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File CUP-1995-030

Date 8/12/99

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, not all entries designated to be scanned, are present in the file. There are also documents specific to certain files, not found on the standard list. For this reason, a checklist has been included. Remaining items, (not selected for scanning), will be marked present on the checklist. This index can serve as a quick guide for the contents of each file. Files denoted with (**) are to be located using the ISYS Query System. Planning Clearance will need to be typed in full, as well as other entries such as Ordinances, Resolutions, Board of Appeals, and etc.**
X	X	***Summary Sheet – Table of Contents**
		Application form
X		Receipts for fees paid for anything
X	X	***Submittal checklist**
X	X	***General project report**
		Reduced copy of final plans or drawings
X		Reduction of assessor's map
		Evidence of title, deeds
		***Mailing list**
		Public notice cards
		Record of certified mail
X		Legal description
		Appraisal of raw land
		Reduction of any maps – final copy
		***Final reports for drainage and soils (geotechnical reports)**
		Other bound or nonbound reports
		Traffic studies
X		Individual review comments from agencies
X	X	***Consolidated review comments list**
		***Petitioner's response to comments**
X	X	***Staff Reports**
		***Planning Commission staff report and exhibits**
		***City Council staff report and exhibits**
		***Summary sheet of final conditions**
		***Letters and correspondence dated after the date of final approval (pertaining to change in conditions or expiration date)**

DOCUMENTS SPECIFIC TO THIS DEVELOPMENT FILE:

X		Signage Guidelines for: Rimrock Marketplace – 2/27/95	X		Letter from Michael Drollinger to Thomas Logue re: raised crosswalk/speed bump design standards — 1/23/95
X	X	City Council Minutes – 4/5/95 - **	X		Notes from pre-application conference – 10/25/94
X		Planning Commission Minutes – 3/7/95 - **	X		Land Use Summary
X		Posting of Public Notice Signs	X		Grand Junction Schematic
X		General Grading Plan	X		Service road Plan
X		Letter from Michael Drollinger to Harold Woolard – 3/28/95	X		Preliminary Drainage Study
X	X	Letter from Thomas Logue to Michael Drollinger – 3/27/95	X		Sewer and Water Plan
X	X	Letter from Grady McNure to Michael Drollinger – 3/24/95	X	X	Highway 6 & 50 Proposed Retail Site Minimum Requirements for Traffic Impact Study – 10/31/94
X		Letter from Jeff Simpson to Mark Relph – 3/16/95	X		General Guidelines – I-70 Business Loop – 1st Street to 22 Road
X	X	Letter from Harold Woolard to Comm. Dev. – 3/9/95	X		Notes to file – unsigned, no date
X	X	Letter from Harold Woolard to Comm. Dev. – 2/28/95	X		Letter from Michael Drollinger to Thomas Logue – 2/2/95 – Application for cond. use
X	X	Letter from Stephen Bruce to Denny Granum – 2/27/95	X		Chicago Title Ins. Co. Commitment for Title Ins.
X	X	Preliminary Master Drainage Study for Rimrock Marketplace Shopping Ctr – 2/94	X		Subsurface Soils Exploration

X		Letter from Thomas Logue to City Council & Planning Commission – 2/6/95	X		Signage Guidelines for Rimrock Marketplace – 2/27/95
X		Endorsement Insured by Western Colorado Title Co. – 3/7/95	X		Letter from Stephen Bruce, B & B Appraisal to Denny Granum – 2/27/95
X		Orthophoto Map Topography	X		Land Use Summary
X		Preliminary Drainage Study	X	X	Site Plan
X		Service Road Plan			

DEVELOPMENT APPLICATION

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

Receipt # 1981
Date 1/24
Rec'd By 2/7
File No. CUP-95-30

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				
[ ] Rezone				From: To:	
[ ] Planned Development	[ ] ODP [ ] Preiim [ ] Final				
[X] Conditional Use		49.9 ac.	SW 25 1/2 Rd. Hwy 6&50	C-2	Retail Sales
[ ] Zone of Annex					
[ ] Text Amendment					
[ ] Special Use					
[ ] Vacation					[ ] Right-of-Way [ ] Easement

[X] PROPERTY OWNER [X] DEVELOPER [X] REPRESENTATIVE

Name	Name	Name
Denver Holdings, Inc.		LANDesign Limited % Tom Logue
10065 East Harvard Ave		200 N. 6th Street
Denver, Co 80231		Grand Junction, Co. 81501
303-338-9026		245-4099
Business Phone No.	Business Phone No.	Business Phone No.

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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 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.

X Thomas A. Logue 2/3/95
Signature of Person Completing Application Date

X
Signature of Property Owner(s) - Attach Additional Sheets if Necessary (Above)

#1981 Acct.

SUBMITTAL CHECKLIST

CONDITIONAL USE

CUP 93-[illegible]

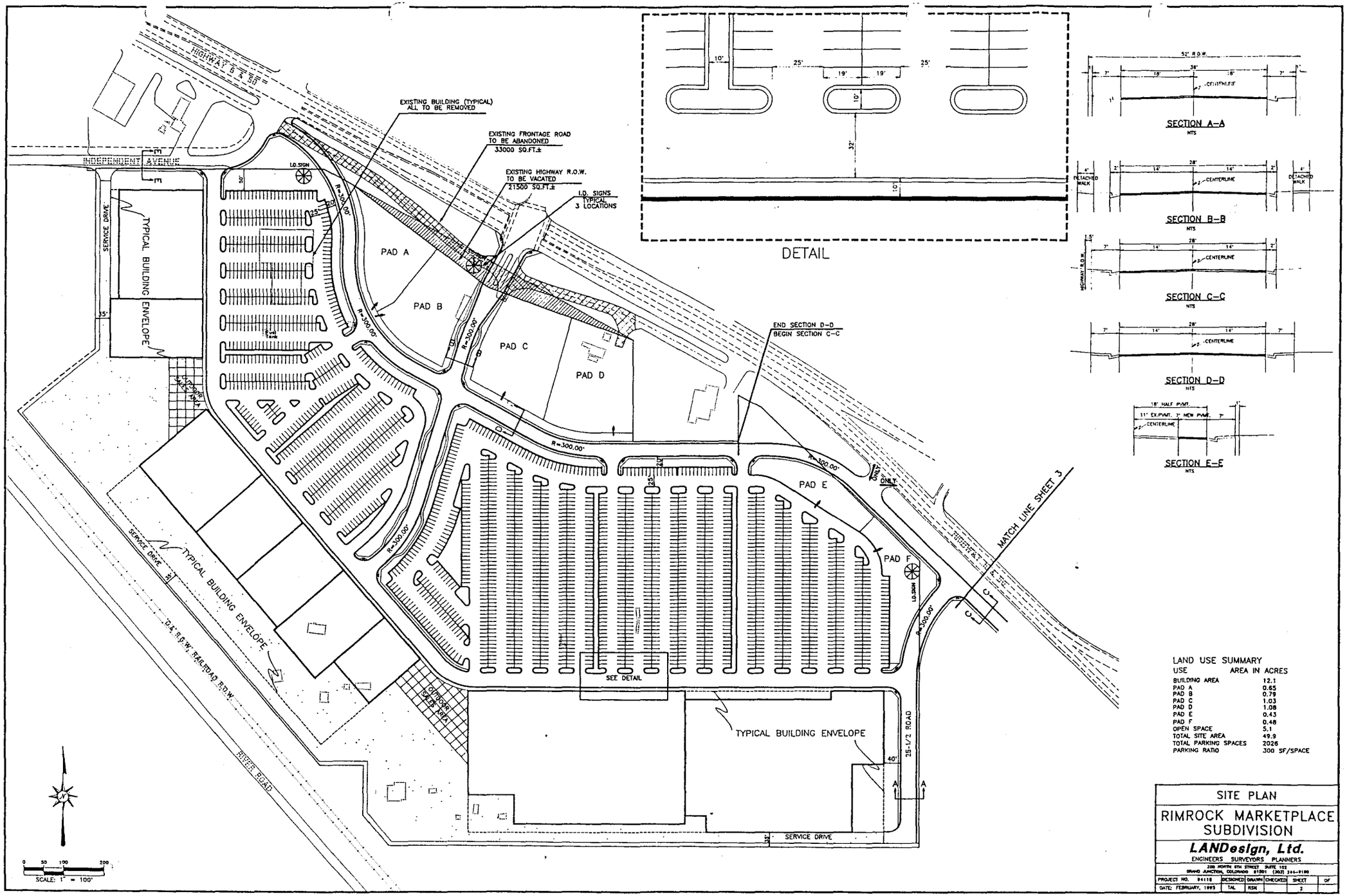
CON

Location: SW 25 Rd & Hwy 6 & 50 Project Name: DHI Shopping Center

ITEMS: DESCRIPTION	SSID REFERENCE	● City Community Development	● City Dev. Eng.	● City Utility Eng.	● City Property Agent	● City Attorney	● City G.J.P.C. (8 sets)	○ City Downtown Dev. Auth.	● City Parks and Rec.	● County Planning	○ Walker Field	● County Bldg. Dept	● CDOT	● City Fire Department	● City Police Department	● Corps of Engineers	● Persigo WW	● Irrigation District - Grand Valley	● Drainage Dist. - Grand Junction	● PS Co.	● US WEST	~~[illegible]~~	● UTE WATER	TOTAL REQ'D. 19
● Application Fee $350 +	VII-1	1																						27
● ~~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					
● Application Form* ← Project Location Map	VII-1	1	1	1	1	1	8	1	1	1	1	1	1	1	1	1	1	1	1					
● ~~11x17 Reduction of Assessor's Map~~	VII-1	1	1	1	1	1	8	1	1	1	1	1	1	1	1	1	1	1	1					
● Evidence of Title	VII-2	1				1																		
● Appraisal of Raw Land	VII-1	1			1				1															
● Names and Addresses	VII-3	1																						
● Legal Description	VII-2	1			1																			
○ Deed	VII-1	1			1	1																		
○ Easement	VII-2	1	1	1	1	1																		
○ Avigation Easement	VII-1	1			1	1																		
○ ROW	VII-3	1	1	1	1	1																		
● General Project Report	X-7	1	1	1	1	1	8	1	1	1	1	1	1	1	1	1	1	1	1					
● ~~Location Map~~	IX-21	1																						
● Vicinity Sketch	IX-33	1	1	1	1	1	8	1	1	1	1													
● Site Plan		2	2	1	1	1	8	1	1	1	1	1	1	1	1	1	1	1	1					
● Traffic Impact Study		1	2																					

Original Do NOT Remove From Office

NOTES:
1) An asterisk in the item description column indicates that a form is supplied by the City.
2) Required submittal items and distribution are indicated by filled in circles, some of which may be filled in during the pre-application conference. Additional items or copies may be subsequently requested in the review process.
3) Each submitted item must be labeled, named, or otherwise identified as described above in the description column.



LAND USE SUMMARY

USE	AREA IN ACRES
BUILDING AREA	12.1
PAD A	0.65
PAD B	0.79
PAD C	1.03
PAD D	1.08
PAD E	0.43
PAD F	0.48
OPEN SPACE	5.1
TOTAL SITE AREA	49.8
TOTAL PARKING SPACES	2026
PARKING RATIO	300 SF/SPACE

SITE PLAN

RIMROCK MARKETPLACE SUBDIVISION

LANDesign, Ltd.
ENGINEERS SURVEYORS PLANNERS
200 NORTH 6TH STREET SUITE 102
GRAND JUNCTION, COLORADO 81501 (303) 241-8180

PROJECT NO. 94118	DESIGNED	DRAWN	CHECKED	SHEET	OF
DATE: FEBRUARY, 1995	TAL	RSK		2	

GENERAL PROJECT REPORT FOR:

RIMROCK MARKETPLACE

Grand Junction, Colorado

February, 1995

CUP-95-30

Prepared By:
LANDdesign Limited, 200 N. 6th. Street, Grand Junction, CO 81501 (303) 245-4099

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SUMMARY AND CONCLUSIONS

The proposal calls for the development of a new shopping center facility located on 50 acres northwest of 25 1/2 Road and U.S. Highway 6 & 50. Site development plans include the construction of approximately 529,000 square feet of new retail sales space.

The property is currently zoned C-2 and adjoins existing non-residential zoned property.

Proposed building locations create a buffer for any of the undesirable impacts of the request.

Access to the subject site is gained from a fully improved principle arterial. Adverse affects are minimized, given the current traffic volumes, the design capacity and projected traffic increases from the proposed use together with planned road improvements.

All of the necessary utility services required for development of this type have available capacity. Adequate water supplies for fire protection also exist.

Fiscal Impacts, once the site is fully developed are positive. Adverse impacts to public facilities are almost non-existent.

The proposal meets or exceeds the criteria set forth in the City's Conditional Use Criteria.

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SITE ANALYSIS

Introduction

The purpose of this section is to identify the physical and technical characteristics of the property selected for the Shopping Center, (also known as the DHI Shopping Center).

This section evaluates potential site development assets and constraints.

Several other reports and studies have been transmitted to the City's development and engineering departments. If the reader of this narrative requires additional data or information they should study the following:

Traffic Impact Analysis, DHI Shopping Center, Grand Junction, January 27, 1995 (draft), by Leigh, Scott & Clery, Inc.

Subsurface Soils Exploration, 2525 Highway 6 & 50, Grand Junction Colorado, December 5, 1994, by Lincoln-DeVore, Inc.

Preliminary Drainage Study, DHI Shopping Center, February 6, 1995, by LANDesign Limited.

Location

The subject site is located northwest of 25 1/2 Road and U.S. Highway 6 & 50 in Grand Junction, Colorado. The site is located in parts of Sections 10 & 15, Township 1 South, Range 1 West of the Ute Meridian.

Existing Land Use

The site is irregular in shape and is approximately 1,600 feet long north and south and 2,000 feet east and west. The most obvious use on the property is a heavy equipment sales and repair facility located along Independent Avenue near the sites northerly most boundary. Numerous abandoned out buildings are also evident on the site. Some retail sales has occurred in the past along the site's frontage with Highway 6 & 50. The balance of the property is vacant and barren of any useful ground cover. The topography is flat and slopes to the southwest at a rate less than one percent. A major drainage channel crosses the site diagonally from the northeast to the southwest and is commonly known as the "Ligrani Drain".

The subject property is currently zoned C-2 (Heavy Commercial) by the City of Grand Junction.

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Utility Service

WATER SERVICE - Domestic water service is available from the Ute Water Conservancy District. A new eight inch water main is located along Highway 6 & 50's south frontage road. The 8 inch main is sufficient in size to provide adequate water for fire protection. A small diameter water main is located within Independent Avenue.

SANITARY SEWER - A existing 15 inch sewer main flows westerly from 25 1/2 Road approximately 300 feet north of the sites south property line. This main currently is operating within it's design capacity.

ELECTRIC, GAS & COMMUNICATION - Underground communication and natural gas mains adjoin the property within the existing road right-of-ways. Overhead electrical service is also located adjacent to the Highway 6 & 50 south right-of-way line.

Access

Primary access to the site is from U.S. Highway 6 & 50, which is a fully improved four lane roadway. Other access to the site can be gained from Independent Avenue which is currently an unimproved substandard paved City street. An evaluation of the existing highway capacity can be found within the *Traffic Impact Analysis for DHI Rimrock Marketplace*, (now known as Rimrock Marketplace).

Site Drainage

The subject site is some what affected by off-site drainage influence from the previously mentioned Ligrani Drain. Most of the existing storm water is carried on the ground surface to Ligrani Drain which flows into an existing box culvert located under the railroad and River Road and is ultimately discharged into the Colorado River. According to the U.S. Army Corps of Engineers, the subject property is not inundated by flooding from the Colorado River in the event of a 100 year storm.

Soils and Geologic Conditions

A Subsurface Soils Exploration Report which identifies the sites soil characteristics and limitations has been completed. The report states, "No geologic conditions were apparent during our reconnaissance which would preclude the site development as planned, provided the recommendations contained herein are fully complied with."

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PROPOSED LAND USE

The accompanying development plans indicates the proposed development of a Rimrock Marketplace facility to be located on a 50 acre site northwest of 25 1/2 Road and U.S. Highway 6 & 50 in the City of Grand Junction.

The primary focal point of the development will be the construction of a 529,000 square foot shopping and retail sales facility structure. Building materials will be masonry and/or steel. Additionally, the Site Development Plans call for the establishment of several "Pads" along the Highway 6 & 50 frontage. At this time is not known what the specific uses will be within each pad. Once a use has been determined, Site Plans will be submitted to the City for review under the Bulk requirements of the Zoning and Development Code. The proposal also calls for subdividing each of the six pads for individual ownership.

The facility will be open 24 hours a day, year round.

In addition to wall mounted signs placed on the buildings, several monument signs are identified on the Site Development Plan. The monument signs will identify the facility name and the name of larger retailers within the center. All signs will meet the current City sign code requirements.

Pole mounted security lighting will be provided throughout the facility.

Review of the proposed site plan indicates about one acre of the total site not including the Pad areas will be left as landscaped open space. Landscaped areas will consist of "street trees" and turf grass, decorative stone, and bark mulch ground covers. Landscaping will be completed in strict accordance with the City's Landscaping Guidelines.

Access - The primary access drive will be from Highway 6 & 50. Secondary service access will be available from 25 1/2 Road and Independent Avenue. As previously stated a Traffic Impact Analysis has been completed for the proposal. As a result of this study, in conjunction with meetings with various pubic officials, the following elements have been incorporated within the proposal:

1. The relocation of the existing Frontage Road across the property. This will allow for adequate vehicle storage at the developments new primary access drive and Highway 6 & 50. The proposal also calls for the physical abandonment of the existing Frontage Road adjacent to the site together with a request to vacate unused portion of the highway right-of-way.

2. The extension of the Frontage Road easterly to Mulberry Avenue. The extended Frontage Road section calls for a sidewalk to be constructed along the southerly side of the road.

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3. Construction of 25 1/2 Road between the new Frontage Road and the properties south boundary.

4. Half street improvements to Independent Avenue where it adjoins the site.

5. Major intersection improvements at Highway 6 & 50 and the new primary access road. These improvements also include reconstruction of the existing traffic control devices found at the intersection.

All service and delivery vehicle access will be provided independent of the access for the customers. This area is generally along the southerly boundary of the property. In addition to providing access to the rear of the buildings, this area will also serve as outside storage.

The bulk of the development will be used for parking. 2,026 parking spaces are provided. Resulting in a parking ratio of one space per 261 square feet of gross building area.

Utility Service - The proposal calls for the relocation of the existing sanitary sewer main which cross the property and will also provide sewer service to the development. New mains will be extended to collect sewer from the Pad areas.

Domestic water service will utilize the existing mains found in the area. Water for both domestic use and fire protection will be extended throughout the site from existing 8 inch diameter mains located in the Highway 6 & 50 Frontage Road, Independent Avenue, and River Road.

Electric, gas and communication service will be extended from existing facilities which adjoin the site.

Grading and Drainage - Grading and Drainage of the site will be conducted in a manner to provide positive drainage away from the buildings. Several drainage discharge points are proposed. Due to the location of the site, in respect to its location on the Ligrani Drain, on-site detention of developed storm water flows will not be attempted. All of the drainage water discharged from the site will ultimately be received by the Colorado River located along the south side of River Road, 500 feet southwesterly of the property.

Development Schedule - At this time it is anticipated that the facility will be developed in a single phase. Site construction will most likely start during the spring of 1995. Development of the Pads will occur independently of the rest of the site.

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Land Uses within Rimrock Marketplace are presented in tabular form.

LAND USE SMUMMARY		
Use	Area	% of Total
Building	529.000 SF	24.2
Parking & Drives	28.5 AC	57.2
Public ROW	2.7 AC	5.4
Landscaping	1.0 AC	2.2
Pads	5.5 AC	11.0
TOTAL	49.9 AC	100.0

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CONDITIONAL USE CRITERIA

The City of Grand Junction has established seven criteria for evaluation of Conditional Use requests. A response to each follows:

Section 4-8-1

A. The proposed use must be compatible with adjacent uses. Such compatibility may be expressed in appearance, site design and scope as well as the control of adverse impacts including noise, dust, odor, lighting, and traffic, etc.

All of the surrounding land which is developed, are commercial uses compatible with the request. Undeveloped lands are currently zone for non-residential uses.

B. Adequacy of design features of the site. such as service areas, pedestrian and vehicular circulation, safety provisions, accessory uses, accessways to and from the site, buffering etc. shall be considered.

All service areas are located to the rear of the proposed buildings. These are also adjacent to an existing main line railroad. The buildings themselves and the railroad grade sreeen and buffer are the undesirable influences of the service areas. The proposal call for the construction of interconnecting pedestrian walkways between the side and adjoining areas.

C. Accessory uses proposed shall be necessary and desirable. These uses shall not have undesirable impacts on adjacent uses or the principal use. Undesirable impacts on these uses shall be controlled or eliminated.

Due to the nature of the request there are no accessory uses proposed other than those discussed above.

D. Adequate public services including sewage and waste disposal, domestic and irrigation water, gas, electricity, and police and fire protection must be available without the reduction of services to other existing uses.

All public utilities required for the development of the subject property exists within the adjoining roadways and have the available capacity to serve the proposed use without reducing services to other existing uses. The site is configured in a fashion which will allow for visibility or access to the buildings by emergency protection services.

E. Other uses complementary to and supportive of the proposed project shall be available, including schools, parks, hospitals, business and commercial facilities, transportation facilities, etc.

Other than the transportation facilities, the proposal does not have a major requirement for other support uses. Highway 6 & 50 is current constructed as a major east-west

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arterial and with some modification at the project primary access point, provide an adequate level of service.

F. Provisions for proper maintenance shall be provided.
Due to the nature of the proposed retail activities, it is mandatory that the entire site is maintained at a high level.

G. The use shall conform to adopted plans, policies, requirements for parking and loading, signs and all other applicable regulation of (the) *Code.*
The application, as submitted, meets all of the requirements for Public Review of a Conditional Use Request. The City requires a specific Site Plan Review prior to the issuance of any building permits. This review process will insure the development conforms to all requirements of the Development Code.

PRELIMINARY MASTER DRAINAGE STUDY

FOR

RIMROCK MARKETPLACE SHOPPING CENTER

February, 1994

Prepared For:

Denver Holdings, Inc.
10065 E. Harvard Ave.
Suite 803
Denver, CO 80231

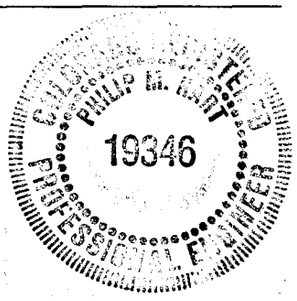
Prepared By:

LANDesign LTD.
200 North 6th. Street, Suite 102

Prepared By: _____
Monty D. Stroup

"I hereby certify that this Preliminary Master Drainage Study for Rimrock Marketplace was prepared under my direct supervision."

Reviewed By: _____
Philip M. Hart, P.E.
State of Colorado, #19346



Prepared By: _____
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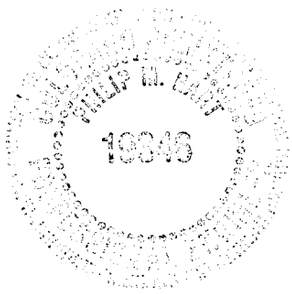


I. General Location and Description

A. Site and Major Basin Location:

The Rimrock Marketplace Shopping Center property contains approximately 52 acres. The project is located in the City of Grand Junction, State of Colorado, more particularly in sections 10 and 15 Township 1 South, Range 1 West of the Ute Meridian. Streets in the vicinity include 6 and 50 Road running northwest and southeast and Independent Avenue which runs east and west.

Development in the vicinity and surrounding the site is commercial in nature. To the south and land included in this site has been agricultural. To the west and east is commercial properties. Across 6 and 50 Road is a Sams Club and a used car dealership. See Exhibit 1

The major drainage offsite is the Ligrani Drainage from the east. This site contains the outfall of the drainage basin.

B. Site and Major Basin Description:

The proposed project site contains approximately 52 acres and is planned for a single developed commercial site. The site contains some existing structures which will be removed during construction of this project. The major drainage basin from offsite, the Ligrani Drainage, enters the site from the east and is conveyed across the site in a ditch. This drainage will be placed in conduit along with the developed drainage.

Based on the "Soil Survey, Grand Junction Area" (Exhibit 2.0) on and off-site soils are defined as (Gm), Green River very fine sandy loam, 0 to 2 percent slopes, hydrological soil group "C" (90% of the site) and (Gl), Green River silty clay loam deep over gravel, 0 to 2 percent slopes, hydrological soils group "B" (10% of the site).

II. Existing Drainage Conditions

A. Major Basin:

The major off site contributory basin is the ligrani drainage. This site is concentrated in a conduit which crosses 6 and 50 Road near the east side of the site. Other off site flows are from the southeast and enter the site on the south boundary.

A site inspection reveals various types of plant life indigenous to agricultural and fallow land.

The subject site is within the Effective Floodplain and is classified as Zone "X" as determined by the FIRM Flood Insurance Rate Map (Reference 6, Exhibit 4.0).

B. Site:

Historically the property drains in a sheet flow fashion from the east to the west at slopes of 0.7 to 1.2 percent towards 25 Road. At the west side of the site it is conveyed via a 84 inch culvert under the Denver and Rio Grand Western Rail Road and River Road. It then is directed to the Colorado River via a ditch

III. Proposed Drainage Conditions

A. Changes in Drainage Patterns:

Ligrani Drainage:

The Ligrani Drainage will be conveyed across the site in conduit as opposed to the current ditch. The conduit will be sized to convey the 100 year storm.

Offsite Drainage from the SE:

Offsite Drainage from the SE will be conveyed by ditch along the railroad to the current site drainage at the west side of the site.

Site Drainage:

Site drainage will be directed to the conduit containing the ligrani Drainage and conveyed off site by the current conduit configuration under the DRGW Railroad.

Maintenance Issues:

Access to and through the site shall be by dedicated easement.

Ownership and responsibility for maintenance of proposed drainage areas shall be that of the Rimrock Marketplace ownership.

IV. Design Criteria & Approach

A. Hydrology:

The "Stormwater Management Manual, (SWMM), Public Works Department, City of Grand

Junction, Co., June 1994" (Reference 1) and the "Mesa County Storm Drainage Criteria Manual" (Reference 2) shall be used as the basis for analysis and facility design.

B. Study Methodology:

Precipitation Method

The Rational method will be used to determine runoff. The 100 Year Synthetic Storm will be simulated based on rainfall (DDF) Depth-Duration-Frequency data for the Grand Junction Urbanized, Area (Table 403a, Reference 2). All site drainage facilities shall be designed to convey the 100 year storm, therefor the 2 year storm event will not be analyzed.

Loss Rate Method:

The effects of interception and infiltration will be analyzed using the SCS Curve Number Method.

Runoff Transformation Method:

Based on watershed geometry the SCS Dimensionless Unit Hydrograph method is to be used.

Element Application:

Each sub-basin is to be analyzed using 3 elements, overland flow, shallow concentrated flow and channel flow. Travel times (Tt) for each of these elements were calculated individually and combined to define the Time of Concentration (Tc) for each sub-basin. The Lag Time (TLAG) for each basin was calculated based on the relationship of TLAG = 0.6 * Tc as defined in Reference 9.

C. Hydraulics:

All site facilities and conveyance elements shall be designed in accordance with the City of Grand Junction guidelines as provided in Reference 1.

This Preliminary Master Drainage Study has been prepared to address site specific drainage concerns in accordance with the requirements of the City of Grand Junction, Colorado. The Appendix of this report includes criteria, exhibits, tables and design nomographs to be used in the Final Drainage Study.

D. Stormwater Permit:

The issue of a stormwater permit has been discussed with the Colorado Department of Health. See Exhibit 3.

V. References:

1. Stormwater Management Manual, (SWMM), Public Works Department, City of Grand Junction, Co., June 1994.

2. Mesa County Storm Drainage Criteria Manual, Final Draft, Mesa County, Colorado, March, 1992.

3. Flood Hazard Information, Colorado River and Tributaries, Grand Junction, Colorado, prepared for the City of Grand Junction and Mesa County, by The Department Of The Army, Sacramento District, Corps Of Engineers, Sacramento, California, November, 1976.

4. Flood Insurance Study, City of Grand Junction, Colorado, Mesa County, Community Number 080117, Federal Emergency Management Agency, Revised July 15th, 1992.

5. Flood Insurance Study, Mesa County, Colorado (Unincorporated Areas), Community Number 080115, Federal Emergency Management Agency, Revised July 15th, 1992.

6. Flood Insurance Rate Map, City of Grand Junction, Colorado, Mesa County, Community-Panel Number 080117 0003 E, Federal Emergency Management Agency, Map Revised July 15th, 1992.

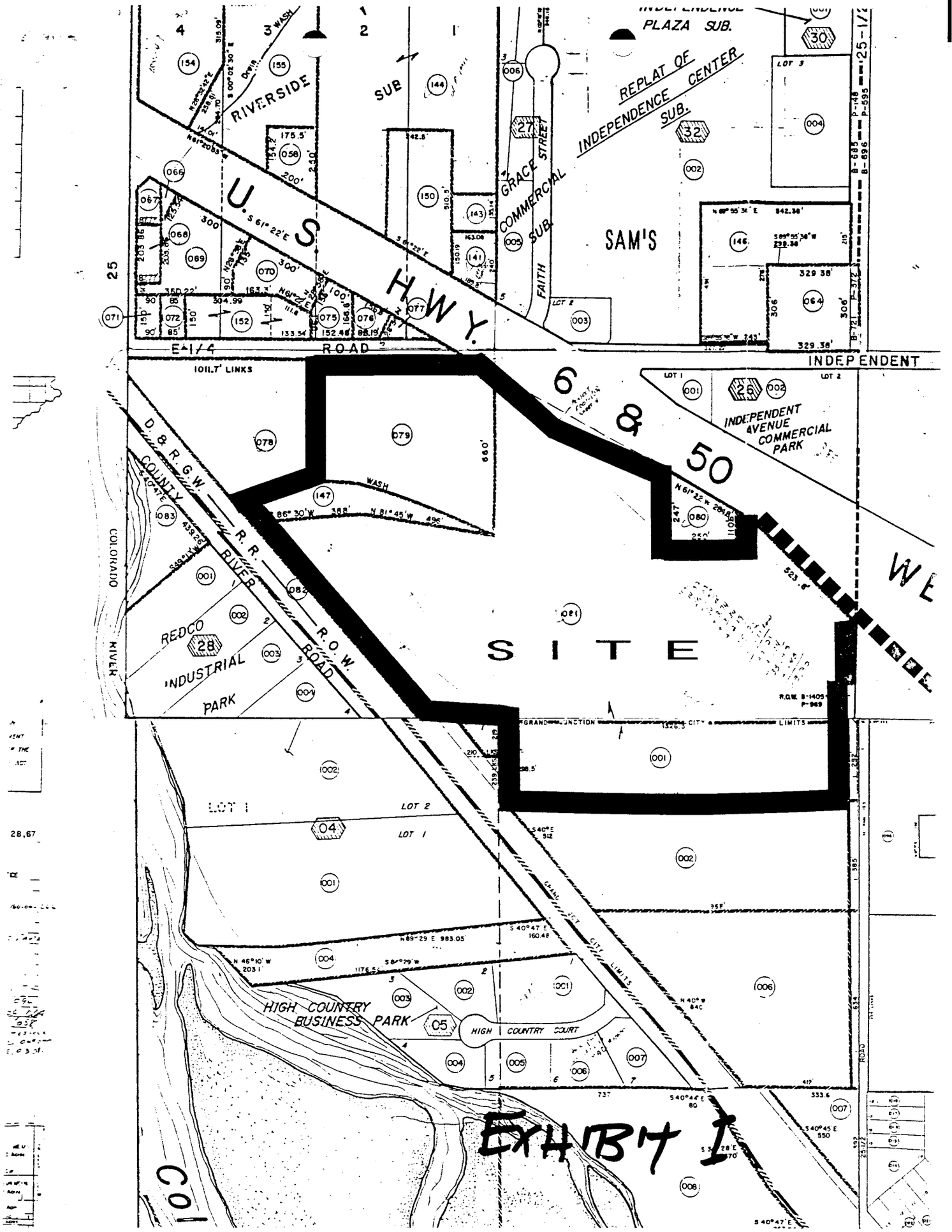
7. Flood Insurance Rate Map, Mesa County, Colorado, (Unincorporated Areas), Community Panel Number 080115 0460 B, Federal Emergency Management Agency, Map Revised July 15th, 1992.

