



use for (10/2) &amp; (20/2)

on back too

Bishop of Pueblo  
1246 Grand Avenue  
Pueblo, CO 81003

#21 84

Frederick A. Schumann  
2323 N. 7th Street  
Grand Junction, CO 81504

#21 84

F & S Investments  
P.O. Box 3025  
Grand Junction, CO 81502

A-C Investments  
P.O. Box 3025  
Grand Junction, CO 81502

#21 84

John C. & June C. Colosimo  
P.O. Box 3025  
Grand Junction, CO 81502

#21 84

William J. Frank  
P.O. Box 3025  
Grand Junction, CO 81502

#21 84

Hilltop Rehabilitation Hospital  
1100 Patterson Road  
Grand Junction, CO 81501

#21 84

James & Keota Burke  
636 26 Road  
Grand Junction, CO 81501

#21 84

Noel B. Norris &  
Henry J. Fausone  
3318 B Crestview Way  
Grand Junction, CO 81501

#21 84

Don H. Hutchison  
2709 Midway  
Grand Junction, CO 81501

#21 84

Joanne Bell  
946 Bookcliff Avenue  
Grand Junction, CO 81501

#21 84

Glenn Ross Kempers  
1001 Wellington Avenue  
Grand Junction, CO 81501

#21 84

Gregg K. Omura  
P.O. Box 3025  
Grand Junction, CO 81502

#21 84

Ross/Maruca Investments  
P.O. Box 3025  
Grand Junction, CO 81502

#21 84

Richard A. Janson  
P.O. Box 3025  
Grand Junction, CO 81502

#21 84

Terry D. Fine  
P.O. Box 3025  
Grand Junction, CO 81502

#21 84

Ronald & Geraldine Walters  
545 Totavi Street  
Los Alamos, NM 87544

#21 84

Irving Biers  
P.O. Box 248  
Snowmass, CO 81654

#21 84

Federal National Mortgage  
1000 W. Temple Street  
Los Angeles, CA 90074

#21 84

Intrawest Bank  
4th & Main Street  
Grand Junction, CO 81501

#21 84

Bethesda Care Centers  
1955 N. Union Blvd.  
Colorado Springs, CO 80909

#21 84

Western CO Surgeon Center Assoc.  
P.O. Box 2919  
Grand Junction, CO 81502

#21 84

Carl A. Lepisto  
P.O. Box 3025  
Grand Junction, CO 81502

#21 84

Scott Investments  
P.O. Box 3025  
Grand Junction, CO 81502

#21 84

W & S Investments  
P.O. Box 3025  
Grand Junction, CO 81502

#21 84

Village Fair  
P.O. Box 518  
Grand Junction, CO 81502

#21 84

Loft Partnership  
950 Northern Way  
Grand Junction, CO 81501

#21 04

H. Steven & Judy A. Weimer  
603 26 3/4 Road  
Grand Junction, CO 81501

#21 84

Ronald E. & R. Ryan  
1101 Patterson Road  
Grand Junction, CO 81501

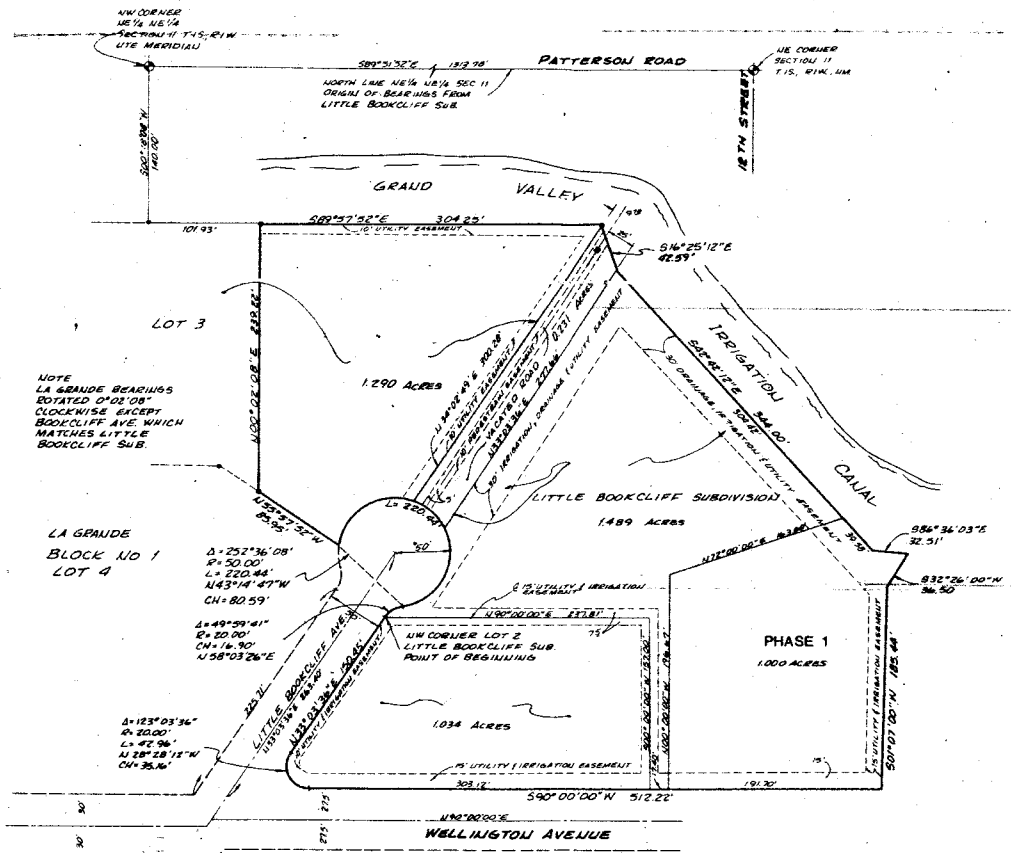
#21 84

\*

Wellington V  
2754 Compass Drive, Suite #377  
Grand Junction, CO 81501

#21 84

EXHIBIT V



NOTE  
LA GRANDE BEARINGS  
EDITED 02/01/01  
CLOCKWISE EXCEPT  
BOOKCLIFF AVE WHICH  
MATCHES LITTLE  
BOOKCLIFF SUB.

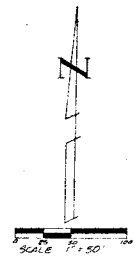
LA GRANDE  
BLOCK NO 1  
LOT 4

$\Delta = 257^{\circ}36'08''$   
 $P = 50.00'$   
 $L = 200.44'$   
 $N 43^{\circ}14'47''W$   
 $CH = 80.59'$

$\Delta = 49^{\circ}09'41''$   
 $P = 20.00'$   
 $CH = 16.90'$   
 $N 58^{\circ}03'26''E$

$\Delta = 123^{\circ}03'36''$   
 $P = 20.00'$   
 $L = 42.96'$   
 $N 38^{\circ}28'15''W$   
 $CH = 35.16'$

- LEGEND
- MESA COUNTY BRASS CAP
  - 40 REBAR & MONUMENT CAP SET L.S. 9960
  - FOUND CORNER



NOTE:  
THIS DRAWING SUBMITTED FOR RE-ZONE  
REFERENCE ONLY - NOT A SUBDIVISION



**LEGAL DESCRIPTION**

A tract of land located the City of Grand Junction, County of Mesa, State of Colorado and being all of Lots 1 and 2 Little Bookcliff Subdivision as per map recorded in Book 12, Page 210 of maps in the office of the Clerk and Recorder of said county and a portion of Lot 3, Block No. 1, La Villa Grande as per map recorded in Book 11, Page 188 of maps in the office of said Clerk and Recorder, and a portion of the vacated right-of-way of Little Bookcliff Avenue.

