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File RP-1996-042 Name: Eagle Rim Subdivision – Mountain View Court

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

DOCUMENT DESCRIPTION:

X	X	Correspondence			
X	X	Subsurface Soils Exploration – 6/6/96			
X	X	Certification of Plat – 7/17/96			
X	X	Moore Subdivision – First Addition – GIS Historical Maps - **			

DEVELOPMENT APPLICATION

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

Receipt _____
Date _____
Rec'd By _____
File No. RP-96-42

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	1.9 Ac	Mountain Vw. Ct. 2945-244-00-236 2945-244-00-237 2945-244-08-008	RSF-5	Residential
☐ Rezone				From: To:	
☐ Planned Development	☐ ODP ☐ Prelim ☐ Final				
☐ Conditional Use					
☐ Zone of Annex					
☐ Variance					
☐ Special Use					
☐ Vacation					☐ Right-of Way ☐ Easement
☐ Revocable Permit					

☒ PROPERTY OWNER	☒ DEVELOPER	☒ REPRESENTATIVE (Both)
Enno and Pauline Heuscher	Same	Owner + Q.E.D. Survey
Name	Name	Name
330 Mtn. Vw. Ct.		Attn: Max 1018 Colorado
Address	Address	Address
Grand Junction, CO 81503		Grand Junction, Co
City/State/Zip	City/State/Zip	City/State/Zip
970-241-1370		970-241-2370
Business Phone No.	Business Phone No.	Business Phone No.

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

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

E. J. Hansen — 2/27/96
Signature of Person Completing Application — Date

E. J. Hansen — 2/27/96
Pauline M. Heuscher — 2/27/96
Signature of Property Owner(s) - attach additional sheets if necessary — Date

3pm ... (244-1430) Planner

SUBMITTAL CHECKLIST

RESUBDIVISION

Location: North end of Mountain View Ct. Project Name: 2-lot replat

Date Received 3-1-96

Receipt # 3592

File # RP-96-42

ITEMS: DESCRIPTION	SSID REFERENCE	● City Community Development	● City Dev. Eng.	● City Utility Eng.	● City Property Agent	O City Parks/Recreation	● City Fire Department	● City Attorney	O City G.J.P.C. (8 sets)	O City Downtown Dev. Auth.	● City Police	O County Planning	O County Bldg. Dept.	● County Surveyor	O Walker Field	O School Dist. #51	O Irrigation District	O Drainage District	O Water District	O Sewer District	● U.S. West	● Public Service	O GVRP	O CDOT	● Corps of Engineers	O Colorado Geological Survey	O U.S. Postal Service	O Persigo WWTF	O TCI Cable			TOTAL REQ'D.
● Application Fee $160	VII-1	1																														
● Submittal Checklist*	VII-3	1																														
● Review Agency Cover Sheet* (2 sets) 10	VII-3	1	1	1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
● Application Form* 10 need location	VII-1	1	1	1	1	1	1	1	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
● Reduction of Assessor's Map need (more) have 10	VII-1	1	1	1	1	1	1	1	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
● Evidence of Title	VII-2	1			1			1																								
O Appraisal of Raw Land	VII-1	1			1	1																										
● Names and Addresses* 200'	VII-2	1																														
● Legal Description* (1) see instructs.	VII-2	1			1																											
O Deeds	VII-1	1			1			1																								
O Easements	VII-2	1	1	1	1			1													1	1	1									
O Avigation Easement	VII-1	1			1			1							1																	
O ROW	VII-3	1	1	1	1			1													1	1	1									
O Covenants, Conditions, & Restrictions	VII-1	1	1					1																								
O Common Space Agreements	VII-1	1	1					1																								
● County Treasurer's Tax Cert (see printout)	VII-1	1																														
O Improvements Agreement/Guarantee*	VII-2	1	1	1				1																								
O CDOT, 404, or Floodplain Permit	VII-3,4	1	1																													
● General Project Report (narrative) (10)	X-7	1	1	1	1	1	1	1	8	1	1	1			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
O Location Map	IX-21	1																														
O Composite Plan	IX-10	1	2	1	1																											
O 11"x17" Reduction Composite Plan	IX-10	1				1	1	1	8	1	1	1	1				1	1	1	1	1	1	1	1	1	1		1	1			
● Final Plat (12) full size	IX-15	1	2	1	1	1	1	1	8	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1			
O 11"x17"Reduction of Final Plat	IX-15	1							8	1	1	1			1	1	1	1	1	1	1	1	1				1					
O Cover Sheet	IX-11	1	2																													
O Grading& Stormwater Mgmt Plan	IX-17	1	2															1							1							
O Storm Drainage Plan and Profile	IX-30	1	2															1			1	1	1						1			
O Water and Sewer Plan and Profile	IX-34	1	2	1															1	1	1	1	1					1	1			
O Roadway Plan and Profile	IX-28	1	2															1														
O Road Cross-sections	IX-27	1	2																													
O Detail Sheet	IX-12	1	2																													
O Landscape Plan	IX-20	2	1	1																												
O Geotechnical Report	X-8	1	1										1													1						
O Phase I & II Environmental Report	X-10,11	1	1																													
O Final Drainage Report	X-5,6	1	2															1														
O Stormwater Management Plan	X-14	1	2															1							1							
O Sewer System Design Report	X-13	1	2	1																1												
O Water System Design Report	X-16	1	2	1															1													
O Traffic Impact Study	X-15	1	2																					1								
O Site Plan	IX-29	1	2	1	1		1		8																							

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

PRE-APPLICATION CONFERENCE

Date: 12 May 1995
Conference Attendance: Enno Heuscher Tom Dixon
Proposal: 3-lot replat
Location: North end of Mountain View Court
Tax Parcel Number: 2945-244-08-236 & 237 & 2945-244-00-236 2945-244-08-008 2945-244-00-237
Review Fee: $160.00 -00 -00
(Fee is due at the time of submittal. Make check payable to the City of Grand Junction.)

Additional ROW required? _____
Adjacent road improvements required? _____
Area identified as a need in the Master Plan of Parks and Recreation? _____
Parks and Open Space fees required? _____ Estimated Amount: _____
Recording fees required? _____ Estimated Amount: _____
Half street improvement fees/TCP required? _____ Estimated Amount: _____
Revocable Permit required? _____
State Highway Access Permit required? _____
On-site detention/retention or Drainage fee required? _____

Applicable Plans, Policies and Guidelines _____

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

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

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

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

O Other _____
Related Files: _____

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

PRE-APPLICATION CONFERENCE

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

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

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

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

Signature(s) of Petitioner(s) _____ Signature(s) of Representative(s) _____

2945-244-08-004
THOMAS E HUNN
PO BOX 3082
GRAND JUNCTION, CO 81502-3082

2945-244-08-003
KENNETH H RICHEL
SU SON L
328 MOUNTAIN VIEW CT
GRAND JUNCTION, CO 81503-2834

2945-244-08-001
HOWARD G SCHMITTEL
CONSTANCE E
2758 CHEYENNE DR
GRAND JUNCTION, CO 81503-2845

2945-244-08-002
WALTER KRAFT
EUNICE M
2756 CHEYENNE DR
GRAND JUNCTION, CO 81503-2845

2945-244-08-005
PEARL A MOORE
2752 1/2 CHEYENNE DR
GRAND JUNCTION, CO 81503-2846

2945-244-08-006
ENNO F HEUSCHER
PAULINE
330 MOUNTAIN VIEW ST
GRAND JUNCTION, CO 81503-2883

2945-244-00-173
SUSAN LINNETTE VOORHEES

2770 CHEYENNE DR
GRAND JUNCTION, CO 81503-2845

2945-244-00-205
WYATT EDWIN MILLER
LUCINDA J
2752 CHEYENNE DR
GRAND JUNCTION, CO 81503-2846

2945-244-00-206
PEARL A MOORE
2752 1/2 CHEYENNE DR
GRAND JUNCTION, CO 81503-2846

2945-244-00-236
ENNO F HEUSCHER
PAULINE
230 MTN VIEW CT
GRAND JUNCTION, CO 81503

2945-244-00-237
ENNO F HEUSCHER
PAULINE
330 MTN VIEW CT
GRAND JUNCTION, CO 81503

2945-244-00-243
ROBERT MCDONOUGH
BARBARA J WILLIS
2750 CHEYENNE DR
GRAND JUNCTION, CO 81503-2807

2945-244-08-008
ENNO F HEUSCHER
PAULINE HEUSCHER
330 MOUNTAIN VIEW CT
GRAND JUNCTION, CO 81503-2834

2945-244-00-080
GRAND VALLEY BY-PRODUCTS INC

347 27 1/2 RD
GRAND JUNCTION, CO 81501-4701

2945-244-00-202
MELVIN B SEEVERS
PO BOX 104
GRAND JUNCTION, CO 81502-0104

2945-244-00-242
JOHN JR BRINKLEY
ALLENE M
PO BOX 130
GLADE PARK, CO 81523-0130

2945-244-00-249
JOHN HAZE SMITH
SARAH P
8258 GLENCREST DR
SUN VALLEY, CA 91352-3505

2945-244-00-251
JOHN HAZE SMITH
SARAH P
8258 GLENCREST DR
SUN VALLEY, CA 91352-3505

GENERAL PROJECT NARRATIVE

The location of this residential re-plat/minor sub. is in the Mountain View Court cul-de-sac area in the city of Grand Junction in Mesa County, and affects three existing residential lots (tax schedule. # 2945-244-00-236, 2945-244-00-237, and 2945244-08-008). Total acreage is 1.9 acres, roughly equally divided between the three residential lots. Proposed use is for single family residential use (unchanged), with no new residential lots being created by the new plat, thus causing minimal to no impact to the surrounding area. The purpose of the project is to make some minor property line adjustments between two of the three existing lots, and to more clearly define by survey and plat the location and description of these particular lots. Improved street frontage access will be provided on the new plat for the center lot (schedule # 2945-244-00-237), with the west lot (schedule # 2945-244-08-008) being provided with improved views and access to the south rim and bank of the Colorado River. The ultimate future overall benefit of these changes will be residential view lots that will offer a better situation for higher quality housing, ultimately increasing the overall value and quality of life in the neighborhood. The lots on the new plat are comparable to other south rim residential lots within 1-2 blocks of the plat, ie. 2794 Cheyenne, 2788 Cheyenne, and the Acoma Court residential sites (see assessors map reduction). Street and sewer improvements on Eagle Rim subdivision are already in place, the costs of which have been already assessed to the property owners through a street and sewer improvement district. Sewer and water extensions were installed to the lots described in the plat several years ago when the street was paved. Electrical, cable TV, gas, and phone lines are in place, located adjacent to the southeast corner of lot 1, Eagle Rim Subdivision. Thus, all utilities are already at a point of ready access to the lots described on this plat. There is also an open (actively used) irrigation ditch and water access to lot 3, Eagle Rim Subdivision, via the southeast boundary of that lot. Added potential irrigation water and drainage access is anticipated for lots 1 and 2, Eagle Rim Subdivision, via the 10 ft. easments shown on the plat. Fire protection is provided by water lines and a fire hydrant within 200 ft. of the subdivision. Street drainage, built as part of the street improvement district, has provided excellent storm drainage and erosion control for the area.

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

April 2, 1996

Pearl A. Moore
2752 1/2 Cheyenne Dr.
Grand Junction, CO 81503

Re: Eagle Rim Subdivision

Dear Ms. Moore:

As a follow-up to our telephone conversation regarding Dr. Heuscher's proposed subdivision replat at the end of Mountain View Court near the Colorado River, I wanted to relay the following information.

1. Western Colorado Title Company has submitted a copy of a deed showing the transfer of the area in question from the United States Government to private ownership (to a Mr. Jacob Myers) in April 1902.

2. Dr. Heuscher will be required to submit a geotechnical report showing that proposed building envelopes on the lots are safe to build in.

I think this information satisfies the concerns you raised with this property. If you have any questions please call me at 244-1447.

Sincerely,

Bill Nebeker

Bill Nebeker
Senior Planner

REVIEW COMMENTS

FILE RP-96-42 **TITLE HEADING: Replat - Eagle Rim Subdivision**

LOCATION: Mountain View Court

PETITIONER: Enno & Pauline Heuscher

PETITIONER'S ADDRESS/TELEPHONE: 330 Mountain View Court
Grand Junction, CO 81503
970-241-1370

PETITIONER'S REPRESENTATIVE: Enno Heuscher

STAFF REPRESENTATIVE: Bill Nebeker

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

PUBLIC SERVICE COMPANY **3/7/96**
John Salazar **244-2781**

Electric & Gas: Require 14' multi-purpose utility easement at the front of all three lots.