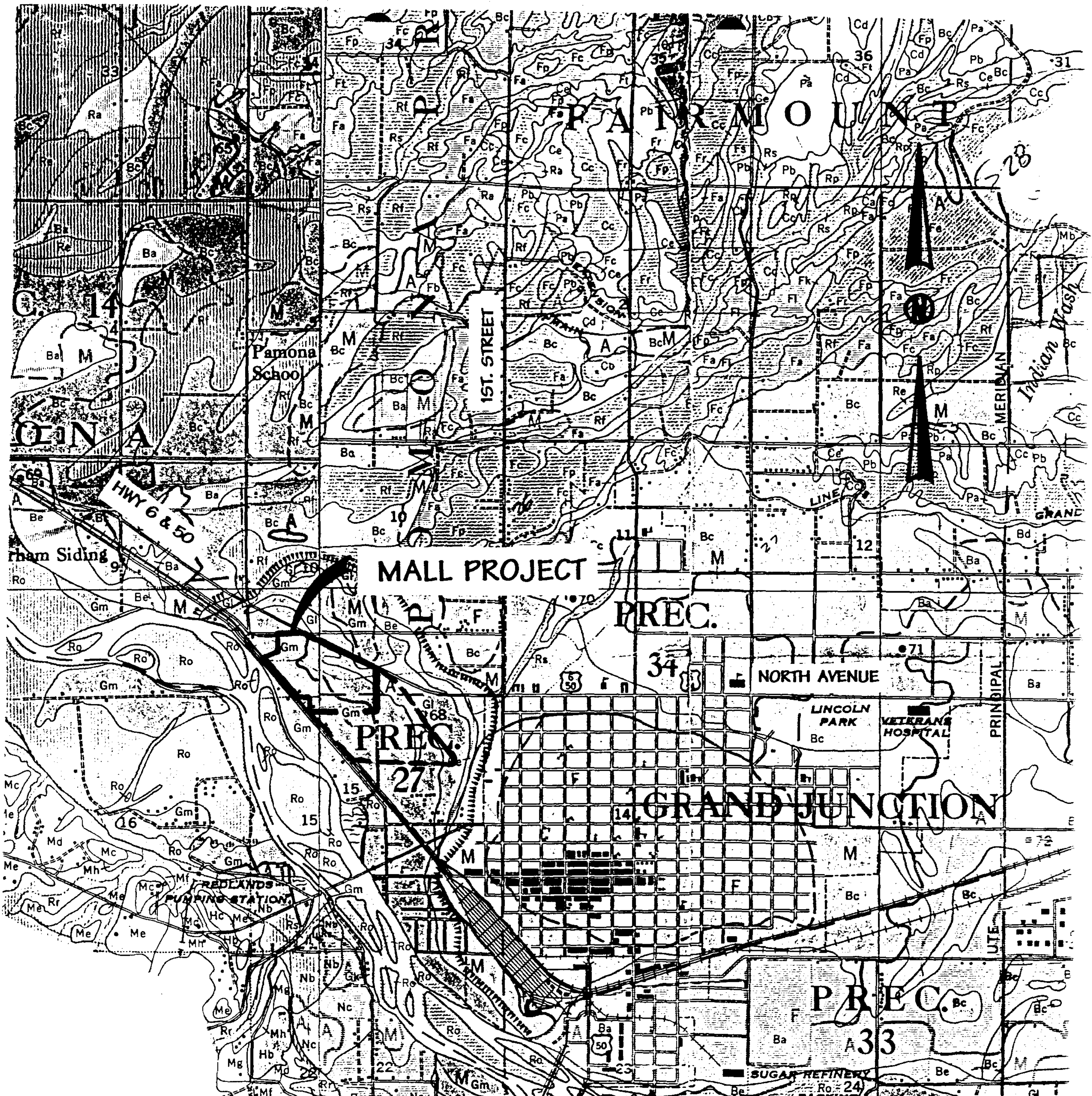
8. Soil Survey, Grand Junction Area, Colorado, Series 1940, No. 19, U.S. Department of Agriculture, issued November, 1955.

10. HEC 2, Water Surface Profiles, US Army Corps of Engineers, September, 1990.

11. Persigo Village Drainage Report, Prepared By: Turner, Collie & Braden Inc., Grand Junction, Colorado, September, 1982.

APPENDIX


PLAZA SUB.
REPLAT OF INDEPENDENCE CENTER SUB.
RIVERSIDE SUB
GRACE STREET
COMMERCIAL SUB
FAITH
SAM'S
U.S. HWY. 6 & 50
E 1/4 ROAD
INDEPENDENT
INDEPENDENT AVENUE COMMERCIAL PARK
WASH
D & R.G.W. R.R.
COUNTY
COLORADO RIVER
RIVER
R.O.W.
ROAD
REDCO INDUSTRIAL PARK
SITE
GRAND JUNCTION CITY LIMITS
LOT 1
LOT 2
HIGH COUNTRY BUSINESS PARK
HIGH COUNTRY COURT
EXHIBIT 1



MALL PROJECT
SITE SOILS MAP
EXHIBIT 8
FAIRMOUNT
GRAND JUNCTION
PREC. 34
PREC. 27
PREC. 33
NORTH AVENUE
LINCOLN PARK
VETERANS HOSPITAL
1ST. STREET
HWY 6 & 50
Pamona School
Indian Wash
MERIDIAN
PRINCIPAL
UTE
REDLANDS PUMPING STATION
SUGAR REFINERY
PACKING PLANT
COLORADO
GRAVEL PIT
CITY FILTERATION PLANT
R. 1 W.
Alphabetical
ional Signs:

LANDesign, LLC.
200 North 6th Street · Suite102 · Grand Junction · Colorado 81501 · 303-245-4099

February 2, 1995

Colorado Department of Health
Water Quality Control Division
WQCD-PE-B2
4300 Cherry Creek Drive South
Denver, Colorado 80222-1530

Attention: Permits and Enforcement Section, Ms. Kathy Dolan.

Re: New Shopping Center, Grand Junction, Colorado

Dear Ms. Dolan:

This letter is to follow up on our telephone conversation of today regarding the appropriate Stormwater Discharge Permits which will be required for a proposed 50 Acre Shopping Center located west of Grand Junction.

As shown on the enclosed map, the subject property is located southeast of US Hwy 6 & 50 at the lower end of a large urban watershed which is tributary to the Colorado River via the "Ligrani Drain". The Ligrani Drain bisects the project site flowing from the northeast to the southwest and discharges directly to the Colorado River. This drain is currently an open channel which is proposed to be piped under ground to facilitate the construction of the parking lots.

This project contains approximately 50 Acres and is planned for a variety of high volume retail sales outlets. Plans call for the construction of three separate building structures, associated asphalt parking area, access roads and a utility infrastructure to include water, sanitary sewer and dry utilities (see enclosure).

Stormwater runoff from the site including roofs and the asphalt parking lot will be routed unabated to the "Ligrani Drain" and subsequently southwest directly to the Colorado River.

Based on our review of the "Colorado Stormwater Program - Fact Sheet" and points of clarification by yourself we understand that following:

Item 1. Since the project site is in excess of 5.0 acres a permit for "Stormwater Discharges Associated With Construction Activity" will be required.

Item 2. Since the proposed land use is "Retail Sales" the project is exempt from the current permit requirements and will not be required to obtain a "Colorado Stormwater General Permit".

At this time we are requesting a letter from your agency to verifying that these assumptions are correct..

Sincerely

Monty D. Stroup

EXHIBIT 3

TABLE "A-1"
INTENSITY-DURATION-FREQUENCY (IDF) TABLE

Time (min)	2-Year Intensity (in/hr)	100-Year Intensity (in/hr)	Time (min)	2-Year Intensity (in/hr)	100-Year Intensity (in/hr)
5	1.95	4.95	33	0.83	2.15
6	1.83	4.65	34	0.82	2.12
7	1.74	4.40	35	0.81	2.09
8	1.66	4.19	36	0.80	2.06
9	1.59	3.99	37	0.79	2.03
10	1.52	3.80	38	0.78	2.00
11	1.46	3.66	39	0.77	1.97
12	1.41	3.54	40	0.76	1.94
13	1.36	3.43	41	0.75	1.91
14	1.32	3.33	42	0.74	1.88
15	1.28	3.24	43	0.73	1.85
16	1.24	3.15	44	0.72	1.82
17	1.21	3.07	45	0.71	1.79
18	1.17	2.99	46	0.70	1.76
19	1.14	2.91	47	0.69	1.73
20	1.11	2.84	48	0.68	1.70
21	1.08	2.77	49	0.67	1.67
22	1.05	2.70	50	0.66	1.64
23	1.02	2.63	51	0.65	1.61
24	1.00	2.57	52	0.64	1.59
25	0.98	2.51	53	0.63	1.57
26	0.96	2.46	54	0.62	1.55
27	0.94	2.41	55	0.61	1.53
28	0.92	2.36	56	0.60	1.51
29	0.90	2.31	57	0.59	1.49
30	0.88	2.27	58	0.58	1.47
31	0.86	2.23	59	0.57	1.45
32	0.84	2.19	60	0.56	1.43

Source: Mesa County 1991

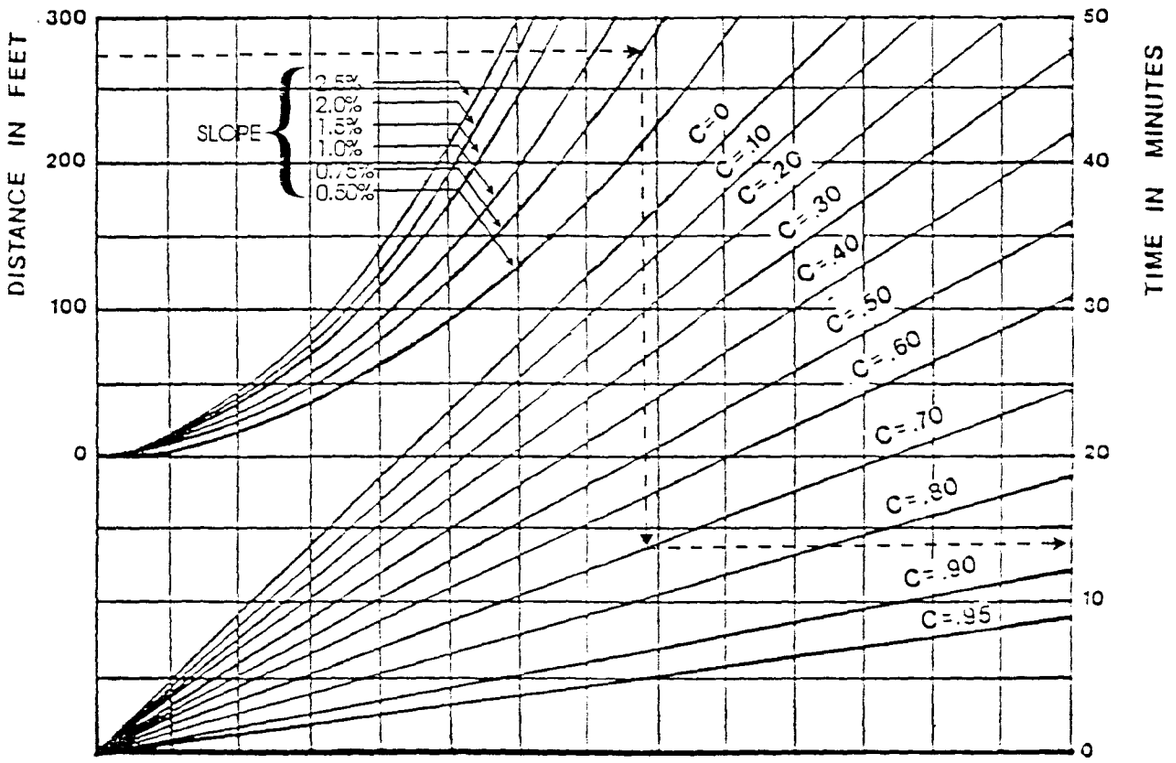
LAND USE OR SURFACE CHARACTERISTICS	SCS HYDROLOGIC SOIL GROUP (SEE APPENDIX "C" FOR DESCRIPTIONS)											
	A			B			C			D		
	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+	0-2%	2-6%	6%+
UNDEVELOPED AREAS Bare ground	.10 - .20 .14 - .24	.16 - .26 .22 - .32	.25 - .35 .30 - .40	.14 - .22 .20 - .28	.22 - .30 .28 - .36	.30 - .38 .37 - .45	.20 - .28 .26 - .34	.28 - .36 .35 - .43	.36 - .44 .40 - .48	.24 - .32 .30 - .38	.30 - .38 .40 - .48	.40 - .48 .50 - .58
Cultivated/Agricultural	.08 - .18 .14 - .24	.13 - .23 .18 - .28	.16 - .26 .22 - .32	.11 - .19 .16 - .24	.15 - .23 .21 - .29	.21 - .29 .28 - .36	.14 - .22 .20 - .28	.19 - .27 .25 - .33	.26 - .34 .34 - .42	.18 - .26 .24 - .32	.23 - .31 .29 - .37	.31 - .39 .41 - .49
Pasture	.12 - .22 .15 - .25	.20 - .30 .25 - .35	.30 - .40 .37 - .47	.18 - .26 .23 - .31	.28 - .36 .34 - .42	.37 - .45 .45 - .53	.24 - .32 .30 - .38	.34 - .42 .42 - .50	.44 - .52 .52 - .60	.30 - .38 .37 - .45	.40 - .48 .50 - .58	.50 - .58 .62 - .70
Meadow	.10 - .20 .14 - .24	.16 - .26 .22 - .32	.25 - .35 .30 - .40	.14 - .22 .20 - .28	.22 - .30 .28 - .36	.30 - .38 .37 - .45	.20 - .28 .26 - .34	.28 - .36 .35 - .43	.36 - .44 .44 - .52	.24 - .32 .30 - .38	.30 - .38 .40 - .48	.40 - .48 .50 - .58
Forest	.05 - .15 .08 - .18	.08 - .18 .11 - .21	.11 - .21 .14 - .24	.08 - .16 .10 - .18	.11 - .19 .14 - .22	.14 - .22 .18 - .26	.10 - .18 .12 - .20	.13 - .21 .16 - .24	.16 - .24 .20 - .28	.12 - .20 .15 - .23	.16 - .24 .20 - .28	.20 - .28 .25 - .33
RESIDENTIAL AREAS 1/8 acre per unit	.40 - .50 .48 - .58	.43 - .53 .52 - .62	.46 - .56 .55 - .65	.42 - .50 .50 - .58	.45 - .53 .54 - .62	.50 - .58 .59 - .67	.45 - .53 .53 - .61	.48 - .56 .57 - .65	.53 - .61 .64 - .72	.48 - .56 .56 - .64	.51 - .59 .60 - .68	.57 - .65 .69 - .77
1/4 acre per unit	.27 - .37 .35 - .45	.31 - .41 .39 - .49	.34 - .44 .42 - .52	.29 - .37 .38 - .46	.34 - .42 .42 - .50	.38 - .46 .47 - .55	.32 - .40 .41 - .49	.36 - .44 .45 - .53	.41 - .49 .52 - .60	.35 - .43 .43 - .51	.39 - .47 .47 - .55	.45 - .53 .57 - .65
1/3 acre per unit	.22 - .32 .31 - .41	.26 - .36 .35 - .45	.29 - .39 .38 - .48	.25 - .33 .33 - .41	.29 - .37 .38 - .46	.33 - .41 .42 - .50	.28 - .36 .36 - .44	.32 - .40 .41 - .49	.37 - .45 .48 - .56	.31 - .39 .39 - .47	.35 - .43 .43 - .51	.42 - .50 .53 - .61
1/2 acre per unit	.16 - .26 .25 - .35	.20 - .30 .29 - .39	.24 - .34 .32 - .42	.19 - .27 .28 - .36	.23 - .31 .32 - .40	.28 - .36 .36 - .44	.22 - .30 .31 - .39	.27 - .35 .35 - .43	.32 - .40 .42 - .50	.26 - .34 .34 - .42	.30 - .38 .38 - .46	.37 - .45 .48 - .56
1 acre per unit	.14 - .24 .22 - .32	.19 - .29 .26 - .36	.22 - .32 .29 - .39	.17 - .25 .24 - .32	.21 - .29 .28 - .36	.26 - .34 .34 - .42	.20 - .28 .28 - .36	.25 - .33 .32 - .40	.31 - .39 .40 - .48	.24 - .32 .31 - .39	.29 - .37 .35 - .43	.35 - .43 .46 - .54
MISC. SURFACES Pavement and roofs	.93 .95	.94 .96	.95 .97	.93 .95	.94 .96	.95 .97	.93 .95	.94 .96	.95 .97	.93 .95	.94 .96	.95 .97
Traffic areas (soil and gravel)	.55 - .65 .65 - .70	.60 - .70 .70 - .75	.64 - .74 .74 - .79	.60 - .68 .68 - .76	.64 - .72 .72 - .80	.67 - .75 .75 - .83	.64 - .72 .72 - .80	.67 - .75 .75 - .83	.69 - .77 .77 - .85	.72 - .80 .79 - .87	.75 - .83 .82 - .90	.77 - .85 .84 - .92
Green landscaping (lawns, parks)	.10 - .20 .14 - .24	.16 - .26 .22 - .32	.25 - .35 .30 - .40	.14 - .22 .20 - .28	.22 - .30 .28 - .36	.30 - .38 .37 - .45	.20 - .28 .26 - .34	.28 - .36 .35 - .43	.36 - .44 .42 - .52	.24 - .32 .30 - .38	.30 - .38 .40 - .48	.40 - .48 .50 - .58
Non-green and gravel landscaping	.30 - .40 .34 - .44	.36 - .46 .42 - .52	.45 - .55 .50 - .60	.45 - .55 .50 - .60	.42 - .50 .48 - .56	.50 - .58 .57 - .65	.40 - .48 .46 - .54	.48 - .56 .55 - .63	.56 - .64 .64 - .72	.44 - .52 .50 - .58	.50 - .58 .60 - .68	.60 - .68 .70 - .78
Cemeteries, playgrounds	.20 - .30 .24 - .34	.26 - .36 .32 - .42	.35 - .45 .40 - .50	.35 - .45 .40 - .50	.32 - .40 .38 - .46	.40 - .48 .47 - .55	.30 - .38 .36 - .44	.38 - .44 .45 - .53	.46 - .54 .54 - .62	.34 - .42 .40 - .48	.40 - .48 .50 - .58	.50 - .58 .60 - .68

NOTES:
1. Values above and below pertain to the 2-year and 100-year storms, respectively.
2. The range of values provided allows for engineering judgement of site conditions such as basic shape, homogeneity of surface type, surface depression storage, and storm duration. In general, during shorter duration storms (Tc ≤ 10 minutes), infiltration capacity is higher, allowing use of a "C" value in the low range. Conversely, for longer duration storms (Tc) 30 minutes), use a ""C value in the higher range.
3. For residential development at less than 1/8 acre per unit or greater than 1 acre per unit, and also for commercial and industrial areas, use values under MISC SURFACES to estimate "C" value ranges for use.

RATIONAL METHOD RUNOFF COEFFICIENTS
(Modified from Table 4, UC-Davis, which appears to be a modification of work done by Rawls)

TABLE "B-1"

MODIFIED FROM FIGURE 403, MESA COUNTY



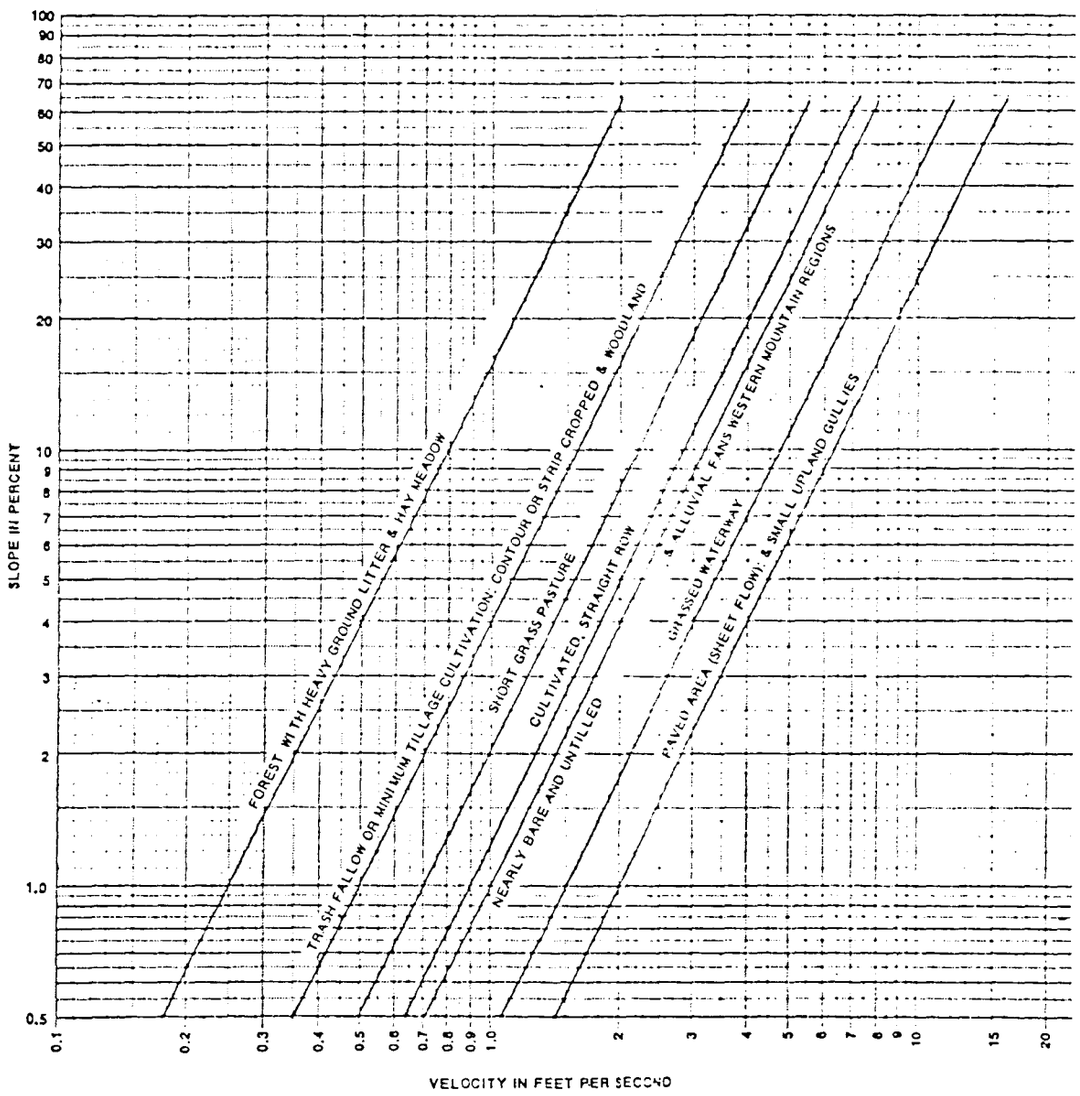
THE ABOVE CURVES ARE A SOLUTION OF THE FOLLOWING EQUATION:

$$To = \frac{1.8\,(1.1 - C)\sqrt{L}}{\sqrt[3]{S}}$$

WHERE: To = OVERLAND FLOW TIME (MIN.)
S = SLOPE OF BASIN (%)
C = RUNOFF COEFFICIENT (SEE TABLE "B-1" IN APPENDIX "B")
L = LENGTH OF BASIN (ft)

GRAPHICAL DETERMINATION OF "To:" FAA METHOD	FIGURE "E-2"

REPRODUCED FROM FIGURE 15.2, SCS 1972



DETERMINATION OF "Ts"	FIGURE "E-3"

SUBSURFACE SOILS EXPLORATION

2525 HIGHWAY 6 & 50

GRAND JUNCTION, COLORADO

Prepared For:

DENVER HOLDINGS, INC.
1045 E. Harvard Ave., Suite 803
Denver, Colorado

Prepared By:

LINCOLN-DeVORE, INC.
1441 Motor Street
Grand Junction, CO 81505

December 5, 1994

Lincoln DeVore, Inc.
Geotechnical Consultants
1441 Motor St.
Grand Junction, CO 81505
TEL: (303) 242-8968
FAX: (303) 242-1561

December 5, 1994

DENVER HOLDINGS INC.
10045 E. Harvard Ave., Ste 803
Denver, Colorado 80123

Re: SUBSURFACE SOILS EXPLORATION

2525 Highway 6 & 50

Grand Junction, Colorado

Dear Sir:

Transmitted herein are the results of a Subsurface Soils Exploration for the proposed retail shopping complex which will include several small to medium sized commercial structures.

If you have any questions after reviewing this report, please feel free to contact this office at any time. This opportunity to provide Geotechnical Engineering services is sincerely appreciated.

Respectfully submitted,

LINCOLN-DeVORE, INC.

By: [signature]
Edward M. Morris, E.I.T.
Western Slope Branch Manager
Grand Junction, Office

Reviewed by: [signature] 1/5/95
George D. Morris, P.E.
Colorado Springs Office

LDTL Job No. 81775-J

EMM/bh

TABLE OF CONTENTS

INTRODUCTION

PROJECT DESCRIPTION

This report presents the results of our geotechnical evaluation performed to determine the general subsurface conditions of the site applicable to construction of a retail shopping complex which will include several small to medium sized commercial structures. A vicinity map is included in the Appendix of this report.

To assist in our exploration, we were provided with a planning map prepared by Land Design of Grand Junction, Colorado. The Boring Location Plan attached to this report is based on that plan provided to us.

We understand that the proposed structures will probably consist of single story, wood and masonry framed structures with concrete slabs on grade. It is not anticipated either half or full basements will be constructed on this site. Lincoln DeVore has not seen any building plans, but structures of this general type typically develop wall loads on the order of 1000-3000 plf and column loads on the order of 15-40 kips. Interior floor loads on the concrete slabs can range from 100-1000 psf depending upon types of interior storage and product displays.

The characteristics of the subsurface materials encountered were evaluated with regard to the type of construction described above. Recommendations are included herein to match the described construction to the soil characteristics found. The information contained herein may or may not be valid for other purposes. If the proposed site use is changed or

types of construction proposed, other than noted herein, Lincoln DeVore should be contacted to determine if the information in this report can be used for the new construction without further field evaluations.

PROJECT SCOPE

The purpose of our exploration was to evaluate the surface and subsurface soil and geologic conditions of the site and, based on the conditions encountered, to provide recommendations pertaining to the geotechnical aspects of the site development as previously described. The conclusions and recommendations included herein are based on an analysis of the data obtained from our field explorations, laboratory testing program, and on our experience with similar soil and geologic conditions in the area.

The scope of our geotechnical exploration consisted of a surface reconnaissance, subsurface exploration, obtaining representative samples, laboratory testing, analysis of field and laboratory data, and a review of geologic literature.

Specifically, the intent of this study is to:

1. Explore the subsurface conditions to the depth expected to be influenced by the proposed construction.
2. Evaluate by laboratory and field tests the general engineering properties of the various strata which could influence the development.
3. Define the general geology of the site including likely geologic hazards which could have an effect on site development.
4. Develop geotechnical criteria for site grading and earthwork.

5. Identify potential construction difficulties and provide recommendations concerning these problems.

6. Recommend an appropriate foundation system for the anticipated structure and develop criteria for foundation design.

FIELD EXPLORATION AND LABORATORY TESTING

A field evaluation was performed on November 25 & 26, 1994,and consisted of a site reconnaissance by our geotechnical personnel and the drilling of 9 shallow exploration borings. These shallow exploration borings were drilled within the proposed building footprints and beneath the proposed parking pavement section near the locations indicated on the Boring Location Plan. The exploration borings were located to obtain a reasonably good profile of the subsurface soil conditions. All exploration borings were drilled using a CME 45-B, truck mounted drill rig with continuous flight auger to depths of approximately 18-24 feet. Samples were taken with a standard split spoon sampler, California Lined Sampler, thin walled shelby tubes, and by bulk methods. Logs describing the subsurface conditions are presented in the attached figures.

Laboratory tests were performed on representative soil samples to determine their relative engineering properties. Tests were performed in accordance with test methods of the American Society for Testing and Materials or other accepted standards. The results of our laboratory tests are included in this report. The in-place soil density, moisture content and the standard penetration test values are presented on the attached drilling logs.

FINDINGS

SITE DESCRIPTION

The project site is located in the South 1/2 of the Southwest Quarter of Section 10, Township 1 South, Range 1 West of the Ute Principal Meridian, Mesa County, Colorado. More specifically the site is located South of the Highway 6 & 50 right of way, immediately South of the intersection of highway 6 &50 and Independent Avenue. The site is approximately 1 mile Northwest of the downtown business district of the city of Grand Junction and is within the Grand Junction city limits.

The topography of the site is relatively flat, being located on an alluvial plain of the Colorado River. An irrigation ditch runs from East to West across the site, forming a small ridge which bisects the property. A large drain ditch is located near the Southern property line. The ground surface in the vicinity of the site has an overall gradient to the South Southwest. The Northern part of the tract is a topographic low except for the fills constructed on this site for previous construction, the highway fill and the irrigation ditch fill. The exact direction of surface runoff on this site will be controlled to an extent by the proposed new construction and will be variable. Surface and subsurface drainage on this site can be described as poor.

