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File 1992-0055 Name: Ptarmigan Ridge - Filing #4 - Final Plat in RSF-4 Zone

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		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.
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DOCUMENT DESCRIPTION:

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X	X	Planning Commission Minutes - ** - 12/1/92	X	X	Utility Coordinating Committee - 4/27/92,12/9/92
X		Public Notice Posting - 12/3/92	X	X	Irrevocable Letter of Credit
X		Subdivision Summary Form	X	X	Development Improvements Agrmt
X		Notice of Public Hearing for 12/1/92	X	X	Release of Improvements Agrmt
X		Utility Coordinating Committee Mtg. - 12/9/92 - Signed off	X		Covenants, Conditions, and Restrictions
X		Real Property Account History - 1/92	X	X	Avigation Easement
X		Computer Files Indexing Information Sheet	X		Certification of Plat
X		Commitment for Title Ins. From Chicago Title Ins. Co.	X	X	Revised Final Plat - 11/24/92
X	X	Geologic Investigation - 4/16/90	X	X	Revised Site Plan
X	X	Subsurface Soil Report - 9/5/90	X	X	Revised Utility Plans -
X	X	Traffic Analysis	X	X	Revised Grading and Drainage Plan
X	X	Development Schedule	X		Revised Road Plans and Profiles
X	X	Floodplain Analysis	X	X	Revised Sewer Line "A" & "B" Plan & Profile
X	X	Correspondence			

DEVELOPMENT APPLICATION

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

A

Receipt 5286
Date 9-2-92
Rec'd By
File No. #55 92

PTARMIGAN Ridge Filing 4

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
[x] Subdivision Plat/Plan	[ ] Minor [x] Major [ ] Resub	4.52 AC	ALONG NORTH 15th STREET NORTH OF Ridge Drive	RSF-4	Residential single family
[ ] Rezone				From: To:	
[ ] Planned Development	[ ] ODP [ ] Prelim [ ] Final				
[ ] Conditional Use					
[ ] Zone of Annex					
[ ] Text Amendment					
[ ] Special Use					
[ ] Vacation					[ ] Right-of-Way [ ] Easement

[x] PROPERTY OWNER	[x] DEVELOPER	[x] REPRESENTATIVE
JOHN SIEGFRIED	c/o QED Surveying SAME Systems	SAME
Name	Name	Name
PO BOX 9088	SAME	SAME
	1010 Colorado Ave	
Address	Address	Address
GRAND JUNCTION, CO 81501	SAME	SAME
City/State/Zip	City/State/Zip	City/State/Zip
241-7025	241-2370 SAME	SAME
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 hearings. In the event that the petitioner is not represented, the item will be dropped from the agenda, and an additional fee charged to cover rescheduling expenses before it can again be placed on the agenda.

X _____ 9/2/92
Signature of Person Completing Application Date

Do NOT Remove From Office

X _____

X _____

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

H

Kenneth Fallert
667 Eastcliff Dr.
Grand Junction, CO 81506

Frank L. Webber
669 Eastcliff Dr.
Grand Junction, CO 81506

Kevin E. Tiedeman
663 Eastcliff Dr.
Grand Junction, CO 81506

Dennis A. Cotthaus
661 Eastcliff Dr.
Grand Junction, CO 81506

Michael D. McCoin
2716 Midway Ave.
Grand Junction, CO 81506

Elmer L. Moore
658 Eastcliff Dr.
Grand Junction, CO 81506

Edgar W. Foy
664 Eastcliff Dr.
Grand Junction, CO 81506

Lyman Walters
666 Eastcliff Dr.
Grand Junction, CO 81506

Rodney H. Wright
668 Eastcliff Dr.
Grand Junction, CO 81506

Michael D. Peterson
670 Eastcliff Dr.
Grand Junction, CO 81506

Donna A. Hefner
409 W. Kennedy Apt. 1
Grand Junction, CO 81505

Marvin & Leta Higginson
534 E. Valley Dr.
Grand Junction, CO 81504

Margaret D. Eachus
652 27½ Road
Grand Junction, CO 81506

Andrew Christensen Family
Ltd. Partnership
2669 Paradise Dr.
Grand Junction, CO 81506

Carmen Allen
263 W. Parkview
Grand Junction, CO 81503

John A. Siegfried
PO Box 9088
Grand Junction, CO 81501

Daryld Richardson
665 Eastcliff Dr.
Grand Junction, CO 81506

Beverly Whitney
PO Box 2735
Grand Junction, CO 81502

J. D. Walters
662 Eastcliff Dr.
Grand Junction, CO 81506

Thomas Clink
3611 Ridge Ct.
Grand Junction, CO 81506

H

Jack Brown
681 27½ Road
Grand Junction, CO81506

Emanuel Epstien
1900 Quentin RD.
Brooklyn, N.Y. 11229

Jimmie Etter
697 27½ RD.
Grand Junction, CO81501

David Odelberg
2708 F½ Road
Grand Junction, CO 81506

Deborah Taylor
3645 27½ Road
Grand Junction, CO 81506

Eben Dean Massey
3635 27½ Road
Grand Junction, CO 81506

Ione O'Brien
3636 Bell CT.
Grand Junction, CO 81506

David Lacy
3644 Bell CT.
Grand Junction, CO 81506

Howard Rudolph
3648 Bell CT.
Grand Junction, CO 81506

Gerald Miller
3645 Bell CT.
Grand Junction, CO 81506

Gregory Guth
3635 Bell CT.
Grand Junction, CO 81506

Frank Beran
P.O. Box 60284
Grand Junction, CO 81506

Lawrence Hensley
592 Cleveland St.
Grand Junction, CO 81504

Rufus Jones
646 ½ Oxbow RD.
Grand Junction, CO 81504

Daniel Miller
PO Box 1703
Grand Junction, CO 81502

Barbara Briggs
3638 Bell Ridge Ct.
Grand Junction, CO 81506

Spomer Const.
1720 Ridge Dr.
Grand Junction, CO 81506

Marguerite McGinn
672 Eastcliff Dr.
Grand Junction, CO 81506

Conrad Pyle
674 Eastcliff Dr.
Grand Junction, CO 81506

Thomas Kriegshauser
673 Eastcliff Dr.
Grand Junction, CO 81506

Nelia Henderson
671 Eastcliff DR.
Grand Junction, CO 81506

Remove
Office

#55 92

B

IMPACT STATEMENT AND PROJECT NARRATIVE

PTARMIGAN RIDGE FILING 4

Ptarmigan Ridge is located on 26 acres bounded on the south by North 15th Street and Ridge Drive. It also touches 27 1/2 Road to the east. Both of these boundaries provide access to collector streets while other traffic flows will be internal.

From a design standpoint, Ptarmigan Ridge Filing # 4 is a continuation of Filing # 3, although the average lot size is approximately 1000 sq. ft. larger.

Ptarmigan Ridge is scheduled for development over a three year period that commenced in the fall 1990. It is anticipated that phases consisting of 25 to 30 lots per phase will be developed on an annual basis. First phases logically will be those areas closest to 27 1/2 Road and North 15th where it ends. Filing 4 will consist of 13 lots with development to commence in the fall of 1992, weather permitting. Street and sidewalk design has been reconfigured to conform to present City standards. The phases will use Ute water and City of Grand Junction services, as well as Grand Valley Water User's irrigation.

Ptarmigan Ridge Filing 4 is a development planned for a density of approximately 3 homes per acre, within an area zoned to permit four units per acre.

Ptarmigan can presently be served by Ute water from the northeast and southwest road frontage and city sewer is available at 15th Street. Irrigation water is available from Grand Valley Water User's Association, and should be adequate with a homeowner watering schedule to share this limited resource.

Part of Ptarmigan lies within the critical zone of Walker Field and an aviation easement will provided.

#55 92

X,Y TRAFFIC ANALYSIS

Ten car trips per day per household, or 130 trips per day will be generated by Filing 4, rather than the maximum of 180 trips per day which present zoning allows.

Street signage and lighting will be installed to present city standards.

#55 92

O DEVELOPMENT SCHEDULE

Construction will commence in the fall of 1992 and be completed in the fall of 1992 or by spring of 1993.

Q SITE PLAN

Standard Grand Junction setbacks will apply to these lots.

R

Adjacent land use and zoning is indicated on the site plan.

U LANDSCAPING

Individual landscaping of lots will be done by the lot-owners. There will be no common area landscaping in Filing 4.

#55 92

I FLOODPLAIN ANALYSIS

This subdivision does not fall within any Federally established or published floodplain.

#55 92

September 22, 1992

John Siegfried
P.O. Box 9088
Grand Junction, CO 81502

Dear John:

In the review of your proposal for a Final Plat for Ptarmigan Ridge filing #4 along 15th Street North of Ridge Drive (City Development file # 55-92) it has been noted that the submittal is incomplete (see attached review comments, specifically City Development Engineer comments, page 4). Section 6-7-4 of the Zoning and Development Code states that "a submittal with insufficient information, identified in the review process, which has not been addressed by the applicant, may be withdrawn from the agenda by the Administrator". The revised documents submitted on September 16th did not include all of the deficient items required for review. The item missing is an addendum to the drainage report. Therefore, your proposal will not be scheduled for the October 6, 1992 Planning Commission hearing. For the item to be scheduled for the November Planning Commission hearing all deficiencies as outlined by the City Development Engineer must be rectified and resubmitted to the Community Development Department by October 1, 1992.

If you have any questions please contact me at 244-1447 at your earliest convenience.

Respectfully,

Dave Thornton
Planner

cc: Gerald Williams
File #55-92

REVIEW COMMENTS

FILE NO. #55-92 TITLE HEADING: Final Plat

ACTIVITY: Ptarmigan Ridge #4

LOCATION: North 15th Street & Ridge Drive

PHASE: ACRES:

PETITIONER: John Siegfried

PETITIONER'S ADDRESS/TELEPHONE: P.O. Box 9088
Grand Junction, CO 81502
(303) 241-7025

ENGINEER/REPRESENTATIVE: John Siegfried

STAFF REPRESENTATIVE: Dave Thornton

NOTE: WRITTEN RESPONSE BY THE PETITIONER TO THE REVIEW COMMENTS IS REQUIRED ON OR BEFORE 5:00 P.M., SEPTEMBER 28, 1992

U.S. WEST **09/08/92**
Leon Peach **244-4964**

New or additional telephone facilities necessitated by this project may result in a "contract" and up-front monies required from developer, prior to ordering or placing of said facilities.

UTE WATER **09/10/92**
Gary R. Mathews **242-7491**

Water line in Ptarmigan Court will run through the cul-de-sac. Policies and fees in effect at the time of application will apply.

CITY FIRE DEPARTMENT **9/14/92**
George Bennett **244-1400**

The fire line is longer than the code allows for a dead-end; it must be looped to provide the flows and meet code.

CITY UTILITIES ENGINEER 09/08/92
Bill Cheney 244-1590

SEWER - No comment.
WATER - It appears that "Water Notes: 3 and 4" do not say the same thing. Which distance is correct - to property line or 5' inside property line. There should be a corp stop at end of line to facilitate future connection.

GRAND VALLEY RURAL ELECTRIC 09/10/92
Mr. Rupp 242-0040

Not in Grand Valley Power service area.

PUBLIC SERVICE COMPANY 09/10/92
Harold Ball 244-2693

Gas & Electric: No objections.

CITY POLICE DEPARTMENT 09/04/92
Marty Currie 244-3563

No problems noted.

CITY FIRE DEPARTMENT 9/14/92
George Bennett 244-1400

The fire line is longer than the code allows for a dead-end; it must be looped to provide the flows and meet code.

PARKS & RECREATION 9/14/92
Don Hobbs 244-1542

Open space fee based upon 13 units x $225 = $2,925.00

CITY PROPERTY AGENT 9/15/92
Tim Woodmansee 244-1565

1. Please provide ties, bearings and distances for the 15' irrigation easement across Lots 2 through 6 of Block 1 and for the drainage easement on Lot 7 of Block 2.
2. Curves 10 and 11 have been described in reverse order in the dedication.
3. Please label the Point of Beginning as well as Lot 1, Block 1 of Ptarmigan Ridge Filing #3.

4. Monumentation should be provided for the southeast corner of the subdivision.

COMMUNITY DEVELOPMENT 08/17/92
David Thornton 244-1447

PLAT & PLAN

Ptarmigan Court is unacceptable as proposed! The concept follows the preliminary plan already approved, but contradicts the ODP submittal which is under review also this month. If the ODP is approved, access further North for 15th Street will not occur thus having 15th Street deadend just beyond Ptarmigan Court which comes off 15th Street is unacceptable. Revision of all plans and a revised plat showing a change in the cul-de-sac is due in our office by Tuesday, September 15.

1. Need to label type and dimensions of easement shown on North side of lots 4, 5, and 6, Block 1 on plat.

GENERAL

1. An avigation easement is required to be recorded and must be recorded with the plat.
2. The soils report notes a potential for perched water table conditions created by irrigation and roof runoff. The design and construction of all improvements should take that into account. Because of the possibility of varying soil conditions, open excavation observation should be performed by a soils engineer prior to placing forms or pouring concrete. The site drainage recommendations and foundation recommendations made in the Lincoln-DeVore, Inc. soils report (dated September 5, 1990) should be followed for site specific construction.
3. The Improvements Agreement/Guarantee must be approved by City Engineering and will be recorded with the Final Plat.
4. Covenants will be recorded with the plat.
5. If Grand Valley Irrigation requests it for their maintenance purposes, no fences should be allowed within the 15 ft. irrigation easement located across Lots 2, 3, 4, 5 & 6 of Block 1 to allow free access for irrigation purposes. This may need to be addressed in the covenants as it was in Filing #3.
6. The Final Plat will not be recorded until we receive in final form all documents needed for recording, an acceptable improvements guarantee and all construction drawings have been accepted by City Engineering.
7. All review agency comments must be addressed in writing to us by Monday, September 28, 1992 by 5:00 p.m.

CITY ENGINEER	9/15/92
Gerald Williams	244-1591

1. The street layout was based upon the extension of North 15th Street northwest. However, the Ptarmigan Ridge ODP submitted simultaneously proposes a dead-end street. If the ODP is accepted, then the proposed street layout would not only be undesirable, it would be unacceptable. The road layout should match the ODP.
2. Other general comments relating to utilities, easements, and other issues were red-lined on plans as a preliminary review as an aid when the plans are revised. These have been given to the developer.
3. A drainage report has been prepared for Filing 3 and 4, and was submitted with Filing 3, but it did not show that drainage criteria was met. Subsequent changes to Filing 4 were to all conformance to drainage criteria, however, an addendum to the drainage report has not been submitted.

All of the above issues have been discussed with the developer by phone and at a meeting. Acceptance of Filing 4 depends in part upon acceptance of the ODP. A resubmittal for a revised Filing 4, with new street, utilities, easements, etc. which constitute a whole new submittal, has not been received. We recommend tabling Filing 4 until the ODP can be decided upon and submittal made complete.

WH ENGINEERING

WILLIAM HELEY
PROFESSIONAL ENGINEER

PROJECT MANAGEMENT
DESIGN ENGINEERING
CRANE SERVICE
PILE DRIVING

October 1, 1992

Mr. Gerald R. Williams, P.E.
Grand Junction Development Engineer
250 North Fifth Street
Grand Junction, CO 81501

Re: Transmittal of Updated Drainage Plan

Dear Mr. Williams:

Ptarmigan Ridge Developers have made some revisions in the site plans for Filing 3 and Filing 4 which reflect back on the initial drainage plan which was presented in the Drainage Report of August, 1992.

Some of these changes were made at the City's request, and others were made as a result of continued planning for the total property. These changes are addressed in an Addendum to the report which is transmitted herewith.

As you are aware, I am primarily concerned with the stormwater drainage planning for this development, and function only in an advisory capacity to review utility plans and road designs. Some aspects of Filing 4 are not as yet completely designed, so there will probably be a second addendum to the drainage report when the plans are completed, e.g. a revised retention basin detail, culvert analysis, and erosion control plan.

If there are any questions on the addendum, please call.

Sincerely,

William Heley, P.E.

2257 FAWN RIDGE COURT, GRAND JUNCTION, COLORADO 81503 • (303) 245-2321

RUNOFF AND DRAINAGE PLAN
ADDENDUM

PTARMIGAN RIDGE
SUBDIVISION

FILING 3

FILING 4

Prepared By

WH ENGINEERING

Grand Junction, Colorado

September, 1992

PURPOSE AND SCOPE

Since the original submittal of this report, some significant changes have been made in the overall development plan which impact upon the drainage system to be installed. The plan originally submitted identified a marginal compliance with runoff criteria, particularly if only Filing 3 was built.

Secondly, some changes have been requested by the City in the handling of street flows. The use of valley cross pans has been restricted when drop inlets and buried piping can be utilized effectively. This type of drain has superceded the cross pans on Ptarmigan Ridge Court and on North 15th Court, the lower requiring an extended drain pipe to convey water to the primary drainage channel rather than to create a deep open ditch.

Filing 4 is now planned to develop concurrently with Filing 3, and this report addresses in more detail the drainage of Filing 4 and the addition of an off street retention basin rather than a depressed zone around the cul de sac. The pavement drainage will be carried by pipe to this basin.

When Filing 4 was initially defined, we believed that North 15 Street might eventually connect through to 17.5 Road, or at least cross the irrigation ditch and serve land north of Filing 4. As planning continued, this was eliminated as an alternative, and North 15th will button hook to a cul de sac. An easement will continue for sewer and water to the north area, but the street will terminate in Filing 4.

This addendum to the original drainage plan addresses these changes and presents a more complete description of the drainage system. It also includes a best management practice plan for water quality control during construction.

Valley Pan Crossing

Ptarmigan Ridge Court has a street flow crossing at station 4+10.63 which includes runoff from Filing 3, Filing 4 undeveloped drainage and from an untitled area up gradient from the temporary terminus of Ptarmigan Ridge Court.

This as yet undefined undeveloped area which will be drained by the ultimate extension of Ptarmigan Ridge Court will at some point in time flow to the same crossing point which is in effect a sag in the street gradient.

We do not have a precise definition of this future flow, so for the sake of design, we shall assume that this flow will be equal to the flow calculated on the basis of developed Filing 3, or in other words, the flow will ultimately be double our prediction for Filing 3. This flow will be about 2.6 total cfs.

Flow from the south side of the street will add to the total flow in the drainage pipe conveying the runoff water to the channel, bringing the flow in this pipe to 4 cfs.

The cross pipe under the street will be a Class V concrete pipe capable of withstanding the imposed loadings with 1 ft of cover. The drain pipe will be 12 inch PVC. Calculations for the culvert hydraulics are attached. A standard drop inlet will be installed in both the north and south gutter flow line as shown on the drawing.

Filing 4 Retention

Water from Filing 4 will be retained in a basin in Filing 4 on the southwestern side of the cul de sac. This basin will retain about 11,500 cubic feet and will contain the 100 year runoff. It will be fed via a 12 inch culvert which drains the north and south side of the street at the neck of the cul de sac. This basin is shown in detail in the Filing 4 drainage plan drawing.

Water Quality and Erosion Control

Construction of Ptarmigan Ridge Filing 3 and Filing 4 will be done under a General Permit from the Colorado Department of Health controlling Stormwater Discharges Associated With Construction Activity.

This construction will be done following a Best Management Practices Plan which will minimize the potential for increased sediment in stormwater runoff during construction.

In order to keep high silt loads out of inlet boxes and culvert pipes, as well as on the street surfaces, diversion ditches will be cut to direct potential flows to temporary detention basins which will allow some sedimentaion to occur before overflowing, and through the use of straw bales or other filter media to minimize the suspended sediment in runoff channels.

Construction equipment will be kept off paved streets as much as possible, and any earth spilled on the streets will be promptly cleaned away. Trucks will not be permitted to turn around in unsurfaced areas during wet weather to minimize tracking of mud onto the streets.

Retention and detention basins will be constructed as soon as practical in the earthmoving phase to intercept runoff.

Paving or surface control will installed as soon as possible, weather permitting, to minimize construction traffic on unsurfaced areas.

All conditions of the Stormwater Permit will be followed.

CULVERT ANALYSIS – STREET DRAIN FROM PTARMIGAN RIDGE COURT.

CULVERT CONSISTS OF A 12" CLASS V RCP UNDER THE STREET JOINING TWO INLETS; THE COMBINED FLOW THEN FLOWS SOUTH EAST APPROXIMATELY 150 FEET TO THE DRAINAGE CHANNEL IN A 12" PVC PIPE.

CHARACTERISTICS:

RCP
$n = .015$
Slope = .007
length = 28 ft
$Q = 2.6$ cfs

INVERT IN 4714.05
INVERT OUT 4713.85
.20

Slope $\frac{.2}{28} = .007$

PVC.
$n = .016$
Slope = 0.5%
length = 150 ft
$Q =$

INVERT IN 4713.85
INVERT OUT 4713.15

Q IS THE QUANITY OF FLOW WHICH IS SHOWN IN TABLES V AND VI FROM CONTRIBUTING AREAS OF DEVELOPED FILING 3 AND 3+4 RESPECTIVELY.

THIS Q IS INCOMPLETE FOR THE TOTALLY DEVELOPED CASE WHEN PTARMIGAN RIDGE COURT IS EXTENDED TO ITS ULTIMATE LIMIT (REF. ODP AUGUST 1992) WHEN STREET FLOWS ADD TO THE VOLUMES AT THE INLETS. IT HAS BEEN SUGGESTED THAT SOME DETENTION WILL BE REQUIRED ALONG WITH THIS DEVELOPMENT, BUT THE STREET FLOWS WILL NOT LIKELY BE SIGNIFICANTLY REDUCED OR INTERCEPTED IN THE EXTENSION OF THIS COURT.

THEREFORE, TO SIZE THE CULVERT FOR FILING 3 CONSTRUCTION, WE WILL EMPLOY A FACTORED ESTIMATE OF RUNOFF BASED UPON A SIMILAR AREA OF FILING 3. PROBABLY, THIS WILL NOT BE SIGNIFICANT BECAUSE OF THE RELATIVELY SMALL FLOWS.

CONTRIBUTING AREAS — 3 & 4

	2yr
A_{4E}	.60
A_{8E}	.31
A_{9E}	.35
A_{3NE}	.32
A_6	.38
	1.96 cfs ←

DOUBLE THIS ⇒ 4 cfs as an ESTIMATE of FLOW QUANTITY.

2 year

	100 yr
SAME AREAS	2.21
	0.84
	0.93
	1.18
	1.35
	6.47 cfs

DON'T DOUBLE THIS. (IT WON'T PASS A 12" PIPE

PLUG BACK INTO CULVERT DESIGN Q.

SHORT CONCRETE PIPE

L/100 S_o ⇒

A_{4E}	.6
A_{8E}	.3
A_6	.4
	1.3 × 2 = 2.6

$Q = 2.6$
$L = 28$
$S_o = .007$
$D = 12"$

$\frac{L}{100\ S_o} = \frac{28}{.7} = 40$

INLET CONTROL $\frac{Hw}{D} = 1.1$ $Hw = 1.10$ ft —

NOT INLET CONTROL Hw can go to 2'

OUTLET CONTROL $tl < .5'$ SO outlet control doesn't apply

PIPE WILL CARRY 2.6 cfs easily

FOR THE SECOND PIPE - A PVC at 150 ft in length —

$Q = 4$ $\quad D? = 12"$ or $15"$
$n = .015.$
$L = 150$
$S_o = 0.5\%$ or $.005$

THIS IS A DIFFERENT CONSIDERATION. THE PIPE IS LONGER AND FLATTER AND THE FLOW COMES FROM BOTH SIDES OF THE STREET.

ALTHOUGH THE PIPE IS PVC — n STILL EQUATES TO CONCRETE WHEN CONSIDERING THE COATING ASSOCIATED WITH STORM WATER.

INLET CONTROL IS STILL NOT A FACTOR. OUTLET CONTROL PROBABLY GOVERNS.

$$q_c = \frac{Q}{D^{5/2}} = \frac{4}{1}$$

$D = 1$
$D^{5/2} = 1$

$$Q_c = 4$$

$$Q_{op} = (5.27)\, D^{5/2} = 5.27$$

$$S_c = 111\, \frac{n^2}{D^{1/3}}$$

$$= (111)(.015)(.015) =$$

$$.025$$

our Slope $<$ S_c

so $Q < Q_{opt.}$

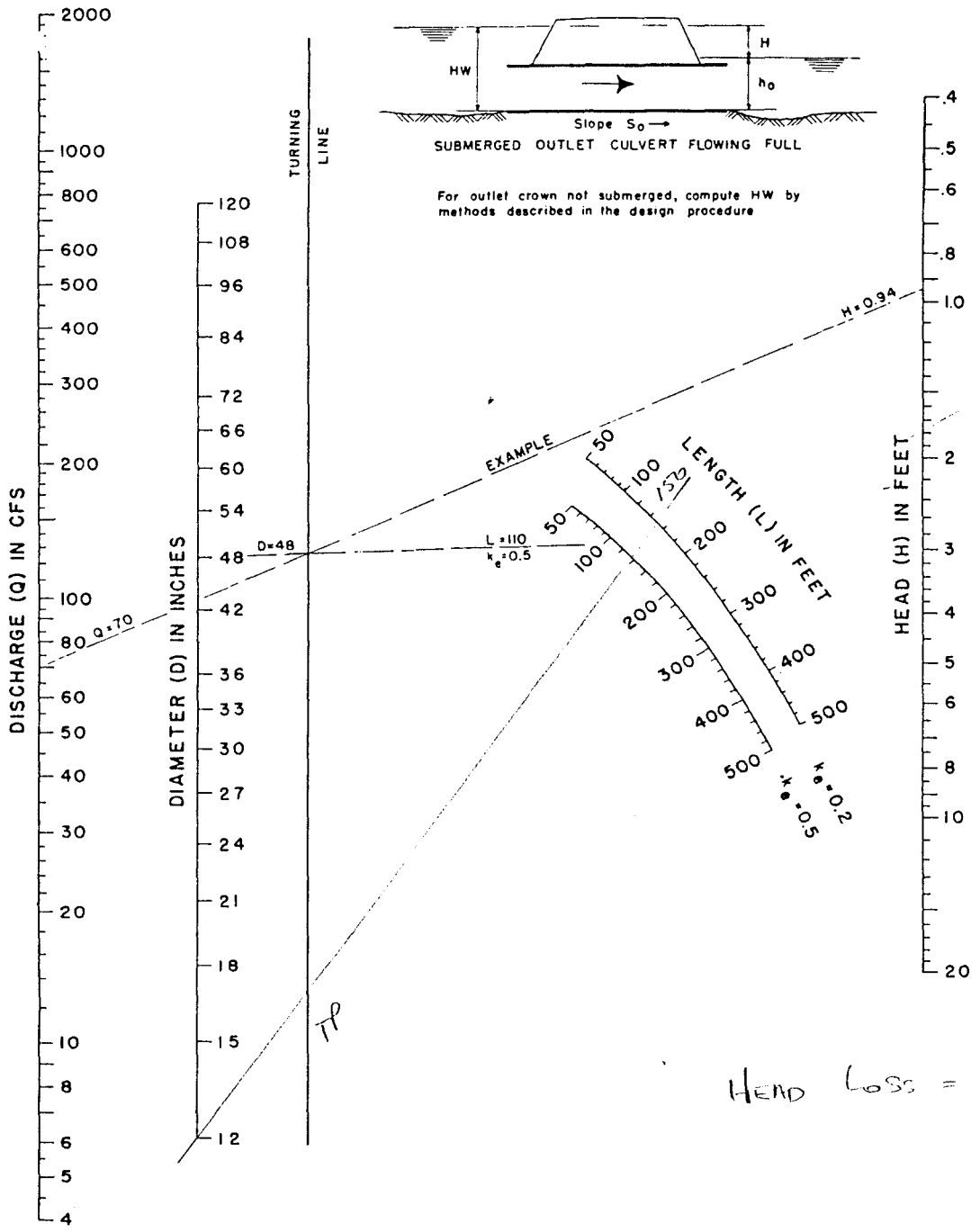
From CHART 5

$H = 2'$, we actually have

$2' + .70'$ total available Head if water rises to grate

∴ PIPE will carry 4 cfs —

CHART 5



HEAD LOSS = 2 Ft.

