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File 1989-0038 Name: Horizon Hills Townhomes – Rezone / Preliminary and Final

	Scanned	
		A few items are denoted with an asterisk (*), which means they are to be scanned for permanent record on the in some instances, not all entries designated to be scanned by the department are present in the file. There are also documents specific to certain files, not found on the standard list. For this reason, a checklist has been provided. **Remaining items, (not selected for scanning), will be marked present on the checklist. This index can serve as a quick guide for the contents of each file.** **Files denoted with (**) are to be located using the ISYS Query System. Planning Clearance will need to be typed in full, as well as other entries such as Ordinances, Resolutions, Board of Appeals, and etc.**
X	X	**Table of Contents**
X		**Review Sheet Summary**
		Application Form
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		***Submittal checklist**
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		Evidence of title, deeds, easements
X	X	***Mailing list to adjacent property owners**
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		***Letters and correspondence dated after the date of final approval (pertaining to change in conditions or expiration date)**

DOCUMENTS SPECIFIC TO THIS DEVELOPMENT FILE:

X	X	Action Sheet	X		Letter from John A. Branagh, John Branagh Investments to John Currier, Western Engineers re: utility easement granted – 6/30/89
X	X	Review Sheet Summary	X		Memo from Don Newton to Karl Metzner re: based on traffice counts traffic signals not warranted – 8/14/89
X		Review Sheets	X		Letter from John A. Branagh to City Council re: Use of Ute or City water – 9/13/89
X		Development Summary	X	X	Letter from John Branagh to City Council re: seeking mitigation of damages as a well as pursuing reimbursement for all expenses – 10/2/89
X		Development Application – 7/11/89	X		Letter from Dan Wilson to John A. Branagh, Horizon Towers Town Homes re: response to John Branagh letter – 12/4/89
X	X	Ordinance No. 2440 - **	X	X	Memo from Mark Achen to Public Works Director re: Fire Protection for Horizon Townhomes – 4/24/90
X		Public Notice Posting – 7/19/89	X	X	Letter from Dan Wilson re: Notice of Claim – 5/9/90
X	X	Planning Commission Minutes - **	X	X	Letter from Mark AChen to Delmar C. Boehm re: comments regarding wasteland – 5/9/90
X	X	Hydrology Report - 7/7/89	X	X	Memo from Don Newton to Dan Wilson re: unresolved issues – 5/11/90
X		Subdivision Summary Form	X	X	Letter from Keith Mumby to Karl Metzner re: request to exten approved rezone to 8/20/90
X	X	Geologic Report – 7/89			

X	X	Subsurface Soils Exploration - 7/6/89			
X		First American Title Company – 6/16/89			
X		Water and Sewer Use Estimate			
X	X	Grading and Site Plan			
X		Elevation Map			
X		As Built Plan & Profile			
X	X	Waterline Extension			
X		Floor Plan			

IMPACT STATEMENT / PROJECT NARRATIVE / DEVELOPMENT SCHEDULE

Horizon Hills Townhomes

(to be constructed)

It is the intention of John A. Branagh, as the Owner of Horizon Towers Apartments at 1111 Horizon Drive, Grand Junction to commence construction, as early as zoning will permit, of forty two (42) two bedroom, 2 bath townhomes. Each unit will have not less than one individual (attached) garage, and the entire project is to be uniquely laid out on 4.7 (±) acres of land contiguous to (and just South of) owner's existing Horizon Towers condominium project.

Multiple floor plans will be utilized, and single storied units constructed to take advantage of the interesting topography. An attractive swimming pool, architecture in the southwest motif, and heavy emphasis placed upon landscaping will provide the most unique and publicly acceptable accommodations yet to be offered in Grand Junction.

Further, Horizon Towers' as adjacent to the Townhomes will be able to offer the reciprocal use of various amenities, inclusive of gymnasium/weight room, saunas, card rooms, sports center and indoor swimming pool. The successes experienced at the existing project militate the construction of this "sister" product.

In order to accomplish the above, a re-zone of the 4.7 acres will be necessary. Existing site is currently zoned to accommodate four units to the acre, whereas an increase to 8.9 units to the acre would be required. It should also be noted that the increased density as proposed is extremely compatible with the surrounding zoning; just West is Lakeside Apartments with 12 units to the acre, South is Northwoods with 26 to the acre and North is Horizon Towers with 34.6 to the acre. POINT: It appears that 8.9 units to the acre as requested is compatible with the surrounding uses and, in fact, a much lower density than the other projects as constructed.

#38 89

St. Nicholas Hellenic
Orthodox Church
3585 N. 12th Street
Grand Junction, CO 81506

John A. Branagh
4432 Piedmont Avenue
Oakland, CA 95611

N.W. Associates, Ltd
11777 San Vicente Blvd, #900
Los Angeles, CA 90049

William E. Foster
P.O. Box 327
Grand Junction, CO 81502

David A. Darden
698 Round Hill Drive
Grand Junction, CO 81506

Margaret E. Foster
2679 Homestead Road
Grand Junction, CO 81506

Steven M. Gardner
654 Round Hill Drive
Grand Junction, CO 81506

Seidel Corporation
2324 E½ Road
Grand Junction, CO 81503

Edward W. Morris
3233 Lakeside Drive, #109
Grand Junction, CO 81506

James H. Nieuwenhius
2684 Burgener Blvd.
San Diego, CA 92110

William G. Waldeck
1039 Lakeside Drive
Grand Junction, CO 81506

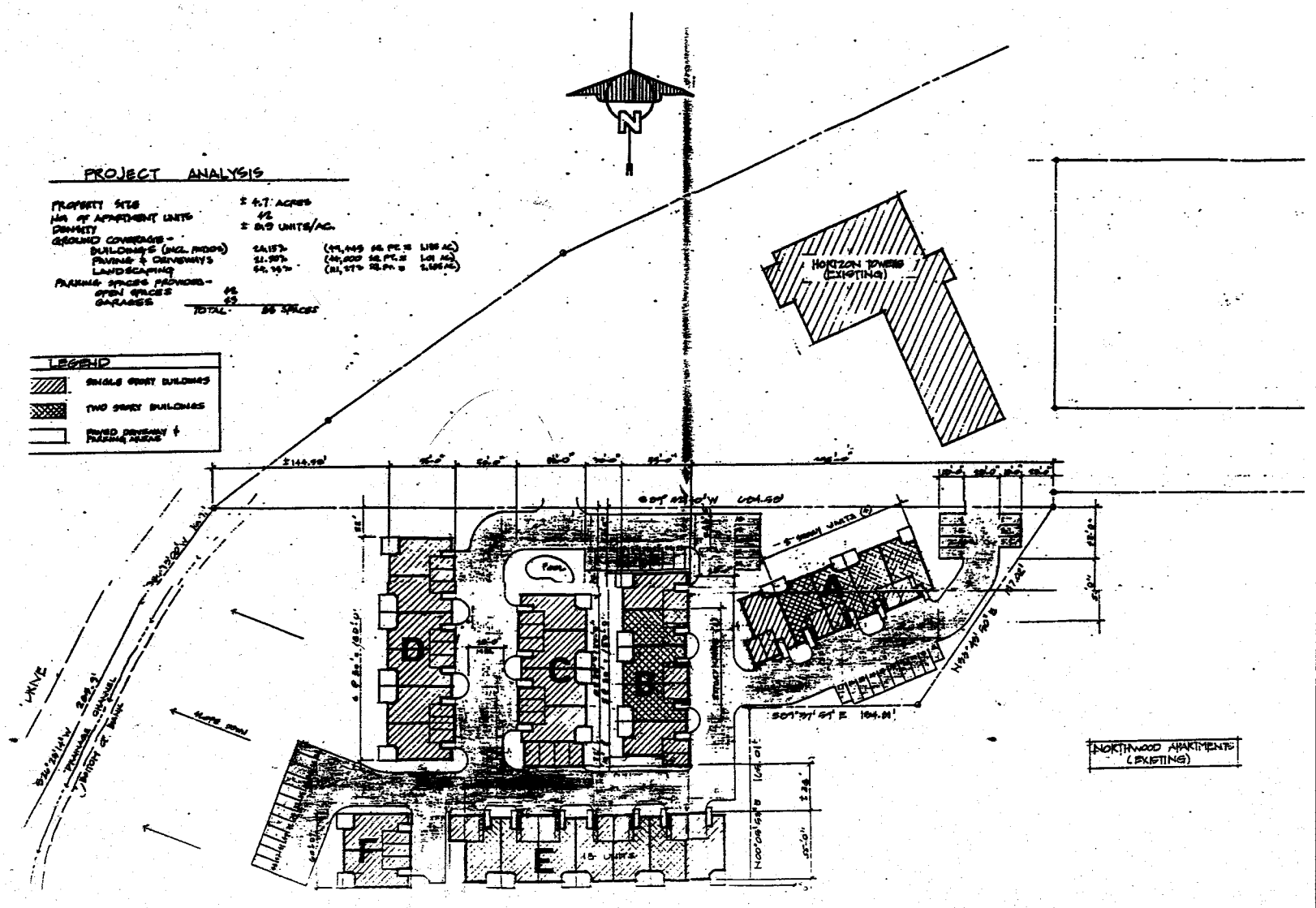
Mildred Bouchard
958 Lakeside Court
Grand Junction, CO 81506

Bradford Wahtley
383 Van Gordon, Apt. #1
Lakewood, CO 80228

Jack Walker
961 Lakeside Dr.
Grand Junction, CO 81506

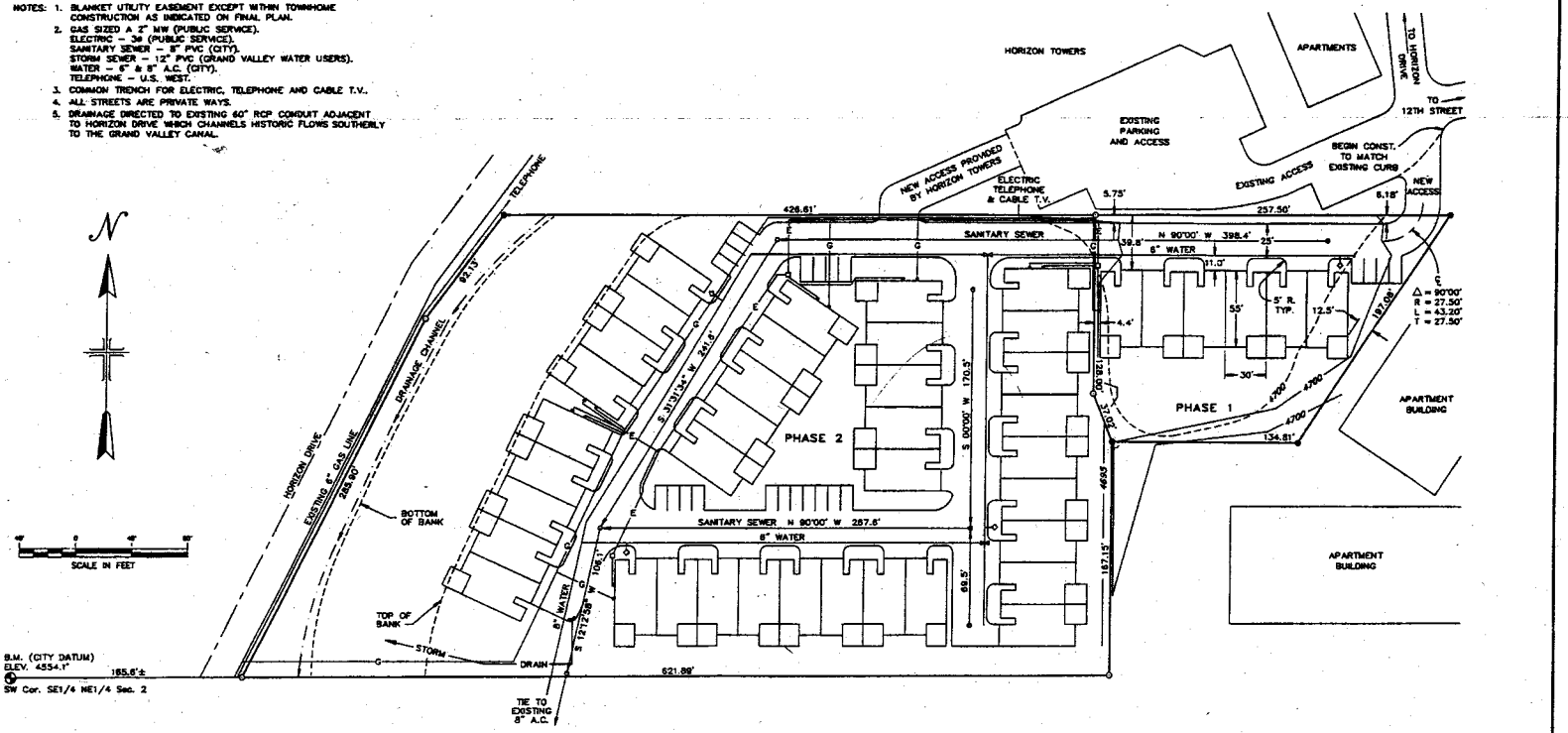
Jack Branagh
4432 Piedmont Avenue
Oakland, CA 94611

Ron Choate
2044 Sandalwood Cr.
Grand Junction, CO 81506



HORIZON HILLS TOWNHOMES

NOTES:
1. BLANKET UTILITY EASEMENT EXCEPT WITHIN TOWNHOME CONSTRUCTION AS INDICATED ON FINAL PLAN.
2. GAS SIZED A 2" MW (PUBLIC SERVICE).
   ELECTRIC – 3Φ (PUBLIC SERVICE).
   SANITARY SEWER – 8" PVC (CITY).
   STORM SEWER – 12" PVC (GRAND VALLEY WATER USERS).
   WATER – 6" & 8" A.C. (CITY).
   TELEPHONE – U.S. WEST.
3. COMMON TRENCH FOR ELECTRIC, TELEPHONE AND CABLE T.V.
4. ALL STREETS ARE PRIVATE WAYS.
5. DRAINAGE DIRECTED TO EXISTING 60" RCP CONDUIT ADJACENT TO HORIZON DRIVE WHICH CHANNELS HISTORIC FLOWS SOUTHERLY TO THE GRAND VALLEY CANAL.