GENERAL GEOLOGY AND SUBSURFACE DESCRIPTION

The geologic materials encountered under the site consist of Alluvial soils which overly the Mancos Shale Formation which is considered to be bedrock in this area. The Mancos Shale is a part of a thick sequence of sedimentary beds which are gently dipping to the North Northeast. The geologic and engineering properties of the materials found in our 9 shallow exploration borings will be discussed in the following sections.

The soils on this site consist of an alluvial deposit placed by the action of the Colorado River, covered with thin alluvium/colluvium transported by mud flows from the hills to the North. This stratification of upper soils results in a layered system of silts and clays with thin, interbedded sand lenses overlying a sand/gravel deposit. Generally, the silts and clays are soft, wet and of low density. Soil density decreases and the moisture content increases with increasing depth. The upper 1-3 feet of the soil profile are sometimes stiffer and relatively dry due to surface desiccation.

The surface soils were found to contain large amounts of organic material in some areas and very high amounts of soluble sulfate salts. Much of this site is probably quite soft during periods of high precipitation and may collect runoff which drains into the ground or by means of surface drainage features very slowly.

At the time of our exploration, the surface soils were fairly moist, soft and care was utilized

during the mobilization of the drill rig to avoid becoming stuck. The Northern portion of the site has been utilized for commercial sales and a thin cobble and gravel fill has been placed which has stabilized the travel surface.

Four soil types were encountered during the exploration program. The first 3 soil types are typical of the softer, recent Alluvial soils. These soils types may be quite interbedded in some areas, which is representative of the depositional processes which have been active in the past. Soil Type I is representative of the surface soils and is primarily the effect of ancient debris fan/debris flow activity from the Bookcliffs to the North. These soils appear to represent the extreme margins of the debris flow activity in this particular area. These soils may contain significant amounts of organic material, particularly near the ground surface. This organic material is probably the result of poor surface drainage in this area, allowing boggy conditions to exist during some seasons of the year.

This Soil Type was classified as a sandy silt (ML) under the Unified Classification System. This material is of low to very low plasticity, of low to moderate permeability, and was encountered in a low density, moist to wet condition. These soils were found to contain thin strata of very clean, fine grain sand. This soil will settle after being loaded. The maximum allowable bearing capacity for this soil was found to be 700 psf, with no minimum dead load pressure required. Many strata in this soil may have metastable characteristics or, due to being wetted have undergone initial collapse but are still of extremely

low density and must be considered unstable. The addition of any extra loading, in the form of buildings or man-made fill, may cause significant settlement of this soil strata. The finer grained portion of Soil Type No. I contains sulfates in detrimental quantities.

The Colorado River terrace deposits in this area are composed of coarse grained sands & sandy gravels and cobbles. The majority of the gravels are quite silty however, some clay strata exists. The deposit with primarily silty fines have been designated Soil Type II in this report and represent the majority of the deposit.

This Soil Type is classified as a silty sandy gravel and cobble (GM) of course grain size under the Unified Classification System. This soil type is non plastic and of medium density. This soil will have virtually no tendency to expand upon the addition of moisture. Settlement will be minimal under the recommended foundation loads. This soil will undergo elastic settlement upon application of static foundation pressures. Such settlement is characteristically rapid and should be virtually complete by the end of construction. If the recommended allowable bearing values are not exceeded, and if all other recommendations are followed, differential movement will be within tolerable limits. At shallow foundation depths this soil was found to have an average allowable bearing capacity of 3500 psf. A deep foundation system, such as driven piles, typically penetrates the majority of this deposit and end bearing capacities of in excess of 80 kips total is commonly achieved.

The portions of the terrace deposit

which has clay or plastic fines is somewhat unusual in the Grand Junction area. It is believed these clay gravels are representative of geologic processes involving deposition of the terrace gravels and cobbles at the same time as ongoing debris flow activity from the Bookcliffs to the North. It is believed these 2 depositional processes are somewhat mixed in this area, resulting in the clayey gravels which are not characteristic of the Colorado River terrace deposit. Theses clayey gravels are designated as Soil Type III, in this report.

This Soil Type is classified as a clay silty sandy gravel and cobble (GC) of course grain size under the Unified Classification System. This soil type is of low plasticity and of medium density. This soil will have virtually no tendency to expand upon the addition of moisture. Settlement will be minimal under the recommended foundation loads. This soil will undergo elastic settlement upon application of static foundation pressures. Such settlement is characteristically rapid and should be virtually complete by the end of construction. If the recommended allowable bearing values are not exceeded, and if all other recommendations are followed, differential movement will be within tolerable limits. At shallow foundation depths this soil was found to have an average allowable bearing capacity of 3000 psf. Driven piles characteristically develop a total end bearing capacity of in excess of 60 kips however the majority of the gravel deposit is commonly penetrated by driven piles.

The surface soils are deposited over

the dense formational material of the Mancos Shale of Cretaceous Age. The Mancos Shale is described as a thinbedded, drab, light to dark gray marine shale, with thinly interbedded fine grain sandstone and siltstone layers. Some portions of the Mancos Shale are bentonitic, and therefore, are highly expansive. The majority of the shale, however, has only a low to moderate expansion potential. The formational shale was encountered in Test Boring Nos. 3,8 & 9 at a depth of 21-21 1/2 feet. It is anticipated that this formational shale will affect the construction and the performance of deep foundation systems on this tract.

The Mancos Shale Formation is often highly fractured, with fillings of soluble sulfate salts being very common. The samples obtained in this drilling program indicated many of the fractured faces and bedding planes in the shale contain sulfate salt deposits. Some seams of sulfate salts up to 1/16 inch thick were observed.

Sulfate Salts exhibit variable strength, depending upon surrounding moisture conditions and their chemistry as related to water. In addition, Sulfate Salts are soluble and may be physically removed from the soil by ground moisture conditions. Such removal may leave significant amounts of void areas within the Mancos Shale, which may affect the load bearing capacity of the formation. Many of the fractures in the Mancos Shale Formation are open, allowing the rapid transmission of water to occur. Some sandstone and siltstone strata within the Mancos Shale Formation also exhibit elevated permeability.

The soils of the Mancos Shale Formation have been designated Soil Type IV type was classified as a low plastic clay (CL) under the Unified Classification System. The Standard Penetration Tests ranged from 41 blows per foot to 60 blows per foot. Penetration tests of this magnitude indicate that the soil is relatively hard and of high density. The moisture content varied from 14.2 % to 18.2 %, indicating a relatively moist soil. This soil is plastic and is sensitive to changes in moisture content. With decreased moisture, it will tend to shrink, with some cracking upon desiccation. Upon increasing moisture, it will tend to expand. Expansion tests were performed on typical samples of the soil and expansive pressures on the order of 1600 psf were found to be typical. The allowable maximum bearing value was found to be in excess of 12000 psf near the Shale surface. Deep foundation systems, such as driven piles, typically develop end bearing capacities in excess of 80-100 kips. A minimum dead load of 1800 psf will be required. This soil was found to contain sulfates in detrimental quantities.

Exploration boring #9 was placed South of the Hansen Equipment building. The exploration boring was placed near the edge of the existing structural fill. The structural fill was found to be of medium to medium high density and composed of gravels and cobbles, with silty sand fines. The fill surface was noted to be quite stable and is representative of the desired construction outlined in this report under the Structural Fill section.

The lines defining the change between soil types or rock materials on the attached boring logs and soil profiles are determined by interpolation and therefore are approximations. The transition between soil types may be abrupt or may be gradual.

The boring logs and related information show subsurface conditions at the date and location of this exploration. Soil conditions may differ at locations other than those of the exploratory borings. If the structure is moved any appreciable distance from the locations of the borings, the soil conditions may not be the same as those reported here. The passage of time may also result in a change in the soil conditions at the boring locations.

GROUND WATER:

A free water table came to equilibrium during drilling at 3-6 feet below the present ground surface. This is probably not a true phreatic surface but is an accumulation of subsurface seepage moisture (perched water). In our opinion the subsurface water conditions shown are a permanent feature on this site. The depth to free water would be subject to fluctuation, depending upon external environmental effects.

Because of capillary rise, the soil zone within a few feet above the free water level identified in the borings will be quite wet. Pumping and rutting may occur during the excavation process, particularly if the bottom of the foundations are near the capillary fringe. Pumping is a temporary,

quick condition caused by vibration of excavating equipment on the site. If pumping occurs, it can often be stopped by removal of the equipment and greater care exercised in the excavation process. In other cases, geotextile fabric layers can be designed or cobble sized material can be introduced into the bottom of the excavation and worked into the soft soils. Such a geotextile or cobble raft is designed to stabilize the bottom of the excavation and to provide a firm base for equipment.

Data presented in this report concerning ground water levels are representative of those levels at the time of our field exploration. Groundwater levels are subject to change seasonally or by changed environmental conditions. Quantitative information concerning rates of flow into excavations or pumping capacities necessary to dewater excavations is not included and is beyond the scope of this report. If this information is desired, permeability and field pumping tests will be required.

CONCLUSIONS AND RECOMMENDATIONS

GENERAL DISCUSSION

No geologic conditions were apparent during our reconnaissance which would preclude the site development as planned, provided the recommendations contained herein are fully complied with. Based on our investigation to date and the knowledge of the proposed construction, the site condition which would have the greatest effect on the planned development is the very low density surface soils and high water table.

Since the exact magnitude and nature of the foundation loads are not precisely known at the present time, the following recommendations must be somewhat general in nature. Any special loads or unusual design conditions should be reported to Lincoln DeVore so that changes in these recommendations may be made, if necessary. However, based upon our analysis of the soil conditions and project characteristics previously outlined, the following recommendations are made.

OPEN FOUNDATION OBSERVATION

Since the recommendations in this report are based on information obtained through random borings, it is possible that the subsurface materials between the boring points could vary. Therefore, prior to placing forms or pouring concrete, an open excavation observation should be performed by representatives of Lincoln DeVore. The purpose of this observation is to determine if the subsurface soils directly below the proposed foundations are similar to those encountered in our exploration borings. If the materials below the proposed founda-

tions differ from those encountered, or in our opinion, are not capable of supporting the applied loads, additional recommendations could be provided at that time.

Due to the soft soils encountered in the upper portion of the exploration borings and the relatively high ground water levels, it is believed a significant amount of structural fill will be placed on this site. The fill will be required to provide a stable surface for construction traffic, will be incorporated into the structural sections for the roads and parking areas and also will be utilized beneath concrete slabs on grade to improve their stability and performance. It is believed significant amounts of geotextile fabrics, placed at the base of the fills will be required as separation elements and some geotextiles & geogrid materials will be used as reinforcement elements. Actual design of the geotextile & structural fill sections will be dictated by the actual building types, building uses and anticipated traffic loads.

EXCAVATION & STRUCTURAL FILL:

Since no site grading plan was made available at the time of writing this report, the extent of site grading and the proposed footing elevations is not known. Therefore, these grading recommendations must be considered preliminary until Lincoln DeVore has had the opportunity to review the site grading plans.

Subgrade

Site preparation in all areas to receive structural fill should begin with the removal of all topsoil, vegetation, and other deleterious materials. Prior to placing any fill, the subgrade should be observed by representatives of Lincoln DeVore to determine if the existing vegetation has been adequately removed and that the subgrade is capable of supporting the proposed fills. The subgrade should then be scarified to a depth of 10 inches, brought to near optimum moisture conditions and compacted to at least 90% of its maximum modified Proctor dry density [ASTM D-1557]. The moisture content of this material should be within + or - 2% of optimum moisture, as determined by ASTM D-1557. If the surface soils are determined to be too soft, or unstable due to the very shallow ground water conditions, compaction of the subgrade may not be possible.

It is recommended the soil surface be carefully prepared during the removal of topsoil vegetation other deleterious materials and that a geotextile fabric be placed and utilized as a separation element. It is generally recommended that if free water is not encountered during the preparation process that a woven fabric, with characteristics similar to or stronger than Mirafi 500-X be utilized. If free water or very wet conditions are encountered, a non-woven fabric, with strength and permeability characteristics similar to or better than Mirafi 140-N.

To reduce the amount of Gravel and Pit Run required for subgrade stabilization, a Geogrid material (Tensar BX1100, for example) can be placed at or near the bottom of the fill section. Actual design of fill sections utilizing Geotextile and Georgrids can be provided, if required. Designs for soil stabilization are based upon many assumptions regarding soil consistency, soil uniformity, ground water elevation, methods of subgrade preparation and material placement methods. All designs for soil improvement may require modification during the construction process.

Structural Fill

In general, we recommend all structural fill in the area beneath any proposed structure or roadway be compacted to a minimum of 90% of its maximum modified Proctor dry density (ASTM D1557). We recommend that fill be placed and compacted at approximately its optimum moisture content (+/-2%) as determined by ASTM D 1557. Structural fill should be a granular, coarse grained, non-free draining, non-expansive soil. This structural fill should be placed in the overexcavated portion of this site in lifts not to exceed 6 inches after compaction. This Structural Fill must be brought to the required density by mechanical means. No soaking, jetting or puddling techniques of any type should be used in placement of fill on this site.

Non-Structural Fill

We recommend that all backfill placed around the exterior of the buildings, and in utility trenches which are outside the perimeter of the buildings and not located beneath roadways or parking lots, be compacted to a minimum of 80% of its maximum modified Proctor dry density (ASTM D-1557).

Fill Limits

To provide adequate lateral support, we recommend that the zone of overexcavation extend at least 3 feet beyond the perimeter of the buildings on all sides. The Structural Fill should be a minimum of 3 feet in final compacted thickness.

No major difficulties are anticipated in the course of excavating into the surficial soils on the Northern portion of the tract. The Southern portion of the tract is quite soft and mobilization of excavating equipment and material hauling may be quite difficult on the native soils. It is probable that safety provisions such as sloping or bracing the sides of excavations over 4 feet deep will be necessary. Any such safety provisions shall conform to reasonable industry safety practices and to applicable OSHA regulations. The OSHA Classification for excavation purposes on this site is Soil Class C.

Field Observation & Testing:

During the placement of any structural fill, it is recommended that a sufficient amount of field

tests and observation be performed under the direction of the geotechnical engineer. The geotechnical engineer should determine the amount of observation time and field density tests required to determine substantial conformance with these recommendations. It is recommended that surface density tests be taken at maximum 2 foot vertical interval.

The opinions and conclusions of a geotechnical report are based on the interpretation of information obtained by random borings. Therefore the actual site conditions may vary somewhat from those indicated in this report. It is our opinion that field observations by the geotechnical engineer who has prepared this report are critical to the continuity of the project.

Slope Angles

Allowable slope angle for cuts in the native soils is dependent on soil conditions, slope geometry, the moisture content and other factors. Should deep cuts be planned for this site, we recommend that a slope stability analysis be performed when the location and depth of the cut is known.

DRAINAGE AND GRADIENT:

Adequate site drainage should be provided in the foundation areas both during and after construction to prevent the ponding of water and the saturation of the subsurface soils. We recommend that the ground surface around the structures be graded so that surface water will be carried quick-

ly away from the building. The minimum gradient within 10 feet of the building will depend on surface landscaping. We recommend that paved areas maintain a minimum gradient of 2%, and that landscaped areas maintain a minimum gradient of 8%. It is further recommended that roof drain downspouts be carried across all backfilled areas and discharged at least 10 feet away from the structure. Proper discharge of roof drain downspouts may require the use of subsurface piping in some areas. Planters, if any, should be so constructed that moisture is not allowed to seep into foundation areas or beneath slabs or pavements.

Due to the shallow ground water conditions encountered on this site, we recommend that basements not be utilized. Half basement type construction could be utilized but would require peripheral and under slab drains.

If half basement construction is utilized, the high water level found on this site should be controlled to prevent large upward fluctuations of this water surface. For this purpose, we recommend that this be accomplished by construction of an area drain beneath the building area. To control water surface movement, it is recommended that the drain outfall in a free gravity drain. If a gravity outfall is not possible, a sealed sump and pump is recommended to remove the water.

The existing drainage on the site must either be maintained carefully or improved. We recommend that water be drained away from structures as rapidly as possible and not be allowed to stand or pond near the building. We recommend that water removed from one building not be directed onto the backfill areas of adjacent buildings. We recommend that a hydrologist or drainage engineer experienced in this area be retained to complete a drainage plan for this site.

Should an automatic lawn irrigation system be used on this site, we recommend that the sprinkler heads be installed no less than 5 feet from the building. In addition, these heads should be adjusted so that spray from the system does not fall onto the walls of the building and that such water does not excessively wet the backfill soils..pa

FOUNDATIONS

Assuming that some amount of differential movement can be tolerated, then a conventional shallow foundation system, underlain by structural fill, placed in accordance with the recommendations contained within this report may be utilized. The foundation would consist of continuous spread footings beneath all bearing walls and isolated spread footings beneath all columns and other points of concentrated load. Such a shallow foundation system, resting on the properly constructed structural fill, a minimum of 3' thick, may be designed on the basis of an allowable bearing capacity of 2200 psf maximum. The structural fill should consist of a course grained, non-expansive, non-free draining material imported to the site.

The placement of textile fabric for separation between the native soils and the structural fill is recommended to aid the fill placement and to improve the stability of the completed fill.

Recommendations pertaining to balancing, reinforcing, drainage, and inspection are considered extremely important and must be followed. Contact stresses beneath all continuous walls should be balanced to within + or - 200 psf at all points. Isolated interior column footings should be designed for contact stresses of about 150 psf less than the average used to balance the continuous walls. The criteria for balancing will depend somewhat on the nature of the structure. Single-story,

slab-on-grade structures may be balanced on the basis of dead load only. Multi story structures may be balanced on the basis of dead load plus one half live load, for up to three stories.

If the design of the upper structure is such that loads can be balanced reasonably well, or if some amount of differential movement can be tolerated, a floating structural slab type of foundation could be used on this site. Such a slab would require heavy reinforcing to resist differential bending along the rim wall. It is possible to design such a slab either as a thickened edge only, a solid or a ribbed slab. A rim wall must be used for confinement purposes. Any such slab must be specifically designed for the anticipated loading.

Such a foundation system may settle to some degree, however, the use of a structural fill placed according to recommendations contained in this report at least 2 feet thick, beneath the slab and rim wall will help reduce settlement and hold differential movement to a minimum. Relatively large slabs will tend to experience minor cracking and heave of lightly loaded interior portions, unless the slabs are specifically designed with this movement in mind.

The placement of a geotextile fabric for separation between the native soils and the structural fill may be required to aid the fill placement and to improve the stability of the completed fill.

When the structural fill is completed, an allowable bearing capacity of 1800 psf maximum may be assumed for proportioning the footings or loadbearing portions of the slab.

The placement of the structural fill a minimum of 2 feet beyond the edge of the structural slab should provide additional support for the eccentrically placed wall loads on the slab edges.

The structural fill should be placed in accordance with the recommendations contained in the structural fill section of this report. The placement of a structural fill a minimum of 3 feet beyond the edge of the structural slab should provide additional support for the eccentricity placed wall loads on the slab edges.

SETTLEMENT:

Close estimates of total and differential settlement will not be provided in this report since Lincoln DeVore has not been given exact foundation loads. Upon completion of the structural plans, the predicted settlements can be supplied upon request.

FROST PROTECTION

We recommend that the bottom of all foundation components rest a minimum of 1 1/2 feet below finished grade or as required by the local building codes. Foundation

components must not be placed on frozen soils.

Structural slab-on-grade (Monolithic) foundation systems typically have an effective soil cover of less than 12 inches. Under normal use, the building and foundation system radiates sufficient heat that frost heave from the underlying soils is not normally a problem. However, additional protection can be provided by applying an insulation board to the exterior of the foundation and extending this board to approximately 18 inches below the final ground surface grade. This board may be applied either prior to or after the concrete is cast and it is very important that all areas of soil backfill be compacted. Local building officials should be consulted for regulatory frost protection depths.

DEEP FOUNDATIONS:

Under some loading conditions, and due to the relatively soft soils and high ground water levels, a deep foundation system consisting of either drilled piers or driven piles could be used to carry the weight of the proposed structures. Deep foundations must extend through the low density, upper low plastic silt materials and into the underlying gravels of the Colorado River Terrace and possibly into the underlying Mancos Shale Formation. Both types of foundation have advantages and disadvantages with respect to this site. Due to the very high ground water conditions and problems encountered during our exploration drilling on this site with flowing sands, it is believed a driven pile foundation system will be the most practi-

cal on this site.

DRIVEN PILES:

We recommend that driven piles bear in the competent materials of the underlying gravel terrace and Mancos Shale Formation. We anticipate that pile driving refusal will be encountered at a depth of 10-15' into the gravels or within a few feet of penetration into the Mancos Shale Formation. Based on a static analysis, piles driven to refusal may be designed for an allowable tip bearing capacity of 70 to 100 tons psf. To determine the bearing area of the pile, the area including the space between the flanges may be included. For example, an HB-12 pile may be assumed to have an end area of approximately 1 square foot. A round, closed-end pipe pile bearing area would be the area of the pile end plate. Pile driving refusal should be determined by our representative in the field. Generally, pile driving refusal is taken as a maximum of 15 blows per inch. If pile groups are used, the overall capacity of the pile group should be reduced in accordance with the appropriate efficiency formula (such as the Converse-Labarre method). If bearing capacities greater than those recommended above are necessary, we recommend that the pile bearing capacity be determined on the basis of static load tests.

It is anticipated that steel piling (either 'H' sections or concrete filled pipe) will be utilized in this construction. The following recommendations will assume the use of these materials. If wood or concrete piling are anticipat-

ed, recommendations can be readily provided.

Driving hammers should be of such size and type to consistently deliver effective dynamic energy suitable to the piles and materials into which they are to be driven. Hammers should operate at manufacturer's recommended speeds and pressures. We recommend that a pile driving hammer be used which is rated at least 19,000 feet pounds. However, driving energy should not be so large that pile damage occurs.

Piles must be used in groups to provide for eccentricities in loading. The group capacity will be less than the summation of the individual pile capacities, depending upon the relative spacing of the piles. A conservative estimate of group capacity is two-thirds of the summation of the individual pile capacities.

We recommend that minimum spacing of the piles be twice the average pile diameter or 1.75 times the diagonal dimension of the pile cross-section, but no less than 24 inches. It is recommended that the tops of the piles extend a minimum of 4 inches into the pile cap. Based on the exploration borings no pile shorter than 22 feet is recommended unless proper pile capacity is verified by field inspection by the Geotechnical Engineer. Vertical piles should not vary more than 2% from the plumb position. We further recommend that eccentricity of reaction on a pile group with respect to the load resultant not exceed a dimension that would produce overloads of more than 10% in any one pile.

Since the underlying bedrock is moderately expansive, we recommend a minimum of permanent pressure be maintained on each pier. The minimum pressure should be designed based on a tip uplift pressure of 2000 psf. The area used to consider the uplift pressure should be width times the depth of the pile section used when considering H piles. Round pipe piles will require an end uplift pressure of 2000 psf and a side uplift of 500 psf for the portion of the side wall in contact with the expansive formation.

Based on our analyses, a standard 10-3/4inch diameter, 1/4 inch wall, pipe pile driven to refusal may be designed for an allowable capacity of 70 to 100 tons. On this site the capacity of the pile will govern allowable load. Pile driving refusal required to obtain the recommended capacity was taken as 7 blows per inch with a 19 foot kip hammer. Driving hammers should be of such size and type to consistently deliver effective energy suitable to the piles and materials into which they are driven. Final pile driving refusal should be determined by representatives of Lincoln DeVore in the field.

DRIVEN PILE OBSERVATION:

Continuous observation of the pile driving operations and a pile load test, if required, should be performed by Lincoln DeVore as a representative of the owner. A continuous log should be maintained on the number of blows per foot required to drive each pile. Driving should be completed

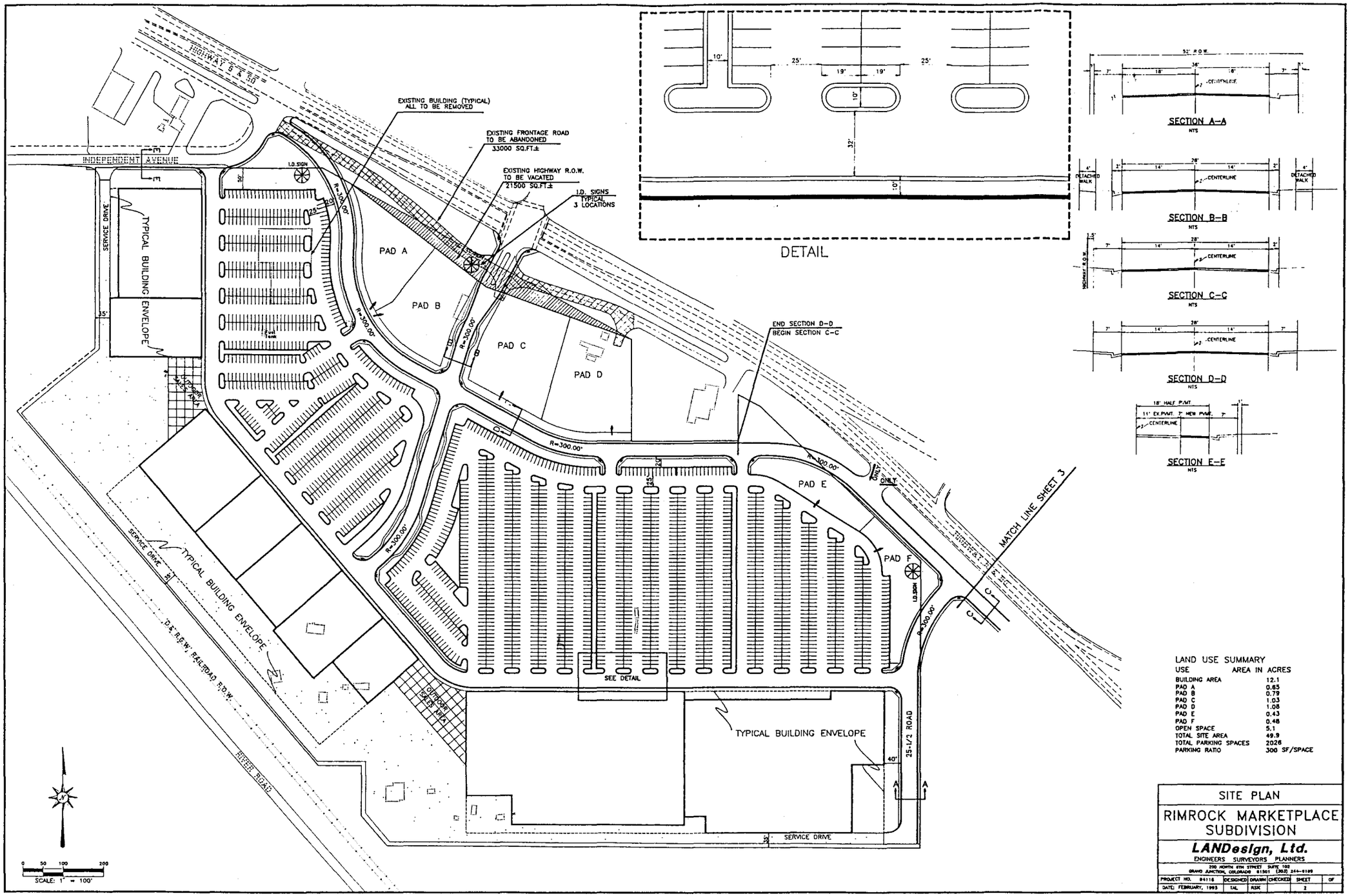
without interruption (except for splicing) and without jetting or pre-drilling unless the geotechnical engineer has been contacted for further recommendations.

GRADE BEAMS:

A reinforced concrete grade beam is recommended to carry the exterior wall loads in conjunction with the deep foundation system. We recommend that this grade beam be designed to span from bearing point to bearing point and not be allowed to rest on the ground surface between these points. We recommend a void space be left between the bottom of the grade beam and the subgrade below due to the expansive nature of the subgrade soils.

Large horizontal loads are not anticipated on this site. However, if horizontal loads exist and exceed 1000 pounds per pile, batter piles will be required. It is recommended that hammer and cushioning be matched to the chosen pile type to provide design load capacity during driving.

We recommend that the horizontal thrust generated at the foundation line by rigid frame buildings not be resisted by "hairpins" embedded into the floor slabs, unless the slab is an integral part of the foundation system. It is recommended that this horizontal force be resisted by either threaded tie rods or reinforcing bars extending from pier to opposite pier below the finished floor slab line. We recommend that all such connectors be either encased in concrete or covered with a heavy coat of bituminous paint to ensure long-term stability.