U.S. WEST COMMUNICATIONS **3/6/96**
Max Ward **244-4721**

For timely telephone service, as soon as you have a plat and power drawing for your development, please:
Mail copy to: U.S. West Communications
Developer Contact Group
P.O. Box 1720
Denver, CO 80201

AND call the toll-free number for Developer Contact Group at 1-800-526-3557.

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

CITY PROPERTY AGENT **3/12/96**
Steve Pace **256-4003**

1. Outer monumentation should be set and or reset in concrete.
2. Interior lot corners?
3. Label point of beginning at SW corner Lot 6, Moore Subdivision on plat.
4. There is a missing dimension on a southerly line of lot 2.
5. In the description there are 2 - courses 1) N90°00'00"E, 151.0' and 2) N90°00'00"E, 109.00' - that should be N90°00'00"W for both courses.
6. The permanent drainage easement should probable by addressed in the dedication.
7. Address utility and irrigation easements separately in the dedication.
8. Option - label existing Lots 6 & 5 and old lot line to help alleviate confusion.

CITY DEVELOPMENT ENGINEER **3/14/96**
Jody Kliska **244-1591**
Dedication on plat needs to be consistent with City's Guide to Plat Dedications.

CITY POLICE DEPARTMENT **3/5/96**
Dave Stassen **244-3587**
No comments.

CITY FIRE DEPARTMENT **3/14/96**
Hank Masterson **244-1414**
The Fire Department has no problems with this replat.

CITY UTILITY ENGINEER **3/15/96**
Trent Prall **244-1590**
The City of Grand Junction Utility Division has no objections to this minor subdivision.

CITY COMMUNITY DEVELOPMENT **3/15/96**
Bill Nebeker **244-1447**

1. This parcel is in the City; County Planning Commission and Board of County Commissioners certificates are not necessary. Provide signature blocks for City Manager and Council President.
2. If no streets and roads are being dedicated remove this statement from the dedication block.
3. The plat must be reviewed by the Colorado Geological Survey due to the close proximity of these lots to the river. It is questionable where lots 2 & 3 will be buildable. The Colorado Geological Survey has their own review fee of $485.00 prepaid.

NOTE: Questions have arisen on whether there is clear title to the parcels between the river and the platted lots. Do you have a copy of the government patent for this land, showing when it was deeded to private ownership?

SUBSURFACE SOILS EXPLORATION

MOUNTAIN VIEW COURT

GRAND JUNCTION, COLORADO

Prepared For:

ENNO HEUSCHER
330 Mountain View Court
Grand Junction,CO

Prepared By:

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

June 6, 1996

Lincoln DeVore, Inc.
Geotechnical Consultants
1441 Motor St.
Grand Junction, CO 81505
TEL: (970) 242-8968
FAX: (970) 242-1561

June 6, 1996

ENNO HEUSCHER
330 Mountain View Court
Grand Junction, CO

Re: SUBSURFACE SOILS EXPLORATION

MOUNTAIN VIEW COURT

GRAND JUNCTION, COLORADO

Dear Sir:

Transmitted herein are the results of a Subsurface Soils Exploration for the proposed construction of single family residential 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: _____
Edward M. Morris, PE
Western Slope Branch Manager
Grand Junction, Office

LDTL Job No. 85137-J

EMM/bl

TABLE OF CONTENTS

INTRODUCTION

PROJECT DESCRIPTION

This report presents the results of our geotechnical evaluation performed to determine the general subsurface conditions and building setbacks from the bluff overlooking the Colorado River of the site applicable to construction of single family residential structures. A vicinity map is included in the Appendix of this report.

To assist in our exploration, we were provided with a final plat of the Eagle Rim Subdivision, prepared by QED Surveying Systems Inc. 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 residential structures will probably consist of single and possibly two story, wood framed structure with the possibility of full basement and concrete floor slab on grade. Lincoln DeVore has not seen a full set of building plans, but structures of this type typically develop wall loads on the order of 600-2000 plf and column loads on the order of 5-15 kips.

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.

This report provides site specific information for the construction of three single family residences within the proposed Eagle Rim Subdivision and to provide building setbacks from the bank overlooking the Colorado River. Included in this report are recommendations regarding general site development and foundation design criteria.

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 4-19-96 & 4-22-96, and consisted of a site reconnaissance by our geotechnical personnel and the drilling of 2 shallow exploration borings. These 2 shallow exploration borings were drilled near the proposed building envelopes and located to aid in evaluating the slope stability conditions of the bank overlooking the Colorado River, 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 19-29 feet. Samples were taken with a standard split spoon sampler, thin walled Shelby tubes, and by bulk methods. Logs describing the subsurface conditions are presented in the attached figures.

The following laboratory tests were performed on representative soil samples to determine their relative engineering properties.

ASTM D-2487	Soil Classification
ASTM D-2435	One Dimensional Consolidation
ASTM D-3080	Direct Shear Strength, Cd
ASTM D-2937	In-Place Soil Density
ASTM D-2216	Moisture Content of Soil

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 Southeast Quarter of Section 24 of Township 1 South, Range 1 West of the Ute Principal Meridian, Mesa County, Colorado. More specifically the site is located at the North end of the Mountain View Court Cul-de-Sac. The site is immediately North of the Moore Subdivision and is bounded on the North by the Colorado River. The tract is located in the Orchard Mesa area and is within the Corporate Limits of the City of Grand Junction. The site contain approximately 1.9 acres.

The topography of the site is variable, with the Southern one-half being relatively flat with a general gradient to the North. The final plat drawing shows an irregular line running approximately from the East to the West of the Subdivision and designated "Top of Grade Break". This line appears to represent the top of the Bluff, overlooking the Colorado River. This slope is very steep, with some limited areas being nearly vertical. The exact direction of surface runoff in the building areas on this site will be controlled by the proposed construction and therefore will be variable. In general, all drainage is expected to travel toward the North and into the Colorado River. Surface drainage on this site could be described as fair to very good. Subsurface drainage could be described as very good.

On-site erosion can be a significant problem if drainage and vegetation are not carefully controlled.

Vegetation will probably be maintained in the immediate area around the building site, but special care should be taken to maintain vegetation on the steeper slopes. We recommend that runoff from these slopes be carefully controlled to prevent erosion caused by irrigation practices, sheetwash or seepage. It may be necessary to provide culverts or drainage ways to prevent excessive erosion along steeper slopes.

GENERAL GEOLOGY AND SUBSURFACE DESCRIPTION

The geologic materials encountered under the site consist of approximately 20' to 22' of unconsolidated alluvial soils which are underlain by a thick sequence of sedimentary rocks. The geologic and engineering properties of the materials found in our 2 shallow exploration borings will be discussed in the following sections.

The Mancos Shale Formation is bedrock beneath this tract. The Mancos Shale is exposed on the lower portions of the slopes, overlooking the Colorado River. The Mancos Shale Formation is generally described as a thin to laminant bedded shale and claystone with interbeds of sandstone, siltstone, and occasional limestone. Based upon water well logs and shallow geotechnical borings in the general areas, it is believed the Mancos Shale is less than 200' thick beneath this tract. This particular portion of the Mancos Shale Formation is noted for significant siltstone and sandstone strata which often times exhibit relatively high permeability. Several thin layers of limestone and a single, discontinuous calcareous strata had

been mapped along this bank. These sandstone and siltstone developments probably represent the thinning remnants of the lower units of the Frontier Sandstone, which is thicker and well developed to the West, in Utah. In addition, immediately above the underlying Dakota Formation, a sandstone and siltstone development is recognized by Petroleum Geologists in the area as the "Dakota Silt". It is believed the "Dakota Silt" is at or below the flow line of the Colorado River.

This site is located near the juncture of the Piceance Basin, to the North and the Uncompahgre Uplift to the South. The attitude of the Mancos Shale Formation is rather difficult to determine from the surface exposures. In general, the beds are dipping to the North, Northeast approximately 10 degrees. The beds appear to have a strike of approximately North 40 to 55 degrees West. The surface exposures of the Shale appear to have been distorted by soil and slope creep, along the steep bank overlooking the Colorado River.

This project is located approximately 2 to 3 miles Northeast of the Redlands Fault Complex, which includes the Jacobs Ladder Fault Complex. In general, the Redlands Fault and Jacobs Ladder Fault is a dip slip fault with the strike ranging approximately North 40 to 50 degrees West. The Grand Valley, which includes this site, is on the downthrow side of this fault complex.

Due to the very weathered condition of many of the outcrops of Mancos Shale on this site, the primary fracture patterns are somewhat obscured. In general, the fracture set exhibiting the greatest control on this site appears to

be approximately parallel to the Colorado River, trending approximately North 70 degrees West and has a very steep dip to the North, Northeast. These fractures are fairly continuous but, appear to have a fairly wide spacing, apparently ranging from 2' to in excess of 10'. This fracture set appears to exhibit a lot of control on the present alignment of the Colorado River along Orchard Mesa and East Orchard Mesa. This fracture set is very prominent near 32 Road and near the confluence of the Gunnison River to the Colorado River (5th Street Bridge).

The second fracture set which is very prominent in this area appears to have a strike of approximately North 45 degrees East. This fracture set also exhibits a very steep dip, to the Northwest and is quite variable in spacing. This fracture set also appears to be very prominent at approximately 28 to 28-1/4 Roads, 29-3/4 to 30 Roads, 30-1/2 to 31 Roads, and 32 to 32-1/2 Roads. This fracture set appears to be fairly evenly spaced between 7 Street to 19 Street/27-1/2 Road. In the locations of either prominent fracturing or the evenly spaced area, this fracture set appears to exhibit control on the alignment of the Colorado River. In addition, areas of bank instability in the Mancos Shale, appears to be of greater concern in the areas this fracture set apparently control the alignment of the Colorado River.

A third fracture set, with a strike of approximately North 27 degrees West, appears to exhibit little control on slope stability of the river bank or the Colorado River alignment. However, this fracture set appears to control

several of the incised drainages, from Orchard Mesa to the Colorado River. The primary drainage on this tract, which has been partially blocked by an embankment to construct a pond, is apparently controlled by this fracture set.

EROSION/SURFICIAL DEPOSITS

The present land forms in the Orchard Mesa area are the result of area wide uplift, in conjunction with erosion and deposition by the Colorado River Complex. The relatively flat area of Orchard Mesa is the result of erosion by the Ancient Colorado River and deposition of coarse grained gravels and cobbles. This gravel and cobble terrace is recognized as being the second terrace of three distinct terraces recognized in the Grand Valley and will be designated at The Orchard Mesa Terrace. This particular gravel and cobble terrace contains large amounts of silt and sand with some fragments of a yellow to yellow orange siltstone. This gravel terrace is generally observed to be of medium density, is very firm to drill with auger equipment and is very stratified.

The Orchard Mesa Terrace of the Ancient Colorado River is often time covered with silty clay and clayey silt soils which range in thickness of a few inches to in excess of 15 feet. In general, these fine grained soils increase in thickness to the East and Southeast. These fine grained soils contain sands and occasional gravels of sandstone, siltstone, and basalt fragments. These soils are generally interpreted as originally being deposited in the Orchard Mesa area by the action of ancient debris flow features, which originated on the middle

to upper slopes of the Grand Mesa, to the East. It is believed the majority of these debris flow features were very active after the Colorado River began eroding through portions of the Orchard Mesa Terrace. It is believed the majority of erosion by the Colorado River, through the Orchard Mesa Terrace, occurred between the existing bluff along the North end of Orchard Mesa and the prominent outcrops of Mancos Shale known as Mantey Heights, approximately 2 to 2-1/2 miles North.

As the Colorado River was eroding the present valley, North of Orchard Mesa, it is believed climatic conditions were such that prominent mud flow/debris flow features originating in the Bookcliff area, filled much of the newly eroded valley and pushed the Colorado River back to its approximate present location. The final sequence of river erosion, at the North end of the Orchard Mesa Feature, has apparently created the steep slopes which are the subject of this study.