HEAD FOR
CONCRETE PIPE CULVERTS
FLOWING FULL
n = 0.012

BUREAU OF PUBLIC ROADS JAN. 1963

How much retention is required for Filing 4?

Contributing areas from drainage report

A_1, A_2, A_3, A_4, A_5 & A_2

2 year

A_1 = 366 cf
A_2 = 151 cf
A_3 = 300 cf
A_5 = 545 cf
A_4 = 602
Total 1,964 cf

100 year

4250 cf
1760 cf
3840 cf
1600 cf
1780
13,230 cf

(490 cubic yards)

Culvert Cross Drain 12" RCP Class V.

flow: $A_1 + A_4$ Peak

2yr

A_1 .80
A_4 .31
1.11

100 yr

A_1 = 2.87
A_4 = 0.84
3.71

Both of these will easily flow in a 12" pipe!

JANDK

GEOLOGIC INVESTIGATION
PTARMIGAN SUBDIVISION

Mesa County, Colorado
April 16, 1990

John H. Wright, C.P.G.
& Associates

(303) 241-6619
336 Main St., Suite 201

P.O. Box 2355
Grand Junction, CO 81502

#55 92

5

GEOLOGIC INVESTIGATION
PTARMIGAN SUBDIVISION

Mesa County, Colorado
April 16, 1990

CONTENTS

GEOLOGIC INVESTIGATION

PTARMIGAN SUBDIVISION

Mesa County, Colorado
April 16, 1990

INTRODUCTION

The proposed Ptarmigan Subdivision is being developed by Ptarmigan Investments Inc., P.O. Box 9088, Grand Junction, CO 81501. The property consists of approximately 33 acres to be subdivided into an as yet undetermined number of residential lots. It is located in a portion of Section 1, T 1 S, R 1 W, Ute P.M. in Mesa County, Colorado southwest of the intersection of G Road and 27 1/2 Road. (See location map).

CONCLUSIONS AND RECOMMENDATIONS

1. Collapsible soils and potentially unstable slopes occur to a limited extent along the northwest margin of the property. These are described more fully below, and their location is indicated on the geologic hazards map which accompanies this report. The recommended means for mitigation of these hazards is avoidance.

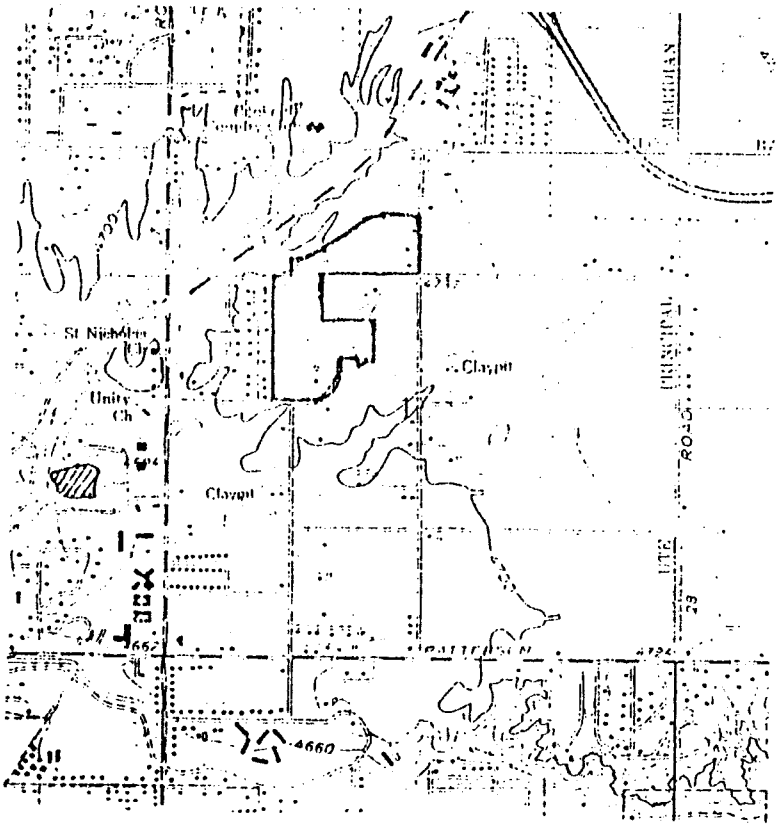
2. Several open irrigation ditches cross the property. At the time of this investigation, they contained flowing water. These ditches, along with poorly drained natural channels nearby but off site suggest a seasonally high water table. Basement structures are therefore not recommended with out a specific plan to prevent seepage into the structure.

3. Some of the irrigation ditches have been reinforced by a levee. If no plan is made to capture and bury the irrigation water in an underground pipe system, then construction should heed a setback from the artificial fill which composes the levee. The suggested set back is indicated on the hazards map which accompanies this report.

4. Subsurface soils testing is recommended to test for water table and other soil properties to guide foundation and other construction design. The tests should be conducted by a Registered Professional Soils Engineer who has been appraised of the findings given in this report.

SCOPE

This report represents the results of a geologic investigation of the proposed Ptarmigan Subdivision as required by Colorado S.B. 35 and local regulations. The investigation included a field examination as well as a review of available geologic literature.



PROPERTY LOCATION MAP (From USGS 7.5 min.quad: "Grand Junction, Colorado")
Scale: 1"= 2,000'
Section 1, T 1 S, R 1 W, Ute PM.

A copy of a preliminary property map (1"=200' with 2' contour topography) was provided by the developer. This map was used as the base for plotting geologic features and is reproduced to accompany this report. Monumentation from the survey was not precisely located in the field, and all the individual lot lines have not been shown.

The conclusions of this investigation are based solely on the site conditions at the time of investigation. They do not reflect hazards which might develop from improper design or construction methods.

GEOLOGY

The property lies entirely upon a soil horizon developed on top of Cretaceous Mancos shale (Km). The Mancos Shale is weathered sufficiently on the site so that no outcrops of formational material exist. Bedding is presumed to be nearly flat.

A geologic plan and hazards map (1"= 200') accompanies this report

Geologic Hazards

Collapsible soils (cs) have been identified along the northwest margin of the property. These occur near or with areas that have been artificially filled with soil and construction debris. The piles of fill and debris appear to have been bulldozed over the edge of a pre-existing slope with little effort made for thorough compaction. Near one of these areas of fill and debris accumulation, but apparently upon the original agricultural surface, concentric soil cracks and a depressed surface were observed. This is interpreted as subsidence due to soil collapse. In the absence of any other plan for mitigation or remedial action, new construction should avoid these areas.

Potentially unstable slopes (pus) also occur along the northwest margin of the property. Whereas most of the property is of fairly level grade, the areas of potential instability grade in excess of 30%. These fall off into an established natural drainage which lies to the north and west of the property. There is no present sign of active instability. However, it is felt that new construction in the areas designated as potentially unstable could initiate slumping or sliding soils conditions. In the absence of any other plan for mitigation or remedial action, new construction should avoid these areas.

A shallow water table, at least seasonally present, is suspected to underlie much of the property. This water is introduced to the substrata through open and unlined irrigation ditches which cross the property. Foundation design following soils testing should contemplate problems that might arise from a shallow water table.

No other geologic hazards, including radiation hazard (see attached Radiation Examination), are apparent.

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Mineral Resources

No developable valuable mineral resources are known to occur on the property.

SITE CONDITIONS

Surface Features

Excepting the areas pointed out as potentially unstable, the remainder of the natural topography is gentle -- grading roughly 2% southwesterly.

The surface consists of level graded agricultural fields -- about 50% fallow and 50% freshly tilled, and level construction graded land. In the northeast and the southwest corners of the property are two small areas of plantings of trees and/ or lawn. Two irrigation ditches cross the property.

Drainage

The property contains an incipient stream channel which originates on the property and drains to the southwest. This channel empties into a pond which is well off site and which is adjacent to the Grand Valley Canal. The source and discharge of the Canal is the Colorado River.

The incipient stream channel, at the time of this investigation, contained a few inches of slowly running water. The probable source of this water is leakage from nearby irrigation systems. The water "daylights" in this channel and drains poorly towards the southwest where just before exiting the property, it creates marshy conditions. While the channel has been modified by artificial means with levees and ditch work, without further modifications, new construction should avoid the marshy areas and heed a set back from the levees. The marshy areas and suggested setbacks are indicated on the geologic plan and hazards map.

Construction Factors

No hard or resistant outcrops of rock occur on the property. Surficial materials are easily rippable with conventional means.

As described above, subsurface water may be a problem in construction.

WATER

Potable water will be obtained from Ute Water Conservancy.

Irrigation water will be derived from Grand Valley Water User's Association.

Sewage will be conveyed off property by the City of Grand Junction systems.

SOILS

Surface soils are comprised entirely of soil type: "Fruita clay loam". This is a light brown to reddish brown, somewhat calcareous soil. It typically exhibits the following properties: slow surface runoff, medium internal drainage, "slight" erosion hazard, easy rippability, and low to absent alkalinity. (These properties are confirmed by field observations at the site.) County wide, the soil type shows a low shrink-swell potential. However, the unweathered Mancos Shale lying immediately beneath it has a higher such potential.

It is recommended that a subsurface soils interpretation be conducted by a Professional Engineer prior to building construction. The soils characteristics thus determined should be considered in foundation and road design.

John H. Wright
Certified Professional Geologist
April 16, 1990

REFERENCES

1. Soil Conservation Service; Soil Survey of the Grand Junction Area, CO; Series 1940, No. 19; 1955.

2. Soil Conservation Service; Soil Survey of Mesa County; 1978.

3. Lohman, S.A.; Geology and Artesian Water Supply, Grand Junction Area, Colorado; U.S.Geological Survey P.P. 451; 1965.

RADIATION EXAMINATION

PTARMIGAN SUBDIVISION

Mesa County, Colorado
April 16, 1990

The proposed Ptarmigan Subdivision, being developed by Ptarmigan Investments Inc., P.O. Box 9088, Grand Junction, CO 81501, was examined for potential radiation hazard. The property is located in a portion of Section 1, T 1 S, R 1 W, Ute P.M. in Mesa County, Colorado. Conditions at the site at the time of this investigation indicate the site is free of radiation hazard.

The examination of the site was carried out according to the requirements of Colorado SB 35, and of local regulations which require radiation examinations for proposed subdivisions. The field examination was carried out in conjunction with the foregoing geologic field investigation, using a Urinco Scintillation Counter Model #720N. The surface was thoroughly traversed on foot and the man-made structures and accumulations of debris were checked. Background radiation was 50 counts per second, +/- 10cps. No where on the property was found a reading higher than background.

As all readings were well below Colorado Health Department standards of 250 counts per second, there is no apparent reason for more detailed radiation survey work.

John H. Wright
Certified Professional Geologist

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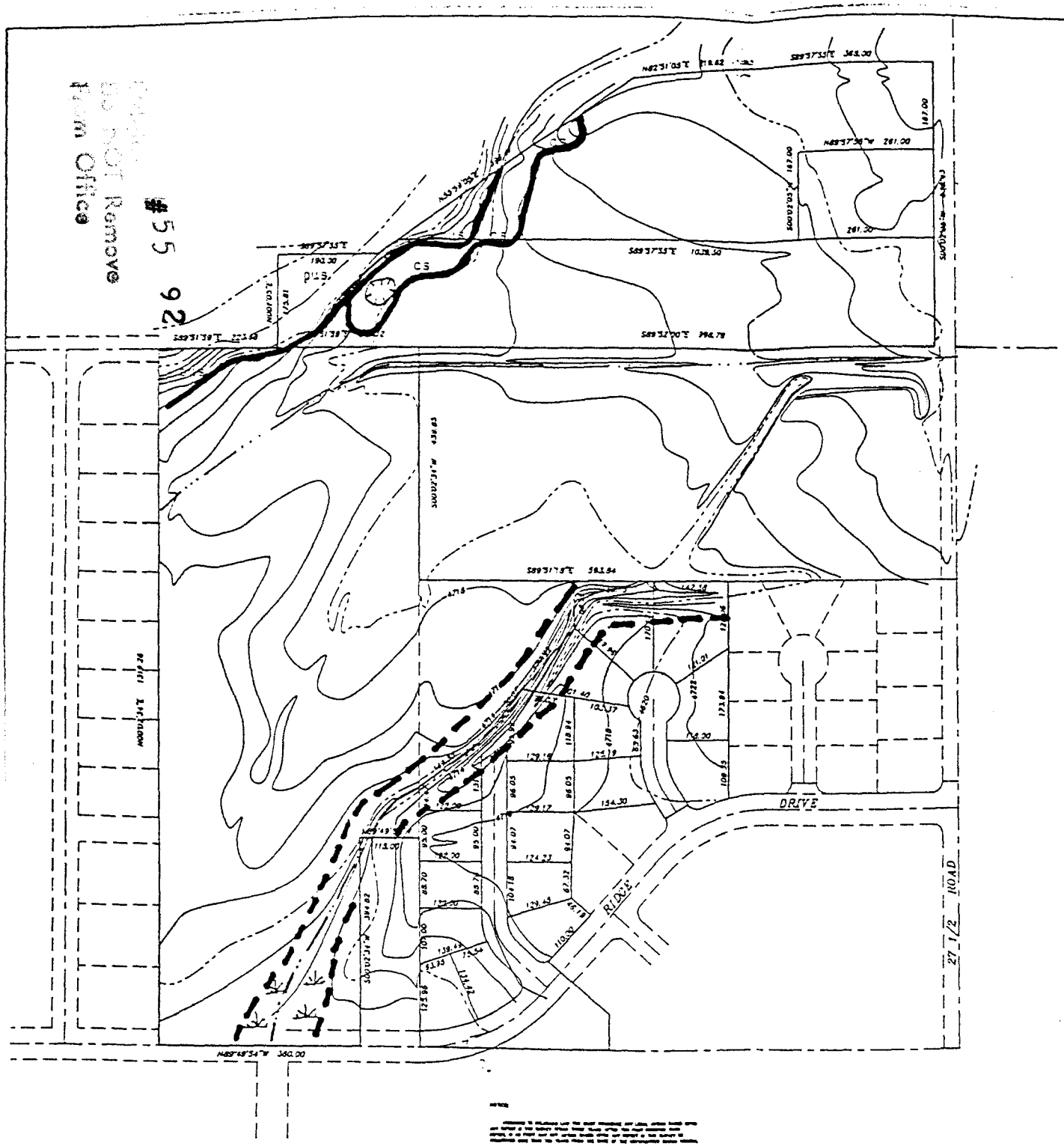

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LEGEND & NOTES

- FOUND SURVEY MONUMENTS SET BY
- SET NO. 5 RE-BAR W/CAP L.S. 16413

Contact or boundary between hazards

Suggested set back

Marshy ground

Collapsed ground

pus Potentially unstable slopes

cs Collapsible soil

PTARMIGAN SUBDIVISION

FOR:	Q.E.D. SURVEYING SYSTEMS Inc. 1018 COLO. AVE. GRAND JUNCTION COLORADO 81501 434-7344 241-2370
SCALE: 1" = 200'	SURVEYED BY: HAMILTON WRIGHT
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KEEP FOR FILES
FOR FUTURE FILINGS

SUBSURFACE SOILS EXPLORATION

BELL RIDGE SUBDIVISION AKA PTARMIGAN RIDGE

GRAND JUNCTION, COLORADO

Prepared For:

Mr. John Siegfried
P.O. Box 9088
Grand Junction, CO 81502

Prepared By:

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

September 5, 1990

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(2)

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

September 5, 1990

Mr. John Siegfried
P.O. Box 9088
Grand Junction, CO 81502

Re: SUBSURFACE SOILS EXPLORATION

BELL RIDGE SUBDIVISION

GRAND JUNCTION, COLORADO

Dear Mr. Siegfried:

Transmitted herein are the results of a Subsurface Soils Exploration for the proposed

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
Western Slope Branch Manager
Grand Junction, Office

Reviewed by: _____ 9/7/90
George D. Morris, P.E.
Colorado Springs Office

GEORGE D. MORRIS REGISTERED 2051 PROFESSIONAL ENGINEER STATE OF COLORADO

EMM/rl

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TABLE OF CONTENTS

This report presents the results of our geotechnical evaluation performed to determine the general subsurface conditions of the site applicable to construction of single-family residential structures. We understand that the proposed structures will consist of one and two-story wood-framed buildings with the possibility of full basements with concrete floor slabs on grade or no basements and concrete slabs on grade or crawlspace-type structures. A vicinity map is included in the Appendix of this report.

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 similiar soil and geologic conditions in the area.

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

Specifically, the intent of this study is to:

1. Explore the subsurface conditions to the depth expected to be influenced by the proposed construction.
2. Evaluate by laboratory and field tests the general engineering properties of the various strata which could influence the development.
3. Define the general geology of the site including likely geologic hazards which could have an effect on site development.
4. Develop geotechnical criteria for site grading and earthwork.
5. Identify potential construcion 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 August 18, 19, and 28 1990, and consisted of a site reconnaissance by our geotechnical personnel and the drilling of twelve exploration borings. These shallow exploration borings were drilled within the proposed building lots near the locations indicated on the Boring Location Plan. The twelve shallow exploration borings were located to obtain a reasonably good

profile of the subsurface soil conditions. Six borings were utilized for the installation of piezometers. These piezometers were placed to monitor the water levels along the irrigation ditch, along the west property line. All exploration borings were drilled using a CME 45, truck mounted drill rig with continuous flight auger to depths of approximately 9 to 24 feet. Samples were taken with a standard split spoon sampler, a California spoon sampler with liners, thin-walled Shelby Tubes, and by bulk methods. Logs describing the subsurface conditions are presented in the attached figures.

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

FINDINGS

SITE DESCRIPTION

The project site is located in the South East Quarter of Section I, Township I South, Range I West of the Ute Principal Meridan, Mesa County, Colorado. More specifically the site is located north of Ridge Drive and is between 27 1/2 Road and the extension of North 15th Street. The tract contains 60 single-family lots.

The topography of the site is relatively flat with a slight overall gradient to the South. The exact

direction of surface runoff on this site will be controlled by the proposed construction and therefore will be variable. In general, surface runoff is expected to travel along the proposed Ptarmigan Ridge Road and into the Ridge Drive drainage features, eventually entering a series of improved, naturally-occuring drainage ditches which discharge in the Colorado River. Surface and subsurface drainage on this site would be described as fair.

GENERAL GEOLOGY AND SUBSURFACE DESCRIPTION

The geologic materials encountered under the site consist of a series of silty clay and sandy clay soils which are underlain by the Mancos Shale Formation. Man-made fill, consisting of uncompacted soil, trash and construction debris is present in the north portion of the tract within Blocks 3 and 5. The geologic and engineering properties of the materials found in our twelve shallow exploration borings will be discussed in the following sections.

The soils on this site consist of a series of silty clay and sandy clay soils which are a product of mud flow/debris flow features which origininate on the south-facing slopes of the Bookcliffs. These mud flow/debris flow features are a small part of a very extensive mud flow/debris flow complex along the base of the Bookcliffs and extending to the Colorado River. Utilizing recent events and standard evaluation techniques, this tract is not with an active debris flow hazard area. The surface soils are an erosional product of the upper Mancos Shale and the Mount Garfield Formations which are exposed on the slopes of the Bookcliffs. The soils contained within these mud flow/debris flow features normally exhibit a

metastable condition which can range from very slight to severe. Metastable soil is subject to internal collapse and is very sensitive to changes in the soil moisture content. Based on the field and laboratory testing of the soils on this site, the severity of the metastable soils can be described as slight.

The geologic and engineering properties of the materials encountered, as indicated by the enclosed subsurface logs, will be discussed in the following paragraphs.

Soil Type No. I comprises the surface, alluvial soils which were encountered during this exploration.

This soil type was classified as a low plastic, silty clay (CL) under the Unified Classification System. The Standard Penetration Tests ranged from 9 blows per foot to 40 blows per foot. Penetration tests of this magnitude indicate that the soil is apparently stiff and of apparent medium to high density. Due to the moisture content of these soils the apparent stiffness and density appears to be higher than it is actually realized. The sample obtained from Exploration Boring No. 3 indicates that these have a dry density of only 92.6 pcf which indicates a low density soil. The moisture content varied from 4.3% to 14.3%, 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 dessication. 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 400 to 920 psf were found to be typical. This material will also consolidate upon saturation or excessive loading. If recommended bearing values

are not exceeded, such settlement will remain within tolerable limits. The allowable maximum bearing value was found to be on the order of 1200 psf. A minimum dead load of 300 psf will be required over the majority of the site.

At depths ranging from seven to twenty-two feet below the exisitng ground surface, the Mancos Shale was encountered. The Mancos Shale was found to be quite weathered and is designated as Soil Type No. IV. A minimum dead load of 300 psf will be required over a majority of the site.

Soil Type No.s II and III are very similar in engineering characteristics but have different appearances in the field. Soil Type No. II is a generally fine-grained sand which is alluvial in origin and is a product of the debris flow action from the Bookcliffs. Soil Type No. III is also alluvial and a product of the debris flow activity but contains large amounts of gravel and occasionally cobble-sized fragments of sandstone, siltstone, and claystone of the lower Mesa Verde Formation. These fragments are the deposits within the high-velocity areas of the original debris flow features. The fine-grained Soil Type II is derived from the sandstones, siltstones, and claystones of the Mesa Verde Formation and represent a more severely weathered and eroded version of Soil Type No. III. For the discussion of this report Soil Types II and III will be described together in the following paragraph.

This Soil Type was classified as a silty sand (SM) under the Unified Classification System. This material is of low plasticity, of low to moderate permeability, and was encountered in a moist to wet condition. It undergoes 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 1200 psf, with 200 minimum dead load pressure required. The finer grained portion of Soil Type No. II and III contains sulfates in detrimental quantities.

The Mancos Shale is described as a thin-bedded, drab, light to dark gray marine shale, with thinly interbedded fine grain sandstone and limestone layers. Some portions of the Mancos Shale are bentonitic, and therefore, are highly expansive. The majority of the shale, however, has only a moderate expansion potential.

This soil type was classified as a silty clay (CL) under the Unified Classification System. The Standard Penetration Tests ranged from 39 blows per foot to over 80 blows per foot. Penetration tests of this magnitude indicate that the soil is variable and of medium to high density. The moisture content varied from 9.3% to 20.6%, indicating a relatively moist soil. This soil is plastic and is sensitive to changes in moisture content. With decreased moisture, it will tend to shrink, with some cracking upon dessication. 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 900 psf were found to be typical. The allowable maximum bearing value was found to be on the order of 3500 psf for the top two feet of the weathered Mancos Shale and increased to 7000 psf below the top two feet of the Mancos Shale. A

minimum dead load of 1000 psf will be required for the top two feet of the Mancos Shale and 1800 psf will be required below the top two feet of the Mancos Shale.

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:

A free water table came to equilibrium during drilling and monitor wells were installed as indicated on the Exploration Boring Location Diagram. Measured depths to the water surface are indicated. This is probably very close to the true phreatic surface rather than a perched water table. In our opinion the subsurface water conditions shown are a permanent feature on this site. The depth to free water would be subject to fluctuation on this site depending upon external environmental effects.

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 soil. 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 is relatively flat over much of the site 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 provided 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 deisgn and construction of both the proposed residential structures and any subdivision improvements.

Due to the existing water table in some portions of this tract and the possibility of free water in other portions of this tract, it is recommended that basement or half basement foundations be constructed with a subsurface peripheral drain system for each structure. All floor slabs should be constructed over a capillary break and vapor barrier.

Because of capillary rise, the soil zone within a few feet above any future free water level associated with perched water tables may be quite wet. Pumping and rutting may occur during the excavation process, particularly if the bottom of the foundations are near the capillary fringe. Pumping is a temporary, quick condition caused by vibration of excavating equipment on the site. If pumping occurs, it can often be stopped by removal of the equipment and greater care exercised in the excavation process. In other cases, geotextile fabric layers can be designed or cobble sized material can be introduced into the bottom of the excavation and worked into the soft soils. Such a geotextile or cobble raft is designed to stabilize the bottom of the excavation and to provide a firm base for equipment.

Careful analysis of the top elevations of the Mancos Shale Formation and the existing pattern of groundwater indicates that the majority of free water encountered in the exploration borings is associated with the irrigation ditch along the west property line and the normal lawn irrigation and water drainage characteristics of the residential Onan Subdivision, along East Cliff Drive. The surface drainage plan for Ptarmigan Ridge Subdivision should be designed in a manner which would improve the surface runoff characteristics in the west portion of this subdivision and encourage the rapid removal of surface waters into an established drainage system. Consideration should be given to properly lining or piping the existing irrigation ditch along the west property line, which is probably the major contributor to the ground water rise in this area.

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 potential for perched water tables and the expansive clays of the Mancos Shale.

Since the exact magnitude and nature of the foundation loads are not precisely known at the present time, the following recommendations must be somewhat general in nature. Any special loads or unusual design conditions should be reported

to Lincoln DeVore so that changes in these recommendations may be made, if necessary. However, based upon our analysis of the soil conditions and project characteristics previously outlined, the following recommendations are made.

OPEN FOUNDATION OBSERVATION

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

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. Planters, if any, should be so constructed that moisture is not allowed to seep into foundation areas or beneath slabs or pavements.

We recommend that a perimeter drain be placed around the exterior walls of the structure at foundation level or below. A drain of this type includes a perforated pipe and an adequate gravel collector, the whole being wrapped in a geotextile filter fabric. We recommend that the discharge pipe for this drain be given a free gravity outlet to exit at ground surface. If "daylight" cannot be obtained, we recommend that a sealed sump and pump be used to discharge the seepage. Under no circumstances shall a "dry well" be used on this site.

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

To give the building extra lateral stability and to aid in the rapidity of runoff, it is recommended that all backfill around the building and in utility trenches in the vicinity of the building 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 a minimum of 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.

FOUNDATIONS

SHALLOW

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 alluvial silty clays of Soil Type No. I, may be designed on the basis of an allowable bearing capacity of 1200 psf maximum. A minimum dead load of 300 psf must be maintained. 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.

It should be noted that the term "footings" as used above includes the wall on grade or "no footing" type of foundation system. On this particular site, the use of a more conventional footing, the use of a "no footing", or

the use of voids will depend entirely upon the foundation loads exerted by the structure. We would anticipate the use of conventional footings on this site.

If full basement type construction is anticipated for a given structure or if the loading conditions of a crawlspace or a half basement-type structure would require more bearing than the capacity than the silty clays of Soil Type No. I can offer then the clays of the Mancos Shale Formation may be utilized for foundation bearing. At this time Lincoln-DeVore has not been informed of the individual foundation/building plans and is therefore not informed as to the precise wall or column loading plan within any of the proposed buildings. Therefore, three foundation types which could be utilized for single-family residences are recommended based on our experience in this area. The choice between these foundation types depends on the internal loading of the foundation members and the amount of excavation planned to achieve the finished lower elevations.

The three foundation types preliminarily recommended are as follows:

1. The voided wall on grade foundation system with a stemwall resting directly on the shale formation.
2. The isolated pad and grade beam foundation system in which the grade beam is voided and loads are transfered to the isolated pads.
3. The drilled pier and fully voided grade beam system with the loads transfered to the piers.

Recommendations given in this report are given for the Shallow Foundation Types No. 1 and 2 and the Deep Foundation Type No. 3.