LAND USE SUMMARY

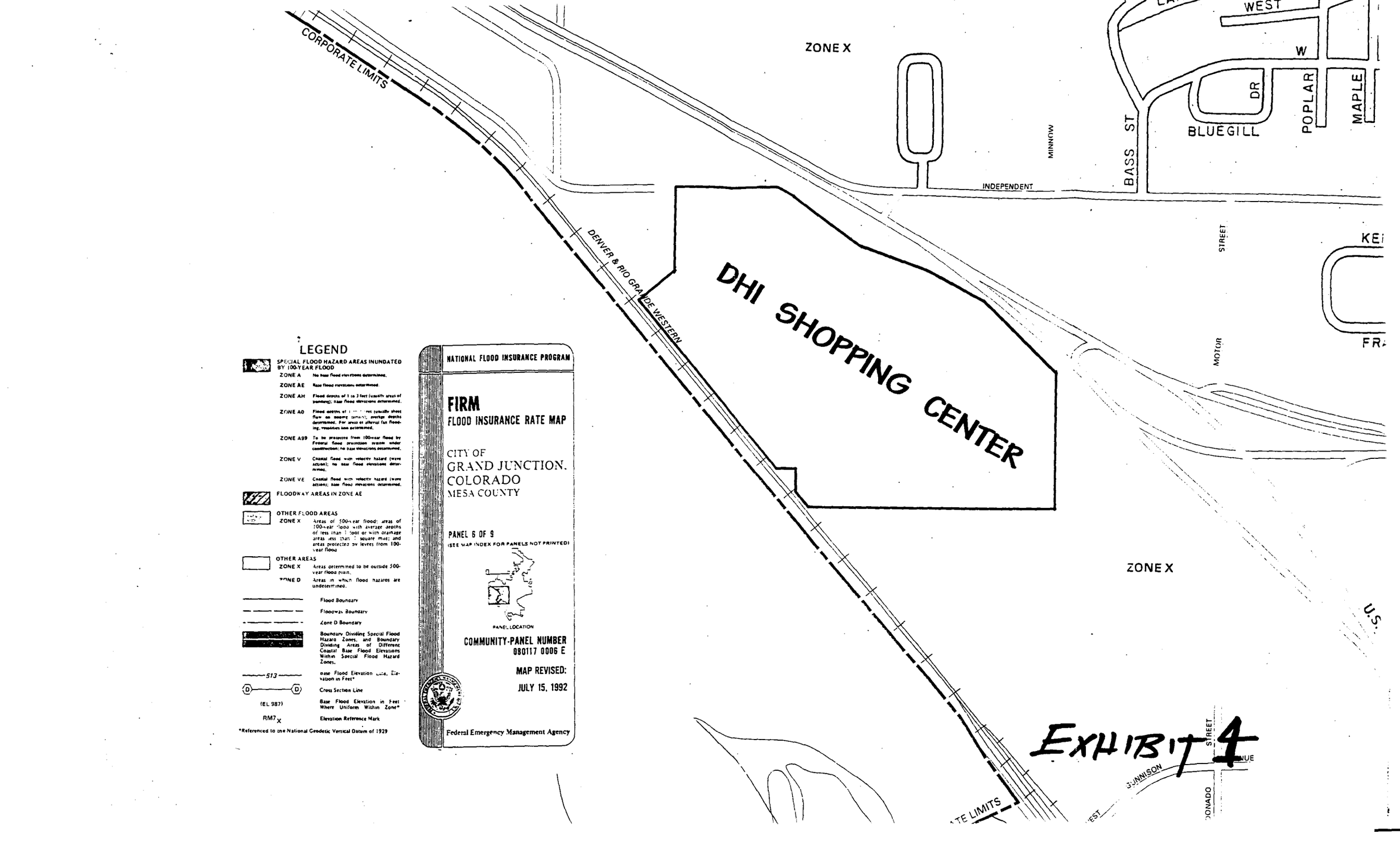
USE	AREA IN ACRES
BUILDING AREA	12.1
PAD A	0.65
PAD B	0.79
PAD C	1.03
PAD D	1.08
PAD E	0.43
PAD F	0.48
OPEN SPACE	5.1
TOTAL SITE AREA	49.9
TOTAL PARKING SPACES	2026
PARKING RATIO	300 SF/SPACE

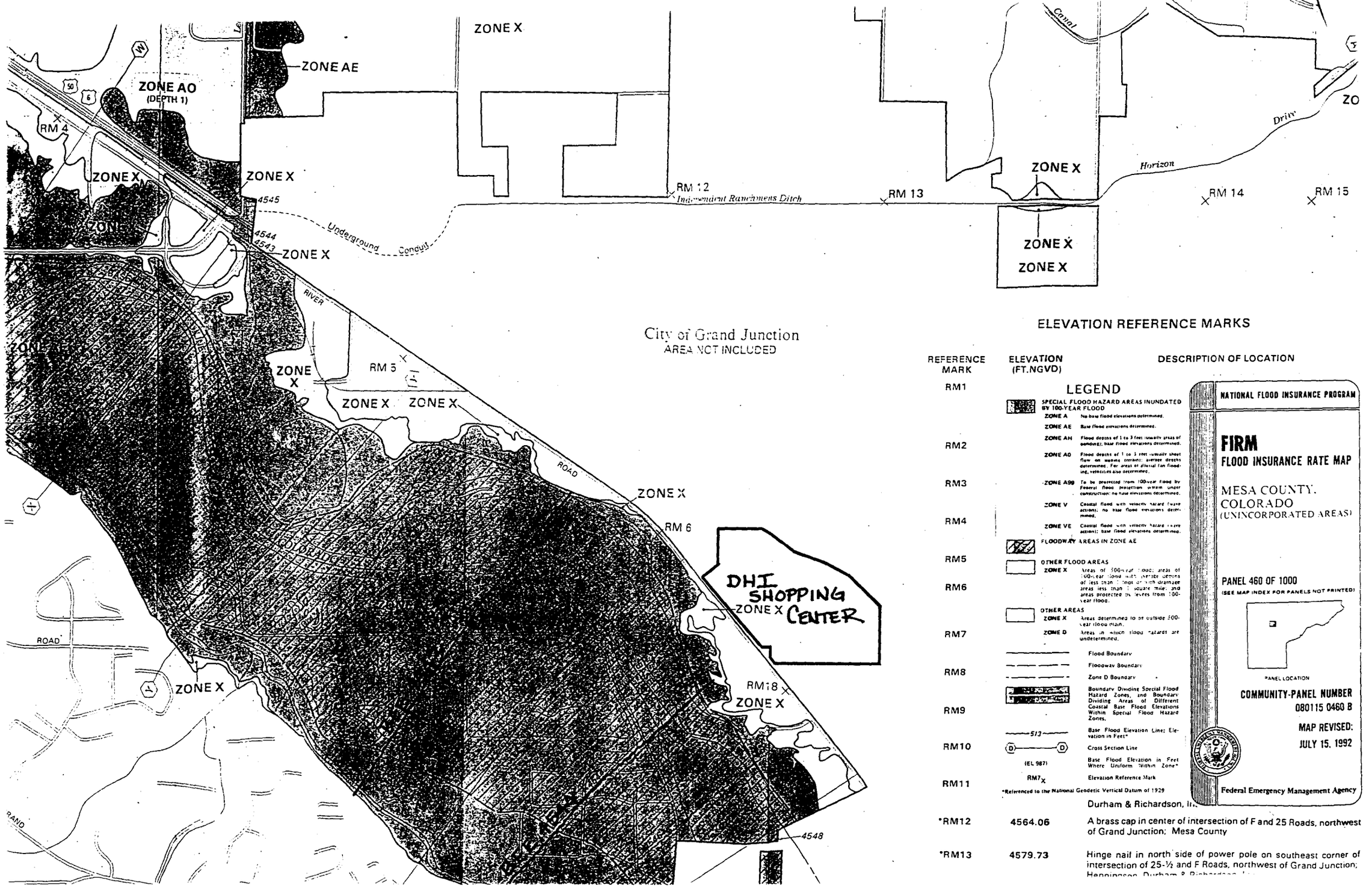
SITE PLAN

RIMROCK MARKETPLACE SUBDIVISION

LANDesign, Ltd.
ENGINEERS SURVEYORS PLANNERS
200 NORTH 6TH STREET SUITE 102
GRAND JUNCTION, COLORADO 81501 (303) 244-9189

PROJECT NO. 94116	DESIGNED	DRAWN	CHECKED	SHEET	OF
DATE: FEBRUARY, 1995	TAL	ASK		2	


CORPORATE LIMITS
ZONE X
WEST
W
DR
POPLAR
MAPLE
BLUEGILL
BASS ST
MINNOW
INDEPENDENT
DENVER & RIO GRANDE WESTERN
DHI SHOPPING CENTER
STREET
MOTOR
ZONE X
U.S.
SUNNISON
STREET
LEGEND
SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD
ZONE A No base flood elevations determined.
ZONE AE Base flood elevations determined.
ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE A99 To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.
ZONE V Coastal flood with velocity hazard (wave action); no base flood elevations determined.
ZONE VE Coastal flood with velocity hazard (wave action); base flood elevations determined.
FLOODWAY AREAS IN ZONE AE
OTHER FLOOD AREAS
ZONE X Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood
OTHER AREAS
ZONE X Areas determined to be outside 500-year flood plain.
ZONE D Areas in which flood hazards are undetermined.
Flood Boundary
Floodway Boundary
Zone D Boundary
Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.
513 Base Flood Elevation Line; Elevation in Feet*
Cross Section Line
(EL 987) Base Flood Elevation in Feet Where Uniform Within Zone*
RM7 X Elevation Reference Mark
*Referenced to the National Geodetic Vertical Datum of 1929
NATIONAL FLOOD INSURANCE PROGRAM
FIRM
FLOOD INSURANCE RATE MAP
CITY OF GRAND JUNCTION, COLORADO MESA COUNTY
PANEL 6 OF 9
(SEE MAP INDEX FOR PANELS NOT PRINTED)
PANEL LOCATION
COMMUNITY-PANEL NUMBER 080117 0006 E
MAP REVISED: JULY 15, 1992
Federal Emergency Management Agency
EXHIBIT 4



ELEVATION REFERENCE MARKS

REFERENCE MARK	ELEVATION (FT.NGVD)	DESCRIPTION OF LOCATION
RM1		
RM2		
RM3		
RM4		
RM5		
RM6		
RM7		
RM8		
RM9		
RM10		
RM11		
*RM12	4564.06	A brass cap in center of intersection of F and 25 Roads, northwest of Grand Junction; Mesa County
*RM13	4579.73	Hinge nail in north side of power pole on southeast corner of intersection of 25-½ and F Roads, northwest of Grand Junction; Henningson, Durham & Richardson, Inc.

LEGEND

- SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD
  - ZONE A — No base flood elevations determined.
  - ZONE AE — Base flood elevations determined.
  - ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
  - ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
  - ZONE A99 — To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.
  - ZONE V — Coastal flood with velocity hazard (wave action); no base flood elevations determined.
  - ZONE VE — Coastal flood with velocity hazard (wave action); base flood elevations determined.
- FLOODWAY AREAS IN ZONE AE
- OTHER FLOOD AREAS
  - ZONE X — Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.
- OTHER AREAS
  - ZONE X — Areas determined to be outside 500-year flood plain.
  - ZONE D — Areas in which flood hazards are undetermined.
- Flood Boundary
- Floodway Boundary
- Zone D Boundary
- Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.
- 513 — Base Flood Elevation Line; Elevation in Feet*
- D — D — Cross Section Line
- (EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone*
- RM7 — Elevation Reference Mark

*Referenced to the National Geodetic Vertical Datum of 1929

NATIONAL FLOOD INSURANCE PROGRAM

FIRM
FLOOD INSURANCE RATE MAP

MESA COUNTY, COLORADO (UNINCORPORATED AREAS)

PANEL 460 OF 1000
(SEE MAP INDEX FOR PANELS NOT PRINTED)

PANEL LOCATION

COMMUNITY-PANEL NUMBER
080115 0460 B

MAP REVISED:
JULY 15, 1992

Federal Emergency Management Agency

CONCRETE SLABS ON GRADE

Slabs could be placed directly on the natural soils or on a structural fill. We strongly recommend that structural fill be placed beneath all slabs, due to the very soft soils encountered over much of this site. We recommend that all non-structural slabs on grade be constructed to act independently of the other structural portions of the building. One method of allowing the slabs to float freely is to use expansion material at the slab- structure interface.

It is recommended that slabs on grade be constructed over a capillary break of approximately 6 inches in thickness. We recommend that the material used to form the capillary break be free draining, granular material and not contain significant fines. A free draining outlet is also recommended for this break so that it will not trap water beneath the slab. A vapor barrier is recommended beneath the floor slab and above the capillary break. To prevent difficulty in finishing concrete, a 2 inch sand layer should be placed above the break. An alternate method of reducing finishing problems would be to place the vapor barrier beneath approximately 6 inches of a minus 3/4 inch gravel fill. This method must be very carefully accomplished to minimize excessive puncturing and tearing of the vapor barrier.

It is recommended that floor slabs on grade be constructed with control joints placed to divide the floor into sections not exceeding 360 to 400 square feet, maximum. Also, additional control joints are recommended at all

inside corners and at all columns to control cracking in these areas.

Problems associated with slab 'curling' are usually minimized by proper curing of the placed concrete slab. This period of curing usually is most critical within the first 5 days after placement. Proper curing can be accomplished by continuous water application to the concrete surface or, in some instances by the placement of a 'heavy' curing compound, formulated to minimize water evaporation from the concrete. Curing by continuous water application must be carefully undertaken to prevent the wetting or saturation of the subgrade soils.

If the interior floor slabs are to receive heavy loads due to:

1) wheel loads of industrial vehicles such as fork lifts or straddle carriers
2) concentrated static loads of racks or
3) heavy distributed stacked loads

then the slabs classify as industrial and we recommend they be designed in accordance with methods outlined in the PCA publication, "Slab Thickness Design for Industrial Concrete Floor Slabs on Grade". For design purposes, the modulus of subgrade reaction for the native silt soils (Soil Type I) may be taken as 60 pci. The modulus of subgrade reaction for a properly placed and compacted structural fill using granular materials may be taken as 300 pci.

REACTIVE SOILS

Since groundwater in the Grand Junction area typically contains sulfates in quantities detrimental to a Type I cement, a Type II or Type I-II or Type II-V cement is recommended for all concrete which is in contact with the subsurface soils and bedrock. Calcium chloride should not be added to a Type II, Type I-II or Type II-V cement under any circumstances.

EARTH RETAINING STRUCTURES

The active soil pressure for the design of earth retaining structures may be based on an equivalent fluid pressure of 48 pounds per cubic foot. The active pressure should be used for retaining structures which are free to move at the top (unrestrained walls). For earth retaining structures which are fixed at the top, such as basement walls, an equivalent fluid pressure of 60 pounds per cubic foot may be used. It should be noted that the above values should be modified to take into account any surcharge loads, sloping backfill or other externally applied forces. The above equivalent fluid pressures should also be modified for the effect of free water, if any.

The passive pressure for resistance to lateral movement may be considered to be 231 pcf per foot of depth. The coefficient of friction for concrete to soil may be assumed to be 0.27 for resistance to lateral movement. When combining frictional and passive resistance, the latter must be reduced by approximately 1/3.

PAVEMENTS

Samples of the surficial native soils at this property that may be required to support pavements have been evaluated using the Hveem-Carmany method (ASTM D-2844) to determine their support characteristics. The results of the laboratory testing are as follows:

AASHTO Classification - A-4(6) Unified Classification - ML

R =	15
Expansion @ 300 psi =	3.60
Displacement @ 300 psi =	4.54

Displacement values higher than 4.00 generally indicate the soil is unstable and may require confinement for proper performance.

No estimates of traffic volumes have been provided to Lincoln DeVore.

Based upon the existing topography, the anticipated final road grades and the anticipated future ground water levels in the local area, a Drainage Factor of 0.6 (1986 AASHTO procedure) should be utilized for the section analysis, unless a specific subgrade soil or subbase design utilizing Geotextiles or Geogrids is prepared.

Due to the possibility of very high soil moisture in the subgrade soils, the use of a Geotextile Fabric for separation and minor reinforcement (such as Mirafi 500-X or 140-N), placed beneath the Aggregate Base Course, may be required in some areas on this site.

PAVEMENT SECTION CONSTRUCTION

We recommend that any asphaltic concrete pavement meet the State of Colorado requirements for a Grade C mix. In addition, the asphaltic concrete pavement should be compacted to a minimum of 95% of its maximum Hveem density. The aggregate base coarse should meet the requirements of State of Colorado Class 5 or Class 6 material, and have a minimum R value of 78. We recommend that the base coarse be compacted to a minimum of 95% of its maximum Modified Proctor dry density (ASTM D-1557), at a moisture content within + or -2% of optimum moisture. The native subgrade shall be scarified and recompacted to a minimum of 90% of their maximum Modified Proctor day density (ASTM D-1557) at a moisture content within + or -2% of optimum moisture.

All pavement should be protected from moisture migrating beneath the pavement structure. If surface drainage is allowed to pond behind curbs, islands or other areas of the site and allowed to seep beneath pavement, premature deterioration or possibly pavement failure could result.

Concrete Pavement

We recommend that any rigid concrete pavement have a minimum flexural strength (F_t) of 650 psi at 28 days. This strength requirement can be met using Class P or AX or A or B Concrete as defined in Section 600 of the Standard Specifications for Road and Bridge Construction, Colorado DOT. It is recommended that field control of the concrete mix be made utilizing compressive strength criteria.

Flexural Strength should only be used for the design process. Concrete with a lower flexural strength may be allowed by the agency having jurisdiction however, the design section thicknesses should be confirmed. In addition, the final durability of the pavement should be carefully considered.

Control joints should be placed at a minimum distance of 12 feet in all directions. If it is desired to increase the spacing of control joints, then 66-66 welded wire fabric should be placed in the mid-point of the slab. If the welded wire fabric is used, the control joint spacing can be increased to 40 feet. Construction joints designed so that positive joint transfer is maintained by the use of dowels is recommended.

The concrete should be placed at the lowest slump practical for the method of placement. In all cir-

cumstances, the maximum slump should be limited to 4 inches. Proper consolidation of the plastic concrete is important. The placed concrete must be properly protected and cured.

LIMITATIONS

This report is issued with the understanding that it is the responsibility of the owner, or his representative to ensure that the information and recommendations contained herein are brought to the attention of the individual lot purchasers for the subdivision. In addition, it is the responsibility of the individual lot owners that the information and recommendations contained herein are brought to the attention of the architect and engineer for the individual projects and the necessary steps are taken to see that the contractor and his subcontractors carry out the appropriate recommendations during construction.

The findings of this report are valid as of the present date. However, changes in the conditions of a property can occur with the passage of time, whether they be due to natural processes or the works of man on this or adjacent properties. In addition, changes in acceptable or appropriate standards may occur or may result from legislation or the broadening of engineering knowledge. Accordingly, the findings of this report may be invalid, wholly or partially, by changes outside our control. Therefore, this report is subject to review and should not be relied upon after a period of 3 years.

The recommendations of this report pertain only to the site investigated and are based on the assumption that the soil conditions do not deviate from those described in this report. If any variations or undesirable

conditions are encountered during construction or the proposed construction will differ from that planned on the day of this report, Lincoln DeVore should be notified so that supplemental recommendations can be provided, if appropriate.

Lincoln DeVore makes no warranty, either expressed or implied, as to the findings, recommendations, specifications or professional advice, except that they were prepared in accordance with generally accepted professional engineering practice in the field of geotechnical engineering.

SOILS DESCRIPTIONS:

SYMBOL	USCS	DESCRIPTION
		Topsoil
		Man-made Fill
	GW	Well-graded Gravel
	GP	Poorly-graded Gravel
	GM	Silty Gravel
	GC	Clayey Gravel
	SW	Well-graded Sand
	SP	Poorly-graded Sand
	SM	Silty Sand
	SC	Clayey Sand
	ML	Low-plasticity Silt
	CL	Low-plasticity Clay
	OL	Low-plasticity Organic Silt and Clay
	MH	High-plasticity Silt
	CH	High-plasticity Clay
	OH	High-plasticity Organic Clay
	Pt	Peat
	GW/GM	Well-graded Gravel, Silty
	GW/GC	Well-graded Gravel, Clayey
	GP/GM	Poorly-graded Gravel, Silty
	GP/GC	Poorly-graded Gravel, Clayey
	GM/GC	Silty Gravel, Clayey
	GC/GM	Clayey Gravel, Silty
	SW/SM	Well-graded Sand, Silty
	SW/SC	Well-graded Sand, Clayey
	SP/SM	Poorly-graded Sand, Silty
	SP/SC	Poorly-graded Sand, Clayey
	SM/SC	Silty Sand, Clayey
	SC/SM	Clayey Sand, Silty
	CL/ML	Silty Clay

ROCK DESCRIPTIONS:

SYMBOL	DESCRIPTION
	SEDIMENTARY ROCKS
	CONGLOMERATE
	SANDSTONE
	SILTSTONE
	SHALE
x x x x x x	CLAYSTONE
	COAL
	LIMESTONE
	DOLOMITE
	MARLSTONE
	GYPSUM
	Other Sedimentary Rocks
	IGNEOUS ROCKS
	GRANITIC ROCKS
+ + + + + +	DIORITIC ROCKS
	GABBRO
	RHYOLITE
	ANDESITE
	BASALT
	TUFF & ASH FLOWS
	BRECCIA & Other Volcanics
	Other Igneous Rocks
	METAMORPHIC ROCKS
	GNEISS
	SCHIST
	PHYLLITE
	SLATE
	METAQUARTZITE
	MARBLE
	HORNFELS
	SERPENTINE
	Other Metamorphic Rocks

SYMBOLS & NOTES:

SYMBOL	DESCRIPTION
	9/12 Standard penetration drive Numbers indicate 9 blows to drive the spoon 12" into ground.
	ST 2-1/2" Shelby thin wall sample
	W_0 Natural Moisture Content
	W_x Weathered Material
Free water	Free water table
	γ^0 Natural dry density
	T.B. – Disturbed Bulk Sample
	② Soil type related to samples in report
15' W_x / Form.	Top of formation
	Test Boring Location
	Test Pit Location
	Seismic or Resistivity Station. Lineation indicates approx. length & orientation of spread (S = Seismic, R = Resistivity)

Standard Penetration Drives are made by driving a standard 1.4" split spoon sampler into the ground by dropping a 140 lb. weight 30". ASTM test des. D-1586.

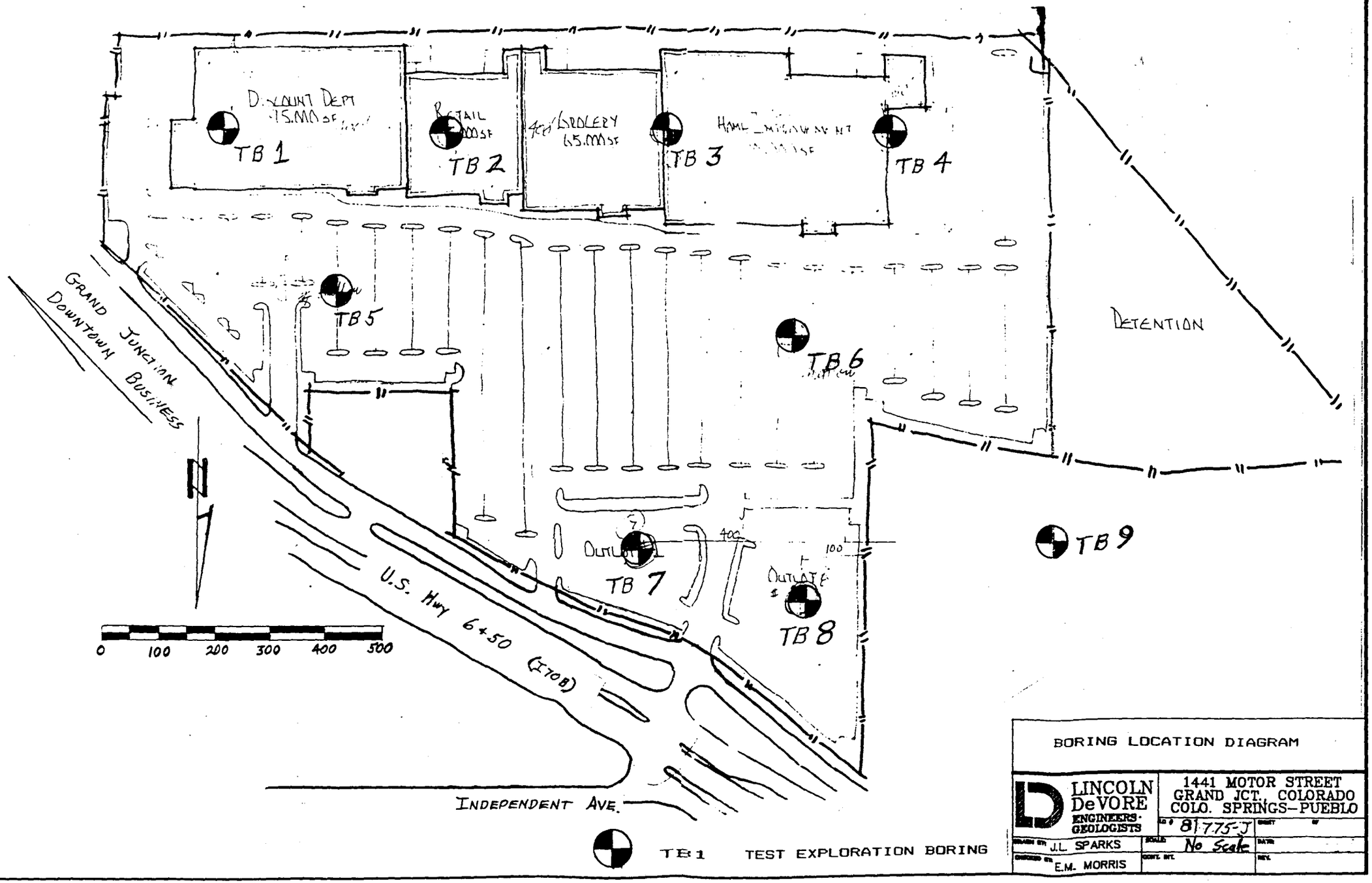
Samples may be bulk, standard split spoon (both disturbed) or 2-1/2" I.D. thin wall ("undisturbed") Shelby tube samples. See log for type.

The boring logs show subsurface conditions at the dates and locations shown, and it is not warranted that they are representative of subsurface conditions at other locations and times.

LINCOLN DeVORE INC.

COLORADO SPRINGS
PUEBLO – GRAND JUNCTION

EXPLANATION OF BOREHOLE LOGS AND LOCATION DIAGRAMS



BORING LOCATION DIAGRAM

LINCOLN DeVORE
ENGINEERS · GEOLOGISTS

1441 MOTOR STREET
GRAND JCT. COLORADO
COLO. SPRINGS–PUEBLO

DRAWN BY J.L. SPARKS	JOB # 81-775-J	SHEET OF
CHECKED BY E.M. MORRIS	SCALE No Scale	DATE
	CONT. INT.	REV.

BORING NO. 1

BORING ELEVATION:

DEPTH (FT.)	SOIL LOG	DESCRIPTION					BLOW COUNT	SOIL DENSITY pcf	WATER %
		Slightly Organic		Very High Sulfates					
		Low Plastic Silt	Low Density		Very Moist				
			Alluvial						
		ML	Sandy Silt	Compressible		Wet	ST		88.7	36.4%
5		I	occ. Clayey		Sulfates		5			
		Free Water ▼		Increasing Sand					
		GC	Clayey, Sandy Gravel				BULK			32.7
		III		Low Plastic Fines					
10		GM	Silty, Sandy Gravel and Cobble			CS	10	19/6	104.8	10.3%
		II	Alluvial Terrace Gravels		Medium Density			26/12		
				Flowing into Hole				51/18		
			Non-Plastic Fines		Medium Density					
		GC	Clayey, Sandy Gravel and Cobble							
15		III	Medium Density		Low Sulfates		15			
				Some Strata of Flowing Sands						
			Very poor recovery of cuttings							
		GM	Silty, Sandy Gravel and Cobble				BULK			33.8%
		II								
20							20			
		TD @ 18'								
25							25			
30							30			

Blow Counts are cumulative for each 6 inches of sampler penetration.

Free Water @ 6'

During Drilling 10-26-94

LOG OF SUBSURFACE EXPLORATION

LINCOLN - DeVORE, Inc.	**2525 US Hwy 6 & 50**	
Grand Junction, Colorado	**Grand Junction, Colorado**	
	DENVER HOLDINGS, Inc. **Denver, Colorado**	Date 1-18-94
	Job No. **81775-J**	Drawn **EMM**

BORING NO. **2**

DEPTH (FT.)	SOIL LOG	BORING ELEVATION: DESCRIPTION				BLOW COUNT	SOIL DENSITY pcf	WATER %
		Slightly Organic		Very High Sulfates				
		Low Density	Low Plastic Silt		Very Moist			
		Alluvial						
		ML Sandy Silt	Compressible		Wet			
5		**Free Water** ▼	occ. Clayey		BULK 5			34.6%
			Increasing Sand		Sulfates			
		GM Silty, Sandy Gravel and Cobble						
		II Alluvial Terrace Gravels		Medium Density				
			Low Plastic Fines		SPT	12/6		31.4%
10		**GM** Silty, Sandy Gravel and Cobble			10	34/12		
		II Non-Plastic Fines				55/18		
		Flowing into Hole		Low Sulfates	BULK			34.1%
				Medium Density				
		GC Clayey, Sandy Gravel and Cobble						
15		III Medium Density			15			
			Some Strata of Flowing Sands					
		Very poor recovery of cuttings						
		GM Silty, Sandy Gravel and Cobble			SPT	16/6		23.8%
		II				27/12		
20					20	41/18		
		TD @ 18'						
25					25			
30					30			
		Blow Counts are cumulative for each 6 inches of sampler penetration.						
		Free Water @ 5'						
		During Drilling 10-25-94						

LOG OF SUBSURFACE EXPLORATION

LINCOLN - DeVORE, Inc.	**2525 US Hwy 6 & 50** **Grand Junction, Colorado**	
	DENVER HOLDINGS, Inc. **Denver, Colorado**	Date 1-18-94
Grand Junction, Colorado	Job No. **81775-J**	Drawn **EMM**

BORING NO. 3

DEPTH (FT.)	SOIL LOG	BORING ELEVATION: DESCRIPTION				BLOW COUNT	SOIL DENSITY pcf	WATER %
		Organic	Clayey	Very High Sulfates				
		Alluvial	Low Density	Wet				
		Low Plastic Silt		Soft to Drill	ST		95.6	24.3%
		Free Water ▼	Compressible					
5		**ML** Sandy Silt		Sulfates	5			
		Stratified	Very Sandy	We	BULK			27.5%
		GM Very Sandy Gravel and Cobble		Medium Density				
		II Alluvial Terrace Gravels						
10				Non-Plastic Fines	10			
		Rapidly Flowing into Hole						
		Non-Plastic Fines		Medium Density				
		GM Silty, Sandy Gravel and Cobble			SPT	7/6		19.4%
15		**II** Medium Density		Low Sulfates	15	23/12		
			Some Strata of Flowing Sands			67/18		
		Very poor recovery of cuttings						
		GC Clayey, Sandy Gravel and Cobble						
		III Medium Density		Low Plastic Fines				
20					20			
		Mancos Shale		Firm				
		IV Expansive	Very Silty Clay		BULK			16.7%
		Increasing Density w/ Depth		V. Moist	SPT	14/6		14.2%
		Decreasing Moisture w/ Depth		Sulfates		43/12		
25		TD @ 23'			25			
30					30			
		Blow Counts are cumulative for each 6 inches of sampler penetration.						
		Free Water @ 4'						
		During Drilling 10-26-94						

LOG OF SUBSURFACE EXPLORATION

LINCOLN - DeVORE, Inc.	**2525 US Hwy 6 & 50** **Grand Junction, Colorado**	
	DENVER HOLDINGS, Inc. **Denver, Colorado**	Date 1-18-94
Grand Junction, Colorado	Job No. **81775-J**	Drawn **EMM**

BORING NO. 4

DEPTH (FT.)	SOIL LOG	BORING ELEVATION: DESCRIPTION				BLOW COUNT	SOIL DENSITY pcf	WATER %
		Slightly Organic		Very High Sulfates				
		Low Plastic Silt	Low Density		Very Moist			
			Alluvial			ST	90.2	26.0%
		Free Water ▼	Compressible		Wet			
5		ML Sandy Silt		Sulfates		5		
		I occ. Clayey	Increasing Sand					
			Low Density			BULK		22.9%
		GM Silty, Sandy Gravel and Cobble		Non-Plastic Fines				
10		II Alluvial Terrace Gravels				10		
		Flowing into Hole		Medium Density				
		GC Clayey, Sandy Gravel and Cobble						
		III Medium Density		Low Sulfates				
		Very poor recovery of cuttings				SPT	23/6	18.9%
15		Very Sandy Cobbles		Non-Plastic Fines		15	50/12	
			Some Strata of Flowing Sands				77/18	
		GM Silty, Sandy Gravel and Cobble				BULK		29.8%
		II						
20						20		
		TD @ 18'						
25						25		
30						30		
		Blow Counts are cumulative for each 6 inches of sampler penetration.						
		Free Water @ 4'						
		During Drilling 10-26-94						

LOG OF SUBSURFACE EXPLORATION

LINCOLN - DeVORE, Inc.	**2525 US Hwy 6 & 50** **Grand Junction, Colorado**		
	DENVER HOLDINGS, Inc. **Denver, Colorado**		Date 1-18-94
Grand Junction, Colorado	Job No. **81775-J**	Drawn **EMM**	

BORING NO. 5

DEPTH (FT.)	SOIL LOG	BORING ELEVATION: DESCRIPTION					BLOW COUNT	SOIL DENSITY pcf	WATER %
		Slightly Organic	Clayey	Very High Sulfates					
		Alluvial, Low Plastic Silt			Wet	ST		95	24.2%
			Low Density						
		ML Sandy Silt	Compressible		Wet				22.1%
5		Free Water ▼		Sulfates		5			
		GC Clayey, Sandy Gravel							
		III	Low Plastic Fines			BULK			23.4%
		Very Stratified		Medium Density					
			Low Plastic Fines						
10		GM Silty, Sandy Gravel and Cobble				BULK 10			31.8%
		II Alluvial Terrace Gravels							
		Sand Strata	Some Strata of Flowing Sands						
		Non-Plastic Fines		Medium Density					
		GC Clayey, Sandy Gravel and Cobble				SPT			21.8%
15		III Medium Density		Low Sulfates		15			
									22.1%
		Very poor recovery of cuttings							
		GM Silty, Sandy Gravel and Cobble				BULK			31.6%
		II							
20						20			
		TD @ 18'							
25						25			
30						30			
		Blow Counts are cumulative for each 6 inches of sampler penetration.							
		Free Water @ 5'							
		During Drilling 10-26-94							

LOG OF SUBSURFACE EXPLORATION

LINCOLN - DeVORE, Inc.	2525 US Hwy 6 & 50 Grand Junction, Colorado		
	DENVER HOLDINGS, Inc. Denver, Colorado		Date 1-18-94
Grand Junction, Colorado	Job No. 81775-J	Drawn EMM	

BORING NO. 6

DEPTH (FT.)	SOIL LOG	BORING ELEVATION: DESCRIPTION				BLOW COUNT	SOIL DENSITY pcf	WATER %
		Slightly Organic	Silt	Very High Sulfates				
		Compressible	Low Density	Wet	ST		89.2	28.5%
		Free Water ▼	Alluvial		BULK			32.9%
		ML	Sandy Silt	Gravelly Strata	Wet			
5		I	Sand Strata	Low Sulfates	5			
		GC	Clayey, Sandy Gravel	Low Plastic Fines				
		III			BULK			26.4
		Sand Strata	Medium Density					
			Low Plastic Fines					
10		GM	Silty, Sandy Gravel and Cobble		10			
		II	Alluvial Terrace Gravels	Low Sulfates	SPT	6/6		14.9%
			Some Strata of Flowing Sands			21/12		
			Non-Plastic Fines	Medium Density		34/18		
		GM	Silty, Sandy Gravel and Cobble		SPT			16.2%
15		II	Sand Strata	Low Sulfates	15	17/6		
			Some Strata of Flowing Sands			39/12		
			Very poor recovery of cuttings			51/18		
		GM	Silty, Sandy Gravel and Cobble					
		II						
20					20			
		TD @ 18'						
25					25			
30					30			
		Blow Counts are cumulative for each 6 inches of sampler penetration.						
		Free Water @ 3'						
		During Drilling 10-26-94						

LOG OF SUBSURFACE EXPLORATION

LINCOLN - DeVORE, Inc.

