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File 1993-0085 Name: Retirement Center - Final Plan - SE Corner of 12th St. & F ½ Rd.

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

DOCUMENT DESCRIPTION:

X	X	Action Sheet - Approved	X	X	Hilltop Minor Subdivision Plat Ratification - 1/10/94, 1/10/94
X	X	Notes to file	X	X	Addenda to DIA and Guarantee - delivered to the City Clerk for scanning and retention - Bk 2119/ Pg 876 - **
X	X	Correspondence	X	X	Release of Improvements Agreement & Guarantee - Bk 2120/Pg 940 - delivered to the City Clerk for scanning and retention - **
X	X	Drainage Plan Report	X		E-mails
X	X	Improvements List / Detail, 7/1/93, 7/27/93	X	X	Planning Clearance - issued 3/3/94 - **
X	X	Planning Commission Minutes - 8/3/93	X		Notice of Public Hearing Mail-out - 7/21/93
		Utility Coordinating Committee approval - 8/11/93	X	X	The Atrium at Grand Valley Retirement Village - Site Plan - GIS Historical Maps - **- and with file
X	X	Development Improvements Agrmt - not recorded - delivered to City Clerk for scanning and retention	X	X	Hilltop Minor Subdivision - Final Plat - GIS Historical Maps - **
X	X	Deferred Improvements Agreement - delivered to the City Clerk for scanning and retention - ** - not recorded	X	X	Subsurface Soils Exploration - 11/19/93

X	X	ASCII	X		Irrigation System Pressure Line & Turf Zones
X		12TH Street Plan and Profile	X		Irrigation System West Side Shrub Zones
X		Utility Plan	X		Irrigation Plan
X	X	West/East Side Planting Plan	X		Orthophoto Map Topography
X	X	Site Details	X	X	Sight Plan
X	X	Car Port Details	X		Drainage Plan
X	.	Building Height Analysis	X	X	Landscape Plan
					Grading and Drainage Plan

DEVELOPMENT APPLICATION

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

Do Not Remove From Office

[A] Receipt _____
Date _____
Rec'd By _____
File No. #85 93

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

PETITION	PHASE	SIZE	LOCATION	ZONE	LAND USE
[ ] Subdivision Plat/Plan	[ ] Minor [ ] Major [ ] Resub				
[ ] Rezone				From: To:	
[X] Planned Development	[ ] ODP [ ] Prelim [X] Final		SE Corner of F½ & 12th	RSF-4 -> PR-21	Retirement Center
[ ] Conditional Use					
[ ] Zone of Annex					
[ ] Text Amendment					
[ ] Special Use					
[ ] Vacation					[ ] Right-of-Way [ ] Easement

[X] PROPERTY OWNER	[X] DEVELOPER	[X] REPRESENTATIVE
HILLTOP	ARCHITECT CLIFF CURREY	COLSON & COLSON	PAT EDWARDS/SALLY SCHAEFER
Name	Name	Name
1100 PATTERSON	471 HIGH ST, SE P.O. BOX 14111	P.O. BOX 3117/1100 PATTERSON
Address	Address	Address
GRD. JCT., CO	SALEM, OR 97301 SALEM, OR 97302	GRD JCT CO/ GRD JCT, CO 81506
City/State/Zip	City/State/Zip	City/State/Zip
244-6007	503-399-1090 503-370-7070	243-0456 / 244-6181
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 Sally Schaefer — 6/29/93
Signature of Person Completing Application — Date

X _____ — 6/29/93
Signature of Property Owner(s) - Attach Additional Sheets if Necessary

#85-93

ARMSTRONG, SHARON M
590 STARLIGHT DRIVE
GRAND JUNCTION, CO 81504

RITTER, MARY LOU
3150 LAKESIDE DRIVE #308
GRAND JUNCTION, CO 81506

BISSELL, DONNA M
3150 LAKESIDE DRIVE #310
GRAND JUNCTION, CO 81506

JOHNSON, MICHAEL & MAUREEN A
14700 BLEDSOE ST
SAN FERNANDO, CA 91342

RYAN, RICKY M
631 BROKEN SPOKE ROAD
GRAND JUNCTION, CO 81504

PARADIS, JEAN & KATHLEEN
604 RICO WAY
GRAND JUNCTION, CO 81506

VONSTOCKEN, WILIAM M
100 W CLARENDON #1220
PHOENIX, AZ 85013

VANCE, JOYCE E
3146 LAKESIDE DRIVE #309
GRAND JUNCTION, CO 81506

NEAL, MARCIA J
3146 LAKESIDE DRIVE #302
GRAND JUNCTION, CO 81506

WOLF, INGRID H
2225 REDLANDS PARKWAY
GRAND JUNCTION, CO 81503

HALL, OLIVER K
3146 LAKESIDE DRIVE #109
GRAND JUNCTION, CO 81506

MAES, BENA
686 GLEN CARO DRIVE
GRAND JUNCTION, CO 81506

GARDNER, ROLLAND
3146 LAKESIDE DRIVE #310
GRAND JUNCTION, CO 81506

LUFF, HALE & MARY A
3 CORNELL DRIVE
RANCHO MIRAGE, CA 92270

POND, EVERETT
3156 LAKESIDE DRIVE #303
GRAND JUNCTION, CO 81506

OLSHOVE, DONALD P & GWEN
P.O. BOX 81
CLOVIS, CA 93613

DOWNING FAMILY TRUST
3156 LAKESIDE DRIVE #307
GRAND JUNCTION, CO 81506

MOSS & COMPANY
964 LAKESIDE CT
GRAND JUNCTION, CO 81506

VANDERKOLK, JANE
6186 EDSALL ROAD #155
ALEXANDRIA, VA 22304

PITTMAN, HANNAH M
3156 LAKESIDE DRIVE #304
GRAND JUNCTION, CO 81506

LAMBSON, WILLIAM & JANE
2839 C OXFORD AVE
GRAND JUNCTION, CO 81506

ODELBERG, DAVID
2708 F 1/2 ROAD
GRAND JUNCTION, CO 81506

PENTECOSTAL HOLINESS CHURCH
COLORADO CONFERENCE INC
ENGLEWOOD, CO 80150

COLORADO NORTHWOODS II
11777 SAN VICENTE BLVD #900
LOS ANGELES, CA 90049

UNITY CENTER OF LIGHT
P.O. BOX 1904
GRAND JUNCTION, CO 81502

DENNIS STAHL
HILLTOP REHAB. HOSPITAL
1100 PATTERSON ROAD
GRAND JUNCTION CO 81506

#85 13

COPY

The Atrium of Grand Valley Retirement Village - Filing No. 42-93.

The subject property has a 6.8 acre water-right with Grand Valley Water Users Association. There exists a headgate near the southeast corner of the property from which irrigation water my be delivered. It appears that a centralized pump station is planned and would assumedly draw water from the proposed pond which could be charged from probably more than one source, including the property's allotted water from this Association. This is a highly advisable approach over trying to pump from a direct flow supply. It is difficult to briefly explain the reasoning for this approach, but we would be glad to discuss it with any interested party.

Also, the Association has an irrigation lateral of long standing located along the south boundary of the property, beginning at the southeast property corner and flowing westerly a few hundred feet before turning southward. Such lateral has a "first right of use" right-of-way as necessary for its operation and maintenance and the providing of space and accessibility to perform such operation and maintenance in the future must be addressed in the planning of this development.

We will be glad to discuss and review these irrigation related matters with developer representatives in an effort to suitably resolve them to the satisfaction of all parties.

G. W. Klapwyk - Manager

Curry • Brandaw Architects

#85 93

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June 29, 1993

Mr. Karl Metzner
City of Grand Junction
250 North 5TH Street
Grand Junction, Colorado 81501

PROJECT: The Atrium of Grand Valley Retirement Village.
Grand Junction, Colorado

RE: Final Plan Submission/Summary Response
to Re-zone and Preliminary Plan Comments.

Dear Mr. Metzner:

Enclosed are copies of the final plan submittal material for your review. The plans have been revised to address the city's previous review comments. Although we generally support your position on most issues, we would like to point out a few exceptions and clarifications:

1. Deceleration Lane - Traffic demands should be based upon the proposed 124 first phase units, not 184. The deceleration lane can be evaluated at the time of the future addition or when 12th Street improvements are scheduled to be made, whichever comes first.

2. Parking - 74 parking spaces are proposed for the 124 unit first phase. 13 spaces are proposed to be added for the 60 suite assisted living expansion, for a total of 87 parking spaces. An additional 10 spaces could be provided if necessary. The following is a breakdown of parking spaces for this project:

	Phase I # Suites	Required Parking	Phase II # Suites	Required Parking	
Retirement Residence	104	52 (1/2)	0	0	
Assisted Living	20	5 (1/4)	60	15 (1/4)	
Staff	-	5	-	7	
Total Spaces		62		22	84

471 High Street Southeast Salem, Oregon 97301 (503) 399-1090 Fax (503) 399-0565

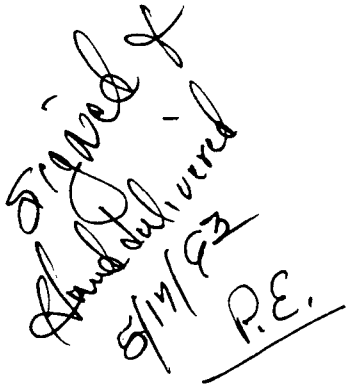
Construction and occupancy of the proposed 124 units in Phase One is estimated at four years. Thus, the petitioners request herein is a combination of their desire to match expenditures with revenues on the overall project and to coordinate water line extension and road improvements with the City's planned improvements to North 12th Street.

Thank you for your consideration of this request.

Sincerely,

Pat Edwards
For The Petitioners

PE:bn



#85 93

COLDWELL BANKER

HOME OWNERS
REALTY, INC.

P.O. BOX 3117
2499 HWY 6 & 50
GRAND JUNCTION, CO 81505
BUS. (303) 243-0456
FAX (303) 243-2896

May 17, 1993

Dan Wilson, City Attorney
City of Grand Junction
250 North 5th Street
Grand Junction, CO 81501

RE: The Atrium of Grand Valley Retirement Village
Planning File #42-93
(F 1/2 Road half-street improvements) (water line looping)

Dear Mr. Wilson:

To clarify the joint petitioners request to defer F 1/2 Road half-street improvements and water line looping the following information is provided:

1. F 1/2 Road half-street improvements
   The petitioners will execute an Agreement to Construct or Escrow Funds for the half-street improvements based upon the following:
   A. Funds will be escrowed for the half-street improvements or the same completed on or before 3 years from the date petitioners obtain a Certificate Of Occupancy on proposed Phase One (104 retirement units and 20 assisted living units)
   B. Concurrently with obtaining the Certificate Of Occupancy on proposed Phase One, the petitioners will provide acceptable financial guarantees in favor of the City (bond, bank, letter of credit or bank set aside letter) insuring that the half-street improvements will be completed.
   C. Proposed agreement and financial guarantee shall be in a form acceptable to the City of Grand Junction.

2. Water line looping
   A. The request to defer water line looping would be specifically subject to determination by the appropriate entities (City Fire Department and City Utilities Engineer) that adequate capacity and pressure exists on the un-looped fire line to support the proposed 124 units in Phase One including the automatic sprinkler system in the building.

   B. Water line looping will be completed in proposed Phase Two (14 cottage units) of the project as contained in the project narrative (to be completed by December 1997).

3. Phasing - Please note that the plans show detailed improvements for the first phase, 124 unit building only. Phase II and III improvements are shown conceptually and we will seek detailed construction approval later.

Please call with any questions you might have.

Sincerely,

Garth Brandaw SD

Garth Brandaw

GB:sd

c:\metzner.doc

#85 93

PROJECT NARRATIVE/IMPACT STATEMENT

THE ATRIUM OF GRAND VALLEY
Planning File #42-93

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Final Plat and Plan Submission/Summary
Response to Re-zone and Preliminary Plan Comments

GENERAL INFORMATION

Petitioners

Joint Development between Hilltop Health Care Services and Colson & Colson Construction Company

Location and Adjacent Land Use

Southeast corner of North 12th Street and F 1/2 Road

	Land Use	Zoning
East of Subject	Undeveloped 10 acre parcel with a single family home fronting on North 15th Street	RSF-4
South & East of Subject	Undeveloped 10 acres open land fronting on North 15th Street	RSF-4
South of Subject	Undeveloped 10 acres with single family home fronting on North 12th Street	RSF-4
West of Subject across North 12th St.	2 & 3 Story residential condominiums community facilities and pool	PR12
	Unity Church/Parking	RSF-4
Northwest of Subject	Northwood Apartments Horizon Towers	PR26 RR34.9
North of Subject across F 1/2 Road	Pentecostal Holiness Church parking	RSF-4
	Single family homes	RSF-4

Proposal

Final plan for two lot minor subdivision known as Hilltop Minor Subdivision.
Final plan for Phase One "The Atrium of Grand Valley" for 104 retirement units and 20 assisted living units, appropriate parking, landscaping and amenities.

Zoning

Presently zoned Planned Residential 21 units per acre for the proposed uses. Proposed residential use is compatible with existing multi-family residential uses adjacent to and in the area of the subject property.

Resident Services

The retirement units are designed for those individuals who are still ambulatory but in need of some support. Private rooms afford the advantages of independent living while the included services provide support, security, and friendship. The private suites include studio, one and two bedroom versions. Each unit is similar to an apartment except a kitchen is not included.

Services include three meals per day plus snacks, housekeeping, laundry, private bus transportation and various recreational activities. Staff are in house 24 hours a day. The monthly rental includes private room, all services and utilities.

Typical residents are single and in their early 80's. Approximately 10% of the rooms will be rented by couples. Fewer than 25% of the residents will drive their own car.

Services to residents of the assisted living units include the same services provided to retirement residents plus 24 hour staffing. Skilled services by a registered nurse, certified nursing assistant, or other skilled staff on an as needed basis and services of a geriatric case manager. Personal services would include assistance with bathing, dressing and meals, routine health screening, medication assistance and coordination of appointments and special diets.

Also planned are complimentary services for the resident population such as an ice cream parlor, beauty salon, bookstore, etc.

Fitness classes will be provided for residents as well as space for specialty professional/procedures, such as geriatric physician, podiatry consults, etc.

The intent of this project is to provide a warm, appealing, residential environment for the community's elderly in such a manner that a variety of services might be provided without the resident needing to change their living situation.

Emphasis would be placed on encouraging activities that promote wellness and long term quality of life in addition to supporting the needs of those who become ill or infirm on a short or long term basis. The concept would, for many, be an alternative to a nursing home placement and, as such, be very cost effective. Petitioners are committed that this project not only enhance the community from a bricks and mortar standpoint but also serve as a "state of the art" example of a holistic and healthy environment for our aging population.

SPECIFIC INFORMATION

F 1/2 Road Half-Street Improvements/Water Line Looping

See attached letter dated May 17, 1993, to Dan Wilson, City Attorney

Declaration Lane/Parking

See attached letter dated June 29, 1993, to Karl Metzner, Staff Representative

Landscape Plan

Landscape architect is out of town due to an emergency. Landscape and irrigation plan to be submitted on or before July 10, 1993, together with Improvements List/Detail covering the same. Landscaping plan and improvements List/Detail to be hand carried to the appropriate review agencies by the petitioner's representative.

North 12th Street Half-Street Improvements

Petitioner will pay to the City of Grand Junction one half the current commercial street section rate, estimated at approximately $50.00 per lineal foot for approximately 659 lineal feet of frontage along North 12th Street.

Sewer Line Extension (Hermosa Avenue to Subject Property)

Petitioner will pay to the City of Grand Junction their proportionate share (on a per acre basis) of the total land area served by the proposed sewer line extension.

Development Schedule

Construction of proposed improvements are to begin within 90 days of approval with all improvements completed on or before 24 months from start date, conditional only upon timely approvals and finalization of agreements and financing.

#85 93

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June 30, 1993

Planning Department
City of Grand
559 White Avenue, Room 60
Grand Junction, CO 81501

Re: Development Improvement Agreement
Phase 1 The Atrium of Grand Valley
"Retirement Village" File #42-93

The petitioners will execute a standard Development Agreement, funded by a set-aside letter from a local lending institution covering proposed infrastructure improvements, simultaneous with executing an agreement to construct or/escrow funds for F 1/2 road half-street improvements as covered in a letter to Dan Wilson City Attorney, dated 5/17/93.

Sincerely,

Sally Schaefer

Sally Schaefer

1100 Patterson Road • Grand Junction, Colorado 81506 • 303-242-8980 • FAX 303-244-6035

NICHOLS ASSOCIATES, INC.
751 HORIZON COURT #102
P.O. BOX 60010
GRAND JUNCTION, CO. 81506
PHONE 303-245-7101

30-June-93

CITY OF GRAND JUNCTION
GRAND JUNCTION, CO.

Ladies and Gentlemen:

Please find enclosed a drainage study report for Hilltop Minor Subdivision and The Atrium Grand Valley Retirement Village. It is the intent of the report to comply with the City of Grand Junction drainage study criteria as outlined in the Interim Outline Of Grading and Drainage Criteria and The Submittal Standards For Improvements And Development.

This report was prepared by me for use as a part of the submittal package for the final filing of Lot One of Hilltop Minor Subdivision.

The detention facility is design for adjustable storage capacity to accommodate possible expansion on adjacent properties at a later date.

I hereby certify that this report was prepared by me.

Terry Nichols
Registered Professional Engineer,
State of Colorado, Number 12093

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#85 93

(5)

HILLTOP MINOR SUBDIVISION

FINAL FILING. LOT ONE DRAINAGE PLAN REPORT

30-Mar-93

I. General Location and Description

The Hilltop Retirement Village property is located in the city of Grand Junction, Colorado. The property is more particularly described as the NW1/4 of NW1/4 of SW1/4 of section 1, Township 1 South, Range 1 West, of the Ute base and meridian. The Mesa County tax ID number for this property is 2945-013-11-002.

The property is bounded on the North by F1/2 road, on the West by Twelfth Street, and on the South by a parcel of land owned by Herman R. and Elsa E. Bull. On the East side, the property is bounded by a parcel of land owned by C. Peterson, L. R. Trust H.C. Peterson.

This study includes the drainage area lying to the East and Northeast of the proposed Hilltop Minor Subdivision. The total drainage area included in this study is 115 acres. The present cover of open ground consists of course grasses, weeds and brush along with some poplar, cottonwood and elm trees. The surface soil type is predominantly medium silt. Part of the drainage basin consists of built up residential areas with paved streets and parking areas. Weighted run-off coefficient calculations are included in the appendix of this report.

II. Existing Drainage Conditions

The majority of the drainage basin has historically been irrigated by surface irrigation techniques for agricultural purposes.

There is an existing concrete dam at the lower end of the drainage basin and an existing 24 inch diameter concrete pipe passing under twelfth street. Water is presently leaking under the concrete dam.

The historic site drainage pattern is a combination of shallow sheet flow and overland concentrated flow leading to streets and a live stream in a major drainage channel which traverses the property from East to West.

III. Proposed Drainage Conditions

The general plan includes extending the existing 24 inch diameter concrete pipe to accommodate the future widening of twelfth street and the construction of an earth dam for a storage/detention pond. A multiple-stage adjustable outlet structure is planned. This structure is designed to accommodate the storage of irrigation water, provide a pond for aesthetic purposes, and provide the required two and one hundred year storm detention capacities. The system is designed to be adjustable so that it can be used for possible future development on adjacent properties.

The development will include a pressurized underground irrigation system to provide irrigation water for the landscaping. The water source for this system will be adjudicated water rights which will be temporarily stored in the pond. The pressurized sprinkler irrigation system will contribute little or no surface runoff.

The property will be intensely developed with multiple resident structures and paved parking areas. The runoff from these improvements and the open landscaped areas will be channeled to the detention area through a series of curbs & gutters and valley pans.

Vehicle access to the drainage facilities will be by a road from the proposed parking area to and across the detention pond dam. The outlet structure will be accessed by temporarily placing a ladder from the dam to the top of the structure.

The owner of the development will retain ownership of the irrigation and drainage facilities and will be responsible for the maintenance of those facilities.

IV. Design Criteria & Approach

Design rainfall intensities are taken from the Interim Outline Of Grading And Drainage Criteria, City Of Grand Junction, July 1992 and the Mesa County Storm Drainage Manual. The time of concentration for each basin is calculated using a combination of overland flow, shallow concentrated sheet flow, and channel flow travel time.

The following formula is used to calculate overland sheet flow:

$$t_c = 1.8(1.1-C)\ (L^{1/2})/(100S)^{1/3}$$

where:

t_c = time of concentration in minutes;
C = runoff coefficient;
L = length of basin in feet; and
S = slope of the basin in feet/feet.

The intensity is taken from APPENDIX A of the Interim Outline Of Grading And Drainage Criteria.

For on site development, the peak runoff discharges are calculated using the rational formula:

$$Q = CiA$$

where:

Q = peak runoff rate in cubic feet per second (CFS);
C = runoff coefficient representing a ratio of peak runoff to average rainfall intensity for a duration equal to the runoff time of concentration;
i = average rainfall intensity in inches per hour; and

A = drainage area in acres.

V. Results And Conclusions

The existing pond and surrounding low area will be developed into a pond for water storage and detention. The total volume of the pond is 172,679 cubic feet. The bottom three feet will be used as permanent storage for aesthetic purposes and for a pump reservoir for the irrigation system. The bottom three feet of the pond has a capacity of 21,094 cubic feet. (See Depth-Capacity Curve in the appendix of this report.)

Starting at the 3 foot level (Elevation 4677), there will be a 3 Ft x .69 Ft orifice in the outlet structure that will pass the historic two year storm of 25.53 CFS. A rise of two feet is allowed for the detention of two year storms. The volume of approximately 40,000 cubic feet far exceeds the detention requirement of 8,000 cubic feet for this phase one project.

At elevation 4679.7 there will be a 3 Ft x 2.19 Ft orifice in the outlet structure which, in conjunction with the lower orifice, will pass the historic 100 year storm of 92.97 CFS. The remaining available detention volume of approximately 110,000 CFS exceeds the required 100 year detention of 17,000 cubic feet for this phase one project.

A large detention volume and adjustable outlet works were selected to provide detention for possible development of adjacent properties. (See calculations in the appendix of this report.)

VI. References

Interim Outline of Grading And Drainage Criteria, City of Grand Junction, July 1992

Submittal Standards for Improvements and Development (SSID) Draft; City of Grand Junction; March 1993

Civil Engineering Handbook Fourth Edition; by Urquhart

Mesa County Storm Drainage Criteria Manual; Adopted April 14, 1992

VII. Appendices Table of Contents

Page 1. Runoff calculations for the 2 year and 100 year storms at the Hilltop Minor Subdivision. Calculations are presented for both historic conditions and conditions after the proposed development. Basin A and the historic basin H_1 represent that portion of the property lying South of the existing drainage channel.

Page 2. Historic run-off calculations for the entire drainage basin affecting this development.

Page 3. Orfice calculations

Page 4. Discharge calculations for the orifices used in the design of the two stage control structure and 24" culvert capacity.

Page 5. Detention volume calculations

Page 6. Depth - capacity calculations for the detention pond.

Page 6-11 Hand calculations

Drawing 1. Site drainage plan.

Drawing 2. Major basin drainage plan.

- APPENDIX-

CALCULATION OF INCREASE IN DISCHARGE DUE TO PROPOSED CONSTRUCTION

After Construction {Area - Intensity - Discharge}

On Site

BASIN	LENGTH (L) FEET	SLOPE (S) PERCENT	RUNOFF COEF. C	BASIN TIME MIN.	GUTTER LENGTH FT.	GUTTER VELOCITY FT./SEC.	GUTTER TIME MIN.	TOTAL TIME Tc MIN.	INTENSITY Inches 2-Yr	INTENSITY Inches 100-Yr	AREA Acres A	DISCHARGE CFS (Q=CIA) 2-Yr	DISCHARGE CFS (Q=CIA) 100-Yr
A1	50	50.0	0.8	1.0	800.0	2.5	5.3	6.4	1.80	4.50	6.36	9.16	22.90
										TOTAL:	6.36	9.16	22.90

Historic - For 6.36 Ac. development area only

On Site

BASIN	LENGTH (L) FEET	SLOPE (S) PERCENT	RUNOFF COEF. C	BASIN TIME MIN.	MAX. TRAVE FT.	TRAVEL VELOCITY FT./SEC.	TRAVEL TIME MIN.	TOTAL TIME Tc MIN.	INTENSITY Inches 2-Yr	INTENSITY Inches 100-Yr	AREA Acres A	DISCHARGE CFS (Q=CIA) 2-Yr	DISCHARGE CFS (Q=CIA) 100-Yr
H1	300	4.0	0.20	17.7	100	2.00	0.83	18.5	0.76	1.94	6.36	0.97	2.47
										TOTAL:	6.36	0.97	2.47
										NET INCREASE:		8.19	20.43

CALCULATION OF TOTAL BASIN HISTORIC DISCHARGE

Historic - For Entire Basin Before construction {Area - Intensity -Discharge}

Total Off Site & On Site

Overland Flow												
BASIN	LENGTH (L) FEET	SLOPE (S) PERCENT	RUNOFF COEF. C	BASIN TIME MIN.	MAX. TRAVE FT.	TRAVEL VELOCITY FT./SEC.	TRAVEL TIME MIN.					
H1	300	1.0	0.70	12.5			12.47					
Channel Flow - Reach 1 @ 1.0%					4,200	2.00	35.00	INTENSITY		AREA	DISCHARGE	
Channel Flow - Reach 2 @ 2.2%					600	3.30	3.03	Inches		Acres	CFS	
Channel Flow - Reach 3 @ 2.2%					600	3.30	3.03	2-Yr	100-Yr	A	2-Yr	100-Yr
Weighted run-off coefficient: 2 Yr				100 Yr		TOTAL :	53.53	0.74	1.88	115.0	25.53	92.97
See work sheet in appendix				0.30	0.43							

Orifice flow formula: Q=CA(2gH)^.5

Where:

Q=Orifice flow in CFS

C=Coefficient

g=Gravitational constant

H=Height of water above the center of the orifice opening in feet

Weir flow formula: Q=CLH^1.5

Where:

Q=Weir flow in CFS

C=Coefficient

L=Length of overflow

H=Depth from the weir crest to the pond water surface

Orfice design criteria:

Bottom orfice

A storage depth of 2 Ft is allowed above the bottom orfice

The bottom orfice must pass the historic 2 Yr storm

Q= 25.53

C= 0.65

g= 32.20

H= 2.34

w= 3.00 (Width of orfice)

A= Q/C(2gH)^.5

= 2.08

A=h x w

h=A÷w = 0.69 Feet = 8.32 Inches

Top orfice

A storage depth of 2 Ft is allowed above the bottom orfice

The bottom orfice must pass the historic 2 Yr storm

Q= 92.97

C= 0.65

g= 32.20

H= 3.10

w= 3.00 (Width of orfice)

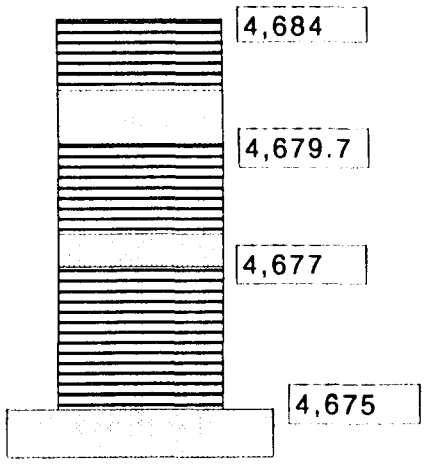
A= Q/C(2gH)^.5

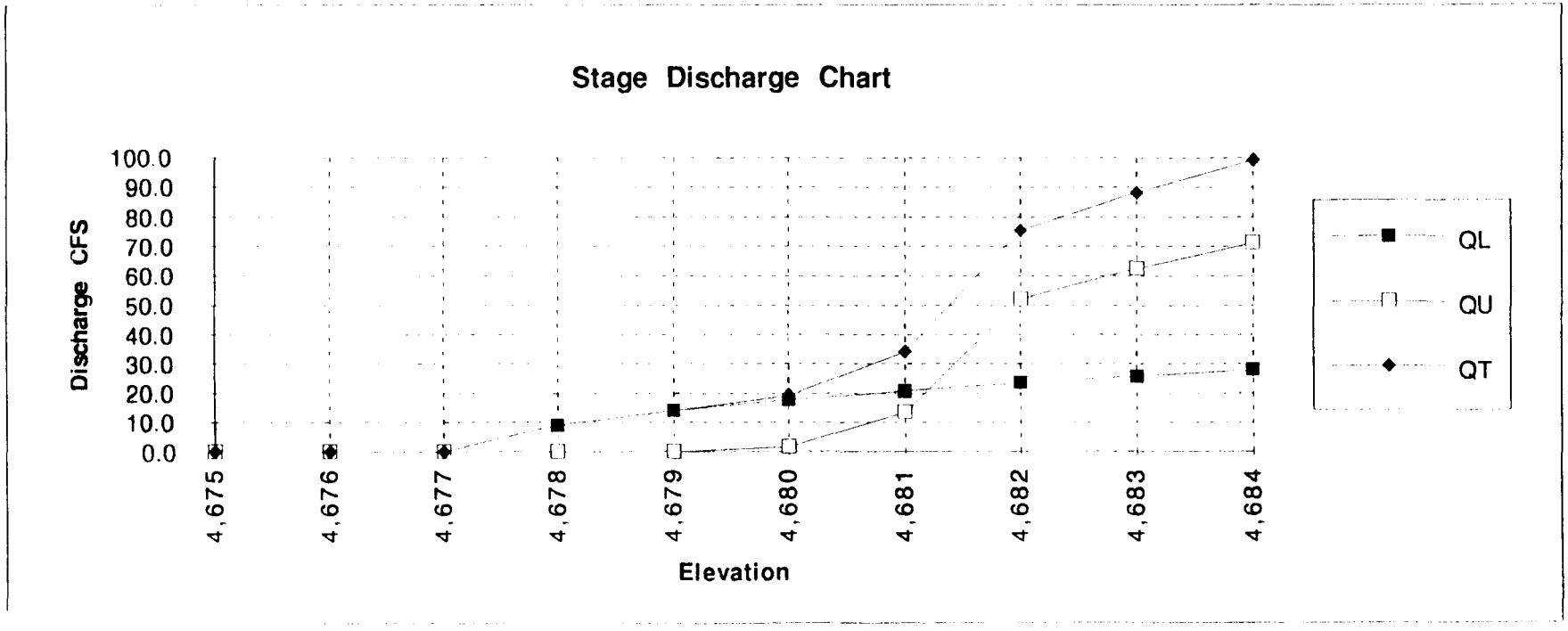
= 6.58

A=h x w

h=A÷w = 2.19 Feet = 2Ft 2 1/4 In

Elevation	Lower Orifice		Upper Orifice		Total
	Discharge Formula	QL	Discharge Formula	QU	QT
4,675	Q=0	0.0	Q=0	0.0	0.0
4,676	Q=0	0.0	Q=0	0.0	0.0
4,677	Q=0	0.0	Q=0	0.0	0.0
4,678	Q=CLH^1.5	9.0	Q=0	0.0	9.0
4,679	Q=CA(2gH)^.5	13.9	Q=0	0.0	13.9
4,680	Q=CA(2gH)^.5	17.7	Q=CLH^1.5	1.5	19.2
4,681	Q=CA(2gH)^.5	20.7	Q=CLH^1.5	13.4	34.2
4,682	Q=CA(2gH)^.5	23.4	Q=CA(2gH)^.5	52.1	75.5
4,683	Q=CA(2gH)^.5	25.8	Q=CA(2gH)^.5	62.4	88.2
4,684	Q=CA(2gH)^.5	28.0	Q=CA(2gH)^.5	71.2	99.2





Required Detention Volume = Vs

For first filing only

From City of Grand Junction Grading & Drainage Criteria page 23

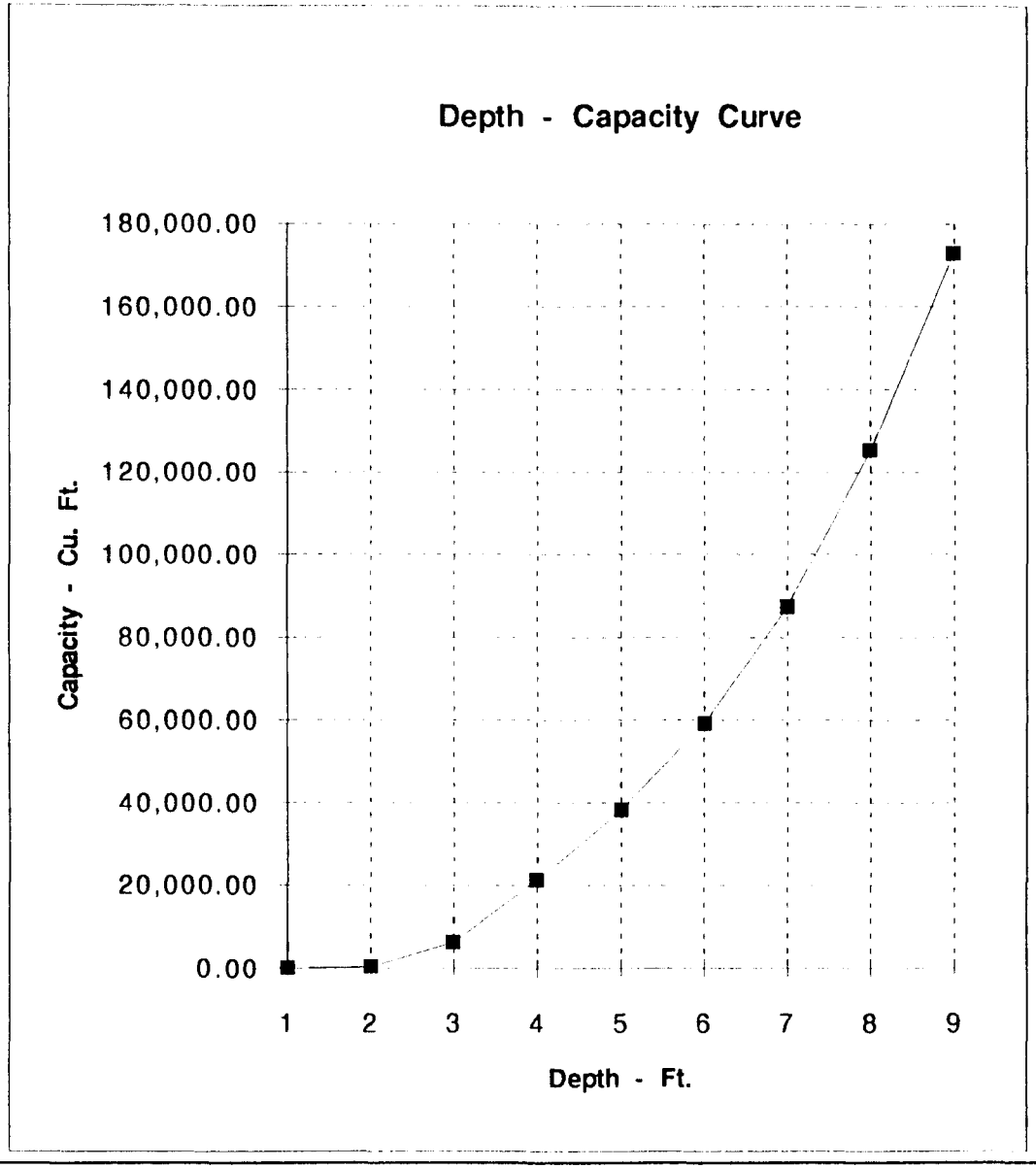
A	6.36	A	6.36
Qo	0.78	Qo	1.98
Td2	49.23	Td100	25.42
Id2	0.63	Id100	2.32
Qd	3.19	Qd	11.81
K	2.89	K	2.89
V	8,014 Cu Ft	V	16,926 Cu Ft

Peak outflow discharge Qo = 25.53

DETENTION POND DEPTH-CAPACITY CURVE

Volume = [An+An+1+(An*An+1)^.5]*h/3

Contour Elevation Ft.	Closed Area Ft. Sq.	Volume Cu. Ft.	Accumulated Volume Cu. Ft.
4,675	23.43	0.00	0.00
4,676	922.92	364.47	364.47
4,677	13,607.37	6,024.70	6,389.16
4,678	15,830.14	14,704.75	21,093.91
4,679	18,535.83	17,165.21	38,259.12
4,680	23,249.68	20,848.30	59,107.42
4,681	33,250.26	28,101.29	87,208.70
4,682	43,200.04	38,116.78	125,325.48
4,683	51,632.47	47,353.65	172,679.13



U = undeveloped

D = developed

AREA CALCULATIONS

AREA

U 1 $465(130) - \frac{140(130)}{2} - \frac{130(250)}{2} = 35,100$

U 2 $300(620) + \frac{620(520)}{2} = 347,200$

U 3 $\frac{360(440)}{2} = 79,200$

U 4 $300(530) = 159,000$

D 5 $110(620) + \frac{620(1250)}{2} = 465,500$

D 6 $2000(680) = 1,360,000$

U 7 $\frac{500(500)}{2} + 720(70) = 175,400$

D 8 $\frac{\pi(450)^2}{4} = 90,880$

BARNES 9 $1000(440) = 440,000$

D 10 $\frac{650(300)}{2} + 130(650) = 182,000$

D 11 $840(900) = 756,000$

D 12 $470(60) = 28,200$

D 13 $\frac{650(550)}{2} + 60(650) = 217,750$

14 $650(650) = 422,500$

U 15 $\frac{520(650)}{2} + 650(120) = 247,000$

TOTAL = 5,005,230 SF

= 114.9 a.

TOTAL UNDEVELOPED (PLATTED):

35,100 + 347,200 + 79,200 + 159,000 + 175,400
+ 440,000 + 247,000 = 1,482,400 SF
= 34.04 AC.

TOTAL DEVELOPED 114.9 - 34.04 = 80.86 a

TOTAL NO. OF LOTS 30 + 26 + 13 + 9 + 14 + 6 + 14 + 12 + 12
+ 12 + 6 + 6 = 162 LOTS

NOTE: ONE CHURCH & LARGE LOT AT NE CORNER OF 27½ & CORTLAND
AND ½ OF LOT @ CORNER OF 12 & F½

LINEAR FEET OF STREETS.

STARTING FROM NE. CORNER -

500 + 280 + 200 + 240. + 620 + 530 + 450. + 300
+ (2) 480. + 180. + 180 x 3.14
+ 1950 + 1100 + 200 + 200 + 400. + 400 + 200
+ 1100 + 400. + 200 + 2(400) + 320 + 2(180).
+ 1050. + 800.
TOTAL = 14,305 F. → 2.7 MILES.

SURFACE AREA OF ROADS

14,305 (50) = 715,260 SF + 30,000 = 750,000 SF
= 17.22 a.

SURFACE OF HOUSES

162 x 1500 SF/HOUSE = 243,000 SF = 5.58 a.

DRIVEWAYS.

162 (18)(33) = 102,060 SF = 2.34 a

TOTAL DEVELOPED IN LAWN:

80.86 - 5.58 - 2.34 - 17.22 = 55.72 a.

TOTAL DESERT NATURAL = 34.04 a.

Streets 17.22 a

RUN OFF CALC.

Method to use (County)

~~Basin size 5 < A < 25 Q = acres~~

~~use SCS TR-55 of the main tributary~~

A < 160 rational method and modified rational method

(see page 401)

required - see p. 301 Mesa Co.
I A.4. SHOW IRRIGATION facilities within 50 ft property -
[illegible] - 32 - [illegible] of coefficients -
[illegible] [illegible] of [illegible].

Overland flow calculations (Trial)

Reach	description of flow	slope	length
3&4	overland C = 0.7	1%	~~400~~ 300
I	" C = 0.7	1.0	~~600~~ 300
STREET S. OF 3-4	STREET n = 0.015	1.0	5,400.

Solution

1.) Fi using fig 403 - L = 300, SLOPE = 1% C = 0.7 T = 13 min.
T = 780 sec.

2.) STREET FLOW GUTTER TRAVEL TIME - L = 5,400'
fig 402 4,200' @ 1% → 2'/s → 2,100 s.
600 @ 2.2% → 3.3'/s → 182
600 @ 2.2% → 3.3'/s → 182.
TOTAL 2,464 → +1'

WEIGHTED CN

$$CN = \left[\sum_{i=1}^{n} (CN_i A_i) \right] / A_t$$

APPENDIX A H-F TABLE

		2 YEAR	100 YR
Unrated 42		.74	.88

		2 YR	100 YR
undeveloped	34.04 a	.10	[illegible]
ROOFS	5.58 a	.90	.95
DRIVEWAYS	2.34 a	.90	.95
LAWNS	55.72 a	.15	.50
streets	17.[illegible] a	.90	.95

TOTAL AREA = 114.9 a ≈ 115 a

$C_2 = \frac{0.10(34.04) + .90(5.58) + \ldots}{115 a}$

$= \frac{(3.404 + 5.02 + \ldots + \ldots 6 + \ldots)}{115} = 0.2989$

≈ 0.30

(city man) $Q = C I A$

$= 0.30(.74)(115) = 25.5$

$$CN_{100} = \frac{1.25(34.04) + .95(5.58) + .15(2.34) + .30(5.7) + .15(17.3)}{115}$$

$CN_{100} = 0.43$

$Q = CIA$

$= 0.43(1.88)(.15) = 12.17$

R ✓ Improvement Agreement- w/ petitioner
do be O.K.ed by Jody, KP, Cheney & Wilson
✓ Improvement Guarantee- w/ petitioner
do be approved by Wilson
R ✓ Plat- do be approved by Jody & Tim - do record
R ✓ Site Plan- " " " & KP
X Open Space fees - 2.5 beds per unit + manager's units x $225
X ½ Sq. Imp. fees - 12% St. & F ½ - w/ Attorney's
OK ✓ parking requirement - KP - Phase I - 74 spaces / 78 provided
Phase II - 22 spaced
X ✓ landscaping req. - KP
X ✓ building heights - KP - 46'90' 2 (dropped roof elevation 2')
Copy of permit ✓ on Corps approval - KP
X Elevation drawings

Parking - 78 spaces shown

~~126 units x .5 spac = 63 spaces~~

Phase I
104 retirement units (semi-ind.) x .5 space = 52 spaces
20 assisted care (dependent) x .25 space = 5 spaces
Staff - 5 on largest shift = 5 spaces
additionals spaces - 1 per 5 12 spaces
74

Phase II
60 assisted care x .25 space = 15 spaces
7 staff = 7 spaces
~~additional spaces - 1 per 5~~ = ~~4~~ spaces
~~26~~ 22 spaces

Narrative states 74 spaces are proposed for Phase I - 124 units
13 spaces proposed to be added for 60 assisted care units (Phase II). An additional 10 spaces could be added.

85 93

IMPROVEMENTS LIST/DETAIL

Original Do NOT Remove From Office

DATE: 1 July 93
NAME OF DEVELOPMENT: HILTOP MINOR SUB
LOCATION: 12TH & F1/2
PRINTED NAME OF PERSON PREPARING: Terry Nichols

	UNITS	TOTAL QTY.	UNIT PRICE	TOTAL AMOUNT
I. SANITARY SEWER				
1. Clearing and grubbing	N.A.	0		0
2. Cut and remove asphalt	L.F	50	5	250
3. PVC sanitary sewer main (incl. trenching, bedding & backfill)	L.F	1016	15	15,240
4. Sewer Services (incl. trenching, bedding, & backfill)				
5. Sanitary sewer manhole(s)	Ea	3	800	2,400
6. Connection to existing manhole(s)	Ea	1	200	200
7. Aggregate Base Course	C.Y	50	20	1000
8. Pavement replacement	S.Y.	50	10	500
9. Driveway restoration	Ea.	2	200	400
10. Utility adjustments	N.A.			
II. DOMESTIC WATER				
1. Clearing and grubbing	N.A.			
2. Cut and remove asphalt	L.F	50	5	250
3. Water Main (incl. excavation, bedding, backfill, valves and appurtenances)				
4. Water services (incl. excavation, bedding, backfill, valves, and appurtenances)	L.F.	100	20	2,000
5. Connect to existing water line	Ea.	1	500	500
6. Aggregate Base Course	C.Y.	50	20	1,000
7. Pavement Replacement	S.Y	50	10	500
8. Utility adjustments	N.A			
III. STREETS				
1. Clearing and grubbing	N.A			
2. Earthwork, including excavation and embankment construction	C.Y.	100	5	500
3. Utility relocations	EA	1 P.P.	500	500
4. Aggregate sub-base course (square yard)	C.Y.	50	20	1000
5. Aggregate base course (square yard)	C.Y	50	20	1,000
6. Sub-grade stabilization	EA	1	200	200
7. Asphalt or concrete pavement (square yard)	S.Y.	140	10	1400
8. Curb, gutter & sidewalk (linear feet)	N.A			
9. Driveway sections (square yard)	N.A			
10. Crosspans & fillets	N.A			
11. Retaining walls/structures	N.A			
12. Storm drainage system	EA	1	30000	20,000

13. Signs and other traffic control devices	1 Job	1	200	200
14. Construction staking	1 Job	1	2,000	2,000
15. Dust control	1 Job	1	500	500
16. Street lights (each)	NA			
IV. LANDSCAPING				
1. Design/Architecture	Other			
2. Earthwork (includes top soil, fine grading, & berming				
3. Hardscape features (includes walls, fencing, and paving)				
4. Plant material and planting				
5. Irrigation system				
6. Other features (incl. statues, water displays, park equipment, and outdoor furniture)				
7. Curbing				
8. Retaing walls and structures				
9. One year maintenance agreement				
V. MISCELLANEOUS	Sub Total			
1. Design/Engineering			127	7,385
2. Surveying			8%	4,923
3. Developer's inspection costs			2%	1,231
4. Quality control testing			5%	3,077
5. Construction traffic control				200
6. Rights-of-way/Easements				0
7. City inspection fees				
8. Permit fees				
9. Recording costs				
10. Bonds				
11. Newsletters				
12. General Construction Supervision				2,000
13. Other _____				
14. Other _____				

TOTAL ESTIMATED COST OF IMPROVEMENTS: $ 80,356

Minor Sub. Only

_____ _____

SIGNATURE OF DEVELOPER — DATE

(If corporation, to be signed by President and attested to by Secretary together with the corporate seals.)

I have reviewed the estimated costs and time schedule shown above and, based on the plan layouts submitted to date and the current costs of construction, I take no exception to the above.

_____ _____

CITY ENGINEER — DATE

_____ _____

COMMUNITY DEVELOPMENT — DATE

Hilltop Improvements Est

			Quantity	Unit Price	Total	
I						
1			0	0	0	
2			50	5	250	
3			1,016	15	15,240	
4			0	0	0	
5			3	800	2,400	
6			1	200	200	
7			50	20	1,000	
8			50	10	500	
9			2	200	400	
10			0	0	0	
II						19,990
1			0	0	0	
2			50	5	250	
3			0	0	0	
4			100	20	2,000	
5			1	500	500	
6			50	20	1,000	
7			50	10	500	
8			0	0	0	
						4,250
III						
1			0	0	0	
2			100	5	500	
3			1	500	500	
4			50	20	1,000	
5			50	20	1,000	
6			1	200	200	
7			140	10	1,400	
8			0	0	0	
9			0	0	0	
10			0	0	0	
11			0	0	0	
12			1	30,000	30,000	
13			1	200	200	34,600
14			1	2,000	2,000	
15			1	500	500	
16			0		0	
IV						
1						
2						

3						
4						
5						
6						
7						
8						
9						
				Sub-total		61,540
V						
1				12%	7,385	
2				8%	4,923	
3				2%	1,231	
4				5%	3,077	
5					200	
6					0	
7						
8						
9						
10						
11						
12					2,000	
13						
14						
					80,356	

REVIEW COMMENTS

FILE #85-93 **TITLE HEADING:** Subdivision Final Plat; Final Plan, Lot 1 - The Atrium of Grand Valley

LOCATION: SE corner of 12th Street & F 1/2 Road

PETITIONER: Hilltop Health Service Corp.

PETITIONER'S ADDRESS/TELEPHONE: 1100 Patterson Road
Grand Junction, CO 81506
244-6181 or 243-0456

PETITIONER'S REPRESENTATIVE: Pat Edwards/Sally Schaefer

STAFF REPRESENTATIVE: Kart Metzner

NOTE: WRITTEN RESPONSE BY THE PETITIONER TO THE REVIEW COMMENTS IS REQUIRED ON OR BEFORE 5:00 P.M., JULY 27, 1993.

U.S. WEST **7/8/93**
Leon Peach **244-4964**

For telephone cable distribution there needs to be availability of joint trench with electric company throughout project.

For entrances into buildings to telephone board there would need to be provision of entrance conduit by owner from service pedestal to TT board, also by owner.

CITY POLICE DEPARTMENT **7/15/93**
Martyn Currie **244-3563**

No comments.

UTE WATER **7/19/93**
Gary R. Mathews **242-7491**

Ute Water will supply this project. See Review File #42-93.

It will be necessary to run a separate domestic water line system. The water meter will be installed near 12th Street.

Polices and fees in effect at the time of application will apply.

COMMUNITY DEVELOPMENT DEPARTMENT **7/19/93**
Karl Metzner **244-1439**

As per the preliminary approval, street improvement requirements must be met at this phase of development. Additional parking area must be shown on plans. Open space fees to be required at time of building permit. Access road to the dam should be shown on the site plan.

GRAND VALLEY WATER USERS **7/19/93**
G.W. Klapwyk **242-5065**

Comments previously made by this office in mid-April 1993 (File #42-93) remain unchanged (copy attached). Thank you for the opportunity to comment.

GRAND JUNCTION FIRE DEPARTMENT **7/19/93**
George Bennett **244-1400**

The water line does not meet the City ordinance for length of dead end lines - a dead end line cannot be longer than 1,000 feet and must be 10 inches in diameter.

The maximum allowable distance between fire hydrants is 300 feet. The fire hydrants on the south and east sides of the building are to be moved to the opposite side of the parking lot and fire lane. The lane is to be marked so as to be visible during adverse conditions (i.e. snow).

The turnaround on the north side is not adequate - it needs to be a minimum of 40 feet outside of the 20 foot access road.

A fire flow survey is to be conducted to determine the required flows. Submit a complete set of building plans for our review. Provide written documentation that the flows can be met.

A review of the fire alarm and sprinkler system is required prior to their installation.

Have your contractors contact our department.

PUBLIC SERVICE COMPANY **7/20/93**
Dale Clawson **244-2695**

Electric & Gas: Same as previous comments.

CITY UTILITIES ENGINEER **7/20/93**
Bill Cheney **244-1590**

WATER - Ute Water

1. It may not be possible to obtain required flow for this type of development through a dead-end 8" line. Contact Fire Department for required flows.

SEWER - City/County

1. Show distance from right-of-way line and edge of pavement to sewer.
2. Show limits of construction in 12th Street.
3. Include construction specifications with plan submittal.
4. Does gas line extend only as far as southwest corner of the property??
5. Show pipe slope between MH #1 and MH #2.
6. Provide at least 0.1 feet fall across manholes when in line and 0.2 feet at angle points.
7. Sewer costs are low by approximately 1/3. Revise to reflect costs when items such as traffic control and vegetation are included.
8. Improvements agreement does not contain adequate amounts of "Aggregate Base Course" and "Pavement Replacement" for sewer installation.
9. Show cross section with edge of asphalt, shoulder, landscaping, other utilities and sewer line.

CITY DEVELOPMENT ENGINEER **7/21/93**
Gerald Williams **244-1591**

See attached comments red-lined text and red-lined drawings.

NICHOLS ASSOCIATES, INC.
751 Horizon Court, Suite #102
P.O. Box 60010
Grand Junction, Colorado 81506

THE ATRIUM OF GRAND VALLEY
Response to Review Comments
re: City of Grand junction Planning Department File No. 85-93

27 July, 1993

U. S. WEST

Trenches and conduits will be provided by developer at the time of construction.

UTE WATER

A separate domestic water line system is planned.

COMMUNITY DEVELOPMENT DEPARTMENT

The parking spaces required for 124 units is 62. The plan provides for 74; no additional parking is required. However, 2 additional handicap spaces have been added. The dam access road is being added to the site plan. The half street improvement for F1/2 Road will be provided as per the May 17, 1993 letter to the City Attorney.

GRAND JUNCTION FIRE DEPARTMENT

The fire protection system is being let to a design construct contractor. Complete plans and flow calculations will be reviewed with the Fire Department prior to construction.

The fire lane turn around dimensions are being revised on the Site Plan to accommodate Fire Department requirements.

SEWER-CITY/COUNTY

Items 1 through 6 are addressed on the revised Sewer Plan. The revised Improvements Agreement included additional quantities and costs as indicted in review comments 7 and 8. A cross section has been added to the sewer plan to address comment item number 9.

REVIEW BY GERALD WILLIAMS

Plat

Items 1, 4, and 5 have been addressed on the revised Filing Plat.

2 and 3. All interior utilities are private and easements are not required. However, an easement has been provided on the plat for the fire flow line for lots 1 and 2.

Site Plan

6. The man hole has been moved to a location which will not interfere with the footing for the retaining wall.

7. The 12" concrete pipe will be lowered 1.0 '.

8. Additional handicap stalls will be added to meet the total requirement of 6 spaces.

9. A concrete pad will be installed in front of the dumpsters

10. The turning radius for the food service area will be increased to 10 feet in order to accommodate the maneuvering of service trucks.

11. The developer is aware of possible future requirement for deceleration lanes.

12. 100 year ponding limits have been added to the Grading and Drainage Plan.

13. Water lines have been added to the drainage plan in areas where they may conflict with storm drains.

14. The turn-around layout has been modified.

GRADING PLAN

A new Grading and Drainage Plan will be submitted addressing items 15 through 24. This plan will include raising the building floor elevation by 2' and utilizing the fire lane as a storm water over flow for the south parking area.

25. The Army Corps 404 permit is in progress.

UTILITY PLAN

26. A storm drain has been added to the Utility Plan

27. The sewer line is private

28. The referenced manhole is a private manhole for use by building maintenance personnel.

29. A drop has been added to the man hole on the revised Sewer Plan and Profile.

30. The required note has been added to the sewer plan.

31. The finished floor level of the pump house has been raised to be 1' above the 100 year flood level.

32. See plat item 3.

SEWER LINE A

33. A drop has been added to the manhole.

34. The service line has been changed to an 8" line.

35. Notes 2 and 5 have been removed from the drawing.

36. The words "and replace" have been added to the note.

37. The following note has been added: "Utility poles shall be supported during the time of nearby trenching."

38. The pipe slope has been added to the Plan Profile Sheet.

39. The line is private and will be so identified on the drawing.

40 and 41. The sewer services and water line crossing details have been added to the plan.

42. The required information has been added to the Grading and Drainage Plan.

43 and 44. Revisions will be made to the Drainage Report.

13	Signs and other traffic control devices	Ea.	1	200	200
14	Construction staking	L.S.	1	2,000	2,000
15	Dust control	L.S.	1	500	500
16	Street lights (each)		0		0
IV	**LANDSCAPING**				
1	Design/Architecture				
2	Earthwork (includes top soil, fine grading, and berming				
3	Hardscape features (includes walls, fencing, and paving)				
4	Plant material and planting				
5	Irrigation system				
6	Other features (incl. statues, water displays, park equipment, and outdoor furniture				
7	Curbing				
8	Retaining walls and structures				
9	One year maintenance agreement				
V	**MISCELLANEOUS**				
1	Design/ Engineering	%		12%	15,534
2	Surveying	%		8%	10,356
3	Developer's inspection costs	%		2%	2,589
4	Quality control testing	%		5%	6,473
5	Construction traffic control				2,000
6	Rights-of-way/Easements				0
7	City inspection fees	%		0.2%	259
8	Permit fees				
9	Recording costs				
10	Bonds				
11	Newsletters				
12	General Construction Supervision				2,000
13	Other: As-built Drawings				1,000
14	Other_____				
	TOTAL ESTIMATED COST OF IMPROVEMENTS:				169,660

_____ _____

SIGNATURE OF DEVELOPER — DATE

(If corporation, to be signed by President and attested to by Secretary together with the corporate seals.)

I have reviewed the estimated costs and time schedule shown above and based on the plan layouts submitted to date and the current costs of construction, I take no exception to the above.

_____ _____

CITY ENGINEER — DATE

_____ _____

COMMUNITY DEVELOPMENT — DATE

IMPROVEMENTS LIST/DETAIL

DATE: 27 Jul 93

NAME OF DEVELOPMENT: The Atrium

LOCATION: 12th St. & F½ Road

PRINTED NAME OF PERSON PREPARING: TERRY NICHOLS

		Units	Total Quantity	Unit Price	Total Amount
I	**SANITARY SEWER**				
1	Clearing and grubbing		0	0	0
2	Cut and remove asphalt	S.Y.	500	5	2,500
3	PVC sanitary sewer main (incl. trenching, bedding, & backfill)	L.F.	1,016	25	25,400
4	Sewer Services (incl. trenching, bedding, & backfill)	Ea.	1	3,000	3,000
5	Sanitary sewer manhole (s)	Ea.	3	800	2,400
6	Connection to existing manhole (s)	Ea.	1	200	200
7	Aggregate Base Course	S.Y.	500	20	10,000
8	Pavement replacement	S.Y.	500	10	5,000
9	Driveway restoration	Ea.	2	200	400
10	Utility adjustments	Ea.	0	0	0
II	**DOMESTIC WATER**				
1	Clearing and grubbing	S.Y.	0	0	0
2	Cut and remove asphalt	Ea.	50	5	250
3	Water Main (incl. excavation, bedding, backfill, valves and appurtenances)		0	0	0
4	Water Services (incl. excavation, bedding, backfill, valves, and appurtenances)	C.Y.	1,600	20	32,000
5	Connect to existing water line	Ea.	1	500	500
6	Aggregate Base Course	C.Y.	500	20	10,000
7	Pavement Replacement		50	10	500
8	Utility adjustments		0	0	0
III	**STREETS**				
1	Clearing and grubbing		0	0	0
2	Earthwork, including excavation and embankment construction	C.Y.	100	5	500
3	Utility relocations	Ea.	1	500	500
4	Aggregate sub-base course (square yard)	S.Y.	50	20	1,000
5	Aggregate base course (square yard)		50	20	1,000
6	Sub-grade stabilization	Ea.	1	200	200
7	Asphalt or concrete pavement (square yard)	S.Y.	140	10	1,400
8	Curb, gutter & sidewalk (linear feet)	L.F.	0	0	0
9	Driveway sections (square yard)	S.Y.	0	0	0
10	Crosspans and fillets		0	0	0
11	Retaining walls/structures		0	0	0
12	Storm drainage system	L.S.	1	30,000	30,000

IMPROVEMENTS AGREEMENT

45 and 46. See the attached revised Improvements Agreement.

It is understood that the building permit will be on hold until completion of the redrafting of plans in accord with the review comments.

Regards,

Terry Nichols, P.E.

Pat Edwards
for the petitioner

STAFF REVIEW

FILE # 85-93

DATE: July 28, 1993

STAFF: Karl Metzner

REQUEST: Final Plan and plat for retirement center and two lot subdivision.

LOCATION: Southeast of 12th Street and F 1/2 road

APPLICANT: Hilltop

EXISTING LAND USE: Vacant

PROPOSED LAND USE: Retirement Center and Assisted Care Facility

SURROUNDING LAND USE:
NORTH: Residential
EAST: Vacant
SOUTH: Residential
WEST: Residential

EXISTING ZONING: Planned Residential

PROPOSED ZONING: N/A

SURROUNDING ZONING:
NORTH: RSF-4
EAST: RSF-4
SOUTH: RSF-4
WEST: Planned Residential (12 units per acre)

RELATIONSHIP TO COMPREHENSIVE PLAN/POLICIES/GUIDELINES: Request is consistant with the 12th Street Corridor Guidelines

STAFF ANALYSIS: The proposed Atrium at Grand Valley Retirement Center recieved zoning and outline development approval on 6/2/93. This request is for final approval on the two lot subdivision and phase one of the retirement center which consists of 104 retirement units and 20 assisted living units. Future phases will consist of 60 additional assisted care units and 14 detached garden apartment units. At the outline development phase the petitioners had requested deferring 1/2 streetimprovements for F 1/2 road to the next phase. This deferral was denied by City Council and all 1/2 street improvements will be required with this phase of development. The petitioner has adequately responded to all review agency comments.

STAFF RECOMMENDATION: Recommend approval of the final plan and plat subject to all staff and review agency comments.

file copy

STAFF REVIEW

FILE # 85-93

DATE: August, 1993

STAFF: Karl Metzner
ACTION REQUESTED: Council motion on an appeal of Planning Commission approval of a final development plan and final subdivision plat for The Atrium at Grand Valley, a 124 unit retirement center and assisted care facility.

LOCATION: Southeast of 12th Street and F 1/2 road

APPLICANT: Hilltop

EXECUTIVE SUMMARY: Dr. John W. Bull is appealing the Planning Commissions approval of a final plan and plat for a retirement center consisting of 102 retirement units and 20 assisted care units. This proposal is phase one of an approved outline development plan for a total of 116 retirement units and 80 assisted care units.

EXISTING LAND USE: Vacant

PROPOSED LAND USE: Retirement Center and Assisted Care Facility

SURROUNDING LAND USE:
NORTH: Residential
EAST: Vacant
SOUTH: Residential
WEST: Residential

EXISTING ZONING: Planned Residential

PROPOSED ZONING: N/A

SURROUNDING ZONING:
NORTH: RSF-4
EAST: RSF-4
SOUTH: RSF-4
WEST: Planned Residential (12 units per acre)

RELATIONSHIP TO COMPREHENSIVE PLAN/POLICIES/GUIDELINES: Request is consistant with the 12th Street Corridor Guidelines

STAFF ANALYSIS: The proposed Atrium at Grand Valley Retirement Center recieved zoning and outline development approval on 6/2/93. This request is for final approval on the two lot subdivision and phase one of the retirement center which consists of 104 retirement units and 20 assisted living units. Future phases will consist of 60 additional assisted care units and 14 detached garden apartment units. At the outline development phase the petitioners had

requested deferring 1/2 streetimprovements for F 1/2 road to the next phase. This deferral was denied by City Council and all 1/2 street improvements will be required with this phase of development. The petitioner has adequately responded to all review agency comments.

STAFF RECOMMENDATION: Recommend approval of the final plan and plat subject to all staff and review agency comments.

PLANNING COMMISSION ACTION: Planning Commission unanimously (5-0) approvad the final development plan and final plat subject to staff and review agency comments. Dr. Bull, a resident to the South of the proposed development, has appealed the Planning Commission decision. Testimony at the Planning Commission hearing indicated that Dr. Bull is opposed to the height of the building.

August 3, 1993

Grand Junction Planning Commission
City Auditorium
520 Rood Avenue
Grand Junction, CO 81501

Re: #85-93 FINAL PLAN - THE ATRIUM OF GRAND VALLEY SUBDIVISION

Dear Sirs:

The attached yellow sheets are copies of the public relations effort initial filing of the Atrium, which demonstrated deliberate misrepresentation of the intended construction and it's appearance.

Cross section A and B will not be visable from 12th Street, which is the high traffic street from which the building will be viewed. The elevation to average roof height is not a number which relates to the Grand Junction Zoning and Development Code. The elevation to the adjoining property line is not a number which relates to the Grand Junction Zoning and Development Code. The portion and percentage of the building which is shown in Site Section B is an insignificant segment which does not represent the building nor it's impact on the landscape.

Referring again to the yellow sheets, Site Section A is shown with reference numbers which are not the specification criteria in the Grand Junction Zoning and Development Code. Additionally the preliminary plans for the third floor do not extend onto that wing and therefore any numbers generated from that site must be seriously questioned. They probably do not represent the third story part of the building at all.

Now refer to the Final Plans on the pink page. Site Section A now represents the same cross section appearing to be over 250 feet now. A vast difference from the preliminary 75 foot cross section and not in agreement with the plans at all. Why is this?

Now view the white page which is prepared by Banner Associates of Grand Junction, Colorado and represents the proposed building as it will be seen from 12th Street. In cross section it is not 75 nor 250 feet long in appearance, it is approximately 345 feet North to South. This is approximately one foot ball field plus an end zone to the visual cross section as viewed from 12th Street. The actual height in the three story section is 41 feet 9 inches, not the 34 feet 5 1/2 inches reported at Site Section A. The actual height of the highest part of the building is 46.5 feet, which is 34% in excess of the Grand Junction City Zoning and Development Code RMF 64.

Now refer to the pink page regarding the face of the building. Not just the highest part on the building is in violation of the code, the entire main body of the building is 41 feet 9 inches tall, which exceeds both the residential code and the B1 business transition zone code. I only mention the B1 code to show that this building does not even comply with the next higher code requirement and certainly is a gross violation of the community standard for a residential area.

The physically awesome size of this building set near the crest of the hill is a serious breach of the residential community standard and the Grand Junction Zoning and Development code RMF 64, and additionally code B1.

It is such an imposing institutional structure as to change the neighborhood development and lower property values of adjacent residential lands. This is grossly unfair to the long established land owners in this developing residential area to change the zoning and character of the community by allowing violations of the code and community standards. The blue sheet demonstrates how this size building can fit in the 7th Street location, but is unacceptable in the 12th Street topography.

A separate issue from the physical size and height is the proposed lot split and building plans for future development. By basic math it is not possible to build the proposed addition of 60 units on the East as planned. That construction would raise the total to 184 units on Lot 1. Lot 1 at 6.21 acres allows the construction of 130 units as derived by multiplying the rezone of 21 units per acre by 6.21 acres.

Why then is there a proposed lot split at all? The lot split would in fact cancel the future expansion plan for this building in Lot 1. Why a lot split or subdivision? Could it be to leave Lot 2 un-landscaped, unimproved and a continuing visual detriment to the community? Could it be to leave the road easement and assessment to another lot?

Is it in the interest of future development to create this narrow strip of land which will continue to be a neglected sore spot in the 12th Street corridor into this city? Could the City be wise to give consent to creation of this problem zone by allowing it to be subdivided without a currently viable plan for it's use? Particularly, would it be wise to create Lot 1 with a proposed zone density of 29.6 units per acre if the addition was ever constructed? Such a change in density would consiutute a 41% excess violation of the newly allowed rezone of 21 units per acre.

I believe that I have shown such excess and violations and raised such important questions that the Planning Commission should refer the lot split and the final plans back to the planing staff until acceptable plans are presented which comply with the Grand Junction Zoning and Development Code.

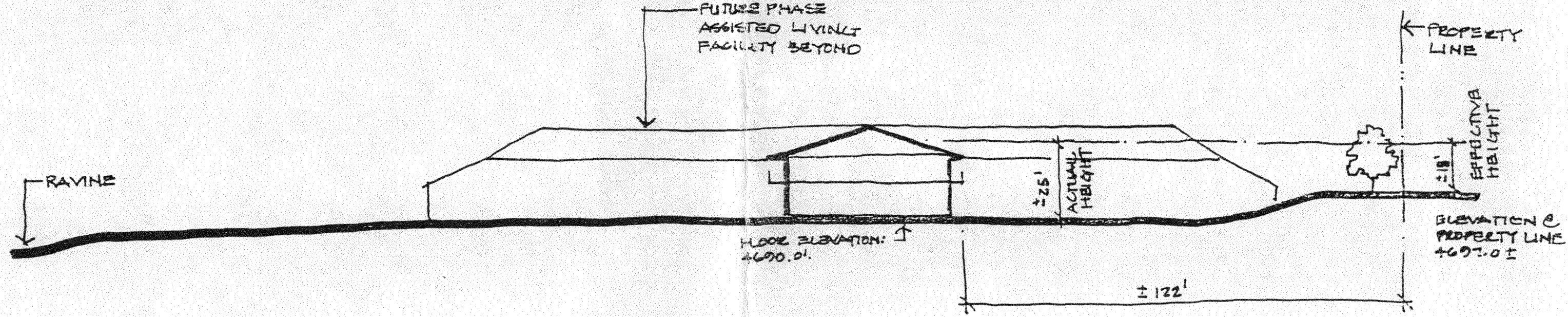
I would suggest to Colson & Colson that a lot split which leaves Lot 2 in a not for profit corporation ownership with all roadway requirements of the North boundary to be subtracted from an already fairly narrow split of the land will probably not be approved by the City. Furthermore, allowance of such a split would set up the transfer of units per acre from Lot 2 to Lot 1 for future construction of the proposed East addition to the main building. As those units are the planned assisted living units and represent the bulk of the legitimate interest of the Hill Top Hospital in this construction it should be very much in Hill Top's interest to know that these units can be constructed or know that units in the present plan can be utilized appropriately as assisted living units in sufficient number to justify Hill Top's interest.

I would further suggest that a two story plan using the East West dimensions of Lot 1 to greater advantage and allowance in the construction for assisted living are important issues in meeting the Grand Junction Zoning and Development Code as well as the legitimate interests of Hill Top Hospital as a partner with an interest in the bounds of it's tax exempt charter.

For the adjacent property owners, research and analysis by:

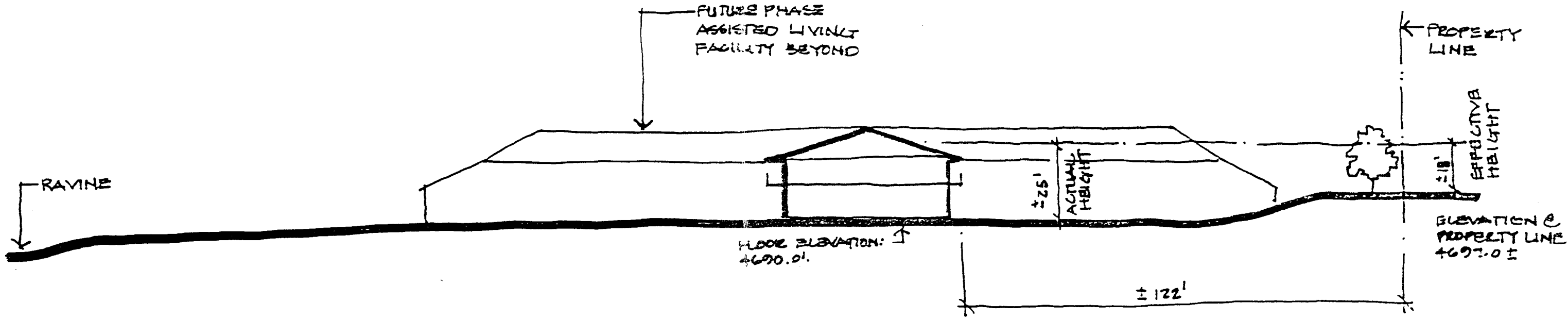
John W. Bull

John W. Bull



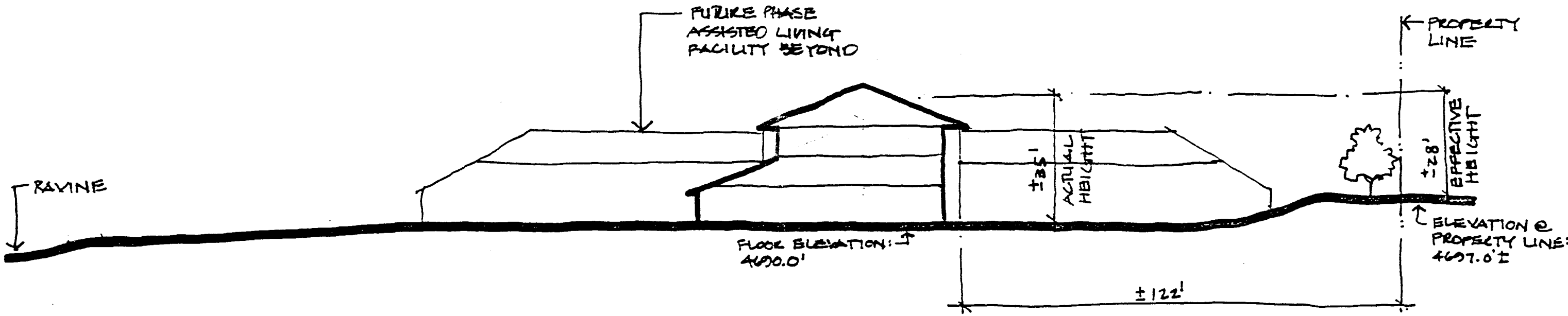
(B) SITE SECTION @ TWO STORY BUILDING

SCALE: 1"=30'-0"



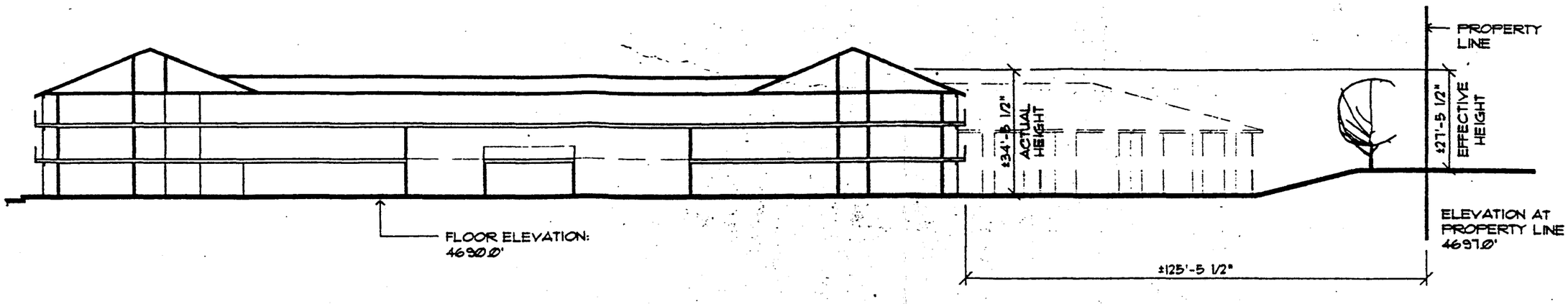
(B) SITE SECTION @ TWO STORY BUILDING

SCALE: 1"=30'-0"



Ⓐ SITE SECTION @ THREE STORY BUILDING

SCALE: 1"=30'-0"



A SITE SECTION AT THREE STORY BUILDING

SCALE: 1"=30'-0"

Curry•Brandaw Architects

471 High Street Southeast
Salem, Oregon 97301

503/399-1090 Fax 399-0565

HRC

HOLIDAY RETIREMENT CORP.

2741 12TH STREET SE P.O. BOX 14111
SALEM, OREGON 97302 SALEM, OR. 97309

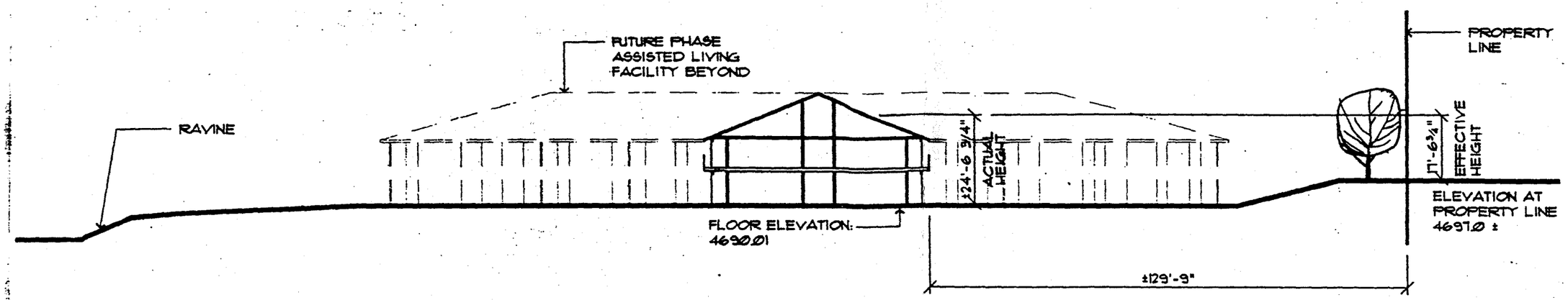
PHONE **(503) 370-7070**

COLSON COLSON
CONSTRUCTION

HILLTOP HEALTH S

1100 PATTERSON ROAD
GRAND JUNCTION, CO. 81506

PHONE **(303) 242-8980**



B SITE SECTION AND TWO STORY BUILDING

SCALE: 1"=30'-0"

ERVICES CORP.

THE ATRIUM
GRAND VALLEY
RETIREMENT VILLAGE

GRAND JUNCTION, COLORADO

Question on base elevation
confirm.

Original
Do NOT Remove
From Office

#85 93

(2)

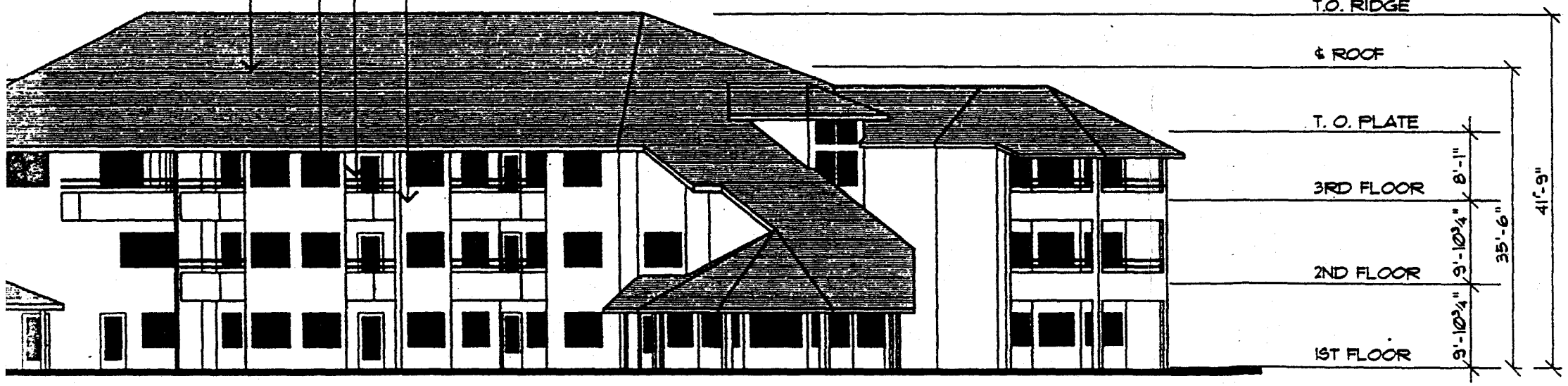
TYPICAL MATERIALS:

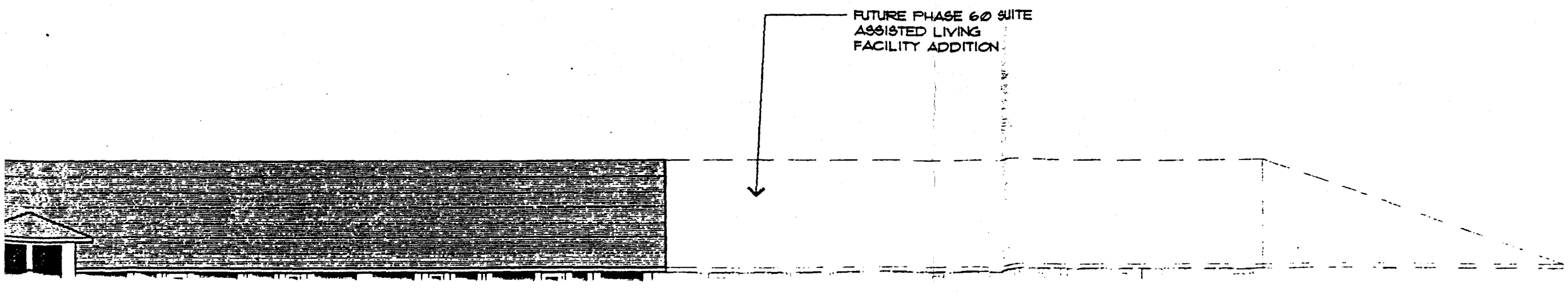
ASPHALT COMP. SHINGLE ROOFING

VINYL WINDOWS

METAL RAILING

STUCCO SIDING





12th STREET

EXISTING GRADE

FINISHED GRADE

46.5'*

41.9'*

39.8'*

F.F. ELEV. 4690.00

* DIMENSIONS SCALED FROM ARCHITECTURAL ELEVATION DRAWINGS

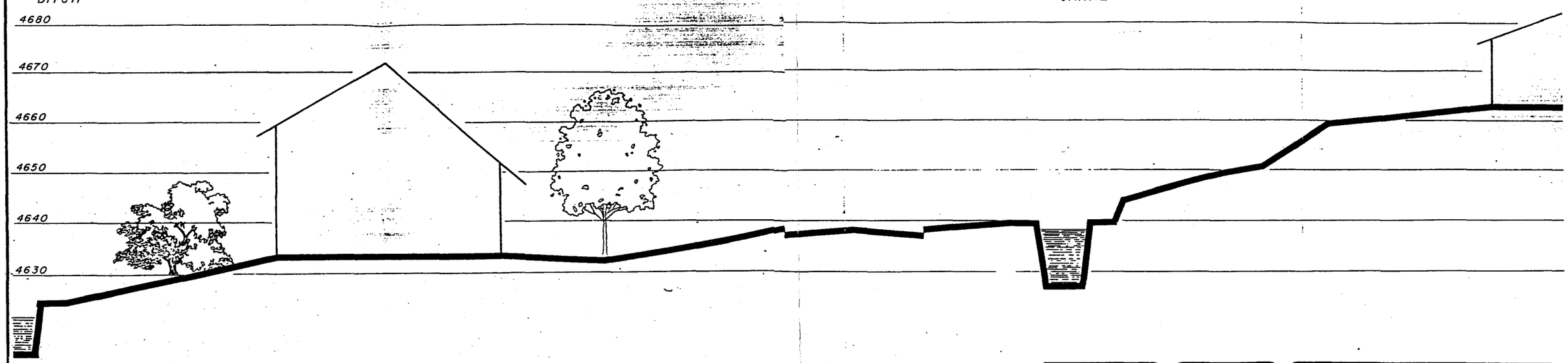
4686.0 4682.3 4679.5 4682.5 4684.8 4686.9 4689.1 4691.4 4693.5 4694.0 4694.6 4695.2 4695.7 4696.0 4696.0 4696.0 4696.5

RANCHMAN'S DITCH

MESA VIEW RETIREMENT RESIDENCE

HORIZON PLACE

GRAND VALLEY CANAL



THOMAS A. LOGUE
LAND DEVELOPMENT CONSULTANT
2764 CROSSROADS BLVD - SUITE 208 GRAND JUNCTION CO 81501
(303) 243-8196

CITY OF GRAND JUNCTION DEVELOPMENT FILE 85-93, HILLTOP MINOR SUBDIVISION-THE ATRIUM OF GRAND VALLEY LOCATED SOUTHEAST OF 12TH STREET AND F-1/2 ROAD, IN THE CITY OF GRAND JUNCTION HAS BEEN REVIEWED AND APPROVED BY THE UTILITY COORDINATING COMMITTEE.

Gary R. Matthews
CHAIRMAN

8-11-93
DATE

CITY OF GRAND JUNCTION DEVELOPMENT FILE 42-93, HILLTOP MINOR SUBDIVISION LOCATED AT THE SOUTH-EAST CORNER OF F 1/2 ROAD AND 12TH STREET IN THE CITY OF GRAND JUNCTION, HAS BEEN REVIEWED AND APPROVED BY THE UTILITY COORDINATING COMMITTEE.

Gary R. Matthews — 10-13-93

CHAIRMAN — DATE

Public Service Dale Clawson — 10/14/93
Easements on Lot 2 will be provided at time of Final Design For Lot 2. D.C.

City Utility ~~Manager~~ Engineer Bill Cleaver — 10-19-93

COLDWELL BANKER

HOME OWNERS
REALTY, INC.

P.O. BOX 3117
2499 HWY 6 & 50
GRAND JUNCTION, CO 81505
BUS. (303) 243-0456
FAX (303) 243-2896

August 16, 1993

Mr. Karl Metzner
Community Development Department
City of Grand Junction
5th and Rood
Grand Junction, CO 81501

RE: The Atrium File #85-93

Hand Delivered

Dear Mr. Metzner:

As discussed in our last telephone conversation, Hilltop acquired the "Johnson Property" on August 12, 1993. The "Johnson Property" adjoins the "Atrium Property" at its southeast corner. Ownership of the "Johnson property" allows sewer service from the cul-de-sac at the end of North 13th, subject only to obtaining utility easements from either the Bull or Peterson property. Therefore, the "Atrium petitioners" will maintain the building finish floor at the 4690' elevation, subject only to obtaining the easements described above.

Representatives of Hilltop have met with both the Bulls and Petersons to discuss sewer extensions, building elevation, etc. Both Bull and Peterson have indicated their willingness to provide the required utility easements. In summary, the "Atrium" will maintain the finish floor elevation of 4690' as originally presented subject to obtaining necessary and equitable easements from either Bull or Peterson.

Sincerely,

Pat Edwards

PE:bn

August 19, 1993

RECEIVED
AUG 19 1993

Grand Junction City Council
250 N. 5th St.
Grand Junction, Co. 81501

Re: PFP-93-93 Final Plan - The Alcove of Grand Valley Subdivision

Dear Sirs:

Construction of angled structures on N. 12th St. appears to be a viable project needed by the people of Grand Junction and Mesa County.

However the statistics of the project such as height, elevation, overall sizing and orientation of the buildings are somewhat vague. Consequently the City Council charged with approving such a variance should demand specific limitations to be more specific and that specifications meet city zoning and development code limitations.

Thank you

Arnold L. Hetland
3090 N. 12th St.
Grand Junction, Co.
81506

HILLTOP
HEALTH SERVICES CORPORATION

October 20, 1993

Mr. Karl Metzner
City Planning Department
550 Rood Avenue
Grand Junction, Colorado 81501

RE: Improvement Agreement
Hilltop Minor Sub/Atrium of Grand Valley

Dear Mr. Metzner,

All improvements on the above project to include one-half street improvement to North 12th Street, one-half street improvements to F1/2 Road, sewer extension, grading and drainage, etc are hereby financially guaranteed by Hilltop Health Services Corporation.

The cost of the above items are included in our construction loan with Norwest Bank who will issue a set-aside letter covering the same once all the cost are agreed to and upon closing of our construction loan on October 25, 1993.

The final detailed costs of the above improvements are still in process pending finalization of sewer line easements, review by the City of final grading and drainage plans, improvements agreement, etc.

Please accept this letter of guarantee until such time as the improvements agreement and costs are finalized and the construction loan with Norwest Bank is finalized.

As you are aware, closing of the construction loan requires recording of the plat ~~and~~ ON the subject property.

Sincerely,

HILLTOP HEALTH SERVICES CORPORATION

Thomas D. Piper

Thomas D. Piper
Chief Financial Officer

TDP:kh

1100 Patterson Road • Grand Junction, CO 81506 • 303-242-8980 • FAX 303-244-6035

HILLTOP
HEALTH SERVICES CORPORATION

MEMORANDUM

DATE: October 20, 1993

TO: City Planning Department

FROM: Sally Schaefer SS

RE: Assessment of Open Space Fees

Thank you for your additional consideration of our request to re-assess the open space fees. Based on the latest formula, this is how I came up with our final number:

•2 Manager Apartments @ $225/each = $450

•Number of bedrooms:

60 Studios = 60
51 - 1-bedroom = 51
11 - 2-bedroom = 22
133 total Bedrooms

133 ÷ 2.5 = 53.2 x $225 = 11,970
(mgrs) +450
$12,240

This comprises the Phase 1 Units
104 Retirement
20 Assisted

1100 Patterson Road • Grand Junction, CO 81506 • 303-242-8980 • FAX 303-244-6035

TREASURER'S RECEIPT
CITY OF GRAND JUNCTION, COLORADO

60737

Date 12-20-93

Received of Hilltop Foundation

Total 12,24

ORG	OBJECT	PROJECT	ACCOUNT TITLE/INVOICE #	AMOUNT
15490	45306		file #42-93 open space fee	

OCT 1993
PAID

Customer # _____

FINANCE DIRECTOR by M.R.

PARKS AND RECREATION DEPARTMENT
City of Grand Junction
1340 Gunnison Avenue
Grand Junction, CO 81501
(303) 244-FUNN • FAX (303) 242-1637

File No. 42-93

Proposal: The Atrium / Hilltop Manor Sub.

Location: 12th & F½

Engineer/Representative: Pat Edwards

Petitioner: Calvin's Cabinets

Address: P.O. Box 14111 Salem, OR

Phone No.: (503) 370-7070

Fee Calculation: 133-2.5 (53.2) = 225

2 Units at $ 225 /unit = $ 12,240

_____ Appraised Value At _____ % = $ _____

Amount Paid$ 12,240 Date 10/12/93 Initials KCLLC

cc: Petitioner – Community Development – File (2)

account 15490-45306

HILLTOP FOUNDATION INC. · GRAND JUNCTION, CO

No. 11478

10-20-93	OPEN SPACE FEE	12,240.00

12,240.00

SUBSURFACE SOILS EXPLORATION

The Atrium At Grand Valley

Grand Junction, Colorado

Prepared For:

Colson & Colson Construction
P.O. Box 14111
Salem, Oregon 97301

Prepared By:

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

November 19, 1993

Lincoln DeVore, Inc.
Geotechnical Consultants
1441 Motor St.
Grand Junction, CO 81505

TEL: (303) 242-8968
FAX: (303) 242-1561

November 19, 1993

Colson & Colson Construction
P.O. Box 14111
Salem, Oregon 97301-2511

Re: SUBSURFACE SOILS EXPLORATION

The Atrium At Grand Valley

Grand Junction, CO

Dear Sir:

Transmitted herein are the results of a Subsurface Soils Exploration for the proposed Retirement Residence and Assisted Living Facility and Individual Cottages.

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

Edward M. Morris, E.I.T.
Western Slope Branch Manager
Grand Junction, Office

Reviewed by: _____
George D. Morris, P.E.
Colorado Springs Office

LDTL Job #79424-J

EMM/ss

TABLE OF CONTENTS

INTRODUCTION

PROJECT DESCRIPTION

This report presents the results of our geotechnical evaluation performed to determine the general sub-surface conditions of the site applicable to construction of a 2 and 3 story, 124 suite retirement residence and assisted living facility on the South side of the ravine and 14 single-story cottage units on the North side of the ravine. A vicinity map is included in the Appendix of this report.

To assist in our exploration, we were provided with a site plan, grading and drainage plan and schematics of the proposed structures. The Boring Location Plan attached to this report is based on that plan provided to us.

We understand that the proposed 124 suite structure will consist of a 2 and 3 story, wood framed structure with either a structural wood floor over a crawl space or a concrete floor slab on grade. The 14 cottage units will consist of single-story, wood framed structures with either a structural floor over a crawl space or a concrete floor slab on grade. Lincoln DeVore has not seen a full set of building plans, but structures of this type typically develop wall loads on the order of 2000 to 3500 plf and column loads on the order of 30 to 80 kips for the 2 and 3 story structures. The single-story cottage unit structure would typically develop wall loads on the order of 600 to 1200 plf and column loads on the order of 3 to 8 kips.

The characteristics of the subsurface materials encountered were evaluated with regard to the type of construction described above. Recommendations are included herein to match the described construction to the soil characteristics found. The information contained herein may or may not be valid for other purposes. If the proposed site use is changed or types of construction proposed, other than noted herein, Lincoln DeVore should be contacted to determine if the information in this report can be used for the new construction without further field evaluations.

PROJECT SCOPE

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

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 construction difficulties and provide recommendations concerning these problems.

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

FIELD EXPLORATION AND LABORATORY TESTING

A field evaluation was performed on November 1 & 2, 1993, and consisted of a site reconnaissance by our geotechnical personnel and the drilling of 12 exploration shallow exploration borings. These shallow exploration borings were drilled within the proposed building locations near the locations indicated on the Boring Location Plan. The exploration borings were located to obtain a reasonably good profile of the subsurface soil conditions. All exploration borings were drilled using a CME 45B, truck mounted drill rig with continuous flight auger to depths of approximately 8 to 23 feet. Samples were taken with a standard split spoon sampler, California lined sampler, thin wall 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 Northwest Quarter of the Northwest Quarter of the Southwest Quarter, of Section 1, Township 1 South, Range 1 West of the Ute Principal Meridian, Mesa County, Colorado. More specifically the site is located approximately 2 miles North of the downtown business district of Grand Junction and is bounded on the North by F-1/2 Road and on the West by North 12th Street. The tract is located within the city limits of Grand Junction, Colorado.

The topography of the site is somewhat variable, with a well defined ravine which runs from East to West and splits the property with approximately 1/3 of the property located North of the ravine and 2/3 located South of the ravine. The direction of drainage run off on this site is quite variable with the North 1/3 draining toward the South and the Southern 2/3 draining toward the North. The ravine drains from the East to the West. An existing pond is located within the ravine, at the West side of the property.

Slope gradients on the site range from less than 2% on the higher portions of the Southern portion of the tract to as high as 40% at the banks immediately adjacent to the ravine. Extensive cut and fill is planned on the Southern portion of the tract, which will significantly change the existing drainage patterns. The exact direction of surface run off on this site will be controlled by the proposed structure and therefore will be variable. In general, surface run off is expected

to travel toward the ravine, eventually entering the natural drainage along the extension of Horizon Drive and into the Colorado River. Surface and subsurface drainage on this site would be described as fair to good.

On-site erosion can be a significant problem if drainage and vegetation are not carefully controlled. Vegetation will probably be maintained in the immediate area around the building sites, but special care should be taken to maintain vegetation on the steeper slopes near the ravine. We recommend that runoff from these slopes be carefully controlled to prevent erosion caused by irrigation practices, sheetwash or seepage. It may be necessary to provide culverts or drainage ways to prevent excessive erosion along steeper slopes.

GENERAL GEOLOGY AND SUBSURFACE DESCRIPTION

The geologic materials encountered under the site consist of 9-1/2 to 23 feet of alluvial, debris flow deposits which overly the Mancos Shale Formation. The geologic and engineering properties of the materials found in our 12 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 originate 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 considered to be within 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 low.

Inspection of the enclosed drilling logs reveal the surface soils are extremely stratified and variable as to composition and density. The upper alluvial soils, designated Soil Types I, II & III in this report, contain variable amounts of soluable Sulfate Salts, much of which is in place an Evaporative Caliche. Large quantities of Sulfate Salts in soil exhibit variable strength, depending upon surrounding moisture conditions and their chemistry as related to water.

Sulfate Salts are soluble and may be physically removed from the soil by ground moisture conditions. Such removal may leave significant amounts of void areas within the soil, which may affect the load bearing capacity of the soil. In addition, large quantities of Sulfate Salts can have a detrimental effect on soil compaction efforts. Some of the soils with large amounts of Sulfate Salts may not be judged suitable for

structural fill material. The on site soils encountered in our subsurface exploration are described in the following paragraphs.

Soil Type I is an alluvial soil which is quite sandy and contains gravel sized fragments of sandstone, siltstone and mudstone. It is anticipated this soil type will be utilized for most of the structural fill material to be placed on the Southern portion of the tract.

Soil Type I was classified as a gravely, silty sand (SM) under the Unified Classification System. This material is non-plastic, with some strata of low plastic silty clays, of low to moderate permeability, and was encountered in a low density, slightly moist to moist condition. If this soil is found in a relatively dry condition, it may undergo very 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 1500 psf maximum, with 150 psf minimum dead load pressure required. The finer grained portion of Soil Type I contains sulfates in detrimental quantities.

Soil Type II was encountered across the site and is anticipated to be utilized beneath many of the paved sections on the tract. This soil type is also very similar to the fine grain portion of Soil Types I and III of this report.

This Soil Type is classified as a very

silty sand (SM) of fine grain size under the Unified Classification System. This soil type is non-plastic and of low density. This soil will have virtually no tendency to expand upon the addition of moisture. Settlement will be minimal under the recommended foundation loads. This soil will undergo elastic settlement upon application of static foundation pressures. Such settlement is characteristically rapid and should be virtually complete by the end of construction. If the recommended allowable bearing values are not exceeded, and if all other recommendations are followed, differential movement will be within tolerable limits. At shallow foundation depths this soil was found to have an average allowable bearing capacity of 1500 psf.

Soil Type III is quite similar to Soil Type I but generally contains greater amounts of gravel sized fragments and may include strata of cobble and boulder sized sandstone, siltstone and mudstone fragments. It is not unusual to encounter very low density matrix material within the strata containing cobble and boulder sized fragments.

Soil Type III was classified as a gravely, silty sand (SM) under the Unified Classification System. This classification is based upon the samples recovered during the exploration program. The samplers utilized could not obtain any samples greater than 1-1/2 to 2-1/2 inches maximum. This material is of low plasticity with many strata of non-plastic finds, of low to moderate permeability, with some strata of high to very high permeability and was encountered in a low density, slightly moist to wet condition. This soil will undergo long-term

consolidation upon the addition of building loads and/or large amounts of moisture. The maximum allowable bearing capacity for this soil was found to be 1500 psf maximum over the majority of the site, with 150 psf minimum dead load pressure required. The finer grained portion of Soil Type No. III sulfates in detrimental quantities.

The surface soils are deposited over the weathered, dense formational material of the Mancos Shale Formation of Cretaceous age. The Mancos Shale is described as a thinbedded, drab, light to dark gray marine shale, with thinly interbedded fine grain sandstone and 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. Formational shale was encountered in the majority of the Test Borings at depths of ranging from 9-1/2 to 23 feet below the existing ground surface. It is anticipated that this formational shale will not affect the construction and the performance of shallow foundations placed on the site. This opinion is based upon the client-supplied grading and drainage plan dated June 29, 1993 for foundation elevations.

The soils of the weathered Mancos Shale Formation have been designated Soil Type IV for this report. This soil type was classified as a silty clay (ML/CL) under the Unified Classification System. The Standard Penetration Tests ranged from 46 blows per foot to over 100 blows per foot. Penetration tests of this magnitude indicate that the soil is

somewhat variable and of medium high to high density. The moisture content varied from 6.4% to 14.6%, 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 desiccation. Upon increasing moisture, it will tend to expand. Expansion tests were performed on typical samples of the soil and expansive pressures on the order of 900 to 1500 psf were found to be typical. The allowable maximum bearing value was found to be on the order of 5500 psf. A minimum dead load of 1800 psf will be required. These bearing values assume a shallow foundation system. This soil was found to contain sulfates in detrimental quantities.

The Mancos Shale Formation is often highly fractured, with fillings of soluble sulfate salts being very common. The samples obtained in this drilling program indicated virtually all fractured faces and some bedding planes in the upper 10 feet of the shale contain sulfate salt deposits. Some seams of sulfate salts up to 1/8 inch thick were observed.

Many of the fractures in the Mancos Shale Formation are open, allowing the rapid transmission of water to occur. Some sandstone and siltstone strata within the Mancos Shale Formation also exhibit elevated permeability.

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

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

GROUND WATER:

A free water table came to equilibrium during drilling, primarily along the ravine and on the North side of the ravine. This is probably not a true phreatic surface but is an accumulation of subsurface seepage moisture (perched water). In our opinion the subsurface water conditions shown are a permanent feature on this site. The depth to free water would be subject to fluctuation, depending upon external environmental effects.

The free water encountered in the exploration program appears to be the result of off-site irrigation practices to the North and East of the tract. The subsurface water is accumulating along the ravine, on the surface of the weathered Mancos Shale Formation. The surface of the Mancos Shale was found to have approximately the same general shape as the existing ground surface, indicating a buried ravine on this site. The presence of significant layers of soluble sulfate salts in the exploration borings on the South side of the tract indicate a perched water table has been formerly present in this area, probably associated with on-site irrigation practices.

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 Formation is quite variable with some relatively flat portions and that subsurface drainage would probably be

quite slow in some areas.

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 tnat several years after development is initiated, a troublesome perched water condition may develop which will provide construction difficulties. In addition, this potential perched water could create some problems for existing or future foundations on this tract. Therefore it is recommended that the future presence of a perched water table be considered in all design and construction of both the proposed residential structures and any subdivision improvements.

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

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

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

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 existing wet soils and ground water near the ravine and the variability of the alluvial soil density and composition.

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

OPEN FOUNDATION OBSERVATION

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

proposed foundations are similar to those encountered in our exploration borings. If the materials below the proposed 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.

STRUCTURAL FILL

PREPARATION OF AREAS TO RECEIVE FILL

Areas where excavation or fill is required shall be cleared of trees, stumps, roots, brush, sod, topsoil, vegetation and other objectionable materials to minimum depth of six (6) inches, or sufficient to remove all detrimentally organic material. The cleared materials, other than those materials suitable for topsoil, shall be legally disposed of.

Any abandoned, buried structures encountered during grading operations shall be totally removed or otherwise rendered harmless for the proposed purposes of the fill, unless other specific recommendations have been provided. All underground utilities to be abandoned beneath any proposed structure shall be removed from within 10 feet of any structures and properly capped. The resulting depressions from the above described procedures shall be backfilled with soil uniformly compacted in accordance with the recommendations in the body of this report. This includes, but is not limited to, septic tanks, fuel tanks, sewer lines or leach lines, storm drains and water lines. Any buried structures or utilities not to be abandoned shall be investigated by the Geotechnical Engineer to determine if any special recommendation will be necessary.

All water wells which will be abandoned shall be backfilled and capped in accordance with the requirements of the Health Department. The top of the cap should be at least 4 feet below finished grade or 3 feet below the bottom of footing, whichever is greater. The type of cap will depend on

the diameter of the well and shall be determined by the Geotechnical Engineer and/or a qualified Structural Engineer

FILL MATERIAL

It is anticipated the majority of on-site soils from cut areas may be utilized for structural fill material. Materials placed in the fill shall be approved by the Geotechnical Engineer and shall be free of vegetable matter, frozen material, and other deleterious substances. No material over 6 inches in maximum dimension shall be placed in fill unless special recommendations are provided by the Geotechnical Engineer. Granular soil shall contain sufficient fine material to fill enough voids to provide a stable fill. The definition and disposition of oversized rocks, expansive and/or detrimental soils are given in the site soils report. Expansive soils, soils of poor gradation, or soils with low strength characteristics may be thoroughly mixed with other soils only if specific recommendations have been provided by the Geotechnical Engineer. Any import material shall be approved by the Geotechnical Engineer before being brought to the site.

PLACING AND COMPACTING FILL

After clearing or benching, the natural ground in areas to be filled shall be observed by the Geotechnical Engineer to determine the presence of any adverse unanticipated conditions. The area shall then be scarified to a depth of 6 inches, cleared of oversized material, brought to the proper moisture content, compacted and tested.

The distribution of the material in the fill shall be such as to avoid the formation of lenses, or layers

of material differing substantially in characteristics from the surrounding material. The materials shall be delivered to the fill surface at a uniform rate and in such quantity as to permit a satisfactory construction procedure. Unnecessary concentration of travel tending to cause ruts and uneven compaction shall be avoided. Before placing each successive layer, all ruts and other hollows more than six (6) inches in depth shall be regraded and compacted. Fill material shall be spread by approved methods in approximately horizontal lifts. These lifts shall not be greater than eight (8) inches in thickness after compaction. Thicker lifts may be used only if it can be demonstrated adequately in the field, by a test section, that uniform compaction can be achieved. The material in each layer, while being compacted, shall be at approximately optimum moisture content, as determined by the Geotechnical Engineer's field representative.

As moisture is added to the material in each layer, it shall be thoroughly mixed into the layer by suitable equipment prior to compaction. Water shall be delivered to the soil by means of a spreader bar which distributes the water approximately uniformly over the fill area. If, in the opinion of the Geotechnical Engineer, the moisture content cannot be uniformly obtained by adding water on the fill surface, the moisture shall be added in the borrow excavation. Water used during earthwork shall be obtained in accordance with the provisions of the regulations of the agency governing the use of water and water meters. When the moisture content and condition of each spread layer is satisfactory, it shall be compacted by an

approved method to the recommended relative compaction based on the appropriate laboratory test.

SLOPE COMPACTION

When the slope of the natural ground receiving fill exceeds 20% (5 horizontal units to 1 vertical unit), the original ground shall be stepped or benched. Benches shall be cut to firm, competent soil. The lower bench shall be at least 10 feet wide or 1 1/2 times the equipment width, whichever is greater, and shall be sloped back into the hillside at a gradient of not less than two (2) percent. All other benches shall be at least 6 feet wide. The horizontal portion of each bench shall be compacted prior to receiving fill as previously recommended for compacted natural ground. Ground slopes flatter than 20% shall be benched when considered necessary by the Geotechnical Engineer.

Fill slopes shall be compacted by approved equipment to the relative compaction specified in the Geotechnical Report. Compacting the slope surface may be done progressively in increments of three to five feet in fill height or after the fill is brought to its total height. The interior shall be compacted by the "horizontal" methods previously outlined. Slopes having a horizontal to vertical ratio steeper than 2:1 shall be overfilled by at least 5 feet and then cut back to the desired slope ratio.

CUT SLOPES

The Geotechnical Engineer will observe all cut slopes during the grading operations at intervals determined at his discretion. If any conditions not anticipated in

the geotechnical report, including but not limited to; perched water, seepage, lenticular or confined strata of a potentially adverse nature, unfavorably inclined bedding, joints or fault planes are encountered during grading, these conditions shall be analyzed by the Geotechnical Engineer to determine if mitigating measures are necessary.

DENSITY TESTS

Field density tests shall be made by the representative of the Geotechnical Engineer. The location and frequency of the tests shall be at the Geotechnical Engineer's discretion. In general, the density tests shall be made at an interval not exceeding two feet in vertical rise and/or 500 cubic yards of embankment. If any density test indicates any part of the layer does not meet the required density, that portion of the layer shall be reworked until the required density is obtained. The Geotechnical Engineer will provide a final completion report on the fill work.

SEASONAL LIMITS

No fill shall be placed, spread or rolled while it is frozen or thawing or during other unfavorable weather conditions. When the work is interrupted by heavy rain, fill operations shall not be resumed until the Geotechnical Engineer indicates that the moisture content and density of the previously placed fill are as specified. Fill surfaces shall be scarified and recompacted after rainfall, if necessary, to obtain the proper moisture content and density within the cover layer at the time of the rain.

No major difficulties are anticipated in the course of excavating into the surficial soils on the site. It is probable that safety provisions such as sloping or bracing the sides of excavations over 4 feet deep will be necessary. Any such safety provisions shall conform to reasonable industry safety practices and to applicable OSHA regulations. The OSHA Classification for excavation purposes on this site is Soil Class B for excavations which extend no deeper than elevation 4685, on the South side of the ravine. All other areas on the tract would utilize the OSHA classification for excavation purposes as Soil Class C, due to potentially very moist to saturated soils.

CUT AREAS BENEATH STRUCTURES

Due to the variability of the soil consistency and texture on this site, we recommend the cut areas on the Southern portion of the tract, which will be utilized for foundation bearing beneath the 2 and 3 story structure be overexcavated a minimum of 3 feet beneath heavily loaded areas and 2 feet for relatively lightly loaded areas and structural fill be placed in conformance with the preceding recommendations in this report. The purpose of this overexcavation/replacement scheme is to ensure that low density, potentially metastable strata immediately beneath the foundation are removed and replaced with a compacted material capable of supporting the structure. In addition, problems associated with a portion of the structure being founded upon variable amounts of structural fill and other portions of the structure being founded on non-reworked native soil will be minimized.

For purposes of this report, the general definition of deleterious substances which may not be placed within the fill would include large amounts of soluble sulfate salts, locally referred to as alkali. The large amounts of soluble sulfate salts encountered in various strata, are associated with ancient and relatively recent ground water elevations. Soluble sulfate salts in soils may result in conditions of difficulty in obtaining proper optimum soil moisture and final compaction within structural fills. In addition, since these are soluble materials, future soil softening or material removal may occur in the future due to unpredicted soil moisture conditions. Such soil softening or removal of the sulfate salts may cause building or site improvement settlements.

DRAINAGE AND GRADIENT:

Adequate site drainage should be provided in the foundation area both during and after construction to prevent the ponding of water and the saturation of the subsurface soils. We recommend that the ground surface around the structure be graded so that surface water will be carried quickly away from the building. The minimum gradient within 10 feet of the building will depend on surface landscaping. We recommend that paved areas maintain a minimum gradient of 2%, and that landscaped areas maintain a minimum gradient of 8%. It is further recommended that roof drain downspouts be carried across all backfilled areas and discharged at least 10 feet away from the structure. Proper discharge of roof drain downspouts may require the use subsurface piping in some areas. Planters, if any, should be so constructed

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

If adequate surface drainage cannot be maintained, or if subsurface seepage is encountered during excavation for foundation construction, a full perimeter drain is recommended for these buildings. It is recommended that this drain consist of a perforated drain pipe and a gravel collector, the whole being fully wrapped in a geotextile filter fabric. We recommend that this drain be constructed with a gravity outlet. Under no circumstances should 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 buildings. 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 review the final 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 buildings and in utility trenches in the vicinity of the buildings be compacted to a minimum of 85% of its maximum Proctor dry density, ASTM D 698. The native soils on this site may be used for such backfill. We recommend that all backfill be compacted using mechanical methods. No water flooding techniques of any type may be used in placement of fill on this site.

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

The slope areas immediately adjacent to the existing ravine drainage can be considered potentially unstable due to the threat of ongoing erosion and the placement of large fills immediately adjacent to the ravine. We recommend the proposed fills on the South side of the ravine be specifically investigated utilizing laboratory analysis of the shear strength and stability of the soils with the proposed building load. Using the information available to Lincoln-DeVore at this time, it is believed the proposed structural fill will be stable, however the underlying native soils may be subject to settlement and shear failure due to the applied load of the structural fill and building. The effects of elevated soil moisture due to future on site irrigation practices, new drainage patterns and elevated free water in the ravine during periods of storm water detention be considered in this analysis. Construction of specific retaining structures may be required in some areas, due to the difficult construction conditions which may be encountered in the ravine area due to elevated soil moisture and free water in the soil section.

FOUNDATIONS

Assuming that some amount of differential movement can be tolerated, then a conventional shallow foundation system, underlain by structural fill placed in accordance with the recommendations contained within this report may be utilized. The foundation would consist of continuous spread footings beneath all bearing walls and isolated spread footings beneath all columns and other points of concentrated load. Such a shallow foundation system, resting on the properly constructed structural fill, may be designed on the basis of an allowable bearing capacity of 3000 psf maximum. Recommendations pertaining to balancing, reinforcing, drainage, and inspection are considered extremely important and must be followed. Contact stresses beneath all continuous walls should be balanced to within + or - 300 psf at all points. Isolated interior column footings should be designed for contact stresses of about 200 psf less than the average used to balance the continuous walls. The criteria for balancing will depend somewhat on the nature of the structure. Single-story, slab-on-grade structures may be balanced on the basis of dead load only. Multi story structures may be balanced on the basis of dead load plus one half live load, for up to and including three stories.

Stem walls for a shallow foundation system should be designed as grade beams capable of spanning at least 14 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 variations in soil density and consistency beneath the structural fill.

SETTLEMENT:

We anticipate that total and/or differential settlements for the proposed structures may be considered to be within tolerable limits, provided the recommendations presented in this report are fully complied with. In general, we expect total settlements for the proposed structure to be less than 2 inches.

FROST PROTECTION

We recommend that the bottom of all foundation components rest a minimum of 1-1/2 feet below finished grade or as required by the local building codes. Foundation components must not be placed on frozen soils.

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 1-1/2 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 floor slabs on grade be constructed with control joints placed to divide the floor into sections not exceeding 360 square feet, maximum. Also, additional control joints are recommended at all inside corners and at all columns to control cracking in these areas.

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

EARTH RETAINING STRUCTURES

The active soil pressure for the design of earth retaining structures may be based on an equivalent fluid pressure of 42 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 55 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 320 pcf per foot of depth. The coefficient of friction for concrete to soil may be assumed to be .35 for resistance 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 Exxon Battledrain or Tensar MD Series NS-1100. An outfall must be provided for this drain.

Due to low toe pressure capacity in the vicinity of the ravine, it is recommended that high concrete-type retaining walls not be used on this site.

Slopes can be successfully retained with staggered cribbed slopes or reinforced earth and other similar systems so long as they are properly drained.

REACTIVE SOILS

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

PAVEMENTS

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

Soil Type II

R = 23
Expansion @ 300 psi = 0.5
Displacement @ 300 psi = 3.82

No estimates of traffic volumes have been provided to Lincoln DeVore. However, we assume that the roads will be classified as residential. The design procedures utilized are those recognized by the Colorado Department of Highways and the 1986 AASHTO design procedure. The terminal Serviceability Index of 2.0, a Reliability of 70 and a design life of 20 years have been utilized, based on recommendations by the Highway Department. An 18 kip ESAL of 5, also recommended by the Highway Department, was used for the analysis.

PROPOSED PAVEMENT SECTIONS

Based on the soil support characteristics outlined above, the following pavement sections are recommended:

Roadway and Parking Areas:

3 inches of asphaltic concrete pavement
on 6 inches of aggregate base course
on 12 inches of recompacted native material
or structural fill

Full Depth Asphalt:

5 inches of asphaltic concrete pavement
on 12 inches of recompacted native material
or structural fill

Rigid Concrete:

5 inches of portland cement pavement
on 4 inches of aggregate base course
on 12 inches of recompacted native material
or structural fill

PAVEMENT SECTION CONSTRUCTION

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

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

CONCRETE PAVEMENT

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

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

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

The concrete should be placed at the lowest slump practical for the method of placement. In all circumstances, the maximum slump should be limited to 4 inches. Proper consolidation of the plastic concrete is important. The placed concrete must be properly protected and cured.

LIMITATIONS

This report is issued with the understanding that it is the responsibility of the owner, or his representative to ensure that the information and recommendations contained herein are brought to the attention of the 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 sub-contractors 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 described in this report. If any variations or undesirable conditions are encountered during construction or the proposed construction will differ from that planned on the day of this report, Lincoln DeVore should be notified so that supplemental recommendations can be provided, if appropriate.

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

SOILS DESCRIPTIONS:

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

ROCK DESCRIPTIONS:

SYMBOL	DESCRIPTION
	SEDIMENTARY ROCKS
	CONGLOMERATE
	SANDSTONE
	SILTSTONE
	SHALE
	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.

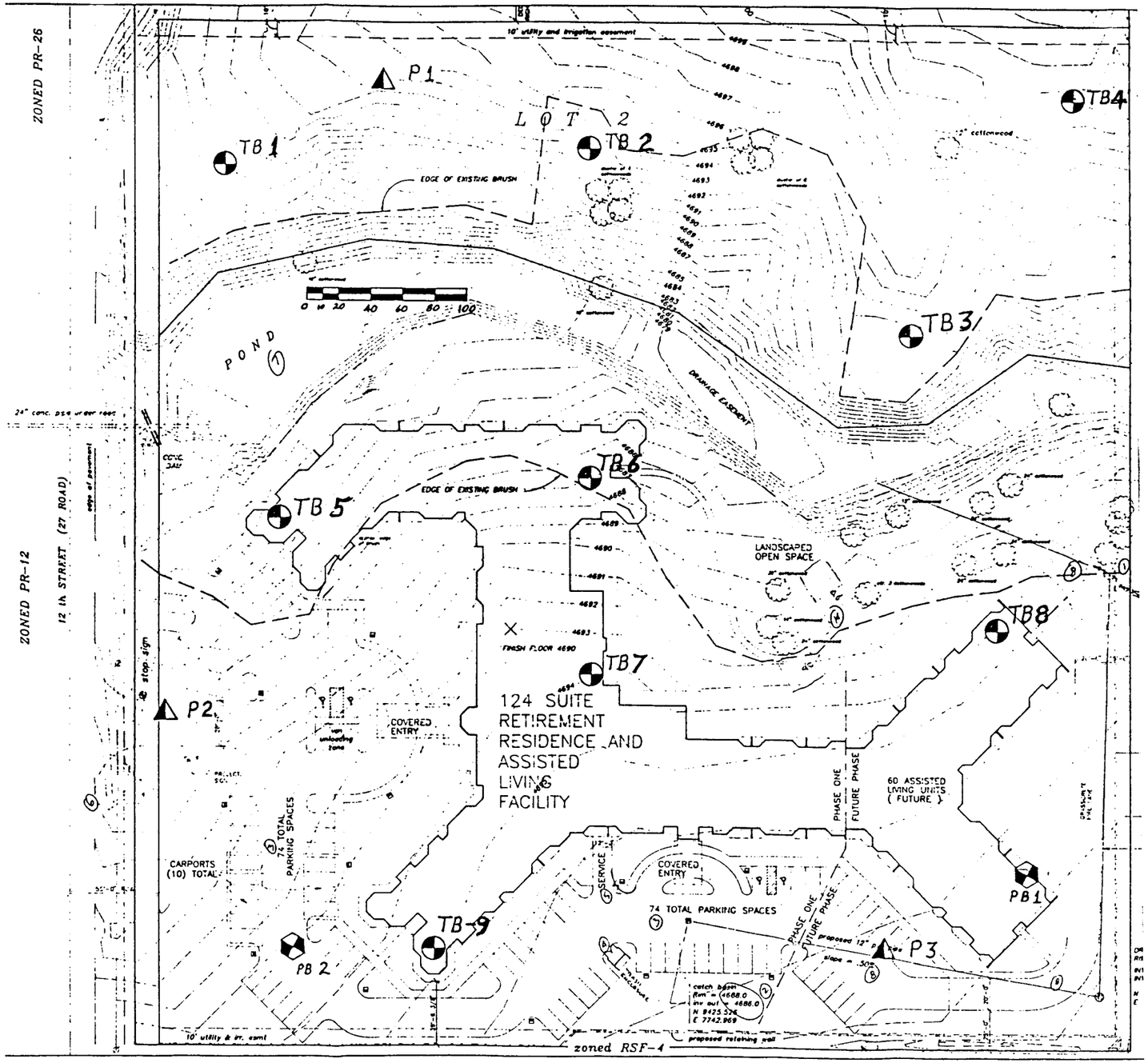
Samples may be bulk, standard split spoon (both disturbed) or 2-½" I.D. thin wall ("undisturbed") Shelby tube samples. See log for type.

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

LINCOLN DeVORE TESTING LABORATORY

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

EXPLANATION OF BOREHOLE LOGS AND LOCATION DIAGRAMS



LEGEND

TB1	TEST EXPLORATION BORING
PB1	PREVIOUS TEST EXPLORATION BORING
P1	PAVEMENT SECTION BORING

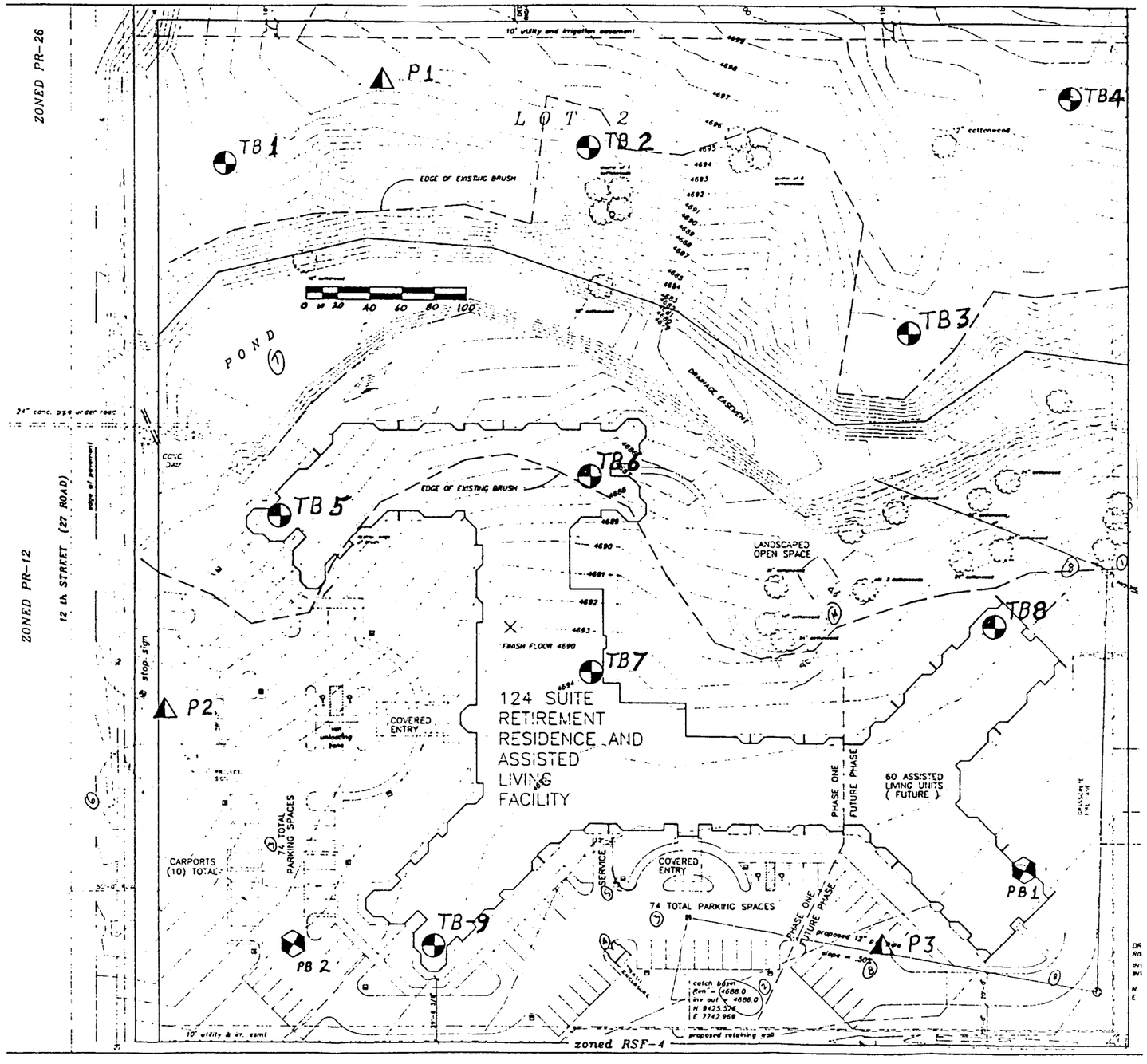
Base Mapping by Q.E.D. Surveying Sytems, Inc.
7/1/93

BORING LOCATION DIAGRAM
THE ATRIUM AT GRAND VALLEY

LINCOLN DeVORE ENGINEERS · GEOLOGISTS

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

LD # 79424-J	SHEET 1 OF 1	
DRAWN BY: ☒ E.M. MORRIS	SCALE: NONE	DATE: 11-18-93
DRAWN BY: ☐ J.L. SPARKS	DRAWN BY: ☐	



LEGEND

⊕	TB1	TEST EXPLORATION BORING
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▲	P1	PAVEMENT SECTION BORING

Base Mapping by Q.E.D. Surveying Sytems, Inc.
7/1/93

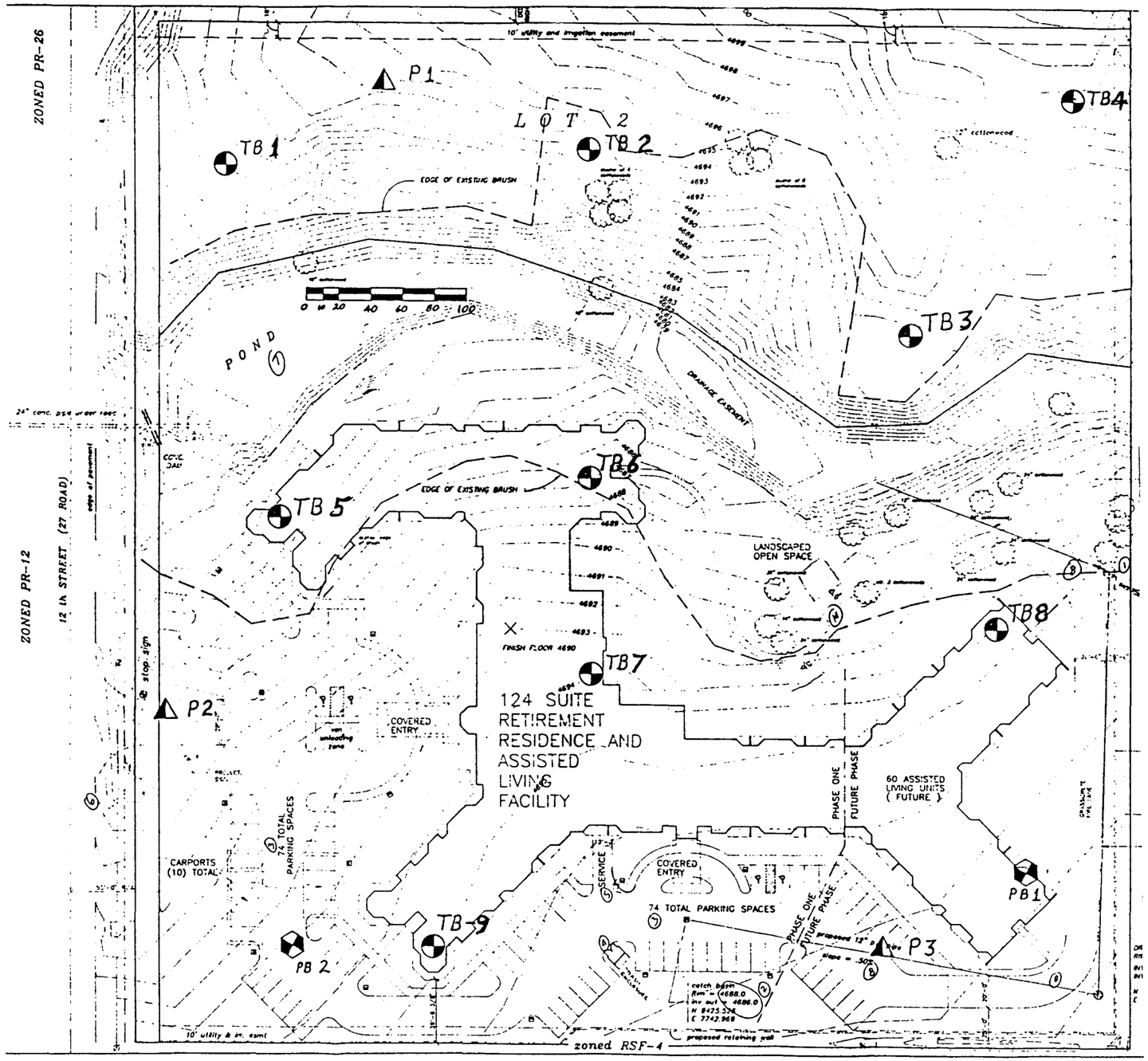
BORING LOCATION DIAGRAM
THE ATRIUM AT GRAND VALLEY

LINCOLN DeVORE ENGINEERS · GEOLOGISTS

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

LO # 79424-J | SHEET 1 OF 1

DRAWN BY: ☒ E.M. MORRIS ☐ J.L. SPARKS | SCALE: NONE | DRAWN BY: ☐ | DATE: 11-18-93



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BORING LOCATION DIAGRAM
THE ATRIUM AT GRAND VALLEY

LINCOLN DeVORE
ENGINEERS · GEOLOGISTS

1441 MOTOR STREET
GRAND JCT., COLORADO
COLO. SPRINGS—PUEBLO

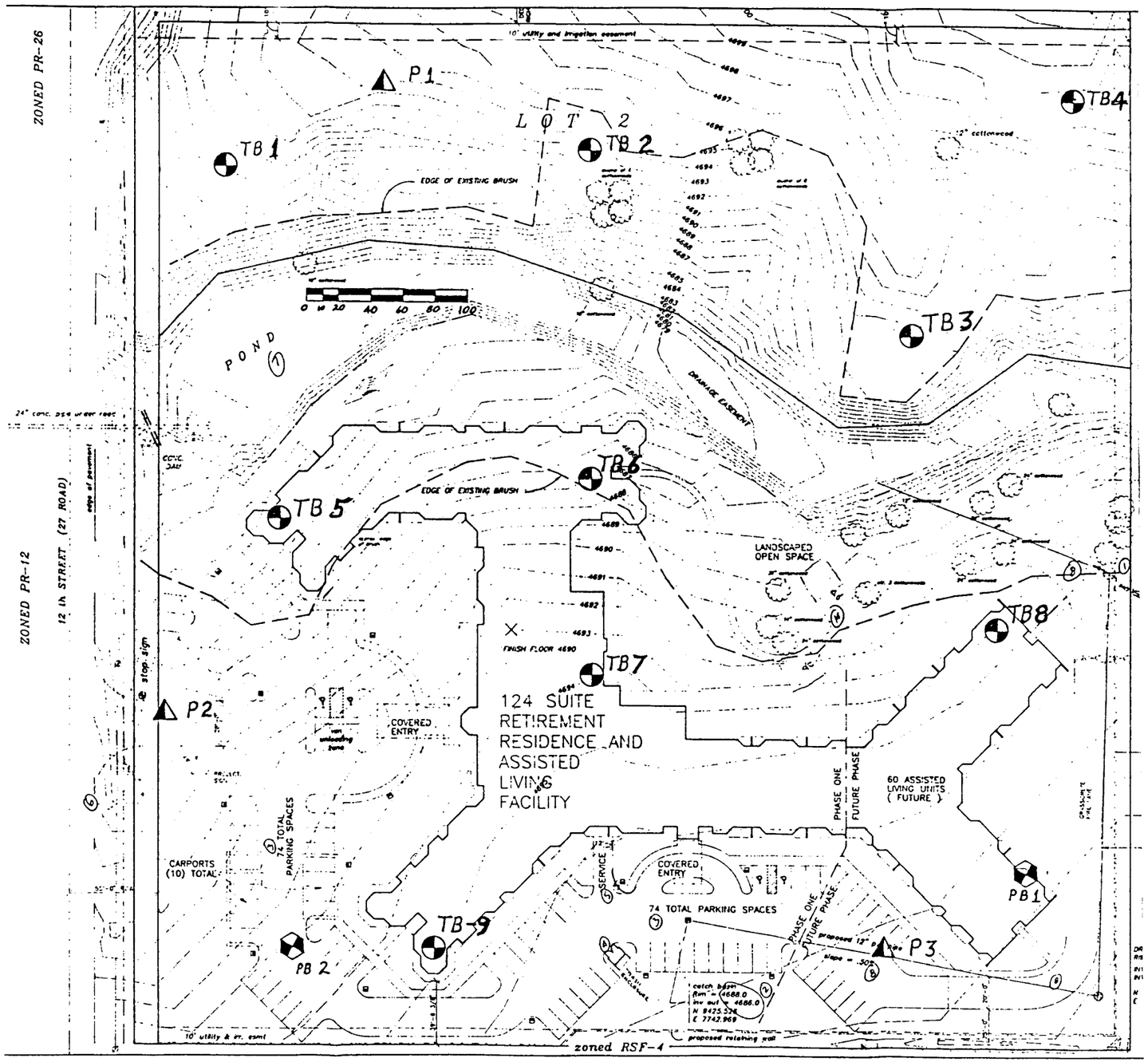
LD # 79424-J | SHEET 1 OF 1

DRAWN BY: ☒ E.M. MORRIS ☐ J.L. SPARKS

SCALE: NONE

DRAWN BY: ☐

DATE: 11-18-93



LEGEND

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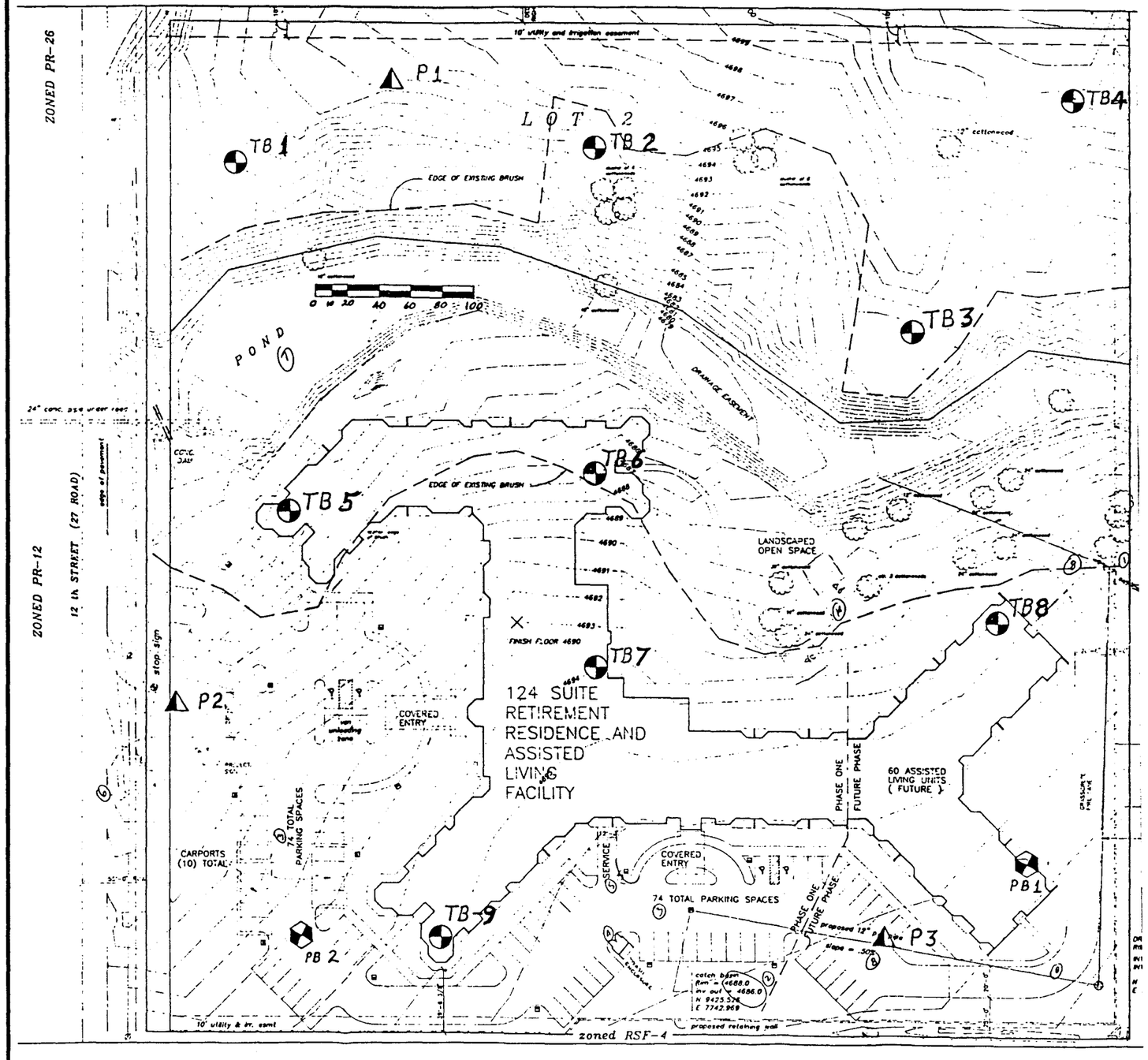
BORING LOCATION DIAGRAM
THE ATRIUM AT GRAND VALLEY

LINCOLN DeVORE ENGINEERS · GEOLOGISTS

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

LD # 79424-J | SHEET 1 OF 1

DRAWN BY: ☒ E.M. MORRIS ☐ J.L. SPARKS | SCALE: NONE | DRAWN BY: ☐ | DATE: 11-18-93



LEGEND

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BORING LOCATION DIAGRAM
THE ATRIUM AT GRAND VALLEY

LINCOLN DeVORE ENGINEERS · GEOLOGISTS

1441 MOTOR STREET
GRAND JCT., COLORADO
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LD # 79424-J	SHEET 1 OF 1	
DRAWN BY: ☒ E.M. MORRIS	SCALE: NONE	DATE: 11-18-93
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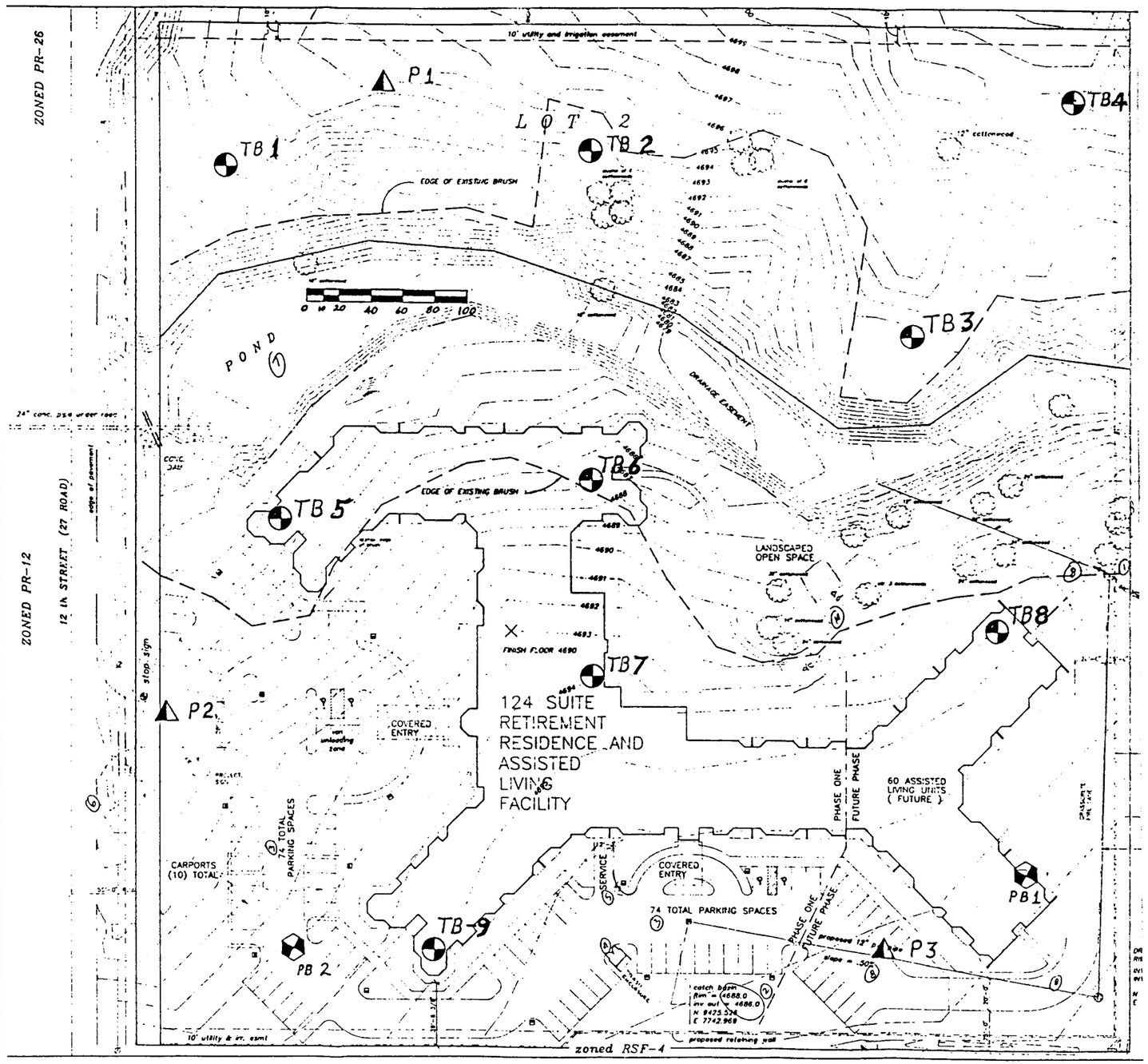


LEGEND

◔	TB1	TEST EXPLORATION BORING
◆	PB1	PREVIOUS TEST EXPLORATION BORING
▲	P1	PAVEMENT SECTION BORING

Base Mapping by Q.E.D. Surveying Sytems, Inc.
7/1/93

BORING LOCATION DIAGRAM
THE ATRIUM AT GRAND VALLEY

LINCOLN DeVORE ENGINEERS · GEOLOGISTS	1441 MOTOR STREET GRAND JCT., COLORADO COLO. SPRINGS–PUEBLO	
	LO # 79424-J	SHEET 1 OF 1
DRAWN BY: ☒ E.M. MORRIS	SCALE: NONE	DATE: 11-18-93
DRAWN BY: ☐ J.L. SPARKS	DRAWN BY: ☐	

BORING NO. 1

BORING ELEVATION:

DEPTH (FT.)	LOG	DESCRIPTION				BLOW COUNT	SOIL DENSITY pcf	WATER %
		Alluvial, Debris Fan Deposits		Moist				
	III	Low Density	Very Stratified			ST	103.0	10.7%
	SM	Gravelly		Sulfates				
5						5		
		Free Water	Very low to non Plastic					
	III	SM, Gravelly		Low density	BULK			26.7%
	Km	Mancos Shale Formation 9'		Saturated				
10	IV	Expansive, Dense	Silty Clay			10		
	CL-M	Increasing Density		Decreasing Moisture				
15						15		
20						20		
25						25		
30						30		

Blow Count Totals are Cumulative

Free Water @ 7-1/2'

During Drilling 11-2-93

LOG OF SUBSURFACE EXPLORATION

LINCOLN - DeVORE, Inc.

Grand Junction, Colorado

THE ATRIUM at GRAND VALLEY

12th & F-1/2 Street , G.J.

COLSON & COLSON

CURRY-BRANDAW, Arch.

Date **11-8-93**

Job No. **79424-J**

Drawn **EMM**

BORING NO. 2

BORING ELEVATION:

DEPTH (FT.)	LOG	DESCRIPTION				BLOW COUNT	SOIL DENSITY pcf	WATER %
		Alluvial, Debris Fan Deposits		Moist				
	III	Gravelly and coarse Sand Debris		Low Density	ST		105.3	13.9%
	SM, Gravelly	Sandstone Fragments						
5		Low Density	Very Stratified		5			
	Free Water		Decreasing Gravel					
			Very low to non Plastic					
	I	Sand and Silt Strata		Low density	BULK			18.4%
	SM, Gravelly			Saturated				
10					10			
		Stratified	Silt Strata		Non Plastic			
	II	Hard to Drill	Medium to High Density					
	SM	Very Silty						
	Km	Mancos Shale Formation		Saturated				
15	IV	Expansive, Dense	Silty Clay		15			
	CL-M	Increasing Density		Decreasing Moisture				
		Sulfates						
20					20			
25					25			
30					30			

Blow Count Totals are Cumulative

Free Water @ 6'

During Drilling 11-3-93

LOG OF SUBSURFACE EXPLORATION

THE ATRIUM at GRAND VALLEY

12th & F-1/2 Street , G.J.

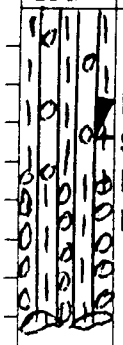
LINCOLN - DeVORE, Inc.

Grand Junction, Colorado

COLSON & COLSON	Date
CURRY-BRANDAW, Arch.	**11-8-93**
Job No. **79424-J**	Drawn **EMM**

BORING NO. 3

BORING ELEVATION:

DEPTH (FT.)	LOG	DESCRIPTION		BLOW COUNT	SOIL DENSITY pcf	WATER %
		Alluvial, Debris Fan Deposits	Moist			
		Low density	Soil Piping	ST	94.0	9.5%
		SM, Gravelly	Sulfates			
5		**III, SM Gravelly**	Sandstone & Siltstone Fragments	5		
		Boulders	Silty, Sandy Fines			
		Very difficult to drill				
		Refusal @ 8' on Sandstone and Siltstone Boulders				
10				10		
15				15		
20				20		
25				25		
30				30		

Blow Count Totals are Cumulative

No Free Water During Drilling 11-2-93

LOG OF SUBSURFACE EXPLORATION

LINCOLN - DeVORE, Inc.

Grand Junction, Colorado

THE ATRIUM at GRAND VALLEY
12th & F-1/2 Street G.J.

COLSON & COLSON
CURRY-BRANDAW, Arch.

Date **11-8-93**

Job No. **79424-J**

Drawn **EMM**

BORING NO. 4

BORING ELEVATION:

DEPTH (FT.)	LOG	DESCRIPTION				BLOW COUNT	SOIL DENSITY pcf	WATER %
		Alluvial, Debris Fan Deposits		Moist				
	III	Low density	Soil Piping		Sulfates	ST	107.2	9.3%
	SM, Gravelly		Sandstone & Siltstone Fragments					
5		Very Stratified	Sl. Moist			5		
		Compressible Strata						
	II SM, very Silty		Medium Density		Sl.Moist	CS	54/6	112.7	6.4%
	IV, Km		Shale Fragments					
10	Mancos Shale		Very firm	Expansive		10		
15						15		
20						20		
25						25		
30						30		

Blow Count Totals are Cumulative

No Free Water During Drilling 11-2-93

LOG OF SUBSURFACE EXPLORATION

LINCOLN - DeVORE, Inc.

Grand Junction, Colorado

THE ATRIUM at GRAND VALLEY	
12th & F-1/2 Street	, G.J.
COLSON & COLSON	Date
CURRY-BRANDAW, Arch.	**11-8-93**
Job No. **79424-J**	Drawn **EMM**

BORING NO. 5

BORING ELEVATION:

DEPTH (FT.)	LOG	DESCRIPTION				BLOW COUNT	SOIL DENSITY pcf	WATER %
		Debris Fan Deposits						
		Some Gravels	Compressible		Sulfates			
	II	Silty Sand	Low Density		v. Moist	ST	96.2	15.8%
		SM, Silty	High Sulfates in some strata					
5		**ML, Silt**				5		
		SM, Silty,	Low Density		Compressible			
		Some Clayey Strata	Very Moist to Wet					
		IV, Shale Debris	Alluvial, Clay Chips in Strata			ST	110.2	15.8%
	I	Some clayey Strata	Low Plastic		Low Density			
10		**SM, Gravelly**				10		
		Very Moist to Wet						
		IV, Km	Firm	v. Moist				
		Mancos Shale	Expansive	Sulfates in Fractures		CS	21/6	101.5 13.9%
			Very Firm				67/12	120.3 14.6%
15						15		
		Hole Caved at 8 feet 11/3/93						
20		No Free Water in Boring,				20		
		However, The very moist to wet conditions indicate						
		Free Water may develop in the 8 to 12 foot level						
25						25		
30						30		
		Blow Count Totals are Cumulative						
		No Free Water						
		During Drilling 11-1'93						

LOG OF SUBSURFACE EXPLORATION

LINCOLN - DeVORE, Inc.

Grand Junction, Colorado

THE ATRIUM at GRAND VALLEY

12th & F-1/2 Street , G.J.

COLSON & COLSON

CURRY-BRANDAW, Arch.

Date **11-8-93**

Job No. **79424-J**

Drawn **EMM**

BORING NO. 6

BORING ELEVATION:

DEPTH (FT.)	LOG	DESCRIPTION				BLOW COUNT	SOIL DENSITY pcf	WATER %
		Debris Fan Deposits						
		Some Gravels	Compressible		Sulfates	6/6		
	II	Silty Sand	Low Density		v. Moist	CS 13/12	106.3	11.5%
		SM, Silty	High Sulfates in some strata			23/18	116.8	11.3%
5		Clayey Strata	Low Plasticity			5		
		SM, Silty,	Low Density		Compressible			
		Some Clayey Strata	Moist	Sulfates				
	II	Very Stratified				ST	98.3	11.4%
		SM, Gravelly	High Sulfates		Low Density			
10		Very firm, gravelly		Clayey Strata		10		
		IV, Km	Expansive	Sandy, Silty Strata				
		Mancos Shale	Very Firm	v. Moist				
			Sulfates in Fractures		BULK			7.7%
15						15		
20						20		
25						25		
30						30		

Blow Count Totals are Cumulative

No Free Water During Drilling 11-1'93

LOG OF SUBSURFACE EXPLORATION

THE ATRIUM at GRAND VALLEY

12th & F-1/2 Street , G.J.

COLSON & COLSON

CURRY-BRANDAW, Arch.

Date **11-8-93**

Job No. **79424-J**

Drawn **EMM**

LINCOLN - DeVORE, Inc.

Grand Junction, Colorado

BORING NO. 7

BORING ELEVATION:

DEPTH (FT.)	LOG	DESCRIPTION					BLOW COUNT	SOIL DENSITY pcf	WATER %
		Debris Fan Deposits							
		Some Gravels	Compressible		Sulfates				
	I	Silty Sand	Firm	, Rocky	Dry	ST		119.2	1.3%
		SM, Gravelly	High Sulfates in some strata						
5		Clayey Strata	Low Plasticity			5			
			Low Density		Compressible				
		Increasing Gravels					18/6		
	I	Coarse Silty Sand	Medium Density		Sulfates	CS	56/12	110.5	6.3%
		SM, Gravelly		Samples in Gravels			78/18	118	7.9%
10		Medium Density				10			
		Some Clayey Strata	Moist	Sulfates					
		Very Stratified	Firm				21/6		
	III	Very firm, gravelly	High Sulfates			CS	37/12	123.2	10.4%
		SM, Gravelly w/Rocks		Clayey Strata			50/18	123.4	12.4%
15		**II, SM, Very Silty Sand**				15			
		III, SM, Very Gravelly Silty Sand							
	IV	**Km**	Expansive	Silty Strata		BULK			10.7
		Mancos Shale	Very Firm	Moist					
		Low Plastic		Sulfates in Fractures					
20						20			
25						25			
30						30			
		Blow Count Totals are Cumulative							
		No Free Water							
		During Drilling 11-1-93							

LOG OF SUBSURFACE EXPLORATION

LINCOLN - DeVORE, Inc.

Grand Junction, Colorado

THE ATRIUM at GRAND VALLEY

12th & F-1/2 Street , G.J.

COLSON & COLSON

CURRY-BRANDAW, Arch.

Date **11-8-93**

Job No. **79424-J**

Drawn **EMM**

BORING NO. 8

BORING ELEVATION:

DEPTH (FT.)	LOG	DESCRIPTION					BLOW COUNT	SOIL DENSITY pcf	WATER %
		Debris Fan Deposits							
		Stratified	Alluvial	Soil Piping					
		II Very Silty Sand	High Sulfates			ST		92.0	6.8%
		SM, V. Silty							
5		Clayey Strata	Low Plasticity			5			
					Compressible				
		Gravelly Sand	Low Density						
		I Coarse Silty Sand	Stratified		Sulfates	ST		96.9	8.4%
		SM, Gravelly							
10		Medium Density				10			
		II, V.Silty Sand	Compressible						
		Very Stratified	Firm	High Sulfates			21/6		
		III Very firm, gravelly				CS	48/12	132.8	10.5%
		SM, Gravelly w/Rocks	Clayey Strata				72/18	105.8	8.9%
15		II, SM, Very Silty Sand		High Sulfates		15			
				Samples in Gravels					
		IV, Km	Expansive	Silty Strata	BULK				11.3%
		Mancos Shale	Very Firm	Moist					
		Low Plastic		Sulfates in Fractures					
20						20			
25						25			
30						30			
		Blow Count Totals are Cumulative							
		No Free Water							
		During Drilling 11-1-93							

LOG OF SUBSURFACE EXPLORATION

THE ATRIUM at GRAND VALLEY

12th & F-1/2 Street , G.J.

COLSON & COLSON

CURRY-BRANDAW, Arch.

Date 11-8-93

Job No. 79424-J

Drawn EMM

LINCOLN - DeVORE, Inc.

Grand Junction, Colorado

BORING NO. 9

BORING ELEVATION:

DEPTH (FT.)	LOG	DESCRIPTION					BLOW COUNT	SOIL DENSITY pcf	WATER %
		Debris Fan Deposits							
		Stratified	Alluvial	Soil Piping					
		II Very Silty Sand	High Sulfates		Sl. Moist	ST		95.9	6.8%
		SM, V. Silty	Very Low Density						
5		III Very firm, gravelly	Low Plasticity		Sulfates	5			
		SM, Gravelly w/Rocks			Compressible				
		Gravelly Sand	Low Density				9/6		
		I, SM, Gravelly	Stratified		Sulfates	CS	22/12	114.6	8.5%
		II, V.Silty Sand					28/18		
10		Firm, medium density				10	51/24	119.3	8.7%
			Slightly Compressible						
		Very Stratified	Firm	High Sulfates			18/6		
		III Very firm, gravelly				CS	26/12	113.1	13.1%
		SM, Gravelly w/Rocks	Clayey Strata				44/18	117.6	9.2%
15		II, SM, Very Silty Sand		High Sulfates		15	76/24	125.5	8.8%
				Samples in Gravels					
		Clayey Sand Strata	Very High Sulfates			BULK			12.7%
		IV, Km	Expansive	Silty Strata					
		Mancos Shale	Firm	Moist		BULK			9.0%
20		Low Plastic	Decreasing	Sulfates in Fractures		20			
		Increasing Density w/ depth							
		High Density Shale		Expansive					
25						25			
30						30			
		Blow Count Totals are Cumulative							
		No Free Water							
		During Drilling	11-1-93						

LOG OF SUBSURFACE EXPLORATION

THE ATRIUM at GRAND VALLEY

12th & F-1/2 Street , G.J.

COLSON & COLSON

CURRY-BRANDAW, Arch.

Date 11-8-93

Job No. 79424-J

Drawn EMM

LINCOLN - DeVORE, Inc.

Grand Junction, Colorado

BORING NO. P-1

BORING ELEVATION:

DEPTH (FT.)	LOG	DESCRIPTION				BLOW COUNT	SOIL DENSITY pcf	WATER %
		Debris Fan Deposits						
		Occ. Gravels	Very Stratified	Firm				
		II, SM, Very Silty Sand		Increasing Moisture	BULK			6.9%
		II, SM, Very Silty Sand		High Sulfates	BULK			11.4%
5		Occ. Gravels	Stratified	Low Density		5		
		I, Gravelly Silty Sand		Compressible	BULK			11.9%
		Free Water ?						
10						10		
15						15		
20						20		
25						25		
30						30		

Blow Count Totals are Cumulative

No Free Water During Drilling 11-2-93

LOG OF SUBSURFACE EXPLORATION

THE ATRIUM at GRAND VALLEY

12th & F-1/2 Street, G.J.

COLSON & COLSON

CURRY-BRANDAW, Arch.

Date 11-8-93

Job No. 79424-J

Drawn EMM

LINCOLN - DeVORE, Inc.

Grand Junction, Colorado

BORING NO. **P-2**

BORING ELEVATION:

DEPTH (FT.)	LOG	DESCRIPTION					BLOW COUNT	SOIL DENSITY pcf	WATER %
		Debris Fan Deposits		Soil Piping					
		I, Gravelly Silty Sand		Low Density					
		II, SM, Very Silty Sand		Moist		BULK			5.0%
		I, Gravelly Silty Sand		High Sulfates		BULK			5.4%
5		Low Density	Stratified			5			
		I, Gravelly Silty Sand		Compressible		BULK			3.8%
		IV Mancos Shale	High Density			SPT	23/6		9.5%
		High Sulfates	Moist	Expansive			76/12		
10						10			
15						15			
20						20			
25						25			
30						30			

Blow Count Totals are Cumulative

No Free Water

During Drilling 11-2-93

LOG OF SUBSURFACE EXPLORATION

THE ATRIUM at GRAND VALLEY

12th & F-1/2 Street , G.J.

COLSON & COLSON

CURRY-BRANDAW, Arch.

Date **11-8-93**

Job No. **79424-J**

Drawn **EMM**

LINCOLN - DeVORE, Inc.

Grand Junction, Colorado

BORING NO. **P-3**

BORING ELEVATION:

DEPTH (FT.)	LOG	DESCRIPTION					BLOW COUNT	SOIL DENSITY pcf	WATER %
		Debris Fan Deposits		Soil Piping					
		I, Gravelly Silty Sand		Low Density					
		II, SM, Very Silty Sand		Moist	BULK				6.0%
		I, Gravelly Silty Sand		High Sulfates	BULK				6.5%
5		Low Density	Slightly Moist			5			
		Very Stratified	Low Plastic		BULK				5.5%
		II, SM, Very Silty Sand		Medium Density					
		Nearly Saturated	Compressible			SPT	8/8		18.4%
		Perched Water ?		Firm			20/12		
10						10	35/18		
15						15			
20						20			
25						25			
30						30			

Blow Count Totals are Cumulative

No Free Water

During Drilling 11-2-93

LOG OF SUBSURFACE EXPLORATION

THE ATRIUM at GRAND VALLEY

12th & F-1/2 Street , G.J.

COLSON & COLSON

CURRY-BRANDAW, Arch.

Date **11-8-93**

Job No. **79424-J**

Drawn **EMM**

LINCOLN - DeVORE, Inc.

Grand Junction, Colorado

HILLTOP MINOR SUBDIVISION PLAT RATIFICATION

Grand Valley Atrium Retirement Village, a Colorado general partnership, being the owner of the property described and made part of the Hilltop Minor Subdivision Plat executed and approved October 19, 1993, said ownership being evidenced by that Bargain and Sale Deed from Grand Valley Atrium, Inc. to Grand Valley Atrium Retirement Village, recorded at Book 2025, Page 438 of the Mesa County records, does hereby ratify and confirm the Hilltop Minor Subdivision Plat of the real property described in said deed.

Dated this 10th day of January, 1994.

GRAND VALLEY ATRIUM RETIREMENT VILLAGE,
a Colorado general partnership

By: Dennis Stahl
Dennis Stahl, President of Grand Valley Atrium, Inc., a general partner

STATE OF COLORADO)
) ss.
COUNTY OF MESA)

The foregoing instrument was acknowledged before me this 10th day of January, 1994, by Dennis Stahl as President of Grand Valley Atrium, Inc. general partner of Grand Valley Atrium Retirement Village, a Colorado general partnership

Witness my hand and official seal.

My commission expires: 1/31/97.

Katherine G. Hunt
Notary Public

NOTARY PUBLIC
KATHERINE G. HUNT
STATE OF COLORADO

Plat Ratification

The undersigned, Norwest Bank Grand Junction, National Association, being the holder of that certain deed of trust from Grand Valley Atrium Retirement Village, a Colorado general partnership dated Nov. 15, 1993 and recorded in Book 2030 at Page 353, Mesa County Records does hereby ratify and confirm the subdivision plat of the real property described in said deed of trust.

Dated this third day of March, 1994.

Norwest Bank Grand Junction,
National Association

By: Wayne Thaler

Wayne Thaler, Vice President

STATE OF COLORADO)
) ss
COUNTY OF MESA)

The foregoing was acknowledged before me this third day of March, 1994, by Wayne Thaler as Vice President of Norwest Bank Grand Junction, National Association.

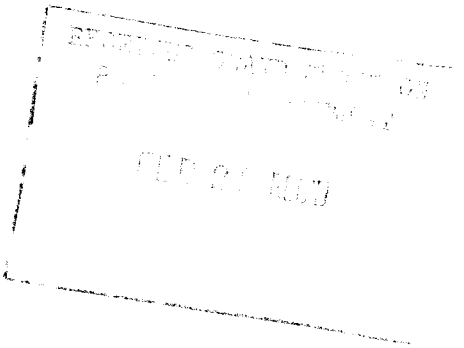
WITNESS my hand and official seal.
My commission expires: 12-31-94

NOTARY PUBLIC
EFFIE
RUCKER
STATE OF COLORADO

Effie Rucker
Notary Public

First American Title Company

330 GRAND AVENUE • GRAND JUNCTION, COLORADO 81501 • (303) 241-8555 • FAX (303) 241-0934



February 17, 1995

Mr. Larry Timm, Director
Community Development Department
250 North 5th Street
Grand Junction, Colorado 81501

Re: Release of Improvements Agreement
Hilltop Minor Subdivision

Dear Larry:

I have enclosed a copy of the recorded release for the above subdivision. As you can see, the recording information referencing the Improvements Agreements was not entered on the Release before it was recorded. Would you kindly have another release recorded or re-record the original release with the Improvements Agreement recording information entered thereon? This would properly affect record title for this release. For your reference, I have enclosed a copy of the original Improvements Agreement.

Yours truly,

First American Title Company

Robert C. Reece
President

RCR:br
Enclosures

First American Title Company

330 GRAND AVENUE • GRAND JUNCTION, COLORADO 81501 • (303) 241-8555 • FAX (303) 241-0934

February 24, 1995

Ms. Kathy Portner
Community Development Department
250 North 5th Street
Grand Junction, Colorado 81501

Re: Hilltop Minor Subdivision

Dear Kathy:

In accordance with your request, I am enclosing herewith a copy of both the recorded Development Improvements Agreement and the recorded Deferred Improvements Agreement. These documents should provide you with the recording information necessary to properly release them.

Please feel free to give a call with any questions.

Yours truly,

First American Title Company

Robert C. Reece
President

RCR:br
Enclosures

First American Title Company

330 GRAND AVENUE • GRAND JUNCTION, COLORADO 81501-2448
(970) 241-8555 • FAX (970) 241-0934

May 7, 1996

Rhonda Edwards
City of Grand Junction
Community Development
250 North 5th St.
Grand Junction, CO 81501

RE: Hilltop Minor Subdivision Improvements Agreements

Rhonda:

Per our conversation, I am sending you check # 17494 for $12.00 for the filing fees for the following Releases of Improvements Agreements.

1. Agreement as evidenced in Memorandum recorded in Book 2178 at Page 71
2. Agreement recorded in Book 2052 at Page 458, amended in Book 2119 at Page 876.
   (NOTE: the previous Release recorded in Book 2120 at Page 940 will be completed and re-recorded to reflect the agreement being released)

Thank you for assistance in this matter, you have been very helpful.

Sincerely,
FIRST AMERICAN TITLE COMPANY

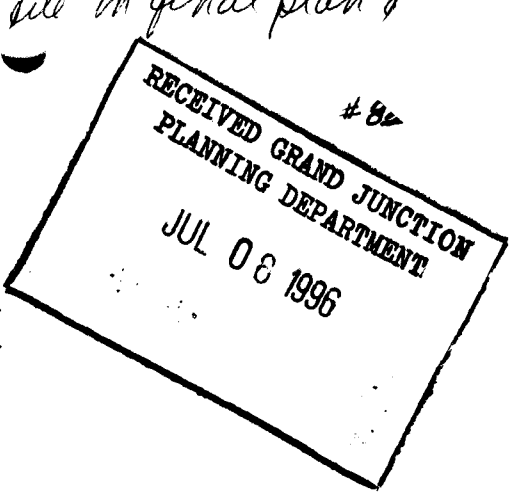
Annette L. Miller

Annette L. Miller
Title Dept Manager

/am

Send copy of recorded documents when received. - 5/14/96

file in final plan #8



1 July 1996

Katherine Portner, AICP
Planning Supervisor, Community Development Department
City of Grand Junction
250 North 5th Street
Grand Junction, Colorado 81501

Dear Kathy:

Per our phone conversation of July one, I am tendering this letter.

We will relocate out of the City right of way, along 3260 N. 12th frontage, two pines and one honey locust. This action will occur mid to late September.

Plans have been made with Bookcliff Gardens to oversee this activity.

As a matter of record, we, the Atrium, have been assured by you no other actions are needed or outstanding. That with the relocation of these trees out of the right of way we will be in complete compliance with the City of Grand Junction as regards your department.

Sincerely yours,

Chris Morrell

Chris Morrell

3260 N. 12th Street • Grand Junction, CO 81506 • (970) 256-0006

FF

ACTION SHEET

#85 93

FINAL

ACRES

UNITS

DENSITY

ACTIVITY Final Plan - Retirement Center

PHASE Final

COMMON LOCATION SE corner of 12th & F 1/2

FILE NUMBER

ZONE RSF-4-PR

TAX SCHEDULE # 2945-013-00-007

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 G.V. Water Users	●	●	●										●	●	●	●	●	●	●	●	●	●				●			●				
○ 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 Corps of Engineers	●	●	●												●	●	●	●								●			●	●	●		
●																																	
○																																	
TOTALS																																	

BOARDS DATE

STAFF

APPLICATION FEE REQUIREMENTS

$630.00 plus $15 per acre. Fee based on adjustment because original submittal for Final was changed to a Preliminary

Original
Remove
From Office

#85 93

SUBMITTAL LEGEND

GENERAL REQUIREMENTS

*A Application Form
B Impact Statement or Project Narrative
*C Summary Form
D Appraisal of Application for Open Space
E Evidence of Title/Title Commitment – in pref. file
F Draft of Covenants/Restrictions
*G Legal Description in pref. file
*H Names and Addresses of Adjacent Property Owners Within 200 feet in pref. file
I Floodplain Analysis
J Geology Report/Soils Report
K Gamma Radiation Report } in pref. file
L Subsurface Soils Investigation
*M Improvements Agreement – need detailed costing
*N Improvements Guarantee
O Development Schedule – narrative

OTHER REQUIREMENTS

AA Location and Vicinity Map
BB Assessor's Map with Subject Property Outlined in Red in pref. file
CC Xerox Portion of Assessor's Map (Not Larger Than 8½" x 14")
DD Reduction of Plan (not larger than 11½" x 14")
EE Reduction of Plat (not larger than 11½" x 14")
FF Action Sheet
GG County Treasurer Tax Certification

SITE PLAN REQUIREMENTS

P Plat (including easements at 24" x 32")
Q Site Plan (24" x 32")
R Adjacent Land Use and Zoning – site plan & narrative
S Drainage/Grading Plan
T Utilities Composite
U Landscaping/Screening/Buffering – site plan
  a) Types of Open Space (existing/proposed)
  b) Percent and Open Space
  c) Maintenance, Irrigation Rights
V Parking – site plan
  a) Total Number Proposed/Required
  b) Dimensions, Striped, Handicapped
W Roadway Plan/Profile
X Traffic Circulation Patterns
  a) Pedestrain/Bikeways/Crosswalks
  b) Dimensions of Curb Cuts, Driveways
  c) Internal Circulation Detail
Y Traffic Analysis
Z Structural Information
  a) Heights, Elevations, Sq. Footage
  b) Percent Building Coverage
  c) Setbacks (centerline/property line)
  d) Lighting and Signage Detail

* Form Provided by Community Development Dept

PREAPPLICATION CONFERENCE

DATE 4/22/93 CONFERENCE ATTENDANCE Kathy P., Pat Edwards

R.O.W. REQUIRED ABUTTING PROPERTY _____

	EXISTING	PROPOSED	
CURB CUTS	☐	☒	
PARKING	☐	☒	
LANDSCAPING	☐	☒	
IRRIGATION	☐	☒	
PEDESTRIAN ACCESS	☐	☒	

	YES	NO	
OPEN SPACE FEES REQUIRED	☒	☐	$225 per unit
NEIGHBORHOOD MEETINGS/CONTACT	☒	☐	Recommended
RECORDING FEES REQUIRED	☒	☐	site plan

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

☒ ACCESS/PARKING
☐ SCREENING/BUFFERING
☒ COMPATIBILITY WITH SURROUNDING USES
☐ DRAINAGE
☐ LANDSCAPING
☐ TRAFFIC GENERATION
☐ FLOODPLAIN/WETLAND MITIGATION
☐ AVAILABILITY OF UTILITIES
☐ GEOLOGIC HAZARDS/SOILS
☐ OTHER _____

APPLICABLE POLICIES/GUIDELINES/REQUIREMENTS

☒ CORRIDOR GUIDELINES 12th St.
☐ AIRPORT
☐ OTHER _____

RELATED FILES #42-93

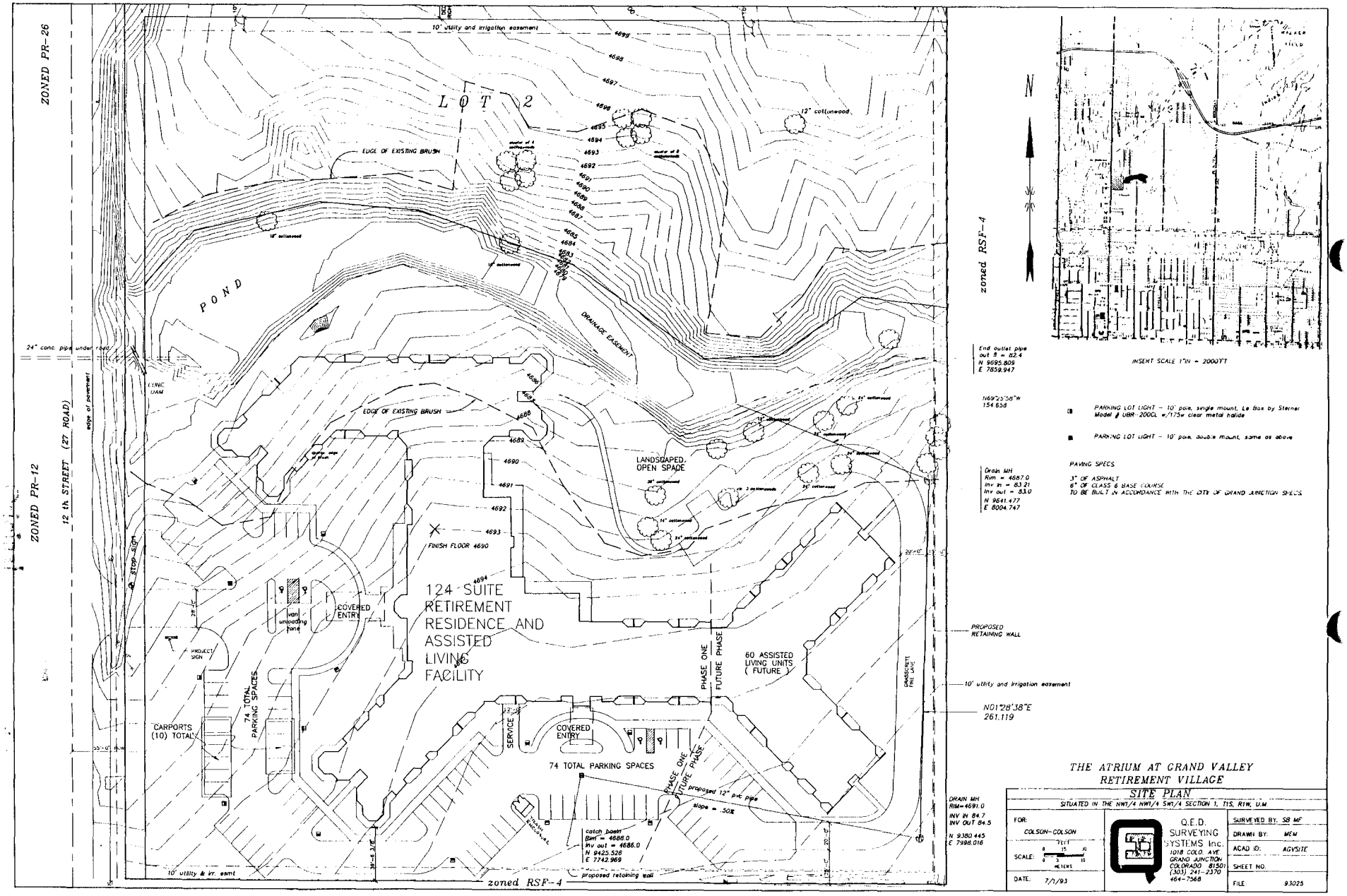
WE HEREBY ACKNOWLEDGE that we have familiarized ourselves with the rules and regulations as they apply to the preparation of this submittal; that the foregoing information is true and complete to the best of our knowledge; and that we assume the responsibility of monitoring the status of this application and review sheet summary comments.

WE RECOGNIZE that we, ourselves, or our representative(s) must be present at all hearings relative to this proposal.

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

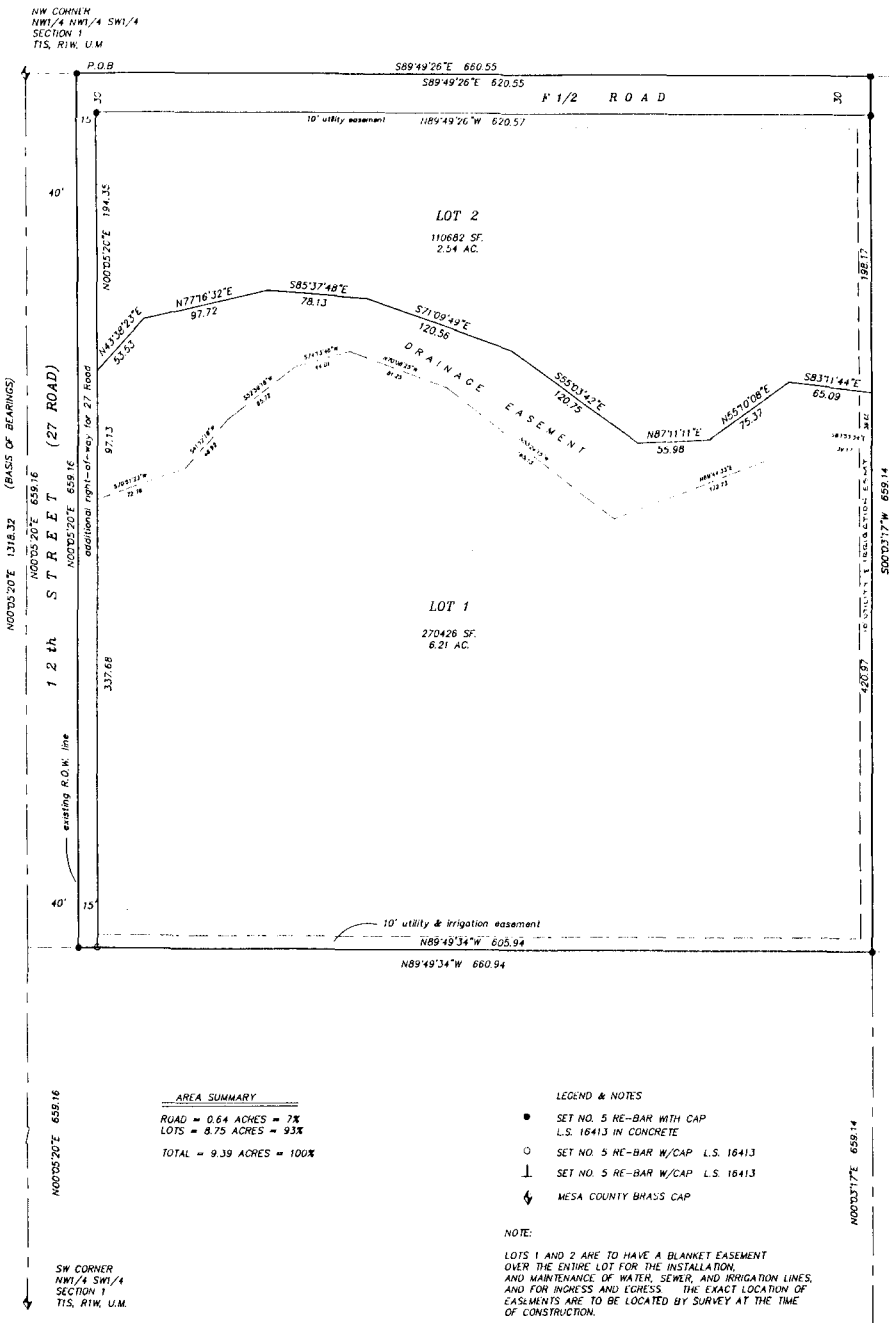
X SIGNATURE(S) OF PETITIONER(S)

X SIGNATURE(S) OF REPRESENTATIVE(S)


ZONED PR-26
ZONED PR-12
12 th STREET (27 ROAD)
edge of pavement
24" conc. pipe under road
10' utility and irrigation easement
LOT 2
EDGE OF EXISTING BRUSH
POND
DRAINAGE EASEMENT
CONC. DAM
EDGE OF EXISTING BRUSH
LANDSCAPED OPEN SPACE
FINISH FLOOR 4690
124 SUITE RETIREMENT RESIDENCE AND ASSISTED LIVING FACILITY
COVERED ENTRY
van unloading zone
PROJECT SIGN
74 TOTAL PARKING SPACES
CARPORTS (10) TOTAL
SERVICE
COVERED ENTRY
74 TOTAL PARKING SPACES
PHASE ONE
FUTURE PHASE
60 ASSISTED LIVING UNITS (FUTURE)
PROPOSED RETAINING WALL
10' utility and irrigation easement
N01°28'38"E 261.119
proposed 12" pvc pipe
slope = .50%
catch basin
Rim = 4688.0
Inv out = 4686.0
N 9425.526
E 7742.969
proposed retaining wall
10' utility & irr. easmt
zoned RSF-4
zoned RSF-4
End outlet pipe
out ft = 82.4
N 9695.809
E 7859.947
N69°25'58"W 154.65ft
PARKING LOT LIGHT - 10' pole, single mount, Le Box by Sterner Model # UBR-200CL w/175w clear metal halide
PARKING LOT LIGHT - 10' pole, double mount, same as above
PAVING SPECS.
3" OF ASPHALT
6" OF CLASS 6 BASE COURSE
TO BE BUILT IN ACCORDANCE WITH THE CITY OF GRAND JUNCTION SPECS.
Drain MH
Rim = 4687.0
Inv in = 83.21
Inv out = 83.0
N 9641.477
E 8004.747
INSERT SCALE 1"IN = 2000FT
DRAIN MH
Rim=4691.0
INV IN 84.7
INV OUT 84.5
N 9380.445
E 7988.016
THE ATRIUM AT GRAND VALLEY
RETIREMENT VILLAGE
SITE PLAN
SITUATED IN THE NW1/4 NW1/4 SW1/4 SECTION 1, T1S, R1W, U.M.
FOR: COLSON-COLSON
SCALE: 1"=30'
DATE: 7/1/93
Q.E.D. SURVEYING SYSTEMS Inc.
1018 COLO. AVE.
GRAND JUNCTION COLORADO 81501
(303) 241-2370
464-7568
SURVEYED BY: SB MF
DRAWN BY: MEM
ACAD ID: AGVSITE
SHEET NO.
FILE: 93025

(33)

HILLTOP MINOR SUBDIVISION



AREA SUMMARY

ROAD = 0.64 ACRES = 7%
LOTS = 8.75 ACRES = 93%

TOTAL = 9.39 ACRES = 100%

LEGEND & NOTES

- ● SET NO. 5 RE-BAR WITH CAP L.S. 16413 IN CONCRETE
- ○ SET NO. 5 RE-BAR W/CAP L.S. 16413
- ⊥ SET NO. 5 RE-BAR W/CAP L.S. 16413
- ⚱ MESA COUNTY BRASS CAP

NOTE:

LOTS 1 AND 2 ARE TO HAVE A BLANKET EASEMENT OVER THE ENTIRE LOT FOR THE INSTALLATION, AND MAINTENANCE OF WATER, SEWER, AND IRRIGATION LINES, AND FOR INGRESS AND EGRESS. THE EXACT LOCATION OF EASEMENTS ARE TO BE LOCATED BY SURVEY AT THE TIME OF CONSTRUCTION.

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.

DEDICATION

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned, Hilltop Health Services Corporation, 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 ____ at Page ____ of the Mesa County Clerk and Recorders Office, and being situated in the NW1/4 SW1/4 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 SW1/4 Section 1, Township 1 South, Range 1 West of the Ute Meridian, Grand Junction, Colorado being described as follows: Considering the West line of the NW1/4 SW1/4 Section 1, T1S, R1W, U.M. to bear S00°05'20"W and all bearings contained herein to be relative thereto: Commencing at the NW corner of the NW1/4 NW1/4 SW1/4 Section 1, T1S, R1W, U.M., thence S89°49'26"E 40.00 feet to the Point of Beginning; thence S89°49'26"E 620.55 feet to the NE corner of the NW1/4 NW1/4 SW1/4 Sec. 1, T1S, R1W, U.M.; thence S00°01'17"W 659.14 feet to the SE corner of the NW1/4 NW1/4 SW1/4 Sec. 1 T1S, R1W, U.M.; thence N89°49'34"W 620.94 feet along the South line of the NW1/4 NW1/4 SW1/4 Sec. 1, T1S, R1W, U.M. to the East right-of-way line for 27 Road; thence N00°05'20"E 659.15 feet to the Point of Beginning, containing 9.39 Acres as described.

That said owner has caused the said real property to be laid out and surveyed as HILL TOP MINOR SUBDIVISION, 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 the area shown as "Drainage easement" for (a.) use conveyance of stormwater runoff from Lot 1 and Lot 2, and also the historical upstream watershed. (b.) for the storage of irrigation water for Lot 1 and Lot 2. (c.) for the purpose of stormwater detention for runoff from Lot 1 and Lot 2, and also for any other property that the Lot 1 owner may grant such use, subject to the condition that there is adequate capacity as determined by an engineering analysis and approved by the City for such additional runoff volume without impacting other pre-existing rights. Such easements and rights shall be utilized in a reasonable and prudent manner.

That all expenses for street paving or improvements shall be furnished by the owner 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__.

Hilltop Health Services Corporation, a Colorado Corp.
Dennis H. Sinai, Secretary/President

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

The foregoing instrument was acknowledged before me this ____ day of ____ A.D., 199__ by Dennis H. Sinai as president of Hilltop Health Services Corporation, 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 HILL TOP MINOR SUBDIVISION, 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 City Council

SURVEYOR'S CERTIFICATE

I, Max E. Morris, certify that the accompanying plat of HILL TOP MINOR SUBDIVISION, 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.

Date

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

HILLTOP MINOR SUBDIVISION
FINAL PLAT

SITUATED IN THE NW1/4 NW1/4 SW1/4 SECTION 1, T1S, R1W, U.M.

FOR: COULSON--COULSON

SCALE: 1"IN = 50'FT

DATE: 6/29/93

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

SURVEYED BY: SB MF
DRAWN BY: MEM
ACAD ID: AGVFIN
SHEET NO.
FILE: 93025