A conventional shallow foundation system consisting of either a voided wall on grade or an isolated pad and grade beam system, resting on the relatively unweathered expansive clays of the Mancos Shale Formation, may be designed on the basis of an allowable bearing capacity of 7000 psf maximum, and a minimum dead load of 1800 psf must be maintained. Contact stresses beneath all continuous walls should be balanced to within + or - 200 psf at all points. Isolated interior column footings should be designed for contact stresses of about 200 psf more than the average used to average used to balance continuous walls. The criteria use for balancing will depend somewhat upon the nature of the structure. Single-story, slab on grade structures and single-story crawlspace structures may be balance on the basis of dead load only. Multi-story structures may be balanced on the basis of dead load plus one half live load, for up to three stories.

Stem walls for a shallow foundation system should be designed as grade beams capable of spanning at least 13 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 the expansive clays.

DEEP FOUNDATIONS:

If the building loads or final building elevations require a deep foundation system, consisting of either drilled piers or driven piles, the following recommendations should be followed. Deep foundations must extend through the low density, upper lean clay materials and into the underlying clays of the Mancos Shale. Both types of foundation have advantages and disadvantages with respect to this site. Therefore, the decision as to which system is used is largely economic and will be left to the owner or his representative. Drilled pier and driven pile foundation systems will be discussed in turn.

DRILLED PIERS:

We recommend that drilled piers have a minimum shaft length of 15 feet and be embedded at least 10 feet into the relatively unweathered bedrock. At this level, these piers may be designed for a maximum end bearing capacity of 25000 psf, plus 1800 psf side support considering only the side wall area embedded in the bedrock. Due to the expansive potential of the bedrock, a minimum dead load uplift is required, consisting of a point uplift of 1800 psf and 300 psf side uplift, based on the side wall embedded in the bedrock. The overburden is soft and no supporting or uplift values are assigned to this material. The weight of the concrete in the pier may be incorporated into the required dead load.

It is recommended that the bottoms of all piers be thoroughly cleaned prior to the placement of concrete. The amount of reinforcing in each pier will depend on the

magnitude and nature of loads involved. As a rule of thumb, reinforcing equal to approximately 1/2 of 1% of the gross cross-sectional concrete area should be used. Additional reinforcing should be used if structural conditions warrant. We recommend that reinforcing extend through the full length of pier.

To minimize the possibilty of voids developing in the drilled piers, concrete with a slump of 5 to 6 inches is recommended. We recommend that piers be dewatered and thoroughly cleaned of all loose material prior to placing the steel cage and concrete. The pier excavation should contain no more than 2 inches of free water unless the concrete is placed by means of a tremie extending to the bottom of the pier. A free fall in excess of 5 feet is not recommended when placing concrete in drilled piers. We recommend that casing be pulled as the concrete is being placed and that a 5 foot head of concrete be maintained while pulling the casing. It is recommended that drilled piers be plumb with 2% of their length and that the shaft maintain a constant diameter for the full length of the pier and not allowed to "mushroom" at the top.

DRILLED PIER OBSERVATION:

The foundation installation for drilled piers should be continuously observed by a representative of Lincoln DeVore to determine that the recommended bearing material has been adequately penetrated and that soil conditions are as anticipated by the exploration. This observation will aid in attaining an adequate foundation system. In addition, abnormalities in the subsurface conditions encountered during foundation installation can be identified and corrective measures taken as

required. Lincoln DeVore requires a minimum of one working day's notice, and a copy of the foundation plan, to schedule any field observation.

GRADE BEAMS:

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

DRIVEN PILES:

We recommend that driven piles bear in the competent materials of the underlying formation. We anticipate that pile driving refusal will be encountered within a few feet of penetration into the shale. Based on a static analysis, piles driven to refusal may be designed for an allowable tip bearing capacity of 70 to 100 tons psf. To determine the bearing area of the pile, the area including the space between the flanges may be included. For example, an HB-12 pile may be assumed to have an end area of approximately 1 square foot. A round, closed-end pipe pile bearing area would be the area of the pile end plate. Pile driving refusal should be determined by our representative in the field. Generally, pile driving refusal is taken as a maximum of 15 blows per inch. If pile groups are used, the overall capacity of the pile group should be reduced in

accordance with the appropriate efficiency formula (such as the Converse-Labarre method). If bearing capacities greater than those recommended above are necessary, we recommend that the pile bearing capacity be determined on the basis of static load tests.

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

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

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

We recommend that minimum spacing of the piles be twice the average pile diameter or 1.75 times the diagonal dimension of the pile cross-section, but no less than 24 inches. It is recommended that the tops of the piles extend a minimum of 4 inches into the pile cap. Based on the exploration borings no pile shorter than feet is recommended unless proper

pile capacity is verified by field inspection by the Geotechnical Engineer. Vertical piles should not vary more than 2% from the plumb position. We further recommend that eccentricity of reaction on a pile group with respect to the load resultant not exceed a dimension that would produce overloads of more than 10% in any one pile.

Since the underlying bedrock is moderately expansive, we recommend a minimum of permanent pressure be maintained on each pier. The minimum pressure should be designed based on a tip uplift pressure of 2500 psf. The area used to consider the uplift pressure should be width times the depth of the pile section used when considering H piles. Round pipe piles will require an end uplift pressure of 1800 psf and a side uplift of 300 psf for the portion of the side wall in contact with the expansive formation.

Based on our analyses, a standard 10-3/4 inch diameter, 1/4 inch wall, pipe pile driven to refusal may be designed for an allowable capacity of 70 to 100 tons. On this site the capacity of the pile will govern allowable load. Pile driving refusal required to obtain the recommended capacity was taken as 7 blows per inch with a 20 foot kip hammer. Driving hammers should be of such size and type to consistently deliver effective energy suitable to the piles and materials into which they are driven. Final pile driving refusal should be determined by representatives of Lincoln DeVore in the field.

DRIVEN PILE OBSERVATION:

Continuous observation of the pile driving operations and a pile load test, if required, should be

performed by Lincoln DeVore as a representative of the owner. A continuous log should be maintained on the number of blows per foot required to drive each pile. Driving should be completed without interruption (except for splicing) and without jetting or pre-drilling unless the gestechnical engineer has been contacted for further recommendations.

GRADE BEAMS:

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

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.

Any partitions which will be located on slabs on grade should be constructed with a minimum space of 2 inches at the bottom of the wall. This space should allow for any future potential upward movement of the floor slabs and minimize damage to the walls and roof sections above the slabs.

It is recommended that slabs on grade be

constructed over a capillary break of approximately 6 inches in thickness. We recommend that the material used to form the capillary break be free draining, granular material and not contain significant fines. A free draining outlet is also recommended for this break so that it will not trap water beneath the slab. A vapor barrier is recommended beneath the floor slab and above the capillary break. To prevent difficulty in finishing concrete, a 2 inch sand layer should be placed above the break.

The magnitude of expansion measured of the soils on this site is such that floor slab movement should be expected if slab on grade consstruction is used. In general, the closer the slab is to the Mancos Shale Formation, the more movement which should be expected. Where floor slabs are cast on expansive soils, no known method of construction will prevent all future slab movement. If the builder and future owner are willing to risk the possibility of some damage due to concrete floor slab movement, the recommendations contained herein should be carefully followed and can help minimize such damage. Any subsequent owner should be advised of the soil conditions and advised to maintain the surface and subsurface drainage, framing of partition above floor slabs, dry wall and finish work above floor slabs. etc.

The first alternative is to dispense with slab-on-grade construction and use a structural floor system. A structural floor system may be either a structural reinforced concrete slab or a structural wood floor system suspended with floor joists. Each system would utilize a crawl space. This alternative would substantially reduce a potential

for post construction slab difficulties due to the expansive properties of the Mnacos Shale Formation.

The second alternative is to install a three foot "buffer zone" of non-expansive, granular soil beneath the slab. This would mitigate the potential for slab movement; however, some potential for movment still exists. Should this alternative be selected, we would recommend that the following be performed:

1. Non-expansive granular soils should be selected for the "buffer zone". The granular soils should contain less than 20% of the material, by dry weight, passing the U.S. No. 200 Sieve. We recommend that the geotechnical engineer be contacted to examine the soils when they are selected, to substantiate that they comply with the recommendations.

2. The perimeter drain for the structures should be located at the elevation equal to or deeper than the "buffer zone". This is to reduce the potential for a "bathtub" effect" which may cause the slab to heave. The "bathtub effect" is created when water is allowed to seep into the "buffer zone" and then becomes trapped since the underlying clay soils have a much lower permeability rate than the "buffer zone" material. Therefore, water may accumulate in the "buffer zone" and subsequently wet the clay soils and cause them to expand.

3. All the non-bearing partitions which will be located on the slabs should be constructed with a minimum 2 inches of void space at the bottom of the wall. This space would allow for the future upward movement of the floor slabs and minimize damage to walls and roof sections above the slabs. The space may require rebuilding after a period of time, since heaving produced by the soils may exceed 2 inches.

4. We recommend that all slabs being placed on the "buffer zone" be constructed to act independently of the other structurall portions of the building. One method of allowing the slabs to float freely is to use expansion material at the slab-structure interface. Control joints should be placed 20 feet on center in each direction. These control joints should control the cracking of the slab should the under-lying soils come in contact with water.

If the slab is to be placed directly on the expansive soils or on a thin fill overlying these soils, the risk of slab movement is high and stringent mitigation techniques are recommended. No design method known at this time will prevent slab movement should moisture enter the expansive soils below. Therefore, to mitigate the effects of slab movement should they occur, we recommend the following:

1. Control joints should be placed in such a manner that no floor area exceeding 400 square feet remains without a joint. Additional joints should be placed at columns and at inside corners. These control joints should minimize cracking associated with expansive soils by controlling location and direction of cracks.

2. We recommend that all slabs on grade be isolated from structural members of the building. This is generally accomplished by an expansion joint at the floor slab/ foundation interface. In addition, positive separation should be maintained between the slab and all interior columns, pipes and mechanical systems extending through the slab.

3. The slab subgrade should be kept moist 3 to 4 days prior to placing the slab. This is done by periodically sprinkling the subgrade with water. However, under no circumstances should the subgrade be kept wet by the flooding or ponding water.

4. Any partitions which will rest on the slabs on grade should be constructed with a minimum void space of 2 inches at the bottom of the wall (see figure in the Appendix). This base should allow for future upward movement of the floor slabs and minimize movement and damage in walls and floors above the slabs. This void may require rebuilding after a period of time, should heave exceed 2 inches.

EARTH RETAINING STRUCTURES

The active soil pressure for the design of earth retaining structures may be based on an equivalent fluid pressure of 54 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 77 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 240 pcf per foot of depth. The coefficient of friction for concrete to soil may be assumed to be 0.24 for resistanse to lateral movement. When combining frictional and passive resistance, the latter must be reduced by approximately 1/3.

We recommend that the backfill behind any retaining wall be compacted to a minimum of 85% of its maximum modified Proctor dry density, ASTM D-1557. The backfill material should be approved by the Soils Engineer prior to placing and a sufficient amount of field observation and density tests should be performed during placement. Placing backfill behind retaining walls before the wall has gained sufficient strength to resist the applied lateral earth pressures is not recommended.

Drainage behind retaining walls is considered critical. If the backfill behind the wall is not well drained, hydrostatic pressures are allowed to build up and lateral earth pressures will be considerably increased. Therefore, we recommend a vertical drain be installed behind any impermeable retaining walls. Because of the difficulty in placement of a gravel drain, we recommend the use of a composite

drainage mat similar to Enkadrain or Miradrain. An outfall must be provided for this drain.

REACTIVE SOILS

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

PAVEMENTS

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

R = 15 by expansion
Expansion @ 300 psi = 3.1
Displacement @ 300 psi = 3.68

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

The developer of the structure should be aware that the traffic volume and the loads on pavement will be considerably higher during the construction phase than during the design life of the pavement structure. Therefore, some repair may be required after construction of the pavement is complete.

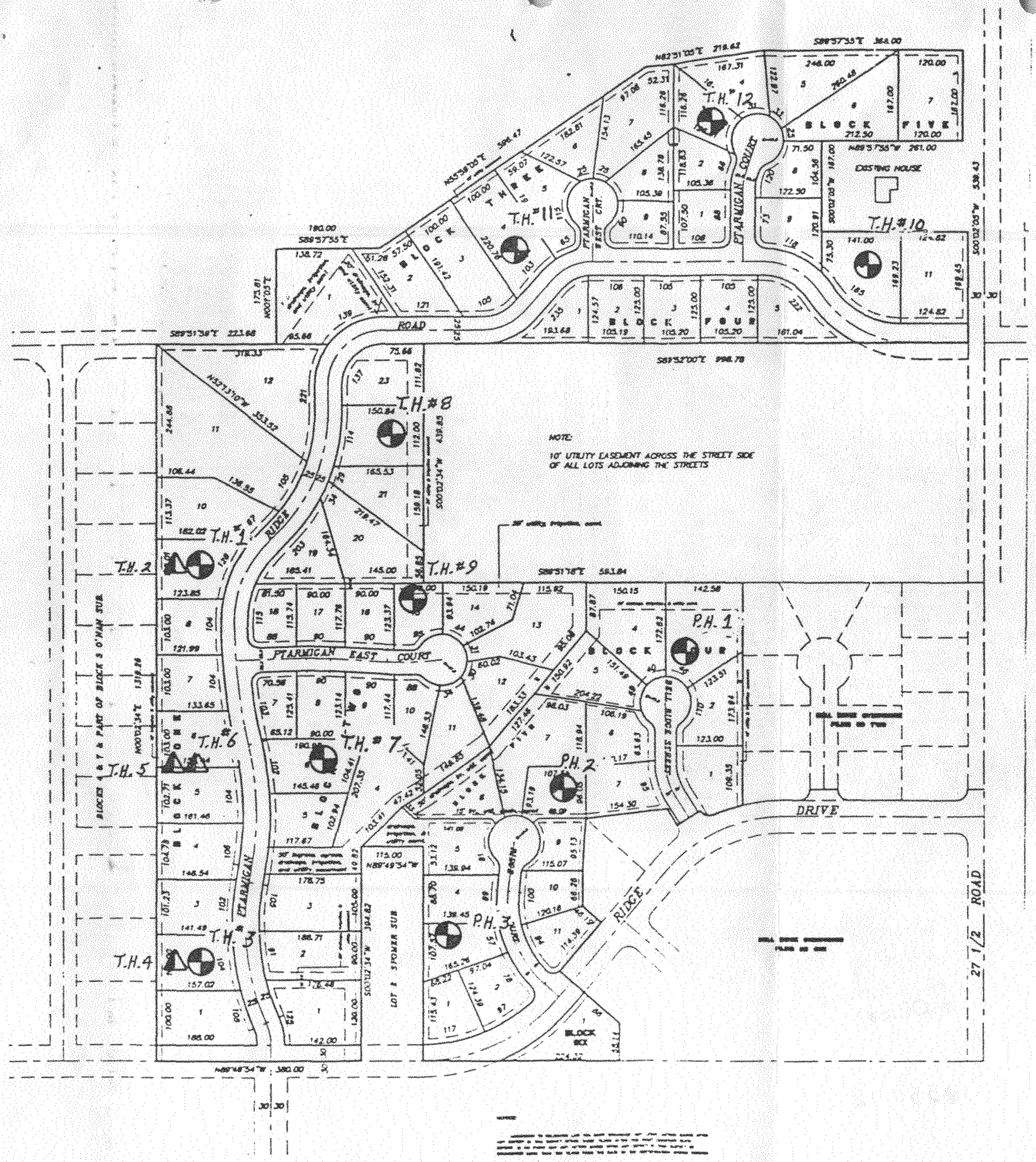
An alternative would be to design a heavier pavement section at this time, utilizing the expected construction volume. It has been our experience that pavement failures during construction are minimal, and that it is more economical to repair localized failures due to contruction traffic rather than construct a heavier pavement section.

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 architect and engineer for the project, and are incorporated into the plans. In addition, it is his responsibility that the necessary steps are taken to see that the contractor and his subcontractors carry out these 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



HOLE NUMBER	DATE DRILLED	DEPTH TO SHALE	WATER @ DRILLING	WATER @ 8-28	WATER @ 9-4-90	WATER @ 12-7-90	WATER @ 3-13-91	WATER @ 6-26-91
T.H. 1	8/17/90	22'	10'-6"	10'	10'	10'-1"	11'-6"	8'-2"
T.H. 2	8/17/90	22'	10'-0"	9'-2"	9'-7"	9'-7"	10'-4"	8'-2"
T.H. 3	8/20/90	17'	12'	11'-6"	11'-4"	12'-10"	15'-0"	10'-5"
T.H. 4	8/20/90	17'	12'-6"	12'	10'-10"	13'-7"	15'-7"	10'-11"
T.H. 5	8/20/90	19'	10'	9'-8"	9'-0"	11'-1"	13'-4"	8'-0"
T.H. 6	8/20/90	19'	10'	10'	9'-7"	11'-4"	12'-0"	8'-5"
T.H. 7	8/20/90	12'	—	—				
T.H. 8	8/20/90	16'	—	—				
T.H. 9	8/24/90	17'	—	—				
T.H. 10	8/24/90	15'	9'					
T.H. 11	8/28/90	12'	—	—				
T.H. 12	8/28/90	7'	—	—				
P.H. 1	6/28/90	7'	—					
P.H. 2	6/28/90	6'	—					
P.H. 3	6/28/90	6'	—					

EXPLORATION BORING

PIEZOMETER

EXPLORATION BORING LOCATION

PTARMIGAN RIDGE SUB. GRAND JUNCTION, COLO.

LINCOLN DeVORE ENGINEERS · GEOLOGISTS

COLORADO: COLORADO SPRINGS, GRAND JUNCTION, PUEBLO,

LD # 72865-J

DRAWN BY: EMM	SCALE:	DATE: 8-28-90
CHECKED BY:	CONT. INTERVAL:	REV.

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
	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.

#55 92

LINCOLN DeVORE TESTING LABORATORY

COLORADO: Colorado Springs, Pueblo, Glenwood Springs, Montrose, Gunnison, Grand Junction. – WYO. – Rock Springs

EXPLANATION OF BOREHOLE LOGS AND LOCATION DIAGRAMS

BORING NO. 1

ELEVATION:

DEPTH (FT)	SYMBOL	SAMPLE	DESCRIPTION	PENETRATION RESISTANCE	IN-SITU DENSITY (PCF)	MOISTURE CONTENT (%)
		I				5.4%
5			GRAVELS – SANDSTONE FRAG.			
		III		5/6		
				15/12		10.2%
			Free Water @ 10'	25/18		
10			SANDSTONE FRAGMENTS – LARGE			
		III		23/6		
				28/12		18.4%
15				35/18		
		IV				
20			MANCOS SHALE			
						11.9%
23						

FREE WATER AT 10'
24 HOURS AFTER DRILLING
8-17-90

#55 92

LOG OF SUBSURFACE EXPLORATION

Lincoln DeVore, Inc.
Geotechnical Consultants

PTARMIGAN RIDGE		DATE 8-17-90
JOB NO. 72865-J	DRAWN EHM	

BORING NO. 3

ELEVATION:

DEPTH (FT)	SYMBOL	SAMPLE	DESCRIPTION	PENETRATION RESISTANCE	IN-SITU DENSITY (PCF)	MOISTURE CONTENT (%)
5		I			92.6	4.3%
10		I		6/6 15/12 25/18		14.2%
			11'-6" FREE WATER			
15		III	OCC. SANDSTONE FRAGMENTS	3/6 7/12 12/18		19.7%
			MANCOS SHALE			
20		IV		30/6 76/12		14.9%

FREE WATER 11'-6"
24 HOURS AFTER DRILLING
8-20-90

#55 92

LOG OF SUBSURFACE EXPLORATION

Lincoln DeVore, Inc.
Geotechnical Consultants

PTARMIGAN RIDGE

DATE 8-20-90

JOB NO. 72865-J

DRAWN EHM

BORING NO. 7

ELEVATION:

DEPTH (FT)	SYMBOL	SAMPLE	DESCRIPTION	PENETRATION RESISTANCE	IN-SITU DENSITY (PCF)	MOISTURE CONTENT (%)
		I			105.9	5.2%
5						
		III		6/6 11/12		7.0%
10				18/18		
12			MANCOS SHALE			
		IV		13/6 39/12 78/18		13.5%
15						

No FREE WATER
8-20-90

#55 92

LOG OF SUBSURFACE EXPLORATION

Lincoln DeVore, Inc.
Geotechnical Consultants

PTARMIGAN RIDGE

DATE 8-20-90

JOB NO. 72865-J

DRAWN EMM

BORING NO. 8

ELEVATION:

DEPTH (FT)	SYMBOL	SAMPLE	DESCRIPTION	PENETRATION RESISTANCE	IN-SITU DENSITY (PCF)	MOISTURE CONTENT (%)
5		II		6/6 18/12 33/18		5.5%
10		III		5/6 12/12 18/18		13.7%
15		I		5/6 13/12 26/18		14.3%
16			KM MANCOS SHALE			
20		IV		53/6 90/10		15.1%

No FREE WATER
DURING DRILLING
8-24-90

#55 92

LOG OF SUBSURFACE EXPLORATION

Lincoln DeVore, Inc.
Geotechnical Consultants

PTARMIGAN RIDGE

DATE 8-24-90

JOB NO. 72865-J

DRAWN EHM

BORING NO. 9

ELEVATION:

DEPTH (FT)	SYMBOL	SAMPLE	DESCRIPTION	PENETRATION RESISTANCE	IN-SITU DENSITY (PCF)	MOISTURE CONTENT (%)
5		I		15/6 40/12 70/18		4.9%
10		II				8.9%
15		III		3/6 7/12 12/18		12.6%
17			MANCOS SHALE			
20		IV		30/6 80/12		14.0%

NO FREE WATER
DURING DRILLING
8-24-90

#55 92

LOG OF SUBSURFACE EXPLORATION

Lincoln DeVore, Inc.
Geotechnical Consultants

PTARMIGAN RIDGE

DATE 8-24-90

JOB NO. 72865-J

DRAWN EMM

BORING NO. 10

ELEVATION:

DEPTH [FT]	SYMBOL	SAMPLE	DESCRIPTION	PENETRATION RESISTANCE	IN-SITU DENSITY [PCF]	MOISTURE CONTENT [%]
			FILL			
5						
9		III	9' H_2O	7/6		14.9%
10				15/12		
				24/18		
		III	GRAVEL SIZED SANDSTONE FRAGMENTS	13/6		14.3%
15			MANCOS SHALE	32/12		
				46/18		
		IV		4/6		17.5%
20				54/8		
			FREE WATER @ 9' DURING DRILLING 8-24-90			

#55 92

LOG OF SUBSURFACE EXPLORATION

Lincoln DeVore, Inc.
Geotechnical Consultants

PTARMIGAN RIDGE		DATE 8-24-90
JOB NO. 72865-J	DRAWN EMM	

BORING NO. 11

ELEVATION:

DEPTH (FT)	SYMBOL	SAMPLE	DESCRIPTION	PENETRATION RESISTANCE	IN-SITU DENSITY (PCF)	MOISTURE CONTENT (%)
			FILL	4/6		
				9/12		
5				16/18		
			(II)	4/6		
				11/12		6-3%
10				4/18		
12½			(IV) MANCOS SHALE	18/6		20-6%
				43/12		
15				74/18		

NO FREE WATER
8-28-90

#55 92

LOG OF SUBSURFACE EXPLORATION

Lincoln DeVore, Inc.
Geotechnical Consultants

PTARMIGAN RIDGE

DATE 8-28-90

JOB NO. 72865-J

DRAWN EHM

BORING NO. 12

ELEVATION:

DEPTH (FT)	SYMBOL	SAMPLE	DESCRIPTION	PENETRATION RESISTANCE	IN-SITU DENSITY (PCF)	MOISTURE CONTENT (%)
		II				
7			MANCOS SHALE			
		IV		15/6 46/12		9.3%

NO FREE WATER

8-28-90

#55 92

LOG OF SUBSURFACE EXPLORATION

Lincoln DeVore, Inc.
Geotechnical Consultants

PTARMIGAN RIDGE

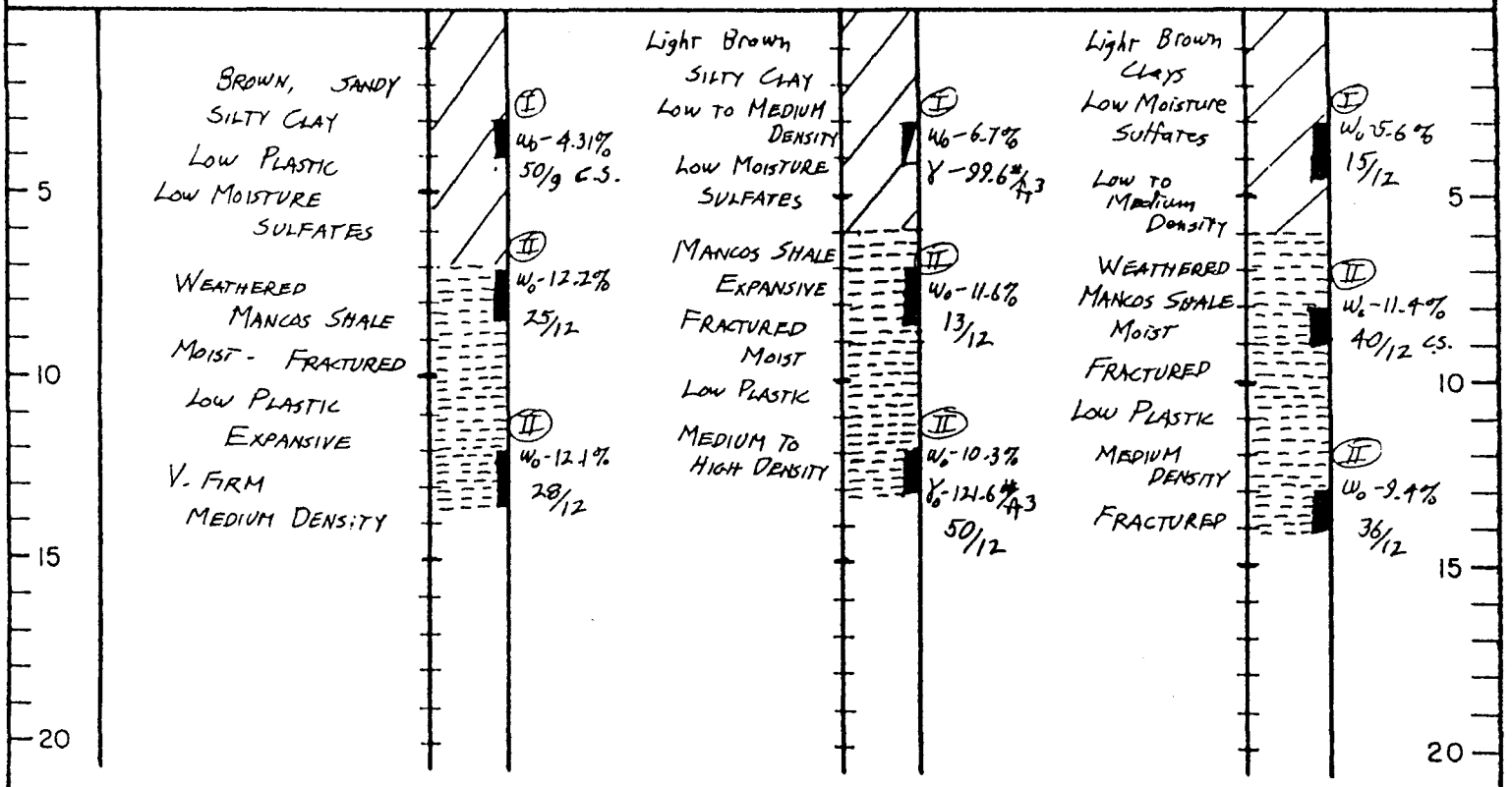
DATE 8-28-90

JOB NO. 72865-J

DRAWN EMM

Job No. LD-12823-J

TEST HOLE NO. P-H-#1 P-H-#2 P-H-#3
ELEVATION



No Free Water In The
Exploration Borings At
Time of Drilling 6-28-90

#55 92

DRILLING LOGS

LINCOLN DeVORE ENGINEERS • GEOLOGISTS
COLORADO: COLORADO SPRINGS, GRAND JUNCTION, PUEBLO,

SUMMARY SHEET

Soil Sample CLAY - SILT (CL-ML)

Test No. 72865-J

Location PTARMIGAN RIDGE - GRAND JUNCTION

Date 8-28-90

Boring No. 9 Depth 3

Sample No. (J)

Test by RM

Natural Water Content (w) 4.9 %

Specific Gravity (Gs) _____

In Place Density (γ_o) _____ pcf

SIEVE ANALYSIS:

Sieve No.	% Passing
1 1/2"	
1"	
3/4"	
1/2"	
4	
10	100.0
20	95.5
40	87.8
100	76.6
200	68.2

HYDROMETER ANALYSIS:

Grain size (mm)	%
.02	46.7
.005	44.4

Plastic Limit P.L. 15.1 %

Liquid Limit L. L. 20.6 %

Plasticity Index P.I. 5.5 %

Shrinkage Limit _____ %

Flow Index _____

Shrinkage Ratio _____ %

Volumetric Change _____ %

Lineal Shrinkage _____ %

MOISTURE DENSITY: ASTM METHOD

Optimum Moisture Content - w_o _____ %

Maximum Dry Density - γ_d _____ pcf

California Bearing Ratio (av) _____ %

Swell: _____ Days _____ %

Swell against _____ psf Wo gain _____ %

BEARING:

Housel Penetrometer (av) _____ psf

Unconfined Compression (qu) _____ psf

Plate Bearing: _____ psf

Inches Settlement _____

Consolidation % under psf

PERMEABILITY:

K (at 20°C) _____

Void Ratio _____

Sulfates 2000 ppm.