Grand Junction, Colorado

2525 US Hwy 6 & 50
Grand Junction, Colorado

DENVER HOLDINGS, Inc.
Denver, Colorado

Date 1-18-94

Job No. **81775-J**

Drawn **EMM**

BORING NO. 7

DEPTH (FT.)	SOIL LOG	BORING ELEVATION: DESCRIPTION					BLOW COUNT	SOIL DENSITY pcf	WATER %
		Slightly Organic		Very High Sulfates					
		Low Plastic Silt	Low Density		Very Moist				
		ML Sandy Silt	Alluvial			CS	3/6	92.3	30.1%
		I occ. Clayey	Compressible		Wet		5/12		
5		Free Water ▼		Sulfates		5	8/18		
		Sand and Gravel	Stratified			BULK			31.4%
		Non-Plastic Fines		Alluvial Terrace Gravels					
		GC Clayey, Sandy Gravel		Low Plastic Fines					
		III Hole Caving	Medium Density						
10		GM Silty, Sandy Gravel and Cobble				10			
		II Many Strata of Flowing Sands							
		Very poor recovery of cuttings							
		Non-Plastic Fines		Only Sands & Silts					
		GM Silty, Sandy Gravel and Cobble			Recovered				
15		III Medium Density		Low Sulfates		15			
		Many Strata of Flowing Sands							
		Hole Caving							
		GM Silty, Sandy Gravel and Cobble							
		II							
20						20			
		TD @ 18'							
25						25			
30						30			
		Blow Counts are cumulative for each							
		6 inches of sampler penetration.							
		Free Water @ 5'							
		During Drilling 10-25-94							

LOG OF SUBSURFACE EXPLORATION

LINCOLN - DeVORE, Inc.	2525 US Hwy 6 & 50 Grand Junction, Colorado		
	DENVER HOLDINGS, Inc. Denver, Colorado		Date 1-18-94
Grand Junction, Colorado	Job No. 81775-J	Drawn EMM	

BORING NO. 8

DEPTH (FT.)	SOIL LOG	BORING ELEVATION: DESCRIPTION				BLOW COUNT	SOIL DENSITY pcf	WATER %
		Organic Clays and Silts		Very High Sulfates				
			Low Density	Wet				
		ML Very Sandy Silt		Very Soft to Drill	SPT	2/6		19.7%
		I	Compressible			4/12		
5		Free Water ▼	Sand Strata	Flowing into Hole	5			
		Very Stratified	Very Sandy					
				Sulfates				
		GM Very Sandy Gravel and Cobble		Medium Density				
		II Alluvial Terrace Gravels		Hole Caving				
10				Non-Plastic Fines	10			
		Sands Rapidly Flowing into Hole						
		Non-Plastic Fines		Medium Density				
		GM Silty, Sandy Gravel and Cobble						
15		II Medium Density		Low Sulfates	15			
			Some Strata of Flowing Sands					
		Very poor recovery of cuttings			BULK			31.5%
		GC Clayey, Sandy Gravel and Cobble						
		III Medium Density		Low Plastic Fines				
20					20			
		Mancos Shale		Firm				
		IV Expansive	Very Silty Clay					
		Increasing Density w/ Depth		V. Moist				
		Decreasing Moisture w/ Depth		Sulfates	SPT	19/6		15.7%
25		TD @ 24'			25	41/12		
						97/18		
30					30			
		Blow Counts are cumulative for each 6 inches of sampler penetration.						
		Free Water @ 5'						
		During Drilling 10-25-94						

LOG OF SUBSURFACE EXPLORATION

LINCOLN - DeVORE, Inc.

Grand Junction, Colorado

2525 US Hwy 6 & 50
Grand Junction, Colorado

DENVER HOLDINGS, Inc.
Denver, Colorado

Date 1-18-94

Job No. 81775-J

Drawn EMM

BORING NO. 9

BORING ELEVATION:

DEPTH (FT.)	SOIL LOG	DESCRIPTION					BLOW COUNT	SOIL DENSITY pcf	WATER %
		Gravel and Cobble Fill		Very High Sulfates					
		Medium Density		Moist to Very Moist					
			Stratified	Soft to Drill at Base					
		ML Sandy Silt	Compressible	Organic	Wet	ST		88.7	30.4%
5		I Very Sandy Strata		Sulfates		5			
		Free Water ▼		Non-Plastic Fines					
		Sand and Some Gravel		Flowing Into Hole					
		GM Very Sandy Gravel and Cobble			Medium Density				
		II Alluvial Terrace Gravels							
10						10			
		Rapidly Flowing into Hole		Sands & Silts		BULK			34.7%
		Very poor recovery of cuttings							
		Non-Plastic Fines		Medium Density					
		GM Silty, Sandy Gravel and Cobble							
15		II Medium Density		Low Sulfates		15			
		Some Strata of Flowing Sands							
			Very poor recovery of cuttings						
		GM Sandy Gravel and Cobble							
		III Medium Density		Non-Plastic Fines					
20						20			
		Mancos Shale		Firm					
		IV Expansive	Very Silty Clay						
		Increasing Density w/ Depth			V. Moist				
		Decreasing Moisture w/ Depth			Sulfates	SPT	24/6		18.2%
25						25	58/12		
							83/18		16.5%
		TD @ 24'							
30						30			
		Blow Counts are cumulative for each 6 inches of sampler penetration.							
		Free Water @ 6'							
		During Drilling 10-25-94							

LOG OF SUBSURFACE EXPLORATION

LINCOLN - DeVORE, Inc.

Grand Junction, Colorado

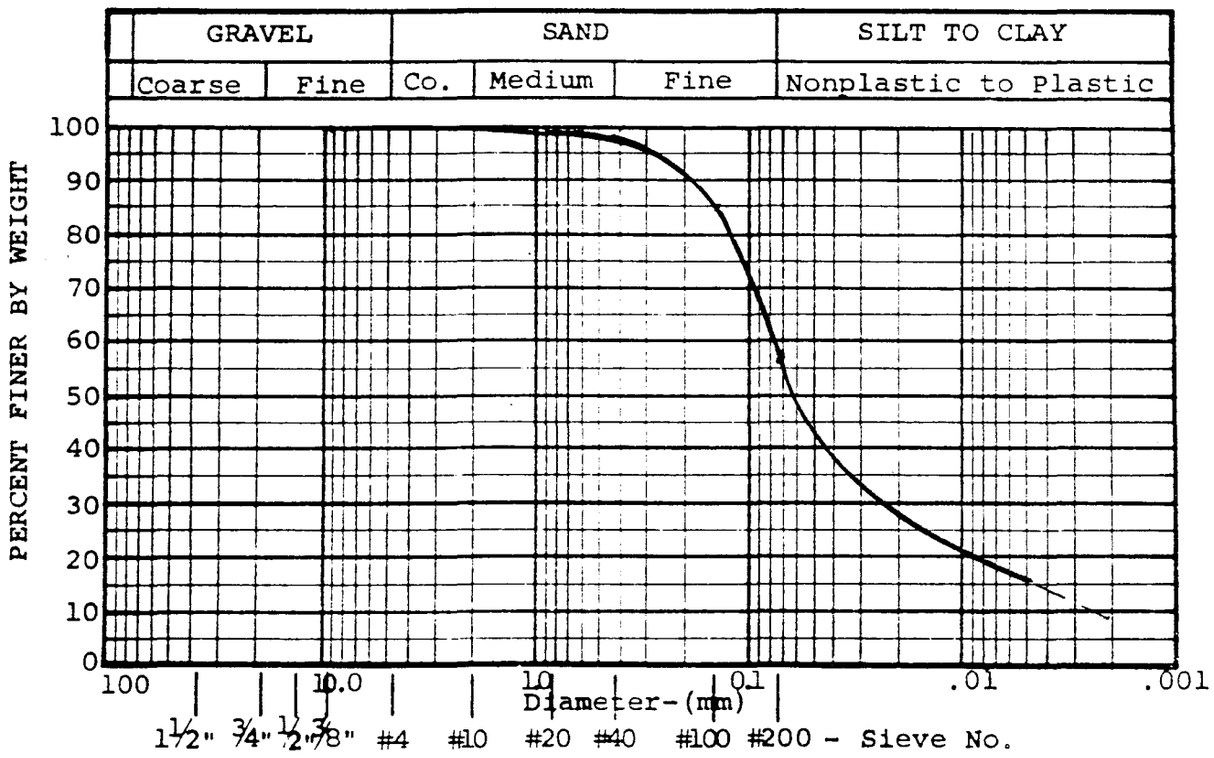
2525 US Hwy 6 & 50
Grand Junction, Colorado

DENVER HOLDINGS, Inc.
Denver, Colorado

Date 1-18-94

Job No. 81775-J

Drawn EMM



Soil Sample SANDY SILT (ML) Sample Location TB 1 @ 4'

Sample No. I

Specific Gravity

Moisture Content 36.4%

Effective Size 0.0025 mm

Cu 3

Cc 2.7

Fineness Modulus

L.L. % P.I. NP %

Bearing psf

Sulfates 1000 ppm

Sieve Size	% Passing
1-1/2"	
1"	
3/4"	
1/2"	
3/8"	100
#4	99
#10	99
#20	99
#40	98
#100	85
#200	56.6
0.0200	28
0.0050	16

Lincoln DeVore, Inc.
Geotechnical Consultants

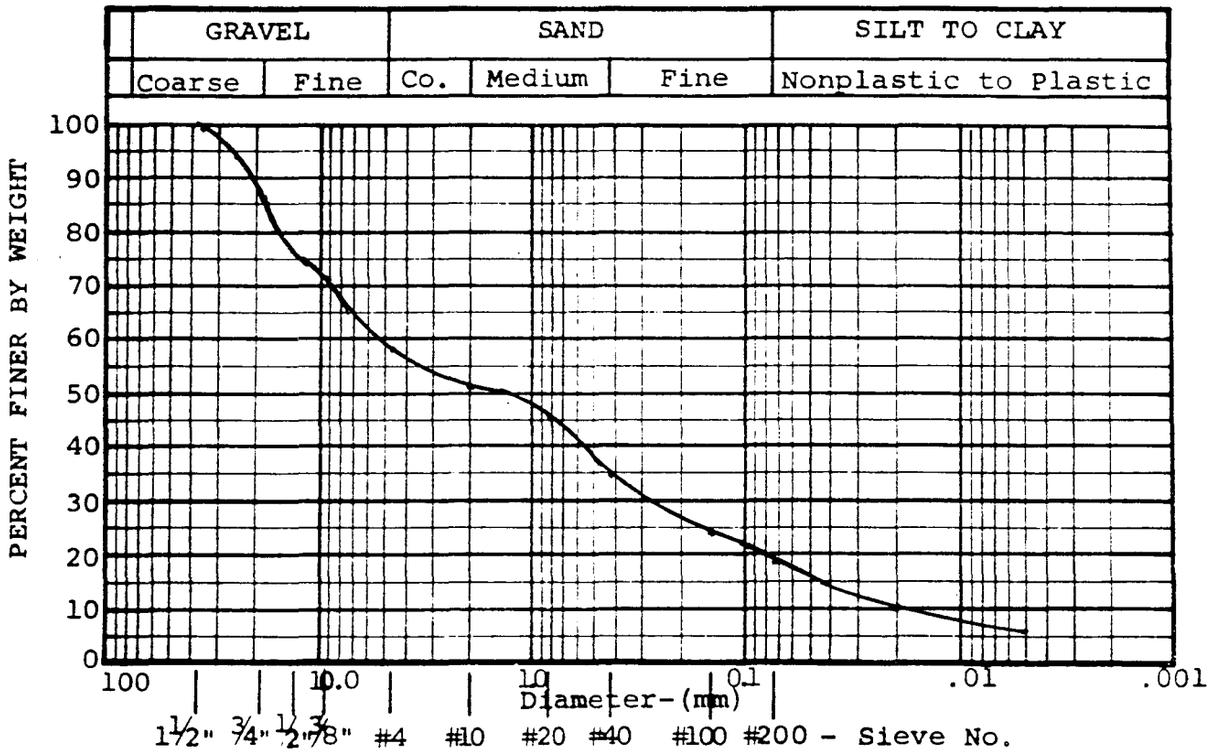
≈ 2525 Hwy 6+50, GRAND JUNCTION, Co

DENVER HOLDINGS

DATE 10-31-94

JOB NO. 81775-J

DRAWN EMM



FINE PORTION ONLY

Soil Sample SILTY, SANDY GRAVEL (GM) Sample Location TB 6@13'

Sample No. II

Specific Gravity

Moisture Content 14.9%

Effective Size 0.02 mm

Cu 265

Cc 0.7

Fineness Modulus

L.L. % P.I. NP %

Bearing 3500 psf

Sulfates 100 ppm

Sieve Size	% Passing
1-1/2"	100
1"	94
3/4"	84
1/2"	77
3/8"	71
#4	58
#10	51
#20	46
#40	34
#100	24
#200	18.7
0.0200	10
0.0050	6

Lincoln DeVore, Inc.
Geotechnical Consultants

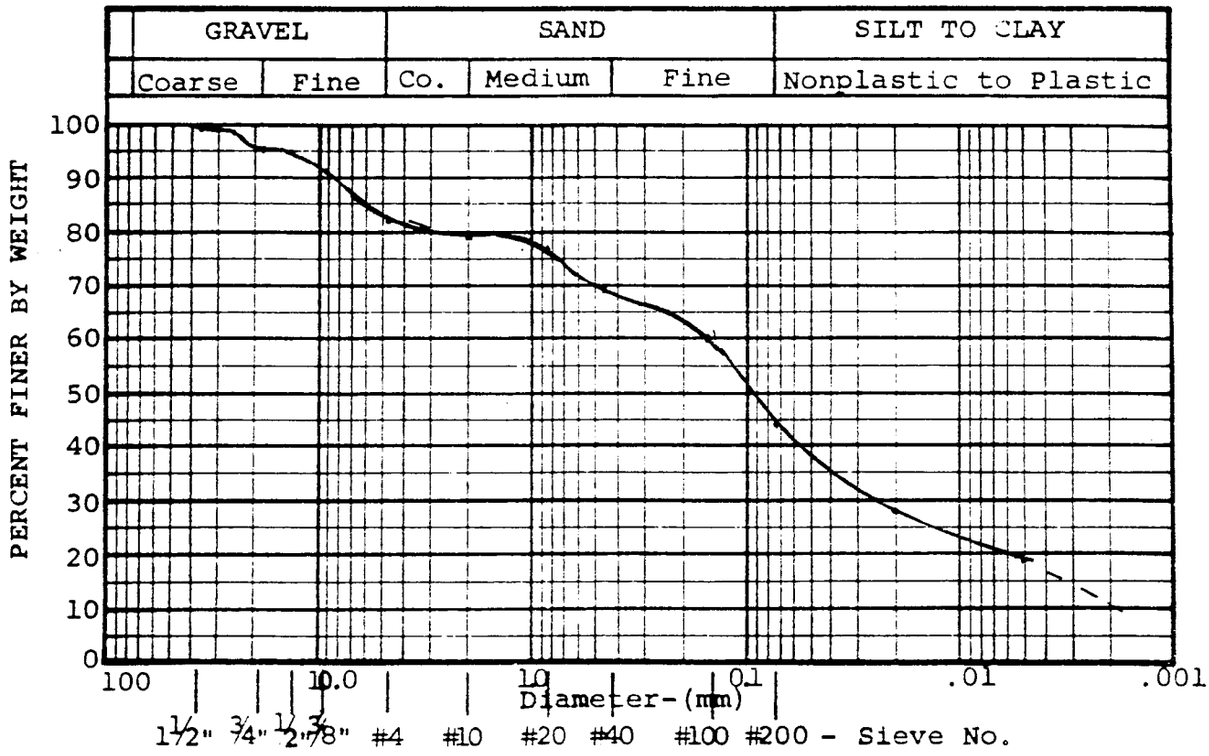
≈ 2525 HWY 6&50, GRAND JUNCTION, CO.

DENVER HOLDINGS

DATE 10-31-94

JOB NO. 91775-J

DRAWN EMM



FINE PORTION ONLY

Soil Sample CLAYEY, SANDY GRAVEL (GC) Sample Location TB 1 @ 9'

Sample No. TTT

Specific Gravity

Moisture Content 32-7%

Effective Size ≈ 0.002 mm

Cu 75

Cc 1.9

Fineness Modulus

L.L. 27 % P.I. 9 %

Bearing 3000 psf

Sulfates 1000 ppm

Sieve Size	% Passing
1-1/2"	100
1"	98
3/4"	95
1/2"	95
3/8"	91
#4	82
#10	79
#20	77
#40	69
#100	60
#200	44
0.0200	28
0.0050	19

Lincoln DeVore, Inc.
Geotechnical Consultants

≈ 2525 Hwy 6 & 50, GRAND JUNCTION, CO.

DENVER HOLDINGS

DATE 10-31-94

JOB NO. 81775-J

DRAWN EHM

SUMMARY SHEET

Soil Sample WEATHERED MANCOS SHALE SANDY CLAY (CL) Km

Test No. 81775-J

Location ≈ 2525 Hwy 6+50, GRAND JCT- Colo

Date 10-31-94

Boring No. 8 Depth 24'

Sample No. IV

Test by LRS

Natural Water Content (w) 15.7 %

Specific Gravity (Gs) _____

In Place Density (γ_o) _____ pcf

SIEVE ANALYSIS:

Sieve No.	% Passing
1 1/2"	
1"	
3/4"	
1/2"	
4	
10	100
20	97
40	94
100	79
200	70.8

HYDROMETER ANALYSIS:

Grain size (mm)	%
0.02	67
0.005	56

Plastic Limit P.L. 16 %

Liquid Limit L. L. 29 %

Plasticity Index P.I. 13 %

Shrinkage Limit _____ %

Flow Index _____

Shrinkage Ratio _____ %

Volumetric Change _____ %

Lineal Shrinkage _____ %

MOISTURE DENSITY: ASTM METHOD

Optimum Moisture Content - w_o _____ %

Maximum Dry Density - γ_d _____ pcf

California Bearing Ratio (av) _____ %

Swell: 1 Days _____ %

Swell against _____ psf Wo gain _____ %

BEARING:

Housel Penetrometer (av) 4500 psf

Unconfined Compression (qu) _____ psf

Plate Bearing: _____ psf

Inches Settlement _____

Consolidation % under psf

PERMEABILITY:

K (at 20°C) _____

Void Ratio _____

Sulfates 1500 ppm.

SOIL ANALYSIS

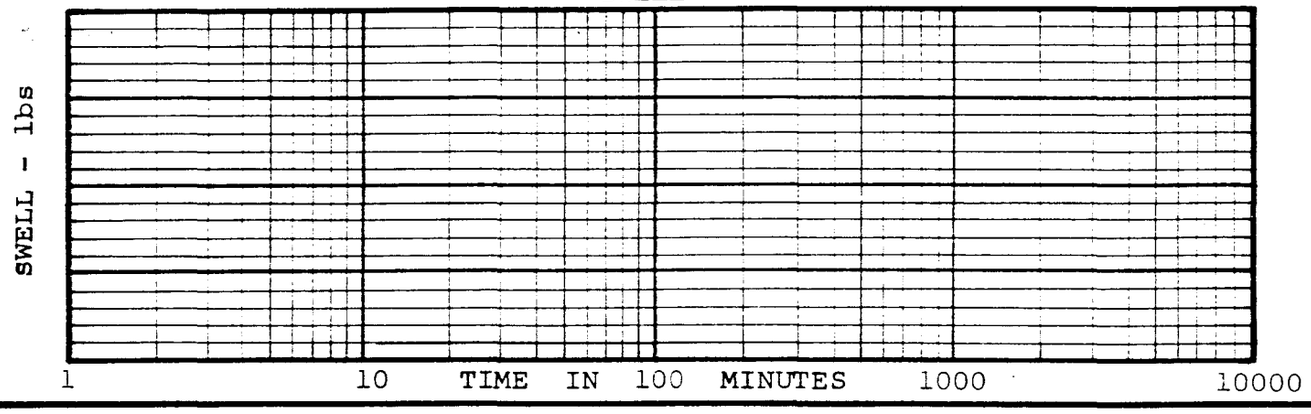
LINCOLN-DeVORE TESTING LABORATORY
COLORADO SPRINGS, COLORADO

SOIL SAMPLE SANDY SILT (ML) Test No. 81775-J

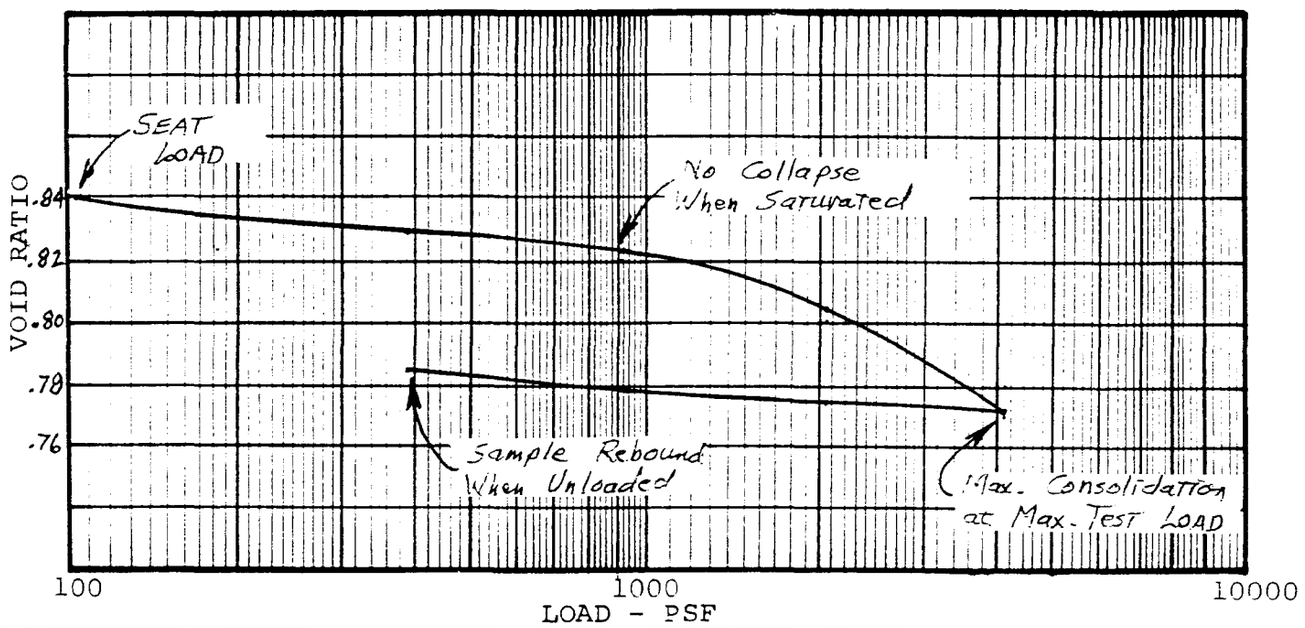
Project ≈2525 Hwy 6+50 Gd. Jct. Date 11-4-94

Sample Location TB 4@2' Test by RL

SWELL



CONSOLIDATION



Sample Conditions	Initial	Maximum Load	Expanded
Dry Density	90.2 pcf	93.6 pcf	93.2 pcf
% Moisture	26.0 %	29.05 %	29.6 %
% Saturation	82 %	100 %	100 %
Void Ratio	.840	.773	.7843

Specific Gravity 2.66

Maximum Load used 4069 lb. Ring Number 143-14

Apparatus Densoil 2 Volume 2.5" Ring .002841 cu. ft.

LOAD - CONSOLIDATION

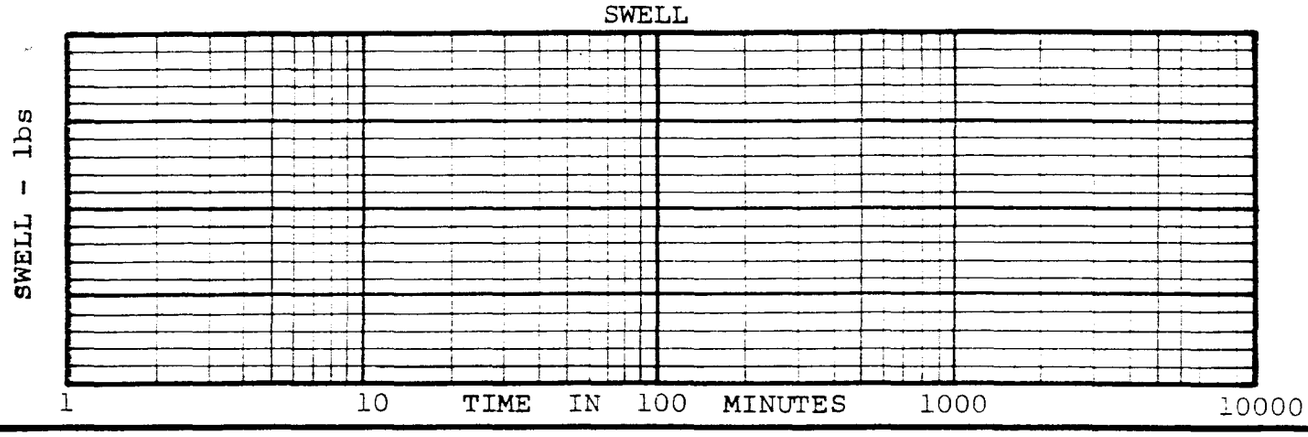
LINCOLN-DeVORE, INC.
COLORADO SPRINGS, COLORADO

SOIL SAMPLE SANDY SILT (ML) Test No. 81775-J

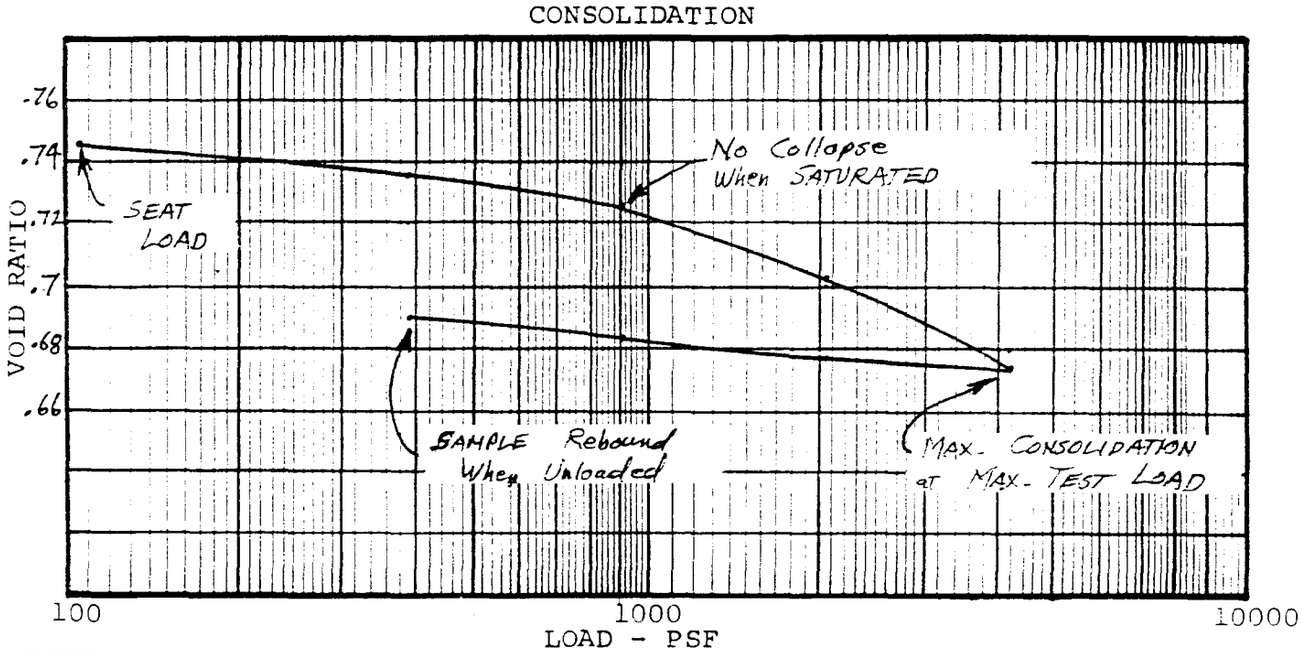
Project ≈2525 Hwy 6&50, GD. Jct. Date 10-31-94

Sample Location TB 5@2' Test by LRS

SWELL



CONSOLIDATION



Sample Conditions	Initial	Maximum Load	Expanded
Dry Density	95.0 pcf	99.1 pcf	98.2 pcf
% Moisture	24.6 %	25.4 %	25.9 %
% Saturation	88 %	100 %	100 %
Void Ratio	.746	.674	.691

Specific Gravity 2.66

Maximum Load used 4210 lb. Ring Number 144.1

Apparatus Densoil 4 Volume 2.5" Ring .002841 cu.ft.