LAKESIDE APARTMENTS

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#38 89

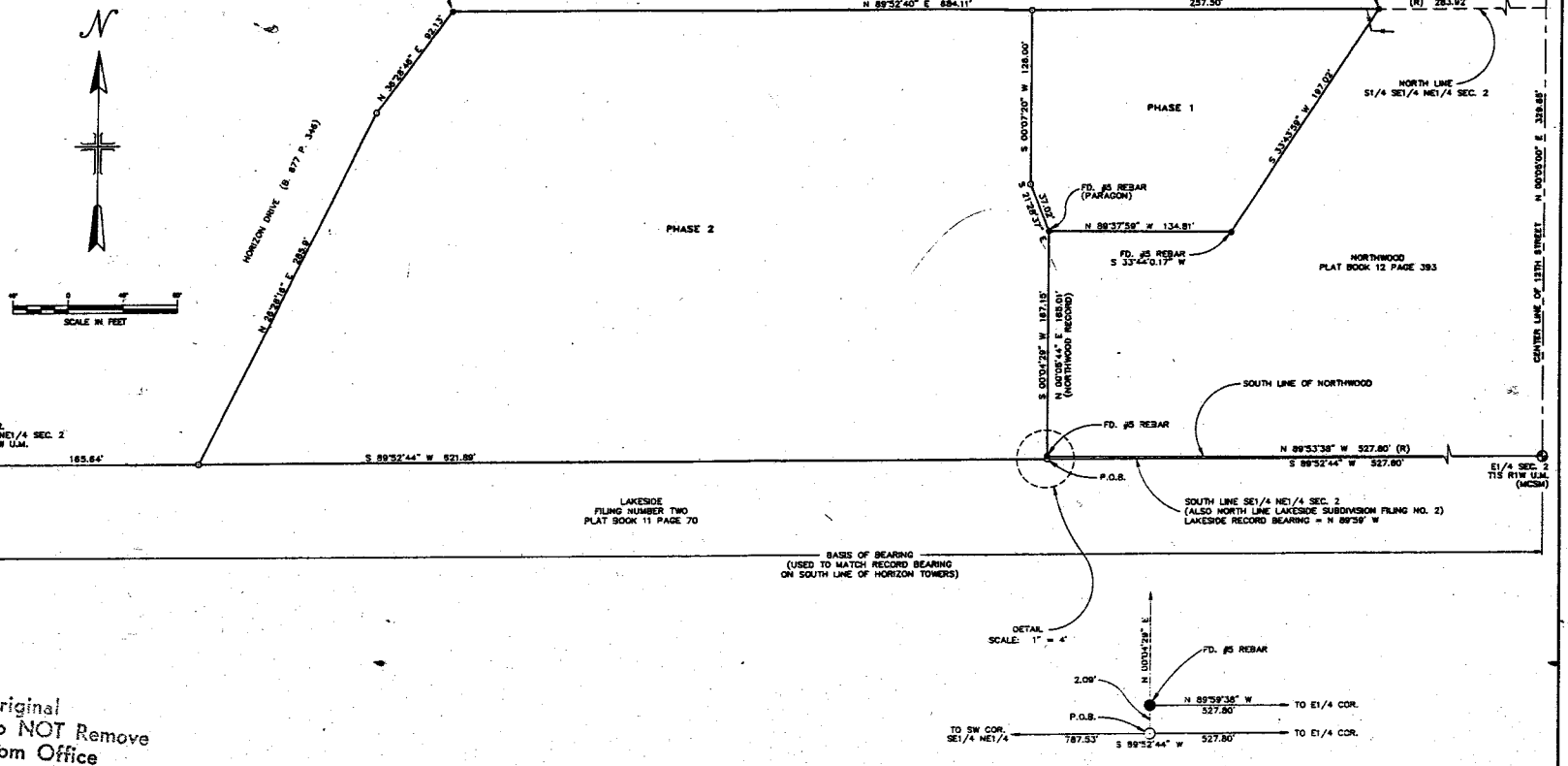
WESTERN [illegible]

PRELIMINARY PLAN PHASE 1 – PHASE 2
FINAL PLAN PHASE 1 OF
HORIZON HILLS TOWNHOMES
IN SE1/4 NE1/4 SECTION 2
T1S, R1W, UTE MERIDIAN
CITY OF GRAND JUNCTION
MESA COUNTY, COLORADO

HORIZON HILLS TOWNHOMES

NOTES:
1. BASIS OF BEARING MATCHES HORIZON TOWERS.
2. ENCROACHING FENCES EXIST ON SOUTH LINE AND AT N.E. CORNER OF PROPERTY.
3. PLAT AND LEGAL BASED UPON DESCRIPTION FOUND IN BOOK 1335 PAGE 563 MESA COUNTY RECORDS AND ADJOINING DESCRIPTIONS AS NOTED.
4. ALL COMMON GROUND TO BE USED FOR UTILITY EASEMENTS.

⊙ = SET # 5 REBAR IN CONCRETE.
● = FD. EXISTING MONUMENT (AS NOTED) PLACED CONCRETE COLLAR.
⊕ = MESA COUNTY SURVEY MONUMENT.



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WESTERN ENGINEERING INC.

SUBDIVISION PLAT OF
HORIZON HILLS TOWNHOMES
N SE1/4 NE1/4 SECTION 2
T1S, R1W, UTE MERIDIAN
CITY OF GRAND JUNCTION
MESA COUNTY, COLORADO

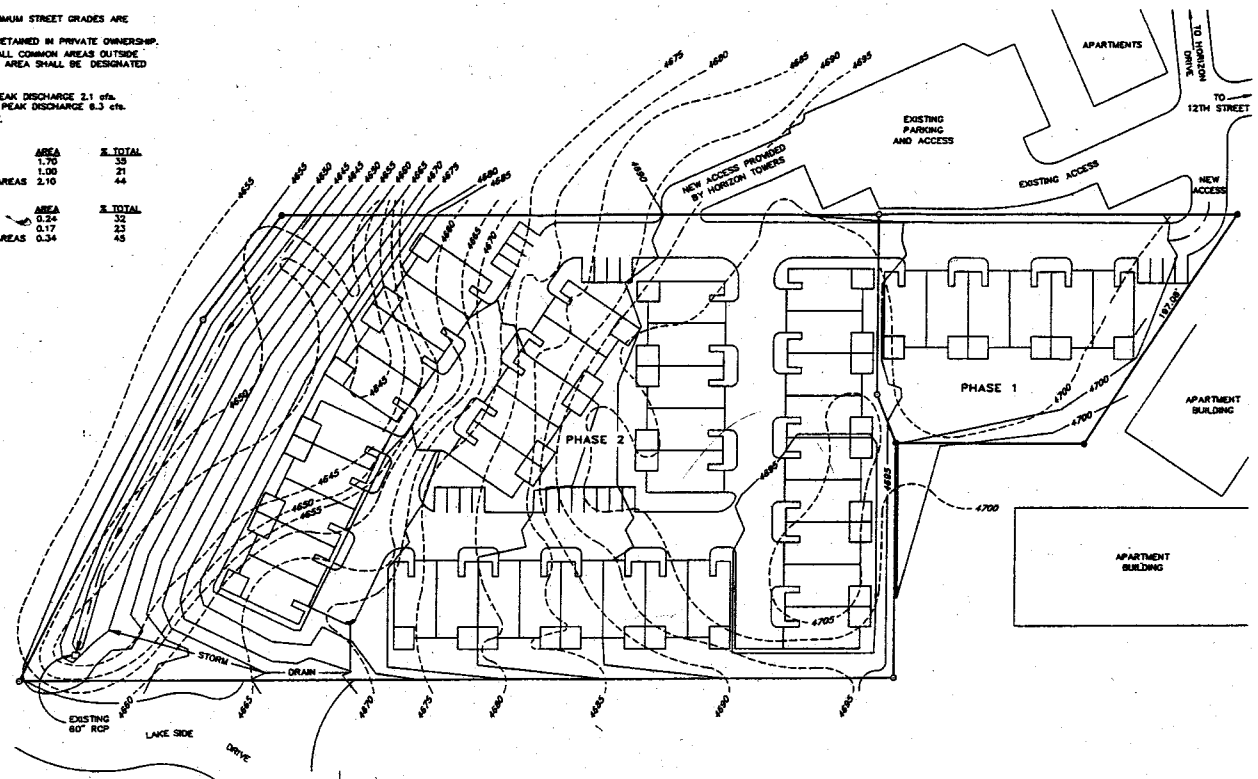
NOTES:
1. STREET GRADES – MAXIMUM STREET GRADES ARE APPROXIMATELY 6.5%.
2. ALL STREETS WILL BE RETAINED IN PRIVATE OWNERSHIP.
3. UTILITY EASEMENTS – ALL COMMON AREAS OUTSIDE OF BUILDING FOOTPRINT AREA SHALL BE DESIGNATED AS UTILITY EASEMENTS.
4. HYDROLOGY –
   EXISTING 10 YEAR PEAK DISCHARGE 2.1 cfs.
   PROPOSED 10 YEAR PEAK DISCHARGE 6.3 cfs.
5. FLOOD HAZARD – NONE.
6. BUILDING SUMMARY:

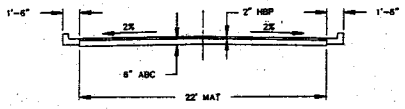
TOTAL PROJECT:

ITEM	AREA	% TOTAL
42 UNITS	1.70	35
STREETS	1.00	21
PRIVATE OPEN AREAS	2.10	44

PHASE 1:

ITEM	AREA	% TOTAL
6 UNITS	0.34	32
STREETS	0.17	23
PRIVATE OPEN AREAS	0.34	45





TYPICAL ROAD CROSS SECTION

SCALE IN FEET

GRADING AND SITE PLAN OF
HORIZON HILLS TOWNHOMES
IN SE1/4 NE1/4 SECTION 2
T1S, R1W, UTE MERIDIAN
CITY OF GRAND JUNCTION
MESA COUNTY, COLORADO

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HORIZON HILLS TOWNHOMES

DEDICATION

KNOW ALL MEN BY THESE PRESENTS:

That the undersigned John Branagh is the owner of that real property in the City of Grand Junction, County of Mesa, State of Colorado, and that being part of the SE1/4 NE1/4 Section 2, Township 1 South, Range 1 West of the Ute Meridian, as shown on the accompanying plat, said real property being more particularly described as follows:

Commencing at the East 1/4 corner of said Section 2, and considering the line between said East 1/4 corner and the S.W. corner of said SE1/4 NE1/4 of Section 2 to bear S 89°52'44" W with all bearings herein contained relative thereto; thence S 89°52'44" W 527.80 feet to the point of beginning; thence S 89°52'44" W 821.89 feet to the easterly right-of-way line of Horizon Drive; thence along said right-of-way line N 28°28'16" E 285.90 feet; thence N 36°28'48" E 82.13 feet to the North line of said S1/4 SE1/4 NE1/4 Section 2; thence leaving said right-of-way line N 89°52'40" E 684.11 feet to a point which is 283.85 feet West of the East line of said Section 2; thence along the westerly line of Northwoods Subdivision S 33°43'56" W 197.02 feet; thence N 89°38'21" W 134.81 feet; thence S 00°04'59" W 187.13 feet to the point of beginning.

That said owner has caused the said real property to be laid out and surveyed as Horizon Hills Townhomes, a subdivision of a part of the City of Grand Junction, County of Mesa, State of Colorado.

That said owner does hereby dedicate to the City of Grand Junction those portions of real property which are labeled as utility easements on the accompanying plat, as easements for the installation and maintenance of utilities and drainage facilities, including but not limited to electric lines, gas lines, and telephone lines; together with the right to trim interfering trees and brush; together with the perpetual right of ingress and egress for installation, maintenance and replacement of such lines. Said easements and rights shall be utilized in a reasonable and prudent manner.

IN WITNESS WHEREOF said owner has caused his name to be hereunto subscribed this _____ day of _____ A.D., 1988.

_____
John Branagh

(STATE OF COLORADO)
( ) :ss
(COUNTY OF MESA)

The foregoing instrument was acknowledged before me this _____ day of _____ A.D., 1988 by John Branagh.

My Commission expires _____
Witness by hand and official Seal.

_____
NOTARY PUBLIC

CITY OF GRAND JUNCTION APPROVAL

This plat of Horizon Towers Townhomes, a subdivision of the City of Grand Junction, County of Mesa, and State of Colorado was approved and accepted on this _____ day of _____ A.D., 1989.

_____
City Manager

By _____
President of Council

_____
Chairman, City Planning Commission

_____
City Planner

_____
City Engineer

(STATE OF COLORADO)
( ) :ss
(COUNTY OF MESA)

I hereby certify that this instrument was filed in my office at _____ o'clock ____ M., this _____ day of _____ A.D., 1989 and is duly recorded in plat Book No. _____, Page _____.

Fee $ _____

_____
Deputy

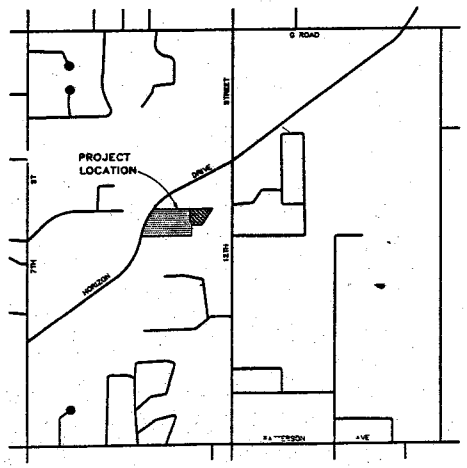
_____
Clerk and Recorder

SURVEYOR'S CERTIFICATE

I, Richard A. Mason, do hereby certify that the accompanying plat of Horizon Hills Townhomes, a subdivision of a part of the City of Grand Junction, County of Mesa, has been prepared under my direction and accurately represents a field survey of same.