#55 92

SOIL ANALYSIS

LINCOLN-DeVORE TESTING LABORATORY
COLORADO SPRINGS, COLORADO

Soil Sample Silty Sand (SM)

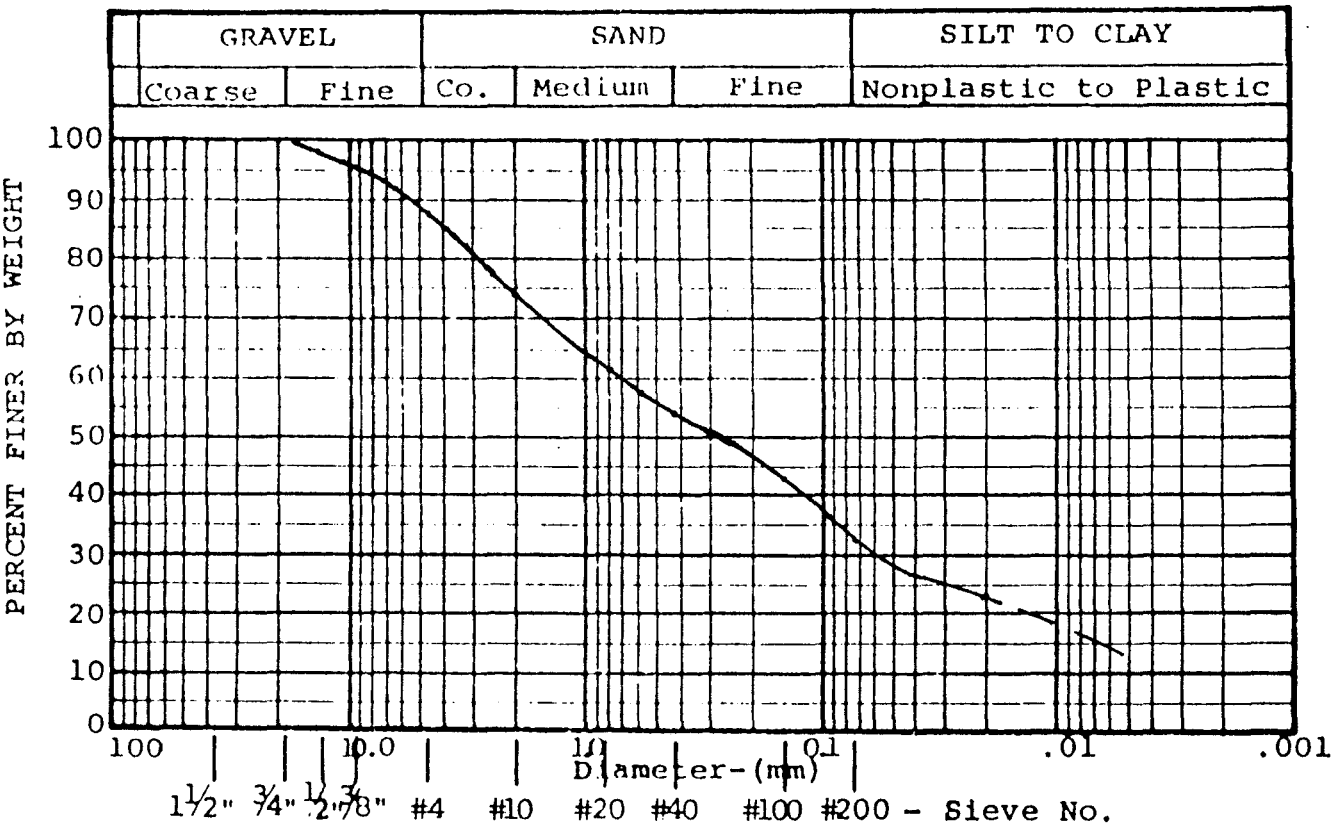
Project Ptarmigan Ridge

Sample Location 11@8

Test No. 72865-J

Date 8-31-90

Test by RM



Sample No. II

Specific Gravity

Moisture Content 13.7

Effective Size

Cu

Cc

Fineness Modulus

L.L. 18.6 % P.I. N.P. %

BEARING psf

Sieve Size	% Passing
1 1/2"	
1"	
3/4"	100.0
1/2"	98.2
3/8"	95.5
4	87.1
10	73.6
20	61.4
40	54.2
100	42.4
200	32.4
0200	23.2

Do NOT Remove From Office

Sulfates 2000 ppm

GRAIN SIZE ANALYSIS

LINCOLN DeVORE ENGINEERS GEOLOGISTS

COLORADO: COLORADO SPRINGS
GRAND JUNCTION, PUEBLO,
GLENWOOD SPRINGS

Soil Sample SILTY SAND (SM)

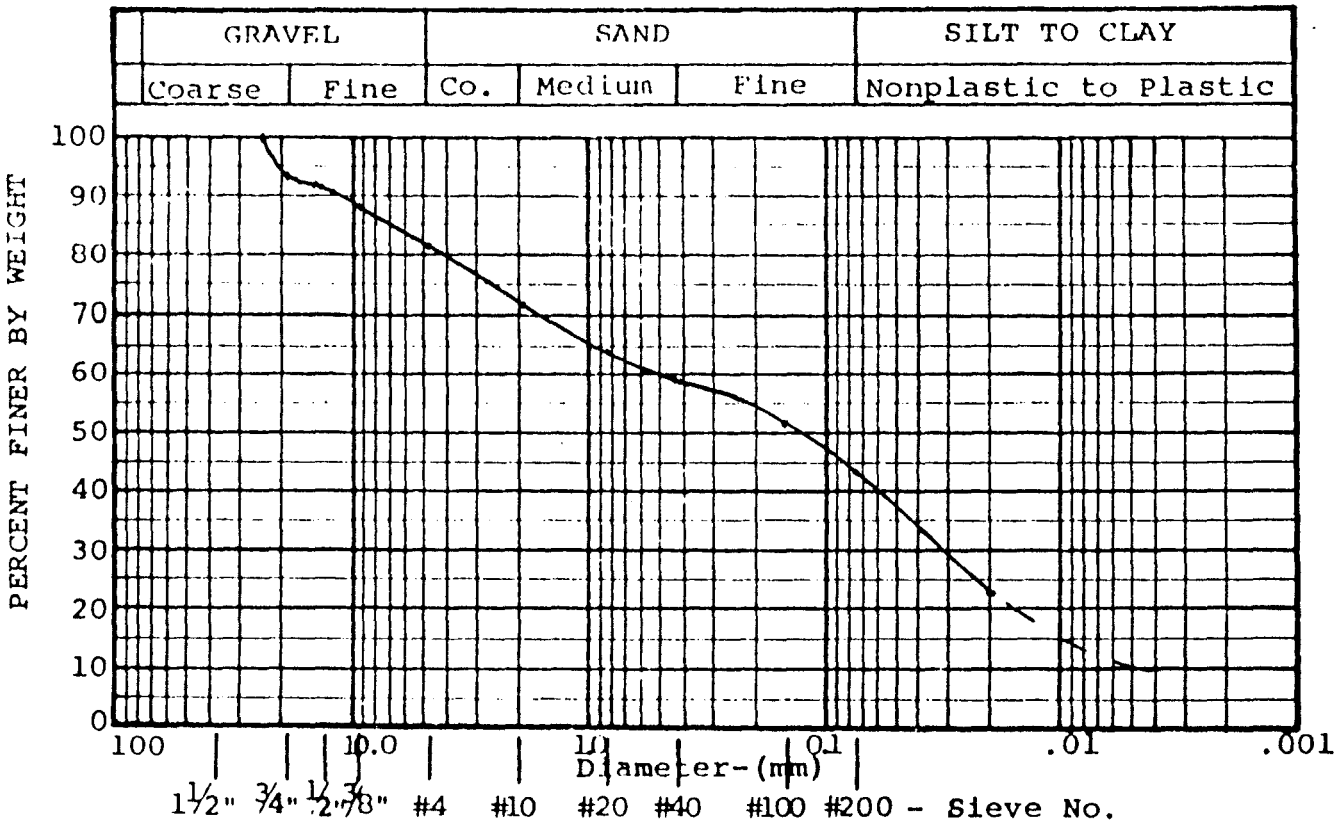
Test No. 72865-J

Project PTARMIGAN RIDGE

Date 8-31-90

Sample Location 3@13

Test by RM



Sample No. III

Specific Gravity

Moisture Content 19.7%

Effective Size

Cu

Cc

Fineness Modulus

L.L. 16.4 % P.I. N-P %

BEARING psf

Sieve Size	% Passing
1 1/2"	
1"	100.0
3/4"	92.9
1/2"	90.7
3/8"	87.8
4	81.3
10	71.2
20	63.7
40	59.4
100	50.7
200	43.0
0200	22.6

#55 92

Sulfates 2000 ppm

Do Not Remove from Office

GRAIN SIZE ANALYSIS

LINCOLN DeVORE ENGINEERS GEOLOGISTS

COLORADO: COLORADO SPRINGS
GRAND JUNCTION, PUEBLO,
GLENWOOD SPRINGS

SUMMARY SHEET

Soil Sample MANCOS SHALE (CL)

Test No. T2865-J

Location PTARMIGAN RIDGE

Date 8-28-90

Boring No. 7 Depth 13

Sample No. IV

Test by RM

Natural Water Content (w) 13.5 %

Specific Gravity (Gs) _____

In Place Density (γ_o) _____ pcf

SIEVE ANALYSIS:

Sieve No.	% Passing
1 1/2"	
1"	
3/4"	
1/2"	
4	
10	100.0
20	93.7
40	89.1
100	83.3
200	79.2

HYDROMETER ANALYSIS:

Grain size (mm)	%
.02	49.1
.005	41.8

Plastic Limit P.L. 17.2 %

Liquid Limit L. L. 27.1 %

Plasticity Index P.I. 9.9 %

Shrinkage Limit _____ %

Flow Index _____

Shrinkage Ratio _____ %

Volumetric Change _____ %

Lineal Shrinkage _____ %

MOISTURE DENSITY: ASTM METHOD

Optimum Moisture Content - w_o _____ %

Maximum Dry Density - γ_d _____ pcf

California Bearing Ratio (av) _____ %

Swell: _____ Days _____ %

Swell against _____ psf Wo gain _____ %

BEARING:

Housel Penetrometer (av) _____ psf

Unconfined Compression (qu) _____ psf

Plate Bearing: _____ psf

Inches Settlement _____

Consolidation % under psf

PERMEABILITY:

K (at 20°C) _____

Void Ratio _____

Sulfates 2000 ppm.

Original
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From Office

SOIL ANALYSIS

LINCOLN-DeVORE TESTING LABORATORY
COLORADO SPRINGS, COLORADO

TEST HOLE NO.	SAMPLE DEPTH (FT.)	NAT. MOIST. Wo = %	NAT. DRY DENSITY (PCF)	PERCENT PASSING NO. 200 SEIVE	ATTERBERG LIMITS LIQUID LIMIT LL-%	ATTERBERG LIMITS PLASTIC LIMIT PL-%	ATTERBERG LIMITS PLAST. INDEX PI-%	UNCONFINED COMPRESSIVE STRENGTH (PSF)	SWELL TEST (PSF)	WATER SOLU. SULF. (PPM)	ASTM D-2487 SOIL CLASS.	SOIL TYPE NO.	DESCRIPTION AND NOTES
9	3	4.9								2000		I	
	8	8.9							468 Remold			I	
	13	12.6								2000		III	
	18	14.0								2000		IV	
10	3									2000		FILL	
	8	14.9								2000		III	
	13	14.3								2000		III	
	18	17.5										IV	
11	3											FILL	
	8	6.3										II	
	13	20.6								2000		IV	
12	3											II	
	8	9.3								2000		IV	

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55 92

LABORATORY TEST RESULTS
SUMMARY OF SAMPLES

LINCOLN DeVORE ENGINEERS-GEOLOGISTS

COLORADO: COLORADO SPRINGS, GRAND JUNCTION, PUEBLO, GLENWOOD SPRINGS
WYOMING: EVANSTON

Job No. LD
Rpt. Date

TEST HOLE NO.	SAMPLE DEPTH (FT.)	NAT. MOIST. Wo = %	NAT. DRY DENSITY (PCF)	PERCENT PASSING NO. 200 SEIVE	ATTERBERG LIMITS			UNCONFINED COMPRESSIVE STRENGTH (PSF)	SWELL TEST (PSF)	WATER SOLU. SULF. (PPM)	ASTM D-2487 SOIL CLASS.	SOIL TYPE NO.	DESCRIPTION AND NOTES
					LIQUID LIMIT LL-%	PLASTIC LIMIT PL-%	PLAST. INDEX PI-%						
1	3	5.4										I	
	8	10.2								2000		III	
	13	18.4										III	
	22	11.9								2000		IV	
3	3	4.3							204 remold			I	
	8	14.2								2000		I	
	13	19.7										III	
	18	14.9								2000		IV	
7	3	5.2	105.9						921			I	
	8	7.0										III	
	13	13.5								2000		IV	
8	3	5.5										II	
	8	13.7										III	
	13	14.3								2000		I	
	18	15.1								2000		IV	

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#55
92

LABORATORY TEST RESULTS
SUMMARY OF SAMPLES

LINCOLN DeVORE ENGINEERS-GEOLOGISTS

COLORADO: COLORADO SPRINGS, GRAND JUNCTION, PUEBLO, GLENWOOD SPRINGS
WYOMING: EVANSTON

Job No. LD
Rpt. Date

REVIEW COMMENTS

FILE NO. #55-92 **TITLE HEADING:** Final Plat

ACTIVITY: Ptarmigan Ridge Filing #4

LOCATION: North of 15th Street & North of Ridge Drive

PETITIONER: John Siegfried

PETITIONER'S ADDRESS/TELEPHONE: P.O. Box 9088
Grand Junction, CO 81502
(303) 241-7025

ENGINEER/REPRESENTATIVE: John Siegfried

STAFF REPRESENTATIVE: Dave Thornton

NOTE: WRITTEN RESPONSE BY THE PETITIONER TO THE REVIEW COMMENTS IS REQUIRED ON OR BEFORE 5:00 P.M., October 25, 1992

CITY DEVELOPMENT ENGINEER **10/12/92**
Gerald Williams **244-1591**

A submittal was made previously for Filing 4 which did not coincide with the concurrently submitted ODP. This was brought to the attention of the developer, and consistency requested. However, as a benefit to the developer, a general review of the plans was provided which could be used in preparation of the revised plans. The following review comments pertain to the revised submittal:

1. The new plat does not appear to coincide with the ODP.

2. The overall drainage scheme has not been adequately addressed.

The above two comments were the primary issues not addressed before which resulted in the submittal being pulled. Inasmuch as they are still not addressed, we consider the submittal incomplete, and therefore no further review was done, nor will be until the issues are addressed.

Reviewed by: Gerald Williams, Development Engineer
Copy to: Don Newton, City Engineer

COMMUNITY DEVELOPMENT DEPARTMENT - DAVE THORNTON

File #55-92 Ptarmigan Ridge filing 4 - **REVISED REVIEW COMMENTS:** (October 14th)

PLAT and PLAN

1. Need to label type and dimensions of easement shown on North side of lots 4, 5, 6, blk 1 on plat.

2. The boundary of tract A is not acceptable. The southwest corner of Tract A needs to show the boundary along the ROW line. Tract A is not within the boundary of Filing four. It is actually a part of the new ODP just approved by Planning Commission and must be made a part of that development. At that time it should be dedicated as ingress, egress, utility, irrigation and drainage easement.

3. Water line must be looped, if it is going to be looped at the southern boundary of lot 1, block one, an easement must be provided and shown on the plat.

4. North 15th Street needs to be called "North 15th Court" north of the intersection of North 15th Street and Ptarmigan Ridge Court.

5. The Drainage issue has not been addressed yet. The addendum submitted is not adequate and does not address Filing four. As result, this project is being pulled from the Planning Commission agenda for November and will not be scheduled until all necessary material is resubmitted on November 2nd for the December Planning Commission meeting cycle.

GENERAL

1. An avigation easement is required to be recorded and must be recorded with the plat.

2. The soils report notes a potential for perched water table conditions created by irrigation and roof runoff. The design and construction of all improvements should take that into account. Because of the possibility of varying soil conditions, open excavation observation should be performed by a soils engineer prior to placing forms or pouring concrete. The site drainage recommendations and foundation recommendations made in the Lincoln-DeVore, Inc. soils report (dated Sept. 5, 1990) should be followed for site specific construction.

3. The improvements Agreement/Guarantee must be approved by City Engineering and will be recorded with the Final Plat.

4. Covenants will be recorded with the plat.

5. If Grand Valley Irrigation requests it for their maintenance purposes, no fences should be allowed within the 15 ft. irrigation easement located across Lots 2, 3, 4, 5 & 6 of Block One to allow free access for irrigation purposes. This may need to be addressed in the covenants as it was in Filing Three.

6. The Final Plat will not be recorded until we receive in final form all documents needed for recording, an acceptable improvements guarantee and all construction drawings have been accepted by City Engineering.

7. Since this project is being pulled from the agenda due to an incomplete submittal, all review agency comments need to be addressed as part of the resubmittal due on Monday, November 2nd, 1992 by 5 p.m.

Grand Junction Community Development Department
Planning • Zoning • Code Enforcement
250 North Fifth Street
Grand Junction, Colorado 81501-2668
(303) 244-1430 FAX (303) 244-1599

October 15, 1992

John Siegfried
P.O. Box 9088
Grand Junction, CO 81502

Dear John:

In the review of your proposal for a Final Plat for Ptarmigan Ridge Filing Four along 15th Street North of Ridge Drive (City Development file # 55-92) it has been noted that the submittal is incomplete (see attached review comments). Section 6-7-4 of the Zoning and Development Code states that "a submittal with insufficient information, identified in the review process, which has not been addressed by the applicant, may be withdrawn from the agenda by the Administrator". The revised documents submitted on October 2nd did not include all of the deficient items required for review. The addendum to the drainage report did not include the necessary information for Filing Four. Therefore, your proposal will not be scheduled for the November 3, 1992 Planning Commission hearing. For the item to be scheduled for the December Planning Commission hearing all deficiencies including those as outlined by the City Development Engineer and all other review agency comments must be rectified and incorporated into the resubmittal. All revised plans/reports/documents/etc. must be resubmitted to the Community Development Department with the appropriate number of copies by November 2, 1992.

If you have any questions please contact me at 244-1447 at your earliest convenience.

Respectfully,

Dave Thornton
Planner

cc: Gerald Williams
File #55-92

REVIEW COMMENTS
DEVELOPMENT ENGINEER - GERALD WILLIAMS
FOR FILE #45-92
PTARMIGAN RIDGE FILING #3
OCTOBER 14, 1992

1. We have yet to receive a copy of the executed documents which provide off-site utility, drainage, and ingress/egress easements.

2. The grading plan shows catch basin inlets on Ptarmigan Ridge Court having different grade elevations. Inasmuch as these are at the same station, the grades should be the same.

3. More detail is required on the outlet end of the proposed 12" PVC drain pipe. What is the invert and the channel invert at the outlet, where is the irrigation pump house, and how is conflict avoided? Please show with adequate detail.

4. Please provide leader lines from the water line note shown on the Utility Plans (see Lot 1, Block 2).

5. The roadway grades on Ptarmigan Ridge Court have not been revised since the valley pan was removed and catch basins were added. Catch basins should be at the same grade, and the 1.5% street cross-grade maintained. This affects both the sewer line plan and profile and also the road plan and profile drawings.

6. There are two ways to station the road profiles which should be consistent:

   (i) Have separate stationing for each of three profiles, that is, for the left and right flow lines and also the centerline; and

   (ii) Have all points based upon centerline stationing, with true length slopes provided along flow lines. This method is preferred by the City Engineer, since it is less confusing and reduces chance for error.

7. An Addendum to the Filing 3 and 4 Drainage Report has been received. The cover letter to the report acknowledges that "some aspects of Filing 4 are not yet completely designed, so there will probably be a second addendum to the drainage report when the plans are completed, e.g., a revised retention basin detail . . .". The Addendum does refer to an 11,500 cubic feet retention basin, but new hydrologic calculations and an overall runoff summary for pre-, post-Filing 3, and post-Filings 3 and 4 conditions have not been provided. The values provided should include all factors, including reductions due to diversion upstream to the proposed retention basin along 27.5 Road, and reduction elsewhere due to retention and/or detention facilities. These values are necessary to determine whether or not compliance has been obtained.

Also Applys #4 TO Filing Review Comments

8. As a matter of note, hydraulic gradients would be of concern not only up to the first catch basin inlet, but to the second inlet as well. Calculations on page 3 of the Addendum appendix appears to show adequacy only to the first inlet.

9. Filing 3 and 4 design and drainage scheme is dependent upon a facility which is not a part of these filings; that is, a large retention basin along 27.5 Road. This basin must be completed and approved prior to acceptance of new filings (3 and 4) which depend upon the basin being in place.

Reviewed by: Gerald Williams, Development Engineer
Copied to: Don Newton, City Engineer

Review Comments
for
Ptarmigan Ridge Filing #4
10/14/92

A submittal was made previously for Filing #4 which did not coincide with the concurrently submitted ODP. This was brought to the attention of the developer, and consistently requested. However, as a benefit to the developer, a general review was provided of the plans which could be used in preparation of the revised plans.

The following review comments pertain to the revised submittal.

1. The new plat does not appear to coincide with the ODP.
2. The overall drainage scheme has not been adequately addressed.

The above two comments were the primary issues not addressed before which resulted in the submittal being pulled. Inasmuch as they are still not addressed, we consider the submittal incomplete, and therefore no further review was done, nor will be until the issues are addressed

Reviewed by: Gerald Williams, Development Engr
Copy to : Don Newton, City Engineer

REVIEW COMMENTS

FILE NO. #55-92 **TITLE HEADING:** Final Plat

ACTIVITY: Ptarmigan Ridge #4

LOCATION: North 15th Street & Ridge Drive

PETITIONER: John Siegfried

PETITIONER'S ADDRESS/TELEPHONE: P.O. Box 9088
Grand Junction, CO 81502
(303) 241-7025 (W)

ENGINEER/REPRESENTATIVE: John Siegfried

STAFF REPRESENTATIVE: Dave Thornton

NOTE: WRITTEN RESPONSE BY THE PETITIONER TO THE REVIEW COMMENTS IS REQUIRED ON OR BEFORE 5:00 P.M., November 24, 1992

CITY AGENCIES:

CITY FIRE DEPARTMENT **10/12/92**
George Bennett **244-1400**

The fire line is longer than the code allows for a dead-end; it must be looped to provide the flows and meet code.

CITY PARKS & RECREATION **9/17/92**
Don Hobbs **244-1542**

Open space fee based upon 13 units X $225. = $2.925.00.

POLICE DEPARTMENT **10/12/92**
Marty Currie **244-3563**

No problems noted.

DEVELOPMENT ENGINEER **11/17/92**
Gerald Williams **244-1591**

The overall drainage scheme for Filings 2,3 and 4 is not entirely resolved. However, $20,000. has been received from the developer as a guarantee that outstanding items will be properly addressed, namely:

1. The retention basin at 27 1/2 Road and Cortland Avenue will be reshaped with conforming side slopes, and will have a positive means of being drained within 48 hours after receiving 100-year runoff volume.

2. Any unaccounted-for excessive runoff from Filings 2,3 and 4 due to development will be addressed in a future drainage report for the new Ptarmigan Ridge ODP area, and facilities built accordingly.

The revised plans dated 10/22; reviewed and red-lined 10/29 by City Engineering must be addressed with these responses to the Review Comments. All other previous comments have been addressed adequately.

CITY PROPERTY AGENT **9/15/92**
Tim Woodmansee **244-1565**

1. Please provide ties, bearings and distances for the 15' irrigation easement across Lots 2 through 6 of Block 1 and for the drainage easement on Lot 7 of Block 2.

2. Curves 10 and 11 have been described in reverse order in the dedication.

3. Please label the Point of Beginning as well as Lot 1, Block 1 of Ptarmigan Ridge Filing #3.

4. Monumentation should be provided for the southeast corner of the subdivision.

CITY UTILITIES ENGINEER **10/12/92**
Bill Cheney **244-1590**

Sewer - No comment.

Water - It appears that "Water Notes: 3 and 4" do not say the same thing. Which distance is correct - to the property line or 5' inside property line? There should be a corp stop at end of line to facilitate future connection.

COMMUNITY DEVELOPMENT DEPARTMENT 11/17/92
Dave Thornton 244-1447

See attached for current review comments. All other previous comments have been adequately addressed.

OTHER REVIEW AGENCIES:

GRAND VALLEY RURAL ELECTRIC 9/10/92
Mr. Rupp 242-0040

Not in Grand Valley Power service area.

PUBLIC SERVICE COMPANY 09/10/92
Harold Ball 244-2693

Gas & Electric: No objections.

U.S. WEST 9/08/92
Leon Peach 244-4964

New or additional telephone facilities necessitated by this project may result in a "contract" and up-front monies required from developer, prior to ordering or placing of said facilities.

UTE WATER 9/10/92
Gary R. Mathews 242-7491

Water line in Ptarmigan Court will run through the cul-de-sac. Policies and fees in effect at the time of application will apply.

COMMUNITY DEVELOPMENT DEPARTMENT - DAVE THORNTON

File #55-92 Ptarmigan Ridge filing 4 - **REVISED REVIEW COMMENTS:** (October 14th)

PLAT and PLAN

1. Need to label type and dimensions of easement shown on North side of lots 4, 5, 6, blk 1 on plat.

2. The boundary of tract A is not acceptable. The southwest corner of Tract A needs to show the boundary along the ROW line. Tract A is not within the boundary of Filing four. It is actually a part of the new ODP just approved by Planning Commission and must be made a part of that development. At that time it should be dedicated as ingress, egress, utility, irrigation and drainage easement.

3. Water line must be looped, if it is going to be looped at the southern boundary of lot 1, block one, an easement must be provided and shown on the plat.