This particular area appears to have been somewhat more eroded by the action of the Ancient Colorado River, prior to final deposition of the Orchard Mesa gravel and cobble terrace deposit. This area, which includes Mountain View Court, North of Cheyenne Drive, is approximately 20' lower than the surrounding ground level of Orchard Mesa. In addition, this particular area appears to have a slightly thicker amount of gravel and cobble terrace deposits and surrounding areas. The shape of this lowered feature is consistent with that swing or bow of a fairly large river, rather than a distinct erosional feature associated with a small stream or gully over the bluff

side and into the Colorado River. No evidence of slope failure of the bank in this area, which would account for this large, lower feature of the Orchard Mesa Terrace, could be found during our field observations.

GENERAL SLOPE/BANK DESCRIPTION

The slope banks along the Colorado River, in the vicinity of the Eagle Rim Subdivision, were carefully observed in order to determine the general characteristics as pertaining to slope stability. This study included a very careful investigation of the bank on this subdivision site and was extended approximately 1/2 mile East and 1 mile West, to the 5th Street Bridge. The bank West of this site was determined to be the most significant, as residential development has occurred in this area and land use changes, similar to those proposed by the Eagle Rim Subdivision, have occurred in this area. In addition, previous information from Subsurface Soils Explorations from several locations between the 5th Street Bridge and 27-3/8 Road, West of this site has been utilized for this study.

A large slope failure feature, which is either relatively recent but natural or, may have occurred when the initial introduction of irrigation practices to the Orchard Mesa area about 60 to 80 years ago, is present between 26-1/2 and 27 Roads. This particular slope failure feature is within the Lamplight Subdivision and has been the subject of several studies since 1977. This particular feature is the only large slope failure in the study area. This particular feature has been analyzed and generally classified as a rotational type slide

having either a circular shaped or a Logarithmic shaped failure surface.

Several very small failures have been noted along this bluff face. In general, these failures are quite small and are apparently limited to the upper, unconsolidated gravels and cobbles or the fine grained silty clay alluvial soils. In general, these smaller failures do not exhibit a well defined, circular type shape but, appear to have a rather steep, plain failure surface, approximating the sliding wedge concept of the Coulomb Theory. Large or well defined block, translatory failures, exhibiting significant horizontal displacement, have not been recognized in the study area. The identified failures, whether quite small or the larger Lamplight Subdivision failure, typically exhibit very prominent vertical displacement with a very small horizontal displacement.

SITE SPECIFIC BANK SLOPE DESCRIPTION

The bank slope will be described, beginning at the Colorado River and preceding upslope, to the building envelope area. The banks immediately adjacent to the Colorado River were found to consist of very small beach type areas and collections of alluvial/colluvial soils which originated on the upper slopes. These alluvial/colluvial soils consist of cobbles and gravels with sands, silts and clay fines. These alluvial/colluvial soils appear to be continually reworked by the river and are subject to complete removal during periods of high water

flow, during the Spring runoff. These soils are being held in place primarily by vegetation and, must be considered as temporary geomorphic features which may be removed during Spring runoff.

The lower slopes of the bluff consist of the Mancos Shale Formation and extended approximately 25' to 30' above the flow elevation of the Colorado River. These banks of Mancos Shale, are very steep, with minor outcrops of sandstone, siltstone and calcareous shale. At the top of the Mancos Shale outcrop, a calcareous shale to shaley limestone layer was observed. This calcareous layer was noted to be somewhat discontinuous and, where present, exhibit a thickness in excess of 10". This calcarous layer was observed to be very hard and contains vugs and relatively small solution features.

Above the Mancos Shale Formation, approximately 20' to 30' of coarse grained gravel and cobble of the Orchard Mesa Terrace Deposit was observed. This terrace deposit was observed to have a flatter slope than the underlying Mancos Shale Formation. The steep slope of the Mancos Shale appears to be controlled both by the numerous strata of sandstone, siltstone and calcareous strata which form resistant strata and the very steep fracture faces in this area. The gravel and cobble terrace deposit, when dry, can sustain a very steep slope but, is relatively easily eroded and is subject to continuous raveling of the surface. Most small slope failures observed along this bank of Orchard Mesa were observed to be within this gravel and cobble terrace deposit.

The surface soils, within the building envelope areas was found to be a mixture of the underlying gravel and cobble terrace and fine grained silty clay and clayey silt alluvial soils. In general, the surface soils are less than 2' in thickness, except in the area of the pond and the embankment which has been constructed with these silty clay and clayey silt soils. These fine grained soils were found on the flatter portions of this slope and were found to be so thin that they effectively did not enter into the slope stability calculations.

SLOPE STABILITY

The stability of the existing slope, utilizing assumed conditions after the construction and landscaping of 3 residential structures in the Eagle Rim Subdivision, was studied using the GEOSLOPE, VERSION 3.0 COMPUTER PROGRAM BY GEOCOMP CORPORATION. The GEOSLOPE PROGRAM is based upon the program STABL 4, developed at Perdue University. Due to the general conditions observed during our observations of the Orchard Mesa Bank in the study area, the Simplified Bishop Method was used for circular shaped failure surfaces. This study assumed several ground water conditions which may result from on-site residential techniques.

The study indicated the upper slopes, particularly within the gravel and cobble Orchard Mesa Terrace deposit, exhibits the most potential of slope failure under anticipated loading and ground water conditions. For purposes of this study, it was assumed the on-site irrigation techniques in

the Eagle Rim Subdivision would be rather poor.

For this study, the site was studied under both static conditions to approximate "normal" conditions and a pseudo-static earthquake force acting on the assumed sliding mass. For purposes of the pseudo-static study, a horizontal acceleration of 0.03 was utilized. The analysis assumed a safety factor of 1.5 or greater for the static ("normal" conditions) and a safety factor of 1.3 for the pseudo-static condition.

The building setback line, shown on the Eagle Rim Subdivision plan, in this report, represents the setbacks for single family residential structures, assuming the maximum loading conditions listed in the Project Description portion of this report. A perched water table is assumed to have developed in the gravel and cobble Orchard Mesa Terrace Deposit, with leakage into the fractures, sandstones and siltstones of the underlying Mancos Shale Formation. The Colorado River is assumed to be at the 100 year flood stage, as shown on the FEMA mapping for the Grand Junction area, July 15, 1992.

SUBSURFACE SOILS, GEOTECHNICAL PROPERTIES

The soils on the ground surface and within the embankment by the pond represent the fine grained, debris fan deposits which originate on the West facing slopes of Grand Mesa. The man-made fill within the pond embankment was found to be quite compact and is not representative of the consistency of the native soils. The following description is for the native soils, which are believed to be less than 2' in thick-

ness within the building envelopes. This soil type is designated Soil Type I for purposes of this report.

This Soil Type was classified as a sandy, silty clay (CL) under the Unified Classification System. This material is of low plasticity, of low permeability, and was encountered in a low to medium density, dry condition. As this soil is found in a relatively dry condition, it may undergo mild expansion with the entry of small amounts of moisture, but will undergo long-term consolidation upon the addition of larger amounts of moisture. This soil will settle after being loaded. The maximum allowable bearing capacity for this soil was found to be 1100 psf, with 200 minimum dead load pressure required. These finer grained soils contain sulfates in detrimental quantities.

The gravels and cobbles of the Orchard Mesa Terrace Deposit are quite thick across this site and it is anticipated these soils will be utilized for foundation bearing. For purposes of this report, these soils are designated Soil Type II.

This Soil Type is classified as a silty, sandy gravel and cobble (GM) of coarse 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 recommend-

ed 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 5000 psf.

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 and sampled in Test Boring No. 2 at a depth of 22' to 29'. It is anticipated that this formational shale will not affect the construction and the performance of the foundations on the site.

This soil type was classified as a silty clay (CL) under the Unified Classification System. The Standard Penetration Tests was found to be in excess of 100 blows per foot. Penetration tests of this magnitude indicate that the soil is very hard and of high density. The moisture content was found to be 10.9%, indicating a relatively dry 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 1900 psf were found

to be typical. The allowable maximum end bearing value was found to be on the order of 25,000 psf. A minimum dead load of 2500 psf will be required. This soil was found to contain sulfates in detrimental quantities.

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.

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.

GROUND WATER:

No free water was encountered during drilling on this site. In our opinion the true free water surface is fairly deep in this area, and hence, should not affect construction. Seepage moisture may affect construction if surface drainage is not properly controlled.

Due to the proximity of the Mancos Shale Formation, there exists a possibility of a perched water table developing in the alluvial soils which overlie the shale. This

perched water would probably be the result of increased irrigation due to the presence of lawns and landscaping and roof runoff. The exploration holes indicate that the top of the Mancos Shale Formation is relatively flat and that subsurface drainage would probably be quite slow.

While it is believed that under the existing conditions at the time of this exploration the construction process would not be effected by any free-flow waters, it is very possible that several years after development is initiated, a troublesome perched water condition may develop which will provide construction difficulties. In addition, this potential perched water could create some problems for existing or future foundations on this tract. Therefore it is recommended that the future presence of a perched water table be considered in all design and construction of both the proposed residential structures and any subdivision improvements.

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 steep banks overlooking the Colorado River, with the recommendation to restrict construction to South of the building setback line, shown on the attached figure.

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 observa-

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

EXCAVATION:

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.

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). This structural fill should be placed in lifts not to exceed six (6) inches after compaction. 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, non-expansive soil.

No major difficulties are anticipated in the course of excavating into the surficial soils on the site. 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 B.

DRAINAGE AND GRADIENT:

Adequate site drainage should be provided in the foundation area 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 structure be graded so that surface water will be carried quickly 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 con-

structed that moisture is not allowed to seep into foundation areas or beneath slabs or pavements.

If adequate surface drainage cannot be maintained, or if subsurface seepage is encountered during excavation for foundation construction, a full perimeter drain is recommended for this building. It is recommended that this drain consist of a perforated drain pipe and a gravel collector, the whole being fully wrapped in a geotextile filter fabric. We recommend that this drain be constructed with a gravity outlet. If sufficient grade does not exist on the site for a gravity outlet, then a sealed sump and pump is recommended. Under no circumstances should a dry well be used on this site.

To give the buildings extra lateral stability and to aid in the rapidity of runoff, it is recommended that all backfill around the buildings and in utility trenches in the vicinity of the buildings be compacted to a minimum of 85% of its maximum Proctor dry density, ASTM D 698. The native soils on this site may be used for such backfill. We recommend that all backfill be compacted using mechanical methods. No water flooding techniques of any type may be used in placement of fill on 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.

It is recommended that lawn and land-

scaping irrigation be reasonably limited, so as to prevent undesirable saturation of subsurface soils or backfilled areas. Several methods of irrigation water control are possible, to include, but not limited to:

* Metering the Irrigation water.
* Sizing the irrigation distribution service piping to limit on-site water usage.
* Encourage efficient landscaping practices.
* Enforcing reasonable limits on the size of high water usage landscaping for each lot and any park areas.

FOUNDATIONS

We recommend the use of a conventional shallow foundation system consisting 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 gravels and cobbles of the Orchard Mesa Terrace Deposit (Soil Type II), may be designed on the basis of an allowable bearing capacity of 5000 psf maximum. No minimum dead load is required.

Contact stresses beneath all continuous walls should be balanced to within + or -150 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 criterion for balancing will depend somewhat upon 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 1/2 live load, for up to 3 stories.

Stem walls for a shallow foundation system should be designed as grade beams capable of spanning at least 11 feet. These "grade beams" should be horizontally reinforced both near the top and near the bottom. The horizontal reinforcement required should be placed continuously around the structure with no gaps or breaks. A foundation system designed in this manner should provide a rather rigid system and, therefore, be better able to tolerate differential movements associated with occasional low density strata which may be present in the

gravel deposit.

If the design of the upper structure is such that loads can be balanced reasonably well, a floating structural slab or raft type of foundation could be used on this site. Such a slab would require heavy reinforcing to resist differential bending. It is possible to design such a slab either as a solid or ribbed slab, but in either case, a rimwall must be used for confinement. Any such slab must be specifically designed for the anticipated loading. Such a foundation system will settle to some degree as the softer, underlying soils consolidate, but differential movement is held to a minimum. Because the soils may settle in varying amounts, some minor cracking and heave are possible unless the slabs are specifically designed with the movement in mind.

SETTLEMENT:

We anticipate that total and/or differential settlements for the proposed structures may be considered to be within tolerable limits, provided the recommendations presented in this report are fully complied with. In general, we expect total settlements for the proposed structure to be less than 1 inch.

