lisac@ci.grandjct.co.us>
To: <TCoxMDY@bresnan.net>
Sent: Sunday, July 13, 2003 3:56 PM
Subject: Forrest Glen

Travis,

I just wanted to mention that the only comment I had for Preliminary Plan Approval was that the plans be revised to show the fence along 29 Road in the 5' landscape easement.

If there are no objections to that, then we will try to schedule this project on the Consent Agenda. If there are objections, please let me know right away. Thanks.

Lisa Cox, AICP
Senior Planner
970.256.4039

Travis J. Cox

From: "Travis Cox" <TCoxMDY@bresnan.net>
To: "Lisa Cox" <lisac@ci.grandjct.co.us>
Sent: Tuesday, July 15, 2003 10:40 AM
Subject: Re: Forrest Glen

Lisa,

Thank you for getting back to me with a schedule for Forrest Glenn. We have no objections to revising the Preliminary Plan to indicate a fence along 29 Road. To minimize reproduction, I will deliver a planset for Community Development, the development engineer and a reduced set for the Planning Commission. If you need additional plansets, please let me know.

From myself and everyone at MDY Consulting Engineers, you have our deepest sympathies for your loss.

Travis Cox
----- Original Message -----
From: "Lisa Cox" <lisac@ci.grandjct.co.us>
To: <TCoxMDY@bresnan.net>
Sent: Sunday, July 13, 2003 3:56 PM
Subject: Forrest Glen

Travis,

I just wanted to mention that the only comment I had for Preliminary Plan Approval was that the plans be revised to show the fence along 29 Road in the 5' landscape easement.

If there are no objections to that, then we will try to schedule this project on the Consent Agenda. If there are objections, please let me know right away. Thanks.

Lisa Cox, AICP
Senior Planner
970.256.4039

MDY CONSULTING ENGINEERS INC.

HORIZON PARK PLAZA
743 HORIZON COURT, STE. 311
GRAND JUNCTION, CO 81506

- **PHN: (970) 241-2122**
- **FAX: (970) 241-2662**

TRANSMITTAL LETTER

DATE: *7/25/03*

TO: *LISA COX* DELIVERED BY: *TRAVIS COX*

RE: *02-716 ~ FORREST GLEN*

COPIES	DATE	NO.	DESCRIPTION
1	*7/25/03*	*2 PKT.*	*PRELIMINARY PLAN RESUBMITTAL*

RECEIVED
JUL 25 2003
COMMUNITY DEVELOPMENT DEPT.

COMMENTS:

SIGNED: _____ ***MDY CONSULTING ENGINEERS, INC.***

PREPARED BY: TRAVIS COX w/ MDY RECEIVED BY: _____ DATE:

\\Old hp\C PAVILION\Packard Bell\2002\02-716\Trans\716T52.doc

Memorandum

DATE: July 28, 2003

TO: Eric Hahn, Community Development Engineer

FROM: Lisa Cox, Senior Planner

SUBJECT: Response to Comments – Forrest Glen Subdivision (PP-2003-067).

Attached are the revised comments for this project. Please review and return any further comments you have to me by Monday, August 11, 2003.

If you have any questions please contact me at:
Phone #: 256-4039
Fax #: 256-4031
E-mail: lisac@ci.grandjct.co.us

From: Eric Hahn
To: Cox, Travis
Date: 1/30/03 1:11PM
Subject: Re: 02-716 Forrest Glen - 29 Road Street Classification

As discussed and noted in the General Meeting for 658 29 Road held on Dec. 13, 2002, 29 Road is CURRENTLY classified as a Principal Arterial, and has been since the current Grand Valley Circulation Plan was adopted by the City and County Planning Commissions on September 25, 2001. Please review my notes from the General Meeting.

Your detailed description of the Principal Arterial section is accurate.

>>> "Travis Cox" <mdyconsultingengineersinc@attbi.com> 01/30/03 10:13AM >>>
Eric:

As Mark Young has discussed with you, we need to know the future classification of 29 Road north of F 1/2 Road. It has been discussed that Principle Arterial is probable. If so, will the street section be as detailed on Page ST-01 of the Standard Contract Documents for Capital Improvements Construction, Revised June 2002? This detail indicates a 110 ft. of ROW and a half street section from centerline to edge of ROW as follows: 7 ft. median or turn lane, 1 ft. 6 in. curb & gutter, 11 ft. drive lane, 16 ft. drive lane, 2 ft. curb & gutter, 10 ft. 6 in. streetscape, 6 ft. sidewalk and 1 ft. between BOW and ROW.

If 29 Road north of F 1/2 Road will not be classified as a Principle Arterial or if the section detailed on Page ST-01 of the Standard Contract Documents for Capital Improvements Construction, Revised June 2002 is not correct, please provide us with the current and correct information. We appreciate your assistance in this matter. Thank you.

Travis Cox

CC: Gerstenberger, Lisa

From: Rick Dorris
To: Don Newton; Travis Cox
Date: 1/31/03 1:11PM
Subject: Re: 02-716 Forrest Glen - Principal Arterial Street Section

Travis,

The section is as you have stated for half street. It is in the Standard Contract Documents, detail ST-01. The only potential question here is where is the section line in relation to the right of way and the development on both sides. Ideally, the section line is the center of the right of way and the road. See me or Eric if you have confusion about this.

Thanks,

Rick Dorris
Development Engineer
City of Grand Junction, CO

>>> Don Newton 01/30/03 02:33PM >>>
Travis, I am not aware of any proposed changed to the Principal Arterial street section, however, I have forwarded your e-mail to Rick Dorris, Development Project Engineer. Rick may have information about the project you are working on that I am not aware of. He should respond to you request in the next day or two.

Also, Im sorry that you were unable to submit you proposal for the 2003 Alley Improvement District by the advertised deadline. We have selected Williams Engineering to perform the work and are in the process of executing a contract for the required services. Thank you for you interest in this project.
Tell Mark hello for me. Don Newton

>>> "Travis Cox" <mdyconsultingengineersinc@attbi.com> 01/30/03 09:59AM >>>
Don:

We have a copy of the Standard Contract Documents for Capital Improvements Construction, Revised June 2002 and purchased November 13, 2002. Could you please verify that the street section for a Principal Arterial is as shown on Page ST-01 of the Standard Contract Documents for Capital Improvements Construction, Revised June 2002? This detail indicates a 110 ft. of ROW and a half street section from centerline to edge of ROW as follows: 7 ft. median or turn lane, 1 ft. 6 in. curb & gutter, 11 ft. drive lane, 16 ft. drive lane, 2 ft. curb & gutter, 10 ft. 6 in. streetscape, 6 ft. sidewalk and 1 ft. between BOW and ROW.

It is crucial for that we have an accurate and up-to-date section detail of a Principal Arterial for purposes of sanitary sewer placement on an upcoming project at 658 29 Road. Our proposed sewer extension will be from an existing manhole in F 1/2 and 29 Roads north to the subject property.

Please verify that the Principle Arterial section is as stated above and if proposed or thought to be altered with the upcoming revision please provide the revised section. We appreciate your assistance in this matter.

Travis Cox

P.S. Possible revision in 2003: The detached sidewalk shown in the detail on Page ST-01 is drawn even with the edge of ROW, but the dimensioning indicates a 1 ft. separation between BOW and edge of ROW.

CC: Eric Hahn

From: Eric Hahn
To: Cox, Travis
Date: 1/7/03 4:38PM
Subject: Re: Street Centerline Design Standards

Travis,

The "knuckle" design isn't specifically addressed anywhere in TEDS or the City Standards. It is a feature that we have allowed on a case-by-case basis when it can be demonstrated that the design will adequately convey the expected worst-case vehicle type (typically, a fire truck). What is required by TEDS and the Standards for a horizontal change in direction in a residential street is a curve with a 150' minimum centerline radius. The "knuckle" design has been allowed in the past because Staff believed that the design was essentially performing as a cul-de-sac that is accessed by two separate streets from two different directions. It seemed logical that, if a cul-de-sac is acceptable, (i.e., it provides adequate access and circulation) then a "knuckle" with the same radius as a typical cul-de-sac should also be acceptable.

So, to summarize; the "knuckle" design is not discussed in any City Standards or design documents, but it has been and is allowed on a case-by-case basis in residential developments.

