GEOTECHNICAL ENGINEERING REPORT

Northlake Subdivision - Streets Burshard Road San Antonio, Texas

PSI Project No. 0312-3490

PREPARED FOR:

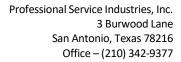
Lennar 100 North East Loop 410, Suite 1155 San Antonio, Texas 78216

July 31, 2025

BY:

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July 31, 2025

Lennar 100 North East Loop 410, Suite 1155 San Antonio, Texas 78216

Attn: Mr. Rogelio Olivarez, Jr.

RE: GEOTECHNICAL ENGINEERING REPORT Northlake Subdivision - Streets Burshard Road San Antonio, Texas PSI Project No. 0312-3490

Dear Mr. Olivarez:

Professional Service Industries, Inc. (PSI), an Intertek company, is pleased to submit this Geotechnical Engineering Report for the above-referenced project. This report includes the results from the field and laboratory investigation along with recommendations for use in preparation of the appropriate design and construction documents for this project.

PSI appreciates the opportunity to provide this Geotechnical Engineering Report and looks forward to continuing participation during the design and construction phases of this project. PSI also has great interest in providing materials testing and inspection services during the construction of this project and will be glad to meet with you to further discuss how we can be of assistance as the project advances.

If there are questions pertaining to this report, or if PSI may be of further service, please contact us at your convenience.

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

Texas Board of Professional Engineers Certificate of Registration # F003307

July 31, 2025

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1.0 PROJECT INFORMATION

1.1 PROJECT AUTHORIZATION

Professional Service Industries, Inc. (PSI), an Intertek company, has completed a field exploration and geotechnical evaluation for the proposed Northlake Subdivision - Streets project. Mr. Rogelio Olivarez, Jr., representing Lennar, authorized PSI's services on March 12, 2025, by signing PSI Proposal No. 444909-1. PSI's proposal contained a proposed scope of work, lump sum fee, and PSI's General Conditions.

1.2 Project Description

Based on information provided by the Client and PSI's review of a plat entitled "Northlake Subdivision", dated February 05, 2025, prepared by Colliers Engineering & Design, and the results of this geotechnical investigation, a summary of our understanding of the proposed project is provided below in the following Project Description table.

TABLE 1.1: PROJECT DESCRIPTION

Project Items	Approximately 379 Acres of residential lots and approximately 52,539 lineal feet of subdivision streets
Pavement for Parking and Drives	Flexible Asphalt (HMAC)
Design Traffic Load (COSA)	Type A without Bus: 100,000 ESALs Collector and Type B: 2,000,000 ESALs Secondary Arterial: 3,000,000 ESALs

The geotechnical recommendations presented in this report are based on the available project information, structure locations, and the subsurface materials encountered during the field investigation. If the information presented above is incorrect, please inform PSI so that the recommendations presented in this report can be amended, as necessary. PSI will not be responsible for the implementation of provided recommendations if not notified of changes in the project.

1.3 PURPOSE AND SCOPE OF SERVICES

The purpose of this study is to evaluate the subsurface conditions at the site and develop geotechnical engineering recommendations and guidelines for use in preparing the design and other related construction documents for the proposed project. The scope of services included drilling soil borings, performing laboratory testing, and preparing this geotechnical engineering report.

This report briefly outlines the available project information, describes the site and subsurface conditions, and presents the following:

- General site development and subgrade preparation recommendations.
- Estimated potential soil movements associated with collapsing, shrinking and swelling soils and methods to reduce these movements.
- Recommendations for site excavation, fill compaction, and the use of on-site and imported fill material under pavements.
- Recommendations for the design of flexible asphaltic pavement systems for the proposed residential streets per the City of San Antonio Pavement Design Standards.



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The scope of services for this geotechnical exploration did not include an environmental, mold nor detailed seismic/fault assessment for determining the presence or absence of wetlands, or hazardous or toxic materials in the soil, bedrock, surface water, groundwater, or air on or below, or around this site. Statements in this report or on the boring logs regarding odors, colors, and unusual or suspicious items or conditions are strictly for informational purposes. The report also does not include a detailed settlement analysis or slope stability analysis.



2.0 SITE AND SUBSURFACE CONDITIONS

2.1 SITE DESCRIPTION

The following table provides a generalized description of the existing site conditions based on visual observations during the field activities, as well as other available information.

TABLE 2.1: SITE DESCRIPTION

Site Location	Burshard Road, San Antonio, Texas GPS Coordinates: Latitude: 29.3289° Longitude: -98.3327°
Site History	Undeveloped Land
Existing Site Ground Cover	Trees and/or Grass
Existing Grade/Elevation Changes	Sloping down to the south
Site Geology (Geologic Atlas of Texas)	Wilcox Group (Epa)
Site Boundaries/Neighboring	Undeveloped property surrounds the site
Development	
Ground Surface Soil Support Capability	
for Operational Stability and Site	Firm Enough for Field Equipment when Dry
Access	

2.2 FIELD EXPLORATION

Field exploration for the project consisted of drilling a total of **fifty-five (55) borings**. The boring design element, approximate depths and drilling footage are provided in the following table.

TABLE 2.2: FIELD EXPLORATION SUMMARY

Design Element	Number of Borings	Boring Depth (ft)	Drilling Footage (feet)
Streets	55	15	660
TOTAL:	55		660

The boring locations were selected by PSI personnel and located in the field using a recreational-grade GPS system. Elevations of the ground surface at the boring locations were not provided and should be surveyed by others prior to construction, if required. We have estimated ground surface elevations at the boring locations from the topographic survey provided (or from Google Earth) and estimate an approximate 1-foot accuracy. The references to elevations of various subsurface strata are based on depths below existing grade at the time of drilling. The approximate boring locations are depicted on the Boring Location Plan provided in the Appendix.



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TABLE 2.3: FIELD EXPLORATION DESCRIPTION

Drilling Equipment	Truck-Mounted Drilling Equipment
Drilling Method	Continuous Flight-Auger
Field Testing	Standard Penetration Test (ASTM D1586)
Sampling Procedure	ASTM D1586
Sampling Frequency	Continuously to a Depth of 10 Feet
Frequency of Groundwater Level Measurements	During and After Drilling
Boring Backfill Procedures	Soil Cuttings and asphalt patching
Sample Preservation and Transportation Procedure	General Accordance with ASTM D4220

During field activities, the encountered subsurface conditions were observed, logged, and visually classified (in general accordance with ASTM D2487). Field notes were maintained to summarize soil types and descriptions, water levels, changes in subsurface conditions, and drilling conditions.

2.3 LABORATORY TESTING PROGRAM

PSI supplemented the field exploration with a laboratory testing program to determine additional engineering characteristics of the subsurface soils encountered. The laboratory testing program included:

TABLE 2.4: LABORATORY TESTING PROGRAM

Laboratory Test	Procedure Specification
Visual Classification	ASTM D2488
Moisture Content	ASTM D2216
Atterberg Limits	ASTM D4318
Material Finer than No. 200 Sieve	ASTM D1140
California Bearing Ratio (CBR)	ASTM D1883

The laboratory testing program was conducted in general accordance with applicable ASTM Test Methods. The results of the laboratory tests are provided on the Boring Logs in the Appendix. Portions of samples not altered or consumed by laboratory testing will be discarded 60 days from the date shown on this report.

2.4 SITE GEOLOGY

We reviewed the **San Antonio Sheet of the Geologic Atlas of Texas** in an effort to determine the geologic setting of the project site and surrounding areas. The Geologic Atlas of Texas was developed by the Bureau of Economic Geology at The University of Texas using aerial photography, data from various oil and gas exploration companies, and very limited ground reconnaissance. Our review indicates that the project is located in the **Wilcox Group (Ewi)** of Tertiary Geologic Age. The San Antonio Sheet generally describes the **Wilcox Group** as mostly mudstone, with various amounts of sandstone, lignite, ironstone concretions, glauconitic; thickness about 1,000 ft. sand, mudstone, clay, mudstone conglomerate, thickness as much as 300 ft. lower part mostly mudstone, thickness about 500 +- ft. Total thickness roughly 1,400-1,800 ft.



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2.5 SUBSURFACE CONDITIONS

The results of the field and laboratory investigation have indicate the subsurface stratification varies across the site and is composed of various interbedded soil types. The following table provides a summary of the material properties for the soil types encountered at the site.

ω (%) ы -200 Sieve (%) LL (%) Ν **Soil Type** Fat Clay Fat Clay with Sand Sandy Fat Clay Lean Clay with Sand Sandy Lean Clay Sandy Lean Clay with Gravel 2 - 50/0"1 - 21NP - 85 NP - 6013 - 98Gravelly Lean Clay with Sand Silty Sand Clayey Sand Silty, Clayey Sand Sandstone

TABLE 2.5: GENERALIZED SOIL PROPERTIES TABLE

Note:

- 1. ω = Moisture Content (%)
- 2. LL= Liquid limit (%)
- 3. PI = Plasticity Index
- 4. -#200 Sieve = % Passing the #200 Sieve
- 5. N = Standard Penetration Test blow count (blows/foot)

The material properties for the sandstone were obtained by laboratory testing, however, these tests were performed on grab samples from cuttings where the rock and rock-like materials had been broken down to its finer constituent materials. Therefore, the reported properties reflect the nature of broken-down rock or rock-like material, which was considered in the analysis and recommendations provided in this report.

The boring logs included in the Appendix should be reviewed for specific information at the boring locations. The boring logs include soil descriptions, stratifications, locations of the samples, and field and laboratory test data. The descriptions provided on the logs only represent the conditions at the specific boring location. The stratifications represent the approximate boundaries between subsurface materials. The actual transitions between strata may be more gradual and less distinct. Variations will occur and should be expected across the site.

2.5.1 GROUNDWATER INFORMATION

Water level measurements were performed during drilling and after completion of drilling. Specific information concerning groundwater is noted on each boring log presented in the Appendix of this report. Groundwater was not encountered during the field investigation of this site.

Groundwater levels fluctuate seasonally as a function of rainfall, proximity to creeks, rivers and lakes, the infiltration rate of the soil, seasonal and climatic variations and land usage. In relatively pervious soils, such as sandy soils, the indicated depths are a relatively reliable indicator of groundwater levels. In relatively impervious soils, water levels observed in the borings may not provide a reliable indication of groundwater



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elevations, even after several days. If a detailed water level evaluation is required, observation wells or piezometers can be installed at the site to monitor water levels.

The groundwater levels presented in this report were measured at the time of PSI field activities. The contractor should be prepared to control groundwater, if encountered during construction activities.



3.0 PAVEMENT DESIGN RECOMMENDATIONS

3.1 PAVEMENT DESIGN PARAMETERS

PSI understands that flexible pavements will be considered for this project. Therefore, pavement design recommendations based on the criteria presented in the *City of San Antonio Pavement Design Standards* (revised January 2017), a traffic loading of 100,000 18-kip Equivalent Single Axle Loads (ESALs) for flexible pavement was evaluated for a street classification of Local Type A streets without bus traffic. A traffic load of 2,000,000 18-kip ESALs for flexible pavement was evaluated for a street classification of Local Type B/Collector streets. A traffic load of 3,000,000 18-kip ESALs for flexible pavement was evaluated for a street classification of Primary and Secondary Arterial streets. PSI utilized the "AASHTO Guide for Design of Pavement Structures" published by the American Association of State Highway and Transportation Officials to evaluate the pavement thickness recommendations in this report. This method of design considers pavement performance, traffic, roadbed soil, pavement materials, environment, drainage, and reliability. Each of these items is incorporated into the design methodology. PSI is available to provide laboratory testing and engineering evaluation to refine the site-specific design parameters and sections, upon request.

PSI collected bulk soil samples of the native soils encountered at the site to conduct Atterberg Limits, Percent Finer than the No. 200 Sieve, and California Bearing Ratio (CBR) test. The results for the Moisture Density Relationship and the CBR Tests are presented in the Appendix. The following table presents the results from our laboratory testing performed on the native soil.

TABLE 3.1: NATIVE SOIL TEST SUMMARY

Sample	Material	Liquid Limit (ASTM D4318)	Plasticity Index (ASTM D4318)	Percent Passing No. 200 Sieve	Laboratory CBR Value (ASTM D1883)
А	Clayey Sand	36	19	31	4.9
В	Clayey Sand	31	14	16	17.2

Based on the results of the laboratory testing, PSI has provided recommended pavement sections for pavements constructed on an improved subgrade. Details regarding the basis for this design are presented in the table below.