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.

CONCRETE SLABS ON GRADE

Slabs could be placed directly on the natural soils or on a structural fill. We recommend that all 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 not believed that a vapor barrier will be required on this site, however if a vapor barrier is desired beneath slabs, we recommend that it be overlain by at least 2 inches of sand to decrease the likelihood of curing problems. 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.

EARTH RETAINING STRUCTURES

The active soil pressure for the design of earth retaining structures may be based on an equivalent fluid pressure of 40 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 50 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 330 pcf per foot of depth. The coefficient of friction for concrete to soil may be assumed to be 0.37 for resistance to lateral movement. When combining frictional and passive resistance, the latter must be reduced by approximately 1/3.

REACTIVE SOILS

Since groundwater in the Orchard Mesa and 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.

LIMITATIONS

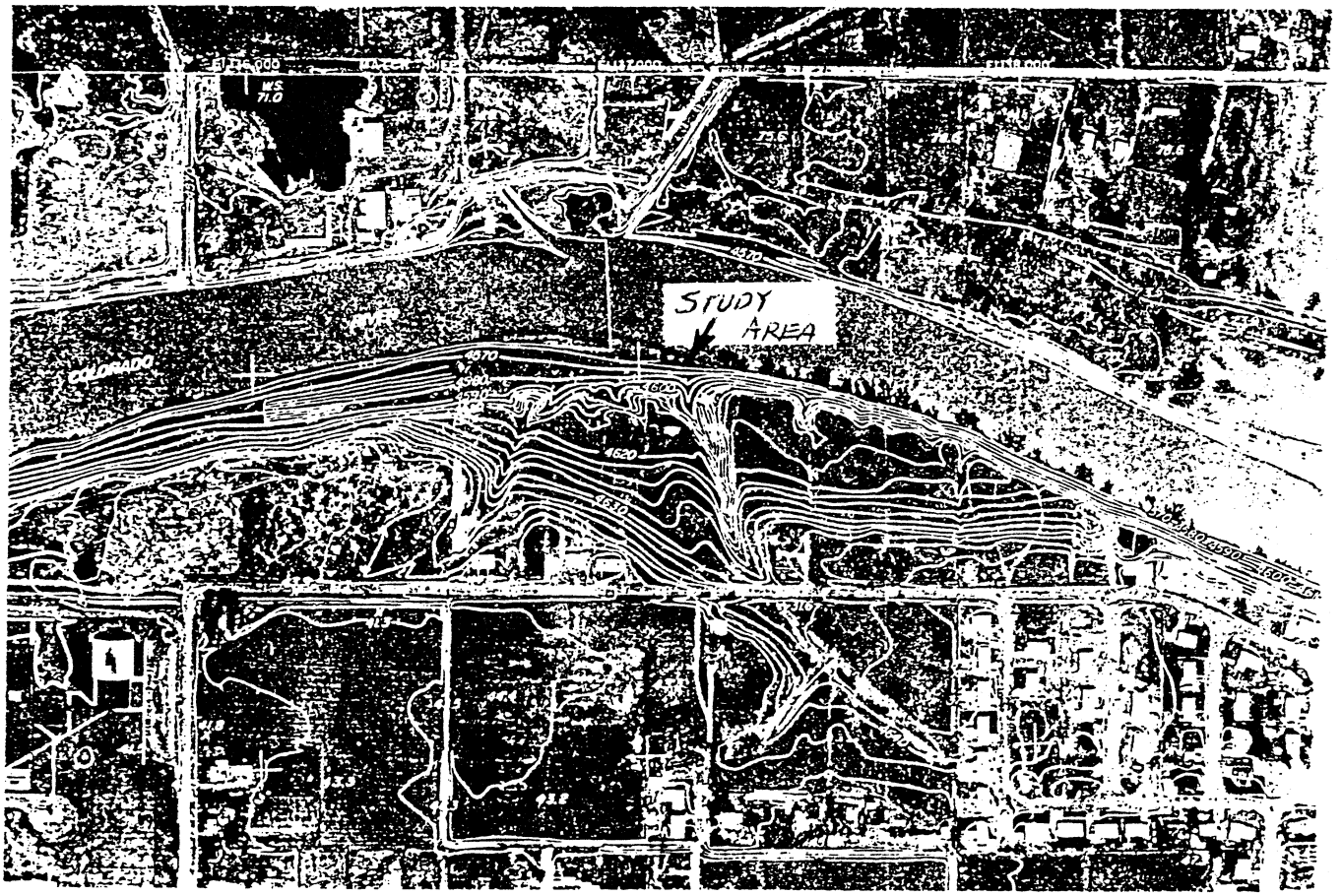
This report is issued with the understanding that it is the responsibility of the owner, or his representative to ensure that the information and recommendations contained herein are brought to the attention of the individual lot purchasers for the subdivision. In addition, it is the responsibility of 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.

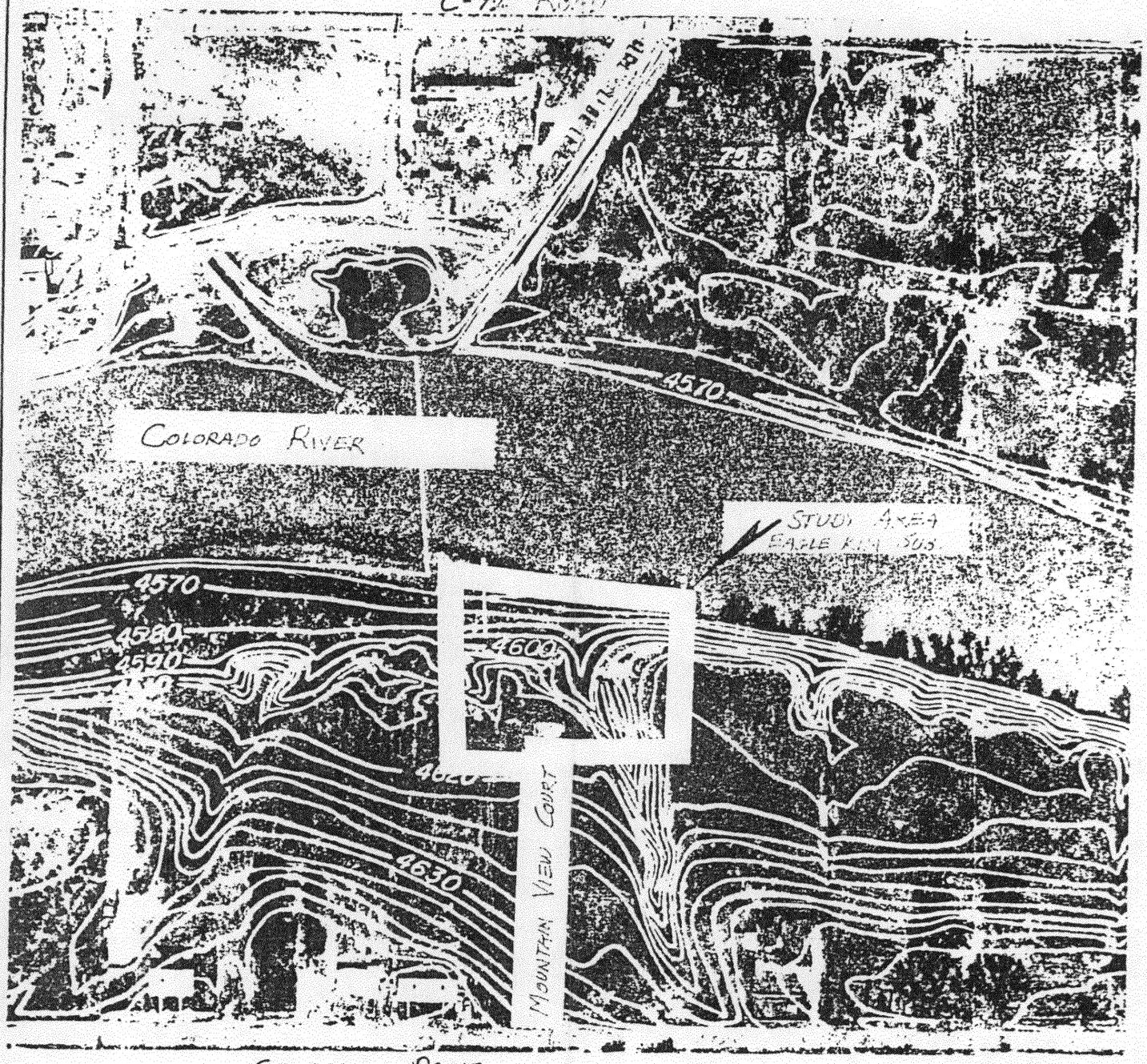
Lincoln DeVore makes no warranty, either expressed or implied, as to the findings, recommendations, specifications or professional advice, except that they were prepared in accordance with generally accepted professional engineering practice in the field of geotechnical engineering.



GENERAL SITE LOCATION DIAGRAM

LINCOLN–DeVORE, Inc.
GRAND JUNCTION, COLORADO
GEOTECHNICAL ENGINEERS–GEOLOGISTS

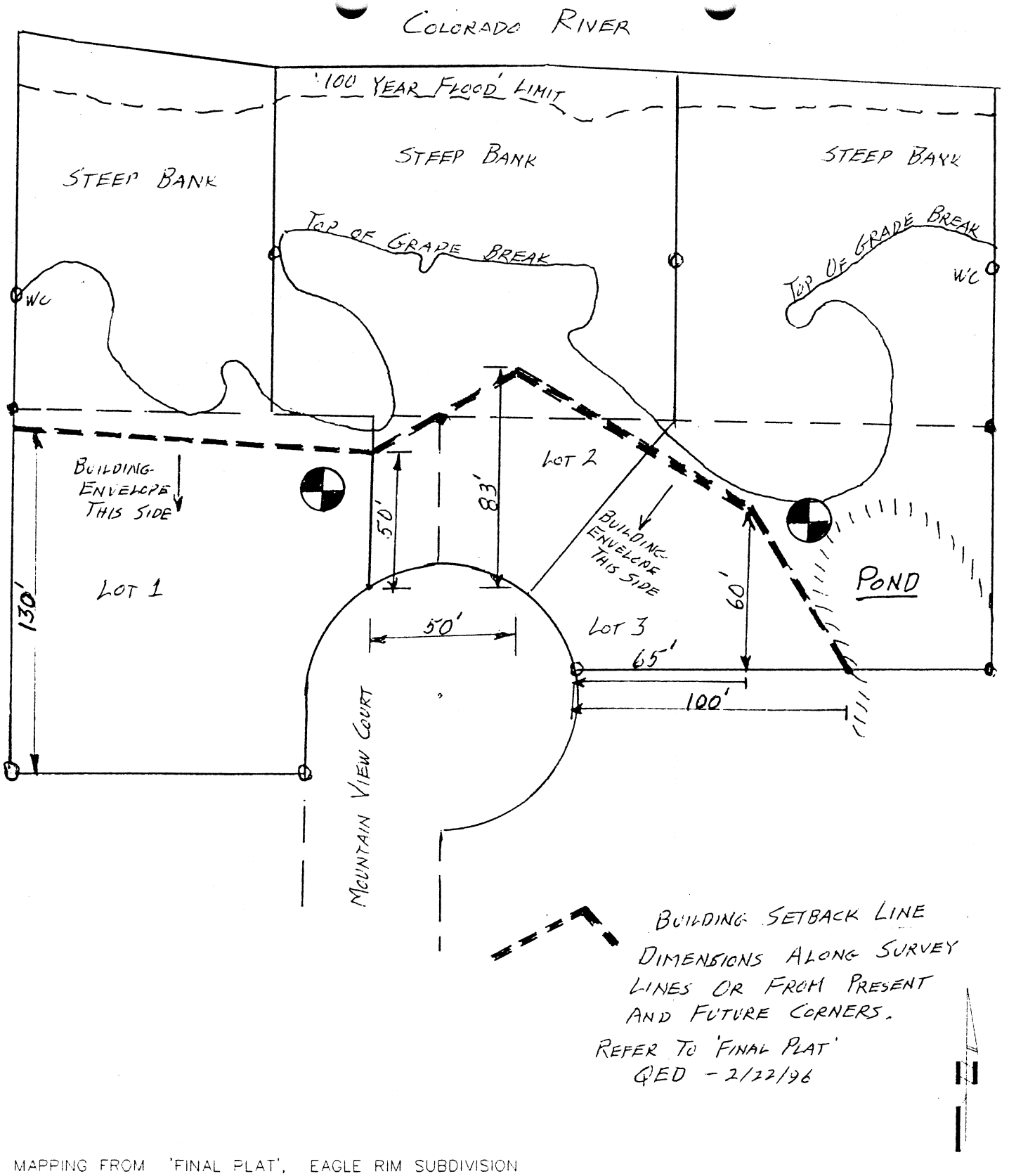
EAGLE RIM SUBDIVISION, GRAND JUNCTION, COLO.		
Mr. ENNO HEUSCHER		DATE: 6-3-96
SCALE: 1"=400'	LD #: 85137-J	File #: 85137