Hope this helps. Call or email me if you have any further questions or concerns.

Eric Hahn, PE
City Development Engineer

>>> "Travis Cox" <mdyconsultingengineersinc@attbi.com> 01/07/03 03:29PM >>>
Eric:

As you may know, with regards to the street layout for Forrest Estates, there has been discussion about knuckles on 90 degree bends. We were wondering if the Grand Junction Zoning and Development Code or the TEDS manual. Please email us with any information you have or reference the above documents for specifications on knuckled centerline bends. More specifically, if you could, identify were in the Code or TEDS this style of bend is recommended or required. Thank You.

Travis Cox

CC: Kliska, Jody; McDill, Mike; Newton, Don

1. At Final Plan, the developer must provide evidence of the vacation of the existing irrigation easement and establishment of the proposed 20' easement along the south property line.
2. The dimension of pavement width along 29 Road indicates a half-street pavement width of 35' as measured from the section line. Scaling the drawing indicates that the actual proposed width is 35.5', which is the correct half-street dimension. At Final Plan, please update this dimension accordingly, and provide a dimension for the proposed half-right of way, as was requested in the first round of comments.
3. At Final Plan, the developer must demonstrate that the pavement taper ratios for the 29 Road improvements meet minimum requirements, and the tapers must be labeled. Also, the City Transportation Engineer may require the developer to provide a detailed striping plan for the street improvements along 29 Road.

City of Grand Junction GIS Sewer Map

- PUMP STATIONS
- SANITARY MANHOLES
- PRIVATE MANHOLES
- COMBINED SANITARY MANHOLES
- STORM MANHOLES
- CATCH BASINS
- IRRIGATION GATES
- CATCH BASIN LATERALS
- Abandoned
- FORCE MAINS
- FORCE MAINS-NOT SURVEYED
- COMBINED SEWER
- SANITARY SEWER
- SANITARY SEWER-NOT SURVEYED
- STORM SEWER
- STORM SEWER-NOT SURVEYED
- IRRIGATION DITCHS
- Detention Ponds

Air Photos

- 2002 Photos
- Highways

Sewer Districts

- Orchard Mesa
- Fruitvale
- Clifton 1
- Clifton 2
- Central Grand Valley
- Streets 2

SCALE 1 : 1,200

100 0 100 200 300

FEET

N

://gis-web-fs.ci.grandjct.co.us/maps/sewermap.mwf

Tuesday, May 06, 2003 11:42 AM

Lisa.
Will this work on Forrest Glen for PID approval?
Mike Joyce

AGREEMENT, GRANT OF EASEMENT AND ABANDONMENT OF EASEMENT

This Agreement and Grant of Easement ("Agreement") is made by Palisade Irrigation District (the "District"), and Maxwell Sneddon & Carole M. Sneddon ("Landowners").

Landowners own real property ("Sneddon Property") within the boundaries of the District in Mesa County, Colorado, described as follows:

> Beginning at a point 390 feet North of the Southwest Corner of the SW1/4NW1/4 of Section 5, Township 1 South, Range 1 East of the Ute Meridian,
> thence East to the East boundary line of the W1/2E1/2W1/2SW1/4NW1/4 of said Section 5,
> thence North 440 feet,
> thence West to a point North of the Point of Beginning,
> thence South to the Point of Beginning,

The District has a fifty-foot historic right-of-way ("Existing PID Easement") for a portion of the Price Ditch Lateral. To facilitate the anticipated development of the Sneddon Property, the parties have agreed that the District will abandon a portion of the Existing PID Easement in consideration of and in exchange for Landowners granting the District the easement provided for by this Agreement ("New Easement") and performing the other obligations set forth below.

THEREFORE, Landowners grant to the District a permanent non-exclusive easement over, under, and across the South 20 feet of the Sneddon Property, and over, under, and across the East 20 feet of the Sneddon Property up to the northern point of the Existing PID Easement ("New Easement").

The New Easement shall be for the purposes of construction, operation, maintenance, repair, modification and reconstruction of an underground water transmission pipeline, and related structures (together, the "New Pipeline") to be constructed within the New Easement pursuant to this Agreement, and for access by personnel, vehicles and equipment, as the District may determine desirable to utilize and exercise its rights related to the New Easement and New Pipeline.

Landowners agree to construct at Landowners' expense the New Pipeline within that portion of the New Easement that lies below or within twenty feet of any street improvements. The New Pipeline shall extend from the Westerly side of Lot #9 of Forrest Glen Subdivision, Westerly to 29 Road. Both ends of the New Pipeline shall be capped. The New Pipeline shall be constructed in accordance with engineering and construction specifications to be provided by Landowners to the District for approval. Landowners shall notify the District when any portion of the New Pipeline is completed but before it is buried, and the District shall have the opportunity to inspect that portion of the New Pipeline before it is buried to confirm its compliance with those specifications.

Landowners may use the surface portion of their property within the New Easement in any way which does not interfere with rights granted the District under this Agreement, however, other than constructing a portion of a public road over the north part of the New Easement, the Landowner shall not construct or place any improvements or structures fixed to the ground within the Easement. Landowners may not place, or grant any other person or entity, except the Central Grand Valley Sanitation District, an easement or right to place, any other pipelines or underground structures within the New Easement.

This Agreement shall bind and benefit the Landowners and the District, together with their successors, legal representatives, heirs and assigns; and the New Easement shall be a covenant which attaches to and runs with the Property, including after acquired title of the Landowners.

In consideration of the grant of the New Easement and covenants of the parties contained in this Agreement, the District abandons, releases and quitclaims to the present owner those portions of the Existing PID Easement located on the Property and not within the New Easement or County Right-of-Ways.

Each individual signing this Agreement on behalf of an entity warrants and represents to the other parties that he or she is duly authorized to sign this Agreement for that entity and bind that entity to the terms and conditions contained in this Agreement. By signing this Agreement, each of the parties agrees for itself and its successors and assigns to take all actions and sign and deliver all documents reasonably required to fulfill the purposes of this Agreement.

In any action or proceeding concerning this Agreement, the prevailing party (as determined by the judge or other presiding official) shall be entitled to recover that party's reasonable attorney's fees and costs of the action or proceeding (in amounts determined by the judge or other presiding official) in addition to any other relief to which that prevailing party may be entitled.

Signed as of the 5th day of September, 2003.

PALISADE IRRIGATION DISTRICT

By: _____

Landowners:

_____
Maxwell Sneddon

_____
Carole M. Sneddon

My Commission Expires 02/12/2006

STATE OF COLORADO)
) ss.
COUNTY OF Mesa)

Subscribed and sworn to before me the 5th day of September, 2003, by Roy lester George as the secretary of Palisade Irrigation District.

WITNESS my hand and official seal.
My commission expires: 02/12/06

Pamela S. Shaw
Notary Public

STATE OF COLORADO)
) ss.
COUNTY OF MESA)

Subscribed and sworn to before me the _____ day of _____, 2003, by Maxwell Sneddon and Carole M. Sneddon.

WITNESS my hand and official seal.
My commission expires: _____

_____
Notary Public

Need fully executed version – also verification of who signed for PID (title).