LOAD - CONSOLIDATION

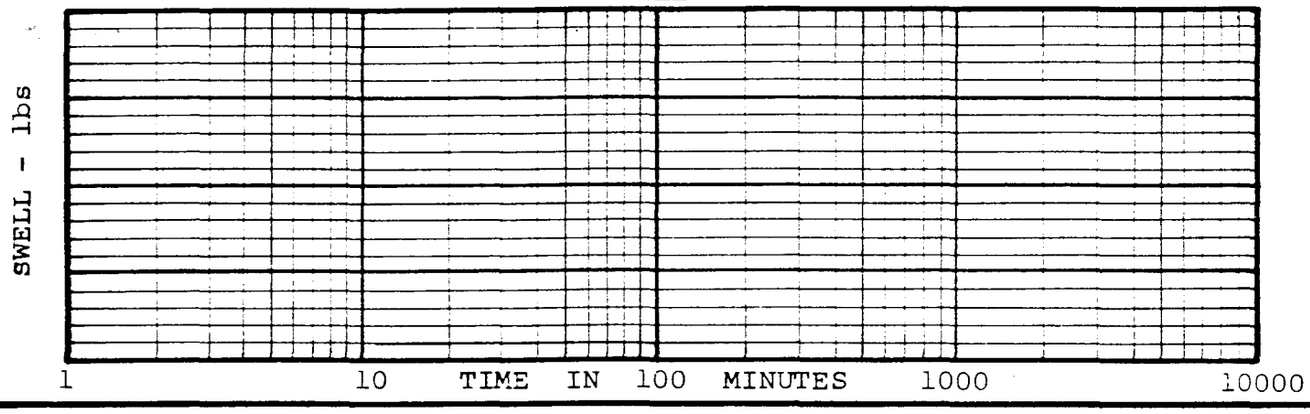
LINCOLN-DeVORE, INC.
COLORADO SPRINGS, COLORADO

SOIL SAMPLE SANDY SILT (ML) Test No. 81775-J

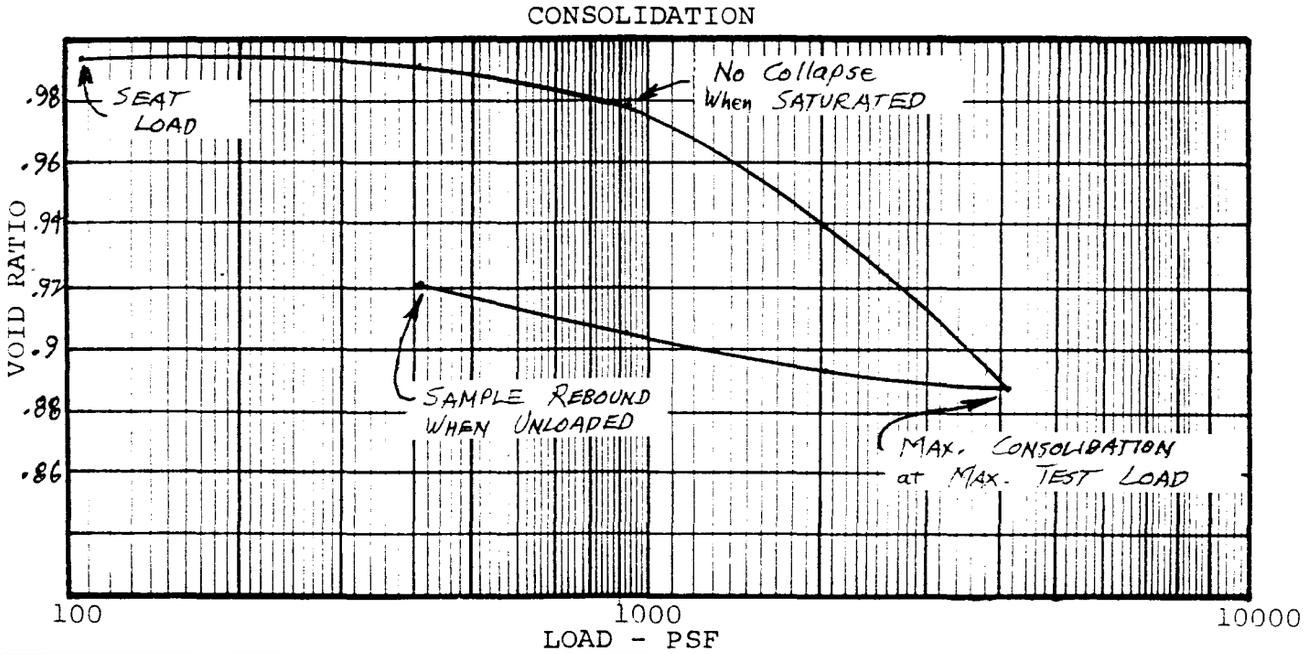
Project ≈2525 Hwy 6+50 GO. JCT. Date 11-4-94

Sample Location TB 6 @ 2' Test by LRS

SWELL



CONSOLIDATION



Sample Conditions	Initial	Maximum Load	Expanded
Dry Density	83.2 pcf	87.9 pcf	86.4 pcf
% Moisture	28.5%	33.4%	34.6%
% Saturation	76.7%	100%	100%
Void Ratio	.995	.887	.921

Specific Gravity 2.66

Maximum Load used 4116 lb. Ring Number 143-8

Apparatus Densoil 3 Volume 2.5" Ring .002841 cu. ft.

LOAD - CONSOLIDATION

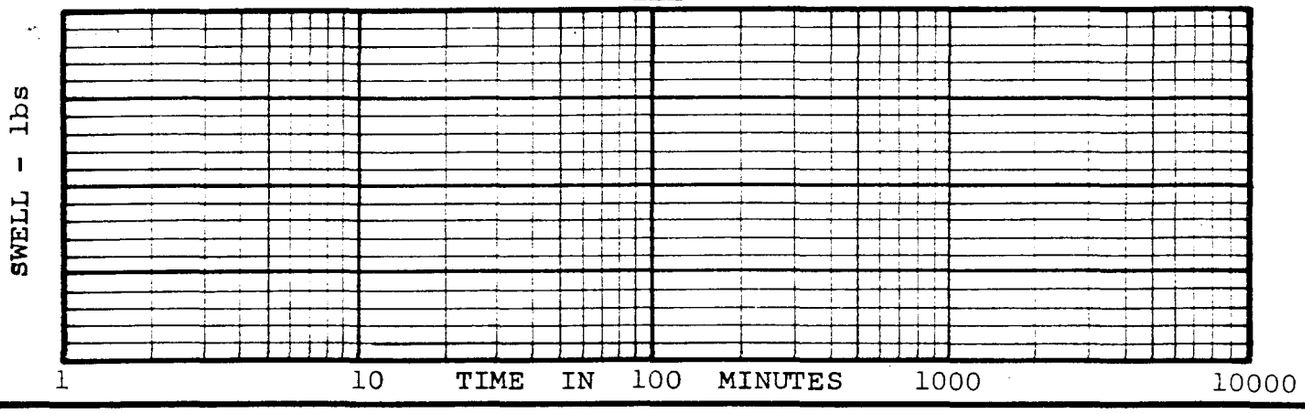
LINCOLN-DeVORE, INC.
COLORADO SPRINGS, COLORADO

SOIL SAMPLE SANDY SILT (ML) sl. organic Test No. 81775-J

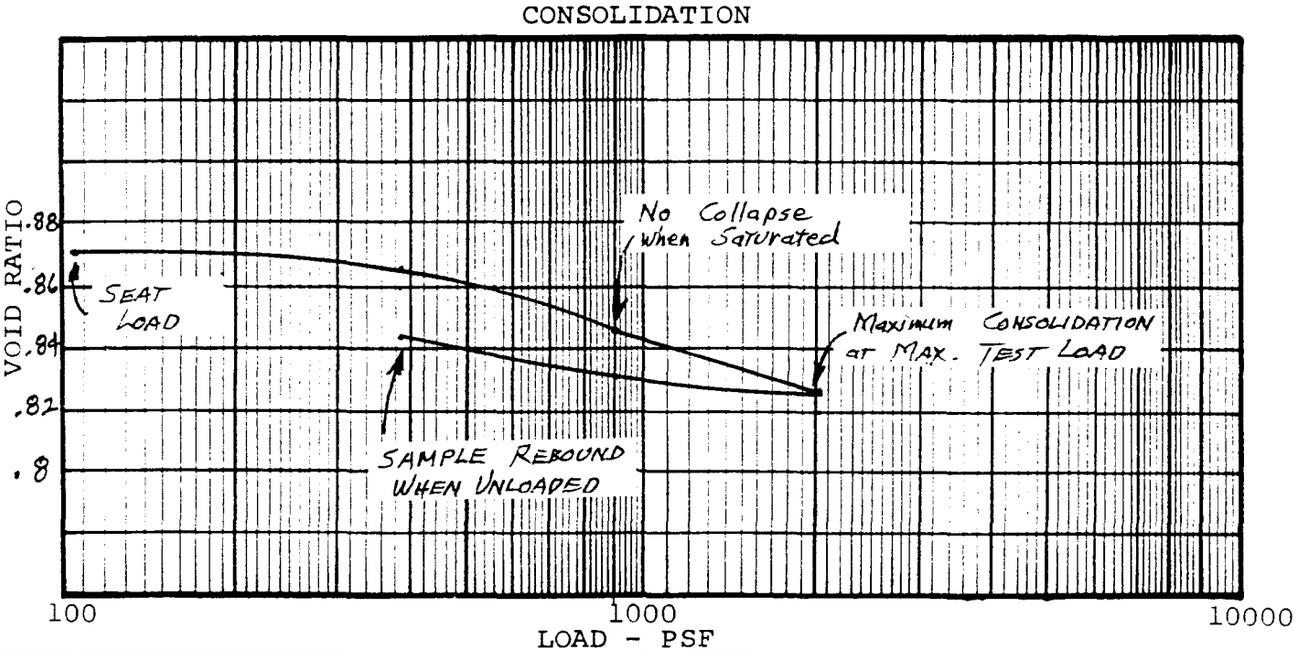
Project ≈2525 Hwy 6&50 Gd. Jct. Date 10-26-94

Sample Location TB 9@4' Test by LRS

SWELL



CONSOLIDATION



Sample Conditions	Initial	Maximum Load	Expanded
Dry Density	88.7 pcf	90.8 pcf	90.1 pcf
% Moisture	30.4 %	31.1 %	31.7 %
% Saturation	92 %	100 %	100 %
Void Ratio	.871	.828	.843

Specific Gravity 2.65

Maximum Load used 2007 lb. Ring Number 144-1

Apparatus Dengoil 1 Volume 2.5" Ring .002841 cu. ft.

LOAD - CONSOLIDATION

LINCOLN-DeVORE, INC.
COLORADO SPRINGS, COLORADO

October 31, 1994

Highway 6 & 50 Proposed Retail Site
Minimum Requirements for Traffic Impact Study

Study Area Boundaries
The coordinated signals on Highway 6 & 50, frontage road to Highway 340. River Road and 25 1/2 Road assuming the connection is made.

Intersections to Analyze:
- Signalized intersection of Independent and Hwy. 6 & 50
- Highway 340 and Mulberry
- Intermediate accesses on frontage road
- Signal coordination system
- All site driveways
- Roadway segment of Hwy. 6 & 50

Trip Generation
-Use ITE 5th Edition for trip rates
-Peak hour estimates may be reduced 2.5% as recommended in CO/WY ITE Section Technical Committee Report
-Pass-by trips will be limited to a maximum 20%
-Weekday am, pm and Saturday analysis required
-Trip distribution may be based on MINUTP output
-Use 2.0% growth factor to project non-site traffic forecasts

Traffic Improvement Analysis:
-Include on-site circulation. Truck access should not be through the parking lot. New parking lot landscaping and lighting code will be required for this parking lot.
-Queuing analysis for all turn lanes. State Highway Access Code criteria required for all turn lane analyses on state highways.
-Minimum separation of 150' between signal and frontage road.
-On-site stacking minimum 300' from flowline of street to first parking aisle. Should be verified by a queuing analysis.
-Provide a collision diagram using the provided accident data. May be supplemented by CDOT accident data.
-Signalized intersection geometric improvements, signal hardware improvements.
-Progression analysis for coordinated signals.
-Pedestrian considerations.
-Frontage road design.
-Lighting needs analysis along Hwy. 6 & 50, frontage road.

REVIEW COMMENTS

FILE # **CUP-95-30** **TITLE HEADING:** Conditional Use Permit - Rimrock Market Place

LOCATION: SW corner 25 1/2 Road and Hwy 6 & 50

PETITIONER: Denver Holdings, Inc.

PETITIONER'S ADDRESS/TELEPHONE: 10065 E. Harvard Avenue
Denver, CO 80231
303-338-9026

PETITIONER'S REPRESENTATIVE: Tom Logue/Landesign Ltd.

STAFF REPRESENTATIVE: Michael Drollinger

NOTE: THE PETITIONER IS REQUIRED TO SUBMIT FOUR (4) COPIES OF WRITTEN RESPONSE AND REVISED DRAWINGS ADDRESSING ALL REVIEW COMMENTS ON OR BEFORE 5:00 P.M., FEBRUARY 24, 1995.

MESA COUNTY BUILDING DEPARTMENT **02/08/95**
Bob Lee **244-1656**

No comments at this time.

CITY PARKS AND RECREATION DEPARTMENT **02/07/95**
Dob Hobbs **244-1542**

We will need an appraisal for use in determining the required open space fees.

CITY ATTORNEY **02/09/95**
John Shaver **244-1501**

Owner Fetter appears to have no connection with project/applicant. Is there a contract? Same question for other owners, (HNL, Venegas and Ligrani). Need evidence of ownership/contract interest in Denver Holdings Inc.

GRAND JUNCTION FIRE DEPARTMENT **02/14/95**
Hank Masterson **244-1414**

An 8" looped water line is required along the relocated frontage road. Hydrants along this road must be located at all intersections and spaced no more than 300' apart.

The overall project plan is acceptable to the Fire Department provided the required fire flows for all structures can be achieved using the proposed 8" looped water lines.

UTILITY ENGINEER **02/15/95**
Bill Cheney **244-1590**

Sewer: Existing sewer across property is 15" P.V.C. laid at 0.1% grade. It may not be possible to relocate sewer line and still maintain minimum flow velocities of 2 feet per second.

15" sanitary siphon shown is plugged just south of line that flows to west.

See City "As Builts" for information pertaining to sewer and include on future submittals.

COMMUNITY DEVELOPMENT DEPARTMENT **02/16/95**
Michael Drollinger **244-1439**

See attached.

GRAND JUNCTION DRAINAGE DISTRICT **02/26/95**
John L. Ballagh **242-4343**

See attached sheet.

CITY DEVELOPMENT ENGINEER **02/20/95**
Jody Kliska **244-1591**

Final soils report needs to address pavement structural sections. These must also be shown on the construction plans.

Final drainage report must be submitted and approved prior to issuance of a planning clearance. Approval from Grand Junction Drainage District is required.

Final site plan must indicate all traffic control including signs, markings, and traffic calming devices. Parking lot lighting plan is required.

Independent Ave. is a designated bike path. Sufficient pavement width to accommodate bike lanes in both directions with appropriate signs and markings are required from the signal to Independent. On Independent where half street improvements are being made, a bike lane on one side is required.

Is the right-in, right-out driveway onto 6 & 50 on the east side of the site necessary? It was not addressed in the traffice study.

The west driveway utilizing the existing frontage road opening needs to be designed to accommodate the anticipated traffic and operate safely. The traffic study indicates 190 right turns out in the peak hour, and there does not appear to be any stacking room. The proximity of the frontage road to the highway will become more of a safety concern as more traffic will using the intersection. Options need to be explored.

UTE WATER **02/20/95**
Gary Mathews **242-7491**

A inline valve will be required for the 8" main in Independent Avenue located between the two proposed 8" mains for the project. Double check valves on Fire Spinkler systems unless chemical then RPV device. RPV device on all irrigation systems. The 8" main in Frontage Road will be looped to the proposed 8" at Pad F on the plans. Check valves will have meters installed inside the buildings and a touch pad reader on the outside of buildings. A connection to the 8" in River Road is needed, at the developers' expense, if fire flows are not sufficient.

POLICIES AND FEES IN EFFECT AT THE TIME OF APPLICATION WILL APPLY.

CP 95-30

GRAND JUNCTION DRAINAGE DIST.

722 23 ROAD P.O. BOX 55246 GRAND JUNCTION, CO 81505
(303) 242-4343

The preliminary plans for D.H.I. RETAIL SUBDIVISION / conditional use seem to be feasible. The LIGRANI DRAIN collects surface runoff from as far east as 17th street and North Avenue, and as far north as ~~Sherwood Park and the multifamily areas on Independence Avenue above the Division of Wildlife~~ offices and Motor Street. Significant flows can originate within the basin contributing to the LIGRANI DRAIN.

The Drainage District does have policy concerning relocating a drain which is what appears to be suggested on the preliminary drainage study sheet. The party wanting to move the drain has to pay all the associated costs of relocation. The Drainage District will want a dedicated easement for the operation and maintenance of the drain whether left in place, relocated, piped or not. If there is to be a relocation, the District will release any and all claim to the area where the drain used to be located, after having easement for the new location. A written request to the Board of Directors of the Grand Junction Drainage District is all that is necessary to begin that process.

The site drainage plan shows manholes only at turn points. District standards require manhole access at junctions also. Each area drain entering the District's drain will have to enter at a manhole. Some minor design changes could reduce the ultimate number of manholes required. The level of detail information is not enough to tell whether the traffic control "islands" are merely painted or raised or planted or what. The idea of locating manholes in the parking area is acceptable. The idea of having access points in planted areas especially if those areas are raised is less desirable. The maintenance of the area inlets and connecting pipes is addressed in the drainage report which says that "Rimrock Marketplace ownership" will be the responsible party. Please require that statement on at least one of the plat or plan documents which will be recorded and become part of all future title papers.

Some of the site has been farmed, while other parts have been fallow for a considerable time. The vegetation mentioned on page 3 of the drainage study does not identify that much of the "natural" vegetation is of the species which can tolerate high water table. The District's work in the nearby areas, Motor Street, Dana Motors, Fuoco Motors, and last year's cooperative work with the City in El Poso support the position that the site may suffer a high water table. Investigation of subsurface drains for lowering the water table and the developer's stated position for or against them should be required of the developer in the review / approval process.

One detail missing is a distance from the building to the manhole which is proposed approximately 300 feet east of the proposed headwall end of the pipe. There must be at least 10 (ten) feet from the building to the closest portion of either the pipe or the manhole or any other faciltiy which the District will maintain.

John L Ballagh.
Feb 16, 1995

RESPONSE TO REVIEW COMMENTS

February 27, 1995

Title: RIMROCK MARKETPLACE, Conditional Use Permit

File No: CUP-95-30

Location: SW Corner 25 1/2 Road and Hwy. 6 &50

The following agency comments were informational in nature, or do not require a response:

MESA COUNTY BUILDING DEPARTMENT
CITY PARKS AND RECREATION DEPARTMENT

RESPONSE TO CITY ATTORNEY
A copy of the latest Title Insurance Commitment is attached showing Denver Holdings, Inc. interest in the property.

RESPONSE TO FIRE DEPARTMENT
The proposed water delivery system will be looped as requested. Fire hydrants will be located as directed by the department.

RESPONSE TO CITY UTILITY ENGINEER:
Future submittals will relocated the existing 15" sanitary sewer main south of its current location within the proposed service drive area to maintain minimum velocities.

RESPONSE TO COMMUNITY DEVELOPMENT:
1. Guidelines for signage at Rimrock Marketplace are attached per previous discussion with development department staff.

2. An appraisal of the raw land value will be transmitted to the department under separate cover.

3. Several funding alternatives, for the frontage road improvements, are currently being explored by the applicant. One of which includes applying the Transportation Capacity Payment towards funding of part of the street improvements.

RESPONSE TO DEVELOPMENT ENGINEER:
1. A copy of the recommendation for pavement design from the Final Soils Report is attached.

2. A final Drainage Report accepted by the Grand Junction Drainage District will be provided with future submittals.

3. The final Site Development Plan will show all traffic control devices and a parking lot lighting plan.

4. The pavement section along Independent Avenue will be widened eight feet to accommodate a striped bike lane.

5. Subsequent meetings with City and CDOT staff members determined at a right in/right out somewhere in the vicinity of the proposed east highway access point would be appropriate.

6. The west driveway near Independent Avenue will be modified to accommodate additional storage for right turns at the peak hour.

RESPONSE TO UTE WATER:
1. The requested inline valve will be added to the final water system improvement plans.

2. Double check valves will be provided on all fire sprinkler systems.

3. The 8 inch main will be looped from the existing main in the Frontage Road with the proposed main near Pad F.

4. Meters will be installed as requested.

RESPONSE TO GRAND JUNCTION DRAINAGE DISTRICT:
1. An easement for the relocated drain will be indicated on the final plat for the subdivision, together with a written request for acceptance from the Board of Directors of the Grand Junction Drainage District.

2. Manhole access will be provide as requested. Most of the medians shown on the site plan are raised and landscaped, therefore, all manholes will be located in a paved area. Ownership and maintenance responsibility of the inlets and connecting pipes will be included within the dedication on the Final Plat.

3. The subsurface soils investigation agrees with the districts position that the ground water table on the property is somewhat high. It is the applicant's position to support the installation of subsurface drains to control the water table within their property.

4. A minimum of ten feet will be maintained between any building and the proposed drain improvements.

STAFF REVIEW

FILE: #CUP 95-30
DATE: February 21, 1995
STAFF: Michael Drollinger
REQUEST: Conditional Use Permit
LOCATION: SW Corner 25 1/2 Road and Hwy. 6&50
ZONING: C-1 & C-2

STAFF COMMENTS:

NOTE: This review contains staff comments related to materials submitted for review; planning analysis of Conditional Use Permit criteria will be in staff report prepared for public hearing.

1. A signage plan must be submitted for approval; deadline is February 27th. The plan must contain the items discussed with Mr. Logue.

2. Appraisal for calculation of open space fees must be submitted by February 27th.

3. Based on a review of the traffic study by the Development Engineer, it appears that the proposed road improvements (including the extension of the frontage road) will be required for the project to function at acceptable levels of service, thus at this time it is the position of staff that the developer will be required to fund the proposed roadway improvements.

STAFF REVIEW

FILE: #CUP 95-30

DATE: March 30, 1995

STAFF: Michael Drollinger

REQUEST: Conditional Use Permit - Rimrock Marketplace Retail Center

LOCATION: SW corner 25 1/2 Road & Hwy. 6 & 50

APPLICANT: Denver Holdings Inc. (DHI Group)

NOTE: This is an appeal of a Conditional Use Permit decision by Planning Commission. Harold Woolard, an adjoining property owner, had appealed the Planning Commission approval of the Rimrock Marketplace to the City Council based on access and drainage concerns (see attached letter).

EXISTING LAND USE: Vacant/retail

PROPOSED LAND USE: Retail center

SURROUNDING LAND USE:

NORTH:	Commercial (Sam's Club)
SOUTH:	Railroad
EAST:	Vacant
WEST:	Commercial (Various)

EXISTING ZONING: C-1 & C-2

PROPOSED ZONING: No Change

SURROUNDING ZONING:

NORTH:	C-2
SOUTH:	I-1 (County Zoning)
EAST:	C-1
WEST:	C-2

FOUR PARTS TO STAFF PRESENTATION

(1) Explain the need for a conditional use permit

(2) Describe the application

(3) Based on planning analysis touch upon the Planning anal. of cond. use permit crit.

(4) Nature of the appeal

RELATIONSHIP TO COMPREHENSIVE PLAN:

No comprehensive plan exists for the area.

STAFF ANALYSIS:

The staff analysis is divided into three sections: (1) an overview of the proposal; (2) planning analysis of conditional use permit criteria and (3) staff findings and recommendations:

The Development Proposal

(2)

DHI Incorporated is requesting ~~Conditional Use~~ approval of an approximately 530,000 square foot retail center plus additional "pad site" development on an approximately 50 acre parcel on Highway 6&50 just west of 25/1/2 and directly south of Sam's Club.

The staff has been working with the petitioner from the early stages of the proposal to develop the site development and circulation layouts which are illustrated on the attached preliminary site development plan. The site development and access plans will be further refined to meet applicable code and review agency requirements and requires Site Plan Review prior to issuance of a Planning Clearance.

The development proposal is detailed in the petitioner's General Project Report. Briefly, access to the proposed site will be from four points, two along Hwy 6&50, one from Independent Avenue, and via a proposed extension to the frontage road to be constructed from the vicinity of Gene Taylor's to the subject site. The major retail users will be located to the rear of the parcel. Smaller "pad" users will be located on sites which are generally to the north of the proposed relocated frontage road and will have their own parking. Service access to the retail center is available to the rear of the buildings. Buildings will cover approximately 25% of the site whereas almost 60% of the site will be covered by parking and drives. Landscaping as prescribed by the Code will be provided along the frontage and in the parking lot. The relocated frontage road will be dedicated as public right-of-way.

Planning Analysis of Conditional Use Permit Criteria

(1)

Section 4-8 of the Zoning and Development Code specifies the criteria used to evaluate all uses requiring a special and conditional use permit. The proposed project falls in the use category of "major shopping center" which requires a conditional use permit in the C-1 and C-2 zoning districts. This section contains staff's evaluation of the conditional use criteria based on the proposed project.

It is important to note that a conditional use is not a use by right. In general terms, the Planning Commission must evaluate whether the use proposed can function satisfactorily at the subject site

without creating significant adverse impacts on surrounding properties or public services. Staff analysis of the specific Code criteria are as follows:

1. The proposed use must be compatible with adjacent uses.

The uses proposed are compatible with those existing in the Hwy. 6&50 corridor.

2. The use shall be approved only if the design features of the site, such as service areas, pedestrian and vehicular circulation, safety provisions, accessory uses, accessways to and from the site, buffering, etc. are sufficient to protect adjacent uses.

Based on staff's review of the preliminary design, provisions are being made to accommodate the applicable design features. Specific design details are required in the final site plan design and are subject to staff approval.

3. Proposed accessory uses must demonstrate that they are necessary and desirable.

No accessory uses are proposed at this time.

4. Adequate public services (e.g. sewage and waste disposal, domestic and irrigation water, gas, electricity, police and fire protection) must be available without the reduction of services to other existing uses.

The petitioner is required to accommodate the concerns of City agencies regarding sewage, waste disposal, and police and fire protection. The petitioner proposes to upgrade and provide sufficient public services and based on review agency comments on the preliminary design, City agency concerns are being met.

5. Other uses complimentary to, and supportive of, the proposed project shall be available including schools, parks, hospitals, business and commercial facilities, transportation facilities, etc.

Availability of support facilities is good. Transportation facilities will require upgrading as detailed in the petitioner's traffic study and are subject to City and CDOT approval.

6. The use shall conform to adopted plans, policies and requirements for parking and loading, signs and all other applicable regulations of this Code.

It is staff's recommendation that the issuance of the conditional use permit be site plan contingent upon all applicable Zoning and Development Code requirements being met in the final site plan design. The use and preliminary design as proposed appears to conform with the intent of the I-70B (Hwy. 6&50) Corridor Guidelines with regard to landscaping, circulation and drainage. The signage plan and guidelines is acceptable to staff with the conditions as noted in the next section.

detailed plans & reports required at that time.

Staff Recommendation

Based on staff's review of the preliminary design and supporting reports and based on the analysis of the conditional use criteria contained in the Zoning and Development Code, staff recommends approval of the conditional use permit for Rimrock Marketplace retail center if the conditions listed below are satisfactorily addressed prior to issuance of a Planning Clearance.

Should the City Council choose to favorably consider the subject application, staff recommends that the approval be subject to the conditions contained below (which are part of the Planning Commission approval of the project):

1. The project is approved for a maximum of 550,000 square feet of retail space (not including the pad sites which will be limited in number by the ability to meet City Zoning Code requirements) to be constructed within the building envelopes identified on the attached site plan. If the proposal should exceed the size limit or the building envelopes proposed, the conditional use permit will subject to reevaluation by the Planning Commission at the discretion of City staff.

2. The project signage will be subject to the attached signage guidelines which are based on those proposed by the petitioner and modified by staff.

3. The conditional use permit approval is subject to subsequent acceptance of a site plan and subdivision which meets all Zoning and Development Code requirements and are subject to staff approval, review agency approval, and Planning Commission approval as required by Code.

4. Staff finds that the circulation improvements identified by the petitioner in the "General Project Report" and the "Traffic Impact Analysis for DHI Shopping Center" are necessary for the safe and efficient movement of vehicles to and from the site at acceptable levels of service (LOS). A condition of this approval is that the funding and construction of the identified improvements are the responsibility of the developer and that all circulation improvements are subject to review and approval by the City and CDOT and must meet all applicable requirements. Significant changes to the design and operation of the circulation network as proposed may require reevaluation of the conditional use permit by the Planning Commission at the discretion of City staff.

5. All pad site development is subject to the requirements of the Zoning and Development Code and the adopted signage guidelines for Rimrock Marketplace. Development proposals for the pad sites require Site Plan Review.

Important to note that the applications will still be subject to SPR with

STAFF RECOMMENDATION:

Staff recommends approval of the conditional use permit with the conditions detailed above.

In addition conditions of approval provide the parameters such as max. ft² which can be built and signage guidelines which must be adopted with the CU permit.