4. North 15th Street needs to be called "North 15th Court" north of the intersection of North 15th Street and Ptarmigan Ridge Court.

5. The Drainage issue has not been addressed yet. The addendum submitted is not adequate and does not address Filing four. As result, this project is being pulled from the Planning Commission agenda for November and will not be scheduled until all necessary material is resubmitted on November 2nd for the December Planning Commission meeting cycle.

GENERAL

1. An avigation easement is required to be recorded and must be recorded with the plat.

2. The soils report notes a potential for perched water table conditions created by irrigation and roof runoff. The design and construction of all improvements should take that into account. Because of the possibility of varying soil conditions, open excavation observation should be performed by a soils engineer prior to placing forms or pouring concrete. The site drainage recommendations and foundation recommendations made in the Lincoln-DeVore, Inc. soils report (dated Sept. 5, 1990) should be followed for site specific construction.

3. The improvements Agreement/Guarantee must be approved by City Engineering and will be recorded with the Final Plat.

4. Covenants will be recorded with the plat.

5. If Grand Valley Irrigation requests it for their maintenance purposes, no fences should be allowed within the 15 ft. irrigation easement located across Lots 2, 3, 4, 5 & 6 of Block One to allow free access for irrigation purposes. This may need to be addressed in the covenants as it was in Filing Three.

6. The Final Plat will not be recorded until we receive in final form all documents needed for recording, an acceptable improvements guarantee and all construction drawings have been accepted by City Engineering.

7. Since this project is being pulled from the agenda due to an incomplete submittal, all review agency comments need to be addressed as part of the resubmittal due on Monday, November 2nd, 1992 by 5 p.m.

DRAFT

October 14, 1992

John Siegfried
P.O. Box 9088
Grand Junction, CO 81502

Dear John:

In the review of your proposal for a Final Plat for Ptarmigan Ridge Filing Four along 15th Street North of Ridge Drive (City Development file # 55-92) it has been noted that the submittal is incomplete (see attached review comments, specifically City Development Engineer comments, page 4). Section 6-7-4 of the Zoning and Development Code states that "a submittal with insufficient information, identified in the review process, which has not been addressed by the applicant, may be withdrawn from the agenda by the Administrator". The revised documents submitted on October 2nd did not include all of the deficient items required for review. The addendum to the drainage report did not include the necessary information for Filing Four. Therefore, your proposal will not be scheduled for the November 3, 1992 Planning Commission hearing. For the item to be scheduled for the December Planning Commission hearing all deficiencies including those as outlined by the City Development Engineer and all other review agency comments must be rectified and incorporated into the resubmittal. All revised plans/reports/documents/etc. must be resubmitted to the Community Development Department with the appropriate number of copies by November 2, 1992.

If you have any questions please contact me at 244-1447 at your earliest convenience.

Respectfully,

Dave Thornton
Planner

cc: Gerald Williams
File #55-92

(REJECT.LET)

MEMORANDUM

DATE: November 9, 1992

TO: Dave Thornton

FROM: Gerald Williams

SUBJ: Ptarmigan Ridge Filings 2, 3, and 4

I thought it may be beneficial to summarize some of the outstanding issues relating to the Ptarmigan Ridge Filings 2, 3, and 4 which are under construction and review.

Filing 2 Retention Basin. The drainage design requires that a retention basin be constructed at 27 1/2 Road across from Cortland Avenue. Retention basins are permitted runoff reduction facilities, but conditions do apply. Thus far, the following concerns and non-conforming conditions exist.

1. We have not had runoff producing rainfall since November 2nd or 3rd, and yet when I visited the site on November 5th, several feet of water remained in the basin. We realize that some of that was probably bleed-off water from the church site detention pond, and therefore direct conclusions regarding percolation rates are difficult to obtain. I noted however, that there was no inflow into the pond occurring at the time of my visit.

   I visited the site again today, 4 days later, and although the water level had receded, ponded water remained over most of the basin bottom, with depths exceeding 0.5 feet. The volume of water in the pond on November 5 was significantly less than 100-year storm required retention volume, and yet the water was unable to percolate out within the required 48 hours.

2. Side slopes of basins are not allowed steeper than 3H:1V. Site observations and the submitted volume certification drawing indicate that side slopes approximate 1.4 or 1.5 to 1. This represents a safety hazard, cannot be readily maintained, and is not acceptable. The side slopes must conform to criteria.

3. When Lewis Hoffman spoke with us at the Community Development counter the morning of November 4, he indicated that the pond was full of water, and therefore would preclude the possibility of a survey in the immediate future for volume certification. Notwithstanding, the very next day (the day I observed several feet of water still in the pond), I received a volume certification for the basin. The top of the basin could have been surveyed, and the general slope as well, but unless as-built bottom elevations were known prior to storm runoff, it is doubtful that the information presented is reliable.

4. In addition to the above issues, we also intend to inspect the diversion struction that receives runoff from 3 pipes and outlets into the 24 inch CMP. This will be done at the time that basin is re-inspected after corrections are made.

All four above concerns must be addressed prior to our acceptance of the detention basin, which will also be prerequisite to approving Filing 3 and 4 plans and plats.

Traffic Regulations A recent site visit revealed that required traffic signage has yet to be installed by the developer. A stop sign facing north at the northeast corner of the intersection is required. At the same corner, only facing east, a double sign is required having a **No Outlet** sign (W14-2) and small rectangular sign underneath which reads "Private Drive". These signs govern traffic at the Ridge Drive and N. 15th Street intersection, which is the access to Filings 3 and 4. Consequently, we will require that these signs be installed prior to our approval of Filings 3 and 4 plans and plats.

Drainage Report Previous requirements for the Filings 3 and 4 drainage report have not been completely addressed, even on the latest addendum dated November 3, 1992. Lewis Hoffman was informed of this on November 4, and indicated that he would have the engineer give me a call to discuss what is still lacking and also our concerns with what was submitted. So far we have not received a phone call or any additional information. This issue must be resolved prior to approving Filings 3 and 4 plans and plats.

Inlet An inlet is required at the southwest corner of Ridge Drive and N. 15th Street. Filings 3 and 4 are not dependent in any way upon the inlet, and therefore the inlet will not be a condition of Filings 3 and 4 approval. However, it must be done as part of Filing 2 and prior to acceptance of Filing 2 work.

I presume that you will be immediately forwarding a copy of this to the developer. I invite questions or comments from you or them.

file:GW:REVPTARM.GW

skw

COMMUNITY DEVELOPMENT DEPARTMENT - DAVE THORNTON

File #55-92 Ptarmigan Ridge filing 4 - **REVISED REVIEW COMMENTS:** (Nov. 16th)

1. Need to label type and dimensions of easement shown on North side of lots 4, 5, 6, blk 1 on plat.

2. Is the 10 ft easement adequate for the waterline that is proposed across the northern boundary of lot 1, block 1? The utility plan does not show the size of that line. What is it? It needs to be a minimum 8 inch line. According to Gary Mathews, Ute Water they won't accept the looped line in an easement at this location. If Ute Water doesn't accept the water line in the easement then you will be required to install the looped water line to 27 1/2 Road.

3. An off site drainage easement is required for the drainage basin area that is being used for filings 3 & 4 and will be located on the future filing 5 property. Please submit the documentation for this easement for our review and approval.

4. All offsite easements will be recorded with the final plat.

5. An avigation easement is required to be recorded and must be recorded with the plat.

6. The soils report notes a potential for perched water table conditions created by irrigation and roof runoff. The design and construction of all improvements should take that into account. Because of the possibility of varying soil conditions, open excavation observation should be performed by a soils engineer prior to placing forms or pouring concrete. The site drainage recommendations and foundation recommendations made in the Lincoln-DeVore, Inc. soils report (dated Sept. 5, 1990) should be followed for site specific construction.

7. The improvements Agreement/Guarantee must be approved by City Engineering and will be recorded with the Final Plat.

8. Covenants will be recorded with the plat.

9. If Grand Valley Irrigation requests it for their maintenance purposes, no fences should be allowed within the 15 ft. irrigation easement located across Lots 2, 3, 4, 5 & 6 of Block One to allow free access for irrigation purposes. This may need to be addressed in the covenants as it was in Filing Three.

10. The Final Plat will not be recorded until we receive in final form all documents needed for recording, an acceptable improvements guarantee and all construction drawings have been accepted by City Engineering.

11. <u>All review agency comments need to be addressed as part of the resubmittal due on Tuesday, November 24th, 1992 by 5 p.m.</u>

November 24, 1992

RESPONSES TO REVIEW COMMENTS

FILE NO. #55-92

Ptarmigan Ridge Filing #4--Final Plat

John Siegfried
P.O. Box 9088
Grand Junction, CO 81501
241-7025

CITY FIRE DEPARTMENT

Lewis Hoffman met with Ken Johnson, Fire Marshall, on November 23, 1992 to resolve the looped water line issue. Ken was informed by Lewis that the water line will be looped through our property on the north, out to 27 1/2 Road. This water line will be part of a preliminary plan we anticipate submitting at the end of December. Until street alignment is established through this property, the construction of the water line is premature. We proposed that Ptarmigan Investments provide the City an improvements agreement and guarantee to cover the water line until construction plans have been approved and construction and acceptance is accomplished. Ken found the proposal acceptable, as it gave him the assurance that the water line would be built. We will work out the details on the improvements agreement and guarantee prior to the plat being recorded, with the Gerald Williams, Community Development Engineer.

DEVELOPMENT ENGINEER

Plans have been revised in response to Gerald's red-lined plans of 10/29. We will need to remove the proposed 8" water line running through the 10' easement on Lot 1, Block 1, as this was part of the looped water line issue and is no longer necessary (the issue was resolved after the plans had been revised.)

CITY PROPERTY AGENT

The plat has been revised.

COUNTY SURVEYOR

The plat has been revised.

CITY UTILITIES ENGINEER

The plans have been revised.

FILE NO. #55-92
RESPONSES TO REVIEW COMMENTS

UTE WATER

The plans will be revised to remove the water line in Lot 1, Block 1. We have responded to Ute Water's previous comments.

COMMUNITY DEVELOPMENT DEPARTMENT

We have responded to most of these comments in responding to other agencies. We will be providing easements for avigation, drainage basin in a future filing (2+/- acre, 5 lot filing just east of Filing 3), and easements (perhaps 2) to provide utility access to our northern property. We are rerouting and piping the irrigation ditch through Lots 2, 3, 4, 5, & 6, Block 1, so all comments regarding this no longer apply. The looped water line issue has been resolved with the Fire Department and we'll resolve the other details with Gerald prior to recording the plat.

file:PR4RES
LEWIS HOFFMAN

GRAND VALLEY WATER USERS ASSOCIATION

GRAND VALLEY PROJECT, COLORADO

500 South Tenth Street (303) 242-5065 FAX (303) 243-4871
GRAND JUNCTION, COLORADO 81501-3740

November 24, 1992

COPY

RECEIVED GRAND JUNCTION
PLANNING DEPARTMENT

NOV 25 1992

Gerald Williams
Public Works Department
City of Grand Junction
250 N. 5th Street
Grand Junction CO 81501

Re: Ptarmigan Ridge Filing Four - Utility Plans dated 9/1/92, with current update detail.

Dear Mr. Williams:

This office has previously discussed with Lewis Hoffman, representative for Ptarmigan, the fact that if the Filing Four area is to be developed, it will be necessary to relocate and pipe this Association's open irrigation lateral (2B) that has historically routed through that area.

I have seen Ptarmigan Ridge's plan and design, as above referenced, to relocate and cover our open irrigation lateral and find it acceptable on behalf of this Association. It has also been understood that Ptarmigan will keep us apprised of any unexpected developments that may arise pertaining to the lateral's piping and relocation, so that between us we may satisfactorily address and resolve any such developments.

Also, we are to be advised of the time the work is to be undertaken, so we may monitor and inspect to the extent thought necessary.

Thank you for your attention of this matter and please advise of any questions.

Sincerely,

G. W. Klapwyk

G. W. Klapwyk
Manager

Copy: Dave Thornton-Community Dev.

Lewis Hoffman-Ptarmigan

COMMUNITY DEVELOPMENT DEPARTMENT STAFF REPORT

by Dave Thornton, 244-1447

File #55-92 Ptarmigan Ridge filing 4

REQUEST: The proposal is for a final plat of Ptarmigan Ridge 4. Filing 4 consists of 13 single family lots on 3.94 acres for an overall density of 3.2 units per acre.

LOCATION: North of Ridge Drive and west of 27 1/2 Road.

APPLICANT: John Siegfried

EXISTING LAND USE: Vacant

PROPOSED LAND USE: Single Family Residential

SURROUNDING LAND USE:

North: Mostly vacant with one single family home
East: 1st Presbyterian Church is constructing a new church
South: Ptarmigan Ridge Subdivision - single family residential
West: Onan Subdivision - single family residential

EXISTING ZONING: RSF-4

SURROUNDING ZONING:

North: Planned Residential - 4 units per acre
East: RSF-4 & Planned Residential - 7.2 units per acre
South: RSF-5 & RSF-4
West: RSF-4

RELATIONSHIP TO COMP PLAN/GUIDELINES/POLICIES: N/A

STAFF ANALYSIS:

This filing is located directly north of filing #3 on 15th street. It is the last portion of Ptarmigan Ridge subdivision which hasn't been platted that is part of the original preliminary plan for Ptarmigan Ridge. All future Ptarmigan Ridge filings will be a part of the recently approved ODP/rezone to PR that occurred a couple of months ago.

Major issues that have emerged from the review of this project by all of the review agencies that have commented are the following:

1. In order to provide adequate fire flow as per code, the 8 inch water line must be looped. A deadend water line for fireflow purposes can only be a maximum of 1000 feet, therefore the developer will need to loop the existing deadend 8 inch water line in 15th Street to either loop west into the existing 8" Ute line or the water line must be

extended to 27 1/2 Road to create a looped system. The option of looping the line to the west will require the water line to be located in an easement which Ute Water is currently refusing to accept. The petitioner has responded by contacting the Fire Department and requested that they be given the option to include the cost of the construction for the looped water line extension to 27 1/2 Road in Filing 4's Improvements Agreement and Guarantee and not be built until the rest of Ptarmigan Ridge subdivision is approved. The schedule calls for submittal and approval for sometime this winter and construction this spring at which time the water line would be extended to 27 1/2 Road.

2. An off site drainage easement is being required for a drainage basin that is needed for drainage from both filing #3 and filing #4. The petitioner has submitted a description of the easement for staff review. A $20,000 guarantee to construct the drainage basin and other improvements has already been given to the City when filing #3 was recorded.

3. The City Development Engineer has received response to his comments and recommends conditional approval. There are still a few minor issues which need to be resolved concerning drainage and the revised plans dated 10/22.

4. Upon approval by Planning Commission the final plat will not be recorded until after all review agency issues have been adequately addressed and/or resolved.

STAFF RECOMMENDATIONS

Staff recommends approval with the following conditions:

1. The improvements Agreement/Guarantee include the cost of looping the 8 inch water line to 27 1/2 Road.
2. All other review comments must be adequately satisfied prior to recording the Final Plat including:
   a) an off site drainage easement be provided for drainage basin which is needed for drainage from Filings 3 & 4.
   b) all remaining issues concerning drainage ~~XXXXX~~ and construction drawings be resolved. as per the City Development Engineer's Review comments dated 11/17/92

COMMUNITY DEVELOPMENT DEPARTMENT STAFF REPORT

by Dave Thornton, 244-1447

File #55-92 Ptarmigan Ridge filing 4

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EXISTING LAND USE: Vacant

PROPOSED LAND USE: Single Family Resiential

SURROUNDING LAND USE:

North: Mostly vacant with one single family home
East: 1st Prebyterian Church is constructing a new church
South: Ptarmigan Ridge Subdivision - single family residential
West: Onan Subdivision - single family residential

EXISTING ZONING: RSF-4

SURROUNDING ZONING:

North: Planned Business
East: RSF-4 & PR 7.2
South: RSF-5 & RSF-4
West: RSF-4

RELATIONSHIP TO COMP PLAN/GUIDELINES/POLICIES: N/A

STAFF ANALYSIS:

STAFF RECOMMENDATIONS

FF — ACTION SHEET

ACRES 4.52 AC

UNITS 13

DENSITY 2.9

ACTIVITY Filing 4 of Ptarmigan ~~Estates~~ Ridge

PHASE FINAL

COMMON LOCATION North 15th ST North of Ridge Drive

FINAL

FILE NUMBER #55 92

ZONE RSF-4

TAX SCHEDULE # 2945-012-26-004

DATE SUBMITTED _____ DATE MAILED OUT _____ DATE POSTED _____

_____ DAY REVIEW PERIOD RETURN BY _____

OPEN SPACE DEDICATION (acreage) _____ OPEN SPACE FEE REQUIRED $ _____ PAID RECEIPT # _____

RECORDING FEE REQUIRED $ _____ PAID (Date) _____ DATE RECORDED _____

REVIEW AGENCIES

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V	W	X	Y	Z	AA	BB	CC	DD	EE	FF	GG
Community Development	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
City Engineer (2 sets)	●	●	●		●				●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			●				
Transportation Engineer	●	●	●										●	●	●	●	●	●	●	●	●	●	●	●	●	●			●				
City Parks/Recreation	●	●	●	●									●	●	●	●	●	●	●		●	●				●			●				
City Fire Department	●	●	●										●	●	●	●	●	●	●	●	●	●	●	●	●	●			●				
City Police Department	●	●	●												●	●	●	●			●	●				●			●				
County Planning	●	●	●										●	●	●	●	●	●	●	●	●	●				●			●				
County Engineer	●	●	●										●	●	●	●	●	●	●	●	●	●	●	●	●	●			●				
County Health	●	●	●							●	●		●	●	●	●	●	●			●	●				●			●				
Floodplain Administration	●	●	●						●				●	●	●	●	●	●			●	●				●			●				
G.J. Dept. of Energy	●	●	●										●	●	●	●	●	●			●	●				●			●				
Walker Field	●	●	●										●	●	●	●	●	●			●	●				●			●				
School District 51	●	●	●										●	●	●	●	●	●			●	●				●			●				
Irrigation > Grand Valley	●	●	●										●	●	●	●	●	●	●	●	●	●				●			●				
Drainage	●	●	●										●	●	●	●	●	●	●	●	●	●				●			●				
Water (Ute, Clifton)	●	●	●										●	●	●	●	●	●	●	●	●	●				●			●				
Sewer Dist. (FV, CGV, OM)	●	●	●										●	●	●	●	●	●	●	●	●	●				●			●				
U.S. West	●	●	●										●	●	●	●	●	●	●	●	●	●				●			●				
Public Service (2 sets)	●	●	●										●	●	●	●	●	●	●	●	●	●				●			●				
State Dept. of Transportation	●	●	●										●	●	●	●	●	●			●	●				●			●				
State Geological Survey	●	●	●							●	●		●	●	●	●	●	●			●	●				●			●				
State Health Department	●	●	●										●	●	●	●	●	●			●	●				●			●				
City Property Agent	●	●	●										●	●	●	●	●	●	●		●	●				●			●				
City Utilities Engineer	●	●	●										●	●	●	●	●	●	●		●	●				●			●				
City Attorney	●	●	●		●	●							●	●	●	●	●	●								●			●				
Building Department	●	●	●									●			●		●	●			●					●			●	●	●		
DDA	●	●	●												●														●	●	●		
GJPC (7 packets)	●	●	●												●			●			●	●			●	●			●	○	○		
CIC (1 packet)	●	●	●												●			●			●	●				●			●	●	●		
County Surveyor	●						●									●																	
Other Grand Valley Rural Elect	●	●	●												●	●	●	●								●			●	●	●		
TOTALS																																	

BOARDS	DATE	
P.C.	12-1-92	4-0 Approved subject to staff Recommendations

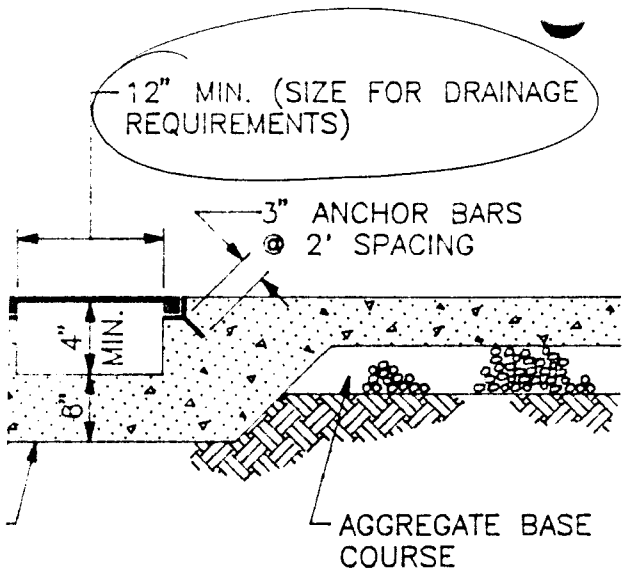
STAFF

APPLICATION FEE REQUIREMENTS

$ 225.00 plus $5 per lot = $290.00

$ 50.00 SIGN Deposit

WHAT SIZE IS REQ'D



TION C–C

Review comments

2/3/93 GRW Revise & resubmit

CROSSING DETAILS

WILLIAM HELEY REGISTERED 12364 2-1-93 PROFESSIONAL ENGINEER STATE OF COLORADO

revised 1/29/93

PTARMIGAN RIDGE FILING FOUR

RETENTION POND DETAIL

OR: PTARMIGAN INVESTMENTS	Q.E.D. SURVEYING SYSTEMS Inc. 1018 COLO. AVE. GRAND JUNCTION COLORADO 81501 (303) 241–2370 464–7568
CALE: FEET 0 5 10 20 / METERS 0 1 3 6 — 1"IN = 20'FT	
ATE: 1/12/93	

SURVEYED BY:	N/A
DRAWN BY:	MEM
ACAD ID:	PR4POND
SHEET NO.	
FILE:	90090

Larry Timm

23 MARCH 1993

RECEIVED GRAND JUNCTION
PLANNING DEPARTMENT
MAR 24 1993

JOHN SIEGFRIED
c/o QED SURVEYING SYSTEMS
1018 COLORADO AVENUE
GRAND JUNCTION, COLORADO 81501

City of Grand Junction, Colorado
250 North Fifth Street
81501-2668
FAX: (303) 244-1599

Re: Incomplete development submittals
Ptarmigan Ridge, Filings 3-6

Dear John,

This letter is written to you following a conversation that Dan Wilson and I had earlier today. That conversation was about the options that I, as Public Works Director, have available to me, on behalf of the City, to ensure that you submit complete and accurate development designs, engineering data, testing reports and review/inspection reports.

It is my understanding from my staff that you have failed to supply required subgrade and base course compaction tests, pressure tests for water lines and concrete testing for water and sewer lines, and that you have failed to provide necessary inspection reports. You have been advised of these deficiencies before and more recently in a letter from City Engineer Don Newton dated March 4, 1993, (attached). To date, you have seemingly ignored those comments. To date, you have failed to correct the issues raised by Don in his letter to you. Lewis Hoffman was again notified on March 22, 1993, of the deficiencies but indicated you will pave anyway.

When I found out that some of these tests have not been submitted, and others were not timely submitted, even for the early filings of your development, I was forced to write this letter. Based on your prior, and consistent, history of non-compliance, and my legal advice, I am requiring that all tests and reports for filings 3, 4 and 5 of Ptarmigan Subdivision(s) are due in my office, on or before March 26, 1993. Gerald Williams has prepared a list (attached) of what has not been completed or filed. Please feel free to confer directly with him to confirm exactly what is outstanding and what is required.

If you fail to provide the required analytical data and reports, or if the information contained in the reports is insufficient, *e.g.* it does not evidence that full and complete testing has occurred or that the construction does not meet City specifications, then you will be subject to any or all of the following actions:

> The removal, at your cost, of any and all site and surface work which has been constructed or installed in areas in which required testing and reporting requirements have not been performed, or, which subsequently show failed tests.

With respect to future filings, including Filing 6, the requirements set forth in the Section V, Construction Phase of "Submittal Standards for Improvements and Development (SSID)" (attached) shall apply until further notice. Please note that the City is in the process of publicly reviewing this document.

Please review this information and respond accordingly. This condition has gone too far and it must be resolved promptly and thoroughly. The situation will not be allowed to continue. The City is currently faced with costs of over $1 million to repair or replace pavement and concrete that was incorrectly installed by developers. Our system of quality control is designed to assure that the taxpayer does not have to pay for these costly repairs. I believe that our requirement is reasonable and affords you adequate flexibility to develop your project.

Obviously, this letter is written based on the assumptions that you, and your agents, have not complied with City requirements and that prior requests of you have been to no avail. If you disagree with the assumptions, please call me. The deadline for submission of information will still apply.

If have questions call at your earliest convenience.

CITY OF GRAND JUNCTION
DEPARTMENT OF PUBLIC WORKS

by: James L. Shanks

James L. Shanks, P.E.
Public Works and Utilities Director
250 North 5th Street
Grand Junction, CO 81501
(303) 244-1557

Approved as to form and content

Dan E. Wilson

Dan E. Wilson
City Attorney

pc: QED Survey
Bill Healy
Lewis Hoffman

Post-it™ routing request pad 7664

ROUTING - REQUEST

Please
- [x] READ
- [ ] HANDLE
- [ ] APPROVE

and
- [ ] FORWARD
- [ ] RETURN
- [ ] KEEP OR DISCARD
- [ ] REVIEW WITH ME

To KT ✓

Date 1/24 From

City of Grand Junction, Colorado
250 North Fifth Street
81501-2668
FAX: (303) 244-1599

March 4, 1993

John Siegfried
QED Surveying Systems
1018 Colorado Avenue
Grand Junction, CO 81501

Re: Ptarmigan Ridge, Filing Two

Dear John:

It has come to my attention that construction of the streets in Ptarmigan Ridge Filings 3, 4, and 5 is commencing without the required inspection and test results or acceptance of the utilities, subgrade preparation and aggregate base course.

Please be aware that any concrete curb, gutter, sidewalk, drainage facilities or paving that is installed prior to City approval of the underlying utilities and road base may have to be removed.

I recommend that construction of the streets be discontinued until the required inspection and test reports have been performed, submitted, and approved. I also need to know who will be responsible for daily inspection and construction management for these Filings.

Please call if you have any questions regarding these requirements.

Sincerely,

J. Don Newton

J. Don Newton, P.E.
City Engineer

mg

xc: Gerald Williams
Mark Relph
Dave Thornton
Dan Wilson

FILING 3 UNITED HAS BEEN GIVEN THE GO AHEAD TO PAVE STREETS WHENEVER THEY ARE READY.

FILINGS 4 & 5 UNITED IS SCHEDULED TO PLACE BASE 3/5/93 UNDER PROPOSED CONCRETE. MAYS IS SCHEDULED TO TO FOLLOW WITH CONCRETE, UNITED WITH ROAD BASE AND ASPHALT. THESE ARE TO TAKE PLACE NEXT WEEK WHEN LEWIS WILL BE GONE.

OUR CONCERN IS THAT ADEQUATE TESTING HAS NOT BEEN PERFORMED, NOR IS THE ADEQUATE PROVISION FOR INSPECTION. PROBLEMS ARE SUMMARIZED BELOW.

