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File RP-1996-137 Name: Cimarron Minor Subdivision – 24 ½ Road / F Road - Replat

Present	Scanned	A few items are denoted with an asterisk (*), which means they are to be scanned for permanent record on the ISYS retrieval system. In some instances, items are found on the list but are not present in the scanned electronic development file because they are already scanned elsewhere on the system. These scanned documents are denoted with (**) and will be found on the ISYS query system in their designated categories. Documents specific to certain files, not found in the standard checklist materials, are listed at the bottom of the page. Remaining items, (not selected for scanning), will be listed and marked present. This index can serve as a quick guide for the contents of each file.
X	X	**Table of Contents**
		***Review Sheet Summary**
X	X	***Application form**
X		Review Sheets
		Receipts for fees paid for anything
X	X	***Submittal checklist**
X	X	***General project report**
		Reduced copy of final plans or drawings
		Reduction of assessor's map.
		Evidence of title, deeds, easements
X	X	***Mailing list to adjacent property owners**
		Public notice cards
		Record of certified mail
X	X	Legal description
		Appraisal of raw land
		Reduction of any maps – final copy
		***Final reports for drainage and soils (geotechnical reports)**
		Other bound or non-bound reports
		Traffic studies
X	X	***Review Comments**
X	X	***Petitioner's response to comments**
		***Staff Reports**
		***Planning Commission staff report and exhibits**
		***City Council staff report and exhibits**
		***Summary sheet of final conditions**

DOCUMENT DESCRIPTION:

X	X	Drainage Report – 10/16/95			
X		Deed of Trust – 1/24/96 – not recorded			
X		E-mails			
X		Treasurer's Certificate of Taxes Due – 5/29/96			
X		Notice of Land Use Application – 6/21/96			
X	X	Site Plan			
X		Utility Composite			
X		Bicycle Rack Detail			
X	X	Landscape Plan			
X	X	Drainage Plan			
X		Plan Details			
X		Floor Plan			
X		Elevation Maps			
X		Entrance Plan			

DEVELOPMENT APPLICATION

Community Development Department
250 North 5th Street, Grand Junction, CO 81501
(303) 244-1430

Receipt _____
Date _____
Rec'd By _____
File No. RP-96137

We, the undersigned, being the owners of property situated in Mesa County, State of Colorado, as described herein do hereby petition this:

PETITION	PHASE	SIZE	LOCATION	ZONE	LAND USE
☒ Subdivision Plat/Plan	☐ Minor ☐ Major ☒ Resub		24½ & F Rds	H.O.	Retail
☐ Rezone				From: To:	
☐ Planned Development	☐ ODP ☐ Prelim ☐ Final				
☐ Conditional Use					
☐ Zone of Annex					
☐ Variance					
☐ Special Use					
☐ Vacation					☐ Right-of Way ☐ Easement
☐ Revocable Permit					

☒ PROPERTY OWNER	☒ DEVELOPER	☒ REPRESENTATIVE
Wayne A. Fisher	Wayne A. Fisher	David R. Smuin
Name	Name	Name
1041 24 Road	1041 24 Rd	1179 Santa Clara
Address	Address	Address
Grand Jct. Co. 81505	Grand Jct. Co. 81505	Grand Jct. CO 81503
City/State/Zip	City/State/Zip	City/State/Zip
970-242-0999	970-242-0999	970-242-4454
Business Phone No.	Business Phone No.	Business Phone No.

NOTE: Legal property owner is owner of record on date of submittal.

We hereby acknowledge that we have familiarized ourselves with the rules and regulations with respect to the preparation of this submittal, that the foregoing information is true and complete to the best of our knowledge, and that we assume the responsibility to monitor the status of the application and the review comments. We recognize that we or our representative(s) must be present at all required hearings. In the event that the petitioner is not represented, the item will be dropped from the agenda, and an additional fee charged to cover rescheduling expenses before it can again be placed on the agenda.

Signature of Person Completing Application — Date 6/3/96

x Wayne A. Fisher — Date 6-3-96

Signature of Property Owner(s) - attach additional sheets if necessary

SUBMITTAL CHECKLIST

RESUBDIVISION/SITE PLAN REVIEW

Location: 24 1/2 & Patterson Project Name: Cimarron Minor Subdivision

Date Received 6-3-96

Receipt # 4105

File # RP-96-137

DESCRIPTION $275

ITEMS	ASSID REFERENCE	DISTRIBUTION																														TOTAL REQ'D.
		● City Community Development	● City Dev. Eng.	● City Utility Eng.	● City Property Agent	O City Parks/Recreation	● City Fire Department	● City Attorney	O City G.J.P.C. (8 sets)	O City Downtown Dev. Auth.	● City Police	O County Planning	● County Bldg. Dept.	● County Surveyor	O Walker Field	O School Dist. #51	● Irrigation District - GVIC	● Drainage District - GJDD	● Water District - UTE	O Sewer District	● U.S. West	● Public Service	O GVRP	O CDOT	O Corps of Engineers	O Colorado Geological Survey	O U.S. Postal Service	O Persigo WWTF	O TCI Cable				
● Application Fee $160+$15/ac+$40 eng	VII-1	1																														
● Submittal Checklist*	VII-3	1																														
● Review Agency Cover Sheet*	VII-3	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
● Application Form*	VII-1	1	1	1	1	1	1	1	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
● Reduction of Assessor's Map	VII-1	1	1	1	1	1	1	1	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1				
● Evidence of Title	VII-2	1			1			1																								
O Appraisal of Raw Land	VII-1	1			1	1																										
● Names and Addresses*	VII-2	1																														
● Legal Description*	VII-2	1			1																											
O Deeds	VII-1	1			1			1																								
O Easements	VII-2	1	1	1	1			1													1	1	1									
O Avigation Easement	VII-1	1			1			1							1																	
O ROW	VII-3	1	1	1	1			1													1	1	1									
O Covenants, Conditions, & Restrictions	VII-1	1	1					1																								
O Common Space Agreements	VII-1	1	1					1																								
● County Treasurer's Tax Cert.	VII-1	1																														
● Improvements Agreement/Guarantee*	VII-2	1	1	1				1																								
O CDOT, 404, or Floodplain Permit	VII-3,4	1	1																													
● General Project Report	X-7	1	1	1	1	1	1	1	8	1	1	1			1	1	1	1	1	1	1	1	1	1	1	1	1	1				
O Location Map	IX-21	1																														
O Composite Plan	IX-10	1	2	1	1																											
O 11"x17" Reduction Composite Plan	IX-10	1				1	1	1	8	1	1	1	1				1	1	1	1	1	1	1	1	1	1		1	1			
● Final Plat	IX-15	1	2	1	1	1	1	1	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
O 11"x17"Reduction of Final Plat	IX-15	1							8	1	1	1			1	1	1	1	1	1	1	1	1				1					
● Cover Sheet	IX-11	1	2																													
● Grading& Stormwater Mgmt Plan	IX-17	1	2															1						1								
O Storm Drainage Plan and Profile	IX-30	1	2															1			1	1	1						1			
O Water and Sewer Plan and Profile	IX-34	1	2	1															1	1	1	1	1					1	1			
O Roadway Plan and Profile	IX-28	1	2															1														
O Road Cross-sections	IX-27	1	2																													
● Detail Sheet	IX-12	1	2																													
● Landscape Plan	IX-20	2	1	1																												
O Geotechnical Report	X-8	1	1										1												1							
O Phase I & II Environmental Report	X-10,11	1	1																													
● Final Drainage Report	X-5,6	1	2															1														
O Stormwater Management Plan	X-14	1	2															1							1							
O Sewer System Design Report	X-13	1	2	1																1												
O Water System Design Report	X-16	1	2	1															1													
● Traffic Impact Study/or Street Impr	X-15	1	2																					1								
● Site Plan per City Engr.	IX-29	1	2	1	1		1		8																							
● Elevation Drawings		1	1																													

NOTES: * An asterisk in the item description column indicates that a form is supplied by the City.

PRE-APPLICATION CONFERENCE

Date: 5/15/96
Conference Attendance: K. Ashbeck, Tom Cronk, Wayne Fisher
Proposal: Replat / Retail center
Location: 24½ Rd & Patterson

Tax Parcel Number: old parcels 2945-043-01-015
Review Fee: $160 (plat) + $75 ($15/ac) + $40 eng fees
(Fee is due at the time of submittal. Make check payable to the City of Grand Junction.)

Additional ROW required? No
Adjacent road improvements required? As per eng
Area identified as a need in the Master Plan of Parks and Recreation? No
Parks and Open Space fees required? _____ Estimated Amount: _____
Recording fees required? Yes, plat & covenants Estimated Amount: $
Half street improvement fees/TCP required? TCP as per eng Estimated Amount: _____
Revocable Permit required? Landscaping in ROW
State Highway Access Permit required? _____
On-site detention/retention or Drainage fee required? on-site

Applicable Plans, Policies and Guidelines Dev. Code

Located in identified floodplain? FIRM panel # _____
Located in other geohazard area? _____

Located in established Airport Zone? Clear Zone, Critical Zone, Area of Influence? _____
Avigation Easement required? _____

While all factors in a development proposal require careful thought, preparation and design, the following "checked" items are brought to the petitioner's attention as needing special attention or consideration. Other items of special concern may be identified during the review process.

☒ Access/Parking	O Screening/Buffering	O Land Use Compatibility
☒ Drainage	☒ Landscaping	☒ Traffic Generation
O Floodplain/Wetlands Mitigation	O Availability of Utilities	O Geologic Hazards/Soils

O Other _____
Related Files: RP 95-200

It is recommended that the applicant inform the neighboring property owners and tenants of the proposal prior to the public hearing and preferably prior to submittal to the City.

PRE-APPLICATION CONFERENCE

WE RECOGNIZE that we, ourselves, or our representative(s) must be present at all hearings relative to this proposal and it is our responsibility to know when and where those hearings are.

In the event that the petitioner is not represented, the proposed item will be dropped from the agenda, and an additional fee shall be charged to cover rescheduling expenses. Such fee must be paid before the proposed item can again be placed on the agenda. Any changes to the approved plan will require a re-review and approval by the Community Development Department prior to those changes being accepted.

WE UNDERSTAND that incomplete submittals will not be accepted and submittals with insufficient information, identified in the review process, which has not been addressed by the applicant, may be withdrawn from the agenda.

WE FURTHER UNDERSTAND that failure to meet any deadlines as identified by the Community Development Department for the review process may result in the project not being scheduled for hearing or being pulled from the agenda.

X Wayne A. Fisher
Signature(s) of Petitioner(s)

X
Signature(s) of Representative(s)

FOURSCORED
P.O. Box 654
Grand Junction, CO 81502

Gertrude Fisher
667 25 Road
Grand Junction, CO 81505

C & A Enterprises
c/o First South Bank
P.O. Box 14099
Macon, GA 31203

Marjean Moses
722 Hemlock Dr.
Grand Junction, CO 81506

Dayton-Hudson Corp.
c/o Prop. Tax Dept.
777 Nicollet Mall
Minneapolis, MN 55402

Mustang Broadcasting
715 Horizon Dr., Suite 430
Grand Junction, CO 81506

Denver G. Cherry etal
c/o Michael Bussey
2150 Shenandoah Dr.
Grand Junction, CO 81503

David R. Smuin
HydroTerra Environmental Cons.
1179 Santa Clara
Grand Junction, CO 81503

Cronk Construction
1129 24 Road
Grand Junction, CO 81505

Wayne Fisher
1041 24 Road
Grand Junction, CO 81505

City of Grand Junction
Community Development Dept.
250 N 5th Street
Grand Junction, CO 81501

GENERAL PROJECT REPORT
May 20, 1996

FISHER DEVELOPMENT
24 ½ Road and F Road
GRAND JUNCTION, CO 81505

Prepared For:
Wayne Fisher
Fisher's Liquor Barn
2448 -F- Road
Grand Junction, CO 81505

Prepared By:
Cronk Construction Inc.
1129 -24- Road
Grand Junction, CO 81505
303-245-0577

and

HydroTerra Environmental Consulting
1179 Santa Clara Avenue
Grand Junction, CO 81505
970-242-4454

Table of Contents

1. General Location and Description

The proposed project is within the Grand Junction City limits near the intersection of 24 ½ Road and F Road (See Assessor's map in site plan submittal). The project proposes a resubdivision and development of Lots 3 and 4 of Fisher Subdivision. Lot 3 currently consists of 1.54 acres; Lot 4 consists of 2.25 acres. The subject parcels are bounded by 24 ½ Road to the east and F Road (Patterson Road) to the southwest. The property is bordered by vacant land to the west. Sticks and Stones, a commercial business, is located to the north of the subject property. A car wash is located south of the property. Mesa Mall is located across F Road southwest of the property. The proposed development is on 2.79 acres of uncultivated native soils and fill dirt in the SE 1/4 of the SW 1/4 of Section 4, T1S, R1W, Ute Principal Meridian. The site is currently bare ground.

The resubdivision will reconfigure Lot 3 to 1.24 acres and Lot 4 to 2.55 acres. The resubdivision is referred to as the Cimmaron Minor Subdivision and has been filed as such. Proposed use for Lot 3 is Fisher's Liquor Barn, a retail liquor outlet (8,000 square feet). Lot 4 will contain a retail sales building (14,000 square feet) on the northern end, and a retail sales building (12,000 square feet) on the southern end.

2. Public Benefit

The proposed project will help fulfill a need for satellite retail space around Mesa Mall. This development will provide the business community with an increased choice of potential retail locations. The project will also allow Fisher's Liquor Barn to expand, an option that is not possible at the current store location. An expanded store will mean a wider variety of products for the public to choose from at competitive prices.

3. Project Compliance, Compatibility, and Impact

The parcel is currently zoned H.O. Highway Oriented. Adjacent uses include the Mall Car Wash to the south, vacant land to the west, Sticks and Stones landscaping supply to the north, and vacant land to the east. All adjacent parcels are also zoned H.O., thus, the proposed project fits with the current zoning designation. The project also fits within the character of the neighborhood as the area is one of the major retail centers in the Grand Valley.

The proposed project will have one access on F Road and two accesses on 24 ½ Road. Two way traffic will circulate throughout the site. The Petitioner proposes a left-turn lane on 24 ½ Road in lieu of a Traffic Impact Study; however, the city has indicated that they may want to add another traffic lane to the existing two lane road. If the additional lane is added, then the petitioner proposes to share the cost of the additional traffic lane with other owners and developers in the area, instead of adding a turn lane.

Utilities are already present in the area. Telephone service and a 1 1/4 inch MW gas line are currently available adjacent to the parcel along 24 ½ Road. An 8 inch sanitary sewer line is currently available at the southern edge of the parcel along 24 ½ Road and will be extended to service the development. An 8 inch Ute water line is located along F Road. Fire hydrants will be located as shown on the accompanying utility plan. Underground electric power is available along F Road.

Utility providers to the parcels are as follows:
Public Service - gas and electric
Ute Water Company - potable water
U.S. West - telephone service
City of Grand Junction - sewer and drainage.

Considerations

- Land use in the surrounding area is business under the zoning designation of H.O., which allows business development consistent with this proposal.
- The number of employees is unknown at this time.
- Anticipated hours of operation of the liquor store will be from 8 am to 10 pm.
- Expected hours of operation for the retail sales units are 9:00 am to 9:00 pm.
- The liquor store will have two free standing signs.
- No free standing signs are currently planned for the retail store units. However signage may be placed on the buildings at the lessee's discretion with all necessary approvals.
- The streets are classified as follows; F Road is a principal arterial and 24 ½ Road is a collector street.
- All utilities are available on or at the edge of the property. Fire hydrants will be added as shown on the utility plan.
- No special or unusual utility demands have been identified for the proposed development.
- There is already development in the area requiring public services and facilities. Thus, there will be minimal impacts on public facilities such as fire and police protection, sanitation, parks, schools, and irrigation. Impacts to traffic will be addressed either by adding a third traffic lane along 24 ½ Road or putting in a turn lane.

4. Geology, Soils, and Hazards

The Natural Resources Conservation Service (formerly the Soil Conservation Service) identifies the soils on the parcel as Sagers Silty Clay Loam (Be). The slope on the parcel is approximately 0.5% to the southwest. Based on the properties listed for this soil type, the project will not be adversely impacted by site geology and no geologic hazards or constraints to the proposed development were identified.

5. Development Schedule and Phasing

The proposed development will be completed in two phases. Phase 1 will include the liquor store and the northern retail outlet building, along with accompanying access, paving and landscaping for the entire proposed development. Phase II will include the southern retail sales building. Construction is scheduled to start as soon as all planning clearances are received, hopefully in June, 1996.

6. Results and Conclusions

In summary, the proposed development is consistent with zoning and current use in the area. Significant impacts to existing infrastructure are not anticipated. Based on the scope of the planned development and the consideration of geologic hazards and drainage, the site appears to be well suited. The schedule provides for having a retail sales space available for occupancy in 1996, and based on the growing demand for commercial business space, there is a need in the community for such development.

REVIEW COMMENTS

FILE #RP-96-137

TITLE HEADING: Fisher Resubdivision of Cimarron Minor Subdivision

LOCATION: 24 ½ & F Roads

PETITIONER: Wayne Fisher

PETITIONER'S ADDRESS/TELEPHONE: 1041 24 Road
Grand Junction, CO 81505
242-0999 / 242-4226

PETITIONER'S REPRESENTATIVE: Cronk Construction

STAFF REPRESENTATIVE: Kristen Ashbeck

NOTE: THE PETITIONER IS REQUIRED TO SUBMIT FOUR (4) COPIES OF WRITTEN RESPONSE AND REVISED DRAWINGS ADDRESSING ALL REVIEW COMMENTS.

CITY COMMUNITY DEVELOPMENT **6/18/96**
Kristen Ashbeck **244-1437**

FINAL PLAT

1. Common easement for parking not indicated. If not on plat, the covenants need to be revised/re-recorded.
2. Date on signature blocks needs to be revised to 1996,
3. Note re: drainage easement is acceptable, however, it should also be addressed in the dedication language.

SITE/PARKING/LIGHTING/LANDSCAPE PLANS

1. Covered walk on 2 sides of liquor store shown as brick walk? Footprint of entry area does not seem to match how it is portrayed on the floor plans.
2. Please verify parking numbers--plan seems to show 179 vehicle spaces, but table indicates 186 (both counts including accessible spaces).
3. Minimum parking stall dimension is 9' x 18.5' (rather than 18' noted on plan).
4. The pole sign shown along 24-1/2 Road for the liquor store is not allowed. This would be considered an off-premise sign which are not allowed in the H.O. zone. A pole sign in this location for the two retail buildings is acceptable.
5. Adjust locations of lights to eliminate dark spots (see attached red-lined drawing).
6. Are planters shown on floor plan of retail centers #1 and #2 supposed to be the same landscape areas as those shown on landscape plan? If so, they don't match.
7. A separate Planning Clearance is required for each building. Once this project is approved and Community Development is ready to issue a Planning Clearance for any one of the buildings, the petitioner is advised that Planning Clearances for all of the buildings must be obtained within 6 months of the approval. A Site Plan Review (re-review) will be required for those not issued a Planning Clearance by that date.

8. As stated in the project narrative, All access, paving and landscaping for the entire development is to be constructed with the liquor store and northern retail building (Phase 1). Any improvements not in place prior to Certificate of Occupancy of the Phase 1 buildings will require an Improvements Agreement & Guarantee.
9. An Improvements Agreement & Guarantee for all public improvements is required prior to Planning Clearance for Phase 1 (see enclosed form).

CITY DEVELOPMENT ENGINEER **6/18/96**
Jody Kliska **244-1591**

1. Half street improvements along the project frontage of 24 ½ Road are required including pavement, curb, gutter and sidewalk. A plan and profile of these improvements is required. The City is interested in completing the gap between these improvements and the existing improvements at the intersection with Patterson Road along the west side. Please have your consultant provide us with a proposal for the design costs for the City's portion (not your frontage). We would like to include this construction with the required improvement construction. The City would pay for our share of the construction costs. The half street improvements along the project frontage would be credited to the TCP.

CITY UTILITY ENGINEER **6/18/96**
Trent Prall **244-1590**

Please coordinate with Terry Nichols (245-7101), engineer for Sticks and Stones sewer extension, to verify location and alignment of sewer stub out to the north.

Please submit four signed copies of the plan for the Utility Engineer's signature prior to start of construction. An improvements agreement will be required to cover the cost of construction and inspection for the sewer line.

Please ensure the following notes are on the sewer plan:

A. Contractor shall have one signed copy of plans and a copy of the City of Grand Junction's Standard Specifications at the job site at all times.
B. All sewer mains shall be PVC SDR 35 (ASTM 3034) unless otherwise noted.
C. All sewer mains shall be laid to grade utilizing a pipe laser.
D. All service line connections to the new main shall be accomplished with full body wyes or tees. Tapping saddles will not be allowed.
E. No 4" services shall be connected directly into manholes.
F. The contractor shall notify the City inspection 48 hours prior to commencement of construction.
G. The Contractor is responsible for all required sewer line testing to be completed in the presence of the City Inspector. Pressure testing will be performed after all compaction of street subgrade and prior to street paving. Final lamping will also be accomplished after paving is completed. These tests shall be the basis of acceptance of the sewer line extension.
H. The Contractor shall obtain City of Grand Junction Street Cut Permit for all work within existing City road right-of-way prior to construction.
I. A clay cut-off wall shall be placed 10 feet upstream from all new manholes unless otherwise noted. The cut-off wall shall extend from 6 inches below to 6 inches above granular backfill material and shall be 2 feet wide. If native material is not suitable, the contractor shall import material approved by the engineer.

J. Sewer stub outs shall be capped and plugged on north property line. Stub out shall be identified with a steel fence post buried 1' below finished grade. As-built surveying and City lamping of stub out required PRIOR to backfill.

K. Benchmark _____.

CITY PROPERTY AGENT **6/18/96**
Steve Pace **256-4003**
No comment - looks good.

CITY FIRE DEPARTMENT **6/14/96**
Hank Masterson **244-1414**
1. Utility Composite is acceptable as shown. Both new fire hydrants must be installed as part of phase one.
2. Fire Department access is acceptable.
3. Complete sealed building plans must be submitted to the fire department for our review and approval prior to receiving a building permit.

CITY POLICE DEPARTMENT **6/13/96**
Dave Stassen **244-3587**
No comments.

MESA COUNTY BUILDING DEPARTMENT **6/5/96**
Bob Lee **244-1656**
No comments.

GRAND JUNCTION DRAINAGE DISTRICT **6/14/96**
John Ballagh **242-4343**
The Fisher Resubdivision is wholly within the boundaries of the Grand Junction Drainage District. There are no known existing or planned GJDD facilities on or through the site of the planned resubdivision.

The drainage plan does recognize that there have been changes in the surface water flow patterns compared to approximately 20 years ago. The statement about the borrow ditch along the north side of F Road and the flows to the west to the channel of Leach Creek is accurate, however, the route of the surface water and the point where that water enters Leach Creek are generally not maintained by anyone. the District does not have the authority to require private parties to maintain their waste ditches. It would seem that the City, as part of a review and approval process does have the authority to see that a downstream property is not in jured by waters from an upstream property. Maintenance of a borrow ditches is necessary. The City may have the right to require such maintenance or at least require the developer to show who the maintaining party will be and how the ditch will be operated.

PUBLIC SERVICE COMPANY **6/7/96**
Jon Price **244-2693**
Public Service Company has no additional requirements at this time. Additional easements may be required depending on building locations.

U.S. WEST **6/6/96**
Max Ward **244-4721**

For timely telephone service, as soon as you have a plat. and power drawing for your housing development, please.....

MAIL COPY TO:
U.S. West Communications
Developer Contact Group
P.O. Box 1720
Denver, CO 80201

AND

CALL THE TOLL FREE NUMBER FOR:
Developer Contact Group
1-800-526-3557

We need to hear from you at least 60 days prior to trenching.

TO DATE, NO COMMENTS RECEIVED FROM:
City Attorney
Grand Valley Irrigation
Ute Water

HydroTerra Environmental Consulting
1179 Santa Clara Avenue
Grand Junction, CO 81503
(970)242-4454

June 25, 1996

Response to Comments

Title Heading: Fisher Resubdivision of Cimarron Minor Subdivision

File #RP-96-137

Location: 24 ½ & F Roads

Petitioner: Wayne Fisher

Petitioner's Representative: Cronk Construction and HydroTerra

Staff Representative: Kristen Ashbeck

Dear Kristen,

Thank you for your comments on the Fisher Submittal. We have addressed the comments and our responses are listed below.

Comments from Kristen Ashbeck

Final Plat

Comment 1. Common easement for parking not indicated. If not on plat, the covenants need to be revised/re-recorded.

Response: The covenants will be revised and re-recorded to reflect the common easement for parking.

Comment 2. Date on signature blocks needs to be revised to 1996.

Response: The date on the signature block has been revised.

Comment 3. Note re: drainage easement is acceptable, however, it should also be addressed in the dedication language.

Response: The dedication language has been revised to address the drainage easement dedication.

Site/Parking/Lighting/Landscape Plans

Comment 1. Covered walk on 2 sides of liquor store shown as brick walk? Footprint of entry area does not seem to match how it is portrayed on the floor plans.

Response: The covered walk is going to be concrete and a symbol has been added to the legend indicating that the hatch pattern represents concrete. The footprint of the entry area has been changed to match the floor plans.

Comment 2. Please verify parking numbers - plan seems to show 179 spaces, but the table indicates 186 (both counts including accessible spaces).

Response: The parking space count is 179 including accessible spaces, but not including bicycle parking. The parking space calculation table has been changed to reflect the true number of spaces on the plan.

Comment 3. Minimum parking stall dimension is 9' x 18.5' (rather than 18' as noted on the plan.

Response: The notation on the plan has been changed, the spaces are dimensioned correctly.

Comment 4. The pole sign shown along 24 ½ road for the liquor store is not allowed. This would be considered an off premise sign which are not allowed in the H.O. zone. A pole sign in this location for the two retail buildings is acceptable.

Response: The sign will be changed to show that it is for the retail buildings.

Comment 5. Adjust locations of lights to eliminate dark spots (see attached red-lined drawing).

Response: The so-called "dark spots" are not really dark spots. Light is subject to the theory of inverse square law, thus the intensity of light is inversely proportional to the square of the distance from the source. This principle is used to derive the isofootcandle chart on the plan. Additionally, light as a wave energy source is subject to the law of superposition. Thus, the intensity at a location is additive. Application of these natural laws to the problem at hand results in a finding that the light intensity in the "dark spot" where the 4 lights radiuses converge in the parking area, actually exceeds the required .6 lumens and is approximately 1.8 lumens within the "dark spot". Similarly for the "dark spot" in the southwest part of the liquor store parking area, the actual lighting intensity from adding the intensity of the two converging light sources is approximately .8 lumens. Despite these findings, the light on the east side of the liquor store has been moved east approximately 10 ft and is now a pole light located within a landscaped area. This move was made because the light would have been above the covered walk way and would have created a shadow in the parking on the east side of the liquor store. Moving this light eliminates one "dark spot" and the shadow. The other lights have not been moved.