~~Called Mike~~

called + left message 9-15-03

PRELIMINARY DRAINAGE REPORT

FOR

FORREST GLEN SUBDIVISION

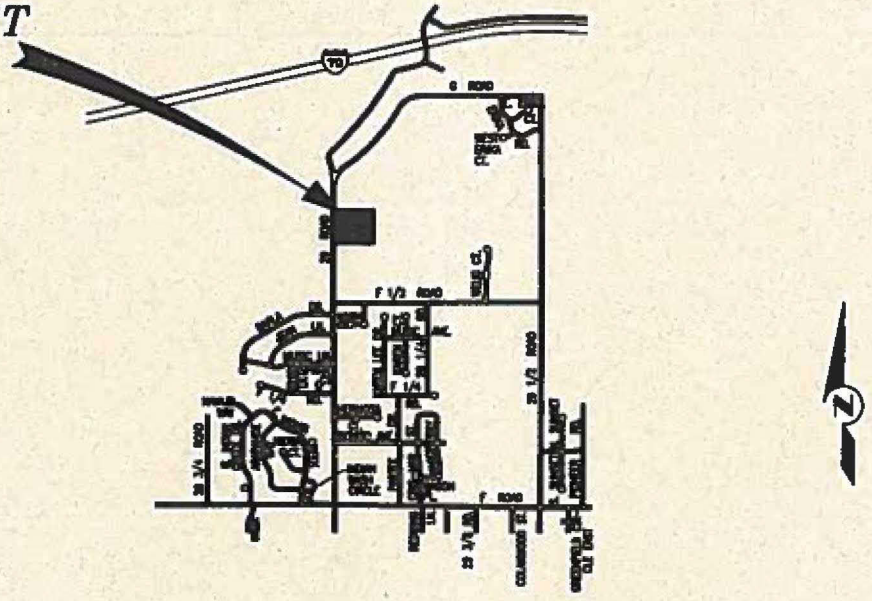
658 29 ROAD
GRAND JUNCTION, COLORADO

PREPARED
FOR

MAXWELL SNEDDON & CAROLE M. SNEDDON
CAL-MAC PROPERTIES LLC
895 24 ½ ROAD
GRAND JUNCTION, COLORADO
81505

DATE: APRIL 9, 2003

PROJECT SITE



VICINITY MAP

NOT TO SCALE

PREPARED
BY

·M·D·Y·

CONSULTING
ENGINEERS
INC.

HORIZON PARK PLAZA
743 HORIZON CT., STE. 311
GRAND JUNCTION, CO
81506

PH: (970) 241-8122
FAX: (970) 241-8668

PRELIMINARY DRAINAGE REPORT

FOR

FORREST GLEN SUBDIVISION

658 29 ROAD
GRAND JUNCTION, COLORADO

PREPARED

FOR

MAXWELL SNEDDON & CAROLE M. SNEDDON
CAL-MAC PROPERTIES LLC
895 24½ ROAD
GRAND JUNCTION, CO 81505

PREPARED

BY

MDY Consulting Engineers, Inc.

HORIZON PARK PLAZA
743 HORIZON COURT, SUITE 311
GRAND JUNCTION, COLORADO 81506
(970) 241-2122

DATE: APRIL 9, 2003

TABLE OF CONTENTS

APPENDICES:

SUPPLEMENTAL REPORT INFORMATION:

REFERENCES:

THE CITY OF GRAND JUNCTION & MESA COUNTY STORMWATER MANAGEMENT MANUAL (MAY 1996)

GRAND VALLEY STORMWATER MANAGEMENT MASTER PLAN (GV-SWMMP) FOR THE GRAND JUNCTION DRAINAGE DISTRICT, MESA COUNTY AND THE CITY OF GRAND JUNCTION (DECEMBER 1998, UPDATED MAY 2000)

MESA COUNTY WEB SITE

MDY Consulting Engineers, Inc.
HORIZON PARK PLAZA
743 HORIZON COURT, SUITE 311
GRAND JUNCTION, COLORADO 81506
PHN: (970) 241-2122
FAX: (970) 241-2662

April 9, 2003

Mr. Eric Hahn, P.E.
Development Engineer
City of Grand Junction
Community Development Department
250 N. 5th Street
Grand Junction, CO. 81501

RE: ***FORREST GLEN SUBDIVISION*** **– PRELIMINARY DRAINAGE REPORT**

Dear Eric,

MDY Consulting Engineers, Inc. have compiled the enclosed preliminary drainage report for ***FORREST GLEN SUBDIVISION*** to provide the City of Grand Junction with information necessary to review and approve the proposed method of handling drainage.

MDY Consulting Engineers, Inc. utilized the City of Grand Junction & Mesa County Stormwater Management Manual (1996 edition) for preparing the drainage report for this site.

MDY Consulting Engineers, Inc. wishes to thank you for your time and assistance you have provided regarding this project. If you have any questions or need additional information, please feel free to contact our office.

Respectfully Presented,
MDY Consulting Engineers, Inc.

James H. Taylor, P.E.

cc. File C:\MDY\2002\02-716\Drainage Report\ Cover Letter-Preliminary

FORREST GLEN SUBDIVISION
PRELIMINARY DRAINAGE REPORT

I) GENERAL LOCATION AND DESCRIPTION:

The proposed ***FORREST GLEN SUBDIVISION*** is located in a portion of the SW¼, NW¼ of Section 5, Township 1 South, Range 1 East of the Ute Meridian, Mesa County, Colorado. The address for the property is 658 29 Road (Parcel No. 2943-052-00-077). The project site is located on the east side of 29 Road. The southern boundary of the project site is approximately 390 feet north of F ½ Road.

The project site consists of 4.68 acres that was at one time agricultural. The property is currently zoned by the City of Grand Junction as Residential Multiple Family, Five dwelling units per acre (RMF-5).

The project site is bounded to the north by a large unplatted parcel of property consisting of a single family home, shop and vacant agricultural property; to the south by single family homes on large lots of unplatted property and platted single family residential subdivisions south of F ½ Road; to the east by vacant agricultural unplatted property; and the west by a single family home on a large parcel of unplatted property. Also approximately 900 feet to the north, at the nearest point to the northern boundary of the project site, is the Government Highline Canal [1]. A Vicinity Map showing the project site location is included in the Appendices.

Soil classification information from the Mesa County web site indicates that two soil types make up 100% of the project site (See Supplemental Report Information). These are a Ce-Persayo Silty Clay, 2 to 5% slopes, non prime farm ground and a Cc-Persayo Silty Clay Loam, 5 to 12% slopes, non prime farm ground. These soil types belong to the Hydrologic Soil Group D. A review of contour mapping of the project site indicates the steepest slope to be

[#] REFER TO PRELIMINARY MAJOR BASIN DRAINAGE PLAN- EXISTING DRAINAGE ENTITY
(#) REFER TO PRELIMINARY MAJOR BASIN DRAINAGE PLAN- PROPOSED DRAINAGE ENTITY

I) **GENERAL LOCATION AND DESCRIPTION: (CONTINUED)**

between 2 and 3 % along the eastern boundary. Ground cover at the present time on the project site appears to be native grasses.

II) **EXISTING DRAINAGE CONDITIONS:**

A review of the Mesa County web site indicates that there are no flood plains in the area of the project site (See Supplemental Report Information).

The project site in its present condition appears to drain from north to south. This is evident from the furrows from previous agricultural operations. The irrigation tail water from the project site was collected in a shallow ditch at the south end of the property [2] and then conveyed to a man made ditch [3], approximately 6 to 8 feet deep, that begins approximately 50 feet east of the southwest corner of the project site. This ditch flows east for an approximate distance of 190 feet before turning and flowing to the south. The ditch, as viewed in late March 2003, was dry. This ditch becomes very shallow as it approaches and turns east at F ½ Road.

The irrigation tail water from the field to the north of the project site is collected in a very shallow ditch [4] that flows to the west along the southern boundary of this field. Along the western boundary of this field is a concrete ditch [5] that drains from north to south. This concrete ditch can convey irrigation water wasted from the pipe that delivers water at the top of this field and during storm events conveys surface drainage from a portion of land that lies approximately 500 feet north of the project site. The irrigation tail water and storm runoff accumulates at the northwest corner of the project site, where it is then conveyed to the south in a 6" diameter PVC pipe [6]. This pipe is in the 29 Road right of way and drains from north to south along the western boundary of the project site. At the southern boundary of the project

[#] REFER TO PRELIMINARY MAJOR BASIN DRAINAGE PLAN- EXISTING DRAINAGE ENTITY
(#) REFER TO PRELIMINARY MAJOR BASIN DRAINAGE PLAN- PROPOSED DRAINAGE ENTITY

II) EXISTING DRAINAGE CONDITIONS: (CONTINUED)

site, the pipe appears to turn east where it discharges into the 6 to 8 foot deep ditch that has been previously described [3].

The fields to the east of the project site also drain from the north to south. Irrigation tail water and surface runoff from these fields is collected and conveyed in a ditch [7] at the field's southern boundary. The exact direction of flow in the ditch was difficult to define during a field review in late March 2003 because the ditch was over grown with vegetation. However, at several locations where the ditch had been "burned", it appears the ditch is draining to the west. On April 7, 2003, water was seen in the ditch flowing from east to west.