_____
Richard A. Mason
Colorado Reg. No. 18469

_____
Date



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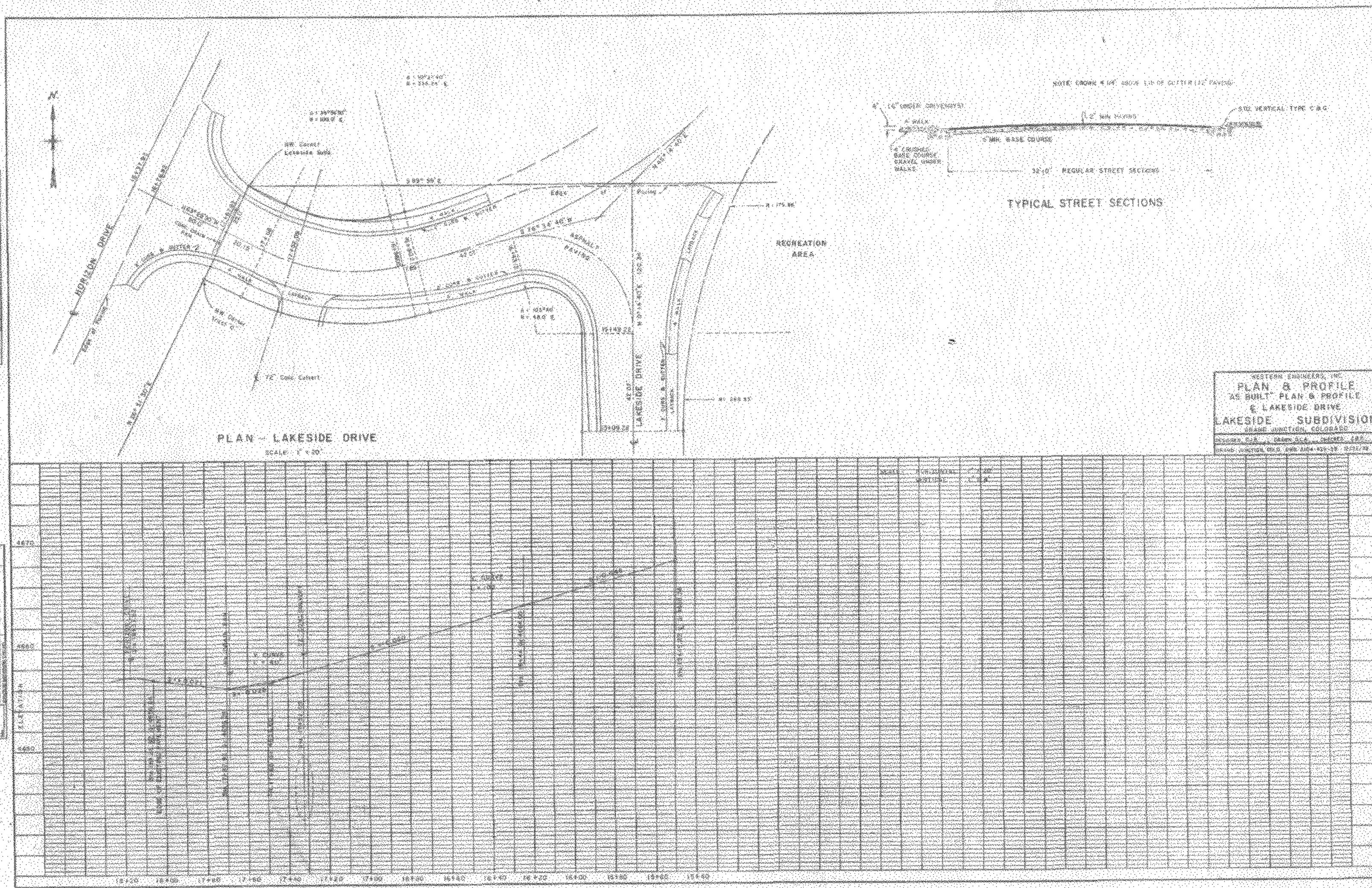
NOTICE: According to Colorado law you must commence any legal action based upon any defect in this survey within three years after you first discover such defect. In no event, may any action based upon any defect in this survey be commenced more than ten years from the date of the certification shown hereon.

WESTERN [illegible]

PLAT OF
HORIZON HILLS TOWNHOMES
IN SE1/4 NE1/4 SECTION 2
T1S, R1W, UTE MERIDIAN
CITY OF GRAND JUNCTION
MESA COUNTY, COLORADO

SURVEYED R.A.M.	DRAWN M.W.C.	CHECKED R.A.M.
DATE 7/7/89	W.O. Dwg. No. 2429-152-1	


TYPICAL STREET SECTIONS
RECREATION AREA
HORIZON DRIVE
LAKESIDE DRIVE
PLAN - LAKESIDE DRIVE
PROFILE
WESTERN ENGINEERS, INC.
PLAN & PROFILE
"AS BUILT" PLAN & PROFILE
LAKESIDE DRIVE
LAKESIDE SUBDIVISION
GRAND JUNCTION, COLORADO
4670
4660
4650
18+20
18+00
17+80
17+60
17+40
17+20
17+00
16+80
16+60
16+40
16+20
16+00
15+80
15+60
15+40

REVIEW SHEET SUMMARY

FILE NO. 38-89 TITLE HEADING Horizon Hills Townhomes Rezone/Prelim. and Final DUE DATE 7/24/89

ACTIVITY - PETITIONER - LOCATION - PHASE - ACRES Petitioner: John Branagh

Location: S. of Horizon Dr., W. of Horizon Towers Acres: 4.7

PETITIONER ADDRESS 4432 Piedmont Ave. Oakland, CA 94611

ENGINEER n/a

DATE REC.	AGENCY	COMMENTS
7/21/89	Ute Water	Ute Water will provide fire and domestic water services for this project directly from existing 8" lines in Horizon Towers water system. Participation may be necessary in contract-protected water lines. SERVICE WILL NOT COME FROM LAKESIDE. Apartments may be master-metered; townhomes should be individually metered. Policies and fees in effect at the time of application will apply.
7/19/89	Police Dept.	No adverse impact anticipated with this project.
7/19/89	Public Service gas:	May have some problem with gas service indicated for Phase I (4.4') from building. Developer should contact PSCo to see if other location is possible. No objection to overall plan.
	electric:	No objection.
7/18/89	Mtn. Bell	New or additional telephone facilities necessitated by this project may result in a "contract" and up-front monies required from developer prior to ordering or placing of said facilities. For more information, please call 244-4919.
7/18/89	GJ Drainage	The site of the proposed Horizon Hills Townhomes does not lie within the boundaries of the Grand Junction Drainage Dist. City Engineering has data on the Horizon Drive Channel, capacities, and existing configuration.
7/21/89	Utilities Mgr.	Per City Code, section 5-4-4B, this development is within City limits and is, therefore, required to connect to the City water distribution systems per Utility Manager. The development is within 400' of the 15" Horizon Drive interceptor and will be required per City Code, Section 25-18, Ord. No. 1873, 5.3-5-80 to connect to this line with a new manhole, if necessary, and a minimum of an 8" sewer line within the development. Submittal is lacking the following information as required by Section 5-6-5 of the Zoning and Development Code pertaining to utilities: 1. No profiles shown for water and sewer. 2. No detail on hydrants, service details, and manholes. 3. No compaction standards or trench details. 4. No eternal utility line affecting the project (sewer, water) shown on any plan. 5. No irrigation or drainage systems shown. 6. No stamp or seal of professional engineer. 7. Additional requirements per Section 5, Zoning and Development Code. 8. No further review will take place until all above items have been submitted.

NOTE: WRITTEN RESPONSE BY THE PETITIONER TO THE REVIEW COMMENTS IS REQUIRED A MINIMUM OF 48 HOURS PRIOR TO THE FIRST SCHEDULED PUBLIC HEARING.

7/20/89 Fire Dept.

The following requirements are to be met:

1. The water line for the fire hydrants shall be a minimum of eight (8") inches, and looped between two main feeder lines.
   a. The fire hydrants shall be placed at a distance no greater than 300 ft. apart.
2. Access
   a. Additional access is required to the south of the property.
   b. NO PARKING will be allowed on any of the accessways
   c. The intersections need to be wider to allow access for our emergency vehicles.
3. A fire flow survey is required to determine if adequate water is available. (I require a set of building plans to accomplish this.)

If you have any questions, please contact our office at 244-1400.

7/24/89 Planning Dept.

1. Density and type of development is compatible with surrounding uses and is consistent with the Horizon Drive Corridor Guidelines.
2. Appraisal is not required. Open space fees will be $225 per residential unit.
3. Need vertical dimensions on elevations.
4. Need ingress/egress easements platted over private drives.
5. Seventy-six parking spaces required; 84 spaces provided. Covenants/restrictions should prohibit garage conversions which would reduce available parking.
6. Access and circulation concerns must be resolved with the City Engineer.

7/24/89 City Engineer

The proposed streets are not designed to any City standards and are not acceptable as public streets. If private streets are approved and constructed, who will be responsible for future maintenance, and how will it be paid for? Proposed street widths and radii at intersections do not appear to be adequate to accommodate truck turning movements. For what size of trucks are the roadways designed? No street grades, cross-sections, or pavement sections are shown on the plans. No pedestrian walkways or sidewalks are shown.

Drainage: This development will drain to the Horizon Channel. This channel often floods over its banks onto Patterson Road (24 to 25 Road) during storms of frequent recurrence. On-site detention will be required for all runoff exceeding historic flows from a 10-year storm. No storm sewers or drainage facilities are shown on the plans. How will drainage water be collected or contained in the streets if no curbs or gutters are constructed?

Public right-of-way is stubbed out to the south side of this property from Lakeside Drive. This right-of-way provides direct access from the proposed development to a public street. Why is connection to Lakeside Drive not being proposed as a second access?

City Engineer (con't)

The west property line (east right-of-way line of Horizon Drive) will have to be modified to match the horizontal curve and right-of-way line shown on the Horizon Towers plat.

The property owner will be responsible for the cost of hali of a commercial street section along the west property line frontage. Since Horizon Drive street improvements have not yet been designed, the funds for these improvements will be placed in escrow account for future street construction.

Street improvements, including curb, gutter, sidewalk and pavement, will also be required to complete Lakeside Drive along the west end of the south property line.

RESPONSE NECESSARY
BY 2/28/89

7/25/89

WESTERN ENGINEERS, INC. SINCE 1052
CONSULTING ENGINEERS / LAND SURVEYORS
2150 Hwy. 6 & 50, Grand Junction, CO 81505-9422 • 303/242-5202 • FAX 242-1672

July 28, 1989

Karl Metzner
City Planner
City of Grand Junction
250 N. 5th St.
Grand Junction, CO 81501

RE: HORIZON HILLS TOWNHOMES: Review Sheet Summary Response

Dear Karl:

Attached is our written response to the review comments. We appreciate the opportunity to respond.

The final plans now being prepared also address all the comments received.

If you have any questions please give me a call.

Very truly Yours,
WESTERN ENGINEERS, INC.

John M. Currier, PE

cc: John Branagh
Ron Choate

July 27, 1989

REVIEW SHEET SUMMARY RESPONSE: Horizon Hills Townhomes

This is response to the comments on the review sheet summary for the Horizon Hills Townhomes project. Responses are given only to those review agencies that had concerns.

Ute Water — The water for the project will be provided by the City and not by Ute Water per City code.

Public Service — The gas service can be located as needed to accommodate Public Service.

Mnt. Bell — The developer agrees to work with Mnt. Bell and provide up-front monies as needed based on the knowledge that said monies are refundable when the project is constructed.

Utilities Mgr. — The development will utilize City water. A connection will be made to the line located in Lakeside Drive.

Sanitary sewer is stubbed out to the property line in Lakeside Dr. The development will incorporate an 8" line which will connect to this stub which in turn connects to the 15" Horizon Drive interceptor. This would be preferable to installing a new manhole in the interceptor.

No sewer and water line profiles were included in the submittal due to the preliminary nature of Phase 2 of the project. Design of phase 2 is now being finalized. This includes detailed street layout including plans and profiles of streets and utilities.

City standards will be utilized for water and sewer utility construction and City specifications will govern compaction standards.

On the final plan now being prepared, off site utilities affecting the project will be shown.

The entire development drains to Horizon Drive Wash. Drainage within the development is being clarified in the final plans now being prepared. Runoff will be conveyed to the streets where it will be contained by curb and gutter. A storm drainage system will also be constructed to ensure that all flow can be contained in the streets.

The source of irrigation water for the site has not been finalized. The owner/developer is

negotiating with G.V.I.C. to obtain water from the Grand Valley High Line canal. If this source is used it would be conveyed in an easement along the east side of Horizon Drive. The second option is to use City water for irrigation.

The plans will only be stamped by a professional engineer when they are finalized.

Fire Dept.

An 8" water line will be constructed in the development. This will be adequate for fire flows. The line will not be looped between two main feeder lines because one of the available feeders belongs to Ute and the other to the City. The City will provide the development with water.

Fire hydrants will be placed at 300 foot intervals or less.

The developer will provide an all weather emergency access to the development from Lakeside. Drive. The access will be barricaded to allow only emergency access.

In the plans now being finalized, the street curve center line radii are being increased to 40 feet. This is adequate for easy access of emergency vehicles.

The fire department will be provided the necessary plans to do a fire flow survey.

Planning Dept.

Vertical dimensions of the units are not expressly shown on the elevation views. However, the scale is 1/4" = 1' and the vertical dimensions can be determined from this.

The owner/developer has agreed to provide ingress/egress easements over his Horizon Towers property to the project. These will be shown on the final plans now being prepared.

City Engineer

All streets in the development are to be private ways. Maintenance will be provided by the owner/developer. As discussed previously, curve radii are being increased and will accommodate SU type vehicles. City standards and specifications will govern street and utility construction. No sidewalks will be provided however, as they are unnecessary in this type of controlled access, highly secure development.

On-site detention will be provided to detain all flows in excess of the historic 10-year storm. This detention is being incorporated into the final plans being prepared. Street drainage will be contained in the streets by curb and gutter. A storm drainage system is also being incorporated into the final plan.

It is the desire of the owner/developer to provide a development with controlled access and a high level of security. To wit: a self contained, high security, high quality community. This project should be considered a "sister" project to Horizon Towers and of the same family. Allowing unlimited access from Lakeside Drive would destroy the entire concept of the development.

The question regarding the west property line (east right-of-way line of Horizon Drive) will be addressed on the final plans being prepared.

Based on the developers completion of Horizon Towers there should be no need for the owner/developer of Horizon Towers to participate in Horizon Drive street improvements.

As the owner/developer is providing only emergency access from Lakeside Drive there should be no requirement to complete curb, gutter, and sidewalk along Lakeside Drive.

G.V.I.C. The owner/developer is negotiating with G.V.I.C. for irrigation water for the project. This would require pumping water above their historic service area to land never before irrigated. If G.V.I.C. is unable to provide irrigation water then City water will be utilized.

It is the intent of the owner/developer to construct a high quality community in the same family as Horizon Towers. The successful completion of Horizon Towers and the high quality of that project indicate that the owner/developer will do no less for this development.

cc: John Branagh
Ron Choate

OFFICE ACTION SHEET

Acres 4.7
Units 42
Density 8.9

REZONE & PRELIMINARY & FINAL

File No. #38 89
Zone RSF-4 to PR
Tax Parcel Number 2945-021-00-047

Activity Horizon Hills Townhomes
Phase
Common Location South of Horizon Dr. West of Horizon Tower

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	X	E	F	G	H	X	X	X	L	X	X	O	P	Q	X	S	T	U	V	X	X	Z	X	BB	CC	DD	EE	FF	GG
Development Dept.	●	●	●	●	●		●	●	●	●	●		●	●	●	●	●	●	●		●	●	●	●	●	●	●	●		●	●	
City Public Works (2 sets)	●	●	●										●	●	●	●	●	●			●	●	●	●								
City Engineer	●	●	●							●	●		●	●	●	●	●	●			●	●	●	●	●							
Transportation Engineer	●	●	●										●	●	●	●	●				●	●	●	●	●							
City Parks/Recreation	●	●	●	●									●	●	●	●					●	●										
City Fire Dept.	●	●	●																													
City Police Dept.	●	●	●												●	●	●															
County Planning	●	●	●																													
County Engineer	●	●	●																													
County Health	●	●	●																													
County Parks/Recreation	●	●	●										●	●	●	●	●			●	●					●						
Comprehensive Planning	●	●	●										●	●	●	●	●				●					●						
Floodplain Administration	●	●	●						●				●	●	●	●	●				●					●						
G.J. Dept. of Energy	●	●	●										●	●	●	●	●				●					●						
Walker Field	●	●	●										●	●	●	●	●				●					●						
School District																																
Irrigation G.V.W.U.	●	●	●																													
Drainage G.J.	●	●	●																													
Water (Ute, Clifton)	●	●	●																													
Sewer Dist. (FV, CGV, OM)																																
Mountain Bell	●	●	●										●	●	●	●	●				●					●						
Public Service (2 sets)	●	●	●										●	●	●	●	●				●					●						
State Highway Dept.	●	●	●										●	●	●	●	●				●					●						
State Geological	●	●	●										●	●	●	●	●				●					●						
State Health Dept.	●	●	●									●	●	●	●	●	●				●					●						
GJPC (7 packets)	●	●	●												●	●	●															
CIC (9 packets)	●	●	●												●	●	●															
OTHER																																
City Attny	●	●															●															
City Utilities Mgr	●	●															●															
Prop. Manager	●	●															●															
totals																																

BOARDS

	DATE	
GJPC	8/1/89	Approved Rezone, Preliminary, Final Plan Phase I, approve final plat.
CIC	8/16/89	Approved as per P.C. recommendation. Denied request to waive road improvement and open space fees.

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STAFF

APPLICATION FEE REQUIREMENTS

open space fee $225 per dwelling unit
$500 application fee

GRAND JUNCTION PLANNING

development summary

File # 38-89 Name Horizon Hills Townhomes Date 8/2/89

PROJECT LOCATION: South of Horizon Drive and west of Horizon Towers

PROJECT DESCRIPTION: Rezone to PR for a 42 unit townhome developme on 4.7 acres. Preliminary plan for 36 units, final plan for 6 units and a two lot subdivisi

REVIEW SUMMARY (Major Concerns)

POLICIES COMPLIANCE	YES	NO*	TECHNICAL REQUIREMENTS	SATISFIED	NOT SATISFIED*
Complies with adopted policies	X		Streets/Rights Of Way	X	
Complies with adopted criteria	X		Water/Sewer	X	
Meets guidelines of Comprehensive Plan	X		Irrigation/Drainage		X
			Landscaping/Screening	X	
			Other:		

* See explanation below

-- Negotiations for pumping from the Grand Valley Highline Canal are in progress. If irrigation water cannot be acquired City water will be used.

STATUS & RECOMMENDATIONS:

--The proposal fits the following rezone criteria:

- There has been a change in the character of the area.
- The proposed rezone is compatible with surrounding uses.
- The proposal is in conformance with the Corridor Guidelines.
- Adequate facilities are available to serve the development.

Planning Commission Action

8/1/89--Planning Commission recommended approval of the rezone.
Planning Commission approved the preliminary plan and final plan and plat subject to review comments.

Memorandum

August 14, 1989

To: Karl Metzner
From: Don Newton DN

Subject: Access to Horizon Hills Townhomes

Based on traffic counts taken August 7th, 8th and 9th and projected traffic volumes based on fully developed conditions in Horizon Towers and Horizon Townhomes, we have determined that traffic signals would not be warranted at the proposed access locations on Horizon Drive and 12th Street. However, these locations will become increasingly congested as more units are developed and occupied. If full development occurs before Horizon Dr. and 12th St. are widened, serious traffic congestion problems could occur during peak traffic periods.

I recommend that access to Lakeside Drive be provided for emergency vehicles and for future resident access. This access could be closed (if desired by the owner) to all but emergency vehicles until such time in the future that it was needed for resident access.

TO: Planning Department

FROM: Bill Cheney, Utilities BC

DATE: August 17, 1989

RE: Horizon Hills Townhomes

I have reviewed the plans submitted by Western Engineers for sewer and water and find them to be acceptable from an engineering standpoint. There are errors on the drawings pertaining to vertical elevations that should be corrected prior to final submittal, however these errors do not substantially affect the concept or design.

Shop drawings of all hydrants, valves and appurtenances to the water line will be required prior to the start of construction. "As Constructed" reproducible drawings for both water and sewer will be required prior to final acceptance by the City.

cc: Don Newton
Greg Trainor

HORIZON TOWERS TOWN HOMES
c/o 4432 Piedmont Avenue
Oakland, CA 94611
(415) 654-4260

October 2, 1989

Grand Junction City Council
250 North 5th Street
Grand Junction, CO 81501

Dear Council Members:

On September 13, 1989, the undersigned did specifically request a written response from your offices pertaining to the (proposed) Town Homes tapping into Grand Junction's City Water. Said response was to be at your earliest convenience, but in any case not later than September 22, 1989. It was also brought to your attention that the original project approvals mandated City water use, and all costs by the developer were based thereon.

Because no response has been received I can only conclude that the City has elected to breech our original agreement and, further to ignore City Code, Section 5-4-H.B. which requires any development within the City limits to connect to the City water distribution system.

In light of the above, I am left withno choice other than to seek mitigation of my damages, as well as to pursue reimbursement for all expenses. At this point I am dropping construction of my Town Homes. It'appears that the political climate in Grand Junction does not warrant the time or capital investment, and my reliance upon earlier City Council's requirements/approvals were for naught.

Yours truly,

John A. Branagh

JAB:dg
cc: Mark Achen, City Manager
Dan Wilson, City Attorney
Karl Metzner, City Planner
Keith Mumby, Esq.
Francis Constructors

Enc: Letter of September 31, 1989

P.S. In the interests of time, this conveyance has been faxed to Keith Mumby, Esq., for distribution to all parties.

December 4, 1989

City of Grand Junction, Colorado
81501-2668
250 North Fifth Street

John A. Branaugh
Horizon Towers Town Homes
c/o 4432 Piedmont Avenue
Oakland CA 94611

Dear Sir:

Keith Mumby has asked that I respond to your October 2, 1989 letter addressed to the City Council. I am pleased to do so both so that I may address some concerns you raised and, perhaps more importantly, to confirm the City's position.

As the Council indicated when last you appeared before them, the City welcomes quality development within the City and believes that your project would benefit the City and its citizens. Of course, we are constrained by the situation and facts with which we must deal.

I will forbear from commenting on the portions of your letter which appear to take fault with the City except to ask if you believe that a contract was agreed upon by you and City staff? If so, I would appreciate knowing what you believe the terms of such an agreement are.

As I understand it, prior to your letter of October 2, 1989, you discussed with City staff that the difference between City tap fees and Ute fees with respect to your project was approximately $92,400.00. You also discussed an additional benefit to your project being served by the City water system in the form of lower monthly rates: approximately 60 cents per thousand gallons of water used.

Our staff indicated that your project could go forward at present with City lines but using bulk water purchased from Ute: you would be billed by the City but would receive the benefit of the lower monthly rates and the reduced City tap fees. You would pay to the City two-thirds of the tap fee "savings" (the difference between the City's and Ute's tap fees). The City would construct the necessary lines required to supply your project with City water at an approximate total construction cost of $130,000.00. Once the new lines were built, the source of water would switch from Ute to City.

As I understand it, you indicated that this was agreeable in concept, but it was not finalized.

I have met with Mr. Mumby and have attempted to explain why it is that the City does not interpret what has happened as a breach of a contract nor how the actions of the City form a basis for a claim for damages. I believe that Mr. Mumby understands the difficulties of the situation, from the City's perspective. I hope that you too will understand them.

If you desire to discuss this matter further, please let me or the Utilities staff know.

Very truly,

Dan E. Wilson
City Attorney

c: Bill Cheney
Keith Mumby

City of Grand Junction, Colorado
81501-2668
250 North Fifth Street

December 11, 1989

John M. Currier
Western Engineers
2150 Highway 6&50
Grand Junction, CO 81505

Re: Horizon Hills Townhomes

Dear John:

I have reviewed the plans (revised 10-20-89) of Horizon Hills Townhomes, Phase I and have the following comments:

UTILITY COMPOSITE: The 8" water line in the southerly most east-west street is mislabeled "S" instead of "W". Please show trash dumpster location on this plan.

GRADING AND DRAINAGE PLAN:

Hydrology: Runoff co-efficients may be low, considering soil conditions and developed impervious areas, however, this is compensated for by a high time of concentration (15 minutes).

What will prevent runoff in the street from jumping the 5' drainage pan and flowing into the west parking area? How and where will water be outlet from this parking area?

SITE PLAN AND PROFILE STREET AND UTILITIES: (Sheets 1 through 3).

Proposed streets are not to City standards and therefore will not be owned and maintained in the City. The street pavement section may not be adequate to support truck loading. A hold harmless agreement for street pavement damage will be required before any fire trucks, garbage trucks or other City service vehicles will be authorized to use these streets.

The sewer lines appear to be shallow (4 to 5 feet deep) which may cause a conflict between sewer service lines, water lines and other utilities. This could be avoided by increase the depth of sewer lines.

Please submit a plat showing the revised right-of-way line along Horizon Drive and improvements agreement for half street improvements (collector standard) for Horizon Drive along the property frontage.

I also need a plan for the required curb, gutter, sidewalk and pavement improvements on the north side of Lake Side Drive.

Please call if you have any questions regarding the above comments.

Sincerely,

J. Don Newton

J. Don Newton
City Engineer

xc: Karl Metzner
Bill Cheney
Jim Shanks
Dan Wilson

FILE:DN:CURRIER.HOR

JDN:skw

WESTERN ENGINEERS, INC. SINCE 1952
CONSULTING ENGINEERS / LAND SURVEYORS
2150 Hwy 6 & 50, Grand Junction, CO 81501 • 303/242-5202

HORIZON HILLS TOWNHOMES

WATER & SEWER USE ESTIMATE

WATER USAGE:

Current information from the Grand Junction City Water Department lists the per capita water consumption within the City at 230 gallons per day.

Based on an average occupancy rate of three people per unit, the development would require 28,900 gallons of domestic water per day (230) gpcd x 3 people/unit x 42 units)

SEWAGE PRODUCTION:

The Mesa County Health department utilizes a sewage production factor of 150 gallons per bedroom per day with a peaking factor of 1.5. In consideration of this, the development can be expected to produce 18,900 gallons of sewage per day (150 gallons/bedroom x 2 bedrooms/unit x 42 units x 1.5).

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WESTERN ENGINEERS, INC. SINCE 1963
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2150 Hwy 6 & 50, Grand Junction, CO 81501 • 303/242-5202

HORIZON HILLS TOWNHOMES July 7, 1989

FLOOD HAZARD & HYDROLOGY REPORT

Flood Hazard

The flooding hazard for the development is minimal. The development is outside of all designated flood plains. Surface runoff through the development will not result in flooding as the development is on a hillside that has excellent surface drainage.

Horizon Drive Wash is located on the west edge of the property. Though not a designated flood plain, some flood hazard is associated with the wash. All development will be high above the wash and will be well above the 100 yr. flood stage in the wash. During development the wash will be regraded and rerouted. Work in the wash will not decrease the conveyance capacity or increase the 100 yr. flood stage.

Hydrology

Existing Conditions

The present condition of the Horizon Hills Townhomes site varies from natural ground to remnants of surrounding earthwork projects. During construction of Horizon Towers excess excavation was stockpiled on this site. The slope of the site changes from flat on the top to 7%-9% grades on the west edge of the site. Historically drainage has been westerly into Horizon Drive Wash. This drainage pattern has been partially disrupted by the import of material from the Horizon Towers construction.

Based on the modified rational method, the existing condition runoff for a 10 yr. storm is 2.1 cfs.

Calculation: $Q=CC_fIA$
$C_f=1.0$ for 10 year
$C=0.20$ $A=4.8$ acre
$T_c=15$ min. => $I=2.2$ iph
$Q= (.20)(1.0)(2.2)(4.8)=2.1$ cfs

Proposed Conditions

At completion of the total development, the areas will be 1.7 acres of structures, 1.0 acres of streets, and 2.1 acres of landscaped ground. Ground slopes will vary from 3% to 9%.

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Using the rational formula with an area weighted runoff coefficient the buildout runoff will be 6.3 cfs.

Calculation:

	percent of area	coefficient
Buildings	35	.95
Streets	21	.20
Landscaped	44	.07
	Area weighted C:	.60

$Q=CC_fIA$
$=(.60)(1.0)(2.2)(4.8)=6.3$ cfs
Time of concentration will remain essentially unchanged.

The increase of 4.2 cfs in Horizon Drive Wash is not a significant increase with respect to the capacity of the wash. However if deemed necessary there are areas within the project that can be utilized for storm water retention/detention.

Proposed Conditions - Phase 1 only

The initial phase of the construction involves 0.75 acre. 53% will be impervious improvements including one building, parking, and access. The remaining 48% will be landscaped. The phase 1 area is situated on the high, flat ground at the east end of the parcel. During construction the site will be regraded from flat to about 2%. The estimated increase in runoff from phase 1 construction is 0.57 cfs, increasing the total runoff from the parcel due to phase 1 construction to 2.67 cfs.

Calculations:

	Percent of Area	Runoff Coefficient
Impervious	53	.95
Landscape	48	.10
	Area weighted C:	.57
	Existing Condition C:	.20

$Q=CC_fIA$
$=(.57)(1.0)(2.2)(.75)=0.9$ cfs (Buildout)
$=(.20)(1.0)(2.2)(.75)=0.33$ cfs

GEOLOGIC REPORT
FOR
JOHN A. BRANAGH
HORIZON HILLS TOWNHOMES
July, 1989

Prepared for:

John A. Branagh
4432 Piedmont Avenue
Oakland, CA 94611

Prepared by:

Western Engineers, Inc.
2150 Highway 6 & 50
Grand Junction, CO 81505

[W.O. # 2429]

#30 09

GEOLOGIC REPORT
FOR
JOHN A. BRANAGH
HORIZON HILLS TOWNHOMES
July, 1989

Introduction

The proposed Branagh development is a 4.7 acre parcel lying in the SE¼NE¼ of Section 2, T1S, R1W of the Ute Meridian. The property is located within the City limits of Grand Junction, Colorado, and a short distance southwest of the intersection of 12th Street and Horizon Drive. This undeveloped parcel is bounded by the existing, multi-family developments of Northwood, Lakeside, and Horizon Towers. The development would occur in two phases with phase one consisting of one structure with 6 townhome units and phase two being six structures with 36 townhome units.

This geologic report is based on a surface reconnaissance of the parcel and surrounding terrain, a Geological Hazard Area Map (Chapter 5, Section 9-4C.3 of the City of Grand Junction Zoning and Development Code), and soils mapping by the Soil Conservation Service (SCS). No subsurface exploration was performed for this report. A soils map based on SCS maps has been prepared and is attached to this report. The only hazard shown on the Geological Hazard Area Map is "Flashflood Potential" along the wash on the western margin of the parcel.

Regional Geology

The parcel is located on the northeast flank of the Uncompahgre Uplift where the underlying sedimentary rocks dip about 3° to the northeast into the Piceance Basin. The site is in the extensive Grand Valley which has been eroded into Mancos Shale of Cretaceous age by the Colorado River. The sedimentary layers beneath the Mancos range in age from Triassic to Cretaceous, and igneous and metamorphic rocks of Precambrian age lie beneath the sedimentaries.

Mancos Shale is a marine deposit and consequently contains soluble salts. The formation was originally about 3,800 feet in thickness, but the Mancos under the subject parcel is now about 1,100 feet thick due to erosion of the valley. The shale is dark gray, thin bedded, and composed mainly of clay and silt particles.

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About the western one-third of the parcel is comprised of a deep wash that is conveying a significant flow of irrigation wastewater and groundwater seepage inflow. The flow in the wash enters into a large concrete pipe at the downstream edge of the parcel. This wash extends headward several miles to the northeast and would convey runoff from any thunderstorms. The wash area has a dense growth of tamarisk, cattails, greasewood, and other vegetation which indicates a high groundwater table.

The wash and adjacent slopes are composed of fine-grained soils of silt and clay overlying Mancos Shale. The depth to shale is unknown, but could be in excess of 20 feet based on known stream-fill thicknesses in the general area. Subsurface exploration would be necessary to determine the soil thicknesses and depth to groundwater.

Conclusions

Based on a reconnaissance of the parcel, the following geologic hazards have been identified:

1. The large area of man-made fill consists of unconsolidated soil, shale fragments, and broken concrete and could be subject to considerable settlement and shearing upon saturation or loading. The design of any large structures must account for this potential instability.

2. The natural pediment soils and stream-deposited materials also could experience settlement under loading, especially if saturated, and this possibility must be evaluated.

3. The Mancos Shale could contain expansive clays that would adversely effect foundations.

4. Mancos Shale and soils derived from the shale contain sulfate salts due to the marine origin of the Mancos. Sulfate-resistant cement should be used where concrete would be in contact with the shale or soil.

5. The depth to water table should be considered in the design of any large structures.

6. The potential for erosion or flooding along the large wash, especially during any sudden rainstorms, must be considered.

7. A low landslide hazard exists along the slope to the east of the wash. Instability of the man-made fill or the underlying shale could occur if the slope were oversteepened by excavation during construction.

8. Commercial mineral resources of metallic or non-metallic nature are not found in the immediate area. A possibility for production of oil and/or natural gas from underlying formations exists. Production of natural gas from these formations occurs nearby.

9. The area has a low probability of destructive seismic events.

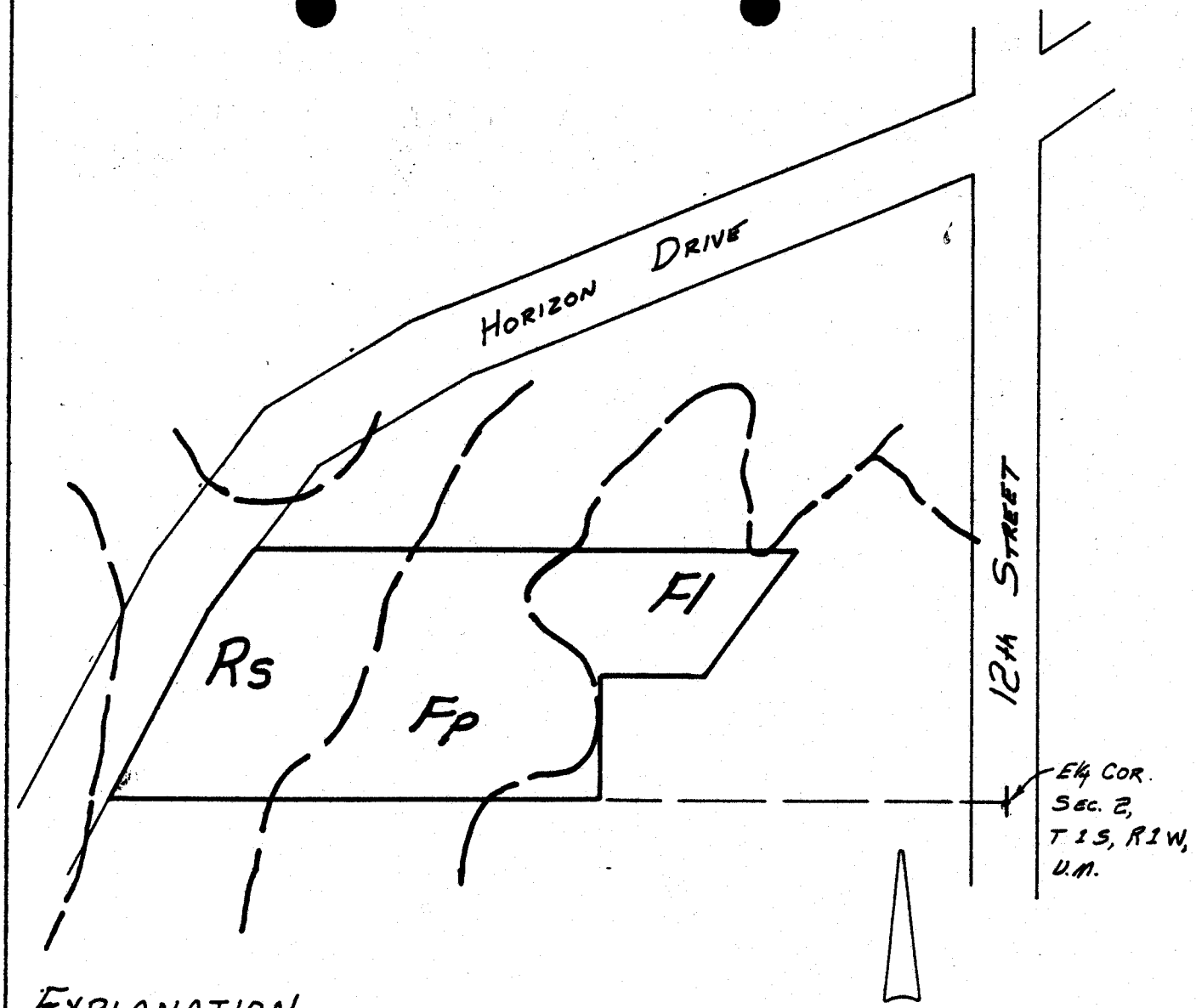
Site-specific investigations should precede any construction at this site to allow design considerations in accordance with the subsurface conditions and potential geologic hazards.

Prepared by:

WESTERN ENGINEERS, INC.

Joe G. Barnes

Joe G. Barnes
Consulting Geologist



EXPLANATION

~ ~	DIVIDES DIFFERENT TYPES OF SOIL BY THE SOIL CONSERVATION SERVICE CLASSIFICATION.
Fl	FRUITA GRAVELLY CLAY LOAM 2 TO 5 PERCENT SLOPES
Fp	FRUITA VERY FINE SANDY LOAM 0 TO 2 PERCENT SLOPES.
Rs	ROUGH GULLIED LAND

SCALE: 1" = 200'

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NOTE: TAKEN FROM SOIL MAP - GRAND JUNCTION AREA, COLORADO, S.C.S., SURVEYED 1939-40.

EASTERN PORTION OF THIS PARCEL COVERED BY MAN-MADE FILL (JUNE, 1989).

S.C.S. SOILS MAP

HORIZON HILLS TOWNHOMES

WESTERN ENGINEERS, INC.

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FRUITA GRAVELLY CLAY LOAM, 2 to 5 percent slopes, Class IIIe Land (Fl)

This soil occurs along the border of alluvial fans or mesas north of the Colorado River. It is at a higher elevation and more isolated than the Fruita very fine sandy loam soils. The areas are narrow and irregular, and the soil mantle over Mancos shale is not so thick as that of the Fruita clay loam or Mack clay loam soils situated farther back on the fans and mesas. Geologic erosion since deposition has removed a considerable part of the original clay loam surface soil, so there is more gravel in the present surface soil. The gravel content diminishes rapidly 150 to 300 feet back from the irregular borders of the mesas. This old alluvium is approximately 3½ to 7 feet deep.

The 8- or 10-inch surface soil consists of very pale-brown to light-brown gravelly light clay loam. The upper subsoil, a light-brown calcareous gravelly clay loam to gravelly loam, grades at depths of 14 to 18 inches into very pale-brown similarly textured material. The lower subsoil may be light gray, very pale-brown, or pale yellow. A fairly large number of angular to semirounded pieces of gravel and fragments of sandstone are intermixed with the clay loam material in the subsoil. The parent material is derived mainly from sandstone but to minor extent from shale.

The amount of visible lime is greater than in the Fruita very fine sandy loams. The subsoil is faintly to moderately splotched with lime, and segregations of lime are common throughout the profile. The soil is friable when moist. Internal drainage is medium and underdrainage is good. Despite the moderate to somewhat excessive quantities of gravel in the lower subsoil, the permeability to plant roots is not seriously restricted.

FRUITA VERY FINE SANDY LOAM, 0 to 2 percent slopes, Class I Land (Fp)

This soil is derived from alluvial deposits 4 to 8 feet thick that overlie shale. Generally the soil occurs on mesas or alluvial fans that are at lower levels than those occupied by the Fruita clay loam soils. It has a less conspicuous accumulation of lime, which suggests that it developed in alluvial deposits somewhat more recent than than those under the Fruita clay loam soils found on the higher mesa positions north of Loma.

The 8- or 10-inch surface soil is a very pale-brown, light-brown, or light reddish-brown calcareous very fine sandy loam. This layer is slightly hard when dry but very friable when moist. The subsoil is slightly lighter brown but is otherwise nearly the same as the surface soil. At depths of 18 to 22 inches it grades into very pale-brown, heavy, very fine sandy loam. This highly calcareous material has a fine subangular structure and is friable when moist. Below a depth of 50 inches the texture is dominantly sandy, but the texture is variable and there is some admixture of sandstone gravel.

This soil has good tilth in spite of a low content of organic matter. It is friable throughout, which assures medium internal drainage and easy penetration of deep-rooted plants.

No severe limitations exists for this soil.

ROUGH GULLIED LAND, Class VIIIe (Rs)

This land type is the product of erosion, gullying, and gully-bank caving of Billings soil material.

Erosion, facilitated by occasional mountain freshets and surface flow of irrigation waste water, continues until a gully has been cut down to the sandy substratum. The small continuous flow of irrigation waste water down the gully keeps the sandy substratum wet during the irrigation season. Some irrigation water applied on the fields adjoining the gully follows animal burrows or seeps down through the soil material until it reaches the sandy substratum. It then trickles out into the gully in small springlike veins and carries the saturated sandy material with it. Eventually, the high bank is undermined and topples down into the gully. The underground erosion and caving continually widen the gully. Some of the gully banks are already 50 to 400 yards apart. Unless waste water from irrigated land is disposed of through corrugated iron outlets, the cropland bordering the gullies gradually caves away.

Soil limitations are classified as severe for local roads and streets (slopes, flood hazard), shallow excavations (slopes, flood hazard), dwellings with basements (steep slopes, erosive soil materials), dwellings without basements (steep slopes, erosive soil materials), sanitary land fill (clayey textures, flooding, steep slopes), septic tank absorption fields (slopes), and sewage lagoons (slopes , flood hazard.)

SUBSURFACE SOILS EXPLORATION

HORIZON TOWERS TOWNHOUSES

GRAND JUNCTION, COLORADO

Prepared For:

HORIZON TOWERS
4432 Piedmont Avenue
Oakland, California 94611

Attn: Mr. Jack Branagh

Prepared By:

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

July 6, 1989

July 6, 1989

Mr. Jack Branagh
HORIZON TOWERS
4432 Piedmont Avenue
Oakland, California 94611

RE: Subsurface Soils Exploration
Horizon Towers Townhouses Project
Horizon Drive
Grand Junction, Colorado

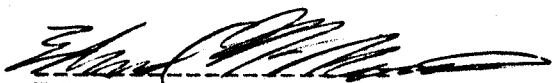
Dear Sir:

Transmitted herein are the results of a Subsurface Soils Exploration for the proposed Horizon Towers Townhouses Project.

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

Respectfully submitted,

LINCOLN-DeVORE, INC.

BY: 
Edward M. Morris
Western Slope Manager
Grand Junction, Office

Reviewed by: George D. Morris, P.E.

EMM/pt

LDTL Job No. 71105-J

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#38 89

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INTRODUCTION

PROJECT DESCRIPTION

This report presents the results of our geotechnical evaluation performed to determine the general subsurface conditions of the site applicable to construction of 7 Multifamily, Condominium style structures. A vicinity map is included in the Appendix of this report.

To assist in our exploration, we were provided with a Preliminary Sketch Plan, prepared by Western Engineers. The Boring Location Plan attached to this report is based on that plan provided to us.

We understand that the proposed structures will consist of on and possibly two story, wood framed buildings with either crawlspaces or concrete slabs on grade. Lincoln-DeVore has not seen a full set of construction drawings, but structures of this type typically develop wall loads on the order of 1000 to 2500 plf and column loads on the order of 10 to 20 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

#38 89

DeVore should be contacted to determine if the information in this report can be used for the new construction without further field evaluations.

PROJECT SCOPE

The purpose of our exploration was to evaluate the surface and subsurface soil and geologic conditions of the site and, based on the conditions encountered, to provide recommendations pertaining to the geotechnical aspects of the site development as previously described. The conclusions and recommendations included herein are based on an analysis of the data obtained from our field explorations, laboratory testing program, and on our experience with similiar soil and geologic conditions in the area. The scope of our geotechnical exploration consisted of a surface reconnaissance, a geophoto study, subsurface exploration, obtaining representative samples, laboratory testing, analysis of field and laboratory data, and a review of geologic literature.

Specifically, the intent of this study is to:

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

5. Identify potential construcion difficulties and provide recommendations concerning these problems.
6. Recommend an appropriate foundation system for the anticipated structure and develop criteria for foundation design.

FIELD EXPLORATION AND LABORATORY TESTING

A field evaluation was performed on June 22, 26 and July 3, 1989, and consisted of a site reconnaissance by our geotechnical personnel and the drilling of 6 exploration borings. These exploration borings were drilled within the proposed building 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 B45, truck mounted drill rig with continuous flight auger to depths of approximately 29 to 39 feet. Samples were taken with a standard split spoon sampler, thin walled Shelby Tubes and by bulk methods. Logs describing the subsurface conditions are presented in the attached figures.

Laboratory tests were performed on repre-sentative 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.

The lines defining the change between soils types or rock materials on the boring logs and on the soil

profiles are determined by interpolation, and are therefore approximations. The transition between soil types may be abrupt or may be gradual.

FINDINGS

SITE DESCRIPTION

The project site is located in the SE Quarter of the NE Quarter of Section 2, Township 1 South , Range 1 West of the New Mexico Principal Meridan, Mesa County, Colorado. More specifically the site is located South of Horizon Drive, West of 12th Street, and North of Lakeside Drive. he site is approximately 2 miles north of the main business district of Grand Junction.

The topography of the site is that of a moderate to steep hillside, dropping generally to the West. The slope gradient on this site is in excess of 60 to 75% at some locations. The direction of surface runoff on this site will be locally controlled by the proposed construction, but, in general, surface runoff will travel to the west and enter the flowing drainageway, which parallels Horizon Drive . Surface drainage is fair to good; subsurface drainage is poor to very poor.

The topography of the site is largely determined by the presence of an uncontrolled fill on the majority of the tract. The west 80 to 180 feet of the tract is a naturally occurring 'swampy' area, associated with the flowing drainageway which parallels Horizon Drive. The uncontrolled fill

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on this site originated from the foundation and site excavation for the Horizon Towers, immediately north and northeast of this site. This tract contains approximately 4.7 acres.

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

The majority of the site is covered with an uncontrolled fill, composed of Mancos Shale fragments, for the most part.

This soil type was classified as a low plastic CL under the Unified Classification System. The Standard Penetration Tests ranged from 11 blows per foot to 48 blows per foot. Penetration tests of this magnitude indicate that the soil is erratic and of low density. The moisture content varied from 6.2% to 17.1%, indicating a relatively dry to moist soil. This soil is plastic and is sensitive to changes in moisture content. With decreased moisture, it will tend to shrink, with some cracking upon dessication. Upon increasing moisture, it will tend to expand. Expansion tests were performed on typical samples of the soil and expansive pressures on the order of 695 to 2100 (remolded) psf were found to be typical.

This material will also consolidate upon saturation. In its existing condition this soil is not recommended for foundation bearing , for foundation soils beneath roadways, parking areas or landscaped areas which require a controlled gradient.

GENERAL GEOLOGY AND SUBSURFACE DESCRIPTION

The geologic materials encountered under the site consist of Debris Flow Deposits, placed over the Mancos Shale Formation.he Debris Flow Deposits were encountered beneath the uncontrolled fill and were very near the ground surface at the extreme east portion of the tract.The geologic and engineering properties of the materials found in our 6 exploration borings will be discussed in the following sections.

This soil type was classified as a gravelly, silty CL under the Unified Classification System. The Standard Penetration Tests ranged from 17 blows per foot to 24 blows per foot. Pene tration tests of this magnitude indicate that the soil is of low plasticity and and of low density. The moisture content varied from 3.7% to 11.3%, indicating a relatively dry soil. This soil is plastic and is sensitive to changes in moisture content. With decreased moisture, it will tend to shrink, with some cracking upon dessication. Upon increasing moisture, it will tend to expand. Expansion tests were performed on typical samples of the soil and expansive pressures on the order of 350 psf were found to be typical. This material will also consolidate upon saturation or excessive loading. If recommended bearing values are not exceeded, such settlement will remain within tolerable limits. The allowable maximum bearing

value was found to be on the order of 1100 psf. A minimum dead load of 350 psf will be required. These values assume the soil to be undisturbed and the existing fill is removed from beneath the building areas. If these soils are reworked and compacted, the maximum allowable bearing value will increase and the minimum bearing required will also increase.

The bedrock beneath this site consists of the Mancos Shale Formation. The Mancos Shale is described as a thin-bedded, drab, light to dark gray marine shale, with thinly interbedded fine grain sandstone and limestone layers. Some portions of the Mancos Shale are bentonitic, and therefore, are highly expansive. The majority of the shale, however, has only a moderate expansion potential. Formational shale was encountered in all Test Borings at depths ranging from 26 to 38 feet. It is anticipated that this formational shale will affect the construction and the performance of the foundations on the site.

This soil type was classified as a silty CL under the Unified Classification System. The Standard Penetration Tests ranged from 53 blows per foot to over 75 blows per foot. Penetration tests of this magnitude indicate that the soil is somewhat weathered and of low density. The moisture content varied from 9.8% to 16.2%, indicating a relatively moist soil. This soil is plastic and is sensitive to changes in moisture content. With decreased moisture, it will tend to shrink, with some cracking upon dessication. Upon increasing moisture, it will tend to expand. Expansion tests were performed on typical samples of the soil and expansive pressures on the order of 1230 to 3265 psf were found to be typical. This material

will also consolidate on excessive loading. If recommended bearing values are not exceeded, such settlement will remain within tolerable limits. For shallow foundations the allowable maximum bearing value was found to be on the order of 8400 psf. A minimum dead load of 3500 psf will be required.

The soils encountered in the drainageway, next to Horizon Drive, were found to be very similar to the Debris Flow Deposits except these soils were very soft, saturated and contained very little coarse material. These soils were found to be unstable in their present condition. The drill rig could not be mobilized in this area. Any fill placed on these soils will induce rapid and long-term consolidation. These soils are not recommended for foundation soils for buildings, roadways, parking areas or for the support of any man-made fill unless specific precautions are taken. Recommendations for construction in this area can be provided by this office, if desired.

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

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

or may be gradual.

No free water was encountered during drilling on this site. In our opinion the true free water surface is fairly deep in this area. Seepage moisture may affect construction if surface drainage is not properly controlled. Subsequent development of the site will probably cause an increase in the amount of soil moisture and may very well create perched water tables. The development of perched water tables and any soil moisture increases must be considered in all future design and construction activities on this site. Free water was encountered at and very near the ground surface in the drainageway along the west property line.

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

CONCLUSIONS AND RECOMMENDATIONS

GENERAL DISCUSSION

No geologic conditions were apparent during our reconnaissance which would preclude the site development as planned, provided the recommendations contained herein are fully complied with. Based on our investigation to date and

the knowledge of the proposed construction, the site condition which would have the greatest effect on the planned development is the low density, uncontrolled fill and the low density Debris Flow Deposits which overlie the Mancos Shale. If these soils are removed or penetrated by the foundation systems, the expansive Mancos Shale will greatly affect the planned development.

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

Open Foundation Observation: Since the recommendations in this report are based on information obtained through random borings, it is possible that the subsurface materials between the boring points could vary. Therefore, prior to placing forms or pouring concrete, an open excavation observation should be performed by representatives of Lincoln DeVore. The purpose of this observation is to determine if the subsurface soils directly below the proposed foundations are similiar to those encountered in our exploration borings. If the materials below the proposed foundations differ from those encountered, or in our opinion, are not capable of supporting the applied loads, additional recommendations could be provided at that time.

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SITE PREPARATION

General: All earthwork and grading for this site development should be accomplished in accordance with the attached earthwork and grading recommendations and Chapter 70 of the UBC. All special site preparation prsented herein will supersede those in the attached Standard Earthwork and Grading Recommendations Section.

Preconstruction meeting: Prior to the start of any site grading or stripping, we recommend that a pre-grading meeting be arranged between Lincoln DeVore, the grading contractor, and the owners representative. The purpose of this meeting is to discuss site preparation recommendations, grading specifications, equipment to be used, scheduling, and any unusual soil conditions or special requirements for this development. In addition, we recommend that Lincoln DeVore be provided with a grading plan and a set of specifications at least 48 hours priour to our attending the pre-grade meeting.

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

Excavation: Site preparation in all areas to receive structural fill should begin with the removal of all topsoil, vegetation, and other deleterious materials. Prior to placing

any fill, the subgrade should be observed by representatives of Lincoln DeVore to determine if the exising vegetation has been adequately removed and that the subgrade is capable of supporting the proposed fills. The subgrade should then be scarified to a depth of 10 inches, brought to near optimum moisture conditions and compacted to at least 90% of its maximum modified Proctor dry density [ASTM D-1557]. The moisture content of this material should be within + or - 2% of optimum moisture, as determined by ASTM D-1557.

To avoid reducing the slope stability on the site, we recommend that the amount of cut and fill performed during site grading be held to a minimum. In addition, we recommend that excavations greater than 5 feet in depth be fully and properly braced.

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 5 feet deep will be necessary. Any such safety provisions shall conform to reasonable industry safety practices and to applicable OSHA regulations.

In general, we recommend all structural fill in the area beneath any proposed structure or roadway be compacted to a minimum of 90% of its maximum modified Proctor dry density (ASTM D1557). We recommend that fill be placed and compacted at approximately its optimum moisture content (+/- 2%) as determined by ASTM D 1557. Structural fill should be a granular, non-expansive soil.

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

During the placement of any structural fill, it is recommended that a sufficient amount of field tests and observation be performed under the direction of the geotechnical engineer. The geotechnical engineer should determine the amount of observation time and field density tests required to determine substantial conformance with these recommendations.

Site Preparation It is recommended that site preparation begin with the removal of all vegetation, existing man-made fill and other deleterious materials. This applies both to areas to be filled and areas o be cut. The removed materials should be legally disposed of off-site or, if appropriate, stockpiled for later use in non-structural areas or landscaping. In the case of existing man-made fill, we recommend that it be removed completely. It is recommended that the exposed native soil be scarified to a depth of 12 inches, brought to near optimum moisture conditions and recompacted to a minimum of 90% of maximum dry density as determined by ASTM D 1557.

Prior to placing fill, the exposed ground should be observed by representatives of Lincoln DeVore to determine that all deleterious material, man-made fill and soft areas have been adequately removed. The removed material may then be replaced with uniformly compacted lifts of structural fill until the desired slab or footing elevation is achieved. We

recommend that the structural fill be placed within 2% of the optimum moisture content of the material and compacted to a minimum of 90% of its maximum dry density, ASTM D 1557.

Structural Fill Soil It appears that the majority of the material excavated from cut areas is not suitable for reuse as structural fill. Material to be approved shall be free of deleterious matter and oversized hard rock. We recommend that no predominantly clayey soils or shale fragmentsbe included in the structural fill. If predominantly clayey soils or shale fragments are to be utilized for the structural fill, then the requirements of Data Sheet 79G provisions would be appropriate for this site. Any fill which utilizes clayey soils or shale fragments will require proper specifications, documentation and future drainage maintanence for successfull building construction.

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

We recommend that slopes cut into the formational Mancos Shale on the site be constructed no steeper than 3 1/2:1 (horizontal to vertical) at any slope supporting or above structures, and no steeper than 3:1 for slopes which do not support or overhang structures. We further recommend that slopes constructed of the Debris Flow Deposits which cap the higher

elevations of the site be constructed no steeper than 2:1 (horizontal to vertical). Slopes constructed of these deposits tend to ravel and must be protected by suitable erosion control.

DRAINAGE AND GRADIENT:

Adequate site drainage should be provided in the foundation area both during and after construction to prevent the ponding of water and the saturation of the subsurface soils. We recommend that the ground surface around the structure be graded so that surface water will be carried quickly away from the building. The minimum gradient within 10 feet of the building will depend on surface landscaping. We recommend that paved areas maintain a minimum gradient of 2%, and that landscaped areas maintain a minimum gradient of 8%. It is further recommended that roof drain downspouts be carried across all backfilled areas and discharged at least 10 feet away from the structure. Planters, if any, should be so constructed that moisture is not allowed to seep into foundation areas or beneath slabs or pavements.

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

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

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

Should an automatic lawn irrigation system be used on this site, we recommend that the sprinkler heads be installed a minimum of 5 feet from the building. In addition, these heads should be adjusted so that spray from the system does not fall onto the walls of the building and that such water does not excessively wet the backfill soils.

It is our understanding that the 100 year floodplain of the drainageway on the west end of the tract will not be addressed as part of the overall drainage plan for the site. We recommend that construction be avoided in this area and that drainageways be kept open and free from debris. During

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periods of high runoff, debris may cause damming at bridges and culverts, resulting in backwater effects which may be damaging. We recommend that a full drainage plan be completed by a hydrologic or drainage engineer fully experienced in this area. Such a plan is beyond the scope of this report.

The slope areas immediately adjacent to the drainageway on the west end of the tract can be considered potentially unstable due to the threat of on-going erosion. A minimum setback should be established between the proposed construction and the edge of existing slope scarps. We recommend that the setback distance be established by laboratory analysis of the shear strength and stability of specific locations along the banks. In addition, mitigation systems are recommended to control the on-going erosion caused by the creek. Such mitigation could include retaining walls, riprap, gabions or other stabilization materials.

FOUNDATIONS

If a shallow foundation system is utilized for this tract we recommend the use of a conventional foundation system consisting of continuous spread footings beneath all bearing walls and isolated spread footings beneath all columns and other points of concentrated load. Such a shallow foundation system, resting on the native Debris Flow Deposits, may be designed on the basis of an allowable bearing capacity of 1100 psf maximum. A minimum dead load of 250 psf must be maintained. If a structural, nonexpansive fill is utilized, the allowable bearing capacity on the order of 2400 psf could be

realized with a fill thickness of approximately 3 feet. More precise values of bearing capacity and fill thickness could be provided if actual building loads were known to Lincoln-DeVore.

As shown on the attached drilling logs, an extensive layer of man-made fill was encountered on this site. It is believed that this fill was placed in an uncontrolled manner and therefore, is not judged suitable for support of the proposed shallow foundation system. Owing to the depths to which this man-made fill was encountered and the relatively shallow excavation depths anticipated, it is recommended that an overexcavation/replacement scheme be used on this site. The existing man-made fill should be completely removed from below the foundation level, so that the underlying native soils are exposed in all areas. Once it is felt that adequate fill removal has been achieved, it is recommended that the excavation be closely examined by a representative of Lincoln-DeVore to ensure that an adequate overexcavation depth has indeed occurred and that the exposed soils are suitable to support the proposed structural man-made fill.

Once this examination has been completed, it is recommended that a coarse-grained, non-expansive, non-free draining man-made structural fill be imported to the site. This imported fill should be placed in the overexcavated portion of this site in lifts not to exceed 6 inches after compaction. A minimum of 90% of the soils maximum Modified Proctor dry density (ASTM D-1557) must be maintained during the soil placement. These soils should be placed at a moisture content conducive to the required compaction (usually Proctor optimum moisture content ± 2%). The

granular material must be brought to the required density by mechanical means. No soaking, jetting or puddling techniques of any type should be used in placement of fill on this site. To ensure adequate lateral support, we must recommend that the zone of overexcavation extend at least 3 feet around the perimeter of the proposed building. To confirm the quality of the compacted fill product, it is recommended that surface density tests be taken at maximum 2 foot vertical intervals.

Contact stresses beneath all continuous walls should be balanced to within + or - 250 psf at all points. Isolated interior column footings should be designed for contact stresses of about 150 psf less than the average used to balance the continuous walls. The criterion for balancing will depend somewhat upon the nature of the structure. Single-story, slab on grade structures may be balanced on the basis of dead load only.

Settlement Characteristics: We anticipate that total and/or differential settlements for the proposed structures may be considered to be within tolerable limits, provided the recommendations presented in this report are fully complied with. In general, we expect total settlements for the proposed structure to be less than 1 inch. Construction in the drainageway at the west end of the tract will involve larger amounts of settlement and cannot be predicted until further information on building loads, site improvements and foundation types are known to this office.

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

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If the design of the upper structure is such that loads can be balanced reasonably well, a floating structural slab or raft type of foundation could be used on this site. Such a slab would require heavy reinforcing to resist differential bending. It is possible to design such a slab either as a solid or ribbed slab, but in either case, a rimwall must be used for confinement. Any such slab must be specifically designed for the anticipated loading. Such a foundation system will settle to some degree as the softer, underlying soils consolidate, but differential movement is held to a minimum. Because of the slightly expansive nature of the clays in the Debris Flow Deposits, some minor cracking and heave are possible unless the slabs are specifically designed with the movement in mind. Such a floating structural slab or raft type of foundation is not appropriate nor is recommended if the Mancos Shale is within 7 feet of the bottom of the foundation.