Comment 6. Are planters shown on floor plans of retail centers #1 and #2 supposed to be the same landscape areas as those shown on the landscape plan? If so they don't match.

Response: Planter layout has been changed to be consistent between the floor plans and the landscape plan.

Comment 7. A separate Planning Clearance is required for each building. Once this project is approved and Community Development is ready to issue a Planning Clearance for any one of the buildings, the petitioner is advised that Planning Clearances for all of the buildings must be obtained within 6 months of the approval. A Site Plan Review (re-review) will be required for those not issued a Planning Clearance by that date.

Response: No response required.

Comment 8. As stated in the project narrative, All access, paving and landscaping for the entire development is to be constructed with the liquor store and northern retail building (Phase 1). Any improvements not in place prior to Certificate of Occupancy of the Phase 1 buildings will require an Improvements Agreement and

Guarantee.

Response: No response required.

Comment 9. An Improvements Agreement and Guarantee for all public improvements is required prior to Planning Clearance for Phase 1 (see enclosed form).

Response: The Improvements Agreement and Guarantee will be filed as requested.

Comments from City Development Engineer - Jodi Kliska

Comment 1. Half street improvements along the project frontage of 24 ½ Road are required including pavement, curb, gutter, and sidewalk. A plan and profile of these improvements is required. The City is interested in completing the gap between these improvements and the existing improvements at the intersection with Patterson Road along the west side. Please have your consultant provide us with a proposal for the design costs for the City's portion (not your frontage). We would like to include this construction with the required improvement construction. The City would pay for our share of the construction costs. The half street improvements along the project frontage would be credited to the TCP.

Response: Developer chooses to pay the impact fee rather than engineer and design the improvements. In light of other planned development in the area, it would be more suitable for the developer to participate by paying fees rather than trying to construct improvements related to other developments.

City Utility Engineer
Trent Prall

Comment 1. Please coordinate with Terry Nichols (245-7101), engineer for Sticks and Stones sewer extension, to verify location and alignment of sewer stub out to the north.

Response: A meeting was held with Terry Nichols at the site to show him the proposed layout for Fisher. Also Terry will be performing the inspection on the Fisher Development and will have first hand knowledge of the location and alignment of the sewer stub out.

Comment 2. Please submit four signed copies of the plan for the Utility Engineer's signature prior to start of construction. An improvements agreement will be required to cover the cost of construction and inspection for the sewer line.

Response: Four copies of the final plan will be submitted for approval prior to start of construction. An improvements agreement will also be executed to cover the cost of construction and inspection.

Comment 3. Please ensure the following notes are on the sewer plan:

Response: The requested notes will be included on the Plan. no sewer plan no notes

---

City Property Agent
Steve Pace
No Comment

City Fire Department
Hank Masterson

Comment 1. Utility Composite is acceptable as shown. Both new fire hydrants must be installed as part of Phase 1.

Response: Both hydrants will be installed as part of Phase 1.

Comment 2. Fire Department access is acceptable.

Response: No response required.

Comment 3. Complete sealed building plans must be submitted to the fire department for our review and approval prior to receiving a building permit.

Response: Complete sealed plans will be submitted for review and approval prior to obtaining a building permit.

City Police Department
Dave Stassen
No comments

Mesa County Building Department
Bob Lee
No Comments

Grand Junction Drainage District
John Ballagh

Comment 1. The comment related to maintenance of drainage conveyances (borrow ditches) downstream from the Fisher development. The comment seemed to be directed at the City.

Response: No Response Required

Public Service Company
Jon Price
No Comments

U.S. West
Max Ward

Comment 1. Notify the company as soon as the final Utility Composite is complete and approved. The company needs 60 days notice prior to trenching.

Response: The company will be notified upon approval of the plan.

To date no comments received from:
City Attorney
Grand Valley Irrigation
Ute Water
No responses required

The revised plans will be submitted along with this response letter. If you have questions, please call David Smuin at 242-4454.

July 29, 1996

Grand Junction Community Development Department
Planning • Zoning • Code Enforcement
250 North Fifth Street
Grand Junction, Colorado 81501-2668
(970) 244-1430 FAX (970) 244-1599

Mr. David R. Smuin
HydroTerra Environmental Consulting
1179 Santa Clara Avenue
Grand Junction, Colorado 81503

RE: RP 96-137 Cimarron Minor Subdivision Replat

Dear David,

City staff has reviewed your response and has the following comments regarding the project referenced above.

Community Development:
Final Plat - Have not received a revised copy of the covenants to reflect the common easement for parking.

Site Plan - Comments addressed, however, please note that the labels are reversed in the legend.

Have not received a copy of the Improvements Agreement for review.

Development Engineer: Payment of fees in lieu of street improvements is not an option. Half-street improvements the length of the frontage along 24-1/2 Road are required.

Utilities Engineer: The petitioner has included a note about the sewer line being extended to the north property line, however the plan and profile views fail to depict this. The plan and profile views should also be modified to show the stub out to the north property line on the proposed alignment for the Sticks and Stones sewer extension being designed by Terry Nichols (245-7101).

The petitioner acknowledged that they had met with Mr. Nichols to discuss the project, however the plans have not been modified to reflect the Sticks and Stones alignment.

Utilities Engineer cont'd: The Improvements Agreement and Guarantee should also include this additional linear footage to property line. Please submit a copy of the Improvements Agreement for my review prior to construction.

Please do not hesitate to contact me if you have questions regarding these comments.

Sincerely,

Kristen Ashbeck
Planner

DRAINAGE PLAN

October 16, 1995
REVISED - December 19, 1995
2nd REVISION - May 18, 1996

FISHER DEVELOPMENT
24-1/2 Road and F Road
GRAND JUNCTION, CO 81505

Prepared For:
Wayne Fisher
Fisher's Liquor Barn
2448 -F- Road
Grand Junction, CO 81505

Prepared By:
Cronk Construction Inc.
1129 -24- Road
Grand Junction, CO 81505
303-245-0577

and

HydroTerra Environmental Consulting
1179 Santa Clara Avenue
Grand Junction, CO 81505
970-242-4454

Table of Contents

I. General Location and Description

The Fisher Development is located within the Grand Junction City limits northwest of the intersection of 24.5 Road and Patterson Road. The east boundary of the development fronts along approximately 556' of 24.5 Road. The property also fronts along approximately 240' of Patterson Road just north of Mesa Mall on the southwest boundary. Commercial property (a car wash and a landscape material supply) borders the subject property to the north and south. Vacant land borders the property to the west.

The development consists of 3.7 acres of tilled native soils. The site was formerly farmed but has been fallow for some time. The soil at the site is classified as SCS type "D" soil, being sandy clay and silty clay loam.

II. Existing Drainage Conditions

Historically drainage was directed to the southwest boundary of the property and entered the Ranchman's ditch which now runs under the parking lot of Mesa Mall as piped subsurface flow. The Ranchman's ditch drains west to 24 Road and then south under the Rio Grande Railroad tracks to the Colorado River located approximately 1000' to the south. The property has remained fallow for the past several years and all drainage has ponded on the property and evaporated or infiltrated. No existing drainage concerns are apparent.

III. Drainage Design Criteria

Drainage design criteria are taken from the *Stormwater Management Manual* (Public Works Department, City of Grand Junction, CO; June, 1994). Reference is also made to the Appendices in the *Stormwater Management Manual* for development of several constitutive

design parameters. The Rational Method is used to develop Peak runoff estimate (cfs) for both pre- and post-development conditions. Peak runoff is developed for the 2 year and 100 year precipitation events for the Mesa County urbanized area. The SCS Type II-A hydrograph (HEC-1, Corps of Engineers - U.S. Army) is used to develop the *time of critical storm duration, T_d,* for detention basin storage sizing. Orifices are used to control detention basin outflow for the 2 year design discharge while the 100 year design discharge is controlled by the size of the outflow piping diameter.

IV. Drainage Design (developed conditions)

The historic drainage outflow is located at the southwest corner of the property and will be changed by development. As shown on the Grading and Drainage Plan, post-development drainage will consist of channeling surface flows from the eastern 84% of the property to four detention basins located in the paved parking areas. Drainage from the remaining 16% of the property (consisting of the common access road with the adjoining property to the west) will be directed west along the northern barrow ditch of F Road. The western drainage is proposed to provide a favorable surface elevation transition across the common access between the subject property and the adjoining parcel to the west.

Each detention basin associated with the majority of drainage to the southeast will employ a single-stage outflow control orifice to limit the cumulative discharge from all detention areas to the design discharge rate. The City of Grand Junction Stormwater Management Manual (Public Works Department, City of Grand Junction, CO, June, 1994) allows use of two-stage outflow control with design discharge rates correlated to the 2 year and 100 year historic flows from the site. Two-stage outflow control is not utilized in detention design because existing downgradient drainage channels (12" dia. PVC) are of insufficient size to carry the larger second-stage outflows (e.g., corresponding to the 100 year historic flows for the drainage basin of concern).

The first-stage cumulative design discharge rate from the four detention areas (as limited by the down-gradient drainage channel capacity) is chosen as 1.0 cfs. Each of the four detention areas will thus be limited to a design discharge of 0.25 cfs to facilitate a cumulative discharge rate from the four detention areas of 1.0 cfs. Orifice sizing for a design discharge rate of 0.25 cfs is developed in Appendix C. The design discharge rate is slightly more than the 2 year historic discharge rate of 0.87 cfs and substantially less than the 100 year historic discharge rate of 3.39 cfs (Appendix B). In accordance with the use of single stage outlet control, the detention basins are sized to retain the larger volumes of stormwater generated from the 100 year storm event under developed conditions (Appendix E).

Both historic and developed peak runoff flows are estimated using the *Rational Method*. Peak runoff flows for four site scenarios are calculated. The four scenarios investigated include both historic and developed peak runoff flow for precipitation event frequencies of 2 years and 100 years.

The time of concentration, T_c, worksheet for each of the 4 scenarios investigated is included for reference as Appendix A. The *Rational Method* worksheet used to calculate peak flow runoff is included for reference as Appendix B. Individual detention basin outflow design considerations (i.e., design outflow for each of the four detention areas taken as 1/4 of the cumulative design outflow) are addressed in Appendix C. The SCS Type II-A hydrograph for the area (HEC-1) is used to develop the time of critical storm duration, T_d, as shown in Appendix D. The detention basin sizing worksheets are included for reference as Appendix E.

V. Results and Conclusions

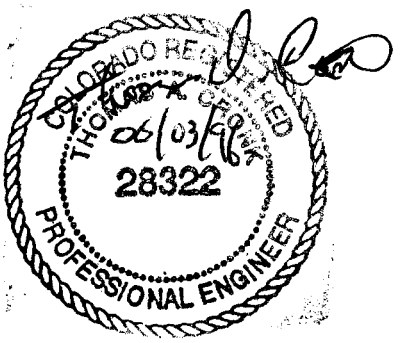
The historic peak flow runoff is estimated at 0.87 cfs (2 year event) and 3.39 cfs (100 year event). As shown in Appendix C, the single stage outlet control will limit developed peak outflow discharge from each detention area to 0.25 cfs (1.0 cfs cumulative total from the four

detention areas). Under developed conditions, the 100 yr precipitation event will result in a maximum storage volume of approximately 14,575 cubic feet (Appendix E). A 12" PVC (C-900) pipe is proposed to channel storm flow from the detention areas to the existing irrigation/stormwater drainage channel located at the southeast corner of the property. Under maximum free-flow conditions (i.e., full pipe flow at a slope of 0.4%), the maximum flow capacity of the outflow channel is 2.45 cfs. The design maximum flow capacity of the outflow piping (both existing and design) is thus in excess of the design peak discharge rate of 1.0 cfs under developed site conditions.

VI. Certification

I, Thomas A. Cronk, hereby certify this report was completed by myself or under my direct supervision and has been prepared in accordance with good engineering practices.

Seal



Thomas A. Cronk

Thomas A. Cronk

Date

June 3, 1996

APPENDIX A

Time of Concentration, T_c, Worksheet

Time of Concentration, T_c, Worksheet

Project: Fisher Development
Site Condition: Pre-development
Prepared by: Tom A. Cronk
Date: May 18, 1996

(The table below is an adaption of a worksheet provided in the SCS TR-55)
This table may be used in subbasin T_c calculations, or for travel time of subbasin runoff through a lower subbasin reach (T_t),
Use only channel flow for T_t calculations

STORM FREQUENCY		2 YEAR	100 YEAR
REACH	AREA IDENTIFIER		
	SEGMENT IDENTIFICATION		
	T_c OR T_t THROUGH BASIN REACH		
OVERLAND FLOW	SURFACE DESCRIPTION (TABLE E-1)	no till - no residue	no till - no residue
	"N" VALUE (TABLE E-1)	0.04 - 0.10 (assume 0.07)	0.04 - 0.10 (assume 0.07)
	FLOW LENGTH, L (TOTAL < 300 FT.) (ft.)	300	300
	LAND SLOPE, S (ft./ft.)	0.006	0.006
	To (min.) (TABLE E-2, OR FIGURE E-1)	28	17
SHALLOW CONCENTRATED FLOW	SURFACE DESCRIPTION (FIGURE E-3)	nearly bare/untilled	nearly bare/untilled
	FLOW LENGTH, L (ft.)	285	285
	FLOW SLOPE, S (ft./ft.)	0.006	0.006
	FLOW VELOCITY, V (FIGURE E-3) (fps)	0.78	0.78
	TRAVEL TIME T_s = L/(60V) (min.)	6.1	6.1
CHANNEL FLOW	CROSS-SECTIONAL FLOW AREA, a (ft^2)	no channel	no channel
	WETTED PERIMETER, Pw (ft.)		
	HYDRAULIC RADIUS, r = a/Pw (ft.)		
	CHANNEL SLOPE, S (ft./ft.)		
	MANNINGS COEFFICIENT, n (APPENDIX F)		
	$V = 1.49r^{2/3}S^{1/2}/n$ (fps)		
	ASSUMED VELOCITY (fps)		
	FLOW LENGTH, L (ft.)		
	TRAVEL TIME T_{ch} = L/(60V) (min.)		
T_c	$T_c=T_o+T_s+T_{ch}$ (min.)	34	23
T_t	$T_t=T_{ch}$ (min.)		
T_l	$T_l=0.6(T_c)$ OR FROM FIGURE E-4		

NOTE - Table and all referenced tables, figures, and appendices from Stormwater Management Manual, Public Works Department, City of Grand Junction, June, 1994

Time of Concentration, T_c, Worksheet

Project: Fisher Development
Site Condition: Post-development
Prepared by: Tom A. Cronk
Date: May 18, 1996

(The table below is an adaption of a worksheet provided in the SCS TR-55)
This table may be used in subbasin T_c calculations, or for travel time of subbasin runoff through a lower subbasin reach (T_r),
Use only channel flow for T_r calculations

STORM FREQUENCY		2 YEAR	100 YEAR
REACH	AREA IDENTIFIER		
	SEGMENT IDENTIFICATION		
	T_c OR T_r THROUGH BASIN REACH		
OVERLAND FLOW	SURFACE DESCRIPTION (TABLE E-1)	pavement	pavement
	"N" VALUE (TABLE E-1)	0.05	0.05
	FLOW LENGTH, L (TOTAL < 300 FT.) (ft.)	100	100
	LAND SLOPE, S (ft./ft.)	0.01	0.01
	To (min.) (TABLE E-2, OR FIGURE E-1)	8	5
SHALLOW CONCENTRATED FLOW	SURFACE DESCRIPTION (FIGURE E-3)	paved area	paved area
	FLOW LENGTH, L (ft.)	100	100
	FLOW SLOPE, S (ft./ft.)	0.005	0.005
	FLOW VELOCITY, V (FIGURE E-3) (fps)	1.4	1.4
	TRAVEL TIME T_s = L/(60V) (min.)	1.2	1.2
CHANNEL FLOW	CROSS-SECTIONAL FLOW AREA, a (ft^2)	0.0569	0.1745
	WETTED PERIMETER, Pw (ft.)	0.6509	1.047
	HYDRAULIC RADIUS, r = a/Pw (ft.)	0.0875	0.1667
	CHANNEL SLOPE, S (ft./ft.)	0.004	0.004
	MANNINGS COEFFICIENT, n (APPENDIX F)	0.012	0.012
	$V = 1.49r^{2/3}S^{1/2}/n$ (fps)	1.55	2.38
	ASSUMED VELOCITY (fps)	1.6	2.4
	FLOW LENGTH, L (ft.)	500	500
	TRAVEL TIME T_{ch} = L/(60V) (min.)	5.2	3.5
T_c	$T_c=T_o+T_s+T_{ch}$ (min.)	14.4	9.7
T_r	$T_r=T_{ch}$ (min.)		
T_t	$T_t=0.6(T_c)$ OR FROM FIGURE E-4		

NOTE - Table and all referenced tables, figures, and appendices from Stormwater Management Manual, Public Works Department, City of Grand Junction, June, 1994

APPENDIX B

RATIONAL METHOD PEAK FLOW RUNOFF WORKSHEET

Rational Method Peak Flow Runoff Worksheet

Project: Fisher Development
Prepared by: Tom A. Cronk
Date: May 18, 1996

SITE CONDITION: PRE-DEVELOPMENT

BASIN	AREA			RUNOFF COEFFICIENT[1], C	
	SURFACE TYPE	SCS GROUP	ACREAGE, A	C_{02}	C_{100}
All	bare ground	D	3.79	0.28	0.34

TOTAL ACREAGE, A_T	WEIGHTED RUNOFF COEFFICIENT, C_W		CONCENTRATION TIME[2], T_C (min.)		INTENSITY[3], i (in./hr.)		PEAK RUNOFF $Q=C_W i A_T$ (cfs)	
	C_{02}	C_{100}	T_{C02}	T_{C100}	i_{02}	i_{100}	Q_{02}	Q_{100}
3.79	0.28	0.34	34	23	0.82	2.63	0.87	3.39

[1] - *Rational Method* runoff coefficients taken from Table B-1, **Stormwater Management Manual, Public Works Department, City of Grand Junction, June, 1994**

[2] - Time of Concentration as derived in attached Appendix A worksheet

[3] - Intensity taken from Table A-1, **Stormwater Management Manual, Public Works Department, City of Grand Junction, June, 1994**

Rational Method Peak Flow Runoff Worksheet

Project: Fisher Development
Prepared by: Tom A. Cronk
Date: May 18, 1996

SITE CONDITION: POST-DEVELOPMENT

BASIN	AREA			RUNOFF COEFFICIENT[1], C	
	SURFACE TYPE	SCS GROUP	ACREAGE, A	C_{02}	C_{100}
	pavement/roof	D	3.19	0.93	0.95
	landscape	D	0.60	0.28	0.34

TOTAL ACREAGE, A_T	WEIGHTED RUNOFF COEFFICIENT, C_w		CONCENTRATION TIME[2], T_C (min.)		INTENSITY[3], i (in./hr.)		PEAK RUNOFF $Q=C_wiA_T$ (cfs)	
	C_{02}	C_{100}	T_{C02}	T_{C100}	i_{02}	i_{100}	Q_{02}	Q_{100}
3.79	0.83	0.85	14.4	9.7	1.32	3.80	4.15	12.24

[1] - *Rational Method* runoff coefficients taken from Table B-1, **Stormwater Management Manual, Public Works Department, City of Grand Junction, June, 1994**

[2] - Time of Concentration as derived in attached Appendix A worksheet

[3] - Intensity taken from Table A-1, **Stormwater Management Manual, Public Works Department, City of Grand Junction, June, 1994**

APPENDIX C

DETENTION BASIN OUTFLOW DESIGN WORKSHEET

DETENTION BASIN OUTFLOW DESIGN WORKSHEET
DISCHARGE PIPING ORIFICE CONTROL

Project: Fisher Development
Prepared by: Tom A. Cronk
Date: May 18, 1996

Detention Basin A					Detention Basin B (cumulative discharge from Basin A)				
head difference, h[1], (ft.)	design discharge, Q[2], (cfs)	design orifice diameter[3] (in.)	actual orifice diameter[4] (in.)	actual discharge, Q_a[5], (cfs)	head difference, h[1], (ft.)	design discharge, Q[2], (cfs)	design orifice diameter[3] (in.)	actual orifice diameter[4] (in.)	actual discharge, Q_a[5], (cfs)
1.7	0.25	2.67	2.50	0.22	2.1	0.50	3.57	3.50	0.48

[1] Difference in inlet and outlet waterlevel elevation at maximum detention capacity (ft.)

[2] Design discharge = 1/4 of cumulative design discharge, Q_h (cfs) less other discharge sources (i.e., lower stage discharge and/or sheetflows)

[3] Design diameter (assuming submerged inlet and outlet, full orifice flow, negligible head loss across orifice) calculated from:

$Q = C_d A\sqrt{2gh}$, *where,*

Q = *design discharge, (cfs)*

C_d = *coefficient of discharge* = 0.62 *for sharp edge transition*

A = *cross-sectional area of pipe* (ft^2)

g = *gravitational acceleration* = 32 ft/sec^2

h = *head difference, (ft)*

[4] Actual orifice diameter based on construction feasibility not exceed design diameter

[5] Actual discharge as based on actual orifice diameter, to be used in determining average discharge rate Q_r for detention basin sizing

DETENTION BASIN OUTFLOW DESIGN WORKSHEET
DISCHARGE PIPING ORIFICE CONTROL

Project: Fisher Development
Prepared by: Tom A. Cronk
Date: May 18, 1996

Detention Basin C (cumulative discharge from Basins A and B)					Detention Basin D				
head difference, h[1], (ft.)	design discharge, Q[2], (cfs)	design orifice diameter[3] (in.)	actual orifice diameter[4] (in.)	actual discharge, Q_a[5], (cfs)	head difference, h[1], (ft.)	design discharge, Q[2], (cfs)	design orifice diameter[3] (in.)	actual orifice diameter[4] (in.)	actual discharge, Q_a[5], (cfs)
1.32	0.75	4.90	5.0	0.78	1.59	0.25	2.70	2.50	0.21

[1] Difference in inlet and outlet waterlevel elevation at maximum detention capacity (ft.)

[2] Design discharge = 1/4 of cumulative design discharge, Q_h (cfs) less other discharge sources (i.e., lower stage discharge and/or sheetflows)

[3] Design diameter (assuming submerged inlet and outlet, full orifice flow, negligible head loss across orifice) calculated from:

$Q = C_d A\sqrt{2gh}$, *where,*

Q = *design discharge, (cfs)*

C_d = *coefficient of discharge* = 0.62 *for sharp edge transition*

A = *cross-sectional area of pipe* (ft^2)

g = *gravitational acceleration* = 32 ft/sec^2

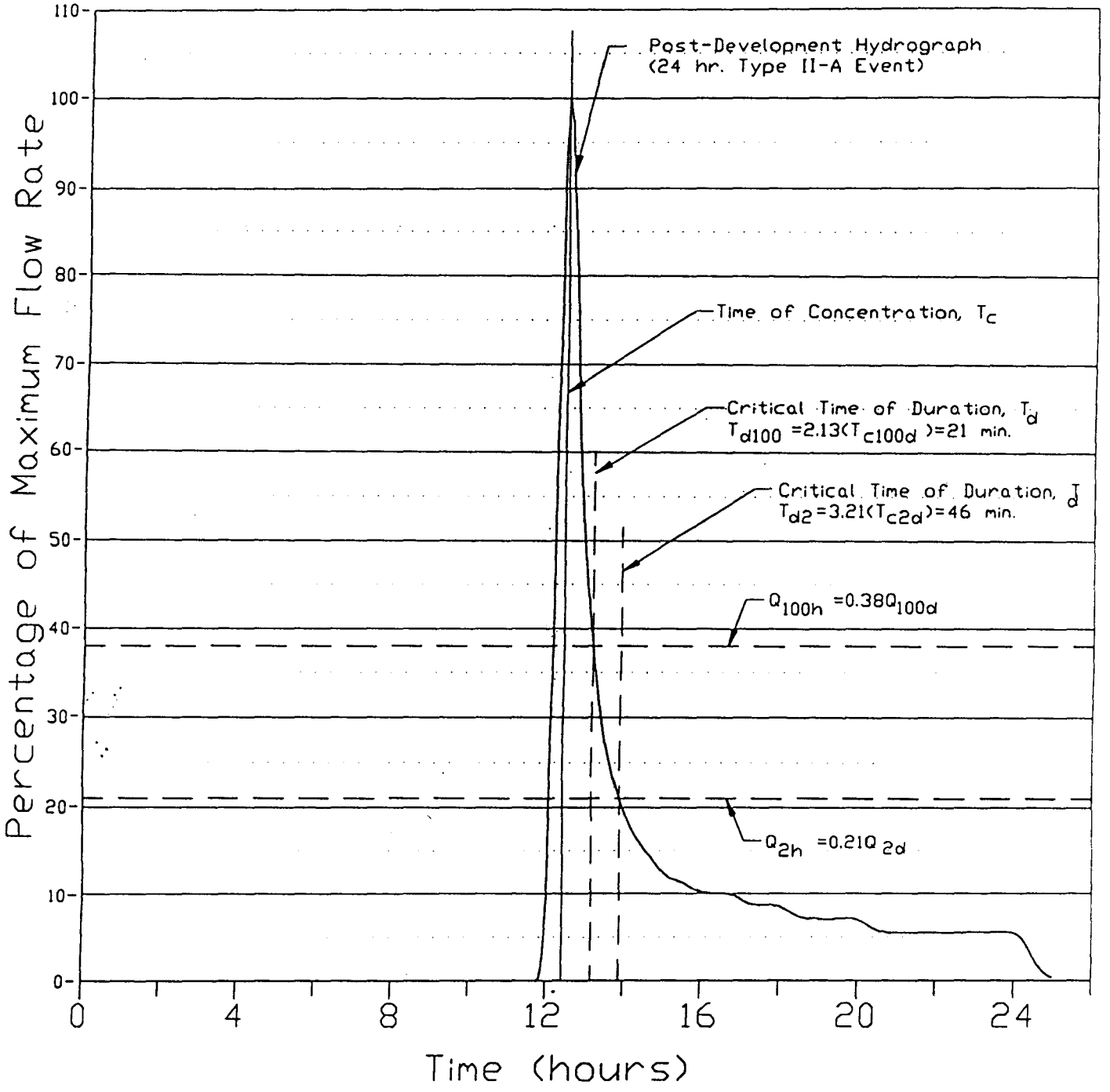
h = *head difference, (ft)*

[4] Actual orifice diameter based on construction feasibility not exceed design diameter
[5] Actual discharge as based on actual orifice diameter, to be used in determining average discharge rate Q_r for detention basin sizing

APPENDIX D

TIME OF CRITICAL DURATION, T_d, WORKSHEET

Runoff Hydrograph
Post-Construction (Fisher Subdivision)
SCS Type II-A Unit Hydrograph (24 hr. event)



APPENDIX E

MODIFIED RATIONAL METHOD DETENTION BASIN SIZING WORKSHEET

MODIFIED RATIONAL METHOD DETENTION BASIN SIZING WORKSHEET

Project: Fisher Development
Prepared by: Tom A. Cronk
Date: May 18, 1996

Basin	Site Hydrology								Detention Basin Sizing					
	Site Condition		2 year event			100 year event			2 year event			100 year event		
			C_{2d}	T_{c2d} (min.)	Q_{2d} (cfs)	C_{100d}	T_{c100d} (min.)	Q_{100d} (cfs)	T_{d2}[1] (min.)	Q_{r2}[2] (cfs)	Storage Volume, V_2[3], (ft^3)	T_{d100}[1] (min.)	Q_{r100}[2] (cfs)	Storage Volume, V_{100}[3], (ft^3)
All	Pre-developed		0.28	34	0.87	0.34	23	3.39						
	Post-developed		0.83	14.4	4.15	0.85	9.7	12.24	46	0.75	9,560	21	0.75	14,575
	Development Impact	quantity			+3.28			+8.85						
		percent			+377%			+261%						

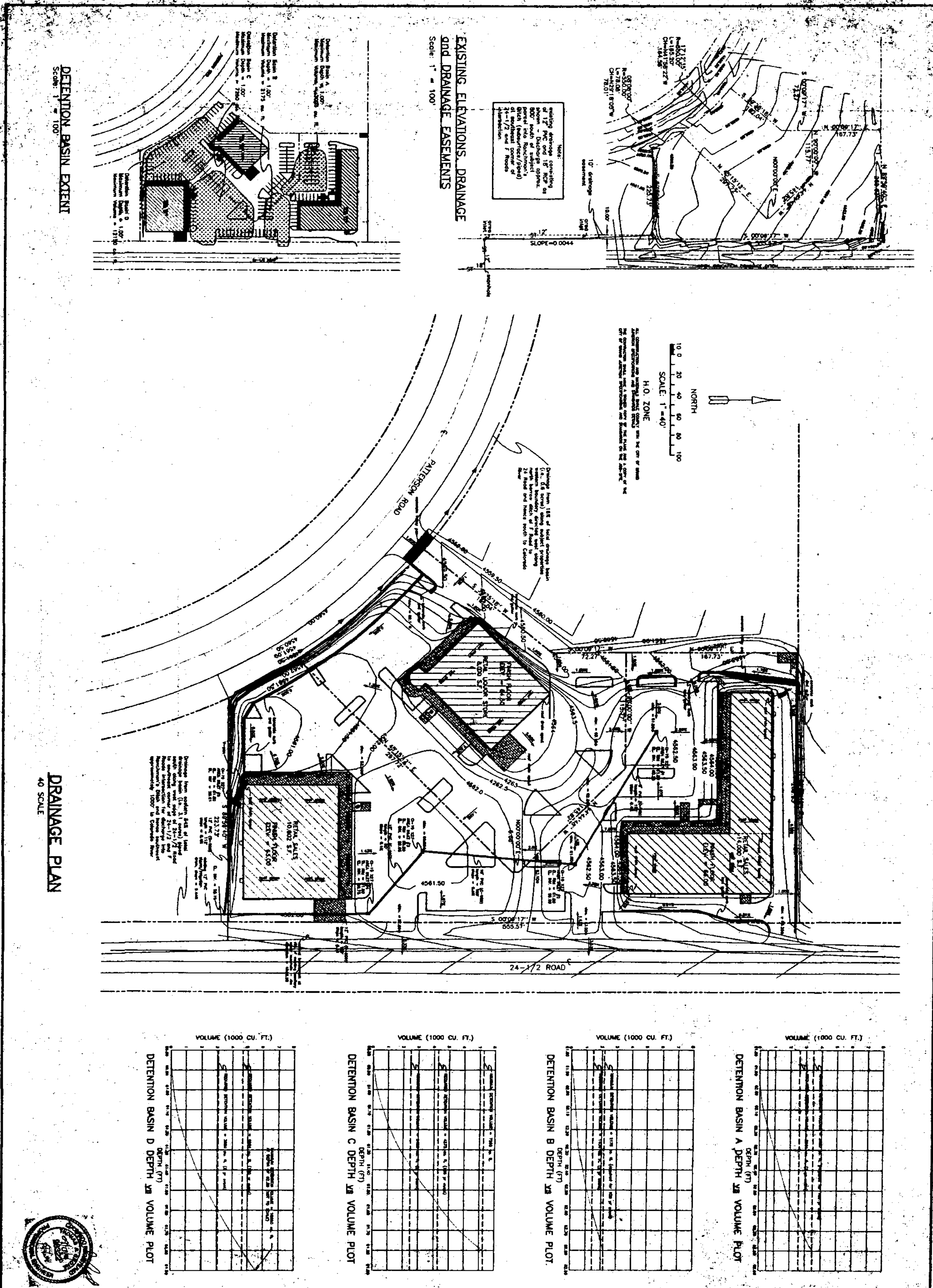
[1] Time of critical duration, T_d, from Appendix D worksheet

[2] Average rate of discharge, Q_r, = 55% of actual discharge, Q_a, taken from Appendix C plus other discharge sources (i.e., lower stage discharge and/or sheetflows)

[3] Storage volume required, V (ft^3), calculated from:

$$V = 60\left|Q_d T_d - Q_r T_d - Q_r T_{Cd} + \frac{KQ_r T_{Cd}}{2} + \frac{Q_r^2 T_{Cd}}{2Q_d}\right|, \text{ where,}$$

K = Ratio of pre- and post-development T_{Cd}

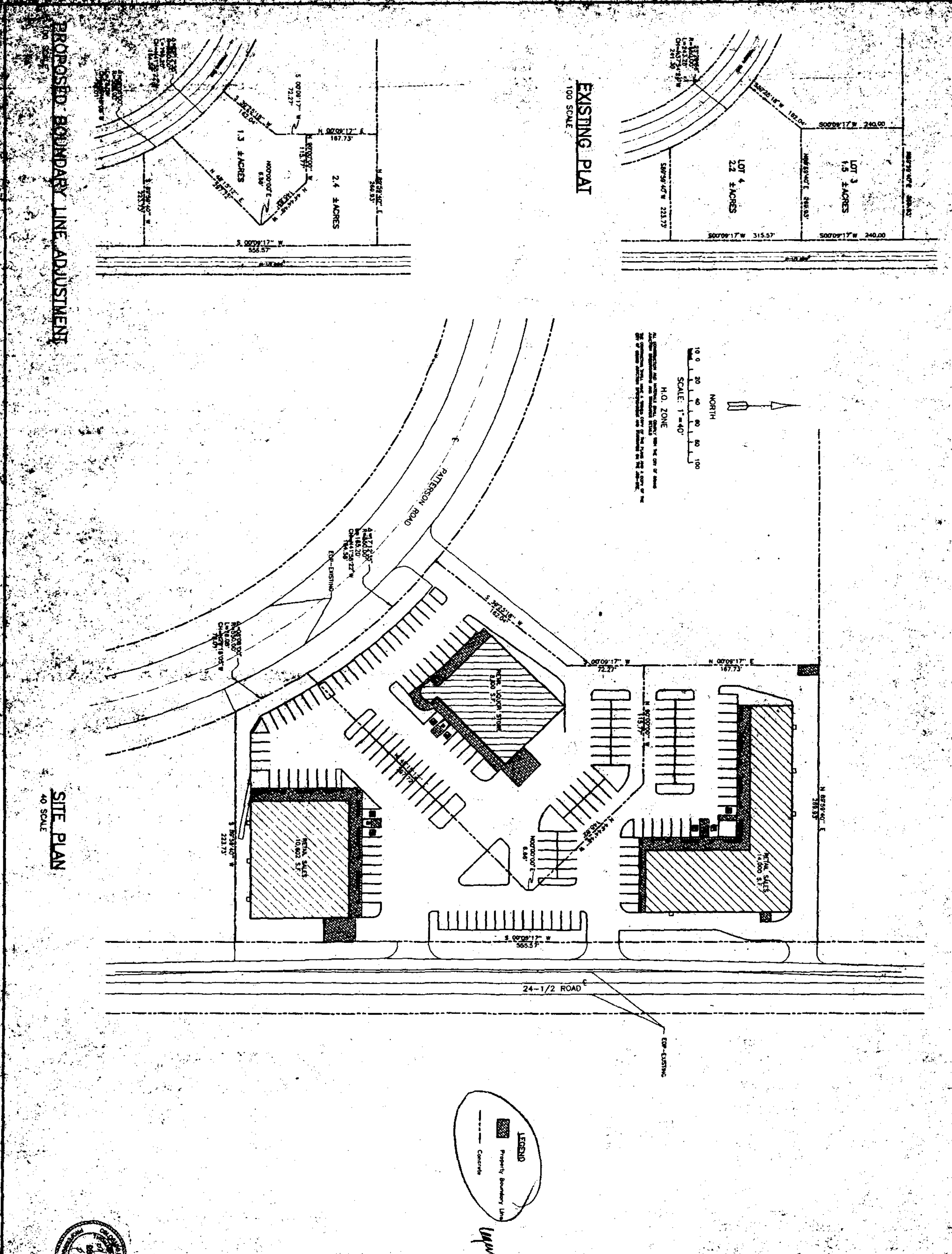


DP-1

BMK estimating/consulting

Hydro Terra Environmental Consulting
1179 Santa Clara Ave.
Grand Junction, CO 81503
(970) 242-4454

FISHER DEVELOPMENT
24 1/2 and F Road
Grand Junction, CO 81505



Hydro Terra Environmental Consulting
1179 Santa Clara Ave.
Grand Junction, CO 81503
(970) 242-4454

FISHER DEVELOPMENT
24 1/2 and F Road
Grand Junction, CO 81505

SP-1

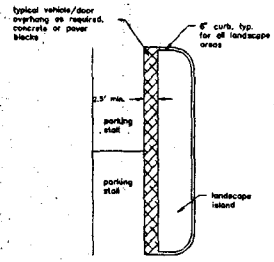
RP-1996-197

LANDSCAPE REQUIREMENTS			
REQUIRED LANDSCAPING		PROPOSED LANDSCAPING	
R.O.W. (100%) (555.57'X29') + (243.28'X25')	22,193	R.O.W. (100% LESS ACCESS)	19,106
FRONTAGE SETBACK (75%) (555.57'X15') + (243.28X15')	8,987	FRONTAGE SETBACK	9,993
INTERIOR PARKING LOT (63,051'X5%)	4,153	INTERIOR PARKING LOT	7,816
		ADDITIONAL LANDSCAPING (BUILDING & PERIMETER)	2,952
		TOTAL REQUIRED	35,602 SQ.FT.
		TOTAL PROPOSED	39,967 SQ.FT.

LANDSCAPING NOTES

ALL LANDSCAPING REQUIREMENTS AND INSTALLATION SHALL CONFORM WITH CITY OF GRAND JUNCTION ZONING AND DEVELOPMENT CODE (JULY, 1989 AS AMENDED)

AN UNDERGROUND PRESSURIZED IRRIGATION SYSTEM SHALL BE INSTALLED TO SERVE ALL LANDSCAPED AREAS



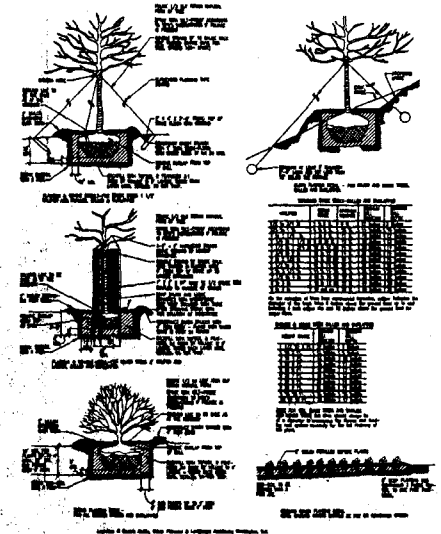
TYPICAL LANDSCAPE ISLAND DETAIL

Scale: 1" = 10'

LEGEND

- 1"-2" WASHED ROCK; PARKING ISLAND GROUNDCOVER
- CONCRETE
- GRASS
- TREE
  TOTAL: 40
  COMBINATION OF:
  MOUNTAIN ASH (25' AT MATURITY; MIN. 1-1/2" CALIPER))
  COTTONLESS COTTONWOOD (60' AT MATURITY; MIN. 1-1/2" CALIPER))
- TREE
  TOTAL: 7
  AUSTRIAN PINE (25' AT MATURITY; 6' MIN. PURCHASE SIZE)
- BARRIER TREE
  TOTAL: 21
  MOUNTAIN ASH (25' AT MATURITY; MIN. 2-1/2" CALIPER)
- SHRUB
  TOTAL: 135
  (MIN. 5 GALLON SIZE)
  COMBINATION OF:
  BARBERRY (4'-8' AT MATURITY)
  BURNING BUSH (4'-6' AT MATURITY)
  POTENTILLA (1'-4' AT MATURITY)
  EUONYMOUS (1'-4' AT MATURITY)
- BARRIER LANDSCAPING
  TOTAL: 46
  (MIN. 5 GALLON SIZE)
  COMPACT BURNING BUSH (3-1/2' AT MATURITY)

PLANTING DETAIL



NORTH

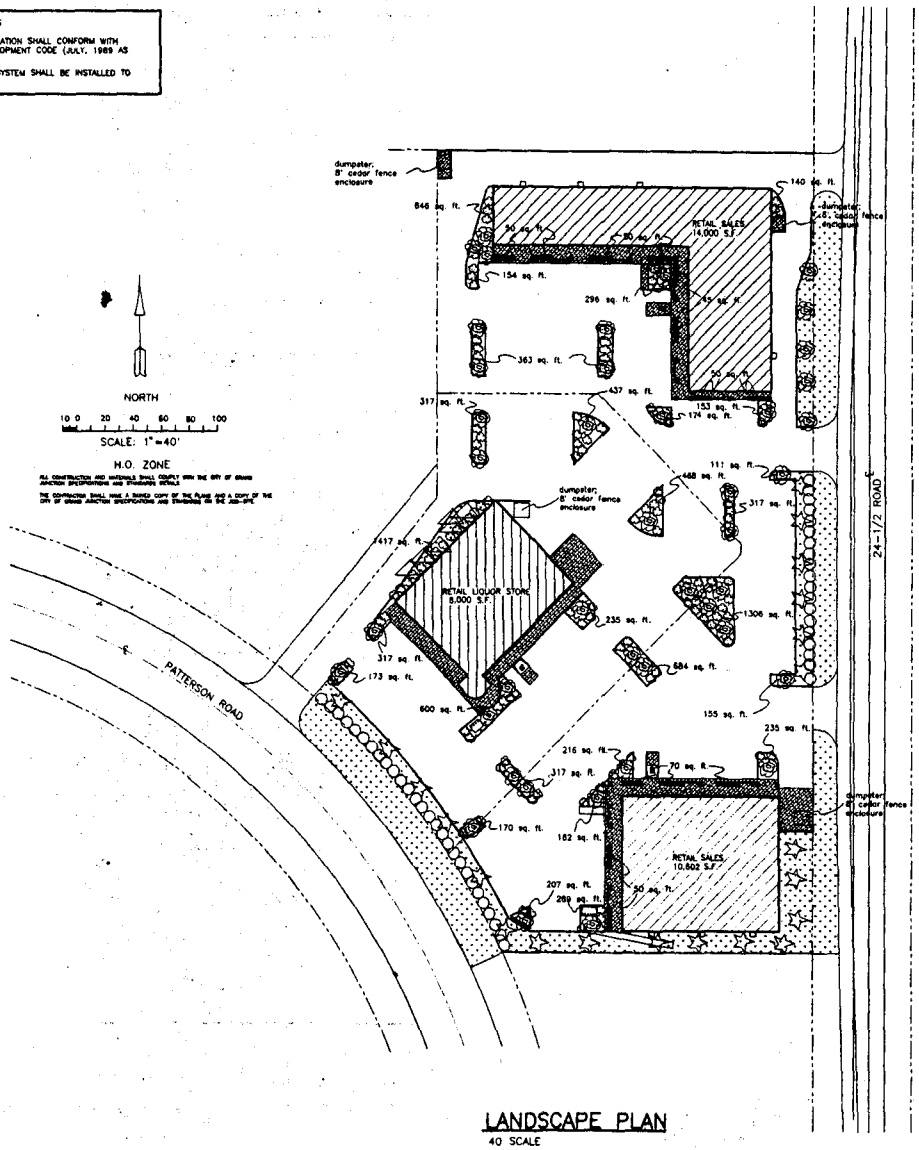
10 0 20 40 60 80 100

SCALE: 1"=40'

H.O. ZONE

ALL CONSTRUCTION AND MATERIALS SHALL COMPLY WITH THE CITY OF GRAND JUNCTION SPECIFICATIONS AND STANDARDS DETAILS

THE CONTRACTOR SHALL HAVE A SIGNED COPY OF THE PLANS AND A COPY OF THE CITY OF GRAND JUNCTION SPECIFICATIONS AND STANDARDS ON THE JOB-SITE



LANDSCAPE PLAN

40 SCALE

REVISIONS		BY
7/2/96		EK

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24 1/2 and F Road
Grand Junction, CO. 81505

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1179 Santa Clara Ave.
Grand Junction, CO. 81503
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JMK consulting/consulting

1	5/21/96	
AS SHOWN		
JMK		