This ditch at its westerly end flows into an existing concrete pipe [8]. Evidence in the surrounding area suggests that the pipe turns to the south before getting to the project site. On April 7, 2003, water in the ditch was seen entering the pipe and exiting a pipe that enters into a ditch that flows to the south. This ditch, pipe and water definitely do not cross the project site.

Also draining to this ditch is seepage flow from a man made drainage ditch [9] that has been constructed southeast of the Government Highline Canal and south of G Road. The Grand Junction Drainage District refers to this as the 29 & G Road Drain. There are no visible pipes coming into this ditch from land north of G Road or west of 29 Road. This ditch was dry in most places and wet along the mid section of the ditch (which appeared to be due to seepage) when viewed in late March 2003. However, on April 7, 2003 clear water was seen bubbling into the bottom of the ditch at the north end. One can only assume that this is seepage water from the Government Highline Canal. Water was let back into the canal on April 1, 2003. The southwestern leg of

[#] REFER TO PRELIMINARY MAJOR BASIN DRAINAGE PLAN- EXISTING DRAINAGE ENTITY
(#) REFER TO PRELIMINARY MAJOR BASIN DRAINAGE PLAN- PROPOSED DRAINAGE ENTITY

II) EXISTING DRAINAGE CONDITIONS: (CONTINUED)

this ditch was still dry on April 7th. A Preliminary Major Basin Drainage Map is included in the Appendices.

III) PROPOSED DRAINAGE CONDITIONS:

The project site will generate developed surface runoff from lots and streets. This runoff will be collected and conveyed by way of concrete curb and gutter in conjunction with concrete gutter cross pans and directed to inlets located north of the southern project site boundary on McCaldon Way (1) and to an inlet on 29 Road (2) at the southwest corner of the project site boundary. These inlets will be connected to a storm drain pipe system draining west along the southern project site boundary (3). This pipe will also be stubbed to the east to be connected to a future detention pond constructed as part of future development (4).

Where this pipe along the southern boundary of the project site intersects 29 Road (5), it will be connected to a proposed storm drain pipe to be installed in 29 Road. The proposed storm drain pipe in 29 Road will begin at a Grand Junction Drainage District (GJDD) manhole located approximately 150 feet south of Music Avenue on the west side of 29 Road. Recent research of the 29 Road corridor suggests that the horizontal alignment of this new storm drain pipe system will more than likely be proposed on the west side of 29 Road since there appears to be fewer anticipated horizontal utility conflicts with this possible western alignment.

The Developer and Project Engineer are currently working with GJDD to evaluate the possible location of this drainage system. Detailed design information of this storm drain pipe system will be provided during the Final Plan process.

[#] REFER TO PRELIMINARY MAJOR BASIN DRAINAGE PLAN- EXISTING DRAINAGE ENTITY
(#) REFER TO PRELIMINARY MAJOR BASIN DRAINAGE PLAN- PROPOSED DRAINAGE ENTITY

III) PROPOSED DRAINAGE CONDITIONS: (CONTINUED)

In addition, it will be necessary to replace the 6" PVC pipe (6) that drains from north to south in the 29 Road right of way located along the western project site boundary. This pipe will be increased in size for ease of maintenance and so that it can adequately convey tail and surface water runoff from the properties north of the project site and storm runoff that flows down the concrete ditch along the east side of 29 Road north of the project site.

As future development occurs to the east of this project site, detention facilities will be designed and constructed such that developed runoff can be collected, stored and released at a controlled rate into the storm drain pipe outfall system. This system will be constructed across the southern boundary of this project site to 29 Road and subsequently south along the 29 Road corridor to the existing GJDD storm drain system south of Music Avenue.

Drainage facilities within the subdivision boundaries will be installed within street right of way or easements dedicated for drainage, irrigation and utilities. Proposed drainage facilities within the 29 Road corridor will be planned within the existing right of way. The final horizontal location of the proposed storm drain pipe system will be determined during the Final Plan process for this project phase.

IV) DESIGN CRITERIA & APPROACH:

In 1998 Williams Engineering prepared for the Grand Junction Drainage District, Mesa County and the City of Grand Junction a document titled *GRAND VALLEY STORMWATER MANAGEMENT MASTER PLAN (GV-SWMMP)* (See drawing in Supplemental Report Information). This document indicates that Williams Engineering has prepared a drainage study dated March 2000 for the 29 Road corridor. A phone call to Mr. Williams did

[#] REFER TO PRELIMINARY MAJOR BASIN DRAINAGE PLAN- EXISTING DRAINAGE ENTITY
(#) REFER TO PRELIMINARY MAJOR BASIN DRAINAGE PLAN- PROPOSED DRAINAGE ENTITY

IV) DESIGN CRITERIA & APPROACH: (CONTINUED)

verify that he has done work in the area, but that he did not indicate specific recommendations being made for facilities in 29 Road north of the last manhole on the Grand Junction Drainage District line. This manhole is south of Music Avenue.

The design approach will be to analyze this project site in conjunction with the future development considerations to the east. Determination of the projected size for the detention pond and location as well as the appropriate pipe size to drain the future detention pond will be conducted during the Final Plan process. An analysis will be made to determine the size and capacity of the pipe to be installed across the southern boundary of the project site. The size of the proposed pipe(s) to be installed in 29 Road will not be larger than the existing pipe size discharging from the GJDD manhole located south of Music Avenue, which is believed to be 24" diameter R.C.P. (to be field verified).

The design criteria for this project will utilize the City of Grand Junction and Mesa County Storm Water Management Manual (May 1996 edition) and the Williams Engineering drainage study dated March 2000 for the 29 Road corridor where applicable.

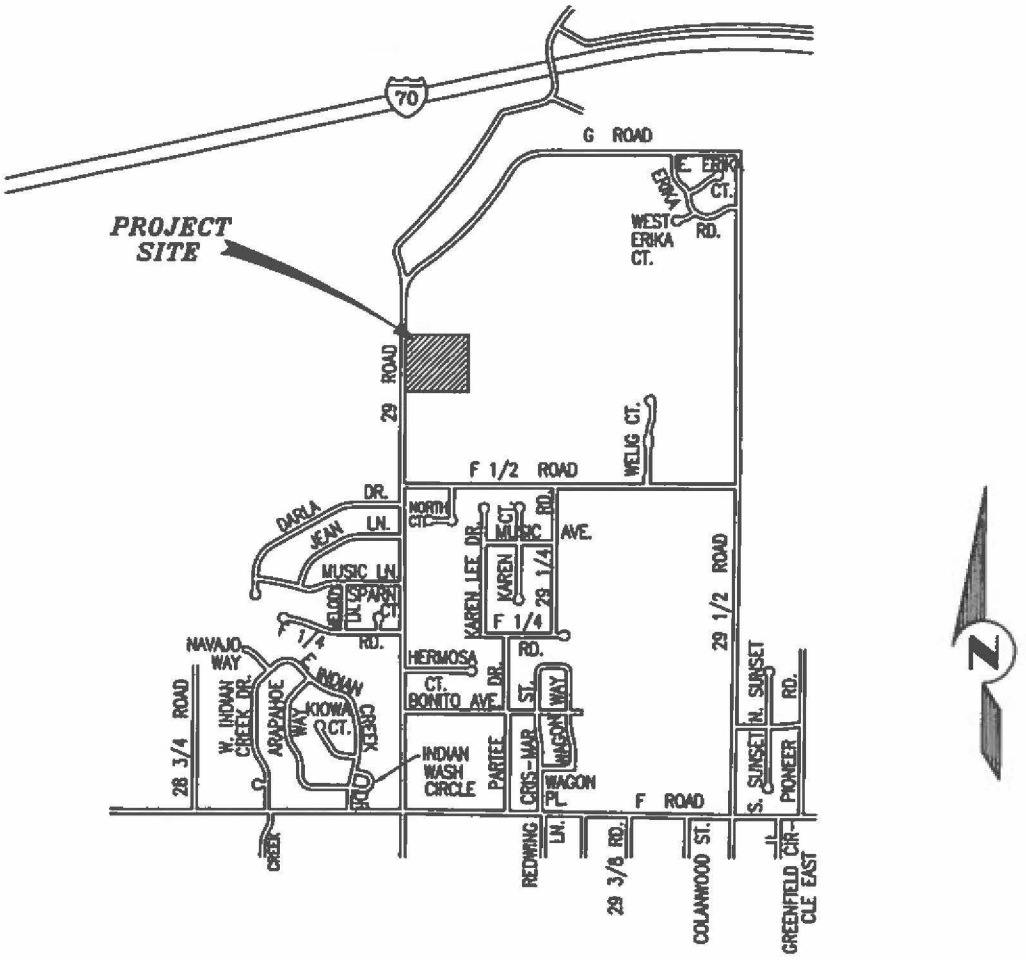
[#] REFER TO PRELIMINARY MAJOR BASIN DRAINAGE PLAN- EXISTING DRAINAGE ENTITY
(#) REFER TO PRELIMINARY MAJOR BASIN DRAINAGE PLAN- PROPOSED DRAINAGE ENTITY

APPENDICIES

APPENDIX A
VICINITY MAP

FORREST GLEN SUBDIVISION

658 29 ROAD
GRAND JUNCTION, COLORADO

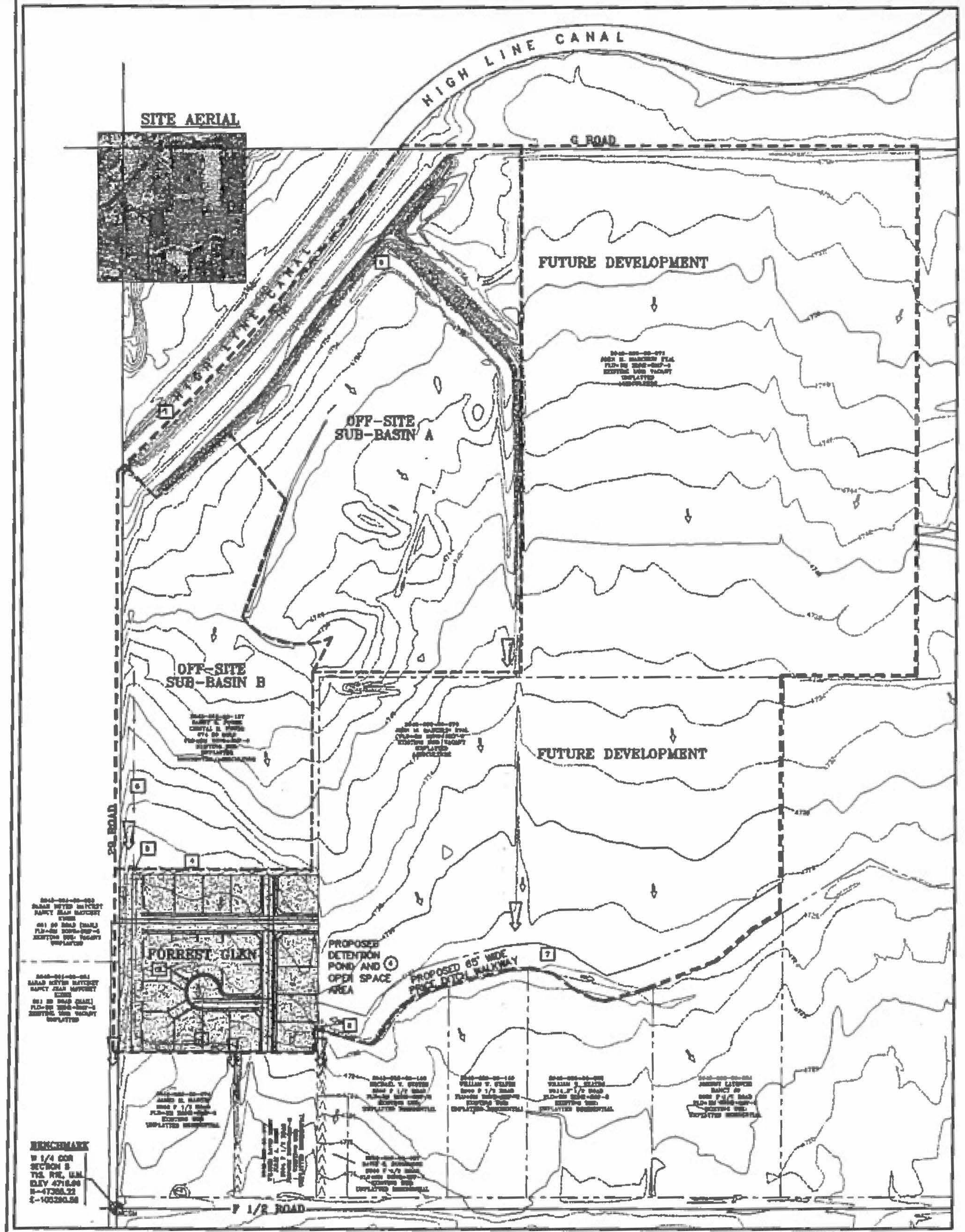


VICINITY MAP

NOT TO SCALE

APPENDIX B

PRELIMINARY MAJOR BASIN DRAINAGE MAP (REDUCED Z-FOLD)

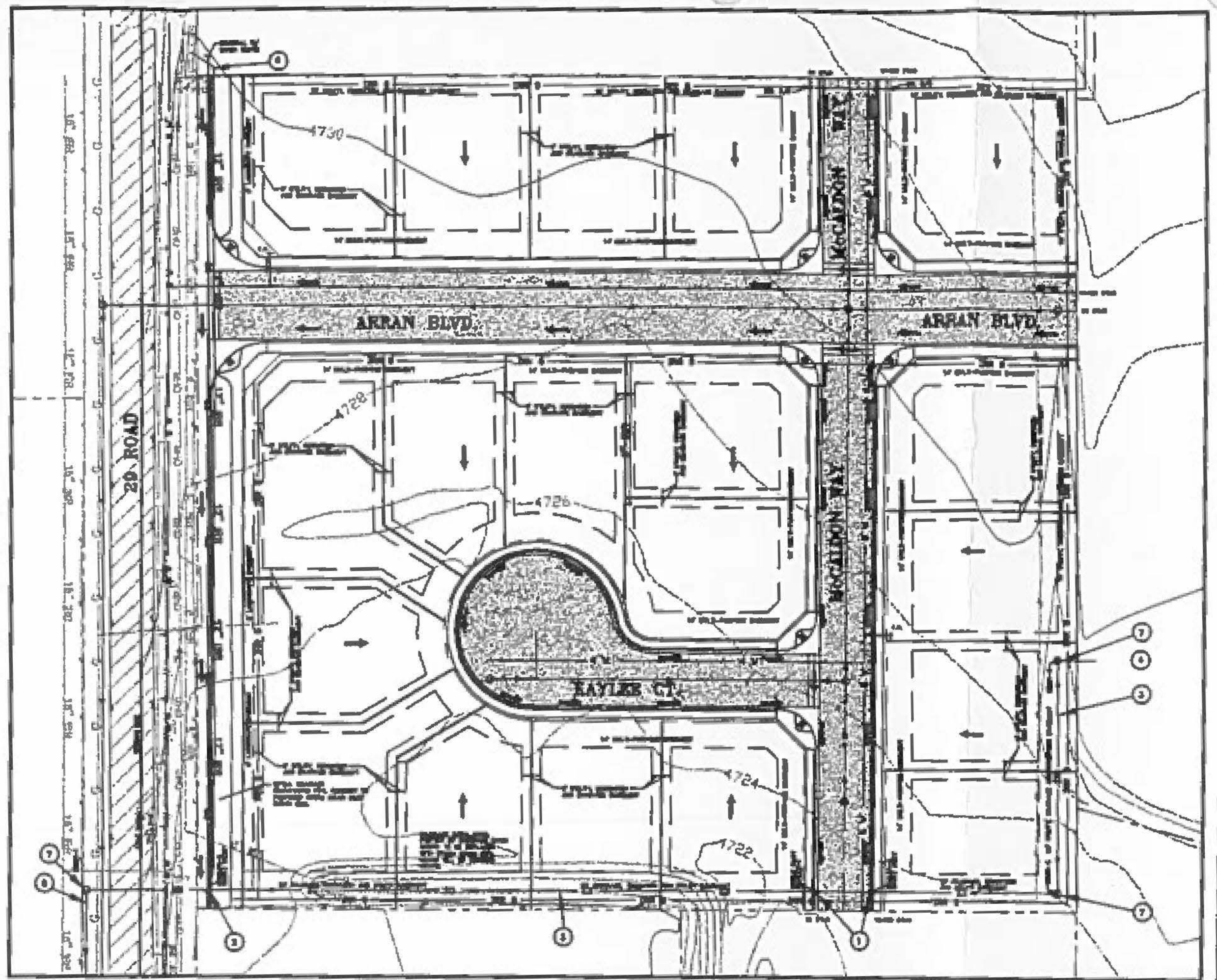


MAJOR BASIN MAP

0' 175' 350' 700'