GENERAL SITE LOCATION DIAGRAM

LINCOLN–DeVORE, Inc.
GRAND JUNCTION, COLORADO
GEOTECHNICAL ENGINEERS–GEOLOGISTS

EAGLE RIM SUBDIVISION, GRAND JUNCTION, COLO.		
Mr. ENNO HEUSCHER		DATE: 6–3–96
SCALE: 1"=200'	LD #: 85137–J	File #: 85137



MAPPING FROM 'FINAL PLAT', EAGLE RIM SUBDIVISION
Q.E.D. SURVEYING SYSTEMS, Inc., 2/22/96

PLAT/BUILDING SETBACK DIAGRAM

LINCOLN–DeVORE, Inc.
GRAND JUNCTION, COLORADO
GEOTECHNICAL ENGINEERS–GEOLOGISTS

EAGLE RIM SUBDIVISION, GRAND JUNCTION, COLO.		
Mr. ENNO HEUSCHER		DATE: 6-3-96
SCALE: 1"=50'	LD #: 85137-J	File #: 85137

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_o Natural Moisture Content
	W_x Weathered Material
Free water	Free water table
	γ^o 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 NO. 1

POND EMBANKMENT

BORING ELEVATION:

DEPTH (FT.)	SOIL LOG	DESCRIPTION			BLOW COUNT /inch	SOIL DENSITY pcf	WATER %
		EMBANKMENT FOR POND	SL. MOIST				
		MANMADE FILL					
		CL SANDY, SILTY CLAY		ST		123.8	8.0%
5		I MEDIUM DENSITY		5	11/06		
		SOME STRATA ARE EXPANSIVE		SPT	18/12		10.8%
			SULFATES		24/18		
		MANMADE FILL					
		CL SANDY, SILTY CLAY	SL. MOIST	ST		107.2	7.9%
10		I GRAVELLY SAND STRATA		10	17/6		
		GM GRAVEL & COBBLE	MEDIUM DENSITY	SPT	29/12		7.6%
		II ALLUVIAL SILTY SAND FINES			43/18		
		MEDIUM DENSITY GRAVELS & COBBLES	SL. MOIST	SPT	17/6		5.6%
15		VERY FIRM TO DRILL		15	32/12		
					77/18		
		NON-EXPANSIVE					
		GM GRAVEL & COBBLE					
		II ALLUVIAL	SL. MOIST				3.7%
20		HOLE CAVED BEFORE SAMPLED		20			
		GRAY, SILTY CLAY ON BIT, MANCOS SHALE ?					
		TD @ 19'					
25				25			
30				30			

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

NO Free Water During Drilling 4-22-96

LOG OF SUBSURFACE EXPLORATION

LINCOLN - DeVORE, Inc.
Geotechnical Consultants
Grand Junction, Colorado

EAGLE RIM SUBDIVISION
Mountain View Court, Grand Junction, CO
Mr. ENNO HEUSCHER
330 Mountain View Court, G. J.
Date **5-27-96**
Job No. **85137-J**
Drawn **EMM**

BORING NO. 2

BORING ELEVATION:

DEPTH (FT.)	SOIL LOG	DESCRIPTION				BLOW COUNT /inch	SOIL DENSITY pcf	WATER %
		CL I	SILTY CLAY, ALLUVIAL SOIL		SULFATES			
			INCREASING GRAVEL & COBBLE		DRY			
			DESSICATED NEAR SURFACE					
					SPT	20/6		3.7%
5		GM	GRAVEL & COBBLE	MEDIUM DENSITY	5	42/12		
		II	ALLUVIAL	SILTY SAND FINES		63/18		
			MEDIUM DENSITY GRAVELS & COBBLES		SL. MOIST			
		GM	GRAVEL	VERY FIRM TO DRILL	SPT	13/6		9.6%
10			SANDY SILT STRATA		10	30/12		
			VERY LOW PLASTIC	NON-EXPANSIVE		128/18		
		GM	GRAVEL & COBBLE					
		GM	GRAVEL & COBBLE	MEDIUM DENSITY				
15		II	ALLUVIAL	SILTY SAND FINES	15			
					BULK			3.2%
			VERY FIRM TO DRILL		DRY			
		GM	GRAVEL & COBBLE	MEDIUM DENSITY				
20		II	ALLUVIAL	INCREASING SAND	20			
			HOLE CAVING					
		MANCOS SHALE			LIMESTONE STRATA	SPT	39/6	10.9%
		CL	SILTY CLAY	GRAY-BLACK	SL. MOIST		120/12	
25		III	EXPANSIVE	HARD	SILTSTONE STRATA	25		
			SHALES ARE FRACTURED					
			INTERBEDDED	SANDSTONE & SILTSTONE STRATA				
		CL	SILTY CLAY	VERY HARD TO DRILL		BULK		
30		III	EXPANSIVE			30		
				Blow Counts are cumulative for each				
			TD @ 28'	6 inches of sampler penetration.				
				NO Free Water				
				During Drilling 4-22-96				

LOG OF SUBSURFACE EXPLORATION

LINCOLN - DeVORE, Inc.
Geotechnical Consultants
Grand Junction, Colorado

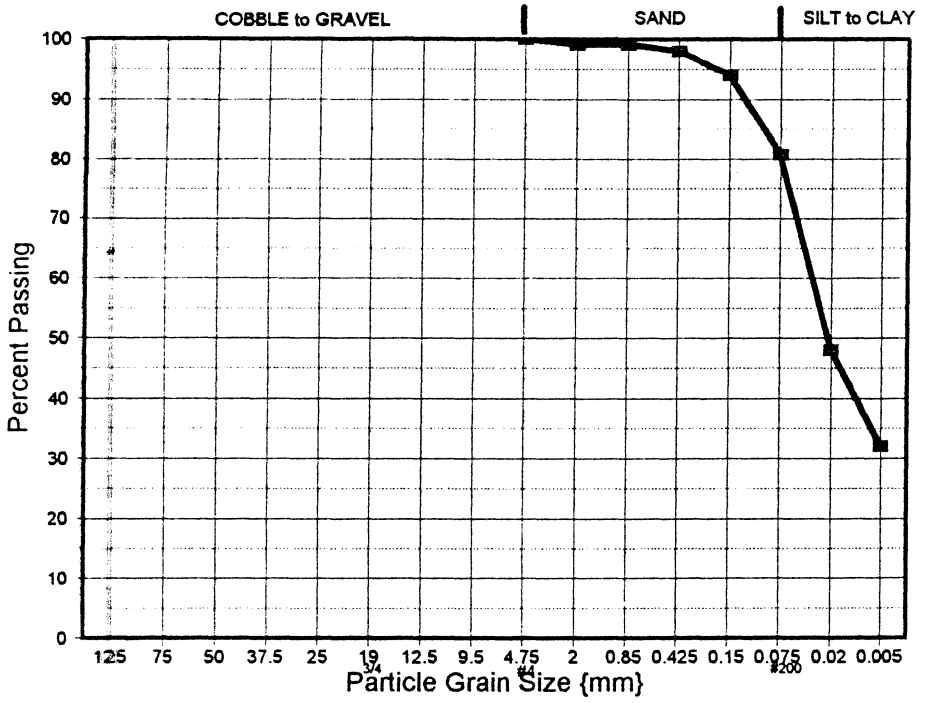
EAGLE RIM SUBDIVISION
Mountain View Court, Grand Junction, CO
Mr. ENNO HEUSCHER
330 Mountain View Court, G. J.
Date **5-27-96**
Job No. **85137-J**
Drawn **EMM**

Soil Sample: ALLUVIAL, SANDY, SIL[illegible] CLAY (CL) Sample No. [illegible] (Typical)

Job Location: NATIVE SOIL & POND EMBANKMENT Test by: LRS

Natural Water Content 7.7% Boring No.: 1 Depth: 9'

Soil Specific Gravity (Gs 2.66 In-Place Density (pcf): 107.2



Effective size mm

Cu

Cc

Plastic Limit (PL) 17%

Liquid Limit (LL) 25%

Plasticity Index (PI) 8%

Shrinkage Limit (SL)

Shrinkage Ratio

DIRECT SHEAR:

Shear Angle: deg.

Tan Shear Angle:

Cohesion: psf

Sieve	(mm)	% Passing
5"	125	
3"	75	
2'	50	
1-1/2"	37.5	
1"	25	
3/4"	19	
1/2"	12.5	
3/8"	9.5	
# 4	4.75	100
#10	2	99
#20	0.85	99
#40	0.425	98
#100	0.15	94
#200	0.075	80.7
	0.02	48
	0.005	32

MOISTURE/DENSITY RELATIONSHIP:

ASTM Method:

Max. Dry Density : pcf

Optimum Moisture :

HVEEM-CARMANY:

'R' Value @ 300 psi:

Displacement 300 psi:

Expansion @ 300 psi:

FHA Soil Swell:

% Swell

psf

ALLOWABLE BEARING (net):

Standard Penetration (SPT): 2400 psf

Unconfined Compression (qu): psf

CONSOLIDATION: @ psf

@ psf

SULFATE SALTS: 750 ppm

PERMEABILITY:

K (20 C): Void Ratio:

SOIL ANALYSIS and SUMMARY

LINCOLN - DeVORE, Inc.

Geotechnical Consultants

Grand Junction, Colorado

EAGLE RIM SUBDIVISION

Mountain View Court, Grand Junction, CO

Mr. ENNO HEUSCHER

330 Mountain View Court, G. J.

Date 5-27-96

Job No. 85137-J

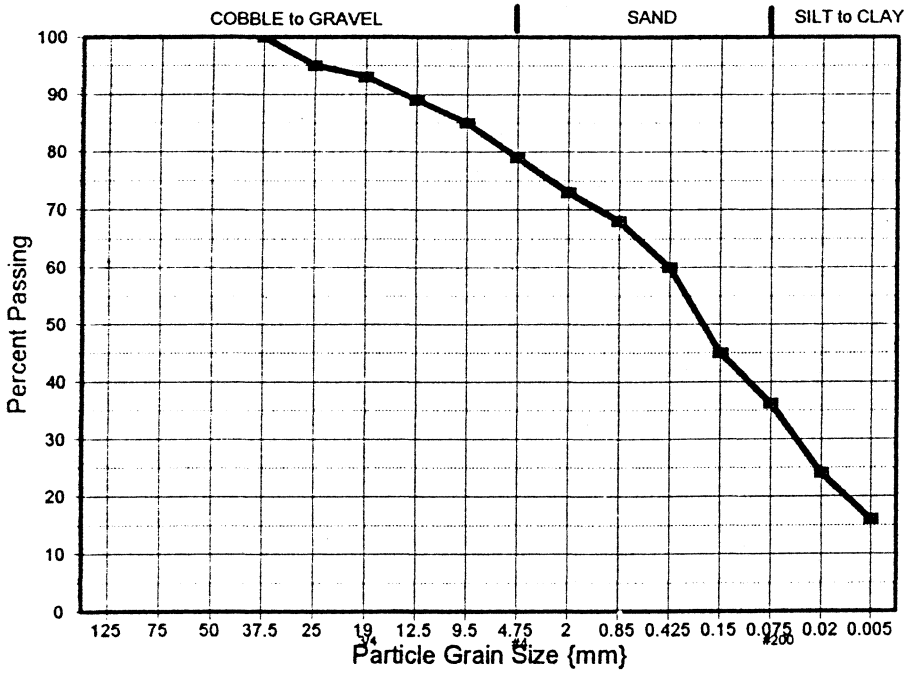
Drawn EMM

Soil Sample: SANDY GRAVEL & COBBLE (GM) Sample No. 1 (Typical)

Job Location: Test by: LRS

Natural Water Content 9.6% Boring No.: 2 Depth: 8'

Soil Specific Gravity (G: 2.66 In-Place Density (pcf):



Effective size mm

Cu

Cc

Plastic Limit (PL) NP

Liquid Limit (LL)

Plasticity Index (PI) NP

Shrinkage Limit (SL)

Shrinkage Ratio

DIRECT SHEAR:

Shear Angle: deg.

Tan Shear Angle:

Cohesion: psf

Sieve	(mm)	% Passing
5"	125	
3"	75	
2'	50	
1-1/2"	37.5	100
1"	25	95
3/4"	19	93
1/2"	12.5	89
3/8"	9.5	85
# 4	4.75	79
#10	2	73
#20	0.85	68
#40	0.425	60
#100	0.15	45
#200	0.075	36.2
	0.02	24
	0.005	16

MINUS 1-1/2" PORTION

MOISTURE/DENSITY RELATIONSHIP:

ASTM Method:

Max. Dry Density : pcf

Optimum Moisture :

HVEEM-CARMANY:

'R' Value @ 300 psi:

Displacement 300 psi:

Expansion @ 300 psi:

FHA Soil Swell:

% Swell

psf

ALLOWABLE BEARING (net):

Standard Penetration (SPT): 5000 psf

Unconfined Compression (qu): psf

CONSOLIDATION: @ psf

@ psf

SULFATE SALTS: 50 ppm

PERMEABILITY:

K (20 C): Void Ratio:

SOIL ANALYSIS and SUMMARY

LINCOLN - DeVORE, Inc.

Geotechnical Consultants

Grand Junction, Colorado

EAGLE RIM SUBDIVISION

Mountain View Court, Grand Junction, CO

Mr. ENNO HEUSCHER Date

330 Mountain View Court, G. J. 5-27-96

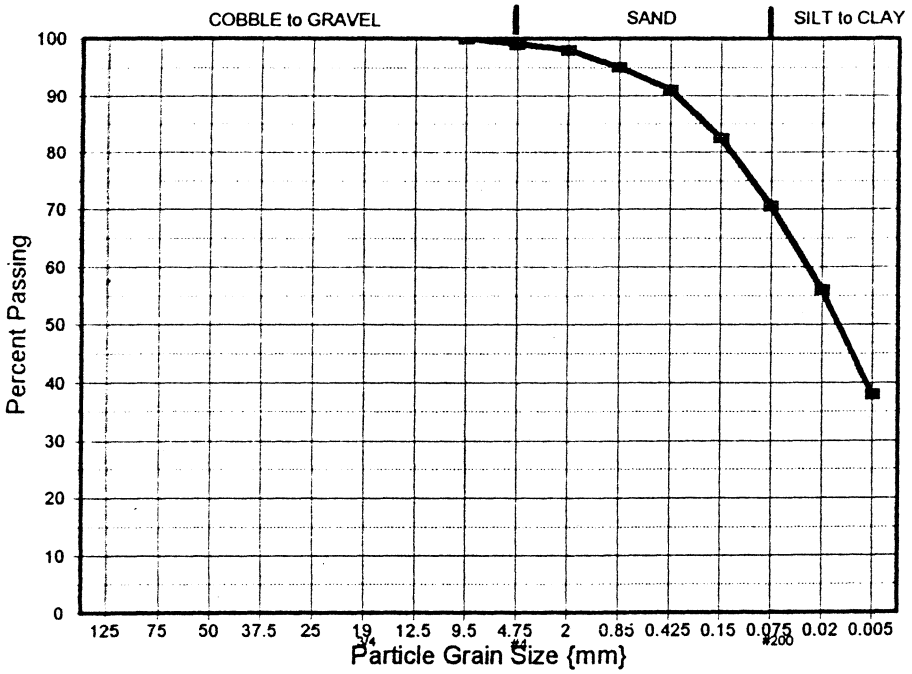
Job No. **85137-J** Drawn **EMM**

Soil Sample: SILTY CLAY (CL) M[illegible]COS SHALE Sample No. [illegible]I (Typical)

Job Location: Test by: LRS

Natural Water Content 10.9% Boring No.: 2 Depth: 23'

Soil Specific Gravity (G: 2.65 In-Place Density (pcf):



Effective size mm

Cu

Cc

Plastic Limit (PL) 21%

Liquid Limit (LL) 35%

Plasticity Index (PI) 14%

Shrinkage Limit (SL)

Shrinkage Ratio

DIRECT SHEAR:

Shear Angle: deg.

Tan Shear Angle:

Cohesion: psf

Sieve	(mm)	% Passing
5"	125	
3"	75	
2'	50	
1-1/2"	37.5	
1"	25	
3/4"	19	
1/2"	12.5	
3/8"	9.5	100
# 4	4.75	99
#10	2	98
#20	0.85	95
#40	0.425	91
#100	0.15	83
#200	0.075	70.6
	0.02	56
	0.005	38

MOISTURE/DENSITY RELATIONSHIP:

ASTM Method:

Max. Dry Density : pcf

Optimum Moisture :

HVEEM-CARMANY:

'R' Value @ 300 psi:

Displacement 300 psi:

Expansion @ 300 psi:

FHA Soil Swell:

4.6 % Swell

1877 psf

ALLOWABLE BEARING (net):

Standard Penetration (SPT): 7000+ psf

Unconfined Compression (qu): psf

CONSOLIDATION: @ psf

@ psf

SULFATE SALTS: 1000 ppm

PERMEABILITY:

K (20 C): Void Ratio:

SOIL ANALYSIS and SUMMARY

LINCOLN - DeVORE, Inc.

Geotechnical Consultants

Grand Junction, Colorado

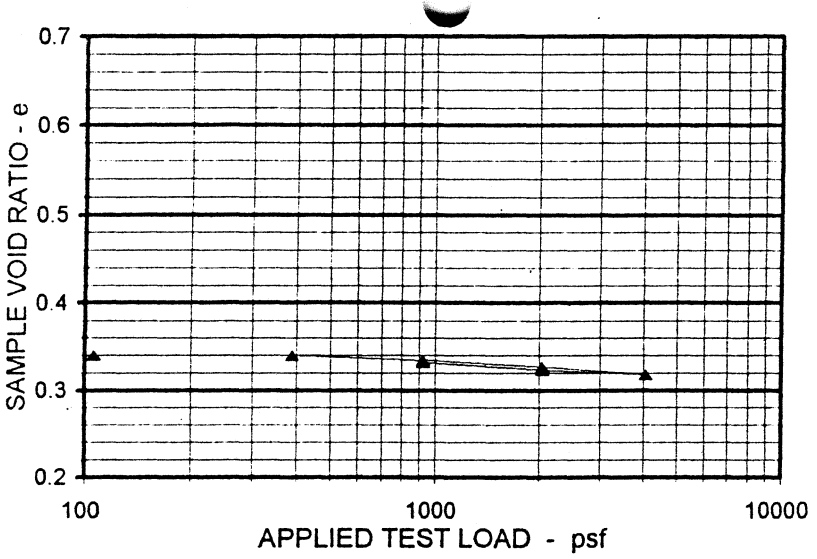
EAGLE RIM SUBDIVISION

Mountain View Court, Grand Junction, CO

Mr. ENNO HEUSCHER | Date

330 Mountain View Court, G. J. | 5-27-96

Job No.	Drawn
85137-J	EMM



The Consolidation Test (ASTM D-2435) Was Run By First Subjecting The Soil Specimen To A 'Seating' Load.

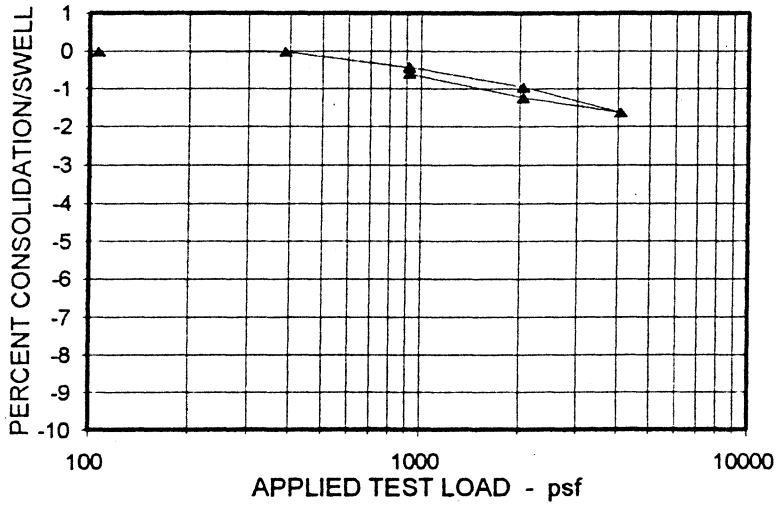
The 'Seating' Load Is To Remove Slack From The Apparatus And To Provide An Accurate Point of Beginning.

The Test Begins With The Specimen At Approximately Natural Moisture Content.

The Sample is Loaded to Approximately 900 psf And Then Saturated With Water.

Any Swell Or Collapse Of The Specimen Is Noted And The Loading Is Continued.

After The Maximum Test Load, The Soil Specimen Is Unload, To Measure Rebound And Swelling Potential, After Consolidation.



LOAD SUMMARY

106	*psf SEATING LOAD*
921	*psf SAMPLE SATURATED*
0	*% SOIL COLLAPSE*
0.02	*% SOIL EXPANSION/SWELL*
1.04	*% SAMPLE REBOUND @ UNLOAD*
1.63	*% MAXIMUM CONSOLIDATION*
4069	*psf MAXIMUM TEST LOAD*

	INITIAL	MAXIMUM LOAD	FINAL LOAD
SOIL DENSITY (pcf)	123.8	125.4	125.0
SOIL MOISTURE (%)	7.6%	12.2%	12.3%
CONSOLIDATION (%)	-0-	1.63%	0.59%
VOID RATIO (e)	0.340	0.324	0.328
SATURATION (%)	59%	100%	100%

SOIL #:	I
SOIL TYPE:	CL
TEST HOLE #:	1 @ 3'
SAMPLE Gs:	2.66
DIAMETER:	2.5"
AREA inchs:	.03409

SOIL CONSOLIDATION ASTM D-2435

LINCOLN - DeVORE, Inc.
Geotechnical Consultants
Grand Junction, Colorado

EAGLE RIM SUBDIVISION
Mountain View Court, Grand Junction, CO
Mr. ENNO HEUSCHER
330 Mountain View Court, G. J.
Date **5-27-96**
Job No. **85137-J**
Drawn **EMM**

City of Grand Junction, Colorado
250 North Fifth Street
81501-2668
FAX: (970)244-1599

June 24, 1996

Jeffrey L. Hynes
Colorado Geological Survey
1313 Sherman Street; RM 715
Denver, CO 80203

Dear Jeff:

Enclosed is a copy of the final plat and geotechnical report for the Eagle Rim Subdivision, located along the Colorado River bank in Grand Junction. As we had talked earlier on the phone, this plat is a replat of three existing lots with one a lot line adjustment on two of the lots. For this reason we are not requiring review by your agency but are submitting these documents for your information.

If you have any questions please call me at (970) 244-1447.

Sincerely,

Bill Nebeker
Senior Planner

July 10, 1996

Enno Heuscher
330 Mountain View Court
Grand Junction, CO 81503

Dear Enno:

In regards to the review of the Eagle Rim Subdivision final plat, please note the following changes/corrections that are needed:

1. This property is located in the City of Grand Junction. Make necessary changes to the dedication statement to reflect this. Remove signature block for County Planning Commission and County Board of Commissioners. Provide signature block for City Manager and Council President.

2. Revise the following statement to add **the City of Grand Junction**, "That said owners have caused the said real property to be laid out and surveyed as EAGLE RIM SUBDIVISION, a subdivision of a part of **the City of Grand Junction,** County of Mesa, State of Colorado.

3. Since no streets or roads are being dedicated, remove the statement, "That said owners do hereby dedicate and set apart all of the streets and roads as shown on the accompanying plat to the use of the public forever."

4. Revise dedication statements for utility and irrigation easements to read as follows:

   A. "All Utility Easements to the City of Grand Junction for the use of public utilities as perpetual easements for the installation, operation, maintenance and repair of utilities and appurtenances thereto including, but not limited to electric lines, cable TV lines, natural gas pipelines, sanitary sewer lines, water lines and telephone lines."

   B. "All Irrigation Easements to the owners of the lots and tracts hereby platted as perpetual easements for the installation, operation, maintenance and repair of private irrigation systems."

5. Provide the following statement in the dedication, "All easements include the right of ingress and egress on, along, over, under, and through and across by the beneficiaries, their successors, or assigns, together with the right to trim or remove interfering trees and brush; provided, however, that the beneficiaries of said easements shall utilize the same in a reasonable and prudent manner.

Furthermore, the owners of lots or tracts hereby platted shall not burden nor overburden said easements by erecting or placing any improvements thereon which may prevent reasonable ingress and egress to and from the easement.

6. Remove the statement, "That all expenses for street paving or improvements shall be furnished by the seller or purchaser, not the County of Mesa" from the plat.

These requirements were required on the original review comments dated March 1996.

As of July 10, 1996 I have not received a response from the Colorado Geological Survey. The City Development Engineer has approved the geotechnical report and placement of the building envelopes.

Please make the necessary corrections to the plat and return one blueline copy for review. If found to be acceptable you will be instructed to submit a mylar copy with required signatures from property owner(s)/financial institutions. After submittal of the mylar we will prepare the plat for recording. Prior to final recording you will be instructed to pick up the final plat and make 2 full sized mylar copies, 1 reduced (11"X17") mylar copy and submit a computer disk with the drawing. If a computer disk is not available, a $20 transcribing fee will be required. If required, make check payable to the City of Grand Junction. An $11 recording fee is also required. Make check payable to Mesa County Clerk & Recorder.

When the above items have been submitted, the plat will be recorded shortly thereafter. Please do not make copies until instructed to do so.

If you have any questions please call me at 244-1447.

Sincerely,

Bill Nebeker
Senior Planner

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

July 10, 1996

Enno Heuscher
330 Mountain View Court
Grand Junction, CO 81503

Dear Enno:

In addition to the items required in the letter sent previously, please note the following correction needed to the Eagle Rim Subdivision Plat:

1. Note on plat that the utility and irrigation easement surrounding the cul-de-sac as is 14' wide. This was a request from Public Service Company at Wednesday's Utility Coordinating Council meeting.

If you have any questions please call me at 244-1447.

Sincerely,

Bill Nebeker

Bill Nebeker
Senior Planner

CITY OF GRAND JUNCTION
DEPARTMENT OF PUBLIC WORKS & UTILITIES
250 NORTH 5TH STREET
GRAND JUNCTION, CO 81501
(970) 244-4003

TO THE MESA COUNTY CLERK & RECORDER:

THIS IS TO CERTIFY that the herein named Subdivision Plat,

EAGLE RIM SUBDIVISION,

Situated in the SE 1/4 of Section 24,

Township 1 SOUTH, Range 1 WEST,

of the UTE Meridian in the City of Grand Junction, County of Mesa, State of Colorado, has been reviewed under my direction and, to the best of my knowledge, satisfies the requirements pursuant to C.R.S. 38-51-106 and the Zoning and Development Code of the City of Grand Junction for the recording of subdivision plats in the office of the Mesa County Clerk and Recorder.

This certification makes no warranties to any person for any purpose. It is prepared to establish for the County Clerk and Recorder that City review has been obtained. This certification does not warrant: 1) title or legal ownership to the land hereby platted nor the title or legal ownership of adjoiners; 2) errors and/or omissions, including, but not limited to, the omission(s) of rights-of-ways and/or easements, whether or not of record; 3) liens and encumbrances, whether or not of record; 4) the qualifications, licensing status and/or any statement(s) or representation(s) made by the surveyor who prepared the above-named subdivision plat.

Dated this 17 day of July, 1996.

City of Grand Junction,
Department of Public Works & Utilities

By: James L. Shanks
James L. Shanks, P.E., P.L.S.
Director of Public Works & Utilities

Recorded in Mesa County

Date: _____

Plat Book: 15 Page: 24

Drawer: CC42

1765179 1000AM 07/24/96
MONIKA TODD CLK&REC MESA COUNTY CO

g:\special\platcert.doc

Fee 10.00 / .00 SC

2 PAGE DOCUMENT

RP. 56-42

BOOK 2251 PAGE 143

STATE OF COLORADO

COLORADO GEOLOGICAL SURVEY
Division of Minerals and Geology

Department of Natural Resources
1313 Sherman Street, Room 715
Denver, Colorado 80203
Phone (303) 866-2611
FAX (303) 866-2461

FAXED 7/17/96

DEPARTMENT OF NATURAL RESOURCES

July 17, 1996 MA-96-0037

Mr. Bill Nebeker, Senior Planner
City of Grand Junction Department of Community Development
250 North Fifth Street
Grand Junction, Colorado 81501-1599

Re: Proposed Eagle Rim Subdivision (aka Heuscher property) -- North of the Intersection of Cheyenne Drive and Mountain View Court and Immediately South of the Colorado River, Grand Junction

1765180 1000AM 07/24/96
MONIKA TODD CLK&REC MESA COUNTY CO

Dear Mr. Nebeker:

At your request, we have reviewed the materials submitted for and made a field inspection of the site of the proposed residential subdivision indicated above. This work entailed studying the geotechnical report by Lincoln DeVore, Inc., Grand Junction, as well as making two site visits to the property. Visits included accessing the property from the steep bank(s) on its north side above the River and observing it through the fence north of the Mountain View Court cul-de-sac. During the first visit I discussed this proposal briefly with Mrs. Pauline (Penny) Heuscher who lives adjacent to the parcel. The following comment summarize our findings.

(1) We concur with the field observations made in this subdivision area as presented in the Lincoln-Devore report. Our only significant departures them relate to interpretation(s) of them made by Lincoln DeVore. The steeper slopes above the River, both in the Orchard Mesa terrace gravels and in the underlying Mancos Shale bedrock, appear to be very susceptible to slope movements, as least surficially, if saturated with water. The higher, more nearly level and flat area(s) behind (south of) the setback (building-envelope) line shown on the proposed plat appears to be completely stable in its present condition and should not present construction or serviceblility problems for properly engineered building foundations. Because of the likelihood that ground-moisture levels in this area could increase after building on these lots (through irrigation and by increasing impervious cover) and that the water table could consequently rise and result in water saturation of the steeper slopes, we recommend that all buildings incorporate foundation drains into their foundation designs. These should carry water away from buildings and should not discharge either on the steeper or more gently sloping areas. Drain water should be discharged away from the site, preferably to the River itself. Also, finish grades on the lots should be modified so that positive drainage away from buildings is maintained. Homeowners should be advised to

irrigate minimally near building foundations. Also, based on our experiences with the nearby Lamplite Subdivision, no fill materials should be placed out over the steeper slopes to effectively lessen slopes on any part of any of the lots. In this other case, it was home construction on fills which was largely responsible for slope failures and consequent damages (partial destruction) to houses and their appurtenances.

(2) If the recommendations made in (1) are disclosed to potential lot purchasers and the proposed setback indicated on the "Final Plat" included with the review-submittal documents is maintained and made a condition of approval of this subdivision proposal, then we have no geology-related objection to it.

Sincerely,

James M. Soule

James M. Soule
Engineering Geologist

cc: Dr. Enno F. Heuscher

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

August 6, 1996

James Soule
Colorado Geological Survey
1313 Sherman Street
Denver, CO 80203

RE: Invoice for Eagle Rim Subdivision

Dear Jim:

I received your bill for CGS's review of Eagle Rim Subdivision. I thought I had made it clear to you at the time of your review that we were sending information to CGS as a courtesy and for informational purposes only since the proposed subdivision was simply a lot line adjustment for three existing lots. (See attached memos and letters.) The City's policy is for the applicant to pay these fees, but considering these circumstances I doubt Mr. Heuscher will be willing to pay either.

If you have any questions please call me at (970) 244-1447.

Sincerely,

Bill Nebeker

Bill Nebeker
Senior Planner

c: Enno Heuscher

ACCOUNT NO.		INVOICE NO.
2200CT		97-015
		INVOICE DATE
		07-29-96

COLORADO GEOLOGICAL SURVEY

DEPARTMENT OF NATURAL RESOURCES
1313 Sherman Street, Room 715
Denver, Colorado 80203
Ph: (303) 866-2611 Fax: (303) 866-2461

INVOICE

BILL TO:

CITY OF GRAND JUNCTION
250 NORTH FIFTH ST.
GRAND JUNCTION, CO 81501

DESCRIPTION	UNIT COST	TOTAL
RE: GEOLOGIC REVIEW OF EAGLE RIM SUBDIVISION REVIEWER: JAMES SOULE MA-96-0037		471.48

EXPLANATION OF CGS INVOICE FOR SUBDIVISION REVIEWS:

UNDER C.R.S. 30-28-101, ET SEQ (SENATE BILL 35 OF 1972) COUNTIES ARE REQUIRED TO SUBMIT PROPOSED SUBDIVISION APPLICATIONS AND SUPPORTING TECHNICAL REPORTS TO THE COLORADO GEOLOGICAL SURVEY "FOR AN EVALUATION OF THOSE GEOLOGIC FACTORS WHICH WOULD HAVE A SIGNIFICANT IMPACT ON THE PROPOSED USE OF THE LAND."

C.G.S HAS PERFOMRED SUCH REVIEWS SINCE 1972 AND SINCE 1983 HAS BEEN REQUIRED BY LAW TO RECOVER THE FULL DIRECT COST OF SUCH REVIEWS MAKING THIS A TOTALLY CASH-FUNDED ACTIVITY OF C.G.S. NEARLY ALL COUNTIES HAVE ELECTED TO PASS THROUGH THE REVIEW FEE TO THE SUBDIVISON APPLICANT. SOME COUNTIES REQUIRE A CHECK "UP FRONT" FOR THE FEE TO C.G.S. AS PART OF THE APPLICATION CHECK LIST, OTHER COUNTIES PREFER THAT WE INVOICE THE APPLICANT DIRECTLY AS IN YOUR CASE. THOSE THAT ARE PREPAID RECEIVE A $25.00 COST REDUCTION AS IT SAVES C.G.S FROM THE COST OF INVOICING AND POSSIBLE COLLECTION COSTS.

IF APPLICANT INFORMATION IS NOT SUPPLIED, THE COUNTY WILL BE BILLED.

IF YOU HAVE ANY QUESTIONS, PLEASE CALL MR. JIM SOULE, THE LAND USE REVEIW ADMINISTRATOR AT (303) 866-2611. FOR MORE GENERAL DISCUSSION ON THE FEE SYSTEM, PLEASE CALL PAT ROGERS, DEPUTY DIRECTOR, OR VICKI COWART, DIRECTOR AND STATE GEOLOGIST AT THE SAME NUMBER.

NOTICE:
COLLECTION FEES WILL BE ADDED TO ACCOUNT BALANCE IF FULL PAYMENT IS NOT RECEIVED WITHIN 60 DAYS.

SUBTOTAL

Terms: NET 10 DAYS **TOTAL** $471.48

PLEASE SHOW INVOICE NUMBER ON PAYMENT

Costs incurred to collect delinquent accounts will be added to balance due.

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

April 2, 1996

Enno Heuscher
330 Mountain View Court
Grand Junction, CO 81503

Re: Eagle Rim Subdivision (#RP-96-42)

Dear Dr. Heuscher:

I recently spoke with Jeff Hynes from the Colorado Geological Survey in Denver regarding your proposed replat. In light of the fact that this subdivision is just a lot line adjustment, he conceded the need for the Survey to review this plat. However he suggested that building envelopes be placed on the plat for each lot with at least a 50 foot setback from the top of grade break.

I don't think a 50 foot setback is feasible for this subdivision. A setback of this magnitude could make lots 1 & 2 unbuildable. Instead of a 50 foot setback, the City will require that a geotechnical report be conducted for these lots. The conclusions of the report must support the location of building envelopes, to be placed on the plat for each lot. This requirement replaces the comment from me that the plat be reviewed by the Colorado Geological Survey.

If you have any questions please call me at 244-1447.

Sincerely,

Bill Nebeker

Bill Nebeker
Senior Planner

c: QED Surveying

Enno F. Heuscher, M.D., F.A.A.F.P.
WELLINGTON MEDICAL BUILDING #2
2525 NORTH 6TH STREET, SUITE #104
GRAND JUNCTION, COLORADO 81501

TELEPHONE 241-1370

June 11, 1996

Community Development Department
City of Grand Junction,

ATTN: Bill Nebeker

Dear Mr. Nebeker:

Enclosed are all the required elements you requested as of your April 2, 1996 letter, with reference to Eagle Rim Subdivision (#RP-96-42). Four copies of the final plat are attached, along with four copies of the complete geotechnical report on the properties. Please be aware that this whole project simply involves a lot line adjustment, resulting in a need for a replat, and is not changing the number of new building sites in the area.

In your letter of April 2, 1996, Colorado Geologic Survey and yourself conceded the need for CGS review of this plat, provided a geotechnical report is conducted for these lots. I feel that as representative for this replat, I have provided more than enough geotechnical review and study of this property, and it should be understood that any further review or study that the City of Grand Junction wants to do concerning this replat will be strictly at the city's expense. Thank you.

Sincerely,

Enno F. Heuscher

Enclosure
ts

City of Grand Junction, Colorado
250 North Fifth Street
81501-2668
FAX: (970)244-1599

June 24, 1996

Jeffrey L. Hynes
Colorado Geological Survey
1313 Sherman Street; RM 715
Denver, CO 80203

Dear Jeff:

Enclosed is a copy of the final plat and geotechnical report for the Eagle Rim Subdivision, located along the Colorado River bank in Grand Junction. As we had talked earlier on the phone, this plat is a replat of three existing lots with one a lot line adjustment on two of the lots. For this reason we are not requiring review by your agency but are submitting these documents for your information.

If you have any questions please call me at (970) 244-1447.

Sincerely,

Bill Nebeker

Bill Nebeker
Senior Planner

CITY OF GRAND JUNCTION FILE **#RP-96-42 FINAL PLAT - EAGLE RIM SUBDIVISION** LOCATED AT MOUNTAIN VIEW COURT NORTH OF CHEYENNE DRIVE HAS BEEN REVIEWED AND APPROVED BY THE UTILITY COORDINATING COMMITTEE.

Phil Bertrand
CHAIRMAN

8-14-96
DATE

TYPE LEGAL DESCRIPTION(S BELOW, USING ADDITIONAL SHEETS AS NECESSARY. USE SINGLE SPACING WITH A ONE INCH MARGIN ON EACH SIDE.

****

NEW DESCRIPTION:

Lots 1, 2, and 3, Eagle Rim Subdivision, Mesa County, Colorado.

PREVIOUS DESCRIPTION:

Lot 6 in
MOORE SUBDIVISION, FIRST ADDITION, Mesa County, Colorado
and
Lot 5 in MOORE SUBDIVISION, FIRST ADDITION
and
all that part of Lot 7 in Section24, Township 1 South, Range 1 West of the Ute Meridian, lying adjacent to and North of Moore Subdivision and South of the South bank of the Colorado River,

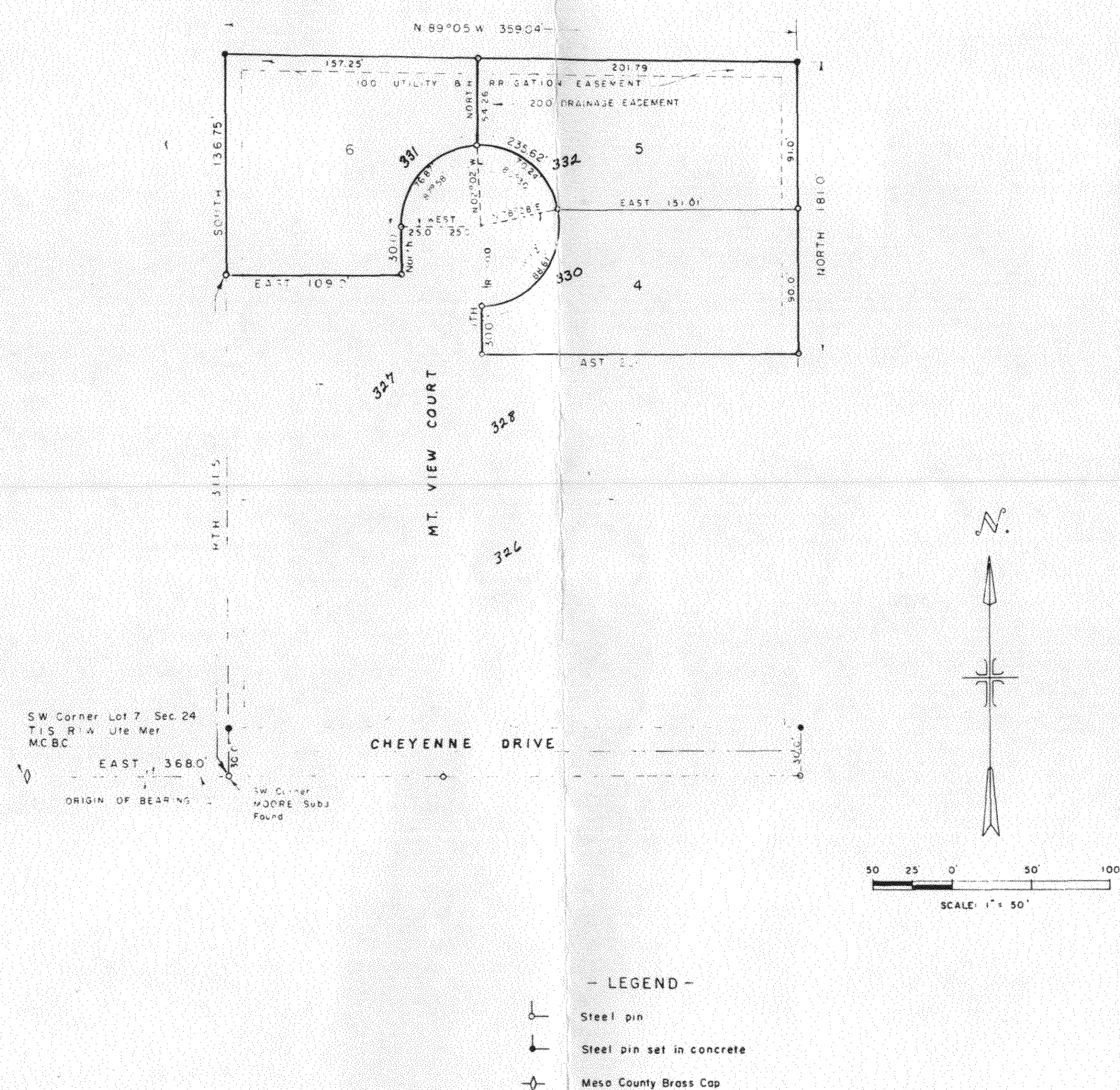
BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
Beginning at the Southwest corner of Lot 6 of MOORE SUBDIVISION FIRST ADDITION, and considering the South line of Lot 7 of Section 24, Township 1 South, Range 1 West of the Ute Meridian to bear N90°00'00"W and all bearings contained herein to be relative thereto; thence N00°00'00"E 136.75 feet to the Northwest corner of Lot 6 of MOORE SUBDIVISION FIRST ADDITION; thence N00°00'00"E 141.84 feet to the South bank of the Colorado River; thence along the South line of the Colorado River the following four courses;
(1) S79°20'41"E 18.33 feet; (2) S83°15'14"E 77.52 feet; (3) N89°58'53"E 98.66 feet; (4) S87°32'52"E 165.50 feet; thence leaving the South bank of the Colorado River S00°00'00"W 128.04 feet to the Northeast corner of Lot 5 of MOORE SUBDIVISION FIRST ADDITION; thence S00°00'00"W 91.00 feet to the Southeast corner of Lot 5 of MOORE SUBDIVISION FIRST ADDITION; thence N90°00'00"E 151.01 feet along the South line of Lot 5 of MOORE SUBDIVISION FIRST ADDITION to the Easterly Right-of-Way of Mt. View Court; thence leaving the South line and along the Easterly Right-of-Way along the arc of a curve to the left 147.01 feet, with a radius of 50 feet, and whose chord bears S84°13'53"W 99.49 feet; thence S00°00'00"W 30 feet to the Southeast corner of Lot 6 of MOORE SUBDIVISION FIRST ADDITION; thence N90°00'00"E 109.00 feet along the South line of Lot 6 of MOORE SUBDIVISION FIRST ADDITION to the POINT OF BEGINNING.
Containing 1.90 acres as described.

ZONE RSF-8
Rezoned to RSF-5

4650

- GEOTECHNICAL REPORT
- CO GEOLOGICAL SURVEY

LAND IS NORTH OF MOORE SUBD



MOORE SUBDIVISION

FIRST ADDITION

DEDICATION

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, Pearl A. Moore is the owner of that real property situated in the County of Mesa, State of Colorado, and lying in Southeast ¼ of Section 24, Township 1 South, Range 1 West of the Ute Meridian, as shown by the accompanying plat thereof, said tract being more specifically described by metes and bounds as follows:

Beginning at a point which bears East 368.0 feet and North 311.5 feet from the Southwest corner of Lot 7, Section 24, Township 1 South, Range 1 West of the Ute Meridian, thence East 109.0 feet, thence North 30.0 feet, thence along the arc of a 50.0 foot radius curve to the right 235.62 feet (the center of said curve bears East 50.0 feet) to a point which bears South 50.0 feet from the center of said curve, thence South 30.0 feet, thence East 200.0 feet, thence North 181.0 feet, thence N 89°05' W 359.04 feet, thence South 136.75 feet to the point of beginning.

That the said owner has caused the said real property to be laid out and surveyed as Moore Subdivision First Addition, a subdivision of a part of the County of Mesa.

That said owner does hereby dedicate and set apart all of the street and roads as shown on the accompanying plat to the use of the public forever and hereby dedicate those portions of said real property which are labeled as utility easements on the accompanying plat as easements for the installation and maintenance of such utilities as telephone and electric lines, poles and cables; storm and sanitary sewer mains, water mains; gas pipe lines; and those portions of said real property which are labeled as irrigation easements on the accompanying plat as easements for the installation and maintenance of irrigation ditches, flumes and conduits;

That all expenses for installation of utilities or ditches referred to above for grading or landscaping, and for street graveling or improvements shall be financed by the seller or purchaser --- not the County of Mesa.

IN WITNESS WHEREOF, said Pearl A. Moore has caused her name to be hereunto subscribed this 1st day of February A.D., 1971.

Pearl A. Moore
Pearl A. Moore

STATE OF COLORADO } ss
COUNTY OF MESA }

The forgoing instrument was acknowledged before me this 1st day of February A.D., 1971, by Pearl A. Moore

My Commission expires November 12, 1973
Witness my hand and official seal.

John C. Sutherland
Notary Public

CLERK AND RECORDER'S CERTIFICATE

RECEPTION No. 1000711

STATE OF COLORADO } ss
COUNTY OF MESA }

I hereby certify that this instrument was filed in my office at 11⁰⁰ o'clock A. M., FEB. 16, 1971 A.D., 1971, and is duly recorded in Plat Book No. 11, Page 27

Annie M. Dunston
Clerk and Recorder

Fees $10.00

By ______
Deputy

COUNTY PLANNING COMMISSION CERITICATE

Approved this 9th day of February, A.D., 1971.
County Planning Commission of the County of Mesa, Colorado

By George R. Sampson
Chairman

BOARD OF COUNTY COMMISSIONER'S CERTIFICATE

Approved this 16th day of February, A.D. 1971
Board of County Commissioners of the County of Mesa, Colorado

By Zach Wadlow
Chairman

SURVEYOR'S CERTIFICATE

I, Willior F. Quinn do hereby certify that the accompanying plat of Moore Subdivision First Addition, a subd., of a part of the County of Mesa, has been prepared under my direct responsibility, supervision and checking and accurately represents a field survey of same.

By William F. Quinn
Registered Land Surveyor

Approved for content and form only and not to the accuracy of surveys, calculations or drafting, pursuant to C.R.S. 1963, 136-2-2 as amended.

By Roger C. Head 2/11/71
Mesa County Surveyor Date

WESTERN ENGINEERS, INC.
PLAT OF
MOORE SUBDIVISION
FIRST ADDITION
MESA COUNTY, COLORADO

SURVEYED W.F.Q. DRAWN W.F.Q. TRACED [illegible]
GRAND JUNCTION, COLO. DWG NO. 1-355-2 1/29/71