TABLE 3.2: PAVEMENT DESIGN PARAMETERS AND ASSUMPTIONS

City of San Antonio Local Type A Street without Bus		
Reliability, percent	70	
Initial Serviceability Index, Flexible Pavement	4.2	
Terminal Serviceability Index	2.0	
Design Traffic Loading, Flexible Pavement	100,000 equivalent single axle loads (ESALs)	
Standard Deviation, Flexible Pavement	0.45	
Subgrade California Bearing Ratio (CBR)	4.9	
Subgrade Modulus of Subgrade Reaction, k in pci	100	



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City of San Antonio Collector Street		
Reliability, percent	90	
Initial Serviceability Index, Flexible Pavement	4.2	
Terminal Serviceability Index	2.0	
Design Traffic Loading, Flexible Pavement	2,000,000 equivalent single axle loads (ESALs)	
Standard Deviation, Flexible Pavement	0.45	
Subgrade California Bearing Ratio (CBR)	4.9	
Subgrade Modulus of Subgrade Reaction, k in pci	100	
City of San Antonio Local Type B Street		
Reliability, percent	90	
Initial Serviceability Index, Flexible Pavement	4.2	
Terminal Serviceability Index	2.0	
Design Traffic Loading, Flexible Pavement	2,000,000 equivalent single axle loads (ESALs)	
Standard Deviation, Flexible Pavement	0.45	
Subgrade California Bearing Ratio (CBR)	4.9	
Subgrade Modulus of Subgrade Reaction, k in pci	100	
City of San Antonio Primary a	nd Secondary Arterials	
Reliability, percent	95	
Initial Serviceability Index, Flexible Pavement	4.2	
Terminal Serviceability Index	2.0	
Design Traffic Loading, Flexible Pavement	3,000,000 equivalent single axle loads (ESALs)	
Standard Deviation, Flexible Pavement	0.45	
Subgrade California Bearing Ratio (CBR)	4.9	
Subgrade Modulus of Subgrade Reaction, k in pci	100	

Asphaltic concrete pavements founded on top of expansive soils will be subjected to PVM soil movements estimated and presented in this report. These potential soil movements are typically activated to some degree during the life of the pavement. Consequently, pavements can be expected to crack and require periodic maintenance to reduce damage to the pavement structure.

During the paving life, maintenance to seal surface cracks within asphalt paving should be undertaken to achieve the desired paving life. Perimeter drainage should be controlled to prevent or retard influx of surface water from areas surrounding the paving. Water penetration leads to paving degradation. Water penetration into base or subgrade materials, sometimes due to irrigation or surface water infiltration leads to pre-mature paving degradation. Curbs should be used in conjunction with asphalt paving to reduce potential for infiltration of moisture into the base course. Curbs should extend the full depth of the base course and should extend at least 3 inches into the underlying clayey subgrade. The base layer should be tied into the area inlets to drain water that may collect in the base.

Material specifications, construction considerations, and section requirements are presented in following sections.

The presented recommended pavement sections are based on the field and laboratory test results for the project, local pavement design practice, design assumptions presented herein and previous experience with similar projects. The project Civil Engineer should verify that the ESAL and other design values are appropriate



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for the expected traffic and design life of the project. PSI should be notified in writing if the assumptions or design parameters are incorrect or require modification.

3.2 PAVEMENT SECTION RECOMMENDATIONS

PSI anticipated that the roadways and parking areas will be used primarily by passenger vehicles and delivery vehicles. PSI is providing parking and drive area sections based on experience with similar facilities constructed on similar soil conditions for the design traffic loading anticipated.

3.2.1 FLEXIBLE PAVEMENT

Recommendations for flexible asphaltic concrete pavement for roadways and parking areas are provided below.



FIGURE 3.1: FLEXIBLE PAVEMENT TYPICAL SECTION

TABLE 3.3: FLEXIBLE PAVEMENT SECTION OPTIONS

Material	Thicknesses				
Troffic Tuno	Tuno A	Tuno D	Collector	Option 1	Option 2
Traffic Type	Type A Type B	Collector	Arterial	Arterial	
Design Traffic Loading, ESALs	100,000	2,000,000	2,000,000	3,000,000	3,000,000
Hot Mix Asphaltic Concrete, Type D					2.5"
Hot Mix Asphaltic Concrete, Type C	3"	4"	4"	4"	
Hot Mix Asphaltic Concrete, Type B					8.5"
Geogrid	Yes	Yes	Yes	Yes	No
Import Flexible Base	6"	14"	14"	15"	
Compacted Subgrade ¹	8"	8"	8"	8"	8"

^{1.} If soils with a PI greater than 20 are encountered during construction. PSI recommends conducting a lime series test in accordance with TxDOT TEX-121-E to determine the amount of lime required to treat the soil in accordance with COSA Item 108



3.2.2 GENERAL PAVEMENT DESIGN AND CONSTRUCTION RECOMMENDATIONS

TABLE 3.4: PAVEMENT DESIGN AND CONSTRUCTION RECOMMENDATIONS

Minimum Undercut Depth	6 inches or as needed to remove roots
Low-Density Soil Treatment	After clearing and grubbing, remove/replace upper 12 inches of exposed soils in maximum 9-inch loose lifts. moisture-condition and compact as Subgrade in Table 4.5.
Reuse Excavated Soils	Must be free of roots and debris and meet material requirements of intended use
Exposed Subgrade Treatment	After moisture conditioning and recompacting the low-density subgrade soils, proof-roll with rubber-tired vehicle weighing at least 20 tons. A representative of the Geotechnical Engineer should be present during proof-roll.
Proof-Rolled Pumping and Rutting Areas	Excavate to firmer materials and replace with compacted general or select fill under direction of a representative of the Geotechnical Engineer
General Fill	Materials free of roots, debris, and other deleterious materials with a maximum rock size of 4 inches with a CBR greater than 4.9
Minimum General Fill Thickness	As required to achieve grade
Maximum General Fill Loose Lift Thickness	9 Inches
Geogrid	Geogrid should meet TxDOT Item DMS – 6240 and be pulled and punched. The subgrade should be leveled and smoothed prior to geogrid placement on compacted subgrade. Geogrid should be installed in accordance with the manufacturer's specifications and constructed in accordance with COSA Item 234. Geogrid should be placed on top of the prepared subgrade in instances that the total thickness of the overlying compacted base material is 10 inches or less. In instances that the total thickness of the compacted base material layer is greater than 10 inches the Geogrid should be placed at the mid-section of the compacted base material Layer.
Flexible Base	COSA Item 200
Maximum Flexible Base Loose Lift Thickness	9 Inches
Hot Mix Asphaltic Concrete	COSA Item 205 Type C COSA Item 205 Type D COSA Item 205 Type B

TABLE 3.5: COMPACTION AND TESTING RECOMMENDATIONS FOR PAVEMENT AREAS

Location	Material	Density Test Method	Soil Type	Percent Compaction	Optimum Moisture Content	Testing Frequency
Pavement	Subgrade, General Fill Soil, Low PI Material	Tex-114-E	PI ≥ 25 PI < 25	94% to 98% ≥ 95%	0 to +4% 0 to +4%	1 per 10,000 SF; min. 3 tests
Areas	Flexible Base Material	TEX-113-E	COSA Item 200	≥ 95%	<u>+</u> 3%	1 per 5,000 SF; min. 3 per lift



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4.0 CONSTRUCTION CONSIDERATIONS

Geotechnical Engineer Involvement at the Time of Construction — Foundation pad preparation recommendations on expansive clay sites in this area depend on the soil moisture conditions that exist due to the prevailing climate at the time of construction as well as the expansive properties of the clay.

It is recommended that the foundation pad recommendations presented in this report be confirmed immediately prior to construction by the Geotechnical-Engineer-of Record (GER). Wetter climate conditions near the time of construction can lead to a significant reduction in pad preparation requirements which can often be a substantial percentage of site development cost.

Having a Geotechnical Engineer retained to review the earthwork recommendations in the Construction Documents and be an active participant in team meetings near the time of construction can often result in project cost savings. Therefore, PSI recommends that an AASHTO accredited 3rd party laboratory with qualified professional engineers who specialize in geotechnical engineering be retained to provide observation and testing of construction activities involved in the foundations, earthwork, pavements and related activities of this project. As the GER, PSI's services can be retained as the 3rd party laboratory. PSI's participation would be advantageous to the project flow and value engineering during construction since we are most familiar with the existing soil conditions at the site.

The geotechnical engineer often does not have available all design information at the time of writing the original report since the report is done very early in the design process. The GER can be of great benefit immediately prior to construction since definitive information regarding the location of the building, surrounding flatwork, pavements, planned landscaping, and drainage features is available at that time. The GER can then write Supplement letters to the original geotechnical report often resulting in less risk and significant project cost savings.

PSI cannot accept responsibility for conditions which deviate from those described in this report, nor for the performance of the foundations or pavements if not engaged to also provide construction observation and materials testing for this project. The PSI geotechnical engineer of record should also be engaged by the Design Team during construction, even if periodic on-call testing is contracted with PSI Construction Services.



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4.1 Initial Site Preparation Considerations

4.1.1 SUBGRADE PREPARATION FOR SITE WORK OUTSIDE BUILDING PAD AND PAVEMENT AREAS

Grade adjustments outside of the foundation pad and pavement areas can be made using select or general fill materials. The clean excavated onsite soils may also be reused in areas not sensitive to movement.

TABLE 4.1: SUBGRADE PREPARATION FOR NON-STRUCTURAL - GENERAL FILL

Minimum Undercut Depth	6 inches or as needed to remove roots, organic and/or deleterious materials
Exposed Subgrade Treatment	Proof-roll subgrade with rubber-tired 20-ton (loaded) construction equipment Alternate Equipment can be used with Geotechnical Engineer Approval
Proof-Rolled Pumping and Rutting Areas	Excavate to firmer materials and replace with compacted general or select fill under direction of a representative of the Geotechnical Engineer
General Fill Type	Any clean material free of roots, debris and other deleterious material with a maximum particle size of 4 inches
Maximum General Fill Loose Lift Thickness	8 inches

TABLE 4.2: FILL COMPACTION RECOMMENDATIONS OUTSIDE OF BUILDING AND PAVEMENT AREAS

Location	Material	Test Method for Density Determination	Plasticity Index	Percent Compaction	Optimum Moisture Content	Testing Frequency
Outside of Structure /	General Fill	ASTM D698	PI ≥ 25	94% to 98%	0 to +4%	1 per 10,000 SF;
Pavement Areas	Generaliii	A311VI D030	PI < 25	≥ 95%	0 to +4%	min. 3 per lift

4.1.2 EXISTING SITE CONDITIONS

The following table outlines construction considerations in consideration of procedures for abandoning old utility lines and removing trees.

TABLE 4.3: CONSIDERATIONS FOR ABANDONING UTILITIES AND TREE REMOVAL

Abandone	d Utilities
Utilities of former structures located within new footprint of proposed structure	Remove pipe, bedding and backfill and then replace with select fill placed using controlled compaction
Utilities of former structures located outside of footprint of proposed structure	Abandon in place using a grout plug
Tree Re	moval
Trees located within proposed building footprint; roadways, parking, and sidewalk areas; and within 15 feet of building area	Remove root system for full vertical and lateral extent and extend removal for at least 3 feet beyond presence of root fragments and replace void with compacted general fill or flowable fill



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4.2 MOISTURE SENSITIVE SOILS/WEATHER RELATED CONCERNS

Soils are sensitive to disturbances caused by construction traffic and changes in moisture content. During wet weather periods, increases in the moisture content of the soil can cause significant reduction in the soil strength and support capabilities. In addition, soils which become wet may be slow to dry and thus significantly retard the progress of grading and compaction activities. It will, therefore, be advantageous to perform earthwork, foundation, and construction activities during dry weather. A relatively all-weather compacted crushed limestone cap having a thickness of at least 6 inches should be provided as a working surface.

4.3 EXCAVATION OBSERVATIONS

Excavations should be observed by a representative of PSI prior to continuing construction activities in those areas. PSI needs to assess the encountered materials and confirm that site conditions are consistent with those discussed in this report. This is especially important to identify the condition and acceptability of the exposed subgrades under foundations and other structures that are sensitive to movement. Soft or loose soil zones encountered at the bottom of the excavations should be removed to the level of competent soils as directed by the Geotechnical Engineer or their representative. Cavities formed as a result of excavation of soft or loose soil zones should be backfilled with compacted select fill or lean concrete.

After opening, excavations should be observed, and concrete should be placed as quickly as possible to avoid exposure to wetting and drying. Surface run-off water should be drained away from the excavations and not be allowed to pond. Excavations left open for more than 48 hours should be protected to reduce evaporation or entry of moisture.

4.4 Drainage Considerations

Water should not be allowed to collect in or adjacent to foundation excavations, on foundation surfaces, or on prepared subgrades within the construction area during or after construction. Proper drainage around grade supported sidewalks and flatwork is important to reduce potential movements. Excavated areas should be sloped toward one corner to facilitate removal of collected rainwater, groundwater, or surface runoff. Providing rapid, positive drainage away from the building reduces moisture variations within the underlying soils and will aid in reducing the magnitude of potential movements.

4.5 EXCAVATIONS AND TRENCHES

Excavation equipment capabilities and field conditions may vary. Geologic processes are erratic and large variations can occur in small vertical and/or lateral distances. Details regarding "means and methods" to accomplish the work (such as excavation equipment and technique selection) are the sole responsibility of the project contractor. The comments contained in this report are based on small diameter borehole observations. The performance of large excavations may differ as a result of the differences in excavation sizes.

The sandstone stratum at this site is hard. Excavations penetrating the sandstone and sandstone removal as part of site grading will likely require high-powered, heavy-duty rock excavation equipment.

The Occupational Safety and Health Administration (OSHA) Safety and Health Standards (29 CFR Part 1926, Revised October 1989), require that excavations be constructed in accordance with the current OSHA



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guidelines. Furthermore, the State of Texas requires that detailed plans and specifications meeting OSHA standards be prepared for trench and excavation retention systems used during construction. PSI understands that these regulations are being strictly enforced, and if they are not closely followed, the owner and the contractor could be liable for substantial penalties.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The contractor's "responsible person", as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, State, and Federal safety regulations.

PSI is providing this information as a service to the client. PSI does not assume responsibility for construction site safety or the contractor's or other parties' compliance with local, State, and Federal safety or other regulations. A trench safety plan was beyond the scope of our services for this project.



5.0 REPORT LIMITATIONS

The recommendations submitted in this report are based on the available subsurface information obtained by PSI and design details furnished by the client for the proposed project. If there are revisions to the plans for this project, or if deviations from the subsurface conditions noted in this report are encountered during construction, PSI should be notified immediately to determine if changes in the foundation recommendations are required. If PSI is not notified of such changes, PSI will not be responsible for the impact of those changes on the project.

The Geotechnical Engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been made in accordance with generally accepted professional Geotechnical Engineering practices in the local area. No other warranties are implied or expressed. This report may not be copied without the expressed written permission of PSI.

After the plans and specifications are more complete, the Geotechnical Engineer should be retained and provided the opportunity to review the final design plans and specifications to check that the engineering recommendations have been properly incorporated in the design documents. At this time, it may be necessary to submit supplementary recommendations. If PSI is not retained to perform these functions, PSI will not be responsible for the impact of those conditions on the project.

This report has been prepared for the exclusive use of Lennar for specific application to the proposed Northlake Subdivision - Streets project to be constructed at Burshard Road in San Antonio, Texas.

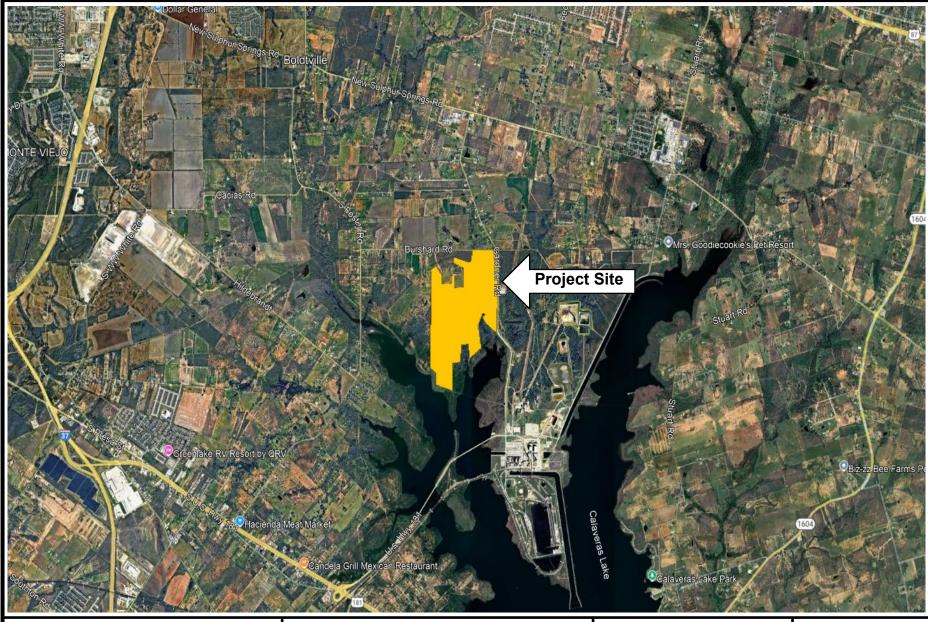


PSI Project No: 0312-3490



APPENDIX







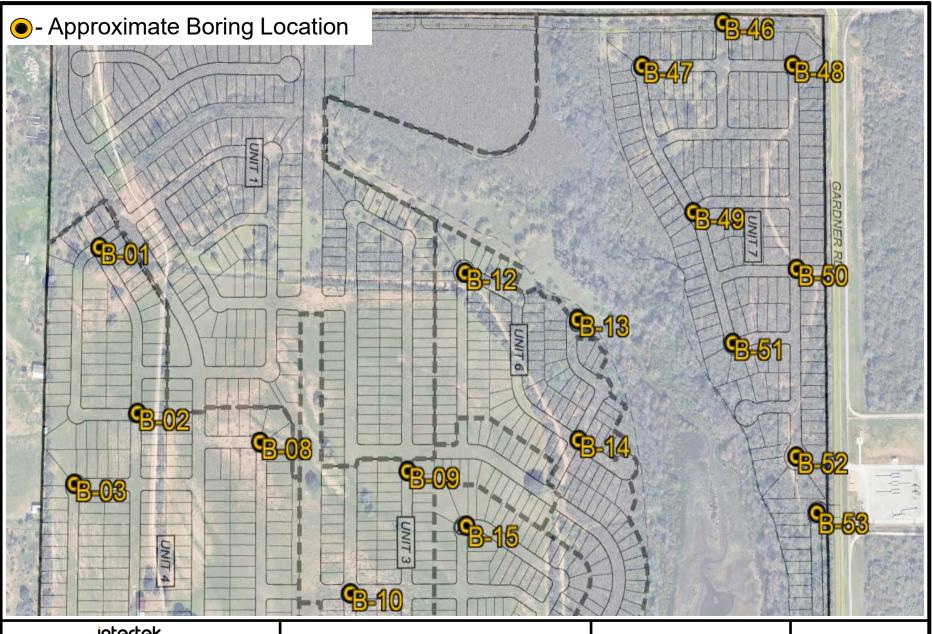
3 Burwood Lane, San Antonio, Texas (210) 342-9377 FAX (210) 342-9401

Site Vicinity Map

Northlake Subdivision - Streets Burshard Road San Antonio, Texas PSI Project No.: 0312-3490

NOT TO SCALE







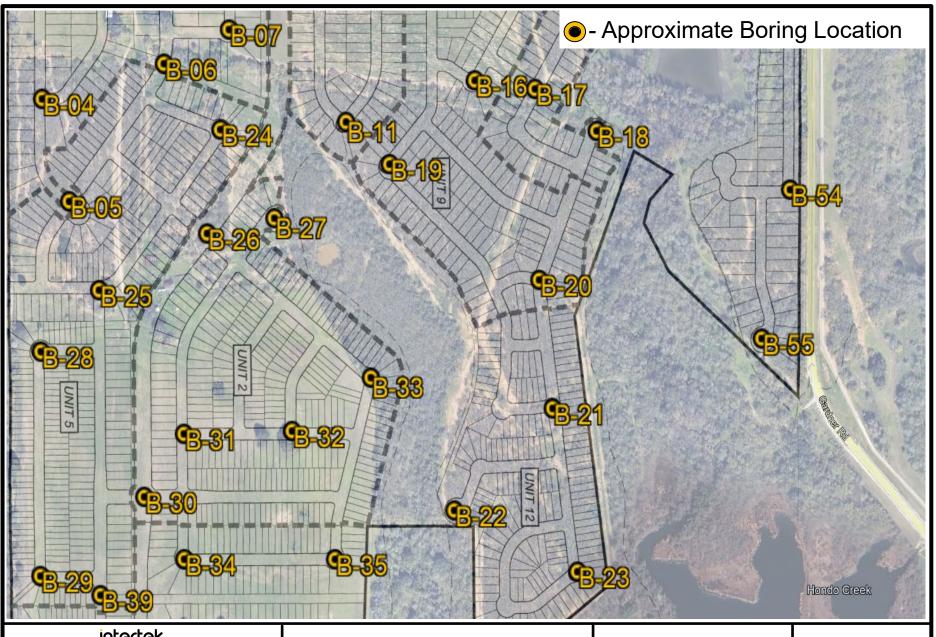
3 Burwood Lane, San Antonio, Texas (210) 342-9377 FAX (210) 342-9401

Boring Location Plan

Northlake Subdivision - Streets Burshard Road San Antonio, Texas PSI Project No.: 0312-3490

NOT TO SCALE







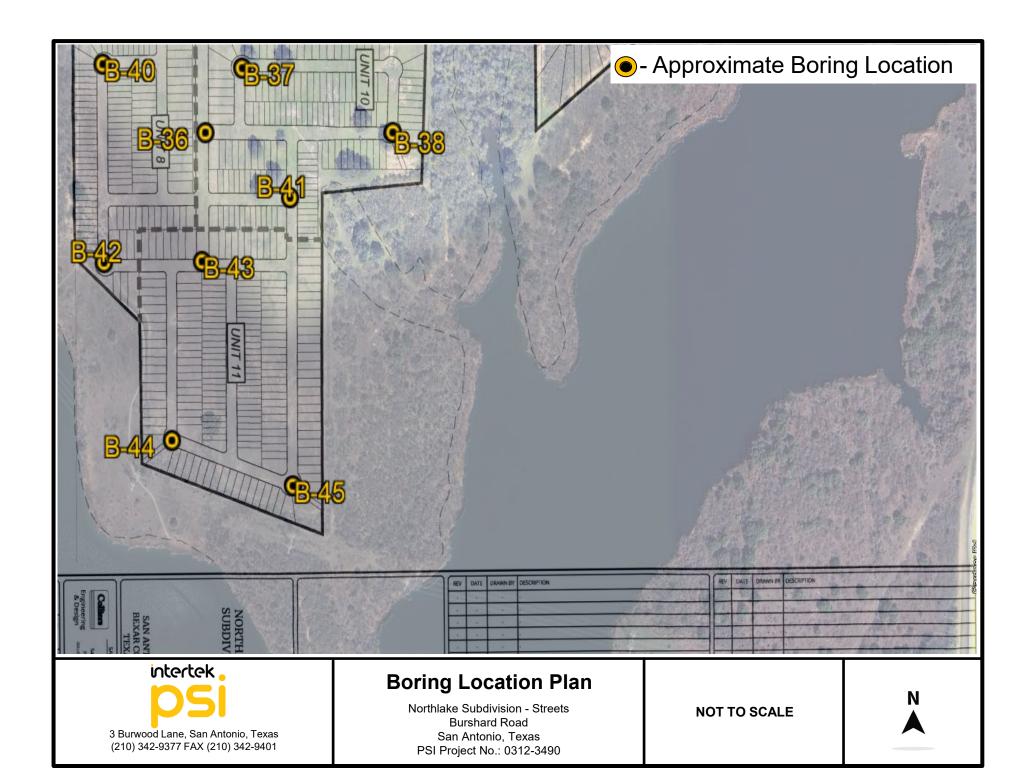
3 Burwood Lane, San Antonio, Texas (210) 342-9377 FAX (210) 342-9401

Boring Location Plan

Northlake Subdivision - Streets Burshard Road San Antonio, Texas PSI Project No.: 0312-3490

NOT TO SCALE







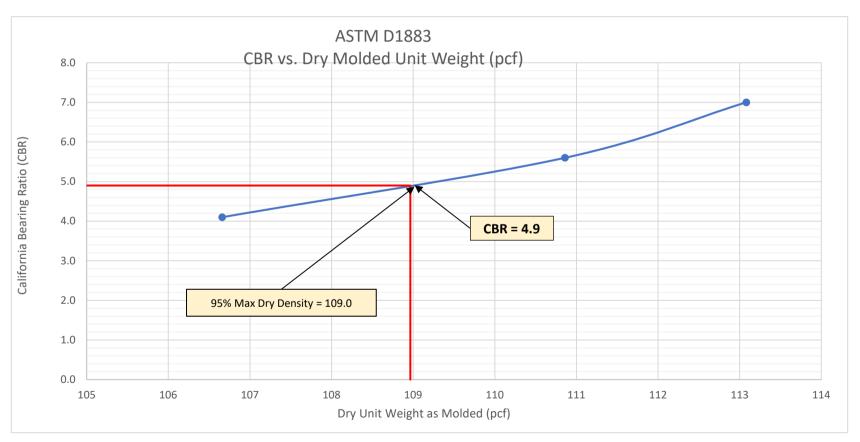
CBR Results



Test No.	Blows/lift	Dry Unit Weight	% Compact.	Water Content %	CBR at 0.1 in	CBR at 0.2 in
1	35	106.66	93%	11.9	4.1	4.0
2	40	110.86	97%	12.6	5.6	6.9
3	55	113.08	99%	11.9	7.0	8.6



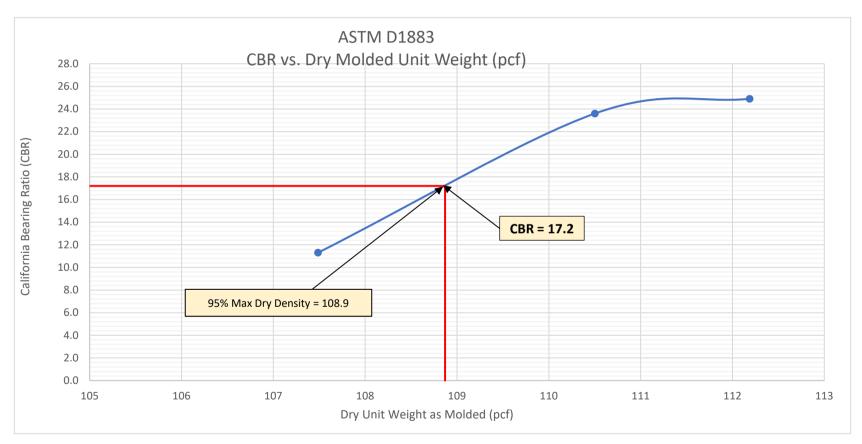
95% Max Dry Density (pcf) = 109.0 Selected CBR Value = 4.9 Clayey Sand (SC)



Test No.	Blows/lift	Dry Unit Weight	% Compact.	Water Content %	CBR at 0.1 in	CBR at 0.2 in
1	35	107.49	94%	10.0	11.3	12.0
2	55	110.50	96%	10.1	23.6	26.2
3	65	112.19	98%	9.4	24.9	28.8



95% Max Dry Density (pcf) = 108.9 Selected CBR Value = 17.2 Clayey Sand (SC)





Boring Logs



BORING B-01

LOCATION: See Boring Location Plan

				RING B-01								LO	CATI	ON: See Boo	ing Loca	ition Plan	
ОЕРТН, FT.	SYMBOL	2LES	TER	SOIL DESCRIPTION	MOISTURE CONTENT	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	ON: See Bot O HAND PEN (2.0 PL 20	4.0	NC CMP (TSF)	F. COMP. SF) RY WT.
DEPT	SYM	SAMPLES	WA-	Elevation:	MOIS	% RETA	% PASSI	SPT TCF VAL	Я %	%R	LIQUIE	PLASTI	PLAST IND	PL 1 20	WC X 40	LL — 4 60	UNCONF (T)
· — —		\bigvee		CLAYEY SAND (SC), brown, loose to dense	13			17						*			
		\bigvee			13			8						*			
- 5 - - 5 -		\bigvee			7	0	44	29			31	17	14	* •	P :		
 		\bigvee			5			31						*			
-10-	-	\bigvee		SILTY SAND (SM), tan, dense	7	2	44	39			22	20	2	* •			
	- (1)																
	-{:	M			5			34						*			
 -15 				Boring terminated at approximately 15 feet.													

DATE: 3/13/25

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BORING B-02

LOCATION: See Boring Location Plan

		טכ	ININO D-02								LO		UN: See						
DEPTH, FT.	SYMBOL	SAMPLES	SOIL DESCRIPTION Elevation:	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND I	PEN (TSF 0 4 L V	VC X	6.0 LL 60	P (TSF)	UNCONF. COMP. (TSF)	UNIT DRY WT. (LB/CU FT)
			SANDY FAT CLAY (CH), brown, very stiff	11		6	15						*						
 			SILTY, CLAYEY SAND (SC-SM), tan,	11	0	55	18			85	25	60	*	•			->>		
- 5 - 			medium dense	6			22						*						
		X V		5	1	40	18			28	21	7	*						
 -10- 				3			19						1						
				6			18						*						
-15- 			Boring terminated at approximately 15 feet.																
	COM DATE		ION DEPTH: 15.0 Feet 2/25	1	1	L							VATER DUNTER		1			1	

intertek

BORING B-03

LOCATION: See Boring Location Plan

		B	DRING B-03	•							LO	CATI	ON: See Borir	ng Locati	ion Plan	
ОЕРТН, FT.	SYMBOL	SAMPLES	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	ON: See Borir O HAND PEN (TS 2.0 PL 20	3F) • UNG 4.0	C CMP (TSF)	SF) NRY WT. SU FT)
DEPT	SYN	SAM	Elevation:	MOIS	% RETA	% PASS	SPT TCF VAL	N F	Ж.	LIQUIE	PLAST	PLAS	PL ♣ 20	WC X 40	LL NOON	UNIT D
		$\sqrt{}$	SILTY SAND (SM), brown, loose to dense													
		XI	dense	7			6						X			
		Ц														
	-															
		\forall														
		XI		12	1	49	20			19	18	1	*+			
		4														
		\forall	- Transitions to a tan color at 4.5 feet													
 5		\bigvee		9			23						*			
		\triangle														
	-	M		7			24						 *			
		\setminus											*			
		M			_		00			0.5	00					
		\mathbb{N}		6	5	33	26			25	22	3	* =			
 10-																
	- -	M		5			37						*			
		\setminus					37									
15 	1		Boring terminated at approximately 15 feet.													
	1		leet.													
	-															
	1															
	1															
	-															
	-															
	-															
<u>–20–</u>		LL IPLE	ION DEPTH: 15.0 Feet		<u> </u>		DFP	TH	L TO (L GR)LIN	ID W	l ∷ ; ; ; ; . ∕ATER			
			12/25				255	DAC		7. VIC			N INTEDED			

DATE: 3/12/25 intertek

DS

BORING B-04

LOCATION: See Boring Location Plan

ОЕРТН, FT.	SYMBOL	SAMPLES	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	Ι.		ON: See B O HAND PEN 2.0 PL 20				 CONF. COMP. (TSF)	UNIT DRY WT. (LB/CU FT)
			Elevation: SANDY LEAN CLAY (CL), brown, stiff to very stiff	4	%	Н %	22				<u>P</u>	"	20 *	 10	60)	<u>5</u>	<u>⊃</u>
		$\sqrt{}$		11	0	60	12			44	16	28	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	-				
 5-		$\left\langle \cdot \right\rangle$	FAT CLAY (CH), tan, very stiff to hard	13			23						*					
		<u> </u>		13	2	92	15			64	22	42	* •			•		
 		/\ 		17			24						*					
 10 		\bigcap										,						
 -15			Boring terminated at approximately 15	17			34						*	 				
			feet.															
-																		
	COM		ON DEPTH: 15.0 Feet										/ATER					

DATE: 3/12/25

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BORING B-05

LOCATION: See Boring Location Plan

		E	30	RING B-05								LO	CATI	ON: See E	oring Loc	ation Plan	
ОЕРТН, FT.	BOL	LES	IER	COUL DESCRIPTION	TURE	INED #4	NG #200	(N) & (T) UES	EC	%RQD	LIQUID LIMIT	CLIMIT	FX	O HAND PE	4.0	eation Plan UNC CMP (TSF) 6.0 LL LL 60	SF) RY WT. U FT)
DEPTI	SYMBOL	SAMPLES		SOIL DESCRIPTION Elevation:	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%R	LIQUID	PLASTIC LIMIT	PLASTICITY INDEX	PL 4 20	WC X 40	LL — ‡ 60	UNCONF (TS UNIT DE
		\bigvee		LEAN CLAY (CL) with SAND, tan, stiff to very stiff	6			11						*			
		\bigvee			9			11						*			
 		\bigwedge			9	1	81	15			43	15	28	**			
		M			13			22						* *			
 -10-		\bigvee			18			20						*			
		M			16			25						*			
 15 		\setminus	_	Boring terminated at approximately 15 feet.				25									
	COM			ON DEPTH: 15.0 Feet 2/25				DEP ⁻ SEE	ΓΗ ⁻ PAG	TO (E (ft.	GRC): NC	NE E	ID W	VATER DUNTERED)		

DATE: 3/12/25 intertek

DS

BORING B-06

LOCATION: See Boring Location Plan

		RO	RING B-06								LO	CATIO	ON: See Bo	ring Loca	ation Plan	
DEPTH, FT.	PI FS	WATER	SOIL DESCRIPTION	MOISTURE CONTENT	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	ON: See Bo O HAND PEN 2.0 PL 20	(TSF) • U 4.0	NC CMP (TSF)	F. COMP. SF) RY WT.
DEPT	SAME	WA-	Elevation:	MOIS	% RETA	% PASSI	SPT TCF VAL	% R	%R	LIQUIE	PLASTI	PLAS IND	PL ♣ 20	WC X 40	LL — 4 60	UNCONF (T)
			SANDY FAT CLAY (CH), brown, very stiff	7			15						*			
		<u> </u>	OANDY LEAN OLAY (OL) Assessed	9	3	57	15			58	18	40	* -			
5 —		<u> </u>	SANDY LEAN CLAY (CL), tan, very stiff to hard	12			21						*			
			SANDSTONE, tan, hard	10	0	55	36			33	23	10	* •			
10			SANDSTONE, tail, flaid	9			50/5"						*			
:: ::				10			50/0"						*			
15			Boring terminated at approximately 15 feet.													
 20 CO) DMP	LETI	ON DEPTH: 15.0 Feet				DEP	 [H ⁻	го	GRO	DUN	ID W	/ATER			

DATE: 3/18/25 intertek

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BORING B-07

LOCATION: See Boring Location Plan

		ט	ININO D-07								LO		ON: See					,	
DEPTH, FT.	SYMBOL	SAMPLES	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND	PEN (TSF	1.0 VC	1C CMF	² (TSF)	NCONF. COMP. (TSF)	UNIT DRY WT. (LB/CU FT)
	111111		Elevation:		%	%					۵			- , - , - ,		 		⊃	
			SILTY SAND (SM), brown, very loose to loose	5			2						*						
				4	0	31	6			17	16	1	* •						
- 5 - 			SANDY FAT CLAY (CH), brown, stiff	13			13						* *						
			OILTY OAND (OM) Assaults as	14	0	55	13			61	18	43	*** 						
 -10- 			SILTY SAND (SM), tan, loose	11			9						*						
		Ţ		10	0	24	7			24	22	2	*						
 -15-		Δ												: : :	: :		: :		
			Boring terminated at approximately 15 feet.																
	СОМ	PLE [*]	ION DEPTH: 15.0 Feet				DEP	ГН -	ТО	GRO	DUN	D W	/ATER						

COMPLETION DEPTH: 15.0 Feet DATE: 3/12/25

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BORING B-08

LOCATION: See Boring Location Plan

		B	5O	RING B-08								LO	CATIO	ON: See B	oring Loca	ation Plan	
DEPTH, FT.	SYMBOL	SAMPLES	TER 	Elevation:	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	ON: See Boring Loc OHAND PEN (TSF) 2.0 4.0 PL WC PL WC 20 40		NC CMP (TSF)	SF)
DEPT	SYM	SAM												PL 20	WC X 40	LL 60	UNCONF (TS)
				SANDY LEAN CLAY (CL), brown, stiff to very stiff	12			9						*			
			-		10	0	53	28			42	15	27	**			
- 5 — - — — - — —				SILTY SAND (SM), tan, medium dense to very dense	8			27						*			
					5	0	19	22			NP	NP	NP	*			
 -10		\bigvee		SANDSTONE, tan, hard	5			50/0"						*			
		\bigvee			3			50/1"						<u> </u> X			
				Boring terminated at approximately 15 feet.													
	COM			ON DEPTH: 15.0 Feet				DEP	 ГН ⁻	ТО	GRO	DUN	D W	VATER			

DATE: 3/19/25

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BORING B-09

ВС	DRING B-09	, -				. •			LO	CATIO	ON: See Borin	g Location	on Plan	
DEPTH, FT. SYMBOL SAMPLES WATER	SOIL DESCRIPTION	TURE	INED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	C LIMIT	PLASTICITY INDEX	O HAND PEN (TS 2.0 PL 20 L	F) • UNC	6.0	UNCONF. COMP. (TSF) UNIT DRY WT.
DEPTH, FT. SYMBOL SAMPLES WATER	Elevation:	MOISTURE	% RETAINED #4	% PASSI	SPT. TCP VALI	% R	%R	LIQUID	PLASTIC LIMIT	PLAST IND	PL 20	WC X 40	LL 6 0	UNCONF (TS)
	CLAYEY SAND (SC), brown, loose to medium dense	8			5						*			
-5-		15	1	38	21			34	19	15	* * *			
		8			22						; ; *			
-10	SILTY SAND (SM), tan, medium dense to dense	6	0	23	29			25	19	6	* ••			
	Desire the region to all at any so time table 45	4			35						*			
	Boring terminated at approximately 15 feet.													
COMPLET DATE: 3/	TION DEPTH: 15.0 Feet				DEP1	TH T	ΓΟ (F (#	GRO	OUN ONE D	ID W	/ATER	1:::	 	

DATE: 3/21/25

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BORING B-10

LOCATION: See Boring Location Plan

CLAYEY SAND (SC), tan, dense to very dense 10 3 49 33 33 56 26 30 30 30 30 30 30 30 3			BC	PRING B-10								LO	CATI	ON: See B	oring Loca	ation Plan	
SANDY LEAR CLAY (CL), brown, still to very stiff 7 12	H, FT.	BOL	ER.	SOIL DESCRIPTION	TURE	INED #4	NG #200	(N) & (T) UES	ŒC	8	LIMIT	CLIMIT	FX	O HAND PEN	4.0	INC CMP (TSF)	SF)
SANDY LEAN CLAY (CL), brown, stiff 7	DEPTI	SYM	WAT	Elevation:	MOIS	% RETA	% PASSI	SPT (TCP	% R	%R	LIQUID	PLASTI	PLAST IND	PL ♣ 20	WC ————————————————————————————————————	LL ⊕ 60	UNCONF (TS
CLAYEY SAND (SC), tan, dense to very dense 10 3 49 33 56 26 30 11 56 Boring terminated at approximately 15				SANDY LEAN CLAY (CL), brown, stiff to very stiff	7			12						*			
CLAYEY SAND (SC), tan, dense to very dense 10 3 49 33 56 26 30 ** * 11 56 Boring terminated at approximately 15	- 5 -		7			2	65				30	20	10	*			
very dense 10 3 49 33 56 26 30 *					10	2	05	22			39	20	19				
13 33 X Boring terminated at approximately 15				very dense	10	3	49	33			56	26	30	* •	•	-	
13 33 X Boring terminated at approximately 15	-10-				11			56						*			
13 33 X Boring terminated at approximately 15																	
Boring terminated at approximately 15			\langle		13			33						*			
	-15 	.2.4		Boring terminated at approximately 15 feet.													

DATE: 3/12/25

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BORING B-11

LOCATION: See Boring Location Plan

		טכ	NINO D-11								LO	CATI	ON: Se	e Borir	ig Loc	ation	Plan	_	
DEPTH, FT.	SYMBOL	SAMPLES	SOIL DESCRIPTION Elevation:	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND	PEN (TS	4.0 4.0 WC X 40	6.0 — LL — 60	//P (TSF) 	JNCONF. COMP. (TSF)	UNIT DRY WT. (LB/CU FT)
1	///	+	SANDY LEAN CLAY (CL), brown, very		%	%					_			 	+::	-+	::::	1	
			stiff	3			18						*						
 				12			25						*						
- 5 - 			FAT CLAY (CH), tan, very stiff to hard	11	0	64	29			39	19	20	* 1		•				
			TAT CLAT (CIT), tail, very still to flatu	10			32						*						
-10- -10- 				15	1	95	22			51	21	30	*			••••••••••••••••••••••••••••••••••••••			
				14			27						*						
-15- 			Boring terminated at approximately 15 feet.																
-20-]]	
		 PLET :: 3/1	ION DEPTH: 15.0 Feet 9/25		I	<u> </u>	DEP SEE	ΓΗ ⁻ PAG	ΓΟ (Ε (ft.	GRO	DUN DNE I	ID W	/ATEF	RED	<u> </u>	T		1	1

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BORING B-12

LOCATION: See Boring Location Plan

END OF DRILLING (ft.): NONE ENCOUNTERED
DELAYED WATER LEVEL (FT): NONE ENCOUNTERED

		В	DRING B-12								LO	CATIO	ON: See	Boring	g Loca	ation	Pla	n		
DEPTH, FT.	SYMBOL	SAMPLES WATER	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND F	PEN (TSF	⁼) ● U 4.0	NC CI	MP (T	SF)	F. COMP. 'SF)	UNIT DRY WT. (LB/CU FT)
DEP	SYN	SAM	Elevation:	MOIS	% RET/	% PASS	SPT TC VAI	%	1%	LIQUI	PLAST	PLAS	PL 4 20	- V	VC X 40	LL 	- !)		UNCON	UNIT [
 			SANDY LEAN CLAY (CL), brown, very stiff to hard	6			25						*							
 5-		M M		9	0	64	22			36	18	18	* •		I					
 				13			31						*							
 			CLAYEY SAND (SC), tan, medium dense to dense	14	0	30	24			42	20	22	**		-					
 				15			35						*							
		$\sqrt{}$		12			20						*							
 15 		/\	Boring terminated at approximately 15 feet.																	
		Ξ: 3/2	L TION DEPTH: 15.0 Feet 21/25	1	<u> </u>		SEE END	PAG OF	E (ft. DRIL): NC LINC	NE E 3 (ft.)	ENCC : NO	/ATER	ITNUC	ERED			; 		

BORING B-13

LOCATION: See Boring Location Plan

DEPTH, FT.	SAIMPLES	WATER	SOIL DESCRIPTION Elevation:	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND PEN 2.0 PL 20	4.0 W(X 40) (5.0 L 4	UNCONF. COMP. (TSF)	UNIT DRY WT.
			SANDY LEAN CLAY (CL), brown, firm to very stiff	2 8	1	61	5 19			34	16	18	* * •					
5 —				11			12						*					
110-			CLAYEY SAND (SC), tan, medium dense to dense	15	0	49	25			51	21	30	*					
			Boring terminated at approximately 15 feet.	18			36						**					

DATE: 3/21/25

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BORING B-14

LOCATION: See Boring Location Plan

		RO	RING B-14								LO	CATI	ON: See Bor	ing Loca	tion Plan	
ОЕРТН, FT.	SYMBOL SAMPI ES	WATER	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND PEN (1	4.0	NC CMP (TSF)	UNCONF. COMP. (TSF) UNIT DRY WT. (LB/CU FT)
DEPT	SYN	WA	Elevation:	MOIS	% RETA	% PASS	SPT TCF VAL	% F	₩	LIQUIE	PLASTI	PLAS	PL 1 20	WC X 40	LL 60	UNIT D
			CLAYEY SAND (SC), brown, medium dense to dense	5			13						*			
				8			23						*			
 		<u>\</u>	- Transitions to a tan color at 6.5 feet	9	0	31	28			33	15	18	**			
		<u>\</u>		13	1	40	32			37	17	20	X			
 10		<u> </u>		15			33						*			
 		<u> </u>		17			33						*			
 			Boring terminated at approximately 15 feet.													
	COMP		ON DEPTH: 15.0 Feet				DEP ⁻	[ГН ⁻	ГО	GRO	DUN	ID W	/ATER			

DATE: 3/21/25

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BORING B-15

LOCATION: See Boring Location Plan

		D	UI.	RING D-15								LO		ON: See B					
DEPTH, FT.	SYMBOL	SAMPLES	WAIEK	SOIL DESCRIPTION	MOISTURE CONTENT	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND PEN 2.0 PL 20 20	4.0 WC	JNC CMF 6.0 LL	² (TSF)	ONF. COMP. (TSF)	UNIT DRY WT. (LB/CU FT)
l ä	(0)	S)		Elevation:	∣కౖర	% RE	, PA	ω. /			[5	PLA	귑	20	40	60		UNC	3
 			1	CLAYEY SAND (SC), brown, loose to medium dense	1	6	%_	5					:	*					
 					11	10	41	25			49	23	26	\ \ * +					
 -5-		V		- Transitions to a tan color at 4.5 feet	11			18						*					
		/\ 			8	0	40	15			29	18	11						
		\ \/				U	40	15			29	10	"	* •					
 -10-		X			6			13						*					
		V																	
 		\setminus			11			21						X					
15- 			1	Boring terminated at approximately 15 feet.															
 	-																		
 20-																			
	COM			ON DEPTH: 15.0 Feet				DEP	ĮΗ.	TO (GRC	UUN	ID W	ATER					

DATE: 3/12/25

intertek

BORING B-16

LOCATION: See Boring Location Plan

		RO	RING B-16	•							LO	CATIO	ON: See Boring	g Locati	on Plan	
ОЕРТН, FT.	SYMBOL	WATER	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	PL V	=) ● UNC 4.0	6.0	UNCONF. COMP. (TSF) UNIT DRY WT. (LB/CU FT)
DEPT	SYN	WA		MOS	RET/	PASS	SPT TC VAI	%	8	IIQUI	LAST	PLAS	PL \	NC X 40	LL -	NCON (T UNIT [
	723		Elevation:		%	%					Δ.			 	 	> -
			CLAYEY SAND (SC), brown, medium dense to dense	9			18						*			
				8	1	43	25			38	21	24	* •			
 - 5 - 				13			30						*			
 			- Transitions to a tan color at 6.5 feet	18	0	49	24			25	17	8	4- -			
 				18			35						*			
 15-				18			39						*			
			Boring terminated at approximately 15 feet.													
	COMF		ON DEPTH: 15.0 Feet				DEP ⁻	TH T	ΓΟ (GRC) UN	ID W	/ATER	<u> </u>	1::::	

DATE: 3/21/25 intertek

DS

BORING B-17

LOCATION: See Boring Location Plan

END OF DRILLING (ft.): NONE ENCOUNTERED
DELAYED WATER LEVEL (FT): NONE ENCOUNTERED

		Ъ	DRING B-17								LO	CATIO	ON: See Bor	ing Loca	ation Plan	
ОЕРТН, FT.	SYMBOL	SAMPLES WATER	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND PEN (** 2.0	4.0	NC CMP (TSF)	UNCONF. COMP. (TSF) UNIT DRY WT. (LB/CU FT)
DEP	SYN	MAS WA	Elevation:	MOIS	% RET/	% PASS	SPT TC VAI	%	1 %	LIQUI	PLAST	PLAS INI	PL 	WC X 40	LL 	UNCON (T UNIT I
 			SANDY LEAN CLAY (CL), brown, very stiff to hard	9			18						*			
 		$\sqrt{}$		10	0	65	31			45	20	25	* +			
 _ 5 _		\\	- Transitions to a tan color at 4.5 feet	9			33						*			
 		/\ 			1	50	42			22	47	16				
 		<u> </u>		9	1	50	42			33	17	16	* •			
 -10-		\bigvee		6			28						*			
		$\overline{\mathbb{N}}$		9		66	42			05	47	c				
 -15- 		\bigwedge	Boring terminated at approximately 15 feet.	9	0	66	42			25	17	8				
		Ξ: 3/2	TION DEPTH: 15.0 Feet 20/25				SEE END	PAG OF	E (ft. DRIL): NC LINC	NE E	ENCO : NOI	VATER DUNTERED NE ENCOUN	ITERED		

BORING B-18

LOCATION: See Boring Location Plan

		יט	JINIO D-10				T				LO		UN: See						
DEPTH, FT.	SYMBOL	SAMPLES	SOIL DESCRIPTION Elevation:	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND 2.	PEN (TSF 0 4 L V) • ut 0 0 VC ×	6.0 LL 60	P (TSF)	JNCONF. COMP. (TSF)	UNIT DRY WT. (LB/CU FT)
			CLAYEY SAND (SC), brown, medium dense to dense	8	6	<u>%</u>	18						*						
		M		7	4	43	30			35	16	19	* •	•					
 - 5 -		/\ M	SANDY LEAN CLAY (CL), tan, hard	7			31						*						
		<u> </u>											11: 1 24: 1 11: 1 11: 1 24: 1						
				9	2	54	34			38	17	21	* •						
 -10-				12			35						*						
		M																	
 15- 			Boring terminated at approximately 15 feet.	14			36						×						
	-																		
	_																		
			TION DEPTH: 15.0 Feet 20/25										/ATER						

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BORING B-19

LOCATION: See Boring Location Plan

		RO	RING B-19								LO	CATI	ON: See Borin	g Location	on Plan	
DEPTH, FT.	SYMBOL	WATER	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND PEN (TS 2.0 PL 20 L	F) • UNC	CMP (TSF)	UNCONF. COMP. (TSF) UNIT DRY WT. (LB/CU FT)
DEPT	SYM	WA-	Elevation:	MOIS	% RETA	% PASSI	SPT TCF VAL	H %	%R	LIQUIE	PLASTI	PLAS IND	PL 20	WC I	LL ♣ 60	UNCONF (T) UNIT D
			SANDY LEAN CLAY (CL), brown, stiff to hard	3			9						*			
 				13	2	62	18			47	22	25	* •			
5 			- Transitions to a tan color at 4.5 feet	10			34						*			
		<u> </u>		10	1	60	34			38	17	21	* •			
				9			26						*			
 -15-			Poring terminated at approximately 15	14			31						* *			
			Boring terminated at approximately 15 feet.													
	COMF		ON DEPTH: 15.0 Feet 9/25				DEP ⁻ SEE	TH T	ΓΟ (E (ft.	GRC): NO	DUN ONE E	ID W	/ATER			

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BORING B-20

		BO	RING B-20	, -				•	•		LO	CATIO	ON: See Boring	g Location	ı Plan		
DEPTH, FT.	SYMBOL SAMPI ES	WATER	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	ON: See Boring HAND PEN (TSI 2.0 PL 20	*) • UNC C \$.0 6.4 \$ UNC C	;MP (TSF)	(TSF)	DRY WT.
DEF	SAS	>	Elevation:	8 8	6 RE	, PAS	S I >	%	8	LIQL	-LAS	PLA	20	X 4 40 60			UNIT (LB
			SANDY LEAN CLAY (CL), brown, stiff to hard	8	6	<u></u> %_	11						*				
				8	0	58	29			41	21	20	* *	•			
 - 5 -			- Transitions to a tan color at 4.5 feet	9	0	68	27			20	17	15					
 				y	0	08	27			32	17	15					
 		\ \ \		6			40						*				
		\		6			46						*				
			SANDSTONE, tan, hard														
				6			50/1"						*::::::::::::::::::::::::::::::::::::::				
15- 			Boring terminated at approximately 15 feet.														
	-																
	COMP		ON DEPTH: 15.0 Feet			<u> </u>							/ATER				

DATE: 3/20/25

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BORING B-21

LOCATION: See Boring Location Plan

END OF DRILLING (ft.): NONE ENCOUNTERED
DELAYED WATER LEVEL (FT): NONE ENCOUNTERED

		ВС	IRING B-21								LO	CATIO	ON: See E	Boring L	ocation	n Plan		
ОЕРТН, FT.	SYMBOL	SAMPLES WATER	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	ON: See E OHAND PE 2.0 PL 20	N (TSF) (UNC (CMP (TSF)	F. COMP. 'SF)	DRY WT. CU FT)
DEPT	SYN	SAM	Elevation:	MOS	% RET/	% PASS	SPT TC VAI	%	1 %	LIQUI	PLAST	PLAS	PL 20	WC X 40	L 6	L • 0	UNCON	UNIT [
 			SANDY LEAN CLAY (CL), brown, very stiff	3			15						*					
 				10	0	54	17			40	20	20	* +					
-5- 			CLAYEY SAND (SC), tan, medium dense to dense	8			34						*					
 		<u> </u>		7	0	41	21			40	18	22	* -					
 -10- 		<u> </u>		6			39						*					
 -15-			Boring terminated at approximately 15	5			42						*					
 			feet.															
		E: 3/2	ION DEPTH: 15.0 Feet 0/25				SEE END	PAG OF	E (ft. DRIL): NC LINC	NE E	ENCC : NO	/ATER DUNTEREI NE ENCO	UNTER	ED			

BORING B-22

		BC	PRING B-22	,-				. •			LO	CATI	ON: See Borir	g Locati	on Plan	
DЕРТН, FT.	SYMBOL	SAMPLES	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND PEN (TS 2.0 PL 20 L	F) • UNG	6.0	UNCONF. COMP. (TSF) UNIT DRY WT.
DEPT	SYN	SAM	Elevation:	MOIS	% RETA	% PASS	SPT TCF VAL	H %	%R	LIQUIE	PLASTI	PLAS IN	PL ♣ 20	WC X 40	LL - 4 60	UNCONI (T)
			SANDY LEAN CLAY (CL), brown, very stiff to hard	7			15						*			
 5 _ 		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\		8	2	50	25 32			42	22	20	* *			
			CLAYEY SAND (SC), tan, medium dense	7	2	40	21			30	16	14	* *			
					2	40	23			30						
 -15-		X	Boring terminated at approximately 15 feet.	9			20						*			
		PLET	ION DEPTH: 15.0 Feet				DEP		ΓΟ (GRC	DUN	ID W	/ATER			

DATE: 3/20/25

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Northlake Subdivision - Streets Burshard Road, San Antonio, Texas

Project No. 0312-3490 **BORING B-23** LOCATION: See Boring Location Plan % PASSING #200 UNCONF. COMP. (TSF) UNIT DRY WT. (LB/CU FT) % RETAINED #4 ○ HAND PEN (TSF) ● UNC CMP (TSF PLASTIC LIMIT PLASTICITY INDEX LIQUID LIMIT DEPTH, FT. SYMBOL SAMPLES WATER SPT (N) & TCP (T) VALUES 2.0 4.0 6.0 %RQD % REC SOIL DESCRIPTION PL WC LL 20 **X** 40 60 Elevation: SANDY FAT CLAY (CH), brown, firm to 3 7 10 1 50 10 56 23 33 CLAYEY SAND (SC), tan, medium dense to dense 10 30 39 0 22 30 19 11 SANDSTONE, tan, hard 9 50/3" 6 50/5" Boring terminated at approximately 15 feet.

COMPLETION DEPTH: 15.0 Feet

DATE: 3/20/25

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BORING B-24

LOCATION: See Boring Location Plan

		Ŀ	30	RING B-24								LO	CATI	ON: See Bo	ring Loca	ation Plan	
DEPTH, FT.	SYMBOL	SAMPLES	TER	SOIL DESCRIPTION	MOISTURE CONTENT	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	ON: See Bo	(TSF) • U	inc cmp (TSF)	F. COMP. SF) RY WT.
DEPT	SYN	SAM		Elevation:	MOIS	% RET	% PASS	SPT TCI VAL	8	Ж.	LIQUII	PLAST	PLAS	PL 20	WC X 40	LL 60	UNCON (T UNIT D
		\bigvee		SANDY LEAN CLAY (CL), brown, stiff to very stiff	9			14						*			
		\backslash			10	1	65	20			48	20	28	* •			
- 5 - 				FAT CLAY (CH) with SAND, tan, very stiff to hard	9			28						*			
		Х М			13	2	71	36			53	26	27	* -			
 10 		Å			13			36						*			
 		M		Boring terminated at approximately 15	14			48									
	-			feet.													
 20	COM	 PI	ETI	ON DEPTH: 15.0 Feet				DEP	TH ⁻	ΓΟ	GRC) LIN	ID W	/ATER			
	DATI							SEE	PAG	E (ft.): NO	NE E	ENCC	UNTERED			

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BORING B-25

LOCATION: See Boring Location Plan

SYMBOL	SAMPLES	WATER	SOIL DESCRIPTION Elevation:	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND I	PEN (T: 0 L •	4.0 WC X 40	UNC (.0 .0 .L 	rsf)	UNCONF. COMP. TSF)	UNIT DRY WT.
			SANDY FAT CLAY (CH), brown, firm to very stiff	2	0	52	6			58	26	32	* * *							
; -			FAT CLAY (CH) with SAND, tan, very stiff to hard	8			18						*							
	\lambda{\lambda}			20	5	82	22			53	23	30	*							
5	V		Boring terminated at approximately 15	17			30						*							
			feet.																	

DATE: 3/13/25

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BORING B-26

LOCATION: See Boring Location Plan

		BO	RING B-26								LO	CATI	ON: See Bori	ng Loca	tion Plan	
DEPTH, FT. SYMBOL		H.	SOIL DESCRIPTION	TURE	INED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	ON: See Bori O HAND PEN (T 2.0 PL 20	SF) • UI	IC CMP (TSF)	F. COMP. SF) RY WT.
DEPT	AMAN.	WATER	Elevation:	MOISTURE CONTENT	% RETAINED #4	% PASSI	SPT TCP	% R	%R	LIQUIE	PLAST	PLAST IND	PL ⊕ 20	WC X 40	LL 60	UNCONF (TS
		<u> </u>	SANDY LEAN CLAY (CL), brown, stiff to very stiff	6			12						*			
			LEAN CLAY (CH) with SAND, tan, very	10	1	59	24			48	17	31	* •			
5 -		7	stiff to hard	12			28						*			
		7		15	2	82	23			38	24	14	* •			
0-				17			28						*			
		7														
// 5- //				19			50						*			
			Boring terminated at approximately 15 feet.													
COI	MF	LET	ON DEPTH: 15.0 Feet				DEP	ГН ¬	TO (GRC	אווס	ID /v	/ATER			

DATE: 3/19/25

intertek

BORING B-27

LOCATION: See Boring Location Plan

END OF DRILLING (ft.): NONE ENCOUNTERED
DELAYED WATER LEVEL (FT): NONE ENCOUNTERED

		ВС	PRING B-21								LO	CATIO	ON: Se	e Bori	ing Lo	cation	n Pla	ın_		
DEPTH, FT.	SYMBOL	SAMPLES	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	ON: Se	PEN (T	4.0	UNC 0	OMP (TSF)	VF. COMP. TSF)	DRY WT. /CU FT)
DEP	SY	SAN W	Elevation:	MOS	% RET	% PAS	SP	%	8	LIQU	PLAS	PLAS	2	₽ 20 1	40		0) NNCOL	(LB/
			SANDY FAT CLAY (CH), brown, stiff to very stiff	7			13						*							
		<u> </u>		8	0	53	26			65	26	39	*				•			
		Λ											\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \							
5 		\bigvee	FAT CLAY (CH), tan, very stiff	17			26						**************************************	(: : : : : : : : : : : : : : : : : : :						
		\bigvee		17			24													
 -10-		<u> </u>		21	0	97	19			84	34	50		* ·				>>		
														H						
				13			25						*							
—15— — — —	-		Boring terminated at approximately 15 feet.																	
	-																			
 20-			CONDECT LATA STATE																	
	DATE Intertel	: 3/1	ION DEPTH: 15.0 Feet 9/25				SEE	PAG	E (ft.	.): NC	NE E	ENCC	ATEF OUNTER NE ENC	RED	ITERE	D NTE	חבים			

BORING B-28

LOCATION: See Boring Location Plan

		ЬΟ	RING D-20								LO	CATI	ON: See B	oring Loca	ation Plan	
DEPTH, FT.	SYMBOL	WATER	SOIL DESCRIPTION	MOISTURE CONTENT	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND PEN 2.0	4.0 WC	6.0 LL 	JNCONF. COMP. (TSF) UNIT DRY WT. (LB/CU FT)
			Elevation:	_	%	- % - 1 %					П		20	40 L	60 I	ר
			CLAYEY SAND (SC), brown, loose to dense	1			7						*			
				9	0	42	18			55	26	29	* •	•	•	
- 5		7	- Transitions to a tan color at 4.5 feet	9			25						*			
		7	SANDSTONE, tan, hard	6	0	24	37			67	24	43	*			
				6			50/3"						*			
			CLAYEY SAND (SC), tan, very dense	6	0	33	77			48	20	28	*	•		
15			Boring terminated at approximately 15 feet.													
		PLET	ON DEPTH: 15.0 Feet				DEPT		ΓΟ (GRO	DUN	ID W	/ATER			

DATE: 3/13/25

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BORING B-29

LOCATION: See Boring Location Plan

		ВО	RING B-29	,-							LO	CATI	ON: See Boring L	ocation Plan	
ОЕРТН, FT.	SYMBOL	WATER	SOIL DESCRIPTION	MOISTURE CONTENT	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	ON: See Boring L O HAND PEN (TSF) (2.0 4.0 PL WC PL X 20 40	UNC CMP (TSF)	NF. COMP. (TSF) DRY WT. (CU FT)
DEF	SAI	>	Elevation:	<u>8</u> 8	% RET	PAS	SP X	%	%	LIQU	PLAS	PLA	♣ × 20 40	• 60	JNCO UNIT
			SANDY FAT CLAY (CH), brown, stiff to very stiff	8	6	<u></u> %	11				_		*		
				14	1	60	15			52	20	32	*•		
- 5 - 			CLAYEY SAND (SC), tan, medium dense to dense	9			27						*		
				8			32						*		
				5	0	32	46			28	16	12	* • •		
10 															
				4			47						*		
15 			Boring terminated at approximately 15 feet.												
	COMP DATE:		ON DEPTH: 15.0 Feet 3/25					PAG): NO	NE E	ENCC	/ATER	: : : : : : : 	

END OF DRILLING (ft.): NONE ENCOUNTERED
DELAYED WATER LEVEL (FT): NONE ENCOUNTERED

BORING B-30

LOCATION: See Boring Location Plan

END OF DRILLING (ft.): NONE ENCOUNTERED
DELAYED WATER LEVEL (FT): NONE ENCOUNTERED

		ВС	PRING B-30				_				LO	CATI	ON: See B	oring Lo	cation Plan	
ОЕРТН, FT.	SYMBOL	SAMPLES	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND PEN	4.0	UNC CMP (TSF) 6.0 LL	UNCONF. COMP. (TSF) UNIT DRY WT. (LB/CU FT)
DEP.	SYI	SAN	Elevation:	MOIS	% RET,	% PASS	SPT	%	%	LIQUI	PLAST	PLAS	PL 2 0	WC 	60	UNCON (1
			SANDY FAT CLAY (CH), brown, stiff to very stiff	3			8						*			
		\bigvee		9	1	52	25			53	19	34	* +			
		/\	CLAVEY CAND (CC) top modium													
- 5 - 			CLAYEY SAND (SC), tan, medium dense to dense	8	0	46	38			39	14	25	*			
				6			29						*			
				7			37						*			
 10		<u> </u>														
 15		XI.	Boring terminated at approximately 15	8			40						*			
	-		feet.													
	COM DATE	E: 3/	 ON DEPTH: 15.0 Feet 7/25			<u> </u>	SEE END	PAG OF	E (ft. DRIL): NC	NE E	ENCC : NO	VATER DUNTERED NE ENCOL	JNTERE	l	

BORING B-31

LOCATION: See Boring Location Plan

		DC	ININO D-31								LO		ON: Se						
ОЕРТН, FT.	SYMBOL	SAMPLES	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND 2	PEN (TS	4.0 WC	JNC CI	vip (TSF	NCONF. COMP. (TSF)	UNIT DRY WT. (LB/CU FT)
			Elevation:		%	%					Д			<u>2</u> 0 	40 	.	,	5	
			SILTY SAND (SM), brown, loose to medium dense	1			9					;	X						
				1	2	21	22			NP	NP	NP:	*						
 -5-			CLAYEY SAND (SC), tan, medium dense																
		\backslash	uense	8			14						*						
				4	0	19	29			39	19	20	* 1		•				
 -10-				5			20						*						
		$\sqrt{}$																	
 -15-				13			18						*						
			Boring terminated at approximately 15 feet.																
 20-																			
		PLET :: 3/1	ION DEPTH: 15.0 Feet 7/25	•		•	DEP ⁻ SEE	ΓΗ ⁻ PAG	ΓΟ (Ε (ft.	GRO	OUN ONE I	ID W	VATER						

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BORING B-32

LOCATION: See Boring Location Plan

В	JRING B-32								LO	CATI	ON: See Bo	oring Loca	tion Plan	
DEPTH, FT. SYMBOL SAMPLES	SOIL DESCRIPTION	TURE	INED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	ON: See Bo	(TSF) • U	NC CMP (TSF)	SF)
SYMBOL SAMPLES	Elevation:	MOISTURE	% RETAINED #4	% PASSI	SPT (TCP	% R	%R	LIQUID	PLASTI	PLAST IND	PL 20	WC X 40	LL — 4 60	UNCONF (TS)
	CLAYEY SAND (SC), brown, loose to dense	2			6						X			
	- Transitions to a tan color at 4.5 feet	4	0	13	14			29	16	13	* •			
5 -		9			23						*			
	FAT CLAY (CH), tan, hard	21	0	92	32			52	21	31	\\ \\ \\			
-10														
	SANDSTONE, tan, hard													
-15		8			50/3"						×			
	Boring terminated at approximately 15 feet.													
-20	TION DEPTH: 15.0 Feet				DEP	 	го (GRO	DUN	D W	VATER			

DATE: 3/17/25

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BORING B-33

LOCATION: See Boring Location Plan

ОЕРТН, FT.	SYMBOL	SAMPLES		SOIL DESCRIPTION Elevation:	MOISTURE CONTENT	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND	PEN 2.0 	(TSF) • u 0 /C ×	6.4 LL 60	MP (TS	UNCONF. COMP.	(TSF) UNIT DRY WT. (LB/CU FT)
				SILTY SAND (SM), brown, loose to medium dense	3	0	24	7			18	16	2	* *							
 - 5 - 				CLAYEY SAND (SC), tan, medium dense	6			23						*							
 					9	0	47	27			49	19	30	* '							
10 		/\																			
 				Boring terminated at approximately 15	18			17							X						
				feet.																	
	COM	IPLE	ETIC	DN DEPTH: 15.0 Feet				DEP	 ГН ⁻	ΓΟ (GRC	DUN	D W	/ATEI	R						

DATE: 3/17/25

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BORING B-34

LOCATION: See Boring Location Plan

				ININO D-04								LO		ON: Se						
DEPTH, FT.	SYMBOL	SAMPLES		SOIL DESCRIPTION Elevation:	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND 2	PEN (TS	4.0 WC X 40	6.0 LL 60	IP (TSF)	UNCONF. COMP. (TSF)	UNIT DRY WT. (LB/CU FT)
				SANDY FAT CLAY (CH), brown, stiff to very stiff	10		8.	9						*						
			_		8	0	53	20			64	20	44	* •			-	•		
- 5 - 				CLAYEY SAND (SC), tan, medium dense to dense	8			25						*						
		X V	-	SANDSTONE, tan, hard	10	0	40	35			33	15	18	* *						
 -10- 		<u> </u>			9			50/4"						*						
		\bigvee			5			50/6"						*						
15				Boring terminated at approximately 15 feet.																
	COM			ON DEPTH: 15.0 Feet 7/25	•									/ATER					•	

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BORING B-35

		ВО	RING B-35	, -							LO	CATIO	ON: See Boring	Location	Plan		
DEPTH, FT.	SYMBOL	WATER	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	PL W) • UNC CM	IP (TSF)	NF. COMP. TSF)	UNIT DRY WT. (LB/CU FT)
DEP.	SYN	WA		MOIS	, RET	PASS	SPT TC VAI	%	1%	LIQUI	LAST	PLAS IN	PL W	/C LL X • • • • • • • • • • • • • • • • • • •	0	NCON L	UNIT [(LB/(
	(///	+	Elevation: CLAYEY SAND (SC) brown, medium		%	%								 		_	
			CLAYEY SAND (SC), brown, medium dense to dense	7			10						X				
				10	0	46	20			77	26	51	* +				
- 5 - 			- Transitions to a tan color at 4.5 feet	8			20						*				
				9			25						*:				
 -10- 		V		8	0	47	27			31	17	14	* •				
				8			31						*				
15- 			Boring terminated at approximately 15 feet.														
	COMI		ON DEPTH: 15.0 Feet				DEP	TH T	ΓΟ (GRC	OUN INF F	ID W	/ATER				

DATE: 3/17/25

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BORING B-36

LOCATION: See Boring Location Plan

		ט	ΟI	1110 D-30								LO		ON: Se							
ОЕРТН, FT.	SYMBOL	SAMPLES	Y	SOIL DESCRIPTION	MOISTURE CONTENT	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND 2	PEN (T	4.0 WC	UNC (CMP (T .0 	rsf)	ONF. COMP. (TSF)	UNIT DRY WT. (LB/CU FT)
ă	0,	S		Elevation:	žΟ	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	PA.	0 -			=	7	립	2	20	40	6	0		NC	N I
				SILTY SAND (SM), brown, loose to medium dense	1	6	%	9					;	* ::::::::::::::::::::::::::::::::::::						ן ר	
		M			2	0	14	12			NP	NP	NP	*							
		\ \/		CLAYEY SAND (SC), tan, medium										\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\							
- 5 - 		\bigvee		dense to dense	7			33						*							
					9	0	40	27			54	20	34	* •			÷ • • • • • • • • • • • • • • • • • • •				
					8			24						*							
 -10-		\triangle																			
 		\bigvee			8			32						*							
	,			Boring terminated at approximately 15 feet.																	
	- - -																				
	1																				
 20-				ON DEDTIL 45 0 Fort																	
	COM Dati			ON DEPTH: 15.0 Feet //25										/ATEF							

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BORING B-37

LOCATION: See Boring Location Plan

В	JINIO D-31								LO		JN: See					,	
DEPTH, FT. SYMBOL SAMPLES WATER	SOIL DESCRIPTION Elevation:	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND 2	PEN (TS	4.0 VC X 40	6.0 LL 60	MP (TSF)	UNCONF. COMP. (TSF)	UNIT DRY WT. (LB/CU FT)
	CLAYEY SAND (SC), brown, loose to dense	6	8,	8	6						*						
	EAT CLAY (CH) with SAND top your	8	1	44	30			46	26	20	*						
- 5	FAT CLAY (CH) with SAND, tan, very stiff to hard	15			48						*						
		18	0	75	37			56	30	26	** 			-			
-10- 					-												
		10															
 -15	Boring terminated at approximately 15 feet.	12			29						*						
COMPLE DATE: 3/	TION DEPTH: 15.0 Feet 14/25										/ATER						

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BORING B-38

BORING	B-38	,-							LO	CATI	ON: See Borin	g Locatior	n Plan	
DEPTH, FT. SYMBOL SAMPLES WATER	SOIL DESCRIPTION	MOISTURE CONTENT	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	IC LIMIT	PLASTICITY INDEX	ON: See Borin O HAND PEN (TS 2.0 PL 20	F) • UNC C	O O O O	RY WT.
Elevati	on:	MOIS	% RETA	% PASS	SPT TCF VAL	% F	₩ 8	LIQUIE	PLASTI	PLAS IN	PL 20	NC LI ★ ■ 40 60	ONCON	UNIT D (LB/C
CLAYEY dense	SAND (SC), brown, loose to	5			6						*			
- Transiti	ons to a tan color at 4.5 feet	11	0	49	22			54	19	35	* •			
- 5	ons to a tail 60101 at 4.0 1661	9			26						*			
		7	0	46	25 35			34	15	19	*			
-10														
	rminated at approximately 15	5			45						*			
feet.														
	H: 15.0 Feet				DEP	TH 7	ΓΟ	GRO)[[]		/ATER			

DATE: 3/14/25

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BORING B-39

LOCATION: See Boring Location Plan

		ט	OIN	INO D-39								LO	CATI	JN: Se	e Bor	ing L	ocatio	n Pia	an		
ОЕРТН, FT.	SYMBOL	SAMPLES	WAI EX	SOIL DESCRIPTION	MOISTURE CONTENT	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND	PEN (1	4.0 WC	UNC 6	CMP (TSF)	NCONF. COMP. (TSF)	UNIT DRY WT. (LB/CU FT)
	12111		E	Elevation:		%	%					Д			<u>20</u> 	40	, , . ,	JU 		5	_
			SI br	ILTY, CLAYEY SAND (SC-SM), own, loose to medium dense	2			6						X							
		\bigvee			4	2	24	11			20	14	6	* +	•						
		<u> </u>												\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \							
-5-			C de	LAYEY SAND (SC), brown, medium ense to very dense	9	0	45	56			57	24	33	*	•		4	 			
		\Box																			
		\bigvee			7			36						*							
		$\sqrt{}$			4			07													
 -10-		4			4			27						* : : : : : : : : : : : : : : : : : : :							
 15-		\bigvee			5			44						*							
	_		fe	oring terminated at approximately 15 et.																	
	_																				
	-																				
-20-																:			: : : : : : : : : : : : : : : : : : :		
			TION /13/2	I DEPTH: 15.0 Feet 5										ATEF							

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BORING B-40

LOCATION: See Boring Location Plan

		ВО	RING B-40								LO	CATI	ON: See Bori	ng Loc	ation Plan		
DEPTH, FT.	SYMBOL SAMPI ES	WATER	SOIL DESCRIPTION	MOISTURE CONTENT	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	ON: See Bori	SF) ● U 4.0	INC CMP (TSF)	F. COMP. 'SF)	ORY WT. SU FT)
DEPT	SYN	WA	Elevation:	MOIS	% RET#	% PASS	SPT TCI VAL	%	1 %	LIQUII	PLAST	PLAS	PL 20	WC X 40	LL 	UNCON (T	UNIT [
			SANDY FAT CLAY (CH), brown, firm to very stiff	3			4						*				
		<u>\</u>											\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \				
				16	1	58	15			50	17	33	1 N				
				10		30	15			30	''	33	<i>[</i>]				
 - 5 -			CLAYEY SAND (SC), brown, medium dense to very dense	8			26						*				
				9			63						*				
		7															
 10_				8	0	27	31			60	22	38	* •		•		
				7			31						*				
—15— — — —		N .	Boring terminated at approximately 15 feet.														
	-																
 20																	
	COMP DATE:		ON DEPTH: 15.0 Feet 3/25										VATER DUNTERED				

DATE: 3/13/25 intertek

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BORING B-41

LOCATION: See Boring Location Plan

		BO	RING B-41	•							LO	CATI	ON: See Bori	ng Locat	tion Plan	
DEPTH, FT.	SYMBOL SAMPI ES	WATER	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND PEN (T	SF) • UN 4.0	tion Plan IC CMP (TSF) 6.0 LL 60 OON	SF) RY WT. SU FT)
DEPT	SYN	WA	Elevation:	MOIS	% RETA	% PASS	SPT TCF VAL	% F	₩	LIQUIE	PLASTI	PLAS	PL 1 20	WC X 40	LL ONCONI	UNIT D (LB/C
			CLAYEY SAND (SC), brown, loose to very dense													
			very delise	1			6						*			
		1											\\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			
		1											:\t\: : :			
				10	1	43	23			36	16	20	*	+		
		\														
			- Transitions to a tan color at 4.5 feet													
- 5 - 				12			29						*			
													[. i. i]. i . [. i. i. i.			
		1														
				10	0	47	51			46	18	28	*	<u>.</u>		
				7			51						*			
		\setminus		'			31									
—10— — — —																
		1														
				13			40						*			
		\setminus														
15 			Boring terminated at approximately 15 feet.													
	4		1001.													
<u> </u>	+															
]															
	-															
	+ $ $															
]															
			ON DEPTH: 15.0 Feet	1	I	I	DEP	TH	ГО	GRO	UN	ID W	VATER		, , , , ,	
4	DATE:	2/1	1/25				QEE	DAC	□ /ft	V. NIC		=NICC	JI INITEDED			

DATE: 3/14/25

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BORING B-42

LOCATION: See Boring Location Plan

		Ė	30	RING B-42								LO	CATI	ON: See Bo	ring Loca	ation Plan	
DEPTH, FT.	SYMBOL	SAMPLES	TER	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	ON: See Bo	(TSF) • U 4.0	NC CMP (TSF)	SF) RY WT.
DEPT	SYN	SAMI	WA	Elevation:	MOIS	% RETA	% PASS	SPT TCF VAL	H %	%R	LIQUIE	PLASTI	PLAS IN	PL 20	WC X 40	LL 60	UNCONI (T: UNIT D
				CLAYEY SAND (SC), brown, loose to very dense	15	0	39	5 20 56			47	19		* * * * * * * * * * * * * * * * * * * *			
 		\bigwedge	_	FAT CLAY (CH) with SAND, tan, very	,			30									
				FAT CLAY (CH) with SAND, tan, very stiff to hard	17	0	84	38 18 22			51	22	29	*			
-15- 				Boring terminated at approximately 15 feet.													
	CON DAT			ON DEPTH: 15.0 Feet 1/25				DEP ⁻ SEE	ΓΗ ⁻ PAG	ΓΟ (E (ft.	GRC): NC	OUN ONE E	ID W	VATER DUNTERED			

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BORING B-43

		BO	RING B-43	, -		•		•	•		LO	CATI	ON: See Boring	Location I	Plan	
DEPTH, FT.	SYMBOL SAMPI ES	WATER	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	ON: See Boring OHAND PEN (TSF 2.0 4 PL W 20 2) • UNC CM	IP (TSF)	SY WT.
DEPT	SYN	WA	Elevation:	MOIS	% RETA	% PASS	SPT TCF VAL	4 %	Я%	LIQUIE	PLAST	PLAS IN	PL W	VC LL X	NOONI	UNIT D
		\	CLAYEY SAND (SC), brown, very loose to dense	3			2						, , , *			
		<u>/</u>		12	0	45	33			61	22	39	* •	•		
5 		<u>/</u>	- Transitions to a tan color at 4.5 feet	7			27						*			
		<u>\</u>		6	0	30	34			63	25	38	* •			
 				5			35						*			
 				11			28						\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \			
15 	-		Boring terminated at approximately 15 feet.													
	COMF		ON DEPTH: 15.0 Feet			<u> </u>							VATER DUNTERED	1		

DATE: 3/14/25

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BORING B-44

		ВО	RING B-44	,-							LO	CATI	ON: See Boring	J Location	Plan		
DEPTH, FT.	SYMBOL	WATER	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	PL V) • UNC CN	MP (TSF)	VF. COMP. TSF)	UNIT DRY WT. (LB/CU FT)
DEP	S	W W	Flountien	M S	, RET	PAS	SPI	%	8	LIQU	LAS	PLAS	20 4	X 4 40 60		NCO	UNIT (LB/
	17.7	+	Elevation: CLAYEY SAND (SC), brown, medium		%	%					ш.			1:::1		ر	
 			dense (30), brown, mediani	5			11						*				
				7	0	34	23			70	26	44	* +		•		
 			- Transitions to a tan color at 4.5 feet	4			23						*				
				3	0	13	20			32	18	14	* • •				
 				17			22						*				
				10			27						*				
15- 			Boring terminated at approximately 15 feet.														
	- - -																
	COMF		ON DEPTH: 15.0 Feet				DEP ^T	TH T	ΓΟ (F (ff	GRC	OUN ONE F	ID W	VATER	1:::1	::::		

DATE: 3/14/25

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BORING B-45

LOCATION: See Boring Location Plan

		BO	RING B-45	•							LO	CATIO	ON: See Bori	ng Loca	tion Plan	
ОЕРТН, FT.	SYMBOL SAMPI ES	WATER	SOIL DESCRIPTION	MOISTURE CONTENT	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	ON: See Bori OHAND PEN (T 2.0 PL 20	SF) • UN 4.0	6.0	TSF) DRY WT. CU FT)
DEP.	SYN	W		MOIS	, RET	PASS	SPT TC VAI	%	1%	LIQUI	LAST	PLAS R	PL	WC X 40	LL 60	UNIT [
	11.11		Elevation:			<u>%</u>					ш.			: : :	. 	ر
		1	CLAYEY SAND (SC), brown, medium dense													
			461.66	1			10						X			
		1														
				9	2	49	18			43	23	20	* -			
	\mathbb{Z}/\mathbb{A}			"	_	43	10			73	25	20				
		1												<u>.</u>		
		.														
— 5 —		1	- Transitions to a tan color at 4.5 feet													
	///XX			11			17						*			
		1														
				9	6	30	17			28	14	14	*			
	////			"	U	30	17			20	'-	17				
		4														
		1														
L				12			19						*			
40																
-10-																
		1														
				9			22						*			
 15-	17.		Boring terminated at approximately 15											: : :		
			feet.													
	1															
	-															
L																
L																
L																
<u> –20 –</u>							_	<u> </u>	<u> </u>		<u> </u>					
	COMP		ON DEPTH: 15.0 Feet				DEP	IH.	[O (GRC	NUC '	D W	ATER			

DATE: 3/14/25

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BORING B-46

LOCATION: See Boring Location Plan

		RO	RING B-46								LO	CATI	ON: See Bo	oring Loca	ation Plan	
DEPTH, FT.	SYMBOL SAMPI ES	WATER	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND PEN	4.0	NC CMP (TSF)	UNCONF. COMP. (TSF) UNIT DRY WT. (LB/CU FT)
DEPT	SYN	WA	Elevation:	MOIS	% RETA	% PASS	SPT TCF VAL	% F	Ж.	LIQUIE	PLAST	PLAS	PL 	WC X 40	LL 60	UNCONI (T) UNIT D
			CLAYEY SAND (SC), brown, medium dense to dense	2			28						*			
 				2	6	15	24			22	14	8	* + +			
			- Transitions to a tan color at 6.5 feet	7	5	28	29 18			27	14	13	* • •			
 - 10-				4			44						*			
 -15-		/ \	Device to weighted at approximately 15	3			29						 			
	-		Boring terminated at approximately 15 feet.													
	COMP		ON DEPTH: 15.0 Feet				DEP ⁻	L ΓΗ ⁻	[[O](GRO	DUN	ID W	VATER			

DATE: 7/14/25

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BORING B-47

LOCATION: See Boring Location Plan

DEPTH, FT.	SYMBOL	SAMPLES	Elevation:	MOISTURE CONTENT	RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND P 2.0 PL 20)	4.0 NC X 40	6.0 LL) - -)	UNCONF. COMF	UNIT DRY WT.
			LEAN CLAY (CL) with SAND, brown, very stiff	2			28						X						
			SANDY FAT CLAY (CH), tan, very stiff	16	1	74	20			49	17	32	7			•			
- 5 — - — — - — —			to hard	13			28						* 1						
				9			53						*						
-10		X		12	4	66	60			54	19	35	* •			+			
			Boring terminated at approximately 15	13			55						*						
			feet.																

DATE: 7/14/25

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BORING B-48

		BO	RING B-48) -		•			-		LO	CATIO	ON: See Boring	Location و	n Plan	
DEPTH, FT.	SYMBOL SAMPI ES	WATER	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	TIC LIMIT	PLASTICITY INDEX	ON: See Boring O HAND PEN (TSF 2.0 4 PL V 20 4	1.0 6.4	O O U	TSF) DRY WT. CU FT)
DEP	SYI	W	Elevation:	MOS	6 RET	, PAS	SP A	%	%	LIQUI	LASI	PLAS R	PL V ♣ 20 4	X 4 40 60		UNIT (LB/
		\	LEAN CLAY (CL) with SAND, brown, stiff to hard	8	6	_%_	11						*			
				9			30						*			
- 5 - 		\		10	1	82	46			43	14	29	**	-		
		<u>/</u>	- Transitions to a tan color at 6.5 feet	12	2	81	31			46	15	31	*	-		
 -10-		\		12			43						*			
		7		15			39						*			
 -15-			Boring terminated at approximately 15	-												
	-		feet.													
	-															
	-															
	COMP		ON DEPTH: 15.0 Feet										ATER	1 ; ; ; 1	-;-;- - <u> </u>	

DATE: 7/14/25

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BORING B-49

В	ORING B-49			110.	. 0012 0				LO	CATI	ON: See B	oring Loca	ation Plan	
DEPTH, FT. SYMBOL SAMPLES	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND PEN	4.0	NC CMP (TSF) 6.0 LL 60	UNCONF. COMP. (TSF) UNIT DRY WT. (LB/CU FT)
DEPT SYN SAM	Elevation:	MOIS	% RETA	% PASS	SPT TCI VAL	1 %	Ж.	LIQUIE	PLAST	PLAS	PL 	WC X 40	LL 60	UNCON (T UNIT D (LB/C
	LEAN CLAY (CL) with SAND, brown, stiff to very stiff	10	2	75	12			45	25	20	* •			
	- Transitions to a tan color at 2.5 feet	9			14						*			
-5-	FAT OLAY (OLD) to a second of the board	9			22						*			
	FAT CLAY (CH), tan, very stiff to hard	16	2	96	20			69	28	41	* •			
-10-		17			32						*			
-15	Paring terminated at approximately 15	14			31						*			
	Boring terminated at approximately 15 feet.													
COMPLE DATE: 7	ETION DEPTH: 15.0 Feet				DEP	[[H]	ΓΟ (F (#	GRC	OUN ONE !	ID W	VATER DUNTERED			

DATE: 7/14/25

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BORING B-50

		BO	RING B-50	,-							LO	CATIO	ON: See I	Boring	J Locatio	n Plan		
DEPTH, FT.	SYMBOL SAMPI ES	WATER	SOIL DESCRIPTION Elevation:	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	ON: See I	V	VC L	CMP (TSF) i.0 L 60	UNCONF. COMP. (TSF)	UNIT DRY WT. (LB/CU FT)
		\	GRAVELLY LEAN CLAY (CL) with SAND, brown, very stiff	6	22		23			35	15	20	* •	•				
 			CLAYEY SAND (SC), tan, medium dense to very dense	7			20						*					
		<u> </u>		5	2	37	23 48			32	24	8	*					
 -10-				5			43						*					
 		Į V	Boring terminated at approximately 15	4			52						*					
	-		feet.															
 	-																	
	COMP		ON DEPTH: 15.0 Feet										ATER	D				

DATE: 7/14/25

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BORING B-51

LOCATION: See Boring Location Plan

		ט	OI.	MINO D-01								LO		ON: See					,	
DEPTH, FT.	SYMBOL	SAMPLES	WAIEK	SOIL DESCRIPTION Elevation:	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	O HAND F	PEN (TSF) 4	1.0 VC X 40	6.0 LL 60	MP (TSF	UNCONF. COMP. (TSF)	UNIT DRY WT. (LB/CU FT)
				SANDY LEAN CLAY (CL), brown, stiff to very stiff	7		8.	13						*						
				LEAN CLAY (CL) with SAND top you	7	8	52	29			39	19	20	* +		•				
- 5 - 				LEAN CLAY (CL) with SAND, tan, very stiff to hard	6			24						*						
		<u> </u>			6	4	84	38			32	22	10	* •						
 -10- 		\bigwedge						20											-	
 					7			24						×						
				Boring terminated at approximately 15 feet.																
	-																			
	COM DATI			ON DEPTH: 15.0 Feet /25										ATER	ΞD					

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BORING B-52

BC	ORING B-52	, -					_		LO	CATI	ON: See Boring	Location P	lan	
DEPTH, FT. SYMBOL SAMPLES WATER	SOIL DESCRIPTION	MOISTURE	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	ON: See Boring OHAND PEN (TSF) 2.0 4. PL W 20 4	0 6.0	VE. COMP.	DRY WT. CU FT)
SYN SAN SAN	Elevation:	MOIS	% RET	% PASS	SPT TC VAI	%	! %	LIQUI	PLAST	PLAS	PL W 20 4	C LL 60	UNCON	UNIT [
	SANDY LEAN CLAY (CL), brown, very stiff to hard	8	0	<u> </u>	15						*			
		7	4	55	24			44	24	20	* •	•		
-5-	- Transitions to a tan color at 4.5 feet	7			30						*			
		8	5	65	38			44	21	23	* •	•		
		8			48						*			
		11			52						*			
-15	Boring terminated at approximately 15	-												
	feet.													
COMPLET	ON DEPTH: 15.0 Feet										VATER			

DATE: 7/14/25

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BORING B-53

BORING B-53 L. H. W. C. L. L. SOIL DESCRIPTION L. H. W. C. L. L. SOIL DESCRIPTION L. L. SO			BO	RING B-53	10jc	,00	140	. 0012 0	, 10			LO	CATI	ON: See Bo	oring Loca	ation Plan		
SANDY LEAN CLAY (CL), tan, very stiff to hard 5	ОЕРТН, FT.	SYMBOL SAMPLES	WATER		MOISTURE	RETAINED #4	ASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	IQUID LIMIT	ASTIC LIMIT	LASTICITY INDEX	O HAND PEN 2.0 PL	4.0 WC	NC CMP (TSF) 6.0 LL LL	CONF. COMP. (TSF)	INIT DRY WT. (LB/CU FT)
SANDY LEAN CLAY (CL), tan, very stiff to hard 5				Elevation:	_	%	% F				_	Ъ	ь.	20	40 	60 	5	<u> </u>
SANDY LEAN CLAY (CL), tan, very stiff to hard 9 1 63 31 45 16 29 ** 11 43 11 5 52 Boring terminated at approximately 15 feet.				SANDY FAT CLAY (CH), brown, stiff to very stiff	5			13										
5