SCALE: HOR. 1"=350'

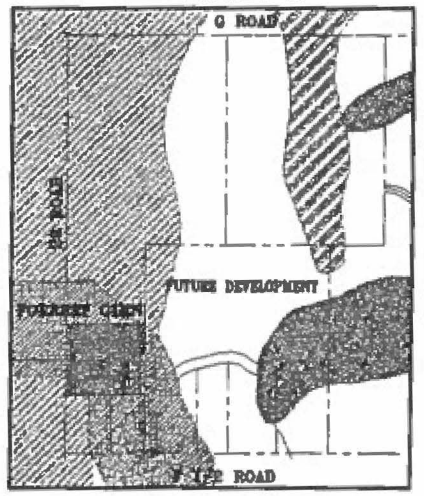
CONTOUR SOURCE NOTE:



FORREST GLEN DRAINAGE

0' 50' 100' 200'

SCALE: HOR. 1"=100'



SOIL TYPES AREA MAP

N.T.S.

DRAINAGE LEGEND

EXISTING DRAINAGE FEATURES

PROPOSED DRAINAGE FEATURES

GENERAL LEGEND

FORREST GLEN

PRELIMINARY PLAN SUBMITTAL SET

PRELIMINARY MAJOR BASIN DRAINAGE PLAN

DATE DRAWN:
04/09/03

PROJECT NUMBER:
02-716

CLIENT:
MAXWELL SNEDDON
CAROLE M. SNEDDON
CAL-MAC PROPERTIES LLC
895 24 1/2 ROAD
GRAND JCT., CO

MDY CONSULTING ENGINEERS, INC.
HORIZON PARK PLAZA
743 Horizon Ct., Ste. 311
Grand Junction, CO
81506
PH: (970) 241-2122
FAX: (970) 241-2662

APPENDIX C

PRELIMINARY MAJOR BASIN DRAINAGE MAP (FULL SIZE INSERTED)

SUPPLEMENTAL REPORT INFORMATION

SOILS INFORMATION FROM THE MESA COUNTY WEB SITE

Information from the Mesa County Web Site Printed 4/4/03

Ce-Persayo silty clay, 2 to 5 percent slopes

Map Unit Setting

MLRA:

Elevation: 4,500 to 5,200 feet (1,372 to 1,585 meters)

Mean annual precipitation: 6 to 10 inches (152 to 254 millimeters)

Average annual air temperature: 50 to 54 degrees F. (10 to 12 degrees C.)

Frost-free period: 150 to 190 days

Map Unit Composition

Persayo and similar soils: 90 percent

Minor components: 10 percent

Component Descriptions

Persayo soils

Landform: Hillside

Geomorphic position: Toeslope

Parent material: Residuum weathered from calcareous shale

Slope: 2 to 5 percent

Surface fragments: Unspecified

Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)

Drainage class: Well drained

Slowest permeability: About 0.20 in/hr (moderately slow)

Available water capacity: About 2.3 inches (very low)

Shrink-swell potential: About 4.5 LEP (moderate)

Flooding hazard: None

Ponding hazard: Unspecified

Seasonal water table minimum depth: Greater than 6 feet

Runoff class: High, Hydrologic Soil Group D

Calcium carbonate maximum: About 40 percent

Gypsum maximum: About 10 percent

Salinity maximum: About 8 mmhos/cm (slightly saline)

Sodicity maximum: About 5 SAR (slightly sodic)

Ecological site: Unspecified

Potential native vegetation: Unspecified

Land capability (irrigated): 6s

Land capability (non irrigated): 7c

##

Typical Profile:

Ap-0 to 4 inches; silty clay

C-4 to 15 inches; silty clay loam

Cr-15 to 19 inches; weathered bedrock

##

Minor Components

Other Soils and similar soils

Composition: About 10 percent

Landform: Unspecified

Geomorphic Position: Unspecified

Slope: Unspecified

Depth to restrictive feature: Unspecified

Drainage class: Unspecified

Ecological site: Unspecified

##

Information from the Mesa County Web Site Printed 4/4/03

Cc-Persayo silty clay loam, 5 to 12 percent slopes

Map Unit Setting

MLRA:

Elevation: 4,500 to 5,200 feet (1,372 to 1,585 meters)

Mean annual precipitation: 6 to 10 inches (152 to 254 millimeters)

Average annual air temperature: 50 to 54 degrees F. (10 to 12 degrees C.)

Frost-free period: 150 to 190 days

Map Unit Composition

Persayo and similar soils: 90 percent

Minor components: 10 percent

Component Descriptions

Persayo soils

Landform: Ridge

Geomorphic position: Backslope

Parent material: Residuum weathered from calcareous shale

Slope: 5 to 12 percent

Surface fragments: Unspecified

Depth to restrictive feature: 10 to 20 inches to bedrock (paralithic)

Drainage class: Well drained

Slowest permeability: About 0.20 in/hr (moderately slow)

Available water capacity: About 2.5 inches (very low)

Shrink-swell potential: About 4.5 LEP (moderate)

Flooding hazard: None

Ponding hazard: Unspecified

Seasonal water table minimum depth: Greater than 6 feet

Runoff class: Very high Hydrologic Soil Group D

Calcium carbonate maximum: About 40 percent

Gypsum maximum: About 10 percent

Salinity maximum: About 8 mmhos/cm (slightly saline)

Sodicity maximum: About 5 SAR (slightly sodic)

Ecological site: Silty Saltdesert

Potential native vegetation: galleta, shadscale saltbush, Indian ricegrass, saline wildrye, Gardner's saltbush, bottlebrush squirreltail

Land capability (irrigated): Unspecified

Land capability (non irrigated): 7c

##

Typical Profile:

Ap-0 to 4 inches; silty clay loam

C-4 to 15 inches; silty clay loam

Cr-15 to 19 inches; weathered bedrock

##

Minor Components

Other Soils and similar soils

Composition: About 10 percent

Landform: Unspecified

Geomorphic Position: Unspecified

Slope: Unspecified

Depth to restrictive feature: Unspecified

Drainage class: Unspecified

Ecological site: Unspecified

##

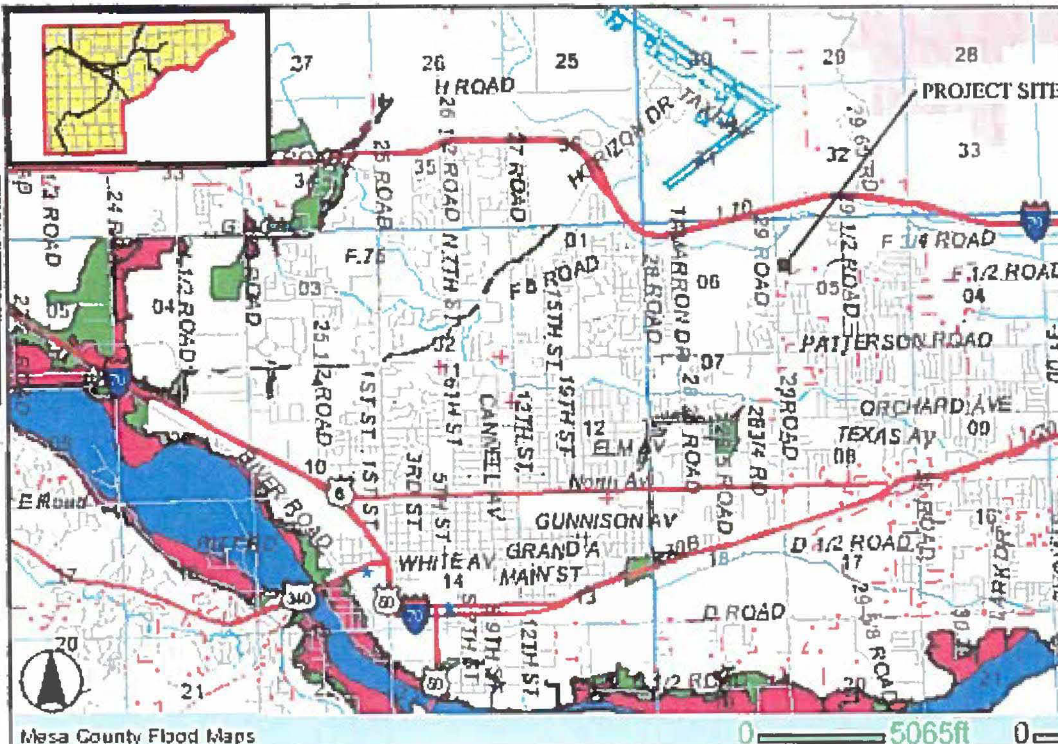
FLOOD PLAIN MAP FROM THE MESA COUNTY WEB SITE

Mesa County Home Page
GIS Home Page
Parcel Search & Road Map
Survey Plats & Monument Records
GPS Survey Monuments (SIMS)
2001 - 2 foot Contours
Vertical Datum Differences
Zoning Maps
USGS Quad Sheets
Aerial Photos/ Digital Imagery
Polling Place
Property Sales
Fire Districts
Sewer Districts
Septic Systems
Persigo 201 Map
Drainage Basins
Flood Maps
Enterprise Zones
Urban Truck Routes
Soils Map
Map Help
Census Maps
Population Density
Total Population

Mesa County Flood Maps

Zoom to Area. . . .

Help ?



Legend
Mesa County Boundary
Hill Shade
Hospitals
Police Stations
Fire Stations
State Highways
Roads
Canals
Township Lines
Section Lines
Airports
Flood Plain
100 Year Floodplain
500 Year Floodplain
Floodway
Outside 500 Year Floodplain
City of Grand Junction
City of Fruita
Town of Palisade
Town of Collbran
Town of Debeque
Colorado National Monument
BLM Lands
National Forest Lands

Zoom In

Disclaimer

The Geographic Information System (GIS) and its components are designed as a source of reference for answering inquiries, for planning and

GRAND VALLEY STORMWATER MANAGEMENT MASTER PLAN (GV-SWMMP)
WATER SHED KEY MAP

EXHIBIT "2A"

WATERSHED KEY MAP

2 Year Storm Condition

LEGEND

FACILITY	EXISTING	PROPOSED	REMOVE & REPLACE
DRAIN CHANNEL			
DRAIN PIPE			
IRRIGATION CANAL/ DITCH			
IRRIGATION PIPE			
STREAM, CREEK, RIVER, OR WASH			
WATERSHED BOUNDARY			

IDENTIFICATION KEY

ID	DESCRIPTION
NHPQ	MASTER DRAINAGE PLAN, PREPARED BY NHPQ IN 1975, INDIAN WASH WATERSHED
CS	COMBINED SEWER SWMMP STUDY, PREPARED BY WILLIAMS ENGINEERING, 1998.
GV-*	GRAND VALLEY SWMMP STUDY PREPARED BY WILLIAMS ENGINEERING, 1998, WATERSHED BASINS AS NOTED.
11	ORCHARD AND BUNTING AVENUE DRAINAGE STUDY BY WILLIAMS ENGINEERING, 1998.
12	29 ROAD CORRIDOR DRAINAGE STUDY BY WILLIAMS ENGINEERING, 2000.

WILLIAMS ENGINEERING
1231 19 ROAD, FRUITA, COLORADO 81521-9689
(970) 858-1014 PHONE (970) 858-1007 FAX

GRAPHIC SCALE: (METRIC) 0 500 1000	JOB: GV-SWMMP	DATE: MAY 2000
	FILE: EXH-2A-GV	

REFERENCES

REPORT REFERENCE MATERIAL:

* THE CITY OF GRAND JUNCTION & MESA COUNTY STORMWATER MANAGEMENT MANUAL (MAY 1996)

* GRAND VALLEY STORMWATER MANAGEMENT MASTER PLAN (GV-SWMMP) FOR THE GRAND JUNCTION DRAINAGE DISTRICT, MESA COUNTY AND THE CITY OF GRAND JUNCTION (DECEMBER 1998, UPDATED MAY 2000)

* MESA COUNTY WEB SITE (DATED MATERIAL AS OF 04/04/03)

Geotechnical Engineering Group, Inc.

PRELIMINARY GEOTECHNICAL INVESTIGATION
SUBGRADE INVESTIGATION AND PAVEMENT DESIGN
Forrest Glen Subdivision
North and East of F ½ Road and 29 Road
Grand Junction, Colorado

Prepared For:

MDY Consulting Engineers, Inc.
743 Horizon Court, Suite 311
Grand Junction, CO 81506

Attention: Mr. Mark D. Young, P.E.

Job No. 1,317

April 9, 2003

Geotechnical, Environmental and Materials Testing Consultants

(970) 245-4078 • fax (970) 245-7115 • geotechnicalgroup.com
2308 Interstate Avenue, Grand Junction, Colorado 81505

TABLE OF CONTENTS

SCOPE

This report presents the results of our Preliminary Geotechnical Investigation and Subgrade Investigation and Pavement Design for the proposed Forrest Glen Subdivision to be located north and east of F ½ Road and 29 Road, in Grand Junction, Colorado. Our investigation was conducted to explore subsurface conditions, provide development recommendations, provide pavement recommendations and to provide preliminary foundation alternatives. The report includes descriptions of subsoil and groundwater conditions found in seven exploratory test pits, recommended pavement sections and discussion on details influenced by the subsurface conditions. This investigation was performed in general conformance with our Proposal No. 02-300 dated November 6, 2002 and as requested by the MDY Consulting Engineers, Inc. e-mail dated April 2, 2003.

The report was prepared from data developed during our field exploration, laboratory testing, engineering analysis and experience with similar conditions. A brief summary of our conclusions and recommendations follows. Detailed criteria are presented within the report.

SUMMARY OF CONCLUSIONS

1. Subsoils found in the seven exploratory test pits consisted of up to 5 feet of clay and up to 3.5 feet of extremely weathered shale underlain by clayey shale to the maximum depth of 5 to 10 feet below the existing ground surface. We encountered 0.5 feet of existing fill in exploratory test pit, TP-1. Groundwater was encountered in exploratory test pit, TP-7, at 8 feet below the ground surface the day of excavation and at 6.5 feet below the ground surface when checked one day later.

2. Expansive soils were found on the subject site. We believe the most predominant recommended foundation type will be drilled piers. An alternative of shallow foundations such as high pressure footings or pads underlain by a depth of structural fill may also be feasible. A design level soils investigation should be performed to provide foundation recommendations on a lot specific basis.

3. An asphalt thickness of 7.0 inches or 3.0 inches asphalt over 12.5 inches base course over well compacted subgrade soils are recommended for interior residential streets, ESAL = 54,750. Additional pavement section alternatives and design and construction criteria are presented in the text of the report.

4. Utility trench backfill should be placed in well compacted manner and tested during construction. Site drainage should be carefully planned and maintained to direct water away from pavements and proposed building areas.

SITE CONDITIONS

The subject site was located north and east of F ½ Road and 29 Road in Grand Junction, Colorado. A vicinity map is included as Fig. 1. The site was a basically flat, vacant field at the time of our site visit. An existing mobile home,

outbuilding and scattered debris were noted in the south and west portion of the site. The mobile home appeared to be abandoned. The attached outbuilding had a concrete slab foundation. We noted existing gravel fill in this area. We noted north/south oriented furrows across the field. The subject site sloped down towards the south at 1 to 3 percent (measured with automatic level). An irrigation canal was located south of the subject site and near the south property line in the west portion of the site. The canal was approximately 6 to 8 feet in depth and no water was flowing at the time of the site visit. A vacant field was east. A vacant field was west, beyond 29 Road. Single family residences were south. A single family residence was north beyond a vacant field. The vicinity sloped down toward the south at slopes of approximately 1 to 3 percent (USGS Grand Junction and Clifton, Colorado topographical quadrangle, 1962, photorevised 1973).

PROPOSED CONSTRUCTION

We understand the subject site consists of 19 lots proposed for development and residential construction. Residences will be wood framed, single story structures with no below grade construction. Shallow, footing foundations are desired. There will be no site grading changes. We anticipate foundation loads may range from 1,000 to 2,000 pounds per lineal foot of foundation wall. We anticipate approximately 775 lineal feet of pavement for interior streets. There

will be no outside improvements, such as a turn lane. There will be no retention area soils testing required. If proposed construction is different than what is described above, we should be notified so that we can re-evaluate the recommendations presented in this report in light of the differences.

SUBSURFACE CONDITIONS

Subsurface conditions at the site were investigated by observing and sampling seven (7) exploratory test pits. Locations of test pits are shown on Fig. 2. Replacement of test pit excavations as a well compacted fill (as described later under the "**SITE DEVELOPMENT**" heading for utility trench backfill) should be confirmed at the time of construction. Graphic logs of the soils found in the exploratory test pits and field penetration resistance tests are presented on Figs. 3 through 5. Subsurface conditions encountered in the exploratory test pits consisted of up to 5 feet of clay and up to 3.5 feet of extremely weathered clayey shale underlain by shale to the maximum depth of 5 to 10 feet below the existing ground surface. We encountered 0.5 feet of existing fill in exploratory test pit, TP-1.

The existing fill material consisted of variable gravel and sand. The existing fill was dry, tan and gray. The clay was very soft to very stiff, dry to moist, tan,

brown and gray. The extremely weathered shale was clayey, very stiff to medium hard, dry to moist, brown and gray, layered and fractured with sulfates noted. The clayey shale was medium hard to hard, dry to moist, brown and gray, fractured and layered. Two clay samples tested had a moisture content of 12.6 and 14.9 percent. One clay sample tested exhibited a liquid limit of 59, plasticity index of 34 and 96 percent passing the No. 200 sieve (silt and clay sized particles). Two weathered shale samples tested had moisture contents of 14.7 to 18.8 percent. Two weathered shale samples had dry densities of 111 pcf and 116 pcf. Three shale samples tested had moisture contents of 12.2 percent to 14.1 percent. Two shale samples tested had dry densities of 111 pcf and 113 pcf. Two shale samples exhibited liquid limits of 39 and 41, plasticity indices of 15 and 17 and 69 and 59 percent passing the No. 200 sieve (silt and clay sized particles). One combined clay, extremely weathered shale and shale sample tested had a moisture content of 12.7 percent exhibited a liquid limit of 42, plasticity index of 18 and 94 percent passing the No. 200 sieve (silt and clay sized particles). Three extremely weathered shale and shale samples were tested for one-dimensional swell / consolidation characteristics. Three samples swelled 0.3 percent to 1.6 percent when wetted under a confining pressure of 500 or 1,000 psf. Results of laboratory testing are included in Figs. 6 through 8 and summarized on Table I.

SITE DEVELOPMENT

Site grading plans were not available at the time of this investigation. We understand there will be no site grading cut or fill. We believe utility installation in the clay, extremely weathered shale and shale soils may be accomplished using conventional excavation equipment. Heavy duty excavation equipment and increased effort may be required in some areas. Practical backhoe refusal was encountered at a depth of 5.5 feet at test pit, TP-6. Utility trenches should be sloped or shored to meet local, State and Federal safety regulations. Based on our investigation, we believe soils at this site may be classified as either Type B or Type C, based on OSHA standards. Excavation slopes specified by OSHA are dependent upon types of soils and groundwater conditions encountered. Contractors should identify the conditions encountered in the excavation and refer to OSHA standards to determine appropriate slopes.

Water and sewer lines will be constructed beneath pavements. Compaction of trench backfill can have a significant effect on the life and serviceability of pavements. We recommend trench backfill be placed in thin, loose lifts, moisture conditioned to within 2 percent of optimum moisture content and compacted to at least 95 percent of standard Proctor maximum dry density (ASTM D 698). The placement and compaction of utility trench backfill should be observed and tested by a geotechnical engineer during construction.

We identified groundwater during this investigation at a depth of 6.5 feet below the ground surface at one test pit, TP-7. We anticipate groundwater levels may rise during irrigation season. An irrigation / drainage canal was noted near the south portion of the subject site. As a result, there may be groundwater concerns during construction, which were not identified by this investigation.

PRELIMINARY CONSTRUCTION CONSIDERATIONS

Subsurface conditions encountered at anticipated foundation levels included clays, extremely weathered shale and shale. Existing fill was encountered in exploratory test pit, TP-1. Existing fill should not be relied upon for structural support and should be removed full depth prior to reliance for structural support. Based on the results of this investigation, we believe the most predominant recommended foundation type will be drilled piers. An alternative of high pressure footing, wall on grade or grade beam and pad foundations underlain by a depth of structural fill may be feasible on some lots. In our opinion, drilled piers would generally offer better performance in areas of expansive soil conditions. Foundation design and construction recommendations should be developed through a detailed geotechnical investigation on a site-specific basis.

Slabs-on-grade supported by the soils encountered during this investigation will likely involve low to moderate risk of slab movement. In finished areas where floor movement and associated damage cannot be tolerated, structurally supported floors should be planned. Site specific evaluation of floor slab movement potential should be addressed in a detailed geotechnical investigation.

PAVEMENT

The pavement subgrade soils include clay, extremely weathered shale and shale. We visually classified each sample obtained from the test pits and tested samples in our laboratory. We tested a combined sample from test pits, TP-1 and TP-2 at 0 to 5 feet depth for pavement design purposes. The combined sample was tested for Atterberg limits, gradation, standard Proctor, and California Bearing Ratio (CBR). The sample tested exhibited a maximum dry density of 106.5 pcf, optimum moisture of 20.0 percent and a California Bearing Ratio (CBR) of 4.5. Due to the expansive nature and variability of the subgrade soils, we used a design CBR value of 2.0. The results of laboratory testing are shown on Table I and included in Figs. A-1 and A-2.

Our design was performed using the computer program WinPAS, based on the 1993 AASHTO Guide for Design of Pavements Structures, a 30 year design

period and our experience. We understand pavements will be used for interior residential streets only. We assumed for design calculations an Equivalent Single Axle Load (ESAL) of 54,750 for the interior streets. This was calculated from a daily equivalent 18 Kip axle load application of 5 over the 30 year design period. We used a regional factor of 2.0 and a design serviceability index of 2.0. Pavement design calculations are included in Appendix A. Table A below shows our recommendations.

TABLE A
SUMMARY OF RECOMMENDED PAVEMENT SECTIONS

Anticipated Traffic Type	Asphaltic Concrete	Asphalt and Aggregate Base Course	Asphalt, Aggregate Base Course and Aggregate Sub Base Course	Portland Cement Concrete
Interior Streets (ESAL = 54,750)	7.0"	3.0" + 12.5" 4.0" + 9.0"	3.0" + 4.0" + 10.0"	5.0"

The pavement subgrade should be scarified a depth of 10-inches, moisture conditioned to 1 percent below and 3 percent above of optimum moisture content and compacted to at least 95 percent of standard Proctor (ASTM D698) maximum dry density. Our experience indicates asphalt pavement in areas which will be subjected to heavy trucks stopping and turning does not perform satisfactorily. On residential streets, (ESAL = 54,750), we recommend placing a 5 inch thick Portland cement concrete pavement in all areas where this heavy truck traffic may occur, including access aprons and trash dumpster locations. In

our experience a full depth asphalt section performs better for expansive subgrade conditions.

The design of a pavement system is as much a function of paving materials as supporting characteristics of the subgrade. The quality of each construction material is reflected by the strength coefficient used in the calculations. If the pavement system is constructed of inferior material, then the life and serviceability of the pavement will be substantially reduced.

The asphalt component of the pavement was designed assuming at least 1,650 pounds Marshall stability. Normally, an asphaltic concrete should be relatively impermeable to moisture and should be designed with a well-graded sand/gravel mix. The oil content, void ratio, flow and gradation need to be considered in the design. We recommend a job mix design be performed and periodic checks are made to verify compliance with these specifications.

If construction materials cannot meet the above requirements, then the pavement design should be evaluated based upon available materials. We recommend the materials and placement methods conform to the requirements listed in the Colorado Department of Transportation "Standard Specifications for Road and Bridge Construction". All materials planned for construction should be submitted and tested to confirm their compliance with these specifications.