PLANNING COMMISSION RECOMMENDATION

At their March 7th meeting, Planning Commission approved the Conditional Use Permit by a vote of 5-0 with the conditions in this staff report.

95-308.wpd

(4) Nature of appeal

Two concerns expressed by Mr. Woolard & contained in the letter which you have as an attachment

(1) drainage

(2) access → describe change

SIGNAGE PLAN
RIMROCK MARKETPLACE

All Signage must meet the requirements contained in Section 5-7 of the Zoning and Development Code (ZDC), as amended. In addition, the following provisions will be part of the signage plan for Rimrock Marketplace:

1. One project identification sign may be located along each roadway frontage. For the purposes of this approval, the project identification sign may be located at the Hwy. 6&50 frontage (as identified on the attached site plan) rather than having to be located along the relocated frontage road. The project identification sign along Hwy 6&50 may be a freestanding sign, not to exceed 25 ft. in height and 300 square feet in area. The project identification signs along the Independent Avenue and 25 1/2 Road frontages shall be limited to monument signs, not to exceed 6 feet in height and 150 square feet in area.

2. Only monument signs (in addition to wall signs), not to exceed 6 feet in height and 150 square feet in area are permitted for identification of uses on the pad sites as identified on the attached site plan.

3. Wall mounted signs are permitted in accordance with the sign code. For purposes of signage allowance calculations, the retail center must utilize the relocated frontage road rather than Highway 6&50.

4. No roof signs are permitted anywhere in the development.

5. Traffic control signs require the approval of the City Development Engineer.

STAFF REVIEW

FILE: #CUP 95-30

DATE: March 1, 1995

REQUEST: Conditional Use Permit - Rimrock Marketplace Retail Center

LOCATION: SW corner 25 1/2 Road & Hwy. 6 & 50

APPLICANT: Denver Holdings Inc. (DHI Group)

EXISTING LAND USE: Vacant/retail

PROPOSED LAND USE: Retail center

SURROUNDING LAND USE:

NORTH: Commercial (Sam's Club)
SOUTH: Railroad
EAST: Vacant
WEST: Commercial (Various)

EXISTING ZONING: C-1 & C-2

PROPOSED ZONING: No Change

SURROUNDING ZONING:

NORTH: C-2
SOUTH: I-1 (County Zoning)
EAST: C-1
WEST: C-2

RELATIONSHIP TO COMPREHENSIVE PLAN:

No comprehensive plan exists for the area.

STAFF ANALYSIS:

The staff analysis is divided into three sections: (1) an overview of the proposal; (2) planning analysis of conditional use permit criteria and (3) staff findings and recommendations:

The Development Proposal

DHI Incorporated is requesting Conditional Use approval of an approximately 530,000 square foot retail center plus additional "pad site" development on an approximately 50 acre parcel on Highway 6&50 just west of 25/1/2 and directly south of Sam's Club. and zoned C-1 & C-2

The staff has been working with the petitioner from the early stages of the proposal to develop the site development and circulation layouts which are illustrated on the attached preliminary site development plan. The site development and access plans will be further refined to meet applicable code and review agency requirements and requires Site Plan Review prior to issuance of a Planning Clearance.

The development proposal is detailed in the petitioner's General Project Report. Briefly, access to the proposed site will be from four points, two along Hwy 6&50, one from Independent Avenue, and via a proposed extension to the frontage road to be constructed from the vicinity of Gene Taylor's to the subject site. The ~~major~~ larger retail users will be located to the rear of the parcel. Smaller "pad" users will be located on sites which are generally to the north of the proposed relocated frontage road and will have their own parking. Service access to the retail center is available to the rear of the buildings. Buildings will cover approximately 25% of the site whereas almost 60% of the site will be covered by parking and drives. Landscaping as prescribed by the Code will be provided along the frontage and in the parking lot. The relocated frontage road will be dedicated as public right-of-way.

Planning Analysis of Conditional Use Permit Criteria

Section 4-8 of the Zoning and Development Code specifies the criteria used to evaluate all uses requiring a special and conditional use permit. The proposed project falls in the use category of "major shopping center" which requires a conditional use permit in the C-1 and C-2 zoning districts. This section contains staff's evaluation of the conditional use criteria based on the proposed project.

It is important to note that a conditional use is not a use by right. In general terms, the Planning Commission must evaluate whether the use proposed can function satisfactorily at the subject site without creating significant adverse impacts on surrounding properties or public services. Staff analysis of the specific Code criteria are as follows:

Based on an analysis of the use criteria, staff finds the following: (and I'll summarize)

1. The proposed use must be compatible with adjacent uses.

The uses proposed are compatible with those existing in the Hwy. 6&50 corridor.

2. The use shall be approved only if the design features of the site, such as service areas, pedestrian and vehicular circulation, safety provisions, accessory uses, accessways to and from the site, buffering, etc. are sufficient to protect adjacent uses.

Based on staff's review of the preliminary design, provisions are being made to accommodate the applicable design features. Specific design details are required in the final site plan design and are subject to staff approval.

3. Proposed accessory uses must demonstrate that they are necessary and desirable.

No accessory uses are proposed at this time.

4. Adequate public services (e.g. sewage and waste disposal, domestic and irrigation water, gas, electricity, police and fire protection) must be available without the reduction of services to other existing uses.

The petitioner is required to accommodate the concerns of City agencies regarding sewage, waste disposal, and police and fire protection. The petitioner proposes to upgrade and provide sufficient public services and based on review agency comments on the preliminary design, City agency concerns are being met.

5. Other uses complimentary to, and supportive of, the proposed project shall be available including schools, parks, hospitals, business and commercial facilities, transportation facilities, etc.

Availability of support facilities is good. Transportation facilities will require upgrading as detailed in the petitioner's traffic study and are subject to City and CDOT approval.

6. The use shall conform to adopted plans, policies and requirements for parking and loading, signs and all other applicable regulations of this Code.

It is staff's recommendation that the issuance of the conditional use permit be site plan contingent upon all applicable Zoning and Development Code requirements being met in the final site plan design. The use and preliminary design as proposed appears to conform with the intent of the I-70B (Hwy. 6&50) Corridor Guidelines with regard to landscaping, circulation and drainage. The signage plan and guidelines is acceptable to staff with the conditions as noted in the next section.

Staff Recommendation

Based on staff's review of the preliminary design and supporting reports and based on the analysis of the conditional use criteria contained in the Zoning and Development Code, staff recommends approval of the conditional use permit for Rimrock Marketplace retail center if the conditions listed below are satisfactorily addressed prior to issuance of a Planning Clearance.

Should the Planning Commission choose to favorably consider the subject application, staff recommends that the approval be subject to the conditions contained below:

1. The project is approved for a maximum of 550,000 square feet of retail space (not including the

pad sites which will be limited in number by the ability to meet City Zoning Code requirements) to be constructed within the building envelopes identified on the attached site plan. If the proposal should exceed the size limit or the building envelopes proposed, the conditional use permit will subject to reevaluation by the Planning Commission at the discretion of City staff.

2. The project signage will be subject to the ~~attached~~ signage guidelines which are based on those proposed by the petitioner and modified by staff. which are part of this staff report

3. The conditional use permit approval is subject to subsequent acceptance of a site plan and subdivision which meets all Zoning and Development Code requirements and are subject to staff approval, review agency approval, and Planning Commission approval as required by Code.

4. Staff finds that the circulation improvements identified by the petitioner in the "General Project Report" and the "Traffic Impact Analysis for DHI Shopping Center" are necessary for the safe and efficient movement of vehicles to and from the site at acceptable levels of service (LOS). A condition of this approval is that the funding and construction of the identified improvements are the responsibility of the developer and that all circulation improvements are subject to review and approval by the City and CDOT and must meet all applicable requirements. Significant changes to the design and operation of the circulation network as proposed may require reevaluation of the conditional use permit by the Planning Commission at the discretion of City staff.

5. All pad site development is subject to the requirements of the Zoning and Development Code and the adopted signage guidelines for Rimrock Marketplace. Development proposals for the pad sites require Site Plan Review. or other permitting as may be required by Code.

Amend #5

STAFF RECOMMENDATION:

Staff recommends approval of the conditional use permit with the conditions detailed above.

RECOMMENDED PLANNING COMMISSION MOTION

Mr. Chairman, on item #95-30, I recommend that we approve the Conditional Use Permit with the conditions #1-5 and the signage plan in the staff report.

95-30.wpd

• have exhibit which will be adopted

SIGNAGE PLAN
RIMROCK MARKETPLACE

All Signage must meet the requirements contained in Section 5-7 of the Zoning and Development Code (ZDC), as amended. In addition, the following provisions will be part of the signage plan for Rimrock Marketplace:

1. One project identification sign may be located along each roadway frontage. For the purposes of this approval, the project identification sign may be located at the Hwy. 6&50 frontage (as identified on the attached site plan) rather than having to be located along the relocated frontage road. The project identification sign along Hwy 6&50 may be a freestanding sign, not to exceed 25 ft. in height and 300 square feet in area. The project identification signs along the Independent Avenue and 25 1/2 Road frontages shall be limited to monument signs, not to exceed 6 feet in height and 150 square feet in area.

2. Only monument signs (in addition to wall signs), not to exceed 6 feet in height and 150 square feet in area are permitted for identification of uses on the pad sites as identified on the attached site plan.

3. Wall mounted signs are permitted in accordance with the sign code. For purposes of signage allowance calculations, the retail center must utilize the relocated frontage road rather than Highway 6&50.

4. No roof signs are permitted anywhere in the development.

5. Traffic control signs require the approval of the City Development Engineer.

SIGNAGE GUIDELINES FOR:
RIMROCK MARKETPLACE

February 27, 1995

All signage must meet the requirements contained within Section 5-7 of the latest *City of Grand Junction Zoning and Development Code*. In addition to the requirements of the sign code the following standards will be a part of the signage plan for Rimrock Marketplace.

- Three general identification sign along the proposed Frontage Road one of which will be near the primary entrance to the site. The applicant may reduce the total signage square footage at one location and increase the allotment at an other. In no case will the aggregate allotment exceed that currently allowed for within the Code.

- Only "monument type" signs will be permitted for identification of the future uses on the pad sites shown on the development plans.

- Wall mounted signs will be permitted in accordance with the sign code.

- No roof top signage will be permitted.

- Traffic control signs will require the acceptance of the City's Development Engineer.

LANDesign
PLANNING • ENGINEERING • SURVEYING

March 27, 1995

Michael Drollinger, Senior Planner
Community Development Dept.
City of Grand Junction
250 North 5th. Street
Grand Junction, CO 81501

RE: RIMROCK MARKET PLACE, file CUP-95-30

Dear Mr. Drollinger:

This letter is in response to concerns by the owner of the Corner Store Property to appeal the Planning Commission decision in reference to Rimrock Marketplace Shopping Center. The following is submitted for your consideration.

It is our understanding that the primary concern is with drainage flows and patterns and their affect on his property. The grading proposal for the planned shopping center does not include or propose any grading outside the boundaries of the site adjacent to the Corner Store property. Our proposal is in accept the historic run-off from the Corner Store property. The proposed Frontage Road will be graded to an elevation in a manner to receive the historic off site drainage flows.

We have taken the liberty to attached a General Grading Plan and Cross Section in the vicinity of the Corner Store property. Bear in mind, that the plan is general in nature and further refinement will occur during the final design phase of the Frontage Road.

If you or any other staff members have questions or need additional information do not hesitate to contact our office.

Respectfully,

Thomas A. Logue

Thomas A. Logue, project manager

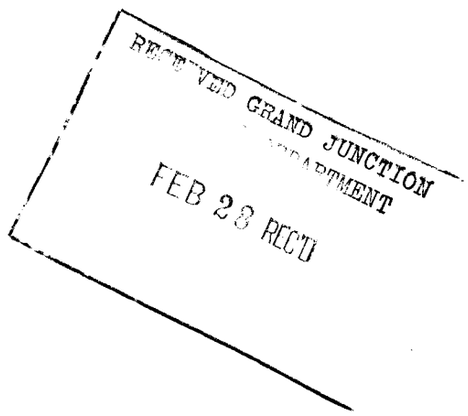
xc: Denver Holdings, Inc.

200 NORTH 6TH ST. • GRAND JUNCTION, CO 81501 • FAX (970) 245-3076 • (970) 245-4099

715 Horizon Drive, Suite 330
Grand Junction, Colorado 81506
303-243-0250 Fax 243-1721

APPRAISAL, Inc.

February 27, 1995



Mr. Denny Granum
c/o Monument Realty, Inc.
759 Horizon Drive Suite A
Grand Junction, Colorado 81506

RE: 5% City of Grand Junction Parks Fee
Tim Woodmansee, City Representative

Dear Mr. Granum:

As you requested, I have completed a limited, restricted appraisal report of 53.50 acres located on the west side of US Highway 6 & 50 in the City of Grand Junction. Currently, the "Property" is legally four parcels ranging from 2.0 acres to 33.90 acres based mostly on the Mesa County assessor's data. Per your instructions, for the purpose of this report discussed both as four parcels and one but it is valued as one- it is viewed as a single tract because they are being purchased by one entity. A retail shopping park is reportedly proposed. The property has substantial frontage on the highway and extends north to E¼ Road. The tracks and right-of-way of the Denver and Rio Grande Western are behind the property. As of the effective date of this limited, restricted appraisal report, the Subject does include some improvements. The most significant of these houses Hanson Equipment Company. However, since its' demolition/removal is planned with all improvements retained by the owner and not the buyer, for the purpose of this report, the "Property" is valued "as if vacant" and available for development. It is presently zoned C-1 and C-2 in the City of Grand Junction. The planned development may obtain Highway Oriented (HO) zoning as part of the final approval but these allow comparable uses- for the most part. Note that the whole "Property" is now being surveyed but this is not completed or available to the appraiser. I do have a survey of one of the parcels. The data contained herein is based on the Mesa County Assessor's data which is assumed to be reasonably accurate. If it's incorrect, this letter must be revised!

The property rights appraised in this report are those rights of Fee Simple Estate Ownership. It is defined as "absolute ownership unencumbered by any other interest or estate subject only to the limitations of eminent domain, escheat, police power, and taxation." [AIREA, *The Dictionary of Real Estate Appraisal,* 1984, P. 123.] The limited, restricted appraisal report assumes the Subject to be free and clear of any leases, liens, or encumbrances other than ordinary mortgage financing.

No personal property is included herein. The appraisal considered real estate only (assumed vacant). By definition, real estate includes the land, buildings, and permanently attached fixtures but existing improvements are excluded, per your instructions.

The Function or Use of this limited, restricted appraisal report is to present some of the appraiser's reasoning- NOT all the appraiser's data, logic, and reasoning used in arriving at an opinion of value. Its' sole purpose is to provide a means of analyzing the property for the City's 5% open space fee- a fee charged for development of unimproved land for parks and recreation development. This limited, restricted appraisal report has been done in conformance with the Departure Provision of USPAP. Tim Woodmansee has stated clearly to me that this limited, restricted appraisal report is adequate for his purposes. This report cannot be understood properly understood by any other party without the additional information that is in my work file. Do not distribute it to others. I recommend if you have any questions regarding this limited, restricted appraisal report that you call me.

The effective date of this limited, restricted appraisal report is February 23, 1995. This is the date of inspection by Stephen T. Bruce and the date to which any estimation of value apply- again, assuming the property to be vacant. This limited, restricted appraisal assignment and the reporting format were at your request and that of the City of Grand Junction.

Regarding data collection, the date range searched was 1993 to present. The geographical limits of the search was primarily west Grand Junction and surrounding areas for sales of property with highway frontage and similar highest and best use potential. The land that was searched was anything with similar/comparable zoning and use potential. Data most relevant would be acreage tracts- say from 2.0 acre on up. Anything with the highest and best use similar to the Subject within those parameters was considered.

The limited, restricted appraisal report is a document conforming to my understanding of the Departure Provision of Uniform Standard of Professional Practice (USPAP) and is intended to arrive at an opinion of Market Value for the Subject. The methodology used in arriving at this value is based upon three traditional approaches to value: The Cost, Income, and Comparative Sales Analysis Approaches were considered. Only the Comparative Sales Analysis was determined to be applicable because this is an analysis of vacant land. When appraising vacant land, the Cost and Sales Comparison Approaches render identical figures. There is no identifiable rental market for the property type. Therefore, only the Sales Comparison Approach is used in this case. In verifying the data used in this analysis, I have discussed details of the sales at length with one or more of the parties to the transactions (the seller, buyer, seller's agent, lessor, lessee, or lessor's agent). These conversations, combined with inspections whenever possible, have given me a perspective relative to the condition of the properties, the terms of the sale, personal property when included, and highest and best use. In addition, data is confirmed whenever possible in the records if the County Clerk and Recorder's office. Competitive land sales follow.

The appraiser has the competence and appropriate knowledge and experience to complete the appraisal assignment.

About the Property

The Subject is assumed vacant. The four parcels included are appraised as one since they will be all one parcel under the pending development plan and payment of the open space fees. To be clear and understandable, a discussion as they currently exist follows. Included in this discussion is some background information about the existing options to buy the four tracts.

Parcel 1: Alvis D. Fetter reported owner, Tax Schedule Number 2945-103-00-147

This is a 2.0 acre vacant tract located south of E¼ Road. It is irregular in shape and is largely an irrigation ditch. The south bank slopes down to adjacent land. I have obtained a survey of this parcel stating a net land area of 1.9956 acres (the assessor shows 1.50 acres). The west end is bounded by the railroad right-of-way. The property is otherwise surrounded by private land. The only apparent access is a one lane trail along the railroad. The access is reportedly legal but this has not been verified. The limited access, topography, and shape make this property of very limited development potential without the assemblage of more suitable land.

Parcel 2: Fred Ligrani reported owner, Tax Schedule Number 2945-103-00-081

This is a 33.90 acre parcel which has a home on it. There is approximately 1,300 feet of frontage on US Highway 6 & 50 (excludes the frontage of parcel # 2945-103-00-080 which is not a subject). It is an irregular shape. The back adjoins the railroad for approximately 951 feet. It is largely agricultural use at present. The assessor classifies it as 1 acre of commercial use, 14.60 acres of irrigated cropland, 18 acres of dry grazing, and .30 acres of roads and ditches. The home is a 1,229 square foot 1½ story built in 1900. There are several agricultural outbuildings which are also excluded from this analysis. There is some evidence of high water potential noting salt grass, etc. is present at the surface where there is no agricultural production. No soils report has been provided.

Parcel 3: H.N.L. Company reported owner, Tax Schedule Number 2945-103-00-079.

This is a 7.71 acre parcel operated as Hanson Equipment located at 2523 Highway 6 & 50. There is 56.70 feet of highway frontage plus some 480 feet on E¼ Road making this a corner lot. It is now improved with a 17,400 square foot commercial building built in 1977. It is a trucking sales and service business also carrying agricultural equipment. Like the other parcels, this property is under contract. In the contract, which is discussed in more detail later, the seller retains rights to the improvements. That is, the seller shall retain the right to remove all improvements before vacating the property. The site appears to be generally level with some sloping at the south border.

Parcel 4: Albino Venegas reported owner, Tax Schedule Number 2945-152-00-001

This is a vacant 9.89 acre tract located south the properties discussed above. From what I can determine from the assessor's schedule maps, there is no apparent access to this property. There is a dedicated right-of-way (25½ Road) on the east end but this "street" is

not presently in. The right-of-way intersects with the highway perhaps 200 feet north of this parcel. The assessor indicates that some older improvements are presently considered of no value and the land is idle- no apparent use.

The total of the above parcels is 53.50 acres. I have been provided with copies of contracts and/or purchase options on all four. In reviewing these, if must be kept in mind that some of these have existing improvements and the buyer is attempting an assemblage of four parcels which are needed for the ultimate goals. Even when the seller has the right to remove the existing improvements, the buyer is still paying for something beyond the land alone. Obviously if the buildings are to be salvaged, there is substantial cost in dismantling and reconstructing them at a new location. This may be less than the cost of an entirely new building but, in the case of Hanson Equipment, there is still substantial cost to Hanson Equipment. The other factor is an assemblage. When specific properties are targeted for an acquisition, premiums frequently result. Sometimes the difference is subtle. Sometimes it is substantial. An assemblage is "The combining of two or more parcels, usually but not necessarily contiguous, into one ownership or use." The Dictionary of Real Estate Appraisal, American Institute of Real Estate Appraisers, 1984, Page 19. The assemblage of the four parcels is not considered herein. There is the potential of a substantial difference between cost and value in the assemblage of parcels. This will become apparent as we move through the comparable sales data presented later. But first, a review of the Subject agreements is appropriate.

Parcel Numbers	Owner	Size	Contract Price	Price/SF	Improvements	Comments
#1: 2945-103-00-147	Fetter	2.0 Acres	$10,000	$0.11	None	Lmtd access, poor topography
#2: 2945-103-00-081	Ligrani	33.90 Acres	$938,683.15*	$0.6338	Older House	*Ttl price based on 34.0 acre contract
#3: 2945-103-00-079	H.N.L. Company	7.71 Acres	$1,355,000	$4.03	17,400 SqFt truck service facility	Seller retains Improvements
#4: 2945-152-00-001	Venegas	9.89 Acres	$140,000	$0.32	No Imp Value	Limited access
Total/Average	**Varies**	**53.50 Acres**	**$2,443,683.15**	**$1.05**	**Assumed all vacant**	**Assemblage of targeted properties**

Obviously there is a wide range in the contract prices for the Subject parcels. The Hanson Equipment property heavily skews the average up. This is the only property with significant improvements and it is also the only one small enough to be considered all frontage property. Developed commercial property along the highway is generally no more than 200 feet deep. Therefore, the rear portions of the larger tracts may be considered excess land by a typical commercial user. If these contracts are to be given any weight at all, it should go to Parcels 2 and 4- #1 is a really poor piece of land that is simply needs to connect the others. #3 is heavily improved which are not to be considered in this analysis.

Parcel 2 is smaller than the total property analyzed herein. In common appraisal practice, this warrants a decreasing adjustment. Parcel 3 is much smaller than the total but

this tract has limited access and exposure. With a total Subject of 53.50 acres included, there are some 2,330,460 square feet.

The purpose of this limited, restricted appraisal report was to estimate the market value of the property as of the effective date, according to the instruction provided by the client. I have included some base data used in my analysis- not all of the sales reviewed. Market value, as used in this limited, restricted appraisal report, is defined as:

"The most probable price, as of a specified date, in cash, or in terms equivalent to cash, or in other precisely revealed terms for which the specified property rights should sell after reasonable exposure in a competitive market under all conditions requisite to a fair sale, with the buyer and seller acting prudently, knowledgeably, and for self-interest, and assuming that neither is under undue duress." *(The Appraisal of Real Estate,* 10th ed., published in 1992 by the Appraisal Institute). The contract price in some of the contracts show the buyer may be under duress- reacting to targeting property for an assemblage.

The Highest and Best Use of the Subject is its potential for commercial development. Viewed as the total property, it is large and has good exposure and access to Highway 6 & 50. A retail center or heavy commercial subdivision may be appropriate. Demand for such use is questionable since no developments of this type have occurred in Grand Junction for several years. Besides the proposed development of the Subject, there are other proposals on the table at this time but none have actually occurred. "As is" most of the property is vacant or have improvements of limited contributory value. However, the Hanson property has improvements of substantial value. Alone, the Highest and Best Use of that property is to remain as improved. But, in the assemblage of the total property for the anticipated use, it is a key parcel for access to the rear sections of the total. Highest and Best Use is defined as:

"The reasonably probable and legal use of vacant land or an improved property, which is physically possible, appropriately supported, financially feasible, and that results in the highest value. The four criteria the highest and best use must meet are legal permissibility, physical possibility, financial feasibility, and maximum profitability.

Highest and Best Use of land or a site as though vacant is: Among all reasonable, alternative uses the use that yields the highest present land value, after payments are made for labor, capital, and coordination. The use of a property is based on the assumption that the parcel of land is vacant or can be made vacant by demolishing any improvements.

Highest and Best Use of property as improved is: The use that should be made of a property as it exists. An existing property should be renovated or retained as is, so long as it continues to contribute to the total market value of the property, or until the return from a new improvement would more than offset the cost of demolishing the existing building and constructing a new one."

[Appraisal Institute, *The Dictionary of Real Estate Appraisal, 3rd Edition,* 1993, page 171.]

Competitive land sales are presented in the following table:

Abstract of Comparable Land Sales

Sale No.	Parties	Bk-Pg Sale Date Sales Price	Size	Financing	Price per SF	Location and Comments	Zoning
1	Sellers to McCallum	2050-272 02/94 $180,000	2.42 Ac's	$30k @ 6% due 03/96 sel'r	$1.71 before demo, $1.99 after	2491 Hwy 6&50. Old motel demo'd for $30,000. Water/Sewer districts formed later.	C-2 City
2	Weaver to Vogel	1918-705 08/92 $135,000	2.09 Ac's	Cash	$1.48	2586 F Road. Now fabric store. Side street by buyer. Zoning change by both parties.	PB City
3	Gormley to Dillon R/E (City Mkt)	1969-370 04/93 $714,800	5.47 Ac's	Cash	$3.00	NW corner 26 & F Rd's. Grocery store planned- still vacant. Sold w/3 WD's	PB City
4	Skiff to Loncarich, EtAl	1949-271 01/93 $127,500	30.69 Ac's	$185k Conv 1st w/other security	$.10	969 19 Road, Fruita. 2 parcels nth side old highway. Resi/Agri surroundings. Lmtd access.	C-2 Fruita
5	Lunnon to Lift Industries	1992-554 07/93 $115,000	10.88 Ac's	$85k sel'r @ 8% due 07/98	$.24	Lots 1 & 3 Appleton Comm Park. Nth side I-70 @ 23 Road. Assemblage.	PC County
6	Hughes to Peachtree Hardware	2000-623 08/93 $95,000	7.24 Ac's	Cash (No TD)	$.30	Lots 7-12 Valley East Comm Park- East of 31½ Rd, Nth of Perkins.	PC County
7	Moss to Badzinski	2053-538	17.6 Ac's	$364,320 Conv 1st, No date/rate	$0.63	681 Horizon Drive. Could go Resi/Comm/Bus. Poor soils known & High Wtr Potential- good location	PB City
8	AFJ Ltd, EtAl to Arnold	2047-189 02/94 $130,000	5.11 Ac's	Cash (No TD)	$0.58	1547 Independent Ave near Sam's Club & across from Subject.	C-2 City

Next, a brief discussion of each sale:

Sale 1 is located about one half mile west of the Subject. It is proposed for a strip type shopping center. The use potential is comparable but it is much smaller. This warrants a substantial decreasing adjustment. There were older improvements on the property when sold but these were removed at a cost $30,000- demolished.

Sale 2 is near the 26 Road and Patterson intersection about one mile north of the Subject. It has been improved with a commercial use- a fabric store. The sale is now about 2½ years old. It is also much smaller. The location is inferior. Matched pairing to Sale 1 indicates a 34% increase for location but the size is still a significant issue. A substantial decrease is warranted for size.

Sale 3 is located near Sale 2 but is the corner at 26 Road. The property was reportedly purchased for a new City Market but the buyer stated that a new store is way

down the road. They had targeted this parcel for their use. Although larger than Sales 1 and 2, this sale shows a higher price per square foot. This tends to exemplify what prices can do when a property is targeted for acquisition. From City Markets standpoint, the purchase of the land, even when at a very high price, is really a small part of the overall investment. The location is better than Sale 2 being on the intersection. Substantial decreases are warranted for size as well as for the motivations of the buyer.

Sale 4 is a large property that is zoned commercial on the east side of Fruita. It is east of the High School. There is limited exposure to the Highway and very limited access- over a small irrigation ditch. The location at Fruita is inferior and limited access and exposure also warrant increasing adjustments. This sale tends to set a minimum value for the Subject.

Sale 5 is on the north side of Interstate 70 near 23 Road. It has good exposure and access but may be more appropriate for a heavy commercial use such as trucking, etc. It was purchased as an assemblage. The location is inferior since the property is further from town. The size is smaller warranting some decrease. Overall, an increase is appropriate. This sale tends to support a value of the Subject is something over $0.35 per square foot.

Sale 6 is a fairly large parcel (6 lots) located southwest of Clifton and south of the I-70 Business Loop. The location is inferior. The smaller size warrants decreasing adjustments. Following adjustments, this sale tends to support a value of the Subject of around $0.40 per square foot.

Sale 7 is a large parcel at Horizon Drive and G Road. The location is rather comparable to the Subject's. The size is smaller indicating a decreasing adjustment. This property has been proposed for a mix of commercial and residential uses in the past. It is not clear what the plan is now. Decreasing for size at 20% supports a value of about $0.50 per square foot.

Sale 8 is a much smaller parcel across the Highway from the Subject near Sam's Club. The location is similar but the much smaller size warrants decreasing adjustments. Decreasing 40% for size indicates a value of the Subject at about $0.40 per square foot.

These are the best sales found for an analysis of the Subject. The most meaningful of these, those with the least adjustments, support a value of the Subject within a range of $0.40 to $0.50 per square foot. This is further supported by the contract options for segments of the Subject- Parcels 2 and 4. The limitations of using Parcels 1 and 3 for an analysis of the total property have already been discussed. Based on the data presented, it is my opinion that a reasonable and fair Market Value of the Subject land, disregarding any contributory value of improvements, is $0.45 per square foot. Applying this to the total land area of the Subject indicates the following:

53.50 Acres = 2,330,460 SqFt @ $0.45 per SqFt = $1,048,707 = $1,050,000 Rd.

Marketing time for the Subject is estimated at between one and two years. If priced competitively it should sell within this time period. This limited, restricted appraisal does

assume that there is reasonable access to the entire property from both US Highway 6 & 50 and from E¼ Road, that the site size is correct, that the Hanson Equipment improvements be removed per the contract, and assuming the existing zoning and/or Highway Oriented zoning which may be required for the anticipated use, and is subject to the contingent limiting conditions attached to and made a part of this limited, restricted appraisal report.

Based on my research and analysis, it is my opinion that, as of February 22, 1995, the market value of the Subject land without any value given to the improvements, was:

ONE MILLION FIFTY THOUSAND DOLLARS
($1,050,000.00)

In this limited, restricted appraisal report, there has been no investigating of any lien's which may or may not exist. My work has to do only with an estimate of value. The Property has no apparent natural, recreational, cultural, or scientific value. The scope of the work does not include possible impacts or price controls, energy or licensing requirements, environmental regulations, or other restrictions except where brought to my attention and clearly disclosed in the limited, restricted appraisal report. It should be read by no one but you and the City representative. Its' sole purpose is for the 5% open space fee.