DESCRIPTION OF TEST OR INFO	FILING 3	FILING 4	FILING 5
PASSING S/L COMPACTION TESTS	OK	2/34	0/12
PASSING W/L COMPACTION TESTS	OK	21/30	0/10
PASSING W/L PRESSURE TEST	NONE	NONE	NONE
PASSING S/L PRESSURE TEST	NONE	YES	NONE
PASSING S/L LANDING TEST	YES	YES	YES
PASSING S/L DEFLECTION TEST	N/R	N/R	N/R
DEVELOPER'S INSPECTOR'S REPORTS	NONE	NONE	NONE
SUBGRADE BELOW CONCRETE COMP. TESTS	—	NONE	NONE
SUBGRADE BELOW ASPHALT COMP. TESTS	NONE	—	—
BASE COURSE BELOW ASPHALT COMP. TESTS	NONE	—	—
DEVELOPER'S INSPECTOR FOR NEXT WEEK	NONE ↓ WANT TO PAVE!	NONE ↓ WANT TO PROCEED WITH CONCRETE AND ASPHALT BASE WORK	NONE ↓

PTARMIGAN RIDGE | FILING #3 | 3/22/93 pm | GRW

ITEM		OK	N/A	N.G.	NOT RECD
Sewer Tests:	Compaction	✓			
	Lamping	✓			
	Deflection		✓		
	Pressure	✓			
Water Tests:	Compaction	✓			
	Pressure				✓
	Chlorination				✓
Subgrade Compaction:	15th St S/W	✓			
	15th St Road	✓			
	RR. CT S/W	✓			
	P.R. CT Road				✓
Base Course Compaction:	15th St S/W	✓			
	15th St Road				✓
	P.R. CT S/W	✓			
	P.R. CT Road				✓
Concrete:	Compressive strength (2 tests)	1 of 2			1 of 2
	Air Content				0
	Slump				0

3/22/93

Paving:	asphalt content				
	Gradation				
	Density				

Note: all pipeline, concrete, and base is placed, intends to pave 3/23/93

PTARMIGAN RIDGE | FILING #4 | 3/22/93 pm | GRW

ITEM		OK	N/A	N.G.	NOT REC'D
Sewer Tests:	Compaction	✓			
	Lamping	✓			
	Deflection		✓		
	Pressure	✓			
Water Tests:	Compaction	✓			
	Pressure				✓
	Chlorination				✓
Subgrade Compaction:	S/W	✓			
	Road	✓			
Base course compaction:	S/W	✓			
	Roads				✓
Concrete:	Compressive Strength (12 tests)				O
	Air content				O
	Slump				O
3/22/93					
Paving:	Asphalt Content				
	Gradation				
	Density				

Note: all pipeline, concrete, and base is placed, intends to pave 3/23/93.

CONSTRUCTION PHASE SUBMITTAL CHART

THIS CHART IS APPLICABLE TO ALL PUBLIC AND COMMONLY OWNED FACILITIES

LOCATION _____ PROJECT NAME _____

STEP	ACTIVITY	SUBMITTAL ITEMS	APPROVAL
1	NONE	○ PRECONSTRUCTION NOTICE ○ WORK WITHIN PUBLIC ROW PERMIT ○ NPDES PERMIT	DEV. ENG DATE
2	GRADING STREET ROUGH OUT	○ CONSTRUCTION REPORT: GRADING PHASE ○ AS-BUILT GRADING SKETCH	DEV. ENG DATE
3	SANITARY SEWER STORM SEWER WATER IRRIGATION OTHER UTILITIES	○ CONSTRUCTION REPORT: PIPELINE PHASE ○ AB WATER & SEWER SKETCH ○ AB DRAINAGE SKETCH ○ AB IRRIGATION SKETCH	DEV. ENG DATE
4	SUBGRADE AND BASE COURSE UNDER CONCRETE	○ CONSTRUCTION REPORT: CONCRETE PREPARATION	DEV. EN DATE
5	CONCRETE WORK	○ CONSTRUCTION REPORT: CONCRETE PLACEMENT ○ FLOWLINE GRADE SHEETS ○ REVISED ASPHALT DESIGN (IF NECESSARY)	DEV. EN DATE
6	SUBGRADE AND BASE COURSE UNDER PAVING	○ CONSTRUCTION REPORT: PAVING PREPARATION	DEV. EN DATE
	DO NOT PROCEED WITHOUT APPROVAL OF STEPS 1-6 ABOVE.		
7	ASPHALT PAVEMENT	○ CONSTRUCTION REPORT: ASPHALT PAVING ○ AS-BUILT ROADWAY SKETCH	DEV. EN DATE
8	TRAFFIC CONTROL FACILITIES, MONUMENTATION, PERMANENT ON-SITE BENCH MARK FOR SUBDIVISIONS	○ COMPLETE SET OF AS-BUILT DRAWINGS ○ REQUEST FOR CITY INITIAL INSPECTION	CITY EN DATE
9	WARRANTY PERIOD	○ REQUEST FOR CITY FINAL INSPECTION	CITY EN DATE

NOTES:

1. EACH STEP SHOULD BE APPROVED PRIOR TO PROCEEDING TO THE NEXT STEP. STEPS 1-6 MUST BE APPROVED PRIOR TO BEGINNING ASPHALT PAVEMENT. THE CITY WILL MAKE EVERY EFFORT TO PROVIDE TIMELY APPROVALS (GENERALLY WITHIN 1/2 WORKING DAY) IN ORDER TO ACCOMMODATE CONSTRUCTION.
2. TEST FREQUENCY AND METHODS SHALL BE PER CITY SPECIFICATIONS.
3. CONSTRUCTION ACTIVITY SEQUENCE MAY VARY SOMEWHAT DUE TO CONDITIONS, AND MAY NOT NECESSARILY FALL WITHIN THE STEPS INDICATED ABOVE. ALSO, FOR SUBDIVISION WORK, DIFFERENT STREETS MAY BE ON DIFFERENT STEPS.
4. ONLY THOSE SUBMITTAL ITEMS PRECEDED BY A SHADED-IN CIRCLE ARE REQUIRED FOR THE PROJECT.
5. FOR DRAWING STANDARDS, SEE SECTION IX. FOR REPORT STANDARDS, SEE SECTION X. FOR OTHER ITEMS SEE SECTION VI FOR FURTHER CLAIRIFCATION.

V CONSTRUCTION PHASE SUBMITTALS

A. KEY TO QUALITY Many a well-conceived idea fell short of its potential due to lack of proper implementation. Well prepared plans followed by poor or unsupervised construction often results in an undesirable project. Having adequate and competent inspection and testing during the construction process is essential and is the key to achieving a quality product. Consequently, the City requires Quality Control and Quality Assurance inspection and testing during the construction of:

1) Facilities that will become public, such as streets, sidewalks, water, sewer, and storm drains; and
2) Facilities that may ultimately impact the public at large, such as Best Management Practices, overlot grading, private detention/retention basins, stormwater collection and conveyance, and common irrigation systems.

B. QUALITY CONTROL The contractor is responsible for Quality Control of the construction project. City-approved plans will be of specification format, and the contractor shall implement whatever procedures, methods, testing, surveying, and inspection that is required in order that the work conforms to specifications.

C. QUALITY ASSURANCE Developers are responsible for providing Quality Assurance during construction of facilities which are shown on City-approved development plans. Quality Assurance typically involves a systematic inspection of work and testing of materials and compaction, all of which serve to assure the developer (and ultimately the City) that his or her contractor is providing work that is in conformance to City-approved plans and specifications.

D. CITY INSPECTION In addition to Quality Control and Quality Assuruance provided by the contractor and developer, respectively, the City reserves the right to inspect the construction of facilities identified in sub-section "A" above. The developer shall notify the City Public Works Department at 244-1555 of construction activity that is ready to commence and of the progress at various stages of the work. As time permits, a City inspector may observe the work. Such inspection of work by the City does not relieve the developer nor contractor of their duties regarding inspection, monitoring, and testing.

E. CONSTRUCTION SEGMENTATION As construction proceeds, the quality or acceptability of work often depends upon the quality of work which precedes it. Hence the common practice of having inspections and approvals at various stages in the construction effort in order to avoid unnecessary removal of previous work. For example, utilities under proposed roadways shall be inspected before backfilling, and be approved prior to paving. Accordingly, submittals of inspection diaries and test results to the City on a segmental basis is required.

F. CONSTRUCTION PHASE SUBMITTAL CHART A chart has been prepared which identifies various steps of construction activity and corresponding submittal items. Depending on the type and size of project involved, some of the items may not be necessary. The chart will be completed by City Staff, and submitted to the developer along with City-approved plans prior to the commencement of construction. Only those items with shaded-in circles will be required.

MEMORANDUM

TO: Mark Achen
FROM: Dave Thornton
RE: Request your signature on Ptarmigan Ridge filing 4 Improvements Agreement
DATE: April 28, 1993

Ptarmigan Ridge filing 4 received Planning Commission approval on December 1, 1992, for final plat in a RSF-4 zone for a 13 lot subdivision on a 3.94 acres. They are now ready to record their plat. As part of their approval they are required to construct certain improvements on and off site. An improvements Agreement and Guarantee is required.

Attached is a signed copy of the improvements agreement. The petitioner is guaranteeing the improvement by providing a letter of credit to the City of Grand Junction for the entire agreed upon amount of $ 23,883.00.

July 29, 1993

Ptarmigan Investments, Inc.
P.O. Box 9088
Grand Junction, CO 81501

Re: Approval of Improvements in Filings 3,4,5, & 6.

Dear Lewis:

This letter is sent in response to your 6/29/93 letter requesting a release of letters of credit. Our response is based upon a 7/27/93 site observation of the asphalt pavement and detention/irrigation basins, and a review of materials received to date.

Filing 3 - We have yet to receive subgrade compaction for Ptarmigan Ridge Court, and base course compaction in Ptarmigan Ridge Court and N. 15th Street, as was requested by Jim Shanks in his 3/23/93 letter to John Siegfried.

Filing 4 - The facilities pertaining to the Filing 4 Letter of Credit are approved. The warranty period will begin as of this date of approval. The letter of credit will be released once we have prepared a bill for inspection costs. Please be informed, however, that in the future, we will require conformance pressure testing of Ute waterlines when they are in the City right-of-way.

Filing 5 - The facilities pertaining to the Filing 5 Letter of Credit are approved. The warranty period will begin as of this date of approval. The Letter of Credit will be released once we have prepared a bill for inspection costs. Please be informed, however, that in the future, we will require conformance pressure testing of Ute waterlines when they are in the City right-of-way.

Drainage Facilities We have yet to receive volume certification for the basins in Filing 4 and 5, and observed that the slopes of the irrigation pond in Filing 6 is still too steep. Therefore, we are not prepared to release the cash bond.

If you have questions regarding the above, please call.

Sincerely,

Gerald Williams, P.E.
Development Engineer

xc: Don Newton
David Thornton

55-92

September 30, 1994

City of Grand Junction, Colorado
250 North Fifth Street
81501-2668
FAX: (303) 244-1599

Rufus Jones
3612 N. Bell Ridge Ct.
Grand Junction, CO 81506

Re: Ptarmigan Ridge Filing #4, Lot 7, Block 2

Dear Mr. Jones

I have inspected the work that you did in lining and placing rock aggregate in the retention pond on Lot 7, Block 2, Ptarmigan Ridge Subdivision. The City hereby approves the above mentioned work on the retention pond.

Sincerely,

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

xc: Jody Kliska
Kathy Portner
file: Ptarmigan Ridge Filing #4

3979 S. Piazza
Grand Jct, Co. 81506
February 8, 1996

Kathy Portner
Grand Jct. Planning Dept.
Grand Jct, Co. 81502

Dear Kathy,

Enclosed is a copy of the appeal of property tax increase on our Ptarmigan Ridge Subdivision lot #4 (3760 N. 15th St.)

The problems with the property "set backs" are noted therein, and were the subject of a meeting I had with your staff (Mike Pelletier) on Aug. 29, 1995. You also were briefly involved.

As noted in the appeal, the "set backs" continue to be a problem. I continue to have potential buyers who are enthused with the property layout until they are advised of the set back requirements - the 30 ft. set back on the south and the 7 ft. on the North have been the problem in all cases.

The configuration of the lot dictates that the front of a residence face to the north. Potential buyers have pointed out that a 7 ft. set back wouldn't allow reasonable access to a front (north) entry into a home,assuming one would need room for an entry walk and some landscaping. The problem would be worse if the neighbor to the north should decide to put up a fence. As it is the north line faces the neighbors back yard. Moving the south line back a minimum of 10 ft would help solve the problem. 15 ft. would be better.

I have advised potential buyers of my visit to the Planning Commission office. However, none has been willing to go thru the process to acquire a variance, even if I do the paper work and pay the bill. This is creating a no win situation for me. Buyers are not willing to pursue the variance process, and if I were successful in getting a 10 ft. or 15 ft. adjustment to the south line, based on your regulations it would be good for only one year.

At our meeting Aug. 29th, 1995, you mentioned that the property set offs were set by consensus of a committee because of the peculiar nature of the lot. Could the committee reconvene and take another look

based on the information included herein? It appears impossible to locate a ranch style home on this property with the present "set backs". After you have had an opportunity to review the enclosed material, could we please meet again to discuss alternatives?

Very truly yours,

R. W. Scott

R. W. Scott
3979 So. Piazza Ln.
Grand Junction, CO 81506
241-4940

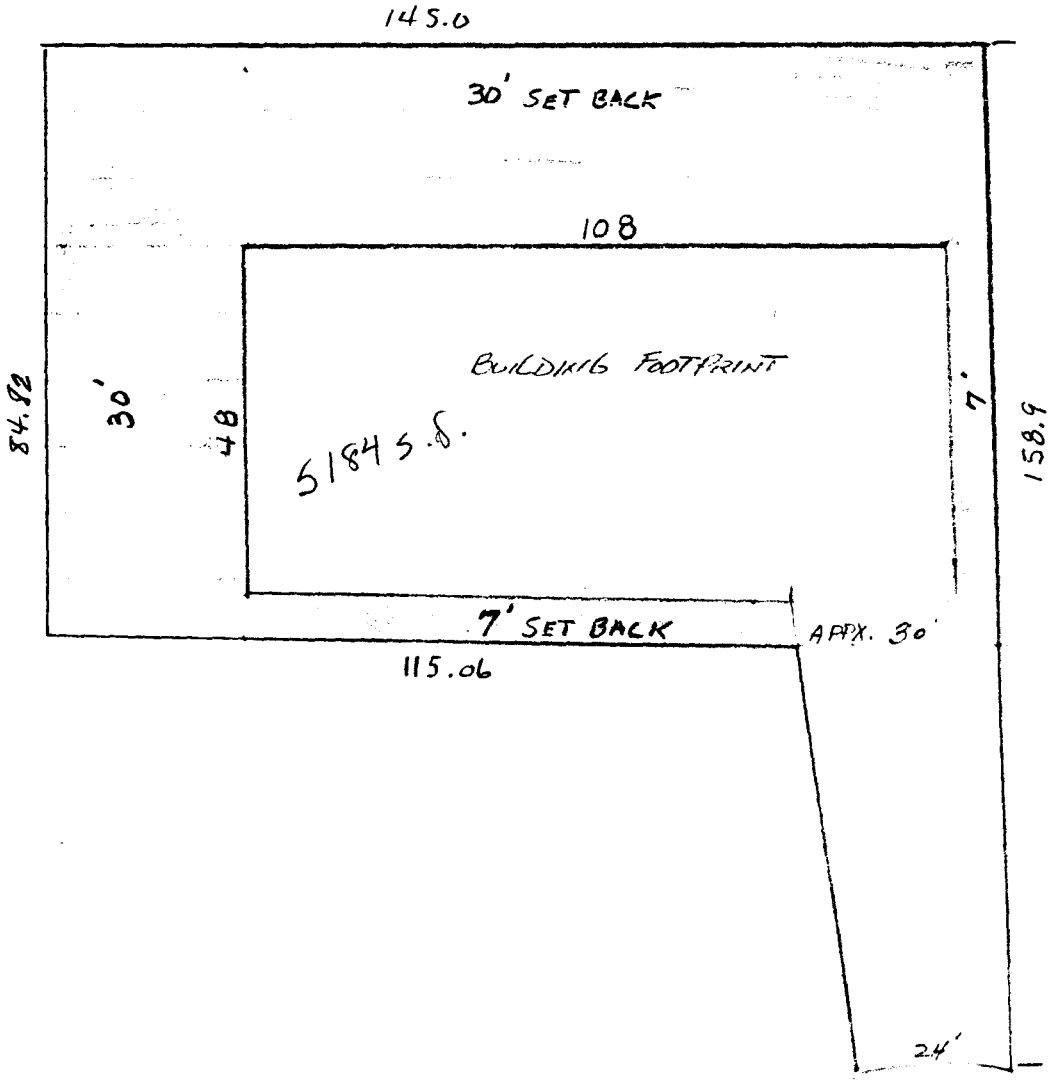
55 - 92

LOT 4
PTARMIGAN RIDGE
SUBDIVISION

OWNER RW SCOTT

lot 4, Block 2, Ptarmigan Ridge filing 4

g. Scale = 30



28 x 54
40 x 30

N

****REAL PROPERTY APPEAL FORM****

Please mail completed form to:
Mesa County Assessors Office
PO Box 20000-5003
Grand Junction, Co 81502-5003

Office hours: 8:30 AM to 4:30 PM
Telephone Number: (303)244-1610
FAX Number: (970)244-1790

Parcel Number 2945-012-58-004 **Daytime Telephone #** 241-4940

Property Address 3760 N. 15th

Owner's Name ROBERT N & VIRGINIA E SCOTT - TRUSTEES

Mailing Address 3979 S PIAZZA PL ✔☐ If permanent address change

City, State, Zip GRAND JUNCTION CO 81506-8503

YOU MAY ELECT TO COMPLETE THIS FORM TO PROTEST YOUR PROPERTY VALUATION OR CLASSIFICATION.
Complete one form for each parcel

AGENT: NO ✔ YES_____
IF YES COMPLETE ASSIGNMENT ON REVERSE SIDE

REAL PROPERTY VALUATION PROTEST: If you disagree with the "current year actual value" or the classification determined for your property, you may file a protest by mail or in person with the County Assessor. Please refer to the Notice of Valuation for the deadline dates for filing appeals.

Completing the Real Property Questionnaire (see reverse side) will help you determine an estimate of value for your property, which can be compared to the value determined by the Assessor. Colorado law requires consideration of only the market approach to value for residential properties (includes apartments) and the cost, market and income approaches to value for vacant land, commercial and industrial properties.

PROVIDE BELOW: MARKET INFORMATION AND/OR REASON FOR APPEAL:

SEE ENCL. #1

FOR OFFICE USE ONLY

	Date	Intl
Appeal Logged		
1st Contact		
NOD Printed		
NOD Proofed		
Supervisor Rev		
Admin Chg		

Denied_____ Adj_____ Satisfied_____
(NOD code & initials)

	ADJUSTED VALUE Abstract	Value
Land		
Imps		
Totals		

ENCLOSURE # 1

REAL PROPERTY APPEAL FORM

PARCEL # 2945-012-58-004

REASON FOR APPEAL: The parcel in question is a residential building lot. The assessed value has increased from $18,450 for 1994 to $30,900 for the 1995 tax year. It is one of two lots remaining vacant in the area. We offered it for sale after deciding not to build approximately three years ago, asking price $27,500.

We have had a number of serious inquiries re the property and two buyers who backed out at closing. The problem has to do with the "set backs" - 30 ft. south and east, 7 ft. north and west. Our buyers have found they cannot fit their home plans within the prescribed space.

After losing three potential buyers, Mr. Scott met with the planning commission in Aug, 1995, to seek relief of the building set backs, and was advised that a variance appeal process would be required at the time specific building requirements are known. Since that time, two potential buyers have withdrawn interest, not wishing to be involved in a variance appeal process.

In summery, it is obvious that the restrictions on building a home on the lot have significantly affected the market value of the property. We have reduced the asking price to $27,000 and are willing to settle for less on an offer. The other vacant lot in the area, 3741 N. 15th, is listed in the $35,000 range, but has no set back problems.

In view of the above, we submit that building restrictions caused by set backs have severely limited the market for this property and respectfully request that as a minimum the appraised value of $30,900 for 1995 be reduced back to the 1994 appraised value of $18,450.

L W Scott

file in #55-92-

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

March 4, 1996

R.W. Scott
3979 S. Piazza Ln.
Grand Junction, CO 81506

RE: 3760 N. 15th Street

Dear Mr. Scott:

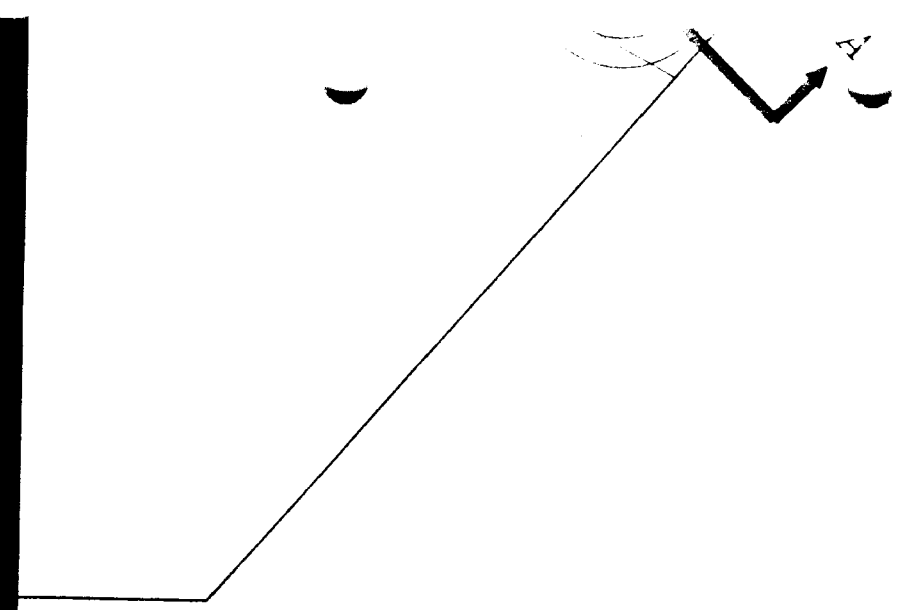
This is in follow-up to your letter of February 8, 1996 concerning the property at 3760 N. 15th Street (2945-012-58-004). You asked that we reconsider the determination of a rear yard setback of 30' on the north property line and a sideyard setback of 7' on the south property line. Given the configuration of the lot and how those lines lay in relation to the adjoining lots, we are reaffirming our original determination which is consistent with interpretations made on similar flag lots. As we discussed before, the only option for a variance is to make the request to the Board of Appeals. However, we think it would be difficult to show this request meets the criteria the Board must consider in granting a variance. The building footprint of 48' x 108' (5,184 s.f.) is more than adequate to design a house within.

If you have other questions, please call me at 244 [illegible].

Sincerely,

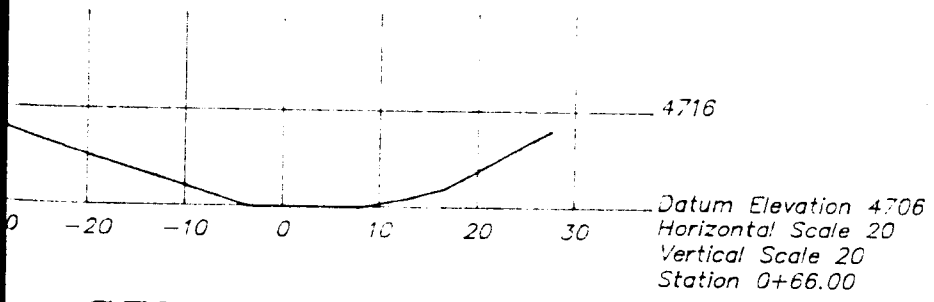
Katherine M. Portner

Katherine M. Portner
Planning Supervisor

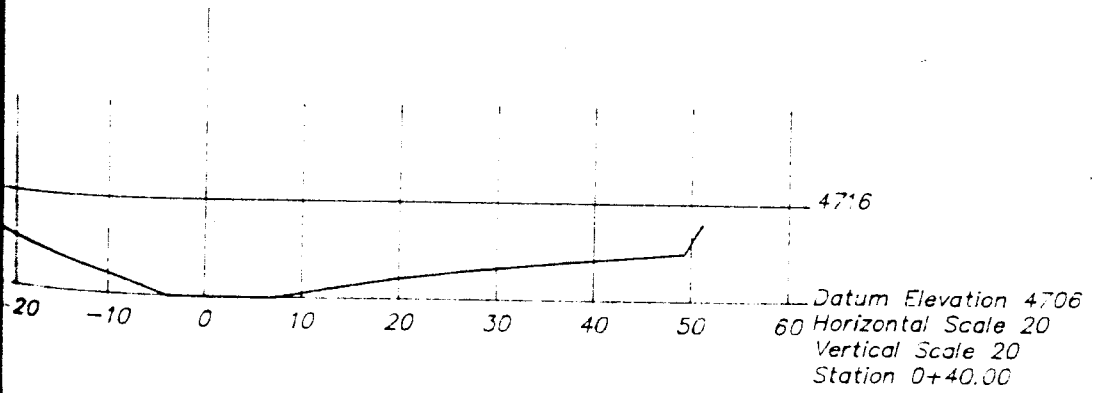


VOLUME OF POND = 12,685 CUBIC FEET BELOW 4714 ELEVATION

- FULL 100 YR VOLUME REQ'D BELOW FL ELEV OF 4713.57
- INDICATE ITEREON WHAT TITE 100 YR 24 HR STORM RUNOFF VOLUME IS.

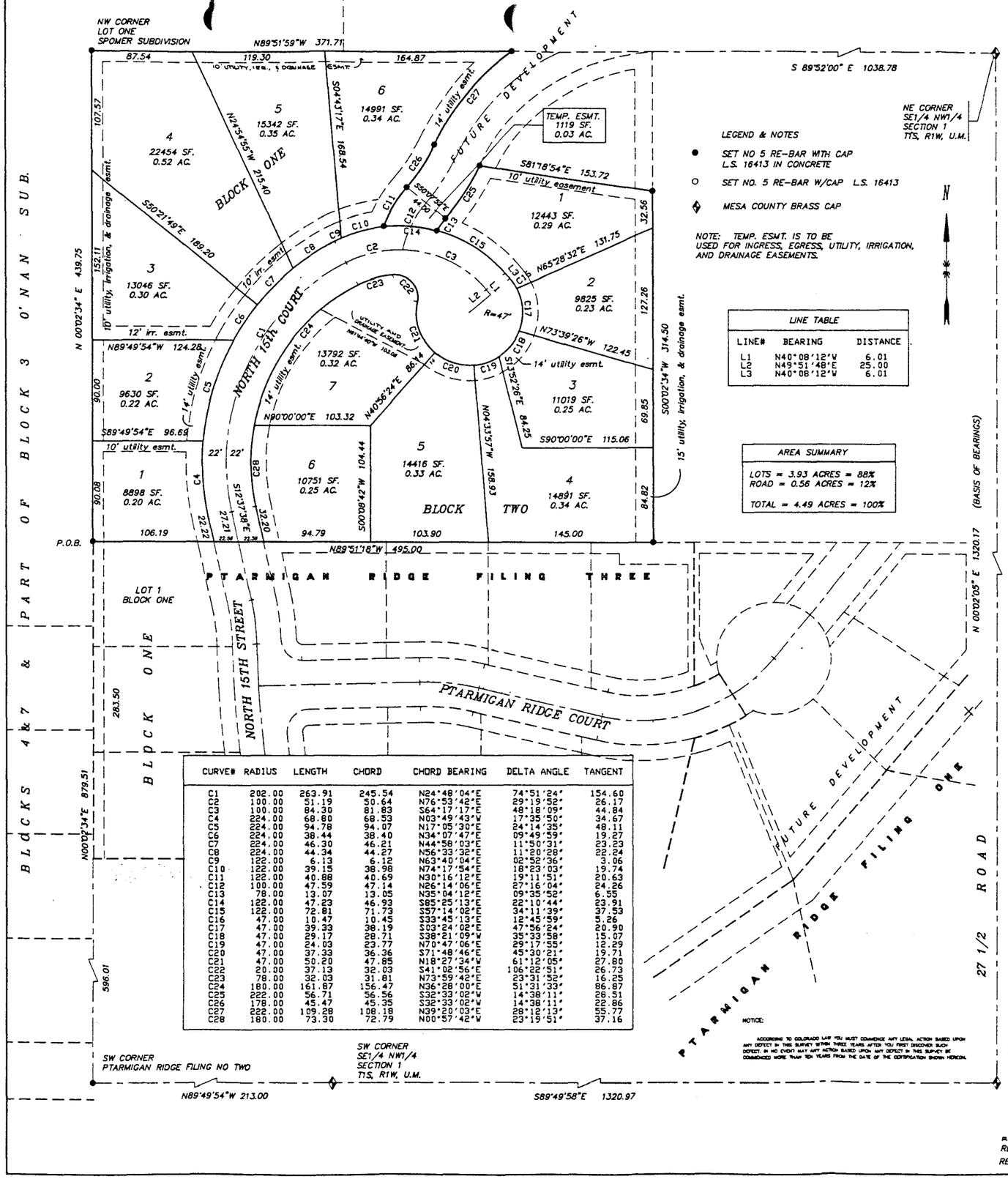


SECTION B – B



SECTION A – A

PTARMIGAN RIDGE FILING FOUR



LINE TABLE		
LINE#	BEARING	DISTANCE
L1	N40°08'12"W	6.01
L2	N49°51'48"E	25.00
L3	N40°08'12"W	6.01

AREA SUMMARY
LOTS = 3.93 ACRES = 88%
ROAD = 0.56 ACRES = 12%
TOTAL = 4.49 ACRES = 100%

CURVE#	RADIUS	LENGTH	CHORD	CHORD BEARING	DELTA ANGLE	TANGENT
C1	202.00	263.91	245.54	N24°48'04"E	74°51'24"	154.60
C2	100.00	51.19	50.64	N76°53'42"E	29°19'52"	26.17
C3	100.00	84.30	81.83	S64°17'17"E	48°18'09"	44.84
C4	224.00	68.80	68.53	N03°49'43"W	17°35'50"	34.67
C5	224.00	94.78	94.07	N17°05'30"E	24°14'35"	48.11
C6	224.00	38.44	38.40	N34°07'47"E	09°49'59"	19.27
C7	224.00	46.30	46.21	N44°58'03"E	11°50'31"	23.23
C8	224.00	44.34	44.27	N56°33'32"E	11°20'28"	22.24
C9	122.00	6.13	6.12	N63°40'04"E	02°52'36"	3.06
C10	122.00	39.15	38.98	N74°17'54"E	18°23'03"	19.74
C11	122.00	40.88	40.69	N30°16'12"E	19°11'51"	20.63
C12	100.00	47.59	47.14	N26°14'06"E	27°16'04"	24.26
C13	78.00	13.07	13.05	N35°04'12"E	09°35'52"	6.55
C14	122.00	47.23	46.93	S85°25'13"E	22°10'44"	23.91
C15	122.00	72.81	71.73	S57°14'02"E	34°11'39"	37.53
C16	47.00	10.47	10.45	S33°45'13"E	12°45'59"	5.26
C17	47.00	39.33	38.19	S03°24'02"E	47°56'24"	20.90
C18	47.00	29.17	28.71	S38°21'09"W	35°33'58"	15.07
C19	47.00	24.03	23.77	N70°47'06"E	29°17'55"	12.29
C20	47.00	37.33	36.36	S71°48'46"E	45°30'21"	19.71
C21	47.00	50.20	47.85	N18°27'34"W	61°12'05"	27.80
C22	20.00	37.13	32.03	S41°02'56"E	106°22'51"	26.73
C23	78.00	32.03	31.81	N73°59'42"E	23°31'52"	16.25
C24	180.00	161.87	156.47	N36°28'00"E	51°31'33"	86.87
C25	222.00	56.71	56.56	S32°33'02"W	14°38'11"	28.51
C26	178.00	45.47	45.35	S32°33'02"W	14°38'11"	22.86
C27	222.00	109.28	108.18	N39°20'03"E	28°12'13"	55.77
C28	180.00	73.30	72.79	N00°57'42"W	23°19'51"	37.16

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

SE CORNER SE1/4 NW1/4 SECTION 1 T1S, R1W, U.M.

T.B.M. = 4708.15

REVISED 11/23/92
REVISED 10/19/92
REVISED 9/15/92

DEDICATION

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, Ptarmigan Investments Inc., a Colorado Corporation, is the owner of that real property situated in the City of Grand Junction, County of Mesa, State of Colorado, and is described in Book 1894 at Page 476 of the Mesa County Clerk and Recorders Office, and being situated in the NW1/4 Section 1, Township 1 South, Range 1 West of the Ute Meridian, Mesa County, Colorado as shown on the accompanying plat, said property being additionally described as follows:

A parcel of land situated in the NW1/4 Section 1, Township 1 South, Range 1 West of the Ute Meridian, Grand Junction, Colorado being described as follows: Considering the East line of the NW1/4 Section 1, T1S, R1W, U.M. to bear S00°02'05"W and all bearings contained herein to be relative thereto: Beginning at the NW corner of Lot 1, Block One, Ptarmigan Ridge Filing Three being 213.00 feet N89°49'54"W and 879.51 feet N00°02'34"E of the SW corner of the SE1/4 NW1/4 Section 1, T1S, R1W, U.M.; thence N00°02'34"E 439.75 feet to the NW corner of Lot One Spomer Subdivision; thence S89°51'59"E 371.71 feet; thence 109.28 feet along the arc of a curve to the left with a radius of 222.00 feet and whose chord bears S39°20'03"W 108.18 feet; thence 45.47 feet along the arc of a curve to the right with a radius of 178.00 feet and whose chord bears S32°33'02"W 45.35 feet; thence 40.88 feet along the arc of a curve to the left with a radius of 122.00 feet and whose chord bears S30°16'12"W 40.69 feet; thence 47.23 feet along the arc of a curve to the right with a radius of 122.00 feet and whose chord bears S85°25'13"E 46.93 feet; thence 13.07 feet along the arc of a curve to the right with a radius of 78.00 feet and whose chord bears N35°04'12"E 13.05 feet; thence 56.71 along the arc of a curve to the left with a radius of 222.00 feet and whose chord bears N32°33'02"E 56.56 feet; thence S81°18'54"E 153.72 feet; thence S00°02'34"W 314.50 feet to the North line of Ptarmigan Ridge Filing Three; thence N89°51'18"W 495.00 feet to the point of beginning, containing 4.49 Acres as described.

That said owner has caused the said real property to be laid out and surveyed as PTARMIGAN RIDGE FILING NO. FOUR, a subdivision of a part of City of Grand Junction, County of Mesa, State of Colorado.

That said owner does hereby dedicate and set apart all of the streets and rights-of-way as shown on the accompanying plat to the City of Grand Junction, for the use of the public forever and dedicate to the CITY OF GRAND JUNCTION, for the use of the public those portions of said real property which are labeled as utility easements on the accompanying plat as perpetual easements for the installation and maintenance of utilities, irrigation, and drainage facilities, including but not limited to electric lines, gas lines, sewer lines, telephone lines, and appurtenances; together with the right to trim interfering trees and brush; with perpetual right of ingress and egress for installation and maintenance of such lines, and said owners hereby dedicate all common areas to the use and benefit of the owners of the lots hereby platted. Such easements and rights shall be utilized in a reasonable and prudent manner. The areas shown as ingress and egress and utility easements are dedicated to the owners of the property within said PTARMIGAN RIDGE FILING NO. FOUR, for perpetual ingress and egress for themselves and the general public, including the postal service, trash, fire, police, emergency vehicles, and the City of Grand Junction.

That all expenses for street paving or improvements shall be furnished by the seller or purchaser, not the City of Grand Junction.

IN WITNESS WHEREOF said owner has caused his name to be hereunto subscribed this _____ day of _____ A.D., 199__

_____
Ptarmigan Investments Inc., a Colorado Corp.
John A. Siegfried, President

REVISED

STATE OF COLORADO)
) S.S.
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this _____ day of _____ A.D., 199__, by John A. Siegfried as president of Ptarmigan Investments Inc., a Colorado Corporation.

My commission expires:

_____
Notary Public

Address _____

CLERK AND RECORDERS CERTIFICATE

STATE OF COLORADO)
) S.S.
COUNTY OF MESA)

I hereby certify that this instrument was filed in my office at _____ o'clock ____ M. this _____ day of _____ A.D., 199__ and is duly recorded in Plat Book No. _____, Page _____

CITY APPROVAL

This plat of PTARMIGAN RIDGE, FILING NO. FOUR, a subdivision of the City of Grand Junction, County of Mesa, and State of Colorado was approved and accepted this _____ day of _____ A.D. 199__.

City Manager

President of Council

Director of Development

Chairman, Grand Junction Planning Commission

Grand Junction City Engineer

SURVEYOR'S CERTIFICATE

I, Max E. Morris, certify that the accompanying plat of PTARMIGAN RIDGE, FILING FOUR, a subdivision of a part of the City of Grand Junction, County of Mesa, State of Colorado has been prepared under my direct supervision and accurately represents a field survey of same. I further certify that it conforms to all applicable requirements of the Zoning and Development Code of the City of Grand Junction and all applicable state laws and regulations.

Max E. Morris, Q.E.D. Surveying Systems Inc.
Colorado Registered Professional Land Surveyor L.S. 16413

Date

RECEIVED GRAND JUNCTION PLANNING DEPARTMENT
NOV 24 1992

PTARMIGAN RIDGE FILING FOUR

FINAL PLAT

SITUATED IN THE NW1/4 SECTION 1, TOWNSHIP 1 SOUTH, RANGE 1 WEST, UTE MERIDIAN

FOR: PTARMIGAN INVESTMENTS

SCALE: 1"=30FT

DATE: 8/29/92

Q.E.D. SURVEYING SYSTEMS Inc.
1018 COLO. AVE.
GRAND JUNCTION
COLORADO 81501
(303) 241-2370
464-7568

SURVEYED BY: DMM MF
DRAWN BY: MEM
ACAD ID: PR4AFIN
SHEET NO. 2 OF 6
FILE: 90090

PB

ZONED RSF-4

FUTURE DEVELOPMENT

TRACT "A"

ZONING IS RSF-4	
Minimum lot area	8,500 sq. ft.
Minimum street frontage	20 feet
Maximum height of structures	32 feet
Minimum lot width	75 feet
Minimum side yard setback	
Principal structure	7 feet
Accessory structure	3 feet
Minimum rear yard setback	
Principal structure	30 feet
Accessory structure	10 feet
Minimum front yard setback	
Principal arterial	75 feet
Minor arterial	65 feet
Collector	50 feet
Local	45 feet

1 12443 SF. 0.29 AC.
2 9825 SF. 0.23 AC.
3 11471 SF. 0.26 AC.
4 14506 SF. 0.33 AC.
5 14416 SF. 0.33 AC.
6 10751 SF. 0.25 AC.
7 13792 SF. 0.32 AC.
1 8898 SF. 0.20 AC.
2 9630 SF. 0.22 AC.
3 13046 SF. 0.30 AC.
4 22454 SF. 0.52 AC.
5 15342 SF. 0.35 AC.
6 14991 SF. 0.34 AC.

R=47'

NORTH 15th STREET

PART OF BLOCK 3 O'NAN SUB.
ZONED RSF-4

BLOCKS 4 & 7
ZONED RSF-4

PTARMIGAN RIDGE FILING THREE
ZONED RSF-4

PTARMIGAN RIDGE COURT

22' 22'

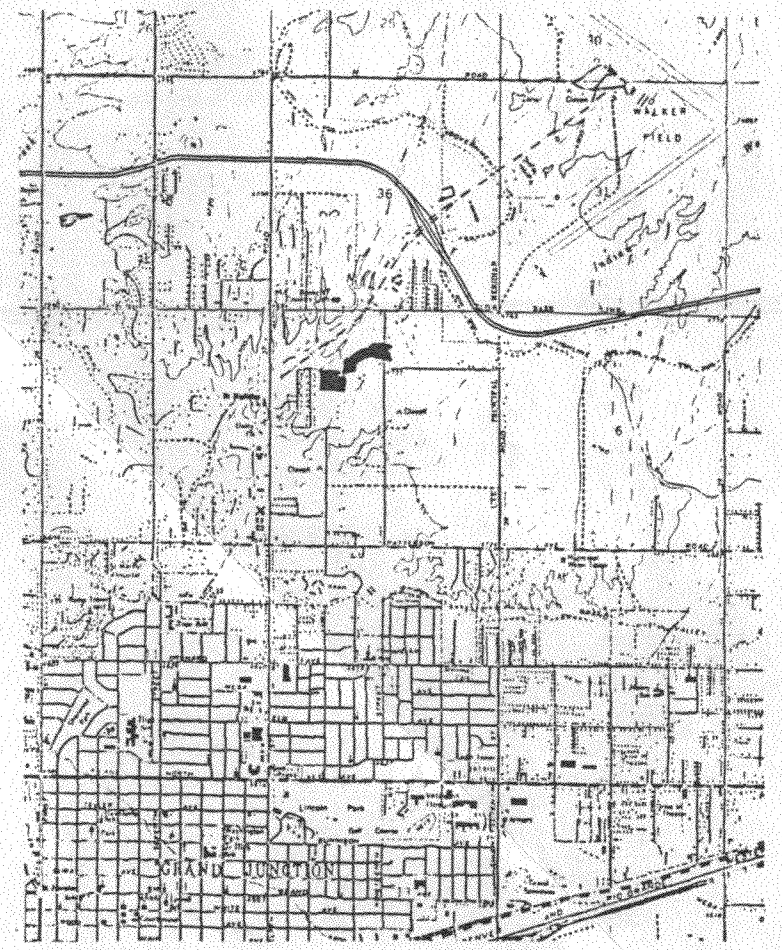
NORTH 15TH STREET

PTARMIGAN RIDGE FILING TWO
ZONED RSF-4

PTARMIGAN COURT NORTH

FUTURE DEVELOPMENT

PTARMIGAN RIDGE FILING ONE
ZONED RSF-5



INSERT: SCALE 1"IN = 2000'FT

55 92

Original
Do NOT Remove
From Office

REVISED

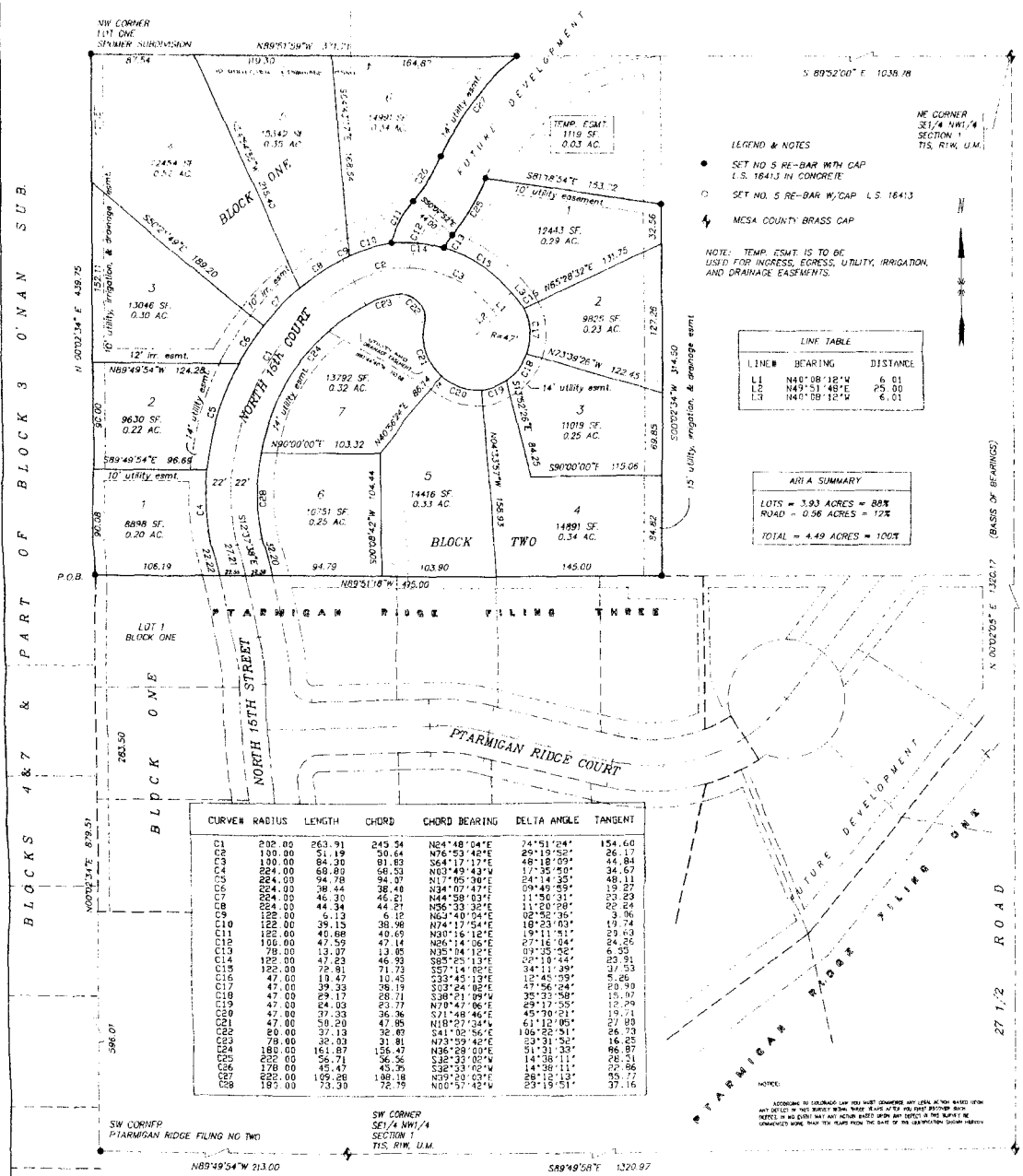
REVISED 9/15/92

PTARMIGAN RIDGE FILING FOUR
SITE PLAN

FOR: PTARMIGAN INVESTMENTS	Q.E.D. SURVEYING SYSTEMS Inc. 1018 COLO. AVE. GRAND JUNCTION COLORADO 81501 (303) 241-2370 464-7568	SURVEYED BY: DMM MF
SCALE: 1"IN = 50'FT		DRAWN BY: MEM
DATE: 8/29/92		ACAD ID: PR4ASITE
		SHEET NO.
		FILE: 90090

DD

PTARMIGAN RIDGE FILING FOUR



CURVE#	RADIUS	LENGTH	CHORD	CHORD BEARING	DELTA ANGLE	TANGENT
C1	202.00	263.91	245.54	N64°48'04"E	74°51'24"	154.60
C2	100.00	51.19	50.64	N76°53'42"E	29°19'52"	26.17
C3	100.00	84.36	81.83	S64°17'17"E	48°18'09"	44.84
C4	224.00	68.80	68.53	N03°49'43"W	17°35'50"	34.67
C5	224.00	94.78	94.07	N17°05'30"E	24°14'35"	48.11
C6	224.00	38.44	38.40	N34°07'47"E	09°49'59"	19.27
C7	224.00	46.30	46.21	N44°58'03"E	11°50'31"	23.23
C8	224.00	44.34	44.27	N56°33'32"E	11°20'20"	22.24
C9	100.00	6.13	6.12	N63°40'04"E	02°52'36"	3.06
C10	122.00	39.15	38.98	N74°17'54"E	18°23'02"	19.74
C11	122.00	40.68	40.69	N30°16'12"E	19°11'51"	20.63
C12	100.00	47.59	47.14	N26°14'06"E	27°16'04"	24.26
C13	78.00	13.07	13.05	N35°04'12"E	09°35'52"	6.55
C14	122.00	47.23	46.93	S85°25'13"E	22°10'44"	23.91
C15	122.00	72.81	71.73	S57°14'02"E	34°11'39"	37.53
C16	47.00	10.47	10.45	S33°45'13"E	12°45'59"	5.26
C17	47.00	39.33	38.19	S03°24'02"E	47°56'24"	20.90
C18	47.00	29.17	28.71	S38°21'09"W	35°33'58"	15.07
C19	47.00	24.03	23.77	N70°47'06"E	29°17'55"	12.29
C20	47.00	37.33	36.36	S21°48'46"E	45°30'21"	19.71
C21	47.00	58.20	47.85	N18°27'34"W	61°12'05"	27.80
C22	80.00	37.13	36.80	S41°02'56"E	106°22'51"	26.23
C23	78.00	32.03	31.81	N23°59'42"E	23°31'52"	16.25
C24	180.00	161.87	156.47	N36°28'09"E	51°31'39"	86.97
C25	202.00	56.71	56.56	S32°33'02"W	14°36'11"	28.51
C26	178.00	49.47	49.35	S32°33'02"W	14°38'11"	22.86
C27	222.00	109.26	108.18	N39°29'03"E	28°12'13"	55.77
C28	180.00	73.30	72.79	N00°57'42"W	23°19'51"	37.16

DEDICATION

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, Ptarmigan Investments Inc., a Colorado Corporation, is the owner of that real property situated in the City of Grand Junction, County of Mesa, State of Colorado, and is described in Book 1894 at Page 478 of the Mesa County Clerk and Recorders Office, and being situated in the NW1/4 Section 1, Township 1 South, Range 1 West of the Ute Meridian, Mesa County, Colorado as shown on the accompanying plat, said property being additionally described as follows:

A parcel of land situated in the NW1/4 Section 1, Township 1 South, Range 1 West of the Ute Meridian, Grand Junction, Colorado being described as follows: Considering the East line of the NW1/4 Section 1, T1S, R1W, U.M. to bear S00°02'05"E and all bearings contained herein to be relative thereto: Beginning at the NW corner of Lot 1, Block One, Ptarmigan Ridge Filing Three being 213.00 feet N89°49'54"W and 879.31 feet N00°02'34"E of the SW corner of the SE1/4 NW1/4 Section 1, T1S, R1W, U.M.; thence N00°02'34"E 439.75 feet to the NW corner of Lot One Spooner Subdivision; thence S89°51'59"E 371.71 feet; thence 108.28 feet along the arc of a curve to the left with a radius of 222.00 feet and whose chord bears S39°20'03"W 108.18 feet; thence 45.47 feet along the arc of a curve to the right with a radius of 178.00 feet and whose chord bears S32°33'02"W 45.35 feet; thence 40.68 feet along the arc of a curve to the left with a radius of 122.00 feet and whose chord bears S30°16'12"W 40.68 feet; thence 47.23 feet along the arc of a curve to the right with a radius of 122.00 feet and whose chord bears S85°25'13"E 46.93 feet; thence 13.07 feet along the arc of a curve to the right with a radius of 78.00 feet and whose chord bears N35°04'12"E 13.05 feet; thence 56.71 along the arc of a curve to the left with a radius of 222.00 feet and whose chord bears N32°33'02"E 56.56 feet; thence S81°18'54"E 153.72 feet; thence S00°02'34"W 314.50 feet to the North line of Ptarmigan Ridge Filing Three; thence N89°51'18"W 495.00 feet to the point of beginning, containing 4.49 Acres as described.

That said owner has caused the said real property to be laid out and surveyed as PTARMIGAN RIDGE FILING NO. FOUR, a subdivision of a part of City of Grand Junction, County of Mesa, State of Colorado.

That said owner does hereby dedicate and set apart all of the streets and rights-of-way as shown on the accompanying plat to the City of Grand Junction, for the use of the public forever and dedicate to the CITY OF GRAND JUNCTION, for the use of the public those portions of said real property which are labeled as utility easements on the accompanying plat as perpetual easements for the installation and maintenance of utilities, irrigation, and drainage facilities, including but not limited to electric lines, gas lines, sewer lines, telephone lines, and appurtenances, together with the right to trim interfering trees and brush; with perpetual right of ingress and egress for installation and maintenance of such lines, and said owners hereby dedicate all common areas to the use and benefit of the owners of the lots hereby platted. Such easements and rights shall be utilized in a reasonable and prudent manner. The areas shown as ingress and egress and utility easements are dedicated to the owners of the property within said PTARMIGAN RIDGE FILING NO. FOUR, for perpetual ingress and egress for themselves and the general public, including the postal service, trash, fire, police, emergency vehicles, and the City of Grand Junction.

That all expenses for street paving or improvements shall be furnished by the seller or purchaser, not the City of Grand Junction.

IN WITNESS WHEREOF said owner has caused his name to be hereunto subscribed this _____ day of _____, A.D., 199__

_____
Ptarmigan Investments Inc., a Colorado Corp.
John A. Siegfried, President

STATE OF COLORADO }
} S.S.
COUNTY OF MESA }

The foregoing instrument was acknowledged before me this _____ day of _____ A.D., 199__ by John A. Siegfried as president of Ptarmigan Investments Inc., a Colorado Corporation.

My commission expires _____

_____
Notary Public

Address _____

CLERK AND RECORDERS CERTIFICATE

STATE OF COLORADO }
} S.S.
COUNTY OF MESA }

I hereby certify that this instrument was filed in my office at _____ o'clock ___ M. this _____ day of _____ A.D., 199__ and is duly recorded in Plat Book No. _____, Page _____

CITY APPROVAL

This plat of PTARMIGAN RIDGE, FILING NO. FOUR, a subdivision of the City of Grand Junction, County of Mesa, and State of Colorado was approved and accepted this _____ day of _____, A.D. 199__

_____ _____
City Manager President of Council

_____ _____
Director of Development Chairman, Grand Junction Planning Commission

_____
Grand Junction City Engineer

SURVEYOR'S CERTIFICATE

I, Max E. Morris, certify that the accompanying plat of PTARMIGAN RIDGE, FILING FOUR, a subdivision of a part of the City of Grand Junction, County of Mesa, State of Colorado has been prepared under my direct supervision and accurately represents a field survey of same. I further certify that this plat conforms to all applicable requirements of the Zoning and Development Code of the City of Grand Junction and all applicable state laws and regulations.