Beginning at the N.W. corner of said Lot 2, Little Bookcliff Subdivision and considering the North line N41°46'17" of Section 11, Township 1 South, Range 1 West of the 10th Meridian to bear S89°57'52"E with all other bearings contained herein relative thereto;

Thence along the arc of a curve to the right whose radius is 20.00 feet whose central angle is 49°09'41" and whose long chord bears N87°03'26"E 16.90 feet;

Thence along the arc of a curve to the left whose radius is 50.00 feet, whose central angle is 257°36'08" and whose long chord bears N43°14'47"W 80.59 feet to a point on the southerly line of Lot 3, Block No. 1 of said La Villa Grande;

Thence S55°57'52"W along said southerly line a distance of 85.95 feet;

Thence N03°02'06"E 239.22 feet to a point on the northerly line of said Lot 1, Block No. 1, La Villa Grande;

Thence S89°57'52"E 304.25 feet to the NE corner of said Lot 1, Block 1, La Villa Grande;

Thence S16°25'12"E 42.59 feet to the most northerly corner Lot 1, Little Bookcliff Subdivision;

Thence along the boundary of Lots 1 and 2, Little Bookcliff Subdivision by the following seven (7) courses and distances

- (1) S82°42'12"E 146.00 feet;
- (2) S86°36'03"E 32.51 feet;
- (3) S33°25'00"W 31.50 feet;
- (4) S01°07'00"W 185.44 feet;
- (5) S90°00'00"W 312.22 feet;
- (6) Along the arc of a curve to the right whose radius is 20.00 feet, whose central angle is 123°03'36" and whose long chord bears N03°03'17"W 35.16 feet;
- (7) N33°03'34"E 150.45 feet to the point of beginning containing 5.044 acres.

Subject to Easements and Rights-of-Way of Record.

**Surveyor's Certificate**

I, James T. Patsy Jr., do hereby certify that the accompanying plat has been prepared under my direction from surveys by others and is correct to the best of my knowledge and belief.

James T. Patsy Jr. Date June 21, 1984  
Registered Land Surveyors  
Colorado Registration No. 9960

NOTICE: According to Colorado law you must commence any legal action based upon any defect in this survey within six (6) 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 (10) years from the date of the certification shown herein.

ROLLAND ENGINEERING 248 Grand Avenue Suite C Grand Junction, Colorado 81401 Tel. 242-6100	DATE	NO. OF SHEETS	SHEET NO.
	6/22/84	35	3
LOTS 1 AND 2 LITTLE BOOKCLIFF SUBDIVISION AND LOT 3 BLOCK 1 LA VILLA GRANDE			



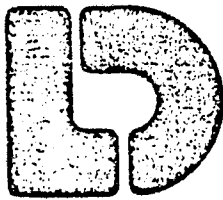


Exhibit 'N'

Lincoln DeVore

1000 West Fillmore St.  
Colorado Springs, Colorado 80907  
(303) 632-3593  
Home Office

December 27, 1978

C. E. Maquire  
760 Horizon Drive  
Grand Junction, CO 81501


Re:                   SUBSURFACE SOILS INVESTIGATION  
  
                          CAPITOL HILL SUBDIVISION  
  
                          GRAND JUNCTION, COLORADO

Gentlemen:

Transmitted herewith is the report concerning a subsurface soils investigation for the proposed Capitol Hill Subdivision to be located in Grand Junction, Colorado.

Respectfully submitted,

LINCOLN-DEVORE

  
George D. Morris, P.E.

GDM/cm  
LD Job No. 25215

*The north half is Little  
Bookcliff Subdivision,  
R.A. Sherdel*

2700 Highway 50 West  
Pueblo, Colo 81003  
(303) 546-1150

P.O. Box 1427  
Glenwood Springs, Colo 81601  
(303) 945-6020

109 Rosemont Plaza  
Montrose, Colo 81401  
(303) 249-7838

P.O. Box 1882  
Grand Junction, Colo 81501  
(303) 242-8968

P.O. Box 1643  
Rock Springs, Wyo 82901  
(307) 382-2649

ABSTRACT:

The contents of this report are a subsurface soils investigation and foundation recommendation for the proposed Capitol Hill Subdivision which is located in the northern portion of the city of Grand Junction, Colorado. The Laboratory has not at this time seen a set of construction drawings for the structures proposed for this development.

After consideration of the investigation and testing program described herein, it is our recommendation that shallow foundation systems, consisting of continuous foundations beneath bearing walls and isolated spread footings beneath columns and other points of concentrated load, be used to carry the weight of the proposed structures. Foundation systems located a minimum of 3 feet below the present ground surface may be proportioned on the basis of a maximum allowable bearing capacity of 1600 psf as an overall site average. A minimum deadload pressure of 500 psf should be maintained at all times, also as an oversite average. It was noted that the maximum bearing value varies from 800 psf to 1800 psf while the minimum pressure varied from zero to 900 psf. Precise values should not be taken for design until the specific building site is inspected.

It is recommended that the proposed structures be well balanced and heavily reinforced.

Contact stresses beneath exterior load bearing walls should be balanced to within  $\pm$  500 psf around the entire structure. Isolated interior column footings should be designed for contact pressures of about 200 psf greater than the average of those selected for the exterior walls. The criteria for this building balance will depend upon the nature of the structure. Single-story, slab on grade structures may be balanced on the basis of dead load only. Multi-story structures or structures with basements should be balanced on the basis of dead load plus approximately one-half the live load. All stem walls for continuous foundations should be designed as grade beams capable of spanning at least 12 feet. Heavy structures, if any, may require special raft foundations to properly spread the load. As an alternate, driven piles could be used as a foundation.

The upper soils on this site can be expected to experience significant loss of strength upon saturation. For this reason, adequate drainage must be provided at all times. Water should never be allowed to pond above the foundation materials. Landscape irrigation in the vicinity of the structures should be kept to an absolute minimum.

Floor slabs should be free to act independently of structural members of the building.

These slabs should contain deep construction or contraction joints to facilitate even breakage. This will keep to a minimum any unsightly cracking which could be caused by differential movement.

More detailed recommendations can be found within the body of this report. All recommendations are subject to the limitations set forth herein.

GENERAL:

The purpose of this investigation was to determine the general suitability of the site for construction of a series of light weight apartment structures. Characteristics of the individual soils found in the test borings were examined for use in designing foundations for these structures.

The proposed construction site is located in the northern portion of the city of Grand Junction, Colorado. The site is a short distance to the southwest of the intersection of 27 Road and Patterson Road. This location is in the NE 1/4 of Section 11, Township 1 South, Range 1 West of the Ute Principal Meridian. This location is shown on the enclosed Site Location Map.

The topography in the vicinity of the site is relatively flat, being located on an alluvial



plain of the Colorado River. The site has a slight gradient to the southwest towards the river. The unlined Grand Valley Canal is located along the northerly boundary of the site. The exact direction of surface runoff on the site will be variable due to the influence of streets and buildings in this vicinity. In general, however, surface runoff will travel to the south and west, eventually entering the Colorado River. Surface and subsurface drainage can be characterized as fair to poor.

The soils on this site are alluvial in nature, having been deposited on the site by the action of the Colorado River in the past. The soil profile was found to consist of a layer of alluvial silt and clay approximately 60 feet in thickness overlying an alluvial terrace consisting mainly of gravel and cobble sized particles. The silt and clay layer tends to be somewhat dry and desiccated near the ground surface, but with increasing depth, becomes wetter and softer. The desiccated, upper silts and clays can be expected to form the primary foundation material for shallow foundations placed on this site. It should be pointed out, however, that these upper, drier silts and clays can be expected to experience a considerable loss of strength with increasing moisture, and that the density of the upper materials varies considerably over the site. For this reason,

it is important that proper drainage be maintained over the site. All of the alluvial materials on this site have been deposited on dense, formational material of the Mancos Shale formation. The Mancos Shale can be considered as bedrock beneath this site.

The Mancos Shale can broadly be described as a thinly bedded, drab, light to dark grey marine shale with thinly interbedded, fine-grained sandstone and limestone. Some layers of the Shale contain a high proportion of bentonite and, therefore, are highly expansive. The majority of the Shale, however, has only a moderate expansion potential. No formational material was encountered in any of the test borings placed on this site. The Shale exists beneath this site at depths sufficient to insure that formational material will not affect construction or performance of the proposed foundation systems.

BORINGS, LABORATORY TESTS & RESULTS:

Eight test borings were placed on this site, as is indicated on the enclosed Test Boring Location Diagram. These test borings were placed in such a manner as to obtain a reasonably good profile of the subsurface soils beneath the site. Test Borings 1 and 6 were drilled to 45 and 60 foot depths in an attempt to find the depth to

shale or to the underlying gravel terrace materials. None was found to a depth of 60 feet. Some variations in the soil profile were noted from point to point, but in general, the soil profile was sufficiently uniform that no further test borings were deemed necessary. All test borings were advanced with a power driven, continuous auger drill. Samples were taken with the California sampler, thin walled tubes, and by bulk methods.

The subsurface profile encountered during our field exploration program can broadly be described as a two-layer system. The upper layer of this system, which was encountered very near the ground surface generally consists of a dry, medium density clay and silt crust. This will be the supporting soil for most of the foundations on the site. The second layer of the soil profile consists of the same types of silts and clays, but in a much higher moisture condition. This material, which was deposited by the action of the Colorado River in the past, was generally low density, of a light brown to tan color and was noted to be stratified with numerous sand layers and occasional scattered gravel. Below this silt and clay layer, at a depth of over 60 feet below the ground surface, a layer of dense alluvial gravel and cobbles, should be found, which represent an old terrace of the Colorado River. Under this, the Mancos

Shale forms the bedrock.

The samples obtained during our field exploration program have been grouped into four soil types. These materials are representative of the basic clays and of the silts and silty sand lenses within the soil profile. The clay of Soil Type No. 3 will be the primary foundation soil, but some foundations will rest on the silts and silty sands. More precise engineering characteristics of the soil types are given on the enclosed Summary Sheets. The following discussion will be general in nature.

Soil Type No. 1 classified as a silt (ML) of fine grain size. Generally, this material is of low plasticity, of low permeability and was encountered in a low density condition. It will have a minor tendency to expand upon the addition of moisture, with expansion pressures on the order of 500 psf being measured on drier samples. In the high moisture condition in which is was generally encountered, these silts will have a great tendency to consolidate upon application of load. Soil Type No. 1 will have a distinct tendency to experience loss of strength upon saturation. For this reason, proper drainage is considered very important on this site. Additionally, proper balancing and reinforcing of foundation components is considered important, since this will help the structure

maintain its integrity if localized strength loss occurs in relatively small isolated areas of the foundation soils. Foundations which rest at least 2 feet below the present ground surface may be proportioned on the basis of a maximum allowable bearing capacity of 800 psf. A minimum dead load pressure of 500 psf should be maintained at all times. Soil Type No. 1 was found to contain sulfates in detrimental quantities.

Soil Type No. 2 is a very fine grained silty sand found primarily in borings 6 and 8. This material is of low plasticity, is permeable and generally of low to medium density. This material has no tendency to expand upon the addition of moisture and only a minor tendency to true consolidation. This soil is generally found in relatively thin layers, however, and the foundations will be affected by the basic clays and silts. Within the upper 10 feet of the soil profile, the maximum allowable bearing value of this material can be taken as 1600 psf with no minimum load required if the sand extends at least 3 feet below foundation level. This soil type contains mildly detrimental quantities of sulfates.

Soil Type No. 3 is a lean clay and is the predominant soil type under the site. This soil is plastic, of low permeability and of quite variable

density. In general, near the ground surface the soil is somewhat desiccated, somewhat expansive, and of medium density. At greater depth, the soil is wet, of low density, of low expansion potential and has a tendency to consolidate. It must be noted that the water table on the site will fluctuate and that an increase in moisture content will cause substantial reduction of allowable bearing values.

For design purposes prior to excavation inspection, the maximum allowable bearing value within 3 feet of present ground surface can be taken as 1800 psf. A minimum load of 900 psf should be maintained.. Below a depth of 6 feet, the maximum bearing value should be reduced to 1200 psf and the minimum required load may be reduced to 400 psf. This soil type contains sulfates in detrimental quantities.

Soil Type No. 4 is a relatively coarse grained silty sand found in a lens in boring 8. This material could be found at numerous points over the site but usually in relatively thin lenses. This soil is non-plastic, permeable and of medium density. It has no tendency to expansion or to true consolidation in itself. The bearing value of this material is variable. The maximum allowable bearing value averages 1800 psf. No minimum load will be required if the sand extends at least 3 feet below foundation

level. This soil type contains only minor amounts of sulfates.

Free water was encountered in most of the test borings between 9 1/2 and 16 feet below ground surface at the time drilled. At this depth, free water could interfere with basement foundations. Due to the presence of this water and to low density at greater depth, basements cannot be recommended over most of the site.

This water table is probably subject to seasonal fluctuation and it is also possible that seepage may be encountered from the unlined Grand Valley Canal which lies north of this site.

#### CONCLUSIONS & RECOMMENDATIONS:

Since the magnitude and nature of the foundation loads for the proposed structures are not precisely known to the Laboratory at this time, the recommendations contained herein must be quite general in nature. Any special loads or unusual design conditions should be reported to the Laboratory so that changes in recommendations may be made, if necessary. We understand that the structures on the site will be two-story multi-family structures, some single-family residences and perhaps a commercial type "professional building". Basements are not planned. Based upon our analysis of the soil conditions and project characteristics previously outlined, the following recommendations are made.

It is recommended that shallow foundation systems, consisting of continuous foundations beneath load bearing walls and isolated spread footings beneath columns and other points of concentrated load, be used to carry the weight of the proposed structures. Foundations which extend less than 6 feet below the present ground surface may be proportioned on the basis of a maximum allowable bearing capacity of 1800 psf over most of the site. A minimum dead load pressure of 900 psf should be maintained at all times above the 6 foot level. It should be noted that the term "spread footings" can be applied to the wall on grade foundation type for lightweight structures.

In order to minimize the possibility for differential movement, it is recommended that the foundation system be well balanced. Structures such as these are usually more heavily loaded on some walls and columns than on others. The amount of variation in this load can be quite high. Balancing can be achieved by placing larger footings beneath heavier loads and smaller footings beneath lighter loads in such a manner that the stress on the soil is approximately the same at all points. The criteria for balancing will depend somewhat upon the nature of the structure. Single-story, slab on grade structures may be balanced on the basis of dead load only. Multi-story



structures or structures with basements should be balanced on the basis of dead load plus approximately one-half the live load. Using whichever criteria is applicable, the contact stresses beneath exterior foundation walls should be balanced to within  $\pm$  300 psf at all points. Isolated interior column footings should be designed for unit stresses of about 200 psf greater than the average selected for the exterior walls.

Stem walls for continuous foundations should be designed as grade beams capable of spanning at least 12 feet. The horizontal reinforcement required for this design should be placed continuously around the building with no gaps or breaks in the reinforcing steel, unless they are specially designed. Stem walls should be reinforced at both top and bottom with the majority of the reinforcing being located at the bottom of the beam. Where stem walls will retain soil in excess of 4 feet in height, vertical reinforcing may be necessary and should be designed. To design such vertical reinforcing, the equivalent fluid pressure of the soil may be taken as about 45 pcf in the active state. Due to the moisture content of the soil below a depth of 6 feet and the lower density found at this level, full basements will be difficult to design and construct. Full basements are therefore not recommended on the site.

Where floor slabs are to be used, they may be placed directly on grade or over a compacted gravel blanket of 4 to 6 inches in thickness. If the gravel bed is chosen, however, it must be provided with a free drainage outlet to the surface and must not be allowed to act as a water trap beneath the floor slab. A vapor barrier is recommended beneath all floor slabs placed on this site.

Floor slabs should be constructed in such a manner that they act independently of columns and bearing walls. Additionally, concrete floor slabs should be placed in sections no greater than 25 feet on a side. Deep construction or contraction joints should be placed at these lines to facilitate even breakage. This will help reduce unsightly cracking which could be caused by differential movement.

Adequate drainage must be provided in the foundation area, both during and after construction, to prevent the ponding of water. The ground surface around the building should be graded such that surface water will be carried quickly away from the structure. Minimum gradient within 10 feet of the structure will depend upon surface landscaping. Bare or paved areas should have a minimum gradient of 2%, while landscaped areas should have a minimum gradient of 7%. Roof drains, if used, should be

carried across all backfilled areas and discharged well away from the structure. The amount of landscape irrigation in the immediate vicinity of the structures should be kept to an absolute minimum. Since the foundation soils can be expected to experience a loss of strength upon saturation, drainage recommendations are considered very important.

Backfill around the proposed structure and in utility trenches leading to the structure should be compacted to at least 90% of the maximum Proctor dry density, ASTM D-698. The native soils on the site may be used for this purpose. Material should be placed in lifts not to exceed 6 inches compacted thickness and at a moisture content approximately equal to the Proctor optimum moisture content  $\pm$  2%. Backfill should be compacted to the required density by mechanical means. No water flooding techniques of any type should be used in the placement of fill on this site. Since proper placement of backfill will aid in the rapidity of runoff and help prevent surface water from reaching the foundation area, backfill recommendations are considered important. If proper drainage cannot be provided by grading, peripheral drains are recommended.

Any topsoil or debris should be removed from the construction area prior to the beginning of construction of foundations. In addition, should any

pockets of debris, organic material, or unusually loose material be encountered during excavation for footings, this material should be removed and replaced with backfill compacted to 95% of the maximum Proctor dry density, ASTM D-698.

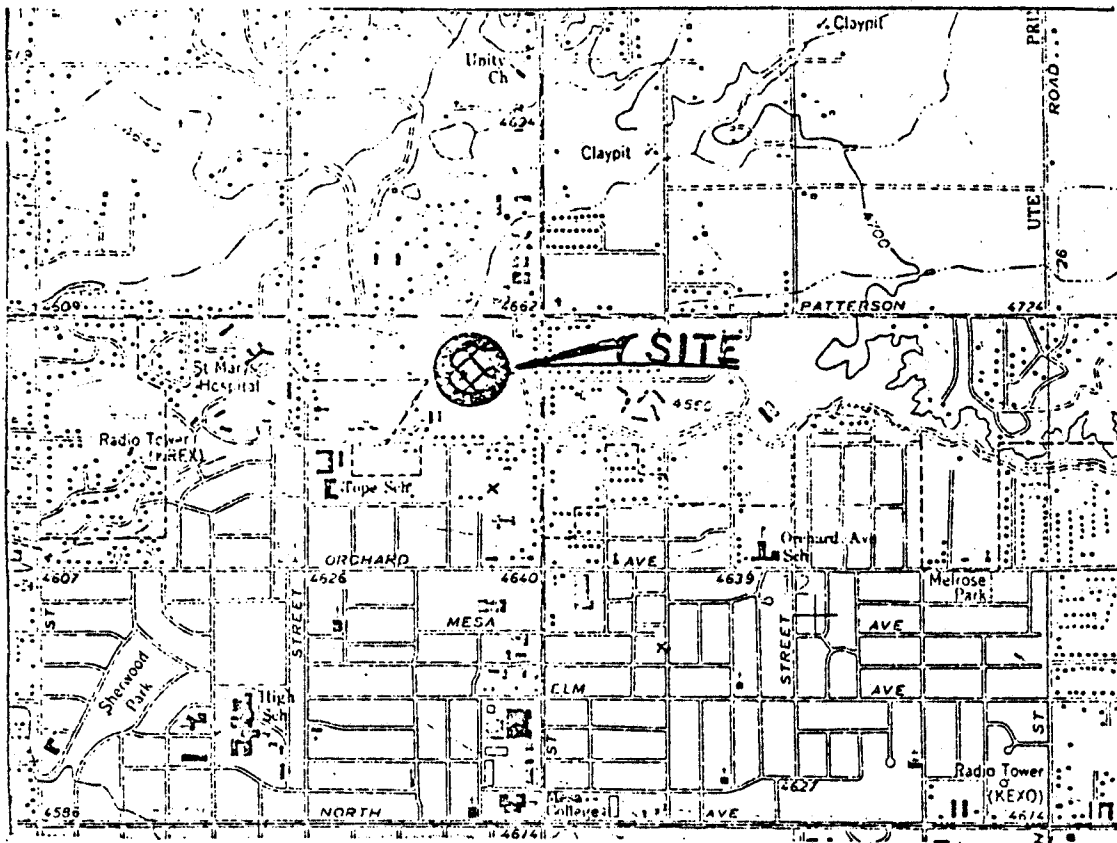
The open foundation excavation should be inspected prior to the construction of forms or placement of concrete to establish that proper design bearing material has been reached and that no debris, soft spots, or other unsuitable materials are located in the foundation area.

The silt and clay soils on this site were found to contain sulfates in detrimental quantities. For this reason, a sulfate-resistant cement such as Type II Modified Cement is recommended for use in all concrete which will be in contact with the foundation soils. Under no circumstances should calcium chloride ever be added to a Type II Cement. In the event that Type II Cement is difficult to obtain, a Type I Cement may be used, providing the concrete is separated from the soils by water-resistant membranes.

Heavy structures which cannot be designed for the relatively light allowable bearing values will require special foundations. A raft type structural slab foundation or a driven pile and grade beam foundation could be used. The choice of foundation should be made depending on the type of building and load configuration.

Special foundations of this type will not be described here, but recommendations for these foundation types can be made in a short time if it becomes necessary to use them.

It is believed that all pertinent points concerning the subsurface soils on this site have been covered in this report. If soil types and conditions other than those described herein are noted during construction on the site, these should be reported to the Laboratory so that changes in recommendations may be made, if necessary. If questions arise or further information is required, please feel free to contact the Laboratory.



SCALE  
1"=2000'

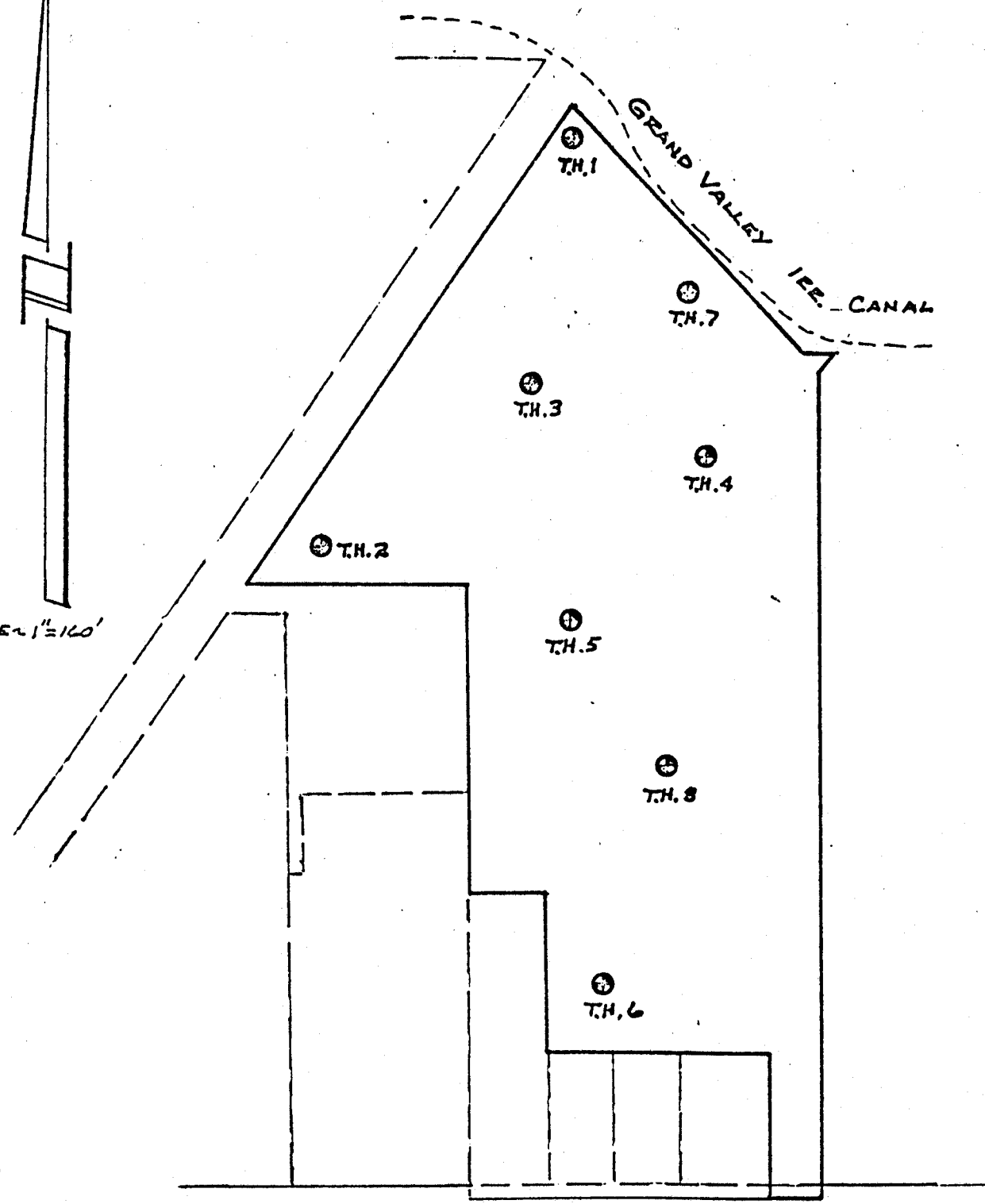
ADAPTED FROM  
U.S.G.S. 7½' Quadrangles



SITE LOCATION MAP

THE LINCOLN-DEVORE TESTING LABORATORY  
 COLORADO: Colorado Springs, Pueblo, Glenwood Springs, Montrose, Gunnison. WYOMING: Rock Springs

SCALE 1"=160'



BOOKCLIFF AVE.

TEST BORING LOCATION DIAGRAM  
CAPITOL HILL SUBDIV. - GRAND JUNCTION

**LD** LINCOLN  
DEVORE  
ENGINEERS-  
GEOLOGISTS

COLORADO: COLORADO SPRINGS,  
PUEBLO, GLENWOOD SPRINGS,  
GRAND JUNCTION, MONTROSE,  
WYOMING: ROCK SPRINGS

**SOILS DESCRIPTIONS:**

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

**ROCK DESCRIPTIONS:**

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

**SYMBOLS & NOTES:**

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

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

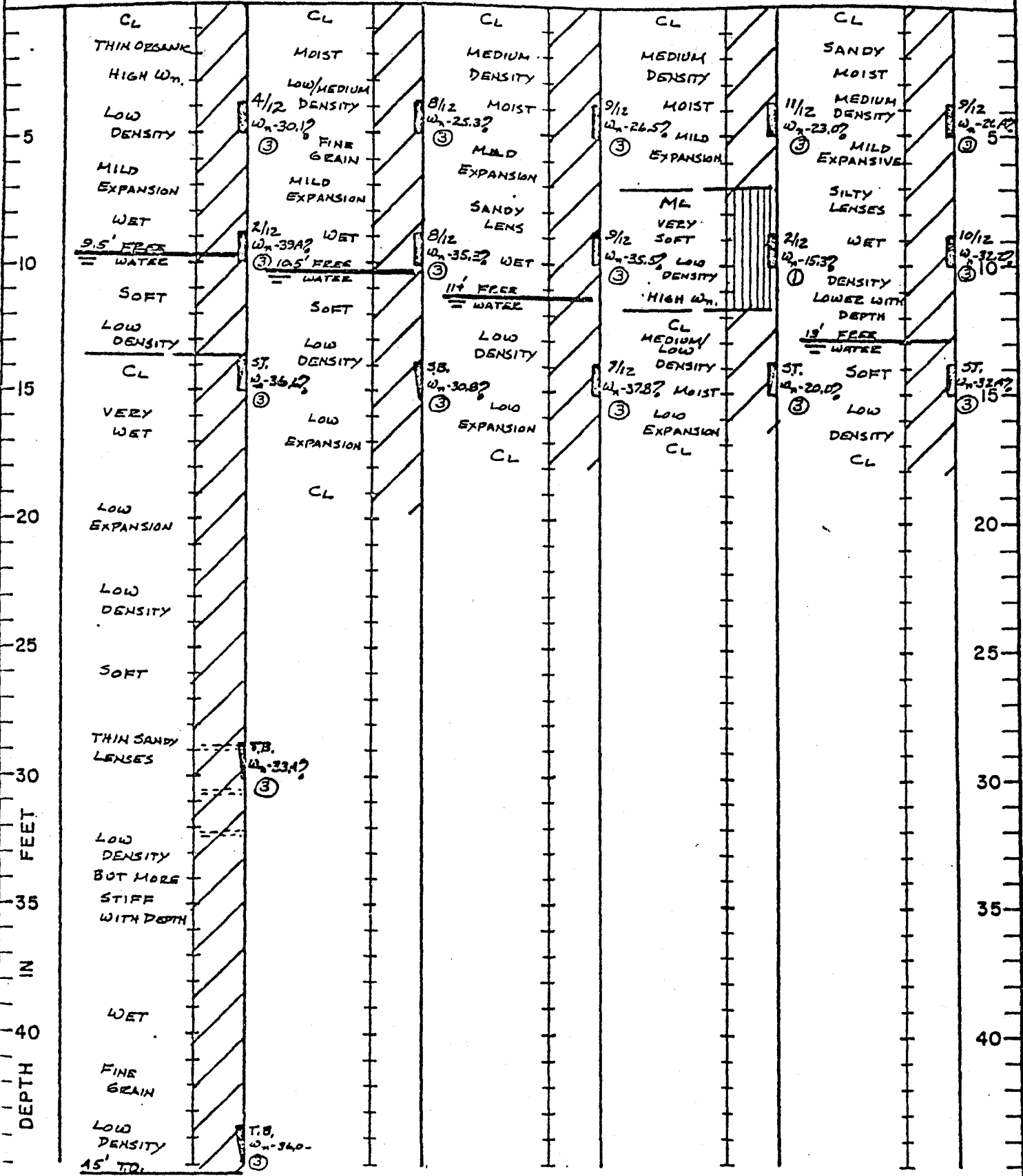
Samples may be bulk, standard split spoon (both disturbed) or 2-1/2" I.D. thin wall ("undisturbed") Shelby tube samples. See log for type.

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

**LINCOLN DeVORE TESTING LABORATORY**  
 COLORADO: Colorado Springs, Pueblo, Glenwood Springs, Montrose, Gunnison, Grand Junction.- WYO.- Rock Springs

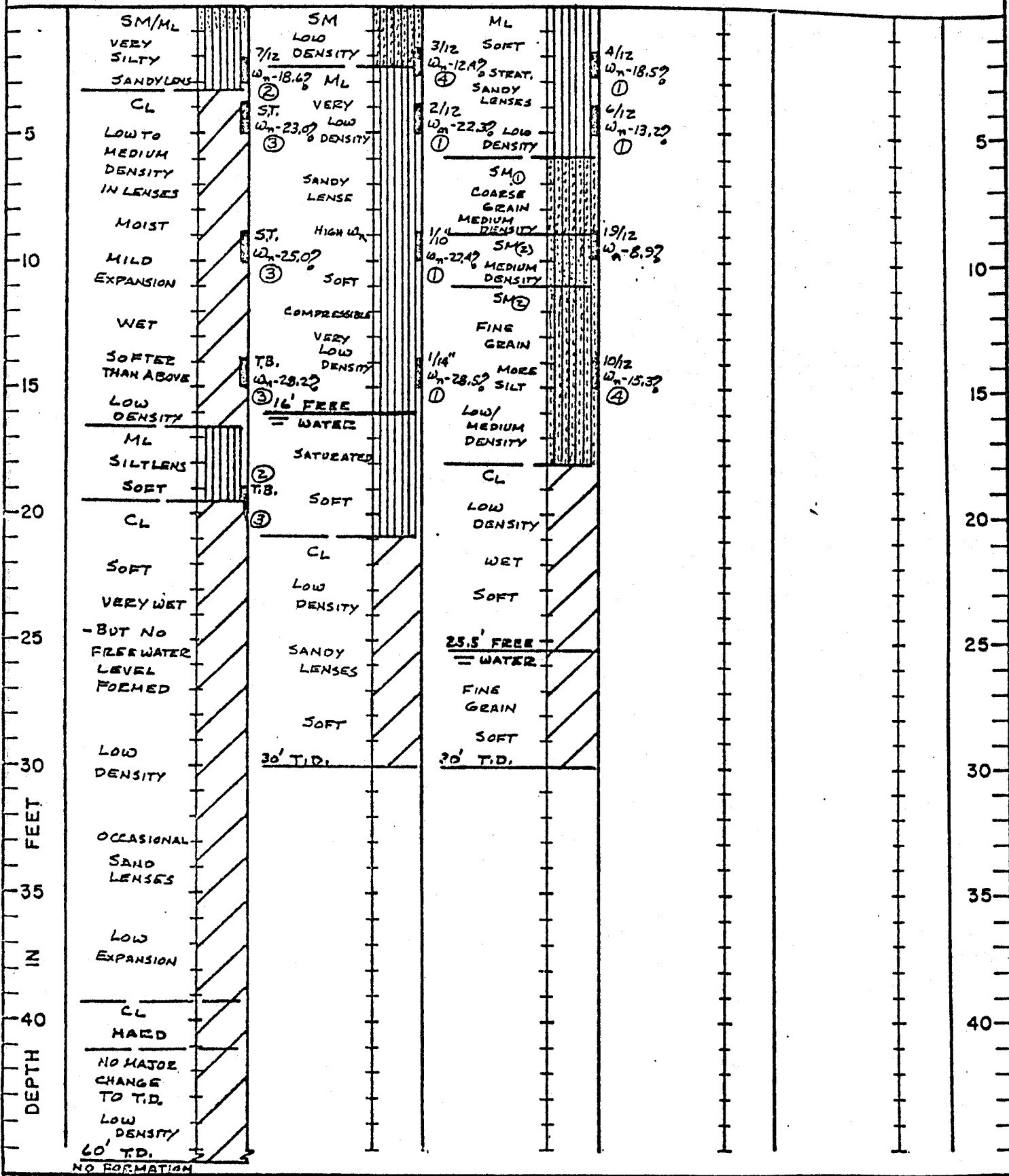
**EXPLANATION OF BOREHOLE LOGS AND LOCATION DIAGRAMS**





DRILLING LOGS

**LINCOLN DeVORE ENGINEERS-GEOLOGISTS**  
 COLORADO: COLORADO SPRINGS, PUEBLO, GLENWOOD SPRINGS, GRAND JUNCTION, MONTROSE, WYOMING: ROCK SPRINGS



DRILLING LOGS



LINCOLN  
DeVORE  
ENGINEERS  
GEOLOGISTS

COLORADO: COLORADO SPRINGS,  
PUEBLO, GLENWOOD SPRINGS,  
GRAND JUNCTION, MONTROSE,  
WYOMING: ROCK SPRINGS

SUMMARY SHEET

Soil Sample ML  
 Location Capital Hill Subdiv.  
 Boring No. 7 Depth 5' (Type)  
 Sample No. 1

Test No. 25215  
 Date 12/3/78  
 Test by KL

Natural Water Content (w) 22.2 %  
 Specific Gravity (Gs) 2.72

In Place Density ( $\rho_o$ ) 109.7 pcf

SIEVE ANALYSIS:

Sieve No.	% Passing
1 1/2"	
1"	
3/4"	
1/2"	100.0
4	99.4
10	97.7
20	94.8
40	92.4
100	85.2
200	72.4

HYDROMETER ANALYSIS:

Grain size (mm)	%
.0200	35.1
.0050	20.3

Plastic Limit P.L. 17.3 %  
 Liquid Limit L.L. 20.2 %  
 Plasticity Index P.I. 2.9 %  
 Shrinkage Limit 12.8 %  
 Flow Index \_\_\_\_\_  
 Shrinkage Ratio \_\_\_\_\_ %  
 Volumetric Change \_\_\_\_\_ %  
 Lineal Shrinkage \_\_\_\_\_ %

MOISTURE DENSITY: ASTM METHOD

Optimum Moisture Content -  $w_o$  \_\_\_\_\_ %  
 Maximum Dry Density -  $\rho_d$  \_\_\_\_\_ pcf  
 California Bearing Ratio (av) \_\_\_\_\_ %  
 Swell: 1 Days 1.8 %  
 Swell against 615 psf  $w_o$  gain 9.4 %

BEARING:

Housel Penetrometer (av) 800 psf  
 Unconfined Compression (qu) \_\_\_\_\_ psf  
 Plate Bearing: \_\_\_\_\_ psf  
 Inches Settlement \_\_\_\_\_  
 Consolidation 4.8 % under 2000 psf

PERMEABILITY:

K (at 20°C) \_\_\_\_\_  
 Void Ratio \_\_\_\_\_  
 Sulfates 1000+ ppm.

SOIL ANALYSIS

LINCOLN-DeVORE TESTING LABORATORY  
 COLORADO SPRINGS, COLORADO

SUMMARY SHEET

Soil Sample SM (very silty)  
 Location Capital Hill Subdiv.  
 Boring No. 6 Depth 2 (TYP)  
 Sample No. 2

Test No. 25215  
 Date: 12/13/78  
 Test by RKL

Natural Water Content (w) 18.55%  
 Specific Gravity (Gs) 2.62

In Place Density ( $\rho_o$ ) 111.1 pcf

SIEVE ANALYSIS:

Sieve No.	% Passing
1 1/2"	
1"	
3/4"	
1/2"	
4	
10	100.0
20	99.7
40	99.5
100	79.2
200	48.9

HYDROMETER ANALYSIS:

Grain size (mm)	%
.0200	30.2
.0050	

Plastic Limit P.L. N.P. %  
 Liquid Limit L. L. \_\_\_\_\_ %  
 Plasticity Index P.I. \_\_\_\_\_ %  
 Shrinkage Limit \_\_\_\_\_ %  
 Flow Index \_\_\_\_\_ %  
 Shrinkage Ratio \_\_\_\_\_ %  
 Volumetric Change \_\_\_\_\_ %  
 Lineal Shrinkage \_\_\_\_\_ %

MOISTURE DENSITY: ASTM METHOD

Optimum Moisture Content -  $w_o$  \_\_\_\_\_ %  
 Maximum Dry Density -  $\rho_d$  \_\_\_\_\_ pcf  
 California Bearing Ratio (av) \_\_\_\_\_ %  
 Swell: \_\_\_\_\_ Days 0 %  
 Swell against \_\_\_\_\_ psf  $w_o$  gain 1.3 %

BEARING:

Housel Penetrometer (av) 1600 psf  
 Unconfined Compression (qu) \_\_\_\_\_ psf  
 Plate Bearing: \_\_\_\_\_ psf  
 Inches Settlement \_\_\_\_\_  
 Consolidation - % under - psf

PERMEABILITY:

K (at 20°C) \_\_\_\_\_  
 Void Ratio \_\_\_\_\_

Sulfates 1000+ ppm.

SOIL ANALYSIS

LINCOLN-DeVORE TESTING LABORATORY  
 COLORADO SPRINGS, COLORADO

SUMMARY SHEET

Soil Sample CL  
 Location Capital Hill Subdiv.  
 Boring No. 3 Depth 10'  
 Sample No. 3 (typ)

Test No. 25215  
 Date: 12/12/78  
 Test by: RKL

Natural Water Content (w) 35.5 %  
 Specific Gravity (Gs) 2.70

In Place Density ( $\rho_o$ ) 110.1 pcf

SIEVE ANALYSIS:

Sieve No.	% Passing
1 1/2"	
1"	
3/4"	
1/2"	
4	100.0
10	99.3
20	98.3
40	97.2
100	92.6
200	81.8

HYDROMETER ANALYSIS:

Grain size (mm)	%
.0200	44.5
.0050	32.9

Plastic Limit P.L. 16.9 %  
 Liquid Limit L.L. 24.1 %  
 Plasticity Index P.I. 7.2 %  
 Shrinkage Limit 15.9 %  
 Flow Index \_\_\_\_\_ %  
 Shrinkage Ratio \_\_\_\_\_ %  
 Volumetric Change \_\_\_\_\_ %  
 Lineal Shrinkage \_\_\_\_\_ %

MOISTURE DENSITY: ASTM METHOD

Optimum Moisture Content -  $w_o$  \_\_\_\_\_ %  
 Maximum Dry Density -  $\rho_d$  \_\_\_\_\_ pcf  
 California Bearing Ratio (av) \_\_\_\_\_ %  
 Swell: 1 Days 2.7 %  
 Swell against 960 psf  $W_o$  gain 11.3 %

BEARING:

Housel Penetrometer (av) 1800 psf  
 Unconfined Compression (qu) \_\_\_\_\_ psf  
 Plate Bearing: \_\_\_\_\_ psf  
 Inches Settlement \_\_\_\_\_  
 Consolidation 4.5 % under 3500 psf

PERMEABILITY:

K (at 20°C) \_\_\_\_\_  
 Void Ratio \_\_\_\_\_  
 Sulfates 1500+ ppm.

SOIL ANALYSIS

LINCOLN-DeVORE TESTING LABORATORY  
 COLORADO SPRINGS, COLORADO

Soil Sample SM

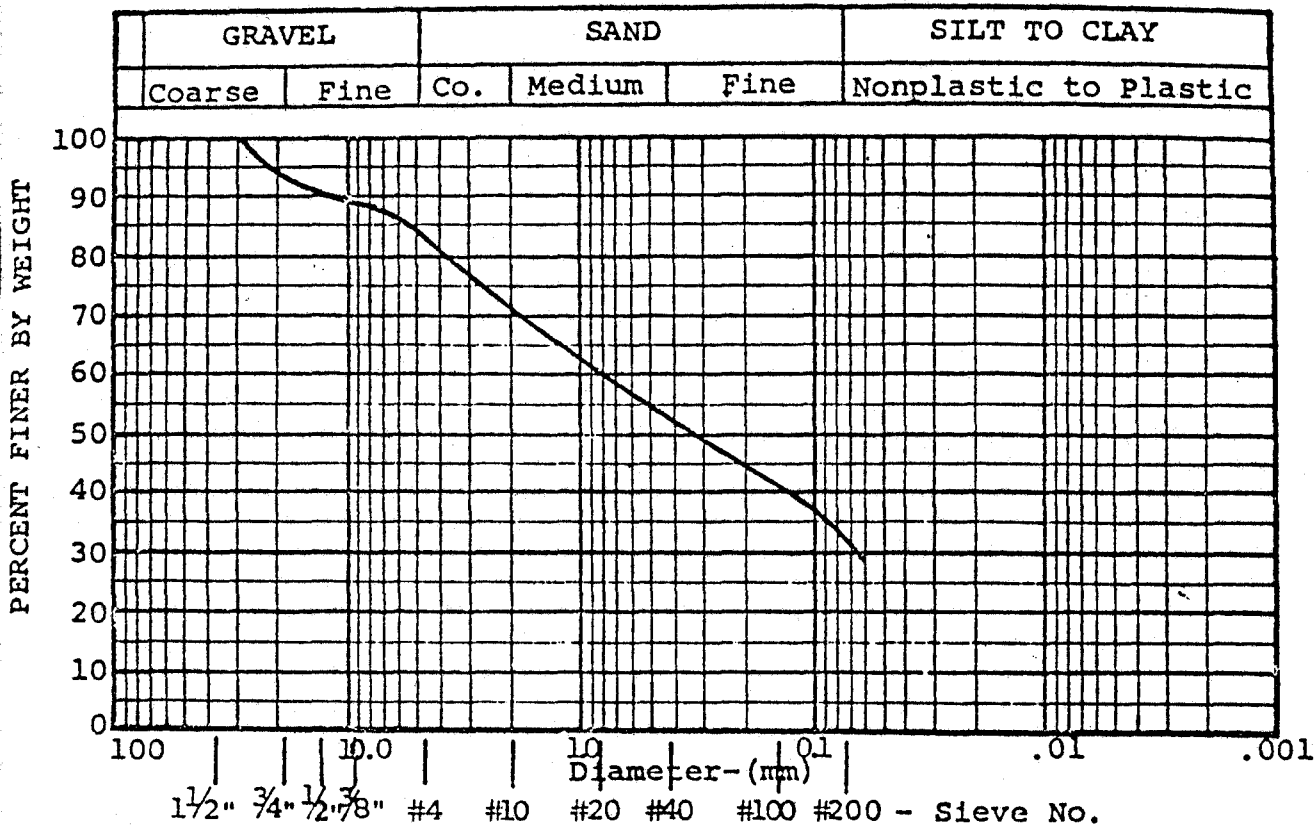
Test No. \_\_\_\_\_

Project Capitol Hill Subdiv.

Date 12/4/78

Sample Location TH. 8 @ 15' (Typ.)

Test by EKL



Sample No. 4

Specific Gravity 2.64

Moisture Content 15.3%

Effective Size \_\_\_\_\_

Cu \_\_\_\_\_

Cc \_\_\_\_\_

Fineness Modulus \_\_\_\_\_

L.L.   %   P.I.   NP  %

BEARING 1800 psf

Sieve Size                      % Passing

1 1/2"	_____
1"	100.0
3/4"	94.8
1/2"	90.5
3/8"	89.6
4	84.0
10	71.5
20	60.5
40	53.8
100	40.9
200	31.1
0200	_____

Sulfates 500+ ppm

GRAIN SIZE ANALYSIS

LINCOLN-DEVORE TESTING LABORATORY  
COLORADO SPRINGS, COLORADO

FS:REZONE/WELL:101

July 27, 1984

To: City of Grand Junction  
Planning Department

From: Dillon-Hunt, P.C.  
804 Grand Avenue  
Grand Junction, Colorado 81501

Subject: Rezone of Lots 1 and 2 of Little Bookcliff Subdivision, Phase I of Little Bookcliff Subdivision and a portion of Lot 3 of La Villa Grande Subdivision as noted in legal description Exhibit "D", from RMF-64 to Planned Business. Additionally, it is intended to gain approval of a one acre parcel noted as "Phase I" on Exhibit "V", to construct a medical office. Note that this rezone is intended to follow finalizing of a vacation/dedication action previously submitted for this parcel of land.

Method: The following items are listed according to subject and order as indicated on the City of Grand Junction submittal legend.

File Reference: 59-82.

General Requirements:

Item A: Application Form: As filled out at pre-application conference conducted on June 6, 1984, is included in the submittal. See Exhibit "O".

Item B: Impact statement or project narrative: The purpose of the zoning change is to convert from residential to planned business. The most current developments surrounding this land parcel are medical in nature and it is anticipated by the Owner that planned business is the most reasonable use for the land and is in keeping with the existing land use. Planned business zoning gives the City maximum input into the use and resultant project(s).

Investigation by the Owner has discovered no problems internal to the site or external that will negatively impact this rezone.

Phase I is intended to become a medical office offering Ophthalmology care and associated dispensary owned and operated by a single entity.

Item C: Summary Form: Does not apply.

Item D: Appraisal of Application for Open Space: Does not apply.

Item E: Evidence of Title: See Exhibit(s) "I, K, L & M".

Item F: Draft of Covenants/Restrictions: As delineated in the enclosed legal description(s) and title policy. See Exhibits "I, K, L & M".

Item G: Legal Description(s): See enclosed Exhibit "D" for rezone property and Exhibit "P" for Phase I.

Item H: Names and Addresses of Adjacent Property: See enclosed Exhibit "G".

Item I: Flood Plain Analysis: Does not apply.

Item J: Geology Report/Soils Report: Does not apply.

Item K: Gamma Radiation Report: No formal report is planned at this time. Reports shall be obtained prior to any actual construction.

Item L: Subsurface Soils Investigations: See enclosed Exhibit "N".

Item M: Improvements Agreement: No formal agreement is planned at this time. This agreement shall be submitted and finalized according to City standards prior to any street improvement.

Item N: Improvements Guarantee: No formal guarantee is submitted at this time. This guarantee shall be submitted and finalized according to City standards prior to any street improvement.

Item O: Development Schedule: Implementation of the rezoning procedure is anticipated to be concluded within the time parameters of the planning process. Construction of the medical office will be completed within a year following approval of the planned business submittal.

Item P: Plat: See enclosed Exhibit "V", which indicates boundary, easements and Phase I.

Item Q: Site Plan: See Exhibit "R".

Item R: Adjacent Land Use: Current City of Grand Junction zoning information indicates the subject site to be surrounded by PB, B-1, RMF-64, RSF-8. See Exhibit "T".

Item S: Drainage/Grading Plan: No formal plan will be submitted at this time. A formal plan will be submitted conforming to City standards prior to construction of any street improvements. Phase I drainage is indicated on Exhibit "S". The one acre site generally slopes to the south-southwest and it is anticipated that roof and parking lot collected water will surface discharge to Wellington



Avenue and into that storm sewer system.

Item T: Utilities Composite: See Exhibit "F". Fire flow information will be submitted at time of building permit application.

Item U: Landscaping/Screening/Buffering: Does not apply to the total site at this time. Landscaping for Phase I shall take several forms. See Exhibit "R". Area 1 will be textured concrete. Area 2 will be a combination of lawn and shrubs/trees irrigated with an automatic sprinkler system using City water. Area 3 is to be shrubs/trees with shredded wood mulch, with an automatic sprinkler system. Area 4 is to be gravel surface for the purpose of future expansion. Maintenance shall be provided by the Owner.

Item V: Parking: See Exhibit "R". Parking for Phase I is divided into two general areas, one for client parking and one for staff parking. Parking stalls have been designed as 10 feet wide by 20 feet in length for standard spaces. Two handicapped spaces will be provided at the main entrance. The total number of spaces will be 39 and the required spaces are  $6720 \text{ GSF}/300 = 22.4$ .

Item W: Roadway Plan/Profile: Does not apply.

Item X: Traffic Circulation Patterns: Existing street patterns shall remain in effect. The small number of cars using this facility will not impact the existing street systems. For Phase I, it is anticipated that practically all people using this facility will arrive by car. Pedestrian access can be gained by using the existing network of sidewalks. Bike access is also available. Internal automobile circulation will be designed to allow cars to stop at the entry to deposit or to pick up a patient. Two curb cuts are proposed which will be installed according to City standards. Trash pick-up will be at the rear of the building.

Item Y: Traffic Analysis: Does not apply.

Item Z: Structural Information: The proposed single story office building will be founded on spread footings or piling as per final design. Walls to be masonry veneer/stud construction with wood truss/shake shingle or clay tile roof system. Construction to be basically one hour. The building will conform to the current provisions of the uniform building code.

- A. Building Area: 6720 GSF
- B. Building Height: 26 feet from grade
- C. % Building Coverage: 15.4%
- D. Set Backs: See plot plan
- E. Site Lighting: Provided by on building lighting
- F. Signage: A single lighted sign will be installed at the southeast curb cut. Sign shall conform to City code.

# REVIEW SHEET SUMMARY

(1 of 2)

FILE NO. #21-84 TITLE HEADING Rezone RMF 64 to PB & Medical Office DUE DATE 7/13/84

ACTIVITY - PETITIONER - LOCATION - PHASE - ACRES Final Activity: Rezone Petitioner: V.

Wellington Location: NW Corner of 11th Street and Wellington, S. of Grand Valley Canal

Phase: Final

PETITIONER ADDRESS V. Wellington, 2754 Compass Drive, Ste. 377 Grand Jct., CO 81501

ENGINEER Dillon-Hunt, P.C., 804 Grand Avenue Grand Junction, CO 81501

<u>DATE REC.</u>	<u>AGENCY</u>	<u>COMMENTS</u>
7/10/84	Mtn. Bell	None.
7/10/84	Public Works	None.
7/10/84	Fire Dept.	The Grand Junction Fire Department has no objections to this rezone/Phase I final.
7/11/84	Police Dept.	Police may have some problem with nighttime building security checks, particularly with the north side of the building.
7/12/84	Public Service	Gas & Electric: No Objections.
7/12/84	Transportation Engineer	The east curb cut appears to be very close to the intersection of Wellington and 11th Street. An expanded plan showing this complete intersection and the drives for the adjacent property would be helpful.
7/12/84	City Engineer	Utility services should be installed to meet City requirements for compaction and roadway resurfacing if not existing.  Drainage: In an effort to reduce all future development impacts on local drainways all intensified drainage (roof, parking lot, etc.) will be detained on site and discharge shall not exceed the 2 year historic runoff rate. Drainage detention design shall be prepared in a Hydrology Report by a Colorado Professional Engineer. Hydrology report shall contain information showing documentation of historic and developed runoff rates, location of receiving waterways, size and capacity of all pipe systems within a 1/2 mile range downstream and the anticipated 2 year volume of flow in receiving waterway and pipe systems.  Driveway curb cuts: All concrete work done in City right-of-way shall meet current City Standards and be constructed by a licensed City Concrete Contractor.
7/13/84	City Parks	None - looks to be satisfactory.
7/16/84	City Planning	Project Narrative: The use proposed does not conflict with the surrounding area. The ROW vacation will be heard in conjunction with this request. NOTE: Any development other than Phase I will require a preliminary and/or final plan approval prior to any construction.  Development schedule seems reasonable. See City Eng. comments re: drainage, landscaping: see site plan comments below. Structural analysis seems to blend in well with surrounding bldgs.  Site Plan: 1. Nice to see bike racks in area that they will be used and not stuck back in a corner.

RECEIVED GRAND JUNCTION  
PLANNING DEPARTMENT.

JUL 30 1984

FS:REVIEW/RES:101

Page 1 of 2

File No.: 21-84

Title Heading: ~~Right of Way Vacation~~ *Rezone & Final Plan*

Activity: Right of Way Vacation

Petitioner: P-H Management, EHT, V Wellington, 2754 Compass Drive, Suite 377, Grand Junction, Colorado, 81501

Engineer: Dillon-Hunt, P.C., 804 Grand Avenue, Grand Junction, Colorado, 81501

AGENCY

RESPONSE

Public Works:

None

Mountain Bell:

None

Fire Department:

None

Police Department:

The major building entry was placed on the south for patient safety and ease of access. The rear staff entry, by design necessity, occurs on the north (rear) of the building. Every reasonable effort will be made to secure this entry and provide lighting to minimize potential security problems. As the actual design evolves, the secondary entrance to the building will be looked at in hope of eliminating the north entrance.

Public Service:

None

Transportation

Engineer:

A more detailed street intersection drawing has been presented to the transportation engineer and by examining this new data, he has concluded the curb cuts locations are satisfactory.

City Engineer:

- a. Utility services shall be installed to meet city standards.
- b. Drainage studies shall be completed according to city standards prior to issuance of a building permit. Retention, if required, shall be designed into the parking and/or landscaping areas.
- c. All driveway curb cuts shall be installed according to city standards by a city licensed contractor.

Page 2 of 2

City Parks:  
City Planning:

None

- a. Any development other than Phase I shall be processed by formal approval processes.
- b. Drainage and landscaping issues are covered elsewhere.
- c. Landscaping in Area 1 shall be the same as Area 3.
- d. A raised curb shall be included along the east property line to prevent overhang beyond the property line.
- e. Trash pick up will be by private operator.
- f. Drainage is addressed elsewhere.

END