Respectfully Submitted,

Stephen T. Bruce
Colorado License #CG01313500
Certified General Appraiser- through 1997

CERTIFICATE OF LIMITED, RESTRICTED APPRAISAL

This limited, restricted appraisal report was prepared in conformance with the Departure Provision of USPAP. I certify that, to the best of my knowledge and belief:

a. The statements of fact contained in this limited, restricted appraisal report are true and correct.

b. The reported analyses, opinion, and conclusions are limited only by the reported assumptions and limiting conditions, and are my personal, unbiased professional analyses and conclusions.

c. I have no present or prospective interest in the property that is the subject of this limited, restricted appraisal, and I have no personal interest or bias with respect to

the parties involved.

d. My compensation is not contingent upon the reporting of a predetermined value or direction in value that favors the cause of the client, the amount of value or direction in value that favors the cause of the client, the amount of value estimate, the attainment of a stipulated result, or the occurrence of a subsequent event. The report complies with all statutes, rules, and regulations prohibiting discrimination on the basis of race, color, religion, national origin, sex, marital status, age, or location of property. The limited, restricted appraisal assignment was not based on a requested minimum value, or specific valuation, or the approval of a loan in the determination of Market Value range.

e. My analyses, and opinions, and conclusions were developed, and this limited, restricted appraisal report has been prepared in conformity with the requirements of the Code of Professional Ethics and the Standards of Professional Practice of the Appraisal Institute.

f. The use of this limited, restricted appraisal report is subject to the requirements of the Appraisal Institute relating to review by its duly authorized representatives.

g. Stephen T. Bruce has made a personal inspection of the property that is the subject of this limited, restricted appraisal. He is licensed to appraise real estate in Colorado.

h. No one provided significant professional assistance to the person signing this limited, restricted appraisal report.

i. This limited, restricted appraisal report is subject to all the contingent and limiting conditions attached to and made a part of this report.

Respectfully Submitted,

Stephen T. Bruce
Colorado License #CG01313500
Certified General Appraiser- through 1997

GENERAL ASSUMPTIONS

This limited, restricted appraisal report has been made with the following general assumptions:

1. No responsibility is assumed for the legal description of, or matters including legal or title considerations. Title to the property is assumed to be good and marketable unless otherwise stated.

2. The property is appraised free and clear of any or all liens or encumbrances unless otherwise stated.

3. Responsible ownership and competent property management are assumed.

4. The information furnished by others is believed to be reliable. However, no warranty is given for its accuracy.

5. All engineering is assumed to be correct. The plot plans and illustrative material in this limited, restricted appraisal report are included only to assist the reader in visualizing the property.

6. It is assumed that there are no hidden or inapparent conditions of the property, subsoil, or structures that render it more or less valuable. No responsibility is assumed for such condition or for arranging for engineering studies that may be required to recover them.

7. It is assumed that there is full compliance with all applicable federal, state, and local environmental regulations and laws unless noncompliance is stated, defined, and considered in the appraisal report update.

8. It is assumed that all applicable zoning and use regulations and restrictions have been complied with, unless a nonconformity has been stated, defined, and considered in the appraisal report update.

9. It is assumed that all required licenses, certificate of occupancy, consents, or other legislative or administrative authority from any local, state, or national government or private entity or organization have been or can be obtained or renewed for any use on which the value estimate contained in this limited, restricted appraisal report is based.

10. It is assumed that the utilization of the land improvements is within the boundaries of property lines of the property described and that there is no encroachment or trespass unless noted in this report.

LIMITING CONDITIONS

This limited, restricted appraisal report has been made with the following general limiting conditions:

1. The distribution, if any, of the total valuation of this report between land and improvements applies only under that stated program of utilization. The separate allocations for land and buildings must not be used in conjunction with any other appraisal and are invalid if so used.

2. Possession of this limited, restricted appraisal report, or a copy thereof, does not carry with it right of publication. It may not be used for any purpose other than that party to whom it is addressed without the written consent of the appraiser and in any event only with proper written qualifications and only in its entirety.

3. The appraiser herein by reason of this limited, restricted appraisal report is not required to give further consultation, testimony, or be in attendance in court with reference to the property in question unless arrangements have been previously made.

4. Neither all nor any part of the contents of this limited, restricted appraisal report (especially any conclusions as to value, the identity of the appraiser, or the firm with which the appraiser is connected) shall be disseminated to the public through advertising, public relations, news, sales, or other media without the prior consent and approval of the appraiser.

5. In this limited, restricted appraisal assignment, the existence of potentially hazardous material used in the construction or maintenance of the building, such as the presence of urea formaldehyde foam insulation, and/or existence of toxic waste, which may or may not be present on the property, has not been considered. The appraiser is not qualified to detect such substances. I urge the client to retain an expert in this field if desired.

6. A statistically high number of residential properties are affected by radon on Colorado; a radon detection test is the responsibility of the client.

7. The limited, restricted appraisal assignment was not based on a requested minimum valuation, a specific valuation, or the approval of a loan. Market Value range was provided herein.

8. The appraiser is certified and is licensed to appraise commercial real estate in Colorado. His interpretation of the Appraisal Foundation and the State of Colorado regulations have been complied with.

9. The client for this report is Mr. Denny Granum of Monument Realty.

QUALIFICATIONS OF

Stephen T. Bruce

715 Horizon Drive, Suite 330, Grand Junction, CO 81506

(303) 243-0250, Fax 243-1721

- **PROFESSION:**

Real Estate Appraiser and Consultant.
Associate with B & B Appraisal, Inc.

- **EDUCATION:**

Bachelor of Science Degree, San Diego State University, San Diego, California.

- **CURRENT MEMBERSHIP:**

Certified General Appraiser in Colorado - CG01313500
Project Coordinator: Several Right-of-Way acquisition projects for the City of Grand Junction and Mesa County

- **COURSES - AMERICAN INSTITUTE OF REAL ESTATE APPRAISERS:**

1981 - Real Estate Appraisal Principles
1981 - Basic Valuation Procedures
1982 - Capitalization Theory and Techniques Parts I, II, III
1983 - Case Studies in Real Estate Evaluation
1983 - Valuation Analysis and Report Writing
1984 - Real Estate Investment Analysis

- **RECENT SEMINARS:**

1994: Evaluating Residential Construction (Appraisal Institute)
1994: Part A, Standards of Professional Practice (Appraisal Institute)
1993: The New Uniform Residential Appraisal Report (Appraisal Institute)
1993: Appraising with the Residential Underwriter in Mind (Appraisal Institute)
1991: Commercial and Residential Review (Appraisal Institute)

- **LOCATIONS OF WORK COMPLETED:**

Colorado Cities - Aspen, Delta, Durango, Fruita, Craig, Glenwood Springs, Gunnison, Grand Junction, Meeker, Montrose, Rifle, Silverton, Steamboat Springs, Telluride, Vail/Beaver Creek.

Colorado Counties - Delta, Delores, Eagle, Garfield, Gunnison, LaPlata, Mesa, Moffat, Montezuma, Montrose, Ouray, Pitkin, Routt, Rio Blanco, San Juan, San Miguel

Utah Counties - Grand, Emory, Uintah

- **QUALIFIED EXPERT WITNESS:**

Mesa County District Court, Delta County District Court, and American Arbitration Board - Denver, Colorado.

- APPRAISAL EXPERIENCE:

Currently an independent fee appraiser associated with B & B Appraisal, Inc., in Grand Junction, Colorado. Operated Stephen T. Bruce & Co., 1988 and 1989. Was associated with Frank Nisley, Jr. and Associates, Inc., as independent fee appraiser from 1976 to 1977 and 1980 to 1988. As principal of Bruce Development Corp., developed over 300 single family homes; from land acquisition to finished home sales, A & D financing, processing, etc., in Southern California.

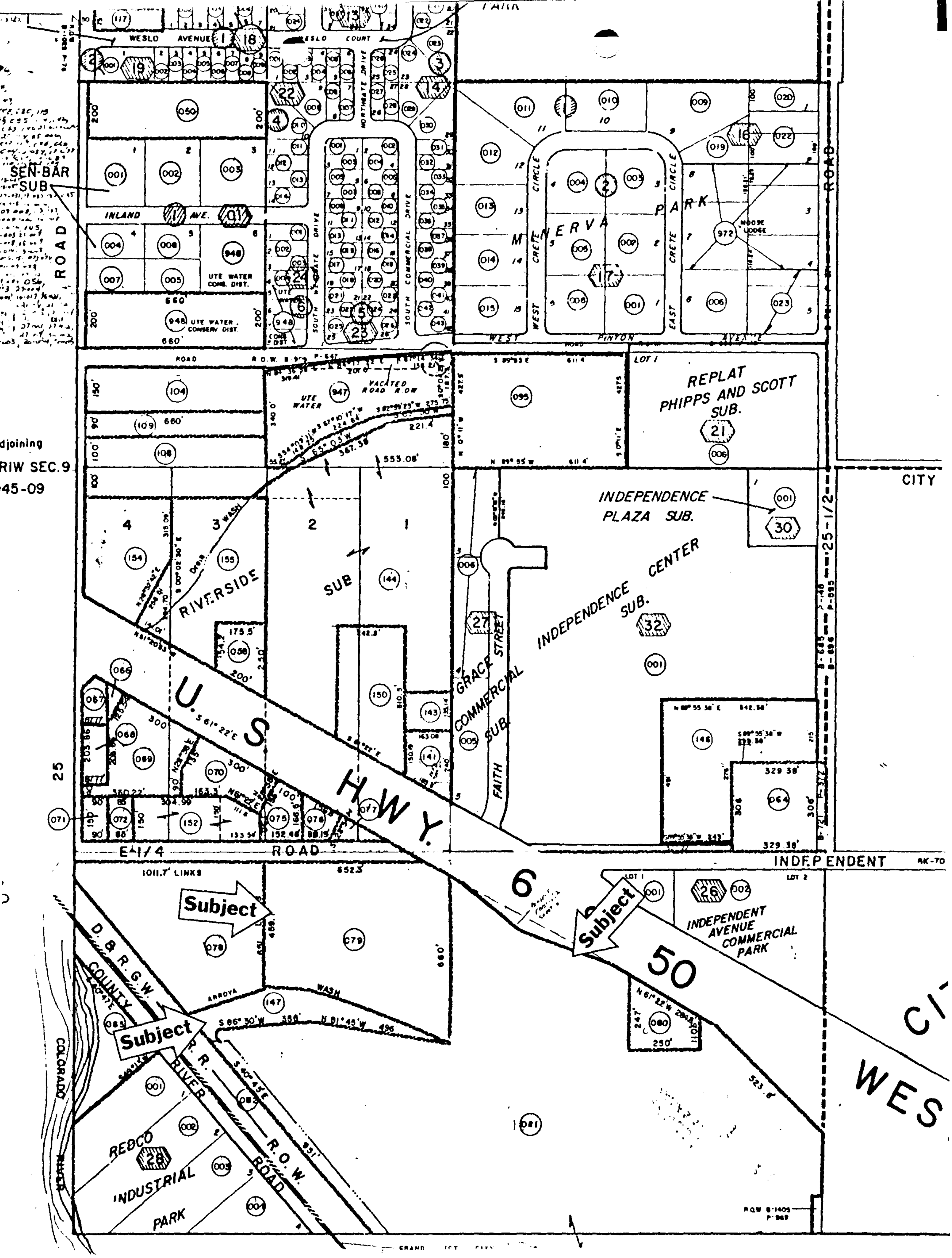
Includes single family dwellings, townhomes, condos, residential income properties, vacant land, farm and ranch, recreational/resort areas, condemnation and development. Numerous Commercial and Industrial properties.

- SOME APPRAISAL CLIENTS ARE:

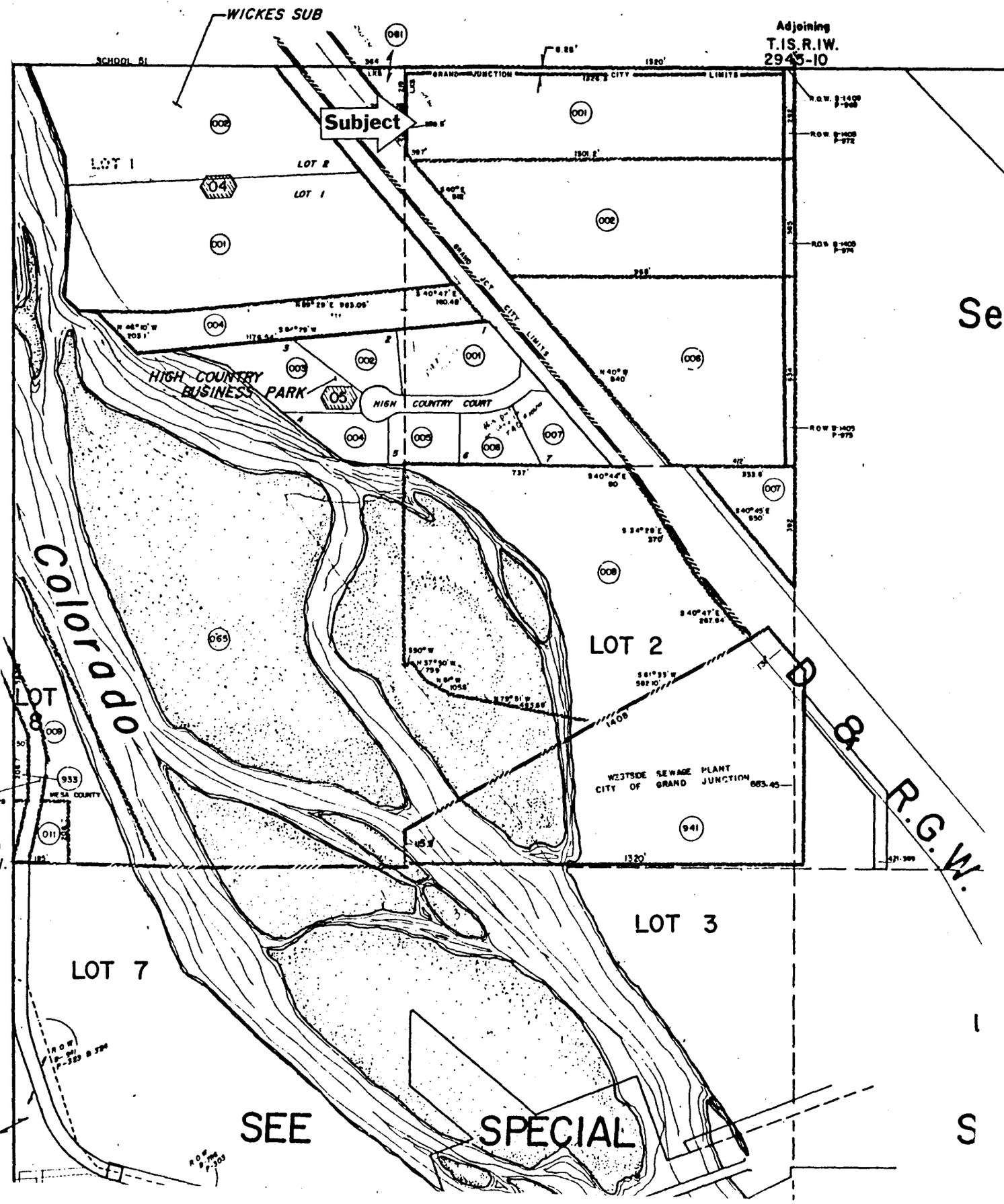
Banc One Mortgage	Bank of Aspen	Bank of Colorado
Centennial Savings Bank	Colorado National Mortgage	Farm Credit Services
Federal Land Bank	Federal Deposit Ins. Corp.	Fidelity Mortgage
Mesa National Bank	Palisades National Bank	Resolution Trust Corp.
Unifirst Mortgage	Norwest Bank of Colorado	

Various Credit Unions & Lenders
Various Attorneys and Public Utilities

5/94



WESLO AVENUE
WESLO COURT
SEN-BAR SUB
INLAND AVE.
ROAD
UTE WATER CONS. DIST.
UTE WATER CONSERV DIST
NORTHGATE DRIVE
SOUTH COMMERCIAL DRIVE
MINERVA PARK
WEST CRETE CIRCLE
EAST CRETE CIRCLE
WEST PINYON AVENUE
MOOSE LODGE
REPLAT PHIPPS AND SCOTT SUB.
VACATED ROAD R.O.W.
UTE WATER
djoining
RIW SEC.9
045-09
CITY
INDEPENDENCE PLAZA SUB.
INDEPENDENCE CENTER SUB.
RIVERSIDE SUB
GRACE STREET
COMMERCIAL SUB.
FAITH
U.S. HWY. 6
25-1/2
E-1/4 ROAD
INDEPENDENT
1011.7' LINKS
Subject
Subject
Subject
50
INDEPENDENT AVENUE COMMERCIAL PARK
ARROYA WASH
D.&R.G.W. R.R. R.O.W.
COUNTY ROAD
RIVER ROAD
COLORADO RIVER
REDCO INDUSTRIAL PARK
WES


WICKES SUB
Adjoining
T.1S.R.1W.
2943-10
Subject
SCHOOL St
GRAND JUNCTION CITY LIMITS
LOT 1
LOT 2
LOT 1
HIGH COUNTRY BUSINESS PARK
HIGH COUNTRY COURT
Colorado
LOT 2
LOT 3
LOT 7
LOT 8
D & R.G.W.
WESTSIDE SEWAGE PLANT
CITY OF GRAND JUNCTION
MESA COUNTY
SEE SPECIAL

February 28, 1995

Harold R. Woolard
DBA The Corner Store
2541 Hwy 6 & 50
Grand Junction, Co 81505

Community Development Director
250 North 5th St.
Grand Junction, Co 81501

Gentlemen:

I am expressing my concerns regarding the RimRock Shopping complex which is proposed to the south of my property.

Vacating the existing frontage road will have a negative impact on my business. The only remaining access to my property will mean that westbound customers must cross a double yellow line and make an unprotected turn across a heavy flow of traffic. My customers buy trailers, I bring trailers onto my lot for sale--moving these vehicles across the highway with no light is hazardous. The present flow of traffic is heavy, imagine what it will be like when construction and then the operation of this shopping center impacts the number of vehicles traveling this route.

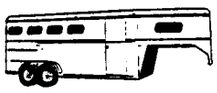
There is no guarantee that the proposed frontage road will not cause a drainage problem on my property. Review of the proposed plans indicate there will be an elevation quite a bit higher than the lower level of my property, which will not allow access to my property and certainly would cause accumulation of runoff on my land and in my building's lower level.

Please provide me with your written assurance that my concerns are not valid. A written reply is mandatory for my peace of mind concerning this project. Thank you for your time and consideration.

Sincerely,

Harold Woolard

Harold Woolard

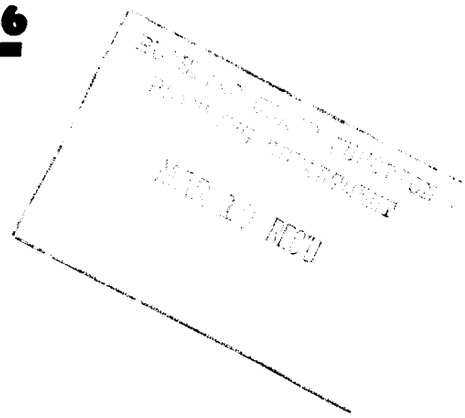


The Corner Store

Trailers for Every Purpose

2541 Hwy 6 & 50 • Grand Junction, CO 81505 • FAX (303) 242-1308

241-9766



March 9, 1995

Community Development Department
250 North 5th St.
Grand Junction, Co. 81501

As no one has seen fit to provide assurances that the drainage plans for Rim Rock Shopping Complex will not impact my property and that the access to my property will not be altered, I am appealing to the City Council to reconsider acceptance of the project.

Consider this letter as that appeal and forward it accordingly. I genuinely need written assurance that my property and income will not be damaged by this project.

Sincerely,

Harold Woolard

Harold Woolard
Owner The Corner Store

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO, CALIFORNIA 95814-2922

REPLY TO
ATTENTION OF

March 24, 1995

Regulatory Branch (199575087)

Mr. Michael Drollinger
City of Grand Junction
Community Development Department
250 North 5th Street
Grand Junction, Colorado 81501

Dear Mr. Drollinger:

I am writing to you regarding the proposed Rimrock Marketplace shopping center. The property is located in Sections 10 and 15, Township 1 South, Range 1 West, Mesa County, Colorado.

The Corps of Engineers recommends that the 50-acre site have a wetland delineation performed to determine the need for a Department of the Army permit. Due to the scope of the project, I am enclosing a list of wetland delineation consultants to expedite this process. We will have to verify any consultant's delineation.

If you have any questions, please write to Randy Snyder at the address below or telephone (303) 243-1199.

Sincerely,

Grady L. McNure
Chief, Western Colorado Regulatory Office
402 Rood Avenue, Room 142
Grand Junction, Colorado 81501-2563

Enclosure

Copy Furnished:
Mr. Dan Yacovetta, Denver Holdings Incorporated, 10065 East Harvard Avenue, Suite 803, Denver, Colorado 80231

Corps of Engineers, Sacramento District
Western Colorado Regulatory Office

402 Rood Avenue, Room 142
Grand Junction, Colorado 81501-2563
February 17, 1995

WETLAND DELINEATION CONSULTANTS

Increasingly, potential applicants for Department of the Army permits are hiring environmental consultants to do wetland determinations and delineations for them. In addition, because of Federal budgetary and work force constraints, we are requesting that many potential applicants have wetland delineations done by consultants. Under existing constraints, the Corps of Engineers will field verify as many wetland delineations as possible. We recommend that wetland delineations performed by consultants be submitted for review and verification at least one month in advance of a submittal of a Department of the Army permit application.

All wetland delineations will be reviewed to insure compliance with the methodology contained in the Corps of Engineers Wetlands Delineation Manual dated January 1987 and that sufficient information is provided to justify the wetland/upland boundaries as shown on the delineation map(s). To obtain a jurisdictional determination letter from the Western Colorado Regulatory Office, all consultant-prepared wetland delineations shall contain:

1. A wetland delineation map depicting a point to point survey of the wetland boundary as flagged by the consultant in the field. The consultant should review the survey for accuracy before submittal to this office. We prefer topographic maps with contour intervals of one or two feet and at a scale of 1 inch equals 100 feet. However, these specifications may vary depending upon the scope of the delineation and the nature of the project. In certain situations, a point to point survey of the wetland boundary may not be required. However, the boundary must be reproducible in some manner. The consultant should contact this office for approval before submitting a delineation without a point to point survey. In all cases, the wetland boundary must be marked with survey flagging or stakes in the field before this office will conduct a site inspection to verify the delineation. The flags or stakes must be sequentially numbered and those numbers shall appear on the survey for each point;

2. The type(s) of wetland present, such as riparian willow, wet meadow, marsh, etc., should be shown on the delineation map. The respective sizes in acres of each type should be included either on the map or in a report;

3. The location of all sample sites should be shown on the delineation map(s);

4. Wetland delineation data forms, or similar data sheets, for each sample site, cross-referenced to the sites should be shown on the delineation map(s). The data for each sample site shall clearly list the indicators for the soils, vegetation and hydrology, and shall include the basis for determining whether the sample site is wetland or upland. The number of sample sites will vary depending upon the size and shape of the wetland, the degree of difficulty in differentiating wetland and upland, width of transition zones, etc.;

5. A site location map, preferably a 7.5-minute USGS quadrangle, shall be included and any other pertinent maps of the site; and

6. A brief written report shall be included with the submittal. This report should list the property owner(s) and/or the developer(s) requesting the delineation. The report shall also describe the nature of the proposed development, and when a permit application will be submitted for the project. Your report should explain the basis for the wetland boundary location and any problems or questionable areas. The dates of the actual field work should also be included in this narrative.

Wetland delineations that are complete and accurate will be acknowledged in writing by the Corps of Engineers. In the event that work force constraints preclude timely field verifications, qualified approval may be issued by this office. However, prior to definitive regulatory approvals, such as a letter of no Federal jurisdiction, nationwide general permit verification, individual permit issuance, etc., wetland maps will be field verified by the Corps of Engineers.

We have attached a wetland delineation field data sheet for photocopying and field use. This form should be used for wetland delineations subject to Corps of Engineers verification. If you and/or your consultants have questions regarding wetland delineation procedures, please contact the Western Colorado Regulatory Office, U. S. Army, Corps of Engineers, Sacramento District at telephone number (303) 243-1199.

The following list of wetland delineation consultants is arranged alphabetically and should not be interpreted as preferential. This list shall be accepted and used by the recipient with the explicit understanding that the U. S. Government shall not be under any liability at all to any person because of any use made of this list.

Alpine Environmental Services
8181 County Road 203
Durango, Colorado 81301
(303) 385-4138
Attn: William Simon, Ph.D.

Aquatic and Wetland Consultants
2060 Broadway, Suite 255
Siena Square
Boulder, Colorado 80302
(303) 442-5770
Attn: Ms. Lauranne P. Rink

BIO-ENVIRONS
1388 County Road 8
Gunnison, Colorado 81230
(303) 641-1451
Attn: Ms. Lynn Cudlip

BIO/WEST, Incorporated
1063 West 1400 North
Logan, Utah 84321
(801) 752-4202
Attn: Mr. Dennis Wenger

BKS Environmental Assoc., Inc.
Post Office Box 3467
Gillette, Wyoming 82717-3467
(307) 682-3810
Attn: Ms. Brenda K. Schladweiler

Cedar Creek Associates, Inc.
Post Office Box 9557
Fort Collins, Colorado 80525
(303) 493-4394
Attn: Mr. Stephen G. Long

David Cooper, Ph.D.
3803 Silver Plume
Boulder, Colorado 80303
(303) 499-6441

CRS Sirrine, Incorporated
216 16th Street Mall, Suite 1700
Denver, Colorado 80202
(303) 820-5240
Attn: Ms. Virginia L. McAfee

Dames & Moore
1125 17th Street, Suite 1200
Denver, Colorado 80202-2027
(303) 294-9100
Attn: Loren R. Hettinger, Ph.D.

Earth Resource Investigations, Inc.
502 Main Street, Box 427
Carbondale, Colorado 81623
(303) 963-1356
Attn: Mr. William N. Johnson

Ecological Research Associates
Post Office Box 2350
Pagosa Springs, Colorado 81147
(303) 731-5600
Attn: Mr. Glenn M. Greenwald

Ecotone Environmental Consultants
Post Office Box 3516
Logan, Utah 84321
(801) 752-2204
Attn: Mr. Oliver J. Grah

ENARTECH, Incorporated
Post Office Drawer 160
Glenwood Springs, Colorado 81602
(303) 945-2236
Attn: Mr. Kerry Sundeen

Engineering Planning Group
949 East 12400 South, Kerbs Park
Draper, Utah 84020
(801) 572-2200
Attn: Mr. Derrick Smith

Engineering-Science
1700 Broadway, Suite 900
Denver, Colorado 80290
(303) 825-8100
Attn: Mr. Bruce Snyder

ERO Resources Corporation
1740 High Street
Denver, Colorado 80218
(303) 320-4400
Attn: Mr. Steve Dougherty

ESCO Associates, Inc.
Post Office Box 18775
Boulder, Colorado 80308
(303) 447-2999
Attn: David L. Buckner, Ph.D.

Huffman and Associates, Inc.
700 Larkspur Landing Cir., Ste. 100
Larkspur, California 94939
(415) 925-2000
Attn: Terry Huffman, Ph.D.

IME
Post Office Box 270
Yampa, Colorado 80483
(303) 638-4462
Attn: Mr. Kent A. Crofts

Intermountain Environmental
Post Office Box 783
Grand Junction, Colorado 81502
(303) 241-2446
Attn: Mr. Michael W. Klish

Erik Olgeirson, Ph.D.
4440 Tule Lake Drive
Littleton, Colorado 80123
(303) 347-8212

PIONEER Environmental Services
980 West 1800 South
Logan, Utah 84321
(801) 753-0033
Attn. Roy D. Hugie, Ph.D.

Plateau Environmental Services
484 Turner Drive, Suite 200E
Durango, Colorado 81403
(303) 259-3027
Attn: Ms. Sharon Matheson

Professional Wetland Consultants
20 Rim Road
Boulder, Colorado 80302
(303) 444-1715
Attn: Mr. David Steinmann

Savage and Savage
464 West Sumac Court
Louisville, Colorado 80027-2227
(303) 666-7372
Attn: Mr. Michael Savage

Stoneman Landers, Incorporated
11480 Cherokee Street, Suite L
Denver, Colorado 80234
(303) 280-0048
Attn: Mr. Peter L. Smith

Sugnet and Associates
2260 Douglas Boulevard, Suite 160
Roseville, California 95661
(916) 782-9100
Attn: Mr. Paul Sugnet

Summit Soils
Post Office Box 1957
Dillon, Colorado 80435
(303) 468-1989
Attn: Ms. Jean Ray

Thomas & Thomas
313 East Costilla
Colorado Springs, Colorado 80903
(719) 578-8777
Attn: Mr. Parry Thomas

Walsh & Associates
225 North 5th Street, Suite 320
Grand Junction, Colorado 81502
(303) 241-4636
Attn: Mr. Edward M. Baltzer

Western Resource Development
711 Walnut Street
Boulder, Colorado 80302
(303) 449-9009
Attn: Mr. David Johnson

Weston Designers and Consultants
5301 Central Ave., N.E., Suite 1516
Albuquerque, New Mexico 87108
(505) 846-1329
Attn: Mr. Charles Burt

Wright Water Engineers
Post Office Box 219
Glenwood Springs, Colorado 81602
(303) 945-7755
Attn: Mr. David Mehan

DATA FORM
ROUTINE WETLAND DETERMINATION
(1987 COE Wetlands Delineation Manual)

Project/Site: _____	Date: _____
Applicant/Owner: _____	County: _____
Investigator: _____	State: _____
Do Normal Circumstances exist on the site? Yes No	Community ID: _____
Is the site significantly disturbed (Atypical Situation)? Yes No	Transect ID: _____
Is the area a potential Problem Area? Yes No	Plot ID: _____
(If needed, explain on reverse.)	

VEGETATION

Dominant Plant Species	Stratum	Indicator	Dominant Plant Species	Stratum	Indicator
1.			9.		
2.			10.		
3.			11.		
4.			12.		
5.			13.		
6.			14.		
7.			15.		
8.			16.		

Percent of Dominant Species that are OBL, FACW or FAC (excluding FAC-). _____

Remarks:

HYDROLOGY

___ Recorded Data (Describe in Remarks):
- ___ Stream, Lake, or Tide Gauge
- ___ Aerial Photographs
- ___ Other

___ No Recorded Data Available

Field Observations:

Depth of Surface Water: _____(in.)

Depth to Free Water in Pit: _____(in.)

Depth to Saturated Soil: _____(in.)

Wetland Hydrology Indicators:

Primary Indicators:
- ___ Inundated
- ___ Saturated in Upper 12 Inches
- ___ Water Marks
- ___ Drift Lines
- ___ Sediment Deposits
- ___ Drainage Patterns in Wetlands

Secondary Indicators (2 or more required):
- ___ Oxidized Root Channels in Upper 12 Inches
- ___ Water-Stained Leaves
- ___ Local Soil Survey Data
- ___ FAC-Neutral Test
- ___ Other (Explain in Remarks)

Remarks: