Geotechnical Exploration Report

First Central Congregational Church Elevator

401 South 36th Street
Omaha, Nebraska

Prepared for:
First Central Congregational Church
421 South 36th Street
Omaha, NE 68131

August 18, 2025
TG Project No. 25302.01

PROFESSIONAL CIVIL ENGINEER
HEATH E. CUTLER
E-16142
8/18/2025
STATE OF NEBRASKA

NE Firm #CA-0080E

THIELE GEOTECH, INC.
13478 Chandler Road
Omaha, Nebraska 68138-3716
402.556.2171 Fax 402.556.7831
www.thielegeotech.com

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INTRODUCTION

Thiele Geotech, Inc. has completed a geotechnical exploration study for the proposed First Central Congregational Church elevator addition project to be located at 401 South 36th Street in Omaha, Nebraska. The purpose of this study was to identify the general soil and ground water conditions underlying the site; to evaluate engineering properties of the existing soils; to provide earthwork and site preparation recommendations; and to recommend design criteria and parameters for foundations and other earth supported improvements.

This study included a soil boring, laboratory testing, and engineering analysis. A single test boring was drilled on the project site at a strategic location. The field and laboratory data are presented in the Appendix, along with a description of investigative methods.

The drilling and testing performed for this study were conducted solely for geotechnical analysis. No analytical testing or environmental assessment has been conducted. Any statements or observations in this report regarding odors, discoloration, or suspicious conditions are strictly for the information of our client. If an evaluation of environmental conditions is desired, a separate environmental assessment should be conducted. This study did not include biological assessment (e.g. mold, fungi, bacteria) or evaluation of measures for their control.

It should also be noted that this report was prepared for design purposes only, and may not be sufficient for a contractor in bid preparation. Prospective contractors should evaluate potential construction problems on the basis of their own knowledge and experience in the local area and on similar projects, taking into account their own intended construction methods and procedures.

This report is an instrument of service prepared for use by our client on this specific project. The report may be duplicated as necessary and distributed to those directly associated with this project, including members of the design team and prospective contractors. However, the technical approach and report format shall be considered proprietary and confidential, and this report may not be distributed in whole or in part to any third party not directly associated with this project. By using and relying on this report, all other parties agree to the same terms, conditions, and limitations to which the client has agreed.

PROJECT DESCRIPTION

Our understanding of the project is based upon information provided by Jackson - Jackson & Associates.

The project consists of constructing an elevator addition to the First Central Congregational Church located at 401 South 36th Street in Omaha, Nebraska. The elevator addition will be constructed on the east side of the building to provide access between the existing basement and the upper three stories. The elevator addition will have an approximate footprint of 160 square feet and utilize cast-in-place concrete foundation walls below grade with CMU block construction methods above grade. For the purposes of this report, a maximum typical continuous exterior wall load of 6 kips per lineal foot has been provided. Exterior grade changes are assumed to be minor, however cuts of up 16.5 feet are anticipated below existing grade within the elevator pit footprint, which is approximately 4 feet below the basement floor.

SURFACE AND SUBSURFACE CONDITIONS

SITE CONDITIONS

The First Central Congregational Church is located at 401 South 36th Street in Omaha, Nebraska. The church sits on the southeast corner of the South 36th and Harney Street intersection, and is surrounded by residential development to the east, west, and south, with commercial development to the north. The project site is located on the east side of the existing church building, and the area was paved with asphalt at the time of the exploration. Grades across the site generally fall to the northeast, with approximately 10 feet of relief in the east parking lot.

LOCAL GEOLOGY

The surface geology of eastern Nebraska is Pleistocene in age and consists of eolian (wind-blown) deposits of Peoria and Loveland loess. The loess formed in dune-shaped hills along the Missouri River and various tributaries. The Peoria loess typically consists of silty lean clays that are stiff when dry but become softer with increasing moisture content. The Peoria sometimes exhibits low unit weight and is collapse susceptible. The Loveland loess is an older deposit, and typically consists of lean clays. The Loveland generally exhibits higher unit weights and shear strengths than the Peoria. Perched moisture conditions sometimes occur above the Peoria/Loveland interface.

The loess overlies Pleistocene glacial deposits of Kansan and Nebraskan till. The till consists of lean to fat clays mixed with sand, gravel, and occasional cobbles. The glacial deposits are generally fairly deep, but are sometimes near the surface at lower elevations on steep slopes. Cretaceous sandstone or Pennsylvanian limestone and shale form the bedrock unit below the glacial deposits. The depth to bedrock is normally great, and rock is rarely encountered in construction.

Along drainageways, alluvial and colluvial deposits are typically present. These soils were formed by erosion of the adjoining loess-mantled hills. Alluvial deposits are generally present along creeks and in major drainageways. The upper several feet of alluvium are usually stiffer due to the effects of desiccation. Colluvial soils are usually located at the base of steep slopes and in upland draws, and are formed by local creep and sloughing.

SOIL CONDITIONS

The soils encountered in the test boring consisted of natural Peoria and Loveland loess deposits.

Peoria loess was encountered beneath the asphalt pavement and extended to a depth of 38 feet below existing grade. It was described as a light brown to brown, very moist, soft to firm, lean clay.

Loveland loess was encountered beneath the Peoria loess and extended to the boring's termination depth of 50 feet. It was described as a reddish brown, moist to very moist, firm, lean clay.

Ranges of engineering properties from laboratory tests on selected samples are presented in Table 1.

Table 1 – Laboratory Results

Soil Layer	Moisture Content (%)	Dry Unit Weight (pcf)	Unconfined Compressive Strength (tsf)	Classification *(LL/PI)*
Peoria loess	24 to 28	86 to 92	0.6 to 1.0	CL (35/14)
Loveland loess	22 to 25	98 to 103	0.7 to 1.4	CL (*visual*)

GROUND WATER OBSERVATIONS

Ground water was not encountered in the test boring during or at the end of the drilling operation. However, it must be noted that ground water levels may fluctuate due to seasonal variations and other factors. The materials encountered in the test boring have relatively low permeabilities and observations over an extended period of time through use of piezometers or cased borings would be required to better define current ground water conditions.

ANALYSIS AND RECOMMENDATIONS

GENERAL

With the soil conditions encountered, this site appears suitable to support the proposed elevator addition. The soil encountered in the boring was generally firm and stable near the assumed footing subgrade elevation and should provide adequate load carrying capabilities with conventional spread footings following the recommendations and procedures provided in the Shallow Foundations section.

Based on elevation details prepared by Jackson - Jackson & Associates, the existing building contains a basement area that sits approximately 12 feet below existing grade. The proposed elevator addition footprint will bear approximately 4 feet below the basement floor, and extend into the bearing zone of the existing structure's east footing line. This is an imaginary zone that extends out and down from the footing toe at a 1H:1V slope. Shoring recommendations are provided in the following section, and additional discussion is provided in the Interaction with Existing Structure section.

Ground water was not encountered in the soil boring and is not anticipated to be encountered during construction of the addition. However, it should be noted that ground water does have a tendency to rise and fall with changes in season.

SHORING RECOMMENDATIONS

OSHA's Construction Standards for Excavations require that the contractor's excavation activities follow certain worker safety procedures. These include a requirement that excavations over 4 feet deep be sloped back, shored, or shielded. The soils encountered in the test boring generally classify as type B and C soils according to the OSHA standard. The maximum allowable slope for an unbraced excavation in these soils is 1H:1V and 1.5H:1V, respectively, although other provisions and restrictions apply. Excavations over 20 feet deep require specific design by a licensed Professional Engineer. The contractor is solely responsible for site/excavation safety and compliance with OSHA regulations. The geotechnical engineer assumes no responsibility for site safety, and the above information is provided only for consideration by the designers.

Temporary shoring will be required to complete excavations for the elevator addition and to protect the footings of the existing structure. The shoring will need to support the existing Peoria loess deposits. An engineering consultant specializing in design of these types of structures should be retained to develop the shoring plans and specifications for the project. We could be retained to provide shoring design as an additional service.

We have provided engineering properties for the soils encountered at this project site to assist in the design. These properties are presented in Table 2. A specialty contractor responsible for the shoring design should review all available data and make their own interpretation of selected design values. The engineer of record should review the geotechnical test data in the Appendix and assign design soil parameters consistent with the design methodology that will be employed to analyze the shoring. The geotechnical engineer is available to consult on selection of earth pressure parameters, but the final selection is the responsibility of the engineer of record for the shoring system.

Table 2 – Material Properties for Shoring Design

Material Type	*Wet Unit Weight (pcf)	Effective Stress Parameters		Total Stress Parameters	
		Internal Friction Angle (deg)	Cohesion (psf)	Internal Friction Angle (deg)	Cohesion (psf)
Peoria loess	120	24	125	0	400

* Wet unit weights provided are for materials above the water table.
(For submerged unit weights, subtract 62.4 pcf.)

EARTHWORK AND EXCAVATIONS

Rubble and waste materials from site clearing and demolition should be removed from the site and lawfully disposed or recycled. Waste materials should not be buried on-site.

Relocation of any existing utility lines within the zone of influence of proposed construction areas should also be completed as part of the site preparation. The lines should be relocated to areas outside of the proposed construction. Excavations created by removal of the existing lines should be cut wide enough to allow for use of heavy construction equipment to recompact the fill. In addition, the base of the excavations should be evaluated by a geotechnical engineering representative prior to placement of fill.

Topsoil and vegetation should be stripped to a depth of 4 to 6 inches in areas to be disturbed during grading, including borrow and fill areas. Stripping depths will likely vary and should be adjusted to remove all vegetation and root systems. A representative of the geotechnical engineer should monitor the stripping operations to observe that all unsuitable materials have been removed. Care should be exercised to separate these materials to avoid incorporation of the organic matter in structural fill sections.

Surfaces to receive fill should be broken up and recompacted to allow new fill to bond to the existing soil. Slopes steeper than 5H:1V should be benched before placing fill.

The excavated site soils will generally be suitable for reuse as structural fill, although some moisture conditioning may be required. Any off-site borrow should be a clean, inorganic silt or lean clay with a liquid limit less than 45 and a plasticity index less than 20. Borrow material should not contain an appreciable amount of roots, rock, or debris, and should not contain any foreign material with a dimension greater than 3 inches.

All fills should be placed and compacted as structural fill. Fill should be placed in thin lifts not to exceed 8 inches loose thickness. Structural fill should be compacted with a sheepsfoot type roller to a minimum of 95 percent of the maximum dry density (ASTM D698, Standard Proctor). Moisture content should be controlled to between -3 and +4 percent of optimum.

Backfill soils in utility trenches should be compacted to a minimum of 95 percent of the maximum dry density at a moisture content between -3 and +4 percent of optimum. Lift thicknesses should be appropriately matched to the type of compaction equipment used. Backfill soils around foundations, basement walls, and retaining walls should be compacted to a minimum of 95 percent of the maximum dry density at a moisture content between -3 and +4 percent of optimum. Granular backfill should not be used in exterior trenches or around foundation elements.

Quality control testing is an important part of any earthwork operation. It is recommended that a representative of the geotechnical engineer periodically monitor earthwork operations to verify proper compliance with these recommendations, including compaction levels.

SHALLOW FOUNDATIONS

The site conditions identified are favorable for the use of conventional spread foundations to support structural loads. Based on our bearing capacity and settlement analysis, a net allowable bearing pressure of 1,800 pounds per square foot was determined. This allowable bearing pressure may be used to size wall footings. The bearing pressure was calculated based on a safety factor of 3 against bearing failure. Foundation settlements are estimated at less than 1 inch total and ½ inch differential over a span of 20 feet. If maximum design loads significantly exceed 6 kips per foot for walls, this bearing pressure may not be applicable and should be reevaluated.

It is recommended that load bearing wall footings be at least 16 inches wide. Exterior footings and footings in unheated areas should be founded a minimum of 3.5 feet below adjacent grade to provide reasonable frost protection. It is recommended that all footings be steel reinforced.

The condition of the bearing soils can vary and should be observed by the geotechnical engineer at the time of excavation. If unsuitable bearing soils are identified, they should be improved by compaction or replaced by structural fill. As an alternative, the footing bottom could be extended through unsuitable materials if suitable material is present below.

The below grade elevator and elevator pit walls will be subjected to lateral earth pressures due to an unbalanced soil height of up to 16.5 feet. The properties listed in Table 3 can be used in wall design.

Table 3 – Lateral Earth Pressure Values

Property	Coefficient	Drained Conditions	Undrained Conditions
Active Lateral Pressure	0.40	40 pcf (Equivalent Fluid)	85 pcf (Equivalent Fluid)
At-Rest Lateral Pressure	0.50	50 pcf (Equivalent Fluid)	90 pcf (Equivalent Fluid)
Passive Resistance	2.00	250 pcf (Equivalent Fluid)	125 pcf (Equivalent Fluid)
Soil Unit Weight (compacted backfill)		120 pcf	60 pcf
Base Adhesion *		500 psf	500 psf

** Multiply by contact area to determine lateral resistance, limited to ½ of the vertical load*

Note: Coefficients and equivalent fluid values are for level backfill. Sloping backfill adds significantly greater load to the wall. These values should be re-evaluated if sloping backfill conditions are present.

If the top of the wall is able to deflect inward approximately 0.4% of the wall height, then active earth pressures can develop. However, if the wall is braced or otherwise restricted from deflecting, such as a basement wall braced by floor framing at the top, then at-rest earth pressures should be used. Safety factors of 2.0 for sliding and for overturning are recommended. Drainage measures should be incorporated in the wall to ensure drained conditions. Proper backfill compaction is also an important factor in long-term stability.

INTERACTION WITH EXISTING STRUCTURE

It is anticipated that new footings will be installed adjacent to existing footings where the addition connects to the existing building. We generally recommend that new footings bear at about the same elevation as existing footings. However, we understand that the elevator pit will extend approximately 4 feet below the existing basement finished floor elevation. Where excavations extend lower than the existing foundation, care should be taken to avoid disturbing the bearing soils of the existing footings. Excavations should not extend below an imaginary plane projecting out and down from the bottom edge of the existing footings at a 1H:1V slope without first providing additional support of the existing footings, either through underpinning or installation of sheet pile shoring.

Some overlap in stress distribution from the new and existing footings may occur, and could cause some minor movements of the existing structure. Maintaining a clear distance between footings equal to the width of the new footing would significantly reduce this risk, but may not be feasible. The design should account for some differential movements between the addition and the existing structure.

SEISMIC SITE CLASS

Seismic structural design requirements are dictated by a site classification based on average soil properties within the top 100 feet. Based on our local experience, the soil profile was estimated below the maximum boring depth. The average undrained shear strength was then estimated based on the actual laboratory testing and on assumed soil properties for the deeper soil profile.

The site classifies as Site Class D (stiff soil profile) according to Table 1613.2.3 of the 2018 International Building Code.

FLOOR SLABS

To avoid localized slab failures, it is important that interior backfill around foundation elements and in plumbing trenches be properly compacted. Interior backfill should be compacted to a minimum of 95 percent of the maximum dry density at a moisture content between -3 and +4 percent of optimum (ASTM D698, Standard Proctor).

To provide uniform support for floor slabs, the upper 6 inches of the subgrade should be compacted to a minimum of 95 percent of the maximum dry density at a moisture content between -3 and +4 percent of optimum (ASTM D698, Standard Proctor). Care should be taken to maintain the condition of the subgrade. Areas that become saturated, frozen, or disturbed should be reworked prior to slab placement. Any unstable areas should be excavated and replaced with structural fill. A granular cushion beneath the floor slab is considered a construction convenience and may be used, but is not considered critical to proper slab performance.

A 10-mil thick vapor retarder is recommended beneath the concrete to inhibit upward migration of moisture through the slab. Care should be taken when finishing concrete placed directly on a vapor retarder to minimize potential problems with curling and blistering.

Interior partition walls weighing up to 1,000 pounds per lineal foot may be supported directly on the floor slab. It is recommended that control joints be provided between partition walls that bear on the floor slab and walls supported on footings. Entrance slabs should be designed as structural stoops with a cavity beneath the slab to accommodate frost heave.

Provisions should be made to provide drainage beneath the elevator pit slab. This system should consist of at least one 4-inch diameter drain line that extends to a sump or exterior drain that will provide positive gravity drainage from beneath the floor slab. The drain line could be placed in a shallow trench (4 inches or less).

Contraction joints are important to control the location of cracks in the floor slab that result from stresses caused by normal drying shrinkage. Joints should be cut as soon as practical after the concrete has set sufficiently to support foot traffic, and must be cut before any shrinkage cracks form. Contraction joints should be cut to a minimum of ¼ of the slab thickness (1/5 of the thickness for early entry saw method). Joints should be spaced no more than 30 times the thickness of the slab or 15 feet maximum. Panels should be kept as square as possible, with the length to width ratio limited to 125 percent. Dowel bars should be used for load transfer across construction joints where slabs are subjected to heavy loads.

Joints should be carefully planned and laid out to match column lines and to meet reentrant corners. Joints should be perpendicular to edges and should not form angles less than 45 degrees or over 225 degrees. To accommodate the relative movement that commonly occurs between floors and foundations, isolation joints should be provided against walls, and diamond or circular isolation joints should be constructed around columns.

SURFACE DRAINAGE AND LANDSCAPING

The long-term performance of any project is contingent upon keeping the subgrade soils at more or less constant moisture content, and by not allowing surface drainage a path to the subsurface. Positive surface drainage away from structures must be maintained at all times. Landscaped areas should be designed and built such that irrigation and other surface water will be collected and carried away from the structure.

Construction staging and grading should provide for removal of surface water from the site. If prolonged ponding of surface water occurs, removal and replacement of wet or disturbed soils may be necessary. Temporary grades should be established to prevent runoff from entering excavations or footing trenches. Backfill should be placed as soon as structural strength requirements are met, and should be graded to drain away from the building.

The final grade of the foundation backfill and any overlying pavements should have a positive slope away from foundation walls on all sides. For grass or landscape covered areas, a minimum slope of 1 inch per foot for 5 to 10 feet away from the building is recommended. A minimum slope of 2 percent is recommended for grassed or landscaped areas of the site away from the building. For paved areas, minimum slopes of 1 percent for concrete pavements and 1½ percent for asphalt pavements are recommended. Pavements and exterior slabs that abut the structure should be carefully sealed against moisture intrusion at the joint.

OTHER RECOMMENDATIONS

During detailed design, additional issues may arise and possible conflicts may occur with our recommendations. Such issues and conflicts should be resolved through dialogue between the geotechnical engineer and designers. It is recommended that the geotechnical engineer review the final design, including the plans and specifications, to verify that our recommendations are properly interpreted and incorporated into the design.

If any changes are made in the design of the project, including the nature or location of proposed facilities on the site or significant elevation changes, the analysis and recommendations of this report shall not be considered valid unless the changes are reviewed. The analysis and recommendations of this report should not be applied to different projects on the same site or to similar projects on different sites.

The analysis and recommendations in this report are based upon borings at specific locations. The nature and extent of variation between boring locations is impossible to predict. Because of this, geotechnical recommendations are preliminary until they have been confirmed through observation of site excavation and earthwork preparation. If variations appear during subsequent exploration or during construction, we may reevaluate our recommendations and modify them, if appropriate. The geotechnical engineer should be retained during construction to observe compliance with the recommendations of this report and to provide quality control testing of earthwork construction. If these services are provided by others, including the contractor, the entity that provides construction phase observation and testing shares responsibility as the geotechnical engineer of record for implementing or modifying these recommendations.

Respectfully submitted,
Thiele Geotech, Inc.

Prepared by,

Heath E. Cutler, P.E.
Nebraska License E-16142

Reviewed by,

Raeanna C. D. Thiele, P.E.
Nebraska License E-16864

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APPENDIX

SUBSURFACE EXPLORATION METHODS

The fieldwork for this study was conducted on June 25, 2025. The exploratory program consisted of a single test boring drilled at the approximate location shown on the Boring Location Plan. The boring location was selected to provide the desired site coverage and was adjusted to accommodate access conditions. The boring location was laid out using a handheld GPS and coordinates interpreted from Google Earth. The elevation was interpolated from contours on the topographic survey prepared by Corner Stone Surveying, dated August 6, 2025. The boring location and elevation should only be considered accurate to the degree implied by the methods used to define them.

The test boring was advanced using hollow-stem flight augers powered by a truck-mounted drill rig. Soil samples were obtained at selected depths as indicated on the boring log. A 3-inch nominal diameter thin-walled sampler was hydraulically pushed to obtain undisturbed samples.

The boring log was prepared based on visual classification of the samples and drill cuttings, and by observation of the drilling characteristics of the subsurface formations. The log has been supplemented and modified based on the laboratory test results and further examination of the recovered samples. The stratification lines on the boring log represent the approximate boundary between soil types, but the in-situ transition may be gradual.

Water level observations were made at the times stated on the boring log. The boring was backfilled with drill cuttings at the completion of the fieldwork.

The field boring log was reviewed to outline the depths, thicknesses, and extent of the soil strata. A laboratory testing program was then developed to further classify the basic soils and to evaluate the engineering properties for use in our analysis.

Laboratory tests to further classify the soils included visual classification, moisture content, dry unit weight, and Atterberg limits. The shear strengths of cohesive samples were evaluated using the unconfined compression test.

The boring log and related information in this report are indicators of subsurface conditions only at the specific location and times noted. Subsurface conditions, including ground water levels, at other locations of the site may differ significantly from conditions that exist at the sampling location. Also note that the passage of time may affect conditions at the sampling location.

Thiele Geotech Inc

LEGEND OF TERMS

Soil Description Terms

Consistency - Fine Grained	Consistency - Coarse Grained	Moisture Conditions
Very Soft, Soft, Firm, Hard, Very Hard	Very Loose, Loose, Medium Dense, Dense, Very Dense	Dry, Slightly Moist, Moist Very Moist, Wet (Saturated)

Sample Identification

Sample Type	Sample Data	Laboratory Data
U -- Undisturbed (Shelby Tube)	No. -- Number	MC -- Moisture content
S -- Split barrel (disturbed)	SPT -- Standard penetration test	γ_d -- Dry unit weight
C -- Continuous sample	bpf -- blows per foot	q_u -- Unconfined compression
A -- Auger cuttings (disturbed)	Rec -- Recovery	LL/PI -- Liquid limit & plasticity index

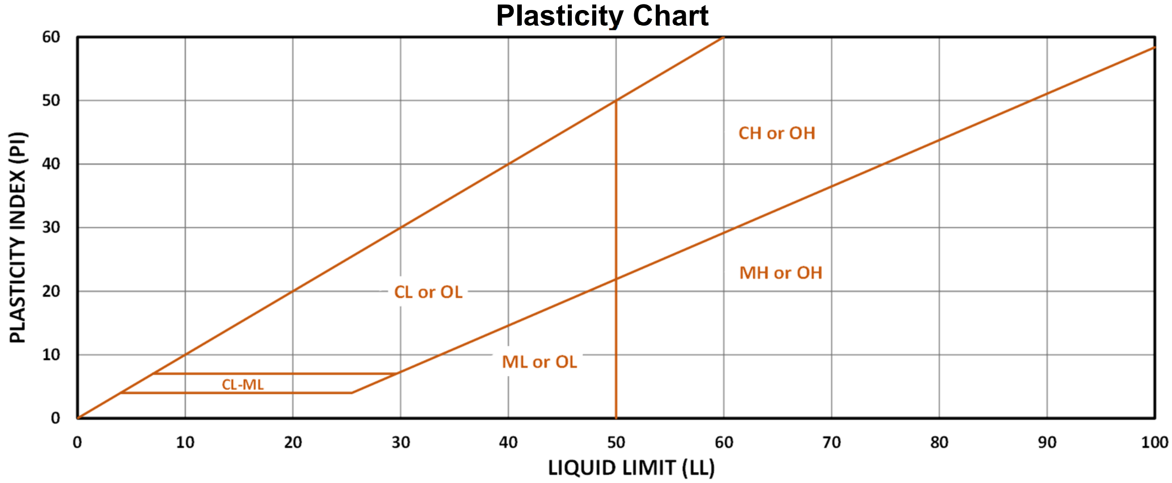
Unified Soil Classification System

Peat	Pt	Highly organic soils	50% or more smaller than No. 200 sieve
Fat Clay	CH	Clay - Liquid Limit > 50 *	
Elastic Silt	MH	Silt - Liquid Limit > 50 *	
Lean Clay	CL	Clay - Liquid Limit < 50 *	
Silt	ML	Silt - Liquid Limit < 50 *	
Silty Clay	CL-ML	Silty Clay *	
Clayey Sand	SC	Sands with 12 to 50 percent smaller than No. 200 sieve *	More than 50% larger than No. 200 sieve and % sand > % Gravel
Silty Sand	SM		
Poorly-Graded Sand with Clay	SP-SC	Sands with 5 to 12 percent smaller than No. 200 Sieve *	
Poorly-Graded Sand with Silt	SP-SM		
Well-Graded Sand with Clay **	SW-SC		
Well-Graded Sand with Silt **	SW-SM		
Poorly-Graded Sand	SP	Sands with less than 5 percent smaller than No. 200 sieve *	
Well-Graded Sand **	SW		
Clayey Gravel	GC	Gravels with 12 to 50 percent smaller than No. 200 Sieve *	More than 50% larger than No. 200 sieve and % gravel > % sand
Silty Gravel	GM		
Poorly-Graded Gravel with Clay	GP-GC	Gravels with 5 to 12 percent smaller than No. 200 sieve *	
Poorly-Graded Gravel with Silt	GP-GM		
Well-Graded Gravel with Clay **	GW-GC		
Well-Graded Gravel with Silt **	GW-GM		
Poorly-Graded Gravel	GP	Gravels with less than 5 percent smaller than No. 200 sieve *	
Well-Graded Gravel **	GW		

* *See Plasticity Chart for definition of silts and clays*

** *See Criteria for Sands and Gravels for definition of well-graded*

Plasticity Chart

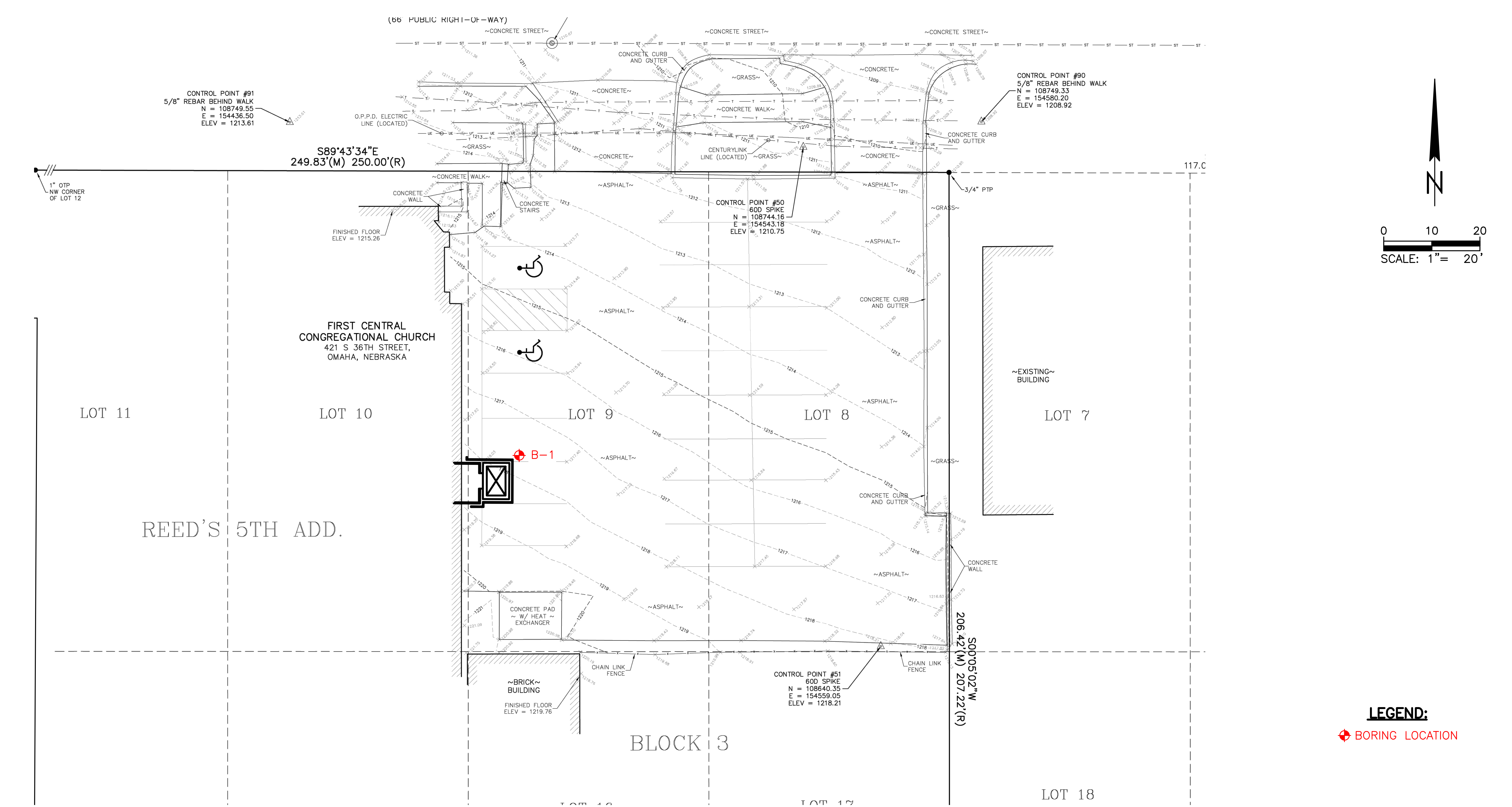


Criteria for Sands and Gravels

	Boulders	Cobbles	Coarse Gravel	Fine Gravel	Coarse Sand	Medium Sand	Fine Sand	FINES (silt or clay)
Sieve size	12"	3"	¾"	#4	#10	#40	#200	

Well-graded sands (SW) $C_u=D_{60}/D_{10}\geq 6$ and $C_c=(D_{30})^2/(D_{10} \times D_{60}) \leq 3$ and ≥ 1

Well-graded gravels (GW) $C_u=D_{60}/D_{10}\geq 4$ and $C_c=(D_{30})^2/(D_{10} \times D_{60}) \leq 3$ and ≥ 1



BORING LOCATION PLAN

Thiele Geotech Inc

PROJECT

FIRST CENTRAL CONGREGATIONAL CHURCH ELEVATOR ADDITION
401 S. 36TH ST., OMAHA, NE

JOB # 25302.01 DATE: 8/15/25

Thiele Geotech Inc
Thiele Geotech, Inc.
13478 Chandler Road
Omaha, NE 68138
Telephone: 402.556.2171
Fax: 402.556.7831

BORING NUMBER B-1

CLIENT First Central Congregational Church
PROJECT NAME First Central Congregational Church Elevator Addition
PROJECT NUMBER 25302.01
PROJECT LOCATION 401 South 36th Street, Omaha, NE
DRILLING DATE 6/25/2025 **SURFACE** Asphalt
GROUND ELEVATION 1218 ft **BORING DEPTH** 50.0 feet
DRILLING METHOD HSA **HOLE SIZE** 6 inches
GROUND WATER LEVELS:
DRILLER Jon Livingston **DRILL RIG** CME 55 #48
DURING DRILLING None encountered
LOGGED BY Nathan Wade **CHECKED BY** Lindsey Kelly
END OF DRILLING None encountered
NOTES Boring backfilled with cuttings
AFTER DRILLING Not measured

DEPTH (ft)	GRAPHIC LOG	MOISTURE	COLOR	CONSIST.	SOIL TYPE	GEOLOGIC ORIGIN	REMARKS	SAMPLE TYPE NUMBER	RECOVERY (IN)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	q_u (tsf)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0							6.5" asphalt											
		very moist	brown	soft	lean clay	Peoria loess	silty	U-1	12			27.3	90.8	0.62				
5								U-2	8			25.0	92.2					
10								U-3	12			24.8	86.1		35	21	14	
				firm														
15								U-4	12			24.3	89.4					
20								U-5	12			24.7	87.6					
25								U-6	12			28.1	86.9					

(Continued Next Page)

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25		very moist	light brown	firm	lean clay	Peoria loess												
			brown															
30								U-7	12			25.7	89.2	0.86				
35								U-8	12			26.5	91.3	0.95				
		moist	reddish brown	firm	lean clay	Loveland loess												
40								U-9	12			23.2	97.7	0.67				
45								U-10	12			21.7	102.8	1.05				
		very moist																
50								U-11	12			25.2	99.4	1.44				

Bottom of borehole at 50.0 feet.

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Omaha, NE 68138
Telephone: 402-556-2171
Fax: 402-556-7831

SUMMARY OF LABORATORY RESULTS

CLIENT First Central Congregational Church

PROJECT NAME First Central Congregational Church Elevator Addition

PROJECT NUMBER 25302.01

PROJECT LOCATION 401 South 36th Street, Omaha, NE

Boring Number	Sample Number	Depth	Water Content (%)	Unit Weight		Void Ratio	Sat. (%)	Unconfined Compression		Atterberg Limits		%<#200 Sieve	Class.	Other Tests
				Wet Density (pcf)	Dry Density (pcf)			q_u (tsf)	Strain (%)	LL	PI			
B-1	U-1	0.5-2.0'	27.3	115.6	90.8	0.855	86	0.62	3.4					
	U-2	3.5-5.0'	25.0	115.2	92.2	0.827	82							
	U-3	8.5-10.0'	24.8	107.5	86.1	0.956	70			35	14		CL	
	U-4	13.5-15.0'	24.3	111.1	89.4	0.884	74							
	U-5	18.5-20.0'	24.7	109.2	87.6	0.923	72							
	U-6	23.5-25.0'	28.1	111.3	86.9	0.939	81							
	U-7	28.5-30.0'	25.7	112.2	89.2	0.889	78	0.86	4.1					
	U-8	33.5-35.0'	26.5	115.5	91.3	0.845	85	0.95	2.3					
	U-9	38.5-40.0'	23.2	120.4	97.7	0.724	87	0.67	2.8					
	U-10	43.5-45.0'	21.7	125.1	102.8	0.639	92	1.05	4.8					
	U-11	48.5-50.0'	25.2	124.4	99.4	0.695	98	1.44	2.8					

NE Firm #CA-0080E