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File 1986-0030 Project Name: Bookcliff Church Of Christ – 539 28 ½ Rd –Conditonal Use

Present	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	X	**Review Sheet Summary**
X		Application form
		Review Sheets
		Receipts for fees paid for anything
		***Submittal checklist**
X	X	***General project report**
		Reduced copy of final plans or drawings
X		Reduction of assessor's map
		Evidence of title, deeds, easements
X	X	***Mailing list to adjacent property owners**
		Public notice cards
		Record of certified mail
X		Legal description
		Appraisal of raw land
		Reduction of any maps – final copy
		***Final reports for drainage and soils (geotechnical reports)**
		Other bound or non-bound reports
		Traffic studies
		Individual review comments from agencies
X	X	***Petitioner's response to comments**
		***Staff Reports**
		***Planning Commission staff report and exhibits**
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		***Summary sheet of final conditions**
		***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	X	Review Sheet Summary			
X		Review Sheets			
X		Development Application – 9/22/86			
X		Public Notice Posting – 10/23/86			
X	X	Planning Commission Minutes - ** - 9/22/86, 11/13/86			
X		Agreement to Amend/Extend Contract – 9/11/86			
X		Request for Treasurer's Certificate of Taxes Due – 9/23/86			
X		Notice of Public Hearing – 11/4/86			
X		Letter from William E. Putnam to Planning re: request for information on use of church property-11/6/86			
X		Handwritten Notes to file			
X	X	Site Plan - (to be scanned)			
X	X	Subsurface Soils Exploration Report –9/26/86			

PROJECT NARRATIVE

The proposal is to build a facility that would be functional for a church.

The proposal is located at the S.W. corner of Northacres and 26½ Road.

The proposed building is set for approximately 3-4 years. Future phase of including back lot is not known.

The area impacted will be the area surrounding the intersection of 7th and Horizon.

The residents adjacent to the proposed property voiced no objections to this proposal when I visited with them.

Services to be provided by the proposed facility will be for all people interested to attend worship services and Bible study which will be provided three times each week.

The planned height of the building is not known. However, it is very doubtful that it would exceed 32 feet.

At the time of building a detailed building plan will be provided showing detailed landscaping and parking.

In view of the fact that the church will be the only users of Northacres road and will have to bear the cost of developing said road, we request permission to initially gravel the road.

Grading will be done in such a way that drainage will flow away from the building to the canal in the west, to Northacres road in the north, and to 7th street in the east.

The purchase of this property for proposed building is contigent upon obtaining approval for a conditional use.

There are three shares of irrigation water that accompany the property. Availability of all utilities has been verified.

This proposal has sought to comply with all requirements for conditional use for church.

#30 86

Harry K. Webster
629 Sage Ct.
Grand Junction, CO 81506

Paul D. Wubben
601 Center St.
Grand Junction, CO 81501

John Gordon
629½ 26½ Rd.
Grand Junction, CO 81506

Bookcliff Church of Christ
539 28½ Road
Grand Junction, CO 81501

John Gordon
629½ 26½ Road
Grand Junction, CO 81506

Mable Morford
2641 F½ Rd.
Grand Junction, CO 81506

Ken Brodel
608 Agana
Grand Junction, CO 81504

Mable Morford
2641 F½ Road
Grand Junction, CO 81506

Clarence L. Files
631 26½ Rd.
Grand Junction, CO 81506

Harry K. & R.H. Webster
629 Sage Ct.
Grand Junction, CO 81506

Clarence L. Files
631 26½ Road
Grand Junction, CO 81506

St. Paul Evangelical
Lutheran Church
632 26½ Rd.
Grand Junction, CO 81506

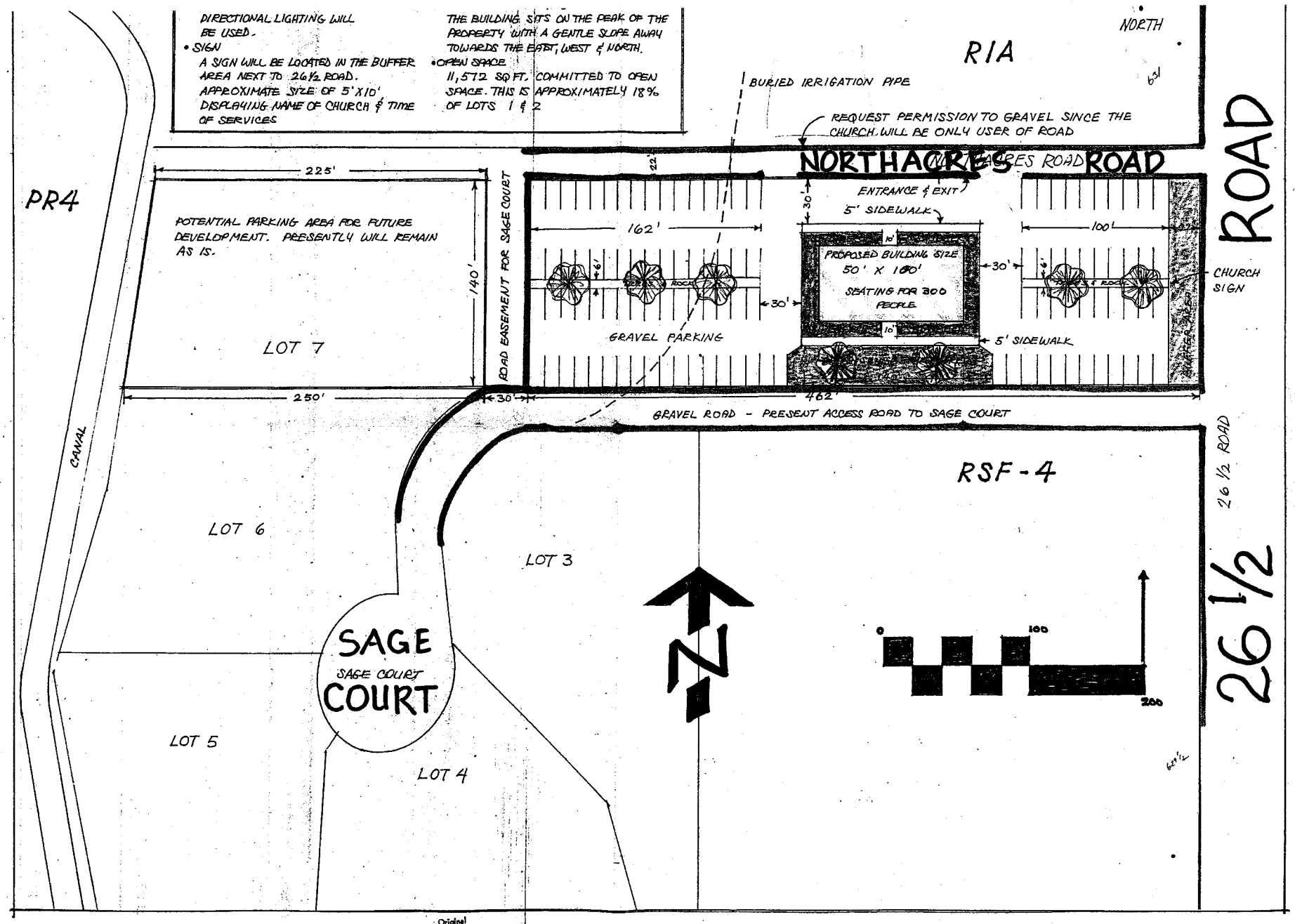
Clayton A. Carsten
2645 F½ Road
Grand Junction, CO 81506

St. Paul Evangelical
Lutheran Church
632 26½ Road
Grand Junction, CO 81506

Bernice L. Long
105 Riverside Dr. #1
Palisade, CO 81526

Michael R. & Judith M. Heuton
630 Sage Ct.
Grand Junction, CO 81506

#3



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From Office

#30 86

SUBSURFACE SOILS EXPLORATION

LOTS 1 AND 2

NORTH ACRES SUBDIVISION

GRAND JUNCTION, COLORADO

Prepared for:
Bookcliff Church of Christ
P.O. Box 40631
Grand Junction, CO 81502
Attn: Ken Brodel

Prepared by:
Lincoln-DeVore, Inc.
1441 Motor Street
Grand Junction, CO 81505

#30 86

Lincoln DeVore

1441 Motor
Grand Junction, Colo 81501
(303) 242-8968

September 26, 1986

Bookcliff Church of Christ
P.O. Box 40631
Grand Junction, CO 81502

Attn: Ken Brodel

RE: SUBSURFACE SOILS EXPLORATION

LOTS 1 AND 2

NORTH ACRES SUBDIVISION

GRAND JUNCTION, COLORADO

Gentlemen:

Transmitted herein are the results of a Subsurface Soils Exploration and Foundation Recommendations for the proposed new church construction.

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

Respectfully submitted,

LINCOLN-DeVORE, INC.

Walter E. Vanderpool
Professional Engineer
Grand Junction Office

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

WEV/jb

LDTL Job No. 62920J

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PROJECT DESCRIPTION:

The contents of this report are a Subsurface Soils Exploration and Foundation Recommendations for the proposed construction of a single-story, masonry or metal frame church. The proposed structure is to be approximately 50 feet by 100 feet in plan. The proposed building is to be located on Lots 1 and 2 of North Acres Subdivision. The site is located in the northern part of the city of Grand Junction.

The site is bounded on the east by 26 1/2 Road. The building location is on a very gentle knoll. A Site Location Diagram is included in the report.

PROJECT SCOPE:

The purpose of this exploration was to determine the general soil conditions of the site applicable to construction of a single story church. Foundation loads for structures of this nature are normally in the range of 1 to 5 kips per foot of wall. Column or point loads, if any, are typically in the range of 15 to 70 kips in magnitude. Characteristics of the individual soils found in these test borings were examined with regard to the type of construction proposed insofar as that is known and described. In situ conditions of the soils noted herein were determined by the soil borings. Presumptive design characteristics of the soils are given for the structures and conditions known at the time of writing this report. Recommendations are included to match the described construction to the soil characteristics found. The information contained herein may or may not be valid for other purposes. If the proposed site use is changed, or types of construction proposed other than noted herein, Lincoln-DeVore must be contacted to determine if the information in this report can be used for the new construction without further exploration being required.

The scope of our Geotechnical Report consisted of a surface reconnaissance by the Geotechnical Engineer, the drilling of two exploratory borings, representative sampling of the soils encountered, laboratory testing, review of available geologic literature, and analysis of our findings.

FIELD EXPLORATION AND LABORATORY TESTING:

The field exploration was performed on September 22, 1986, and consisted of a site reconnaissance by our geotechnical personnel and the drilling of two test borings. The borings were drilled within the limits of the proposed building near the locations indicated on the Test Boring Location Diagram.

The borings were located to obtain a reasonably good profile of the subsurface soil and rock conditions. The borings were drilled with a CME 45, truck-mounted rig. Borings were advanced using continuous flight, solid stem auger. The test borings were drilled to a depth of 20 to 25 feet. Samples were taken with a standard split-spoon sampler, a lined California spoon sampler, and by bulk methods. Logs describing the subsurface conditions are included in this report.

Representative soil samples from the test borings were tested in our laboratory for moisture content, dry density, grain size distribution, swelling potential, plasticity characteristics, and corrosive properties. The tests were performed in accordance with methods published by ASTM or other accepted standards. The test results are included in this report. Penetration test values, dry density, and moisture content are presented on the Drill Logs.

The lines defining the change between soil types or rock materials on the Boring Logs and 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 proposed building location is on a very gently sloping knoll. Surface gradients slope down away from the building site in all directions at 10% or flatter.

The site is presently undeveloped. The surface is covered by a thin stand of wild grass. Topsoil is very poor and thin. There are no erosion or well developed drainage channels in the building area.

General Geology and Soil Profile:

The site is covered by a relatively thin layer of normally consolidated, fine grained, colluvial and alluvial soil. These soils have been transported to the site by sheetwash, gravity, and to a minor extent, by wind. These deposits were encountered to a depth of 4 1/2 to 5 feet below the present ground surface.

The underlying material consists of residually weathered and formational rock of the Mancos Shale Formation (KM). The Mancos Shale can be broadly described as a thin bedded, gray to black marine shale of Cretaceous Age. The shale is composed of highly overconsolidated clay, silt, and occasional thin, fine sand beds. Portions of the Mancos Shale are bentonitic and sensitive to volume change upon wetting or drying. Locally, the shale is highly fractured. Fracture patterns tend to be aligned in a north-south pattern with minor east-west cross-fracturing. Typically, the joints are spaced at 2 to 6 inch intervals.

The soil deposits consisted of two general soil types. The upper 4 to 4 1/2 feet of the soil profile classified by the Unified Classification System as a silty clay (CL/ML). This soil type is fine to very fine grained, low plastic, and of low to very low permeability. The silty clay was encountered in a low moisture, medium dense condition. Upon wetting, these soils will have a mild tendency to expand or swell. Swelling pressures on the order of 200 to 400 psf should be given consideration in the foundation design. Upon saturation, these soils will lose bearing capacity and tend to consolidate. Assuming surface and subsurface drainage are carefully controlled, foundations designed for a maximum soil pressure of 3000 psf would be appropriate. A minimum soil pressure of 700 psf will be required at all times.

The second soil type encountered on this site classified as a silty sand (SM) of very fine grain size. Soil Type No. 2 was encountered as a 4 to 12 inch thick layer beneath the silty clay and above the weathered shale. The silty sand is non-plastic, moderately permeable, and was encountered in a dry to moist, medium dense condition. The thin bed of fine sand will have very little effect upon the proposed construction. If thicker lenses are encountered during construction, their effect can be easily evaluated during inspection of the open excavation. The maximum allowable bearing capacity provided for foundations placed on the silty clay would be appropriate where the silty sand is encountered.

The weathered shale classified by the Unified Classification System as a lean clay (CL) of very

fine grain size. The lean clay is moderately plastic. The intact shale is of very low permeability and high density. The fractures tend to be open or filled with sulfate crystals. Permeability in the fractured rock mass tends to be high where interconnected fractures are present. The shale has a high bearing capacity. However, the shale tends to expand or swell upon wetting. A maximum allowable bearing capacity of 5000 psf would be appropriate on the shale. A minimum soil pressure of 1500 psf will be required at all times dictated by the expansive potential.

Groundwater:

A free water table was encountered in Test Boring No. 2 at a depth of 15 feet during drilling. The free water table is believed to be associated with local irrigation practices and the bedrock fracturing. The subsurface water conditions should be considered as a permanent feature of the site. The depth to free water will be subject to fluctuation, depending upon local irrigation practices and external environmental effects.

CONCLUSIONS AND RECOMMENDATIONS:

General Discussion:

No geologic conditions were apparent during our reconnaissance and field exploration which would preclude the site development as planned, provided the recommendations contained herein are fully complied with.

For purposes of this investigation, it is assumed that all foundations will be located within 1 to 4 feet below the present ground surface. If foundations are planned on fill or if deeper foundations are required, Lincoln-DeVore must be permitted to review the proposed construction so that appropriate design recommendations can be provided.

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.

Shallow Foundations:

It is recommended that a shallow foundation system consisting of continuous footings beneath all bearing walls and isolated spread footings beneath columns and other points of concentrated load, be used to transfer the weight

of the proposed structure. Such a shallow foundation system may be balanced on the basis of a maximum allowable bearing capacity of 3000 psf as an overall site average. A minimum pressure of 700 psf will be required.

It should be noted that the term "footings" as used above includes the wall on grade or "no footing" type of foundation system. On this particular site, the use of a more conventional footing, the use of a "no footing", or the use of voids will depend entirely upon the foundation loads exerted by the structure. We would anticipate the use of spread footings of variable width on this site.

Where conventional shallow foundation systems are used, it is recommended that they be well balanced and heavily reinforced. Contact stresses beneath exterior foundation walls should be balanced to within +/- 300 psf at all points. Isolated interior column footings should be designed for unit loads of about 150 psf more than the average of those selected for the exterior walls. The criterion for balancing will depend somewhat upon the nature of the structure. Single-story, slab on grade structures may be balanced on the basis of dead load only. Multi-story structures should be balanced on the basis of dead load plus approximately one-half the live load.

Stem walls, for a shallow foundation system, should be designed as grade beams capable of spanning at least 15 feet. These "grade beams" should be horizontally reinforced both near the top and near the bottom. Major reinforcing should be near the top of the wall section.

The horizontal reinforcement required should be placed continuously around the structure with no gaps or breaks unless specially designed. Additional slant reinforcing (at 45°) should be placed at any step in the foundation walls. Vertical reinforcing will not be required to resist lateral pressures unless the loaded wall exceeds 5 feet in height.

Where the stem walls are relatively shallow, vertical reinforcing will probably not be necessary. However, where the walls retain soil in excess of about 5 feet in height, vertical reinforcing may be necessary to resist the active pressure of the soils along the wall exterior. To aid in designing such vertical reinforcing, the following equivalent fluid pressures can be utilized:

Silty Clay (CL/ML):
Active Case - 45 pcf
Passive Case - 150 pcf

It should be noted that the above values should be modified to take into account any surcharge loads applied at the top of the walls as a result of stored goods, live loads on the floor, machinery, or any other externally applied forces. The above equivalent fluid pressures should also be modified for the effects of any free water table.

The stem wall recommendations given above would apply principally to conventional masonry construction. If a rigid frame (or steel frame) building should be used, then the foundation configuration would probably take the form of isolated bearing pads being located directly beneath the exterior wall columns with a concrete grade beam spanning from pad to pad supporting the exterior wall. In this event, the

exterior grade beams should be designed to span at least half the distance between pad to pad or the 15 foot dimension, depending upon which value is greater. Once again, the grade beams should be horizontally reinforced continuously around the building exterior with no gaps or breaks unless they are designed. The majority of the reinforcement should be placed near the top of the section in this instance. The exact amount, size, and actual location of reinforcing steel should be determined by a structural analysis of the planned building.

The bottom of all foundation components should 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.

Floor Slabs on Grade:

Prior to constructing floor slabs on grade, any unsuitable materials including topsoil, organics and unacceptable miscellaneous fills should be removed from the underslab areas. The resulting surface should be scarified and recompacted prior to placing the new fill. The surface deposits are mildly expansive in nature. Some floor slab movement must be expected where slabs bear on or within 3 feet above the mildly expansive silty clay or the formation shale.

A compacted gravel layer of 4 to 6 inches in thickness would be recommended beneath all slabs on grade. This gravel layer would act as a capillary break. A vapor barrier is recommended beneath all slabs on grade.

All floor slabs on grade must be constructed to act independently of the other structural portions of the building. These floor slabs should contain deep construction or contraction joints to facilitate even breakage and to help minimize any unsightly cracking which could result from differential movement. Floor slabs on grade should be placed in sections no greater than 20 feet on a side. Prior to constructing slabs on grade, all existing topsoil and organics must be removed from the building interior. Likewise, all foundations must penetrate the topsoil layer. A post-tensioned floor slab and foundation system may be appropriate for use on this site depending upon the building configuration. Properly designed, a post-tensioned floor slab-foundation system could reduce the potential for differential movement between floor slabs on grade and foundation components. If requested, Lincoln-DeVore can easily provide post-tension concrete foundation recommendations for this site after reviewing the proposed building plan.

Any interior, non-load bearing partitions which will be constructed to rest on the floor slab should be constructed with a minimum space of 1 1/2 inches at either the top or bottom of the wall. The bottom of the wall would be the preferred location for this space. This space will allow for any future potential expansion of the subgrade soils and will prevent damage to the wall and/or roof section above which could be caused by this movement.

Grading, Drainage, Backfill, and Compaction:

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 so that surface water will be carried quickly away from the structure. The minimum gradient within 10 feet of the building will depend upon surface landscaping. Paved areas should maintain a minimum gradient of 2%, while landscaped areas should maintain a minimum gradient of 5%. Roof drains must be carried across all backfilled areas and discharged well away from the structure.

If adequate surface drainage cannot be maintained or if any subsurface seepage is encountered during excavation for foundation construction, then a perimeter drain must be recommended for this building. This drain would consist of a perforated drain pipe, gravel collector and sand filter (or acceptable filter fabric layer). If sufficient topographic fall does not exist on the site to allow daylighting of the drain pipe, then a sealed sump and pump arrangement would be required to remove the collected moisture. Dry wells should not be used on this site. A peripheral drain will be required around all areas where floor slabs are located below the finish grade.

The existing drainage in the area must either be maintained or improved. Water should be drained away from the structures as rapidly as possible and should not be allowed to stand or pond in the area of the buildings. The surface drainage across the entire property must be carefully

controlled to prevent infiltration and saturation of the foundation soils. All backfill around the buildings should be compacted to a minimum of 90% of its maximum Proctor dry density, ASTM D-698. Roof drains must be carried across all backfilled regions and discharged well away from the structures.

Special Conditions:

No major difficulties are anticipated in the course of excavating into the surficial site soils that consist of silty clay and silty sand. The weathered formational shale will probably require heavy excavating equipment such as track-mounted hydraulic excavators or tractors equipped with a ripper tooth. Blasting should not be required unless excavations extend 6 or more feet into the shale. It is possible that some safety provisions such as the sloping or bracing of the sides of excavations over 5 feet deep could be necessary. Any such safety provisions should conform to reasonable industry safety practices and applicable OSHA regulations.

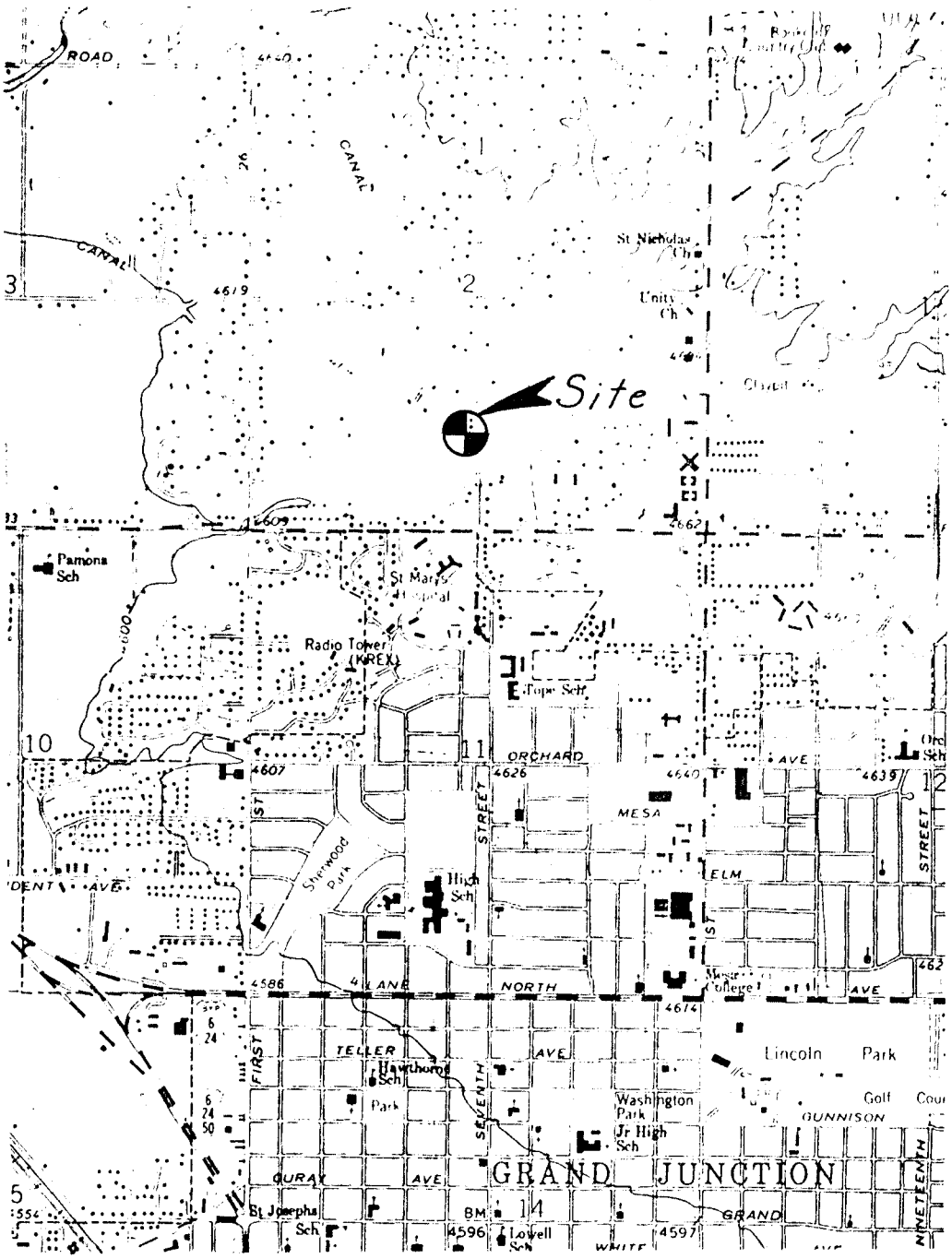
The soils on this site were found to contain sulfates in detrimental quantities. Therefore, a Type V Cement would be recommended in all concrete in contact with the soil. Under no circumstances should calcium chloride ever be added to a Type V Cement. In the event that Type V Cement is difficult to obtain, a Type II Cement may be used, but only if it is protected from the soils by an impermeable membrane.

The open foundation excavation must be inspected prior to the placing of forms and pouring of

concrete to establish that adequate design bearing materials have been reached and that no debris, soft spots or areas of unusually low density are located within the foundation region. All fill placed below the foundations must be fully controlled and tested to ensure that adequate densification has occurred.

It is extremely important due to the nature of data obtained by the random sampling of such a heterogeneous material as soil that we be informed of any changes in the subsurface conditions observed during construction from those outlined in the body of this report. Construction personnel should be made familiar with the contents of this report and instructed to relate any differences immediately if encountered. **Caution: Failure to follow these recommendations will void part or all of the recommendations contained in this report.**

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



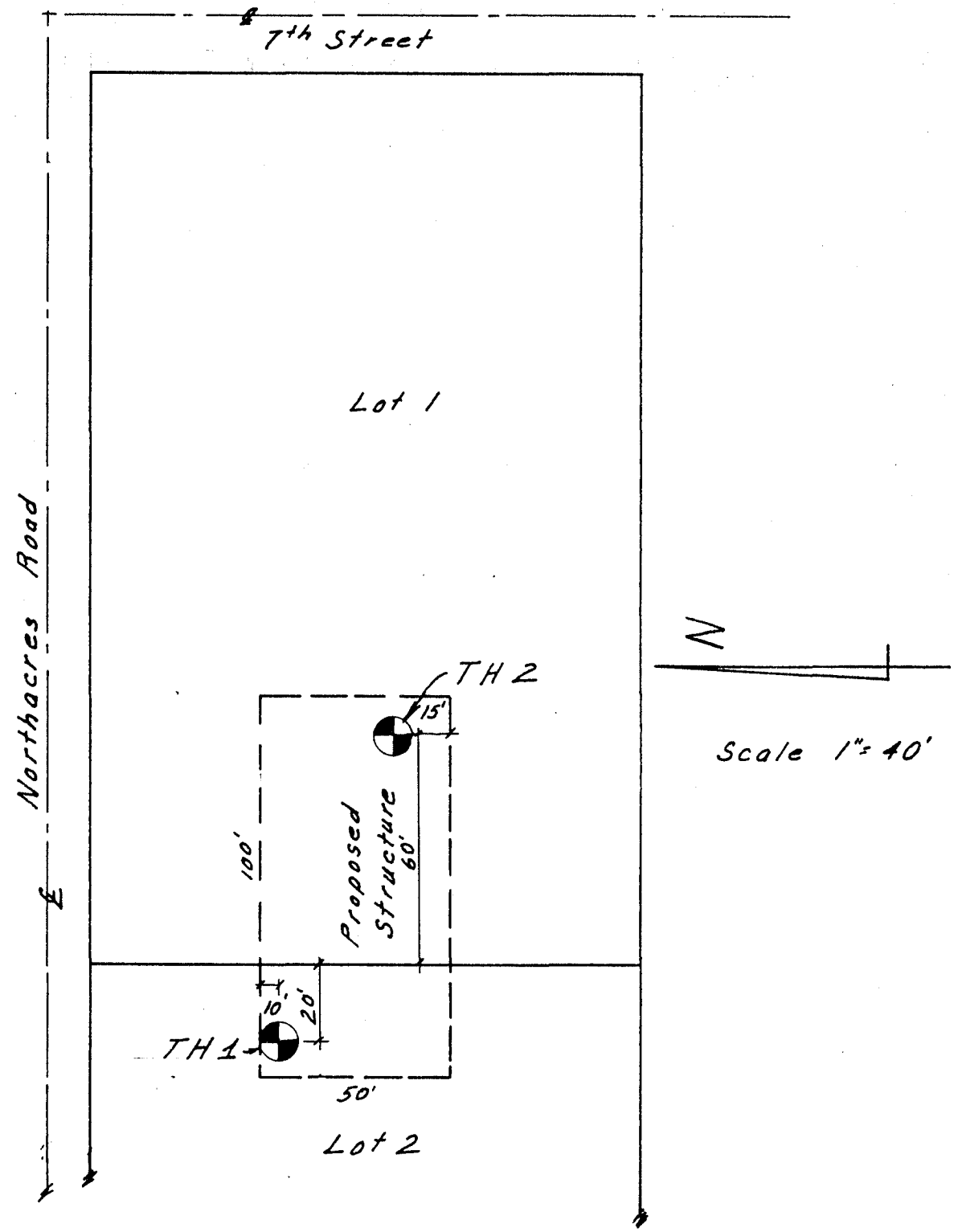
Site Location Diagram

62920-J

Bookcliff Church of Christ
North Acres Subd., G. Jct. Colo.

LINCOLN DeVORE ENGINEERS GEOLOGISTS

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



Test Boring Location Diagram

62920-J

Bookcliff Church of Christ
North Acres Subd., G. Jct. Colorado

LINCOLN DeVORE
ENGINEERS
GEOLOGISTS

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

SOILS DESCRIPTIONS:

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

ROCK DESCRIPTIONS:

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

SYMBOLS & NOTES:

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

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

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

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

LINCOLN DeVORE TESTING LABORATORY

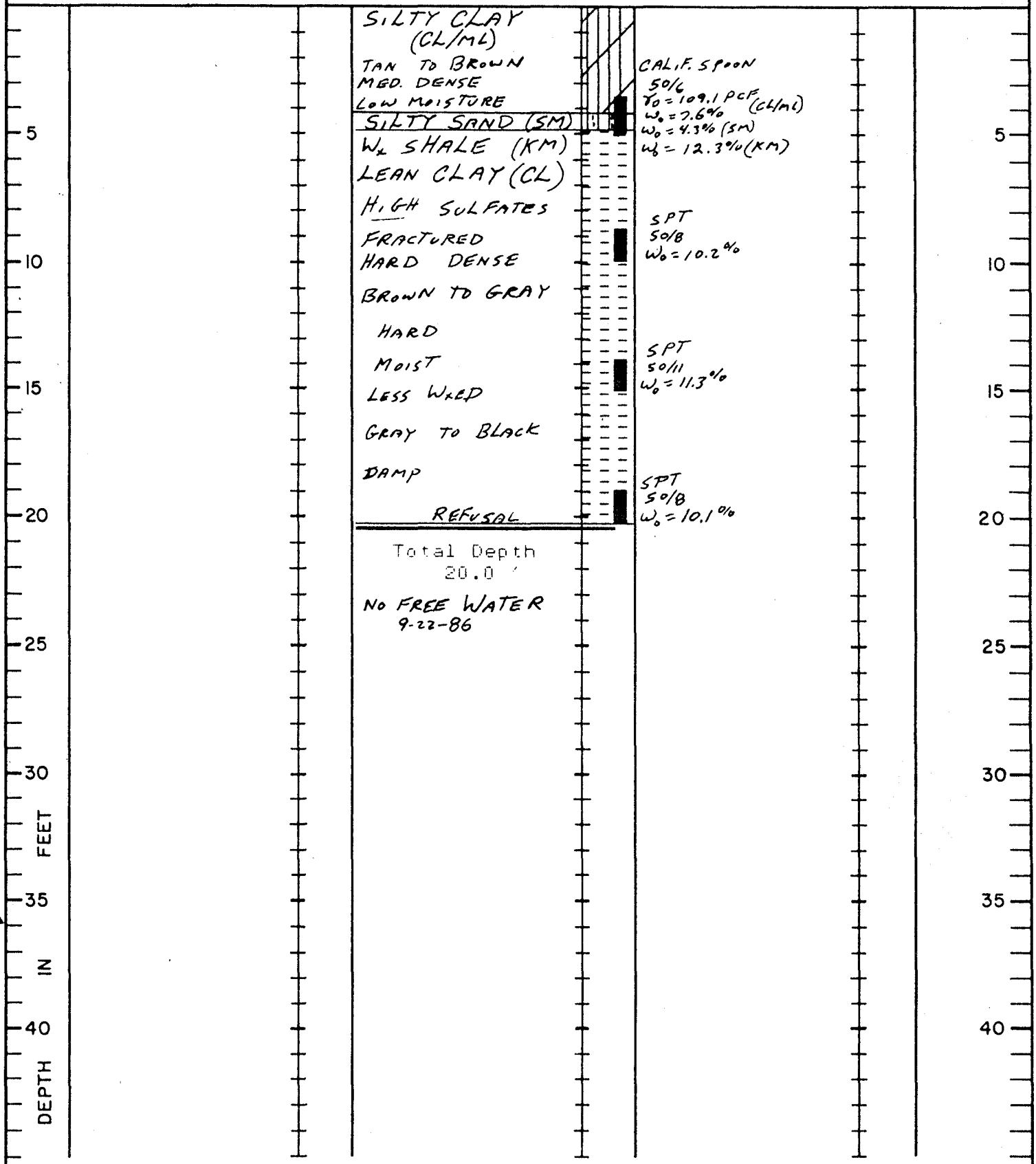
COLORADO: Colorado Springs, Pueblo, Glenwood Springs, Montrose, Gunnison, Grand Junction. – WYO. – Rock Springs

EXPLANATION OF BOREHOLE LOGS AND LOCATION DIAGRAMS

Job No. LD 2920 J

TEST HOLE NO. TH no. 1

ELEVATION elevation 4640 ′



DRILLING LOGS

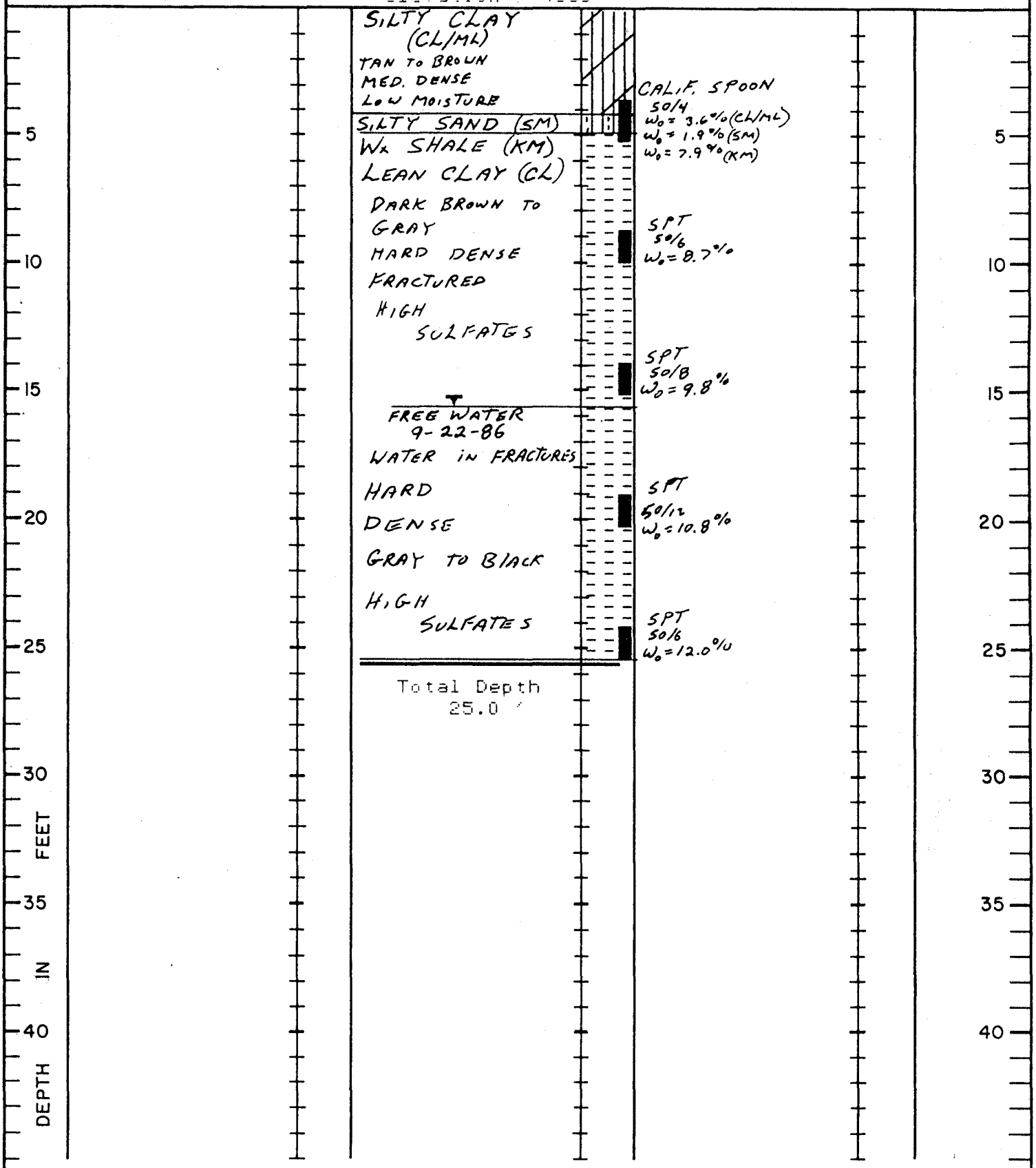
LINCOLN DeVORE ENGINEERS · GEOLOGISTS

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

Job No. LD52920 J

TEST HOLE NO. TH no. 2

ELEVATION elevation 4639 ′



DRILLING LOGS

LINCOLN DeVORE ENGINEERS · GEOLOGISTS

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

SUMMARY SHEET

Soil Sample SILTY CLAY (CL/ML) Test No. 62920-J

Location LOT #2, NORTH ACRES SUB. GRAND JUNCTION, CO. Date 9-22-86
Boring No. TH #1 Depth 4' (TYPICAL)
Sample No. SOIL TYPE NO. 1 Test by C.M.B.

Natural Water Content (w) 7.6 %
Specific Gravity (Gs) _____ In Place Density (γ_o) 109.1 pcf

SIEVE ANALYSIS:

Sieve No.	% Passing
1 1/2"	
1"	
3/4"	
1/2"	100
4	99.8
10	99.0
20	98.4
40	97.6
100	75.3
200	62.4

HYDROMETER ANALYSIS:

Grain size (mm)	%
0.02	36.3
0.005	25.4

Plastic Limit P.L. 15.3 %
Liquid Limit L. L. 19.2 %
Plasticity Index P.I. 3.9 %
Shrinkage Limit _____ %
Flow Index _____
Shrinkage Ratio _____ %
Volumetric Change _____ %
Lineal Shrinkage _____ %

MOISTURE DENSITY: ASTM METHOD

Optimum Moisture Content - w_o _____ %
Maximum Dry Density - γ_d _____ pcf
California Bearing Ratio (av) _____ %
Swell: 1 Days 0.1 %
Swell against 200 psf Wo gain 15.5 %
$w_f = 3.9\%$
$\gamma_o = 107.2$

BEARING:

Housel Penetrometer (av) _____ psf
Unconfined Compression (qu) _____ psf
Plate Bearing: _____ psf
Inches Settlement _____
Consolidation % under psf

PERMEABILITY:

K (at 20°C) _____
Void Ratio _____

Sulfates 1500± ppm.

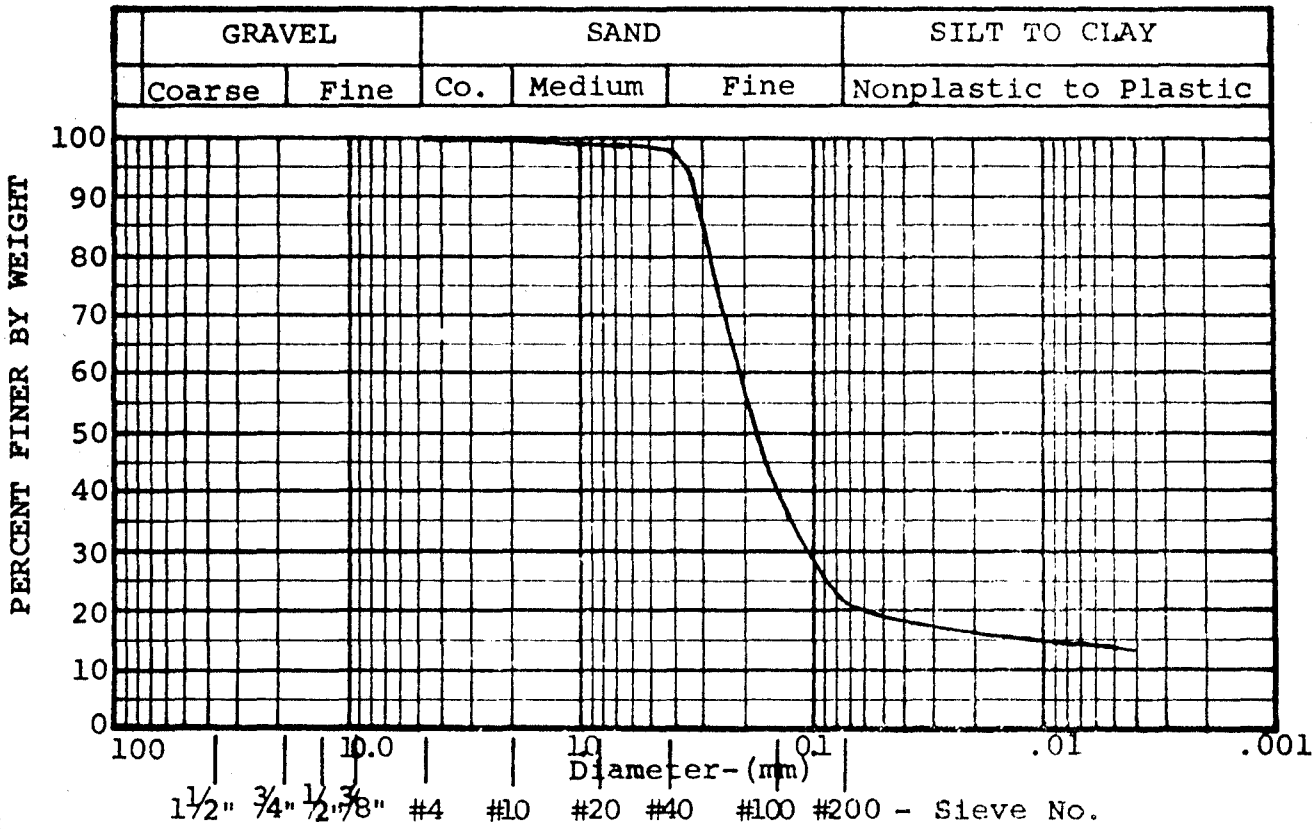
SOIL ANALYSIS

LINCOLN-DeVORE TESTING LABORATORY
COLORADO SPRINGS, COLORADO

Soil Sample SILTY SAND (SM) Test No. 62920-J

Project LOT #1 NORTH ACRES SUB. GRAND JUNCTION, CO. Date 9-23-86

Sample Location TH #2 @ 4½' Test by C.M.B.



Sample No. SOIL TYPE NO. 2

Specific Gravity

Moisture Content 1.9%

Effective Size

Cu

Cc

Fineness Modulus

L.L. % P.I. NP %

BEARING psf

Sieve Size	% Passing
1 1/2"	
1"	
3/4"	
1/2"	
3/8"	
4	100
10	99.8
20	99.3
40	97.3
100	39.2
200	20.7
.0200	16.3
.005	13.4

Sulfates 500± ppm

GRAIN SIZE ANALYSIS

LINCOLN-DeVORE TESTING LABORATORY
COLORADO SPRINGS, COLORADO

SUMMARY SHEET

Soil Sample LEAN CLAY (CL) w/ SHALE Test No. 62920-J

Location LOT #2 NORTH ACRES SUB., GRAND JUNCTION, CO. Date 9-23-86

Boring No. TH #1 Depth 15' (TYPICAL)

Sample No. SOIL TYPE NO. 3 Test by CMB

Natural Water Content (w) 11.3 %

Specific Gravity (Gs) _____ In Place Density (γ_o) _____ pcf

SIEVE ANALYSIS:

Sieve No.	% Passing
1 1/2"	
1"	
3/4"	
1/2"	
4	
10	
20	100
40	99.9
100	98.6
200	97.5

HYDROMETER ANALYSIS:

Grain size (mm)	%
0.02	76.0
0.005	50.1

Plastic Limit P.L. 22.6 %

Liquid Limit L. L. 38.1 %

Plasticity Index P.I. 15.5 %

Shrinkage Limit _____ %

Flow Index _____

Shrinkage Ratio _____ %

Volumetric Change _____ %

Lineal Shrinkage _____ %

MOISTURE DENSITY: ASTM METHOD

Optimum Moisture Content - w_o _____ %

Maximum Dry Density - γ_d _____ pcf

California Bearing Ratio (av) _____ %

Swell: 1 Days 0.2% %

Swell against 550 psf Wo gain 20.0 %

$w_I = 3.8\%$

$\gamma_D = 103.4$ pcf

BEARING:

Housel Penetrometer (av) _____ psf

Unconfined Compression (qu) _____ psf

Plate Bearing: _____ psf

Inches Settlement _____

Consolidation % under psf

PERMEABILITY:

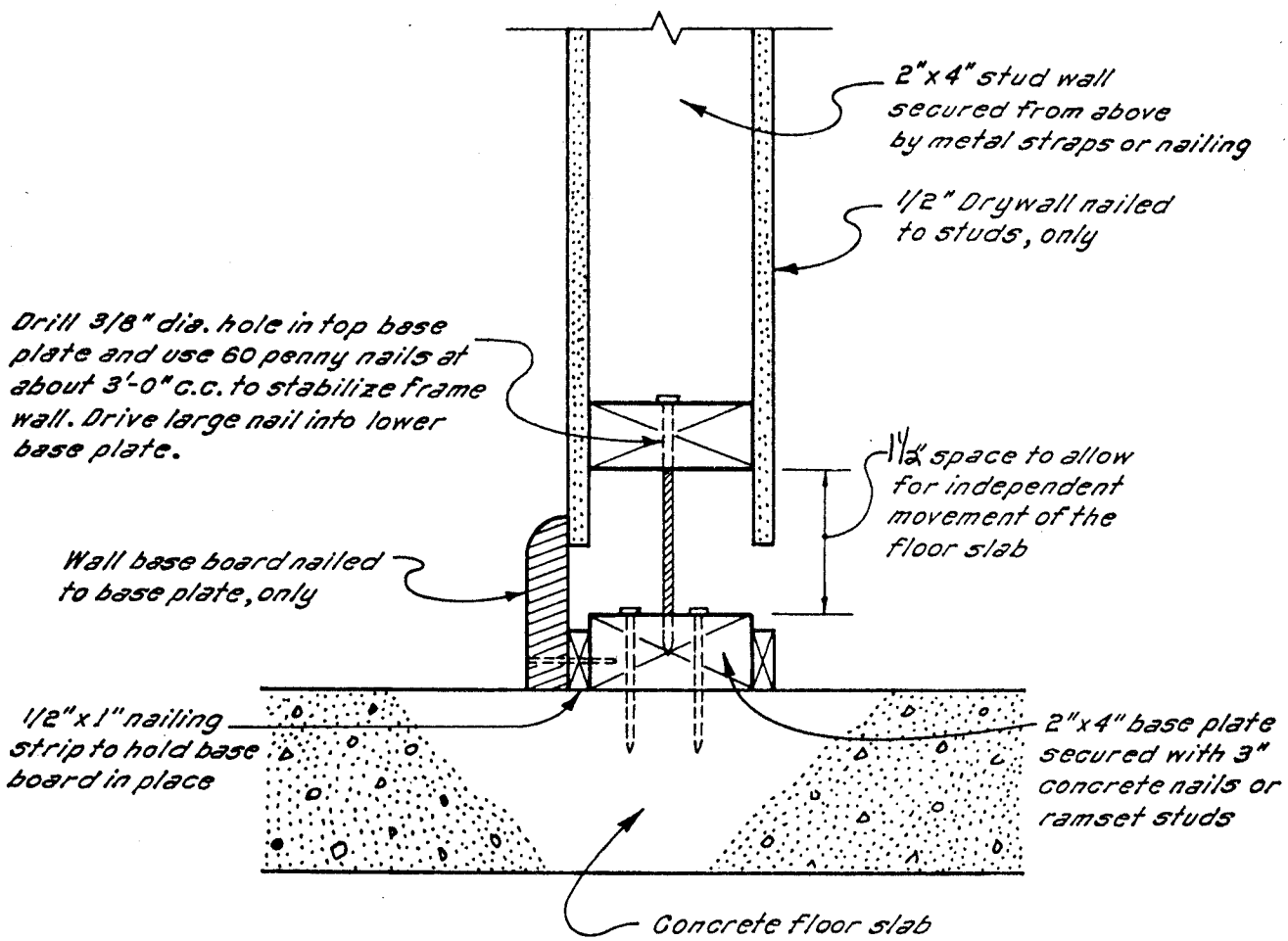
K (at 20°C) _____

Void Ratio _____

Sulfates 2000± ppm.

SOIL ANALYSIS

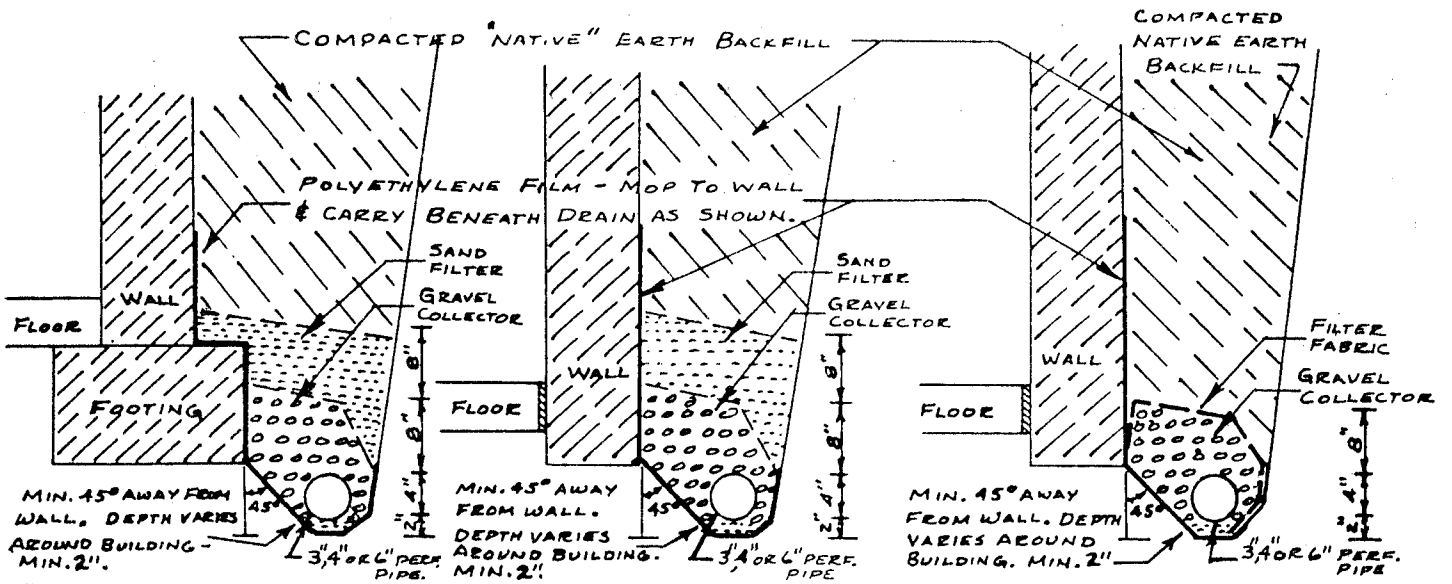
LINCOLN-DeVORE TESTING LABORATORY
COLORADO SPRINGS, COLORADO



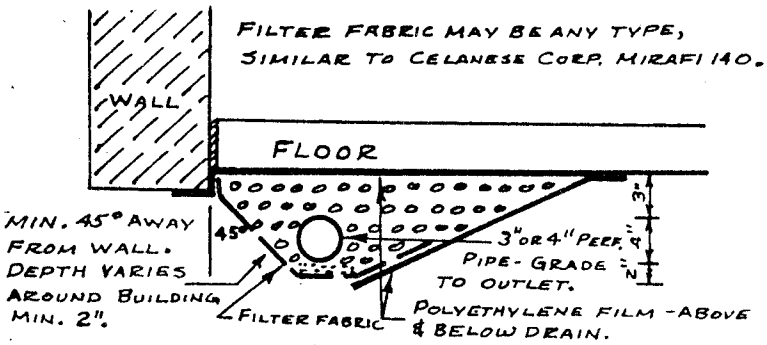
FRAMING WALL

Non-bearing wall on concrete floor slab over expansive clay soil

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



SPREAD FOOTING TYPE GRADE BEAM TYPE FILTER FABRIC ALTERNATE



UNDER-SLAB, INTERIOR TYPE

NOTES:

.Size of perforated pipe sand filter varies with amount of seepage expected. 4" diameter is most common.

.Gravel size depends on size of pipe perforations: 85% gravel > 2 x diameter of perforation.

.Sand filter must depend on native soil and must follow the Terzaghi-Vicksburg Criteria:

1) $\frac{15\%\ \text{filter}}{15\%\ \text{base}} = 4+$ 2) $\frac{15\%\ \text{filter}}{85\%\ \text{base}} < 4$ 3) $\frac{50\%\ \text{filter}}{50\%\ \text{base}} = 12\ \text{to}\ 58$

This is required for stability and length of filter life. The sand filter may be replaced with an approved filter fabric.

.All pipe to be perforated VCP, PVC or Orangeburg.

.4" flexible pipe may be used to depth of $4\frac{1}{2}$ feet, but must be carefully graded. 3" flexible pipe may be used to a depth of 7 feet and should be carefully graded.

.Rigid pipe only to be used below a depth of 7 feet below ground surface.

.All pipe to be laid at a minimum grade of 1.4% around building foundations.

.Outfall to be free, gravity outfall if at all possible. Use sump and pump only if no gravity outfall exists.

.Conditions can vary considerably, and each site may be variable as to quality of sand or gravel required. All sites should be inspected to determine the amount and quality of sand filter required, unless a filter fabric installation is used as shown.

TYPICAL SECTIONS
PERIMETER DRAIN & FRENCH DRAIN

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

REVIEW SHEET SUMMARY

FILE NO. #30-86 TITLE HEADING Conditional Use for Church in RSF-4 DUE DATE 10-16-86

ACTIVITY - PETITIONER - LOCATION - PHASE - ACRES Conditional Use for a Church in RSF-4, SW corner of Northacres Road & 26½ Road, Bookcliff Church of Christ, Ken Brodel

PETITIONER ADDRESS 539 28½ Road 434-4783

ENGINEER

DATE REC.	AGENCY	COMMENTS
0-07-86	Bldg. Dept.	State statues require that the construction plans be drawn by a Colorado Licensed Architect. Would advise that a preliminary drawing be submitted for review before final construction documents are let out to bid. Recommend approval of proposal.
0-07-86	City Engineer	The petitioners will ultimately be responsible for full half street improvements adjacent to their property on the south side of Northacres Road. The street improvements can be constructed in one of the following ways: 1. Construct half street width for full length of property being developed. 2. Construct full street width for half of property length being developed. The second method is more functional and preferred. The street improvements should be constructed at the same time that the property is developed. The existing 50 feet of right of way width for Northacres Road is adequate to construct a standard residential street to City specifications. 26½ Road is designated as a minor arterial requiring 77 feet of right of way width. The existing width is 60 feet, therefore, an additional 8.5 feet of right of way will be required from the property owner on the west side of 26½ Road. The following comments are in reference to the site plans submitted by the petitioner: 1. The right of way width for Sage Court is and should remain 50 feet (site plan shows 30 feet). 2. The right of way width for Northacres Road is and should remain 50 feet. 3. The driveway "Entrance & Exit" shown on the plan should be repositioned to line up with the 30 foot wide traffic lane at the end of the east parking lot. Another entrance and exit should be provided in the same location at the west parking lot. 4. Parking spaces should be eliminated at the west end of the west lot and east end of the east lot to provide a drive through lane around the center two rows of parking. 5. Both parking areas should be paved to eliminate dust and drainage problems. 6. A grading and drainage plan will be required prior to a building permit being issued. All streets and drainage improvements on public right of way must be designed by a Professional Engineer registered in the State of Colorado.
0-07-86	City Parks/Rec.	Will need to review landscape plans when available. If this falls into the 5% open space fee guidelines, then we'll need an appraisal to determine the fee due.
0-09-86	Mt. Bell	No objection
0-09-86	Public Service	Gas & Electric: No Objection. Note: PSCo does have an existing gas line in gravel road access to Sage Ct.

RESPONSE NECESSARY by Nov. 1, 198

REVIEW SHEET SUMMARY

FILE NO. #30-86 TITLE HEADING Conditional Use for Church Cont'd. DUE DATE

ACTIVITY - PETITIONER - LOCATION - PHASE - ACRES

Bookcliff Church of Christ

PETITIONER ADDRESS

ENGINEER

DATE REC.	AGENCY	COMMENTS
0-15-85	City Police	I do not see any problems.
0-16-86	City Planning	1) If approved, this department will require a signed copy of a Building Permit Guarantee. No building permit will be issued until: a. Final building plans, drainage plans and site/landscape plans are submitted and approved by City Planning, Engineering and Building Departments. b. Northacres Road is constructed to the standards prescribed by City Engineering. c. The appraisal for land value is approved (determined prior to the time of construction) and the Open Space Fees are fully paid to the City Parks Department. 2) An 8.5 foot strip of right of way the full width of the property along 26½ Road must be dedicated (prior to final approval) to provide the necessary 77 feet of right of way for 26½ Road as a minor arterial. 3) It is recommended that parking circulation may be improved by deletion of the west-most and east-most center spaces to allow for automobile passage. 4) The parking lot(s) should be paved (for dust control) due to the proximity of residences, plus the fact that the Planning Commission has historically make that a requirement for approval for past church submittals. 5) Any temporary (prior to construction) or permanent signage will require a separate sign permit.
0-22-86	City Fire Dept.	This office has no objection to the proposal, provided the building will meet the requirements of the UFC for its intended use. The temporary access will need to be a minimum of 20 feet unobstructed width. An additional area hydrant may be required, please contact this office.
10-27-86	Grand Valley Irrigation	These plans are very sketchy as far as the Grand Valley Irrigation Company is concerned. The petitioner states they are going to waste water into the Company's canal, but they say nothing about the quality of the water or how the water will be collected for displacement into the canal. We also need to have some designation for right of way on the bank of the canal. I realize these plans are very incomplete, but these issues need to be addressed before the fact, not after the project is under way. Possibly a visit with the developers is in order...

LATE

LATE

Petitioner's Response to Review Sheet Summary

Petitioner has reviewed all comments on the Review Summary Sheet and has found all conditions acceptable with the exception of two.

With regards to paving parking lots; in view of the following reasons the petitioner feels that a gravel parking lot should be adequete.

1. The property is not going to be used on a daily basis. It will be used only three times a week: Sunday morning, Sunday evening, and Wednesday evening.

2. It is the petitioner's understanding that city code does not specify pavement as an absolute and that a gravel parking lot can meet city code fordust control. Therefore, in view of the minimal usage of the facility additional ground coverage should not be required.

3. It is the petitioner's understanding that the property under consideration borders county property. Therefore, county requirements for parking area surfaces may be just as appropriate. Also, there have been structures recently built by churches in the county and in the city which have gravel parking.
   1. Assembly of God, 2867 Orchard Avenue
   2. Church of Christ, 2893 F Road
   3. Bookcliff Baptist Church, 2702 F Road
   4. Shepherd of the Valley, 3133 F Road

4. At present costs an additional $40,000 would be needed if paving were required. In view of the prior reasons stated it is believed that paving would require the petitioner to bear an unreasonable initial cost.

5. It is the petitioner's desire that the planning committee understand that it isn't the petitioner's desire to never pave the parking area. Our only desire is to avoid what appears to be marginally needed initial outlays.

With regards to Northacres Road; in view of the following reasons the petitioner feels that something less than full road improvements be allowed.

1. Northacres Road will be used only by petitioner. It accesses no other residences. And it will be used on only three occasions a week.

2. Considering that the future extension of Northacres Road across the canal is dubious (in view of easier access to Horizon Court for Northridge at a lesser expense) it appears unreasonable to make such stringent requirements for a road that very likely may never exceed the proposed use by the petitioner.

3. The requirement of sidewalks along the road is not necessary since they will not be used; therefore, serving no functional purpose. It should be noted that parts of the newly constructed Patterson Road do not have sidewalks where they serve no functional purpose.

4. The petitioner feels the financial burden for full street improvements would be unreasonable based on usage of the road. At present costs an additional $45,000 would be needed if full street improvements were required.

NOTE: The City Fire Department has been contacted as per their request.

#30 86

OFFICE ACTION SHEET

Acres 2.51
Units
Density
Activity C.U. for Church in Residential Zone
Phase
Common Location

File No. #30 86
Zone RSF-4
Tax Parcel Number 2945-023-13-001, 002, 003

CONDITIONAL USE

Date Submitted _____ Date Mailed Out _____ Date Posted _____

_____ day Review Period Return by _____ "X" we don't need

Open Space Dedication (acreage) _____ Open Space Fee Required $ _____ Paid Receipt # _____

Recording Fee Required $ _____ Paid (Date) _____ Date Recorded _____

review agencies	A	B	X	D	E	X	G	H	L	Q	R	S	BB	CC	DD	FF	GG
1 Development Dept.	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●
2 City Public Works	●	●							●	●	●	●	●		●		
3 City Engineer	●	●							●	●	●	●	●		●		
Transportation Engineer	●	●							●	●	●	●	●		●		
4 City Parks/Recreation	●	●	X						●	●	●	●	●		●		
5 City Fire Dept.	●	●							●	●	●	●	●		●		
6 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	●	●							●	●	●	●	●		●		
7 Irrigation - Grand Valley Irr.	●	●							●	●	●	●	●		●		
Drainage	●	●							●	●	●	●	●		●		
8 Water (Ute, Clifton)	●	●							●	●	●	●	●		●		
Sewer Dist. (FV, CGV, OM)	●	●							●	●	●	●	●		●		
9 Mountain Bell	●	●							●	●	●	●	●		●		
10,11 Public Service (2 sets)	●	●							●	●	●	●	●		●		
State Highway Dept.	●	●							●	●	●	●	●		●		
State Geological	●	●							●	●	●	●	●		●		
State Health Dept.	●	●							●	●	●	●	●		●		
12-18 GJPC (7 packets)	●	●							●				●		●		
9-27 CIC (9 packets)	●	●							●					●	●		
28 OTHER Bldg. Dept	●	●							●					●	●		
12 totals																	

BOARDS

	DATE	
GJPC	11-13-86	Approval of Conditional Use with conditions that full street improvements (without sidewalk) for one-half of the length of the church property, that the parking lots be dust-free surface (not necessarily asphalt paving) & that petitioners come back before the Planning Commission with final plans prior to construction.
CIC	12-17-86	Tabled after hearing all side - further review needed by Council before a vote - Jan. 21, 1987
CIC	1-21-87	Approved with the conditions recommended by Planning Commission.

STAFF

Original Do NOT Remove From Office

NOTE: Petitioners have chosen not Mike Sutherland to purchase this property 244-1637

APPLICATION FEE REQUIREMENTS

$ 425 fee payable on submittal
check payable to City of Grand Jct.

GRAND JUNCTION Planning

development summary

File # 30-86 Name Bookcliff Church of Christ Date 11-14-86

PROJECT LOCATION: 627 26½ Rd. (west side of 7th St. just north of the gravel road to Sage Court – north of Horizon Drive)

PROJECT DESCRIPTION: A request for a conditional use permit for a church in a residential single-family zone (RSF-4). The proposal is for construction 2-4 years from now.

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

Staff has requested that due to the close proximity of the proposed parking lots and street to an existing residence, the lots and street should be paved. The petitioner disagrees on the grounds that the site will only be used on 3 occasions per week & therefore the requirement will cause undue expense.

Opposition from neighboring residents was primarily due to the request for a gravel street rather than paved.

STATUS & RECOMMENDATIONS:

Staff has no opposition to approval but has a consensus of opinion that the street should be improved at the time of Church development. If not, there is little chance the street will ever be constructed without a forced improvements district.

Planning Commission Action Approval of the Conditional use providing that full street improvements (except sidewalk) be completed for ½ the length of the Church property; that the parking lots be constructed with a dust-free surface (not necessarily asphalt paving); and that the petitioners appear before Planning Commission at the time final development plans are complete and they are ready to commence w/ construction.

NOTE: The (final) approval by Planning Commission is being appealed to City Council by neighboring residents. This will be scheduled for the next available CIC hearing

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			Landscaping/Screening	X	
			Other:		

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