_____ _____
Max E. Morris, Q.E.D. Surveying Systems Inc. Date
Colorado Registered Professional Land Surveyor L.S. 16413

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

REVISED 11/16/92
REVISED 10/19/92
REVISED 9/15/92

RECEIVED GRAND JUNCTION PLANNING DEPARTMENT
DEC 30 1992

PTARMIGAN RIDGE FILING FOUR

FINAL PLAT

SITUATED IN THE NW1/4 SECTION 1, TOWNSHIP 1 SOUTH, RANGE 1 WEST, UTE MERIDIAN

FOR: PTARMIGAN INVESTMENTS

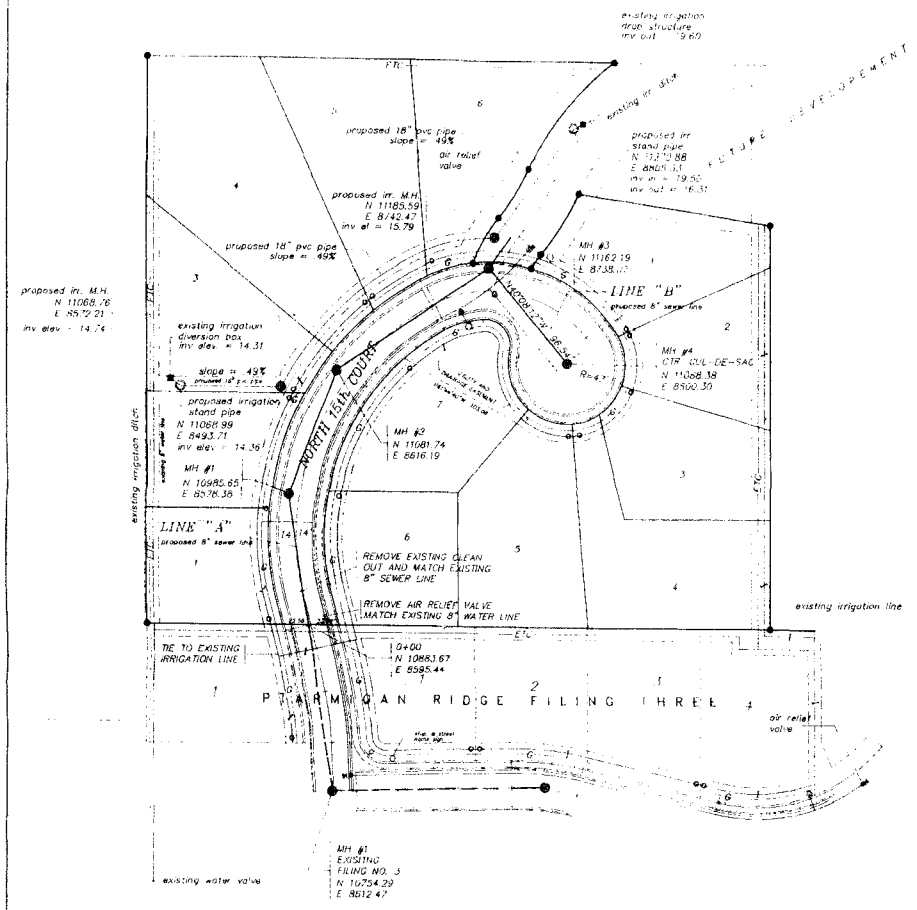
SCALE: 1IN = 50FT

DATE: 8/29/92

Q.E.D. SURVEYING SYSTEMS Inc.
1018 COLO. AVE.
GRAND JUNCTION
COLORADO 81501
(303) 241-2370
434-7568

SURVEYED BY: DMM MF
DRAWN BY: MEM
ACAD ID: PRAAFIN
SHEET NO. 2 OF 6
FILE: 90090

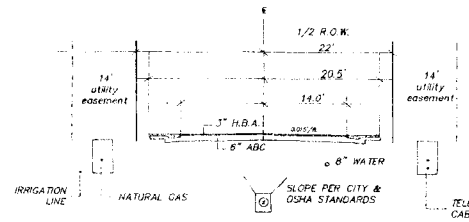
APPROVED FOR CONSTRUCTION		INITIAL ACCEPTANCE	
CITY OF GRAND JUNCTION	DATE	CITY OF GRAND JUNCTION	DATE



LEGEND & NOTES

1. Elevation control bench = 4706.15 on Mesa County Brass Cap SE corner NW1/4 Sec. 1.

   Also the rim elevation of the existing Manhole at the intersection of 15th Street and Ridge Drive is 4705.35



NOT TO SCALE

NORTH 15th STREET

NOTES:

1. ALL CONSTRUCTION TO COMPLY WITH THE CITY OF GRAND JUNCTIONS STANDARDS & SPECIFICATIONS
2. ALL IRRIGATION PIPE IS TO BE 100 PSI PIPE

○	FIRE HYDRANT
⊕	DOMESTIC WATER VALVE BOX
⧓	THRUST BLOCK
☼	STREET LITE
○	IRRIGATION RISER
——●——	8" SEWER LINE AND MANHOLE
W	8" WATER LINE
I	3" PRESSURIZED IRRIGATION LINE
ETC	ELECTRIC, TELEPHONE, CABLE TV
G	GAS

REVISED 12/21/92
REVISED 11/23/92
REVISED 10/20/92
REVISED 9/15/92

PTARMIGAN RIDGE FILING FOUR

UTILITY PLANS

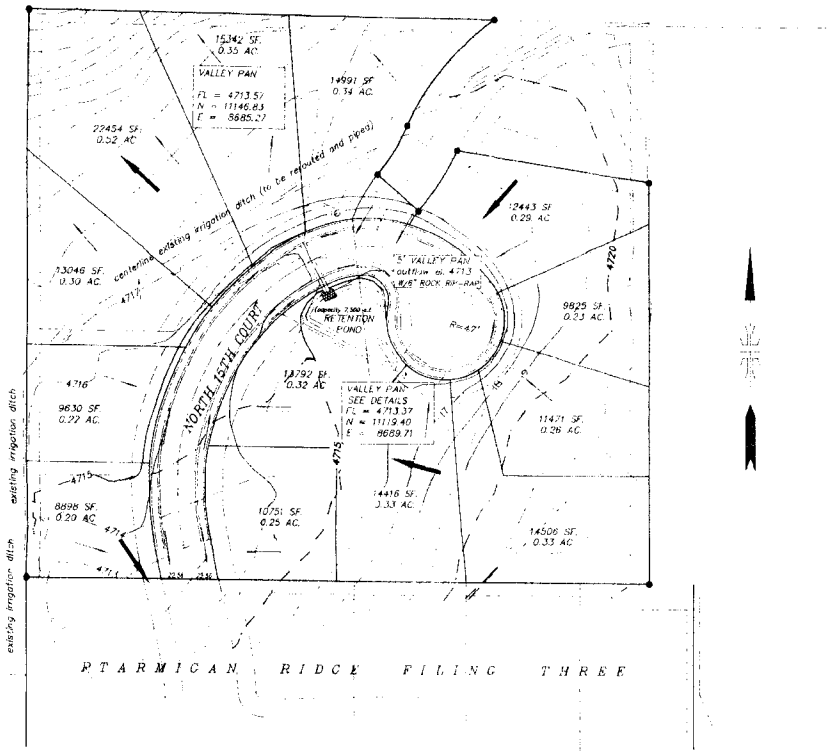
FOR: PTARMIGAN INVESTMENTS

SCALE: 1"IN = 50'FT

DATE: 9/1/92

Q.E.D. SURVEYING SYSTEMS Inc.
1018 COLO. AVE.
GRAND JUNCTION
COLORADO 81501
(303) 241-2370
464-7568

SURVEYED BY: DMM MF
DRAWN BY: VAP
ACAD ID: PRAUTIL
SHEET NO. 4 of 6
FILE: 90090



3" ANCHOR BARS @ 2' MAX. SPACING WELDED TO FRAME

L 1-1/2" x 1-1/2" x 5/16" ALL SIDES

FRAME FOR SIDEWALK DRAIN TROUGH

COVER SHALL BE OF CHECKERED FLOOR PLATE (5/16" MIN. THICKNESS) SHIM AND REINFORCE EDGES OF COVER WITH SQUARE TUBING OR BAR OF SAME MATERIAL AS FRAME AND COVER

GROUND SURFACE

WELD CROSS BRACE AT CENTER OF COVER PLATE

CURB OPENING

4.7%

℄ DRAINAGE

SEE STANDARD PAVEMENT DETAILS FOR DIMENSIONS OF MONOLITHIC CURB GUTTER AND SIDEWALK

NOTE: BOTH FRAME AND COVER SHALL BE FABRICATED OF SAME MATERIAL (STEEL OR ALUMINUM) ALL STEEL SURFACES SHALL BE GALVANIZED

DRAIN TROUGH FOR SIDEWALK CROSSING

18" WIDTH

FRAME AND COVER SHALL BE FLUSH WITH TOP OF SIDEWALK

3" ANCHOR BARS @ 2' SPACING

CONCRETE DRAIN TROUGH CAST IN PLACE

AGGREGATE BASE COURSE

SECTION C-C

DETAILS NOT TO SCALE

top of pond el. = 4715
HWL el. = 4714
4.7%
5' conc. v-pan
OUTLET EL. = 4713.0
SEE DETAILS
bottom of pond el. = 4711
side slope = 3:1
6" ROCK RIP-RAP TO PREVENT EROSION

POND CAPICITY = 7,500 CU.FT.

LEGEND & NOTES

EXISTING CONTOURS

FUTURE CONTOURS

DIRECTION OF EXISTING DRAINAGE

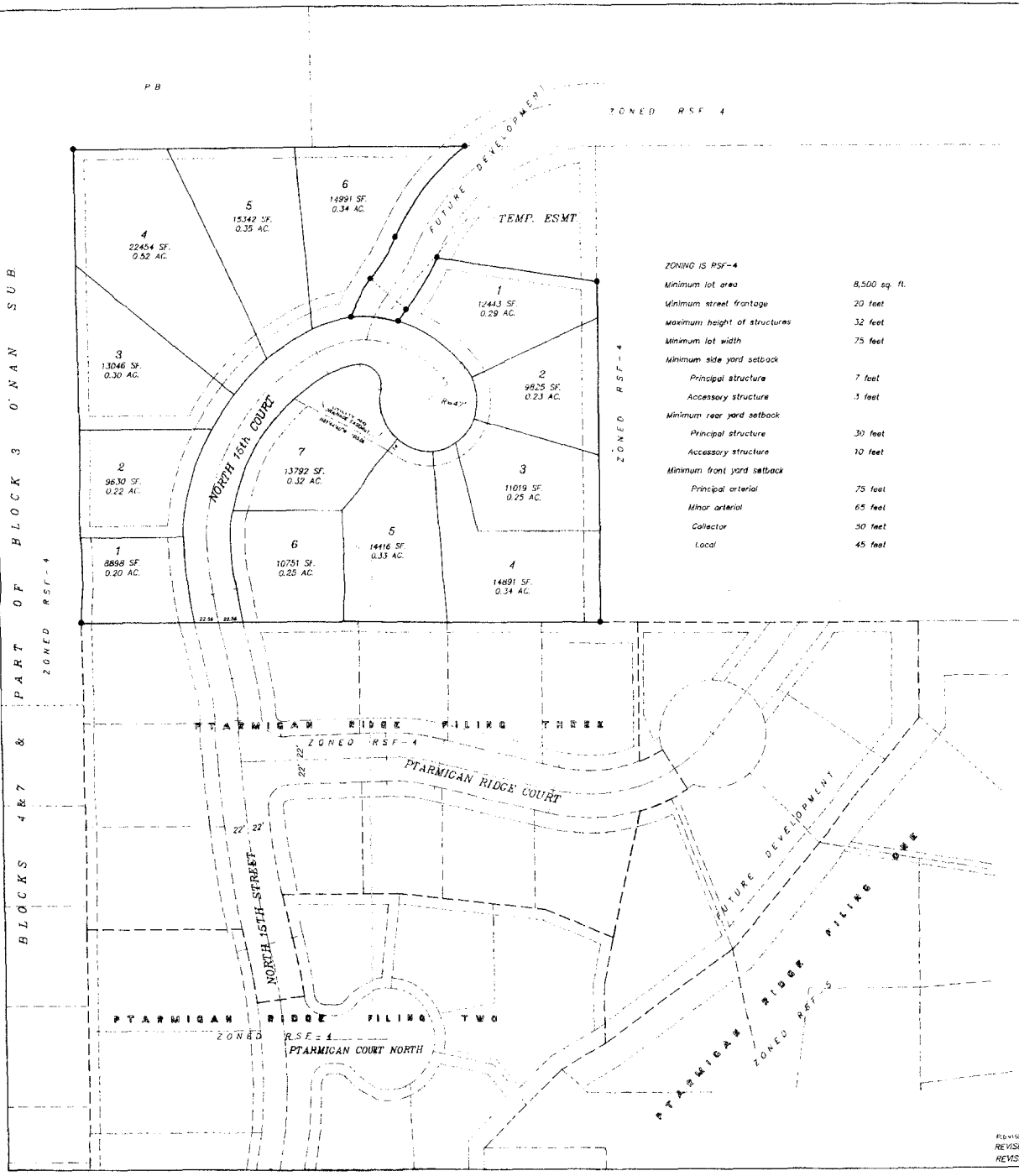
DIRECTION OF STREET AND LOT DRAINAGE

CONTOUR INTERVALS ARE 1.0' FT.

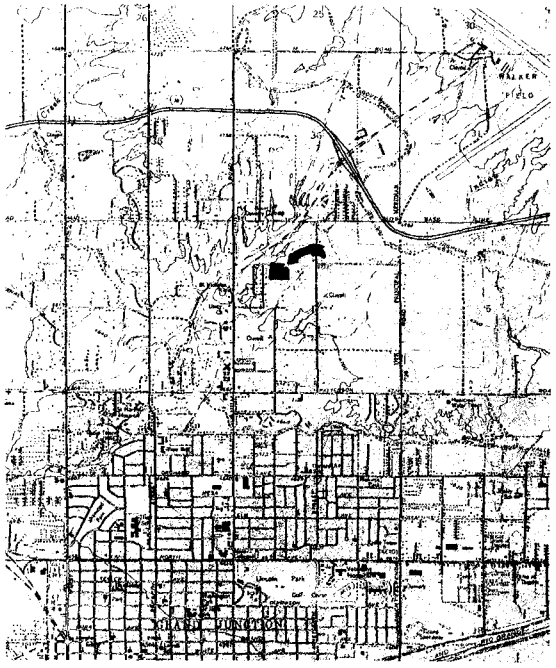
ELEVATIONS BASED ON 4908.15 ON MESA COUNTY BRASS CAP AT THE SE CORNER OF NW1/4 SECTION 1

WILLIAM HEATH DAVIS 12364 12-31-92 STATE OF COLORADO

PTARMICAN RIDGE FILING FOUR			
GRADING AND DRAINAGE PLAN			
FOR: PTARMICAN INVESTMENTS	O.E.D. SURVEYING SYSTEMS Inc. 1018 COLO. AVE. GRAND JUNCTION COLORADO 81501 (303) 241-2370 464-7568	SURVEYED BY:	DMM MF
		DRAWN BY:	MEM
SCALE: 1"=50' 1IN = 50FT		ACAD ID:	PR4ADRN
DATE: 9/1/92		SHEET NO.	3 of 6
revised 12/29/92 revised 12/22/92 revised 11/23/92 revised 10/20/92 REVISED 9/15/92		FILE:	90090



ZONING IS RSF-4	
Minimum lot area	8,500 sq. ft.
Minimum street frontage	20 feet
Maximum height of structures	32 feet
Minimum lot width	75 feet
Minimum side yard setback	
Principal structure	7 feet
Accessory structure	3 feet
Minimum rear yard setback	
Principal structure	30 feet
Accessory structure	10 feet
Minimum front yard setback	
Principal arterial	75 feet
Minor arterial	65 feet
Collector	30 feet
Local	45 feet



INSERT: SCALE 1"IN = 2000'FT

REVISED 11/25/92
REVISED 10/19/92
REVISED 9/15/92

PTARMIGAN RIDGE FILING FOUR
SITE PLAN

FOR: PTARMIGAN INVESTMENTS

SCALE: 1"IN = 50'FT

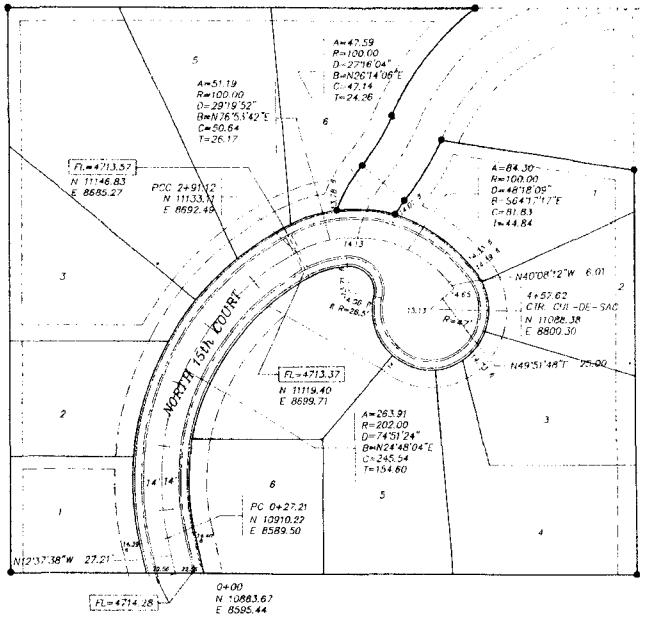
DATE: 8/29/92

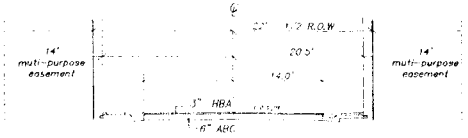
Q.E.D. SURVEYING SYSTEMS Inc.
1018 COLO. AVE.
GRAND JUNCTION
COLORADO 81501
(303) 241-2370
464-7368

SURVEYED BY: DMM MF
DRAWN BY: MEM
ACAD ID: PR4SITE
SHEET NO. 1 OF 6
FILE: 90090

RECEIVED GRAND JUNCTION
PLANNING DEPARTMENT
DEC 30 1992

APPROVED FOR CONSTRUCTION	INITIAL ACCEPTANCE
CITY OF GRAND JUNCTION — DATE	CITY OF GRAND JUNCTION — DATE





NORTH 15th COURT

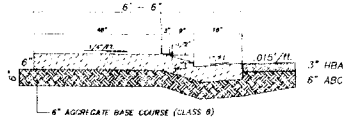
1"N = 10.0'FT

PAVEMENT CALCULATIONS & DESIGN

AXLE LOADS: TEE	N. 15th COURT VDL	18 KIP EDLA
2,000 : 0.0003	110	.033
4,000 : 0.012	22	.264
10,000 : 0.12	4	0.48
18,000 : 1.245	1	1.245
24,000 : 0.485	1	0.485
		2.507
FROM NOMOGRAH	SN = 1.72 = √SN	
DESIGN STRUCTURE		
HBA @ 0.44	3" = 1.32	
3/4 ABC @ 0.12	6" = 0.72	
	SN = 1.92	

VDL = VEHICLES / DAY / LANE

RF = 1.00
R value = 15 (From soils test)

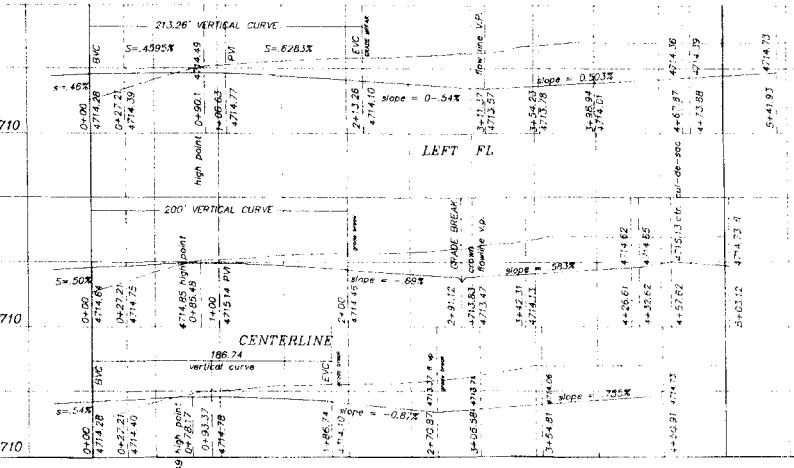


DRIVE OVER CURB, GUTTER & SIDEWALK
PER CITY OF GRAND JUNCTION SPEC'S.
(TYPICAL)

SCALE: 1"N = 2.0'FT

SCALE: HOR. 1"N = 50'FT
VERT 1"N = 5'FT

Note: FLOWLINE IS .36' LOWER ELEV. THAN CENTERLINE
BACK OF WALK IS .14' HIGHER ELEV. THAN CENTERLINE



NORTH 15th COURT

LEGEND & NOTES

1. Elevation control bench = 4708.15 on Mesa County Brass Cap SE corner NW1/4 Sec. 1 also rim elevation on existing manhole at intersection of 15th Street and Ridge Drive is 4705.35
2. All work within the public right-of-way shall be in accordance with the City of Grand Junction specifications and standards.
3. All materials and workmanship shall be subject to inspection by the City of Grand Junction. The City of Grand Junction reserves the right to accept or reject any materials and workmanship that does not conform to the standards and specifications of the City of Grand Junction
4. The contractor shall have one signed copy of the plans, and a copy of the City of Grand Junctions standards and specifications at the job site at all times.

revised 11/23/92
revised 10/20/92
REVISED 9/15/92

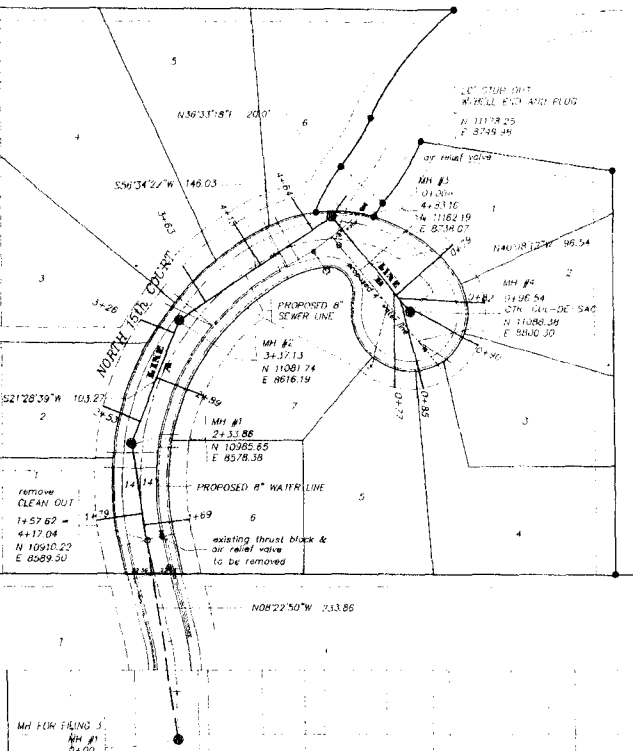
PTARMIGAN RIDGE FILING FOUR

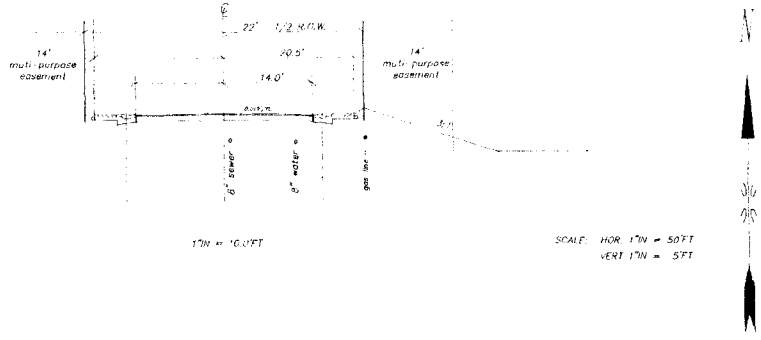
ROAD PLANS AND PROFILES

FOR: PTARMIGAN INVESTMENTS	SURVEYED BY: DMM, MP
SCALE: 1"N = 50'FT	DRAWN BY: MHK
DATE: 8/1/92	ACAD ID: PR4ROAD
	SHEET NO. 6 of 8
	FILE: 90090

O.E.D. SURVEYING SYSTEMS Inc.
1018 COLO AVE.
GRAND JUNCTION
COLORADO 81501
(303) 241-2370
464-7568

APPROVED FOR CONSTRUCTION	INITIAL ACCEPTANCE
CITY OF GRAND JUNCTION DATE	CITY OF GRAND JUNCTION DATE





LEGEND & NOTES

1. Elevation control bench = 4708.15
on Mesa County Brass Cap
SE corner NW1/4 Sec. 1

Also the rim elevation of the existing Manhole at the intersection of 15th Street and Ridge Drive is 4705.35

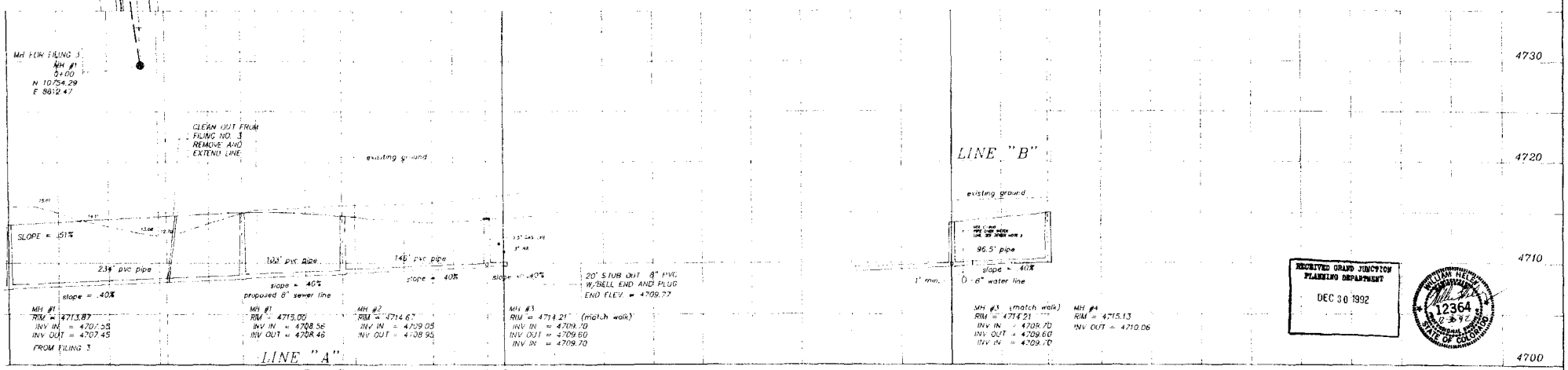
NOTES:

All materials and workmanship shall be subject to inspection by the City of Grand Junction.
The City of Grand Junction reserve the right to accept or reject any materials and workmanship that does not conform to the standards and specifications of the City of Grand Junction.

The Contractor shall have one signed copy of the Plans, and a copy of the City of Grand Junction's standards and specifications at the job site at all times.

NOTICE:

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



RECEIVED GRAND JUNCTION PLANNING DEPARTMENT
DEC 30 1992

WILLIAM HELD 12364 12-30-92 REGISTERED LAND SURVEYOR STATE OF COLORADO

revised 12/21/92 revised 10/20/92
revised 11/23/92 REVISED 9/15/92

& materials shall comply with
nd Junction specifications & standard details

ss and water mains cross within 10
of each other, the sewer pipe shall be a
8 inches clear distance vertically below the water
a special sewerline construction is required
nsist of: a) AWWA C-900 PVC sewer pipe with
ete collars which shall extend at least 6 inches on
joints. If the sewer line crosses a water main, an
ım length pipe section shall be centered with
water main, having collared end joints; or b)
concrete encasement along the entire length of

3. Leave Rim elevations 3" below finish grade - road contractor to bring rims to grade after paving and grout per Grand Junction's specs.
4. Sewer service laterals shall be installed 14' inside property line (Roadway Right-of-way line) and capped with water-tight plugs. They shall be marked with a 4'x2"x4" buried vertically above the end of the pipe and extending 6" above the ground surface. The top 6" of the board shall be painted white.
5. Cover sewer a minimum of 42"
6. Pipe specifications: Main - PVC ASTM D 3034 - SDR 35 8"
PVC-AWWA C900 8"
Laterals - PVC ASTM D 3034 - SDR 35 4"

WATER NOTES:

1. All construction & materials shall comply with Ute Water and/or the City of Grand Junction specifications & standard details
2. All water services 3/4" copper Type K
3. Extend all water laterals 5' inside property lines
4. Water service locations shall be installed 5' beyond the property line (Roadway right-of-way line) and capped with corp. stops. They shall be marked with a 4'x2"x4" buried vertically above the end of the pipe and extending 6" above the ground surface. The top 6" of the board shall be painted blue.
5. Cover minimum of 57" per Ute Water specs.
6. Pipe specifications: 8" water - C-900 Class 150 DR 18
4" water - SDR 21

Trenchs:

Trench backfill shall be compacted to 95% standard Proctor density in 12" lifts (max) in R.O.W.

PTARMIGAN RIDGE FILING FOUR

SEWER LINE "A" & "B" PLAN & PROFILE

FOR: PTARMIGAN INVESTMENTS	Q.E.D. SURVEYING SYSTEMS Inc. 1018 COLO. AVE. GRAND JUNCTION COLORADO 81501 (303) 241-2370 464-7588	SURVEYED BY: DMM MF
SCALE: 1"IN = 50FT		DRAWN BY: MEM
DATE: 9/1/92		ACAD ID: PR4SEW
		SHEET NO. 5 of 6
		FILE: 90090