If column loads are not uniformly distributed or if the subsoil is so soft that major differential settlements develop, rafts require stiffening to prevent excess deformation. Stiffening can be accomplished by constructing a cellular configuration, constructing partitions to act as T beams with the raft or by utilizing the superstructure for stiffness. The larger the raft, the more expensive these procedures become.

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

If anticipated settlements are not acceptable or if a structural fill is not desired then we recommend that a deep foundation system, consisting of either drilled piers or driven piles be used to carry the weight of the proposed structure. Deep foundations must extend through the low density, upper lean clay materials and into the underlying Mancos Shale. Both types of foundation have advantages and disadvantages with respect to this site. Therefore, the decision as to which system is used is largely economic and will be left to the owner or his representative. Drilled pier and driven pile foundation systems will be discussed in turn.

Deep Foundations: We recommend that drilled piers have a minimum shaft length of 15 feet and be embedded at least 5 feet into the relatively unweathered bedrock. At this level, these piers may be designed for a maximum end bearing capacity of 25000 psf, plus 1800 psf side support considering only the side wall area embedded in the bedrock. Due to the expansive potential of the bedrock, a minimum dead load uplift is required, consisting of a point uplift of 2600 psf and 380 psf side uplift, based on the side wall embedded in the bedrock. The overburden is soft and no supporting or uplift values are assigned to this material. The weight of the concrete in the pier may be incorporated into the required dead load.

It is recommended that the bottoms of all piers be thoroughly cleaned prior to the placement of concrete. The amount of reinforcing in each pier will depend on the magnitude and nature of loads involved. As a rule of thumb, reinforcing equal to approximately 1/2 of 1% of the gross cross-

sectional concrete area should be used. Additional reinforcing should be used if structural conditions warrant. We recommend that reinforcing extend through the full length of pier.

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

Drilled Pier Observation: The foundation installation for drilled piers should be continuously observed by a representative of Lincoln DeVore to determine that the recommended bearing material has been adequately penetrated and that soil conditions are as anticipated by the exploration. This observation will aid in attaining an adequate foundation system. In addition, abnormalities in the subsurface conditions encountered during foundation installation can be identified and corrective measures taken as required. Lincoln DeVore requires a minimum of one working day's notice, and a copy of the foundation plan, to schedule any field

observation.

Driven Piles: Should it be decided to use driven piles, a number of different types of piles would be available for use. Typically these consist of timber, steel, or precast concrete. Each is associated with a number of advantages and disadvantages.

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

Driving hammers should be of such size and type to consistently deliver effective dynamic energy suitable to the piles and materials into which they are to be driven. Hammers should operate at manufacturer's recommended speeds and pressures. We recommend that a pile driving hammer be used which

is rated at at least 19,000 feet pounds. However, driving energy should not be so large that pile damage occurs.

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

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

Based on our analyses, a standard HP 12 pile driven to refusal may be designed for an allowable capacity of 70 to 100 tons. On this site the capacity of the pile will govern allowable load. Pile driving refusal required to obtain the recommended capacity was taken as 15 blows per inch with a 20 foot kip hammer. Driving hammers should be of such size and type to consistently deliver effective energy suitable to the piles and materials into which they are driven. Final pile driving refusal should be determined by representatives of Lincoln DeVore

in the field.

Large horizontal loads are not anticipated on this site. However, if horizontal loads exist and exceed 1000 pounds per pile, batter piles will be required. It is recommended that hammer and cushioning be matched to the chosen pile type to provide design load capacity during driving. We recommend that minimum spacing of piles be twice the average pile diameter or 1.75 times the diagonal dimension of the pile cross-section, but no less than 24 inches. It is recommended that tops of piles extend a minimum of 4 inches into the pile cap and that no piles should be shorter than 10 feet in length. Vertical piles should not vary more than 2% from the plumb position. We further recommended that eccentricities of reaction on a pile group with respect to the load resultant not exceed a dimension that would produce overloads of more than 10% in any one pile.

Since the underlying bedrock is moderately expansive, we recommend a minimum of permanent pressure be maintained on each pier. The minimum pressure should be designed based on a tip uplift pressure of 2500 psf. The area used to consider the uplift pressure should be width times the depth of the pile section used.

Continuous observation of the pile driving operations and a pile load test, if required, should be performed by Lincoln DeVore as a representative of the owner. A continuous log should be maintained on the number of blows per foot required to drive each pile. Driving should be completed without interruption (except for splicing) and without jetting or

pre-drilling unless the geotechnical engineer has been contacted for further recommendations.

Lincoln DeVore was not provided with elevations for the top of borings. Therefore, the estimated tip elevations cannot be determined. Based upon the subsurface logs, we anticipate that pile driving refusal will be encountered at depths varying from 20 to 45 feet below exisiting grade. The depth to bedrock will be shallower on the extreme west end and deeper on the east end. The data indicates that the capacity of piles driven to refusal will be a function of the structural capacity of the pile. We estimate that typical 10 5/8" concrete filled steel pipe sections, driven to refusal, as defined in this report could be designed for loads of approximately 70 to 100 tons. Although the bedrock in this area is relatively hard, a reinforced driving tip, in our opinion, would not be necessary in these materials. If the piles are driven to refusal, then no pile load tests are recommended.

SLABS

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.

If a shallow foundation system is used or if the concrete slab is located within 7 feet of the Mancos

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

On-grade slabs may bear directly on the existing man-made fill. Because the soils were found to be relatively loose, some settlemant should be expected. If these settlements are determined to be not tolerable, then the existing possible fill should be removed to a depth of 3 feet below slab elevation and replaced with uniformly compacted lifts of structural fill, compacted to at least 90% of maximum Proctor dry density, as determined by ASTM D-1557. The purpose of this recommendation is to decrease the likelihood of adverse slab movement.

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

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

2. We recommend that all slabs on grade be isolated from structural members of the building. This is generally accomplished by an expansion joint at the floor slab / foundation interface. In addition, positive separation

should be maintained between the slab and all interior columns, pipes and mechanical systems extending through the slab.

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

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

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

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

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

3. All the non-bearing partitions which will be located on the slabs should be constructed with a minimum 2 inches

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of void space at the bottom of the wall. This space would allow for the future upward movement of the floor slabs and minimize damage to walls and roof sections above the slabs. The space may require rebuilding after a period of time, since heaving produced by the soils may exceed 2 inches.

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

Another alternative is to dispense with slab-on-grade construction and use a structural floor system. A structural floor system may be either a structural reinforced concrete slab or a structural wood floor system suspended with floor joists. Each system would utilize a crawl space. This alternative would substantially reduce a potential for post construction slab difficulties due to the expansive properties of the Mancos Shale.

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

REACTIVE SOILS

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

SWIMMING POOLS:

If a swimming pool is proposed for any portion of this site, Lincoln-DeVore must be notified of the proposed location and construction so that specific recommendations can be made, Due to the number of possible foundation soils conditions possible on this site, no recommendations are made in this report. It is emphasized that there is a comparatively high risk associated with either indoor or outdoor pools constructed on this site.

LIMITATIONS

This report is issued with the understanding that it is the responsibility of the owner, or his representative to ensure that the information and recommendations contained herein are brought to the attention of the architect and engineer for the project, and are incorporated into the plans. In addition, it is his responsibility that the necessary steps are taken to see that the contractor and his subcontractors carry out these recommendations during construction.

The findings of this report are valid as of the present date. However, changes in the conditions of a

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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.

EARTHWORK AND GRADING RECOMMENDATIONS

GENERAL INTENT

The intent of these recommendations is to establish procedures for clearing, compacting natural ground, preparing areas to be filled, and placing and compacting fill soils to the lines and grades shown on the accepted plans. These recommendations shall only be used in conjunction with the following soil reports for which they are a part:

GEOTECHNICAL REPORT
HORIZON TOWERS TOWNHOUSES
PRELIMINARY FILL SPECIFICATIONS
GRAND JUNCTION, COLORADO
by
LINCOLN-DeVORE, INC.
Job No. 71105, July 5, 1989

No deviation from these recommendations are advised, except where specified in the soil reports or in other written communicaton by the Geotechnical Engineer. If deviations become necessary, Lincoln-DeVore, Inc. shall be notified so that the effects of the deviation can be assessed and changes in recommendations made, if required.

JOB SAFETY

The Geotechnical Engineer will not be responsible for job site safety conditions or for meeting the provisions of the OSHA regulations concerning safety on the job site. The duty of the Geotechnical Engineer is to conduct technical reviews of the Contractor's construction performance. This shall not be construed as including review of the adequacy of the Contractor's safety measures in or near the construction site.

OBSERVATION AND TESTING

Lincoln-DeVore, Inc. should be retained by the Owner as the Geotechnical Engineer to observe and test the earthwork in accordance with these recommendations. The Geotechnical Engineer or his representative shall provide sufficient observation and testing of the work so that he will be able to provide an opinion as to whether the work was performed in substantial conformance with the recommendations. It shall be the responsibility of the Contractor to assist the Geotechnical Engineer and to keep him appraised of work schedules, changes and new information and data so that he may provide these opinions. In the event that any unusual conditions not covered by these recommendations or geotechnical reports are encountered during the grading operations, the Geotechnical Engineer shall be contacted for further recommendations.

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If, in the opinion of the Geotechnical Engineer, substandard conditions are encountered, such as questionable or unsuitable soil, unacceptable moisture content, inadequate compaction, adverse weather, etc., he will, as soon as practical, notify the owner or his representative of such substandard conditions and will recommend a corrective action to be taken. The presence of the Geotechnical Engineer or his representative, and the observation and testing shall not release the Grading Contractor from his duty to compact all fill material to the specified degree of compaction and to use adequate material to accomplish the purpose of the fill.

Test methods used to determine the degree of compaction shall be performed in accordance with following American Society for Testing and Materials test methods:

> Maximum Density & Optimum Moisture Content - ASTM D-1557.
> Density of Soil In-Place - ASTM D-1556 or ASTM D-2922, or as otherwise recommended in the body of the Geotechnical Report.

All densities shall be expressed in terms of Relative Compaction as determined by the foregoing ASTM testing procedures. The minimum relative compaction acceptable for this project is 90% unless otherwise recommended in the Geotechnical Report.

PREPARATION OF AREAS TO RECEIVE FILL

Areas where excavation or fill is indicated on the drawings 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

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 th 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 eof 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 succsessive 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 approxlimately 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 lthe 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 compactad prior to receiving fill as previously recommended for compacted natural ground. Ground slopes flatter than 20% shall be benched when considered necessay 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.

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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.

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KMV
LW ✓
DT ✓
KP ✓

HORIZON HILLS TOWNHOMES

A meeting took place February 16, 1990 at 11:30 in the conference room at City Hall. Those in attendance included Jack Branaugh, Ron Choate, Mike Kelleher, Fuzzy Aubert, Charlie Stockton, Greg Trainor and Bill Cheney. The meeting was held at the request of Jack Branaugh, the developer of Horizon Hills Townhomes, to discuss what arrangements had or could be made to supply potable water to his development. Both Ute Water and the City had proposed to supply water to the development in the plan review comments.

Nothing was resolved at the meeting. Ute water is still insisting that they supply the water. If this happens Mr. Branaugh indicated that the project would not be financially feasible because of the Ute Water tap fees and he would sue the City for damages as a result of the initial plan review comments, i.e., the City will provide water to the development and City tap fees will be in effect. The difference in the two tap fees is approximately $92,400 based on 42 residential units. It is doubtful that the difference in tap fees could influence the project to the extent he is claiming but that may be difficult to prove one way or the other. (editorial comment)

Bill Cheney, City utility engineer gave assurances to Mr. Branaugh that the City would not stand in his way if he wanted to proceed with his project and contract with Ute Water to supply water to his development. According to the language of the Ordinance and the letter to Dan Wilson from Mark Hermundstad (copy attached) it is felt that supplying this development with City water is "impracticable".

No additional meetings between the developer and the City are planned at this time. Mr. Branaugh said his attorney would be getting in touch with Dan Wilson, City Attorney, in the very near future.

Distribution:
Dan Wilson
Greg Trainor
Karl Metzner

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MARK A. HERMUNDSTAD
SUSAN M. CORLE
JOHN P. GORMLEY
THOMAS C. VOLKMANN

SILMON SMITH (1886-1964)
CHARLES HOLMES (1897-1967)

WARREN L. TURNER
OF COUNSEL

July 17, 1989

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

Re: Revisions to the City of Grand Junction's Zoning and Subdivision Regulations

Dear Dan:

During the days preceding the City Council meeting on July 5, 1989, you and I discussed the revisions that the City of Grand Junction was proposing to make to its Zoning and Subdivision Regulations. As you are aware, we represent Ute Water Conservancy District, and Ute Water was concerned with the wording of Section 5-4-4 of these Regulations, relating to Potable Water Systems. Ute Water was concerned with the language of this Section, as originally proposed, because the language appeared to conflict with an agreement entered into between Ute Water and the City on May 1, 1976. That Agreement related to the provision of water service to areas of the District that were subsequently annexed into the City.

After I discussed Ute Water's concerns with you, you agreed to propose some amendments to Section 5-4-4 to help alleviate Ute Water's concerns. My understanding from our conversations was that the City, in enacting the new Regulations, did not intend to breach or abrogate the City's contract with Ute Water. Accordingly, minor modifications were made to Section 5-4-4A., and Sections B and D were combined into one paragraph. That paragraph, as amended, stated that all developments in the City would be served by the City Water Treatment and Distribution System, "unless such requirement is deemed to be unreasonable or impracticable". You stated that the quoted language was added to cover, among other things, the contract between the City and Ute Water. Under your interpretation of the quoted phrase, if enforcement of the general requirement would result in a breach of the contract between Ute Water and the City, it would be "impracticable" to

enforce that requirement. After reviewing the definitions of "impracticable", I tend to agree with your interpretation.

At the City Council meeting that was held on July 5, 1989, several people from Ute Water's Board of Directors and staff were present, and I was also present. At that meeting, I made some short remarks to the City Council. Basically, my remarks were intended to convey to the Council that Ute Water has a valid contract with the City of Grand Junction for the provision of water service to areas of Ute Water that are subsequently annexed into the City. I stated that you and I had conversations concerning the proposed ordinance, and that, although we had some misgivings about the revisions, even as you amended them, we were comfortable that the ordinance was not intended to be in conflict with the City's contractual obligations with Ute Water. I stated that our comfort level on this matter was increased because of the following matters:

1. We did not believe that Grand Junction would intentionally adopt an ordinance that would violate its valid contractual arrangements with Ute Water.

2. You had proposed revisions to the ordinance, which the City Council adopted, which added the language discussed in the previous paragraph. In adopting your revisions, the City Council was aware of your definition of the term "impracticable", and that such definition was intended to cover, at least in part, the contractual arrangements with Ute Water Conservancy District.

3. If the City did in fact adopt an ordinance that impaired its contractual obligations with Ute Water, it is my opinion that such an ordinance would be unconstitutional, and thus, unenforceable.

Ute Water Conservancy District held a regular Board of Directors' meeting on July 12, 1989. At that meeting, the staff of Ute Water and I reported to the Board of Directors concerning this matter. The Board requested that I write this letter to you, so that we have a written record concerning the discussions which preceded the adoption of the revised Zoning and Subdivision Regulations, and concerning the interpretation that was being placed on certain terms set forth therein.

If anything I have stated herein is not accurate, please do not hesitate to contact me, so that we can discuss the matter. Thank you for your cooperation and assistance in this matter.

Very truly yours,

WILLIAMS, TURNER & HOLMES, P.C.

Mark A. Hermundstad

MAH/sr

xc: Ute Water Conservancy District

GOLDEN, MUMBY, SUMMERS, & LIVINGSTON
ATTORNEYS AT LAW
UNITED BANK OF GRAND JUNCTION - 2808 NORTH AVENUE
P.O. BOX 398
GRAND JUNCTION, COLORADO 81502

JAMES GOLDEN
KEITH G. MUMBY
K. K. SUMMERS
J. RICHARD LIVINGSTON
SUSAN M. DACKONISH

AREA CODE 303
TELEPHONE 242-7322

FACSIMILE 242-0698

July 19, 1990

HAND DELIVERED

Mr. Karl Metzner
Planning Director
City of Grand Junction
250 N. 5th
Grand Junction, CO 81501

RE: Horizon Hills Townhomes Rezone
Jack Branagh, Petitioner

Dear Karl:

This letter is in confirmation of our telephone call of July 18, 1990.

Please consider this letter a request to extend the approved Rezone to August 20, 1992.

The reason for the request arises from the fact that the service of water to the project is still in dispute between the City and Ute Water. Until this issue is resolved, the project cannot move forward.

Upon resolution, it will be necessary to adjust the project to the resolution and go through all of the necessary steps to finalize all requirements and re-bid the project.

If you need anything additional to consider this request, please contact me.

Very truly yours,

GOLDEN, MUMBY, SUMMERS & LIVINGSTON

By Keith G. Mumby

KGM/pll

xc: Jack Branagh

MEMORANDUM

DATE: April 24, 1990

TO: Public Works Director Jim Shanks
Fire Chief Mike Thompson

FROM: Mark Achen, City Manager

SUBJECT: Fire Protection for Horizon Townhomes Development

Mayor Mantlo, City Attorney Wilson, the attorney for the developer Keith Mumby, Utility Engineer Cheney, and I met April 18 to discuss the referenced issue.

It is the City's desire to provide water service to this development rather than allow it to be served by the Ute Water Conservancy District; however, the City is unable to provide looped water service to this property without building a very expensive service line from 12th and Patterson to the site. The developer opposes paying for this line because it merely duplicates Ute's existing line along 12th.

Before examining other alternatives including litigation, I promised we would consider a dead end line to the development if an adequate fire protection strategy can be developed.

At some point the City may be able to acquire Ute's line and the looping could be accomplished at a substantially lower cost.

Please work together to see if such an alternative is possible. I would like a response by May 4, if at all possible. If not, let me know what is a reasonable time frame.

c: City Council Members
D. Wilson
B. Cheney
G. Trainor
K. Metzner

May 6, 1990

City Manager of Grand Junction

Dear Sir:

As a resident of Horizon Towers - 1111 Horizon Drive - I hope you will earnestly consider accepting for the city the wasteland offered by the owner of H.T. just to the west of H.T. and also of the money he is willing to donate to create a park - thus changing an eyesore into a beauty spot.

The whole neighboring area would benefit and people living in this area would enjoy using it. Also as parks hereabouts are non-existent, a park would rectify such an omission.

Very Truly Yours

Delmar C Boehm

May 9, 1990

City of Grand Junction, Colorado
81501-2668
250 North Fifth Street

Keith Mumby
Golden, Mumby, Summers & Livingston
P.O. Box 398
2808 North Avenue, Suite 400
Grand Junction, CO 81501

Re: "Notice of claim" dated May 7, 1990

Dear Keith:

First, a review of the facts.

Petitioner John Branagh submitted an application for a rezone and planned development in late June or early July of 1989. In the normal course of the City development process, review comments were received by interested agencies in July of 1989.

Pertinent comments received include those from Ute: "Ute Water will provide fire and domestic water services for this project directly from existing 8" lines in Horizon Towers water system. Participation may be necessary in contract-protected water lines. SERVICE WILL NOT COME FROM LAKESIDE. Apartments may be master-metered; townhomes should be individually metered. Policies and fees in effect at the time of application will apply."

City utilities manager response: "Per City Code, section 5-4-4B, this development is within City limits and is, therefore, required to connect to the City water distribution systems per Utility Manager." Other comments concerning sewer and the insufficient application were also made. For instance, insufficient information included no profiles for water or sewer, no details on hydrants. Utilities Manager noted that "No further review will take place until all the above items have been submitted."

City Fire Department comments: "...1. The water line for the fire hydrants shall be a minimum of 8" and looped between two main feeder lines. a. The fire hydrants shall be placed at a distance no greater than 300 feet apart...3. A fire flow survey is required to determine if adequate water is available. (I require a set of building plans to accomplish this.) If you have any questions, please contact our office at 244-1400." [As of the date of this letter, no building plans have been submitted to fire to accomplish the fire flow survey, nor has the developer called the Fire Department.]

The developer's engineer responded on July 27, 1989, to the agency comments, in pertinent part:

"The water for the project will be provided by the City and not by Ute Water per City code." "The development will utilize city water. A connection will be made to the line located in Lakeside Drive....No sewer or water line profiles were included in the submittal due to the preliminary nature of Phase 2 of the project. Design of Phase 2 is now being finalized..."

"An 8" water line will be constructed in the development. This will be adequate for fire flows. The line will not be looped between two main feeder lines because one of the available feeders belongs to Ute and the other to the City. The city will provide the development with water...The Fire Department will be provided the necessary plans to do a fire flow survey." Copies of the foregoing comments were shown going to John Branagh and Ron Choate.

The Planning Commission approved the rezoning of the property, a final plan as to Phase 1. (consisting of six units), and a preliminary plan as to Phase 2 (36 units) on August 1, 1989. City Council approved the rezone on August 16, 1989. According to planning staff, both approvals were subject to compliance with the remaining technical requirements.

With respect to Phase 1, on December 11, 1989, City Engineer Newton wrote to the developer's engineer concerning the revised plans for Phase 1 (the plans were revised 10/20/89 and submitted November 20, 1989). The requirements set forth in that letter were satisfied on March 15, 1990. The developer's engineer responded to Newton's December 11 letter twice: once on March 9, 1990 and again on March 15, 1990. [The second letter was identical but included the improvement agreement cost estimate, which apparently was not enclosed with the 3/9/90 letter.]

On September 13, 1989, John Branagh wrote to the city Council requesting "an affirmation that city water as Council approved will be supplied...". He wrote again on October 2, 1989.

At the request of Keith Mumby, attorney for Mr. Branagh, I wrote to Mr. Branagh on December 4, 1989. In my letter I made reference to conversations had between Branagh's engineer and City staff concerning the City's proposal that, instead of requiring Branagh to pay all of the costs associated with building a new line north from Patterson Road, the City would share in such costs. The City made the proposal, which at that

point had neither been rejected nor accepted by Branagh's people, because staff felt there was some benefit to the City system in having a new line built and also because it did not seem equitable, under these circumstances, to require Branagh to pay the full cost of the new line construction [even though, the City Development Code contemplates that Branagh pay the full estimated $130,000].

Apparently in response to my letter, Mr. Branagh requested a meeting which was had at City Hall in December of 1989. It was at that meeting, for the first time, that Mr. Branagh indicated that he was scrapping the Phase 1/Phase 2 distinction and intended to final plat the entire project. Bill Cheney's notes of that meeting confirm my recollections, to wit: a. the City would supply the project; b. the City was willing, even though not required, to pay for some portion of the construction costs associated with the new line to be built to serve this development; c. Branagh, and his agents, were to discuss with Ute the possibility of using Ute lines as an emergency back-up system and they were to contact the Fire Department concerning looped systems; d. Mr. Branagh would do the needed research and get back to City staff to discuss a development schedule.

On February 16, 1990, at the request of Mr. Branagh, another meeting was had at City Hall. In attendance were Branagh, his agent Ron Choate, Ute Manager and Assistant Manager, Greg Trainor and Bill Cheney. At that meeting, for the first time that I am aware, City staff suggested that Mr. Branagh could contract with Ute Water to supply water to his development (based on the language of the Ordinance and the letter to Dan Wilson from Mark Hermundstad, it was suggested that supplying this development with City water was "impracticable").

In response to the apparent confusion, I wrote to Mark Hermundstad, Ute's attorney on February 22, 1990. You were copied with that letter. You will recall that I explicitly stated that the City would supply the water and I asked Hermundstad whether Ute would allow the use of its lines for emergency purposes. I have received no response from Mr. Hermundstad to date in this regard.

On April 18, 1990, Mayor Mantlo, Mark Achen, the undersigned, Bill Cheney and you met. You asserted that Branagh had been damaged because sales of Horizon Towers had been delayed, and Branagh's market analysis proved that a "window of opportunity" had closed for sale of the proposed Horizon Hills Townhomes due to other similar projects coming on line. The

City staff reiterated concerns about the use of "dead end" lines proposed by Branagh. City staff agreed to examine what standards should apply to the use of the proposed "dead end" lines and whether a variance is appropriate and that a position would be determined as quickly as possible with May 4, 1990 suggested as an appropriate date. City staff reiterated that one solution Branagh should explore was using the Ute line as an emergency source of fire protection water. It was apparent that the "dead end" line could supply sufficient water for domestic water supply; what is problematic is whether Branagh's proposal is sufficient for fire protection purposes.

Please note that while the City has been willing to review this issue with you, and at your request, we see no concomitant effort on the part of your client. Further, from my perspective, the City's willingness to cost share is very generous and not required. Should I take your "Notice" to mean that you do not desire the City to continue to examine less costly (to Branagh) alternatives?

On May 7, 1990, you sent me what I will call a "Notice Pursuant to C.R.S. 24-10-109."

This letter is intended to serve two purposes: to respond to your legal analysis implied in your May 7 "Notice" and to review what has occurred so that, even if we can't agree what the legal import of the facts are, we can agree what has happened.

I offer the following observations:

1. At no time from July of 1989 to date has any additional information been supplied nor contacts made by Branagh, nor his agents, to the Fire Department. No building plans have been submitted so that the Fire Department is yet unable to complete its review of either Phase of the proposed project. **See,** Fire Department comments on the July review sheet and Branagh's engineer's response.

2. It is "horn book" law, in my view, that the onus is on the developer to supply sufficient information to be reviewed before the developer can process to construct. Branagh has not yet supplied sufficient complete information to receive the approval of the City Engineer; that is, independent of the fire protection issue, no construction nor final approval can be had until Branagh finishes the required work and submittals concerning other utilities and access. In my view, I do not understand how he can assert, in good faith, that the City is delaying the project when he has not even completed the basic

engineering. [Note that Branagh's engineer, John Currier has left the employ of Western Engineers. This may explain some of the delays but it does NOT explain why the City is at fault.]

3. Notwithstanding your assertions, with one possible exception, the City, since July of 1989, has clearly stated that the City will supply the water for the project. The one possible variation on a consistent theme is described in the meeting of February 16, 1990; any confusion arising out of that meeting I believe was quickly remedied.

4. In my view, it is "horn book" law that it is the responsibility of the developer to pay for infrastructure needed to serve his project. Ordinarily, the City requires that the developer pay for the costs of construction of any water lines. As you know, we have been willing to share in some of the costs of constructing a line needed to complete a looped system--we have been so willing only because we want the project to proceed and because we saw a system-wide benefit to the 12th street line extension. Such cost sharing, in my view, is not a legal requirement but rather a policy decision inuring to your client's benefit. We have also, in the past, at the request of a developer, made agreements for reimbursement over time from later developer's to pay for the up-front costs of sewer line extensions. If you would like, I would be willing to examine that issue in this context.

5. This is not a situation where a developer is caught between two water suppliers and cannot get out. This is a situation where the developer does not want to pay the required costs associated with a project and, rather deftly, has attempted to divert attention from the real focus: the developer must pay tap fees and line construction costs required to comply with an existing City ordinance.

6. I do not understand how you can claim damages from the City based on additional construction costs [in addition to what? Branagh, from the beginning, knew he had to build a line up 12th. What does this statement refer to?]; based on delay in construction [Branagh has **not yet** submitted the information required to receive final approval. How then can he claim that the City is causing delay?]. The other asserted bases for injury seem totally unrelated to any City action or to this project.

I look forward to the benefit of your view of the facts and the law as I have described them. If you believe I have omitted some or have misstated some, please let me know.

Very truly yours,

Dan E. Wilson
City Attorney

DEW:jj

c: City Council Members
M. Achen, City Manager
J. Shanks, Public Works Director
K. Metzner, Planning Director

City of Grand Junction, Colorado
81501-2668
250 North Fifth Street

May 9, 1990

Delmar C. Boehm
P.O. Box 1961
Grand Junction, CO 81502

Dear Mr. Boehm:

Thank you for your comments regarding the "wasteland" southwest of Horizon Towers. The owner has asked the City for $145,000 for this tract of land and requested the City develop it for a park. As your letter indicates by the use of the word "wasteland", this property is extremely difficult to put to any use without substantial expense, perhaps as much as 10 times the amount ($25,000) the owner has offered to contribute toward this development.

The site is also much smaller than we are now considering for City parks and does not have ready public access for use by citizens. Thus, I doubt the City will be seriously interested in purchasing or developing the ground.

Undoubtedly, this parcel is unattractive when viewed from the windows of the Towers; however, the ground is similar to large acreages immediately to the north of Horizon Towers. Generally, City parks are established upon the recommendation of the City Parks and Recreation Advisory Board. While they have not considered this parcel, it does not, at least at first blush, appear to meet the criteria for a City park.

If I may be of further assistance, please feel free to contact me.

Sincerely,

Mark K. Achen
City Manager

MKA:jj

c: City Council Members
Ted Novack, Parks & Recreation Department Director

MEMORANDUM

TO: Dan Wilson

FROM: Don Newton DN

DATE: May 11, 1990

SUBJECT: Horizon Town Homes Development

The only unresolved issues that I know of are as follows:

1. The drainage pan which crosses the proposed street just north of Lakeside Drive at the south end of the parking area, could be eliminated by installing storm drain inlets on the 12" CMP which will cross the road approximately 10" south of the proposed pan.

2. The island shown in Lakeside Drive should be eliminated.

3. Stop signs will be required at all exits onto public streets.

4. No improvement guarantee or agreement has been submitted for the required street improvement on Lakeside Drive and Horizon Drive.

xc: Karl Metzner
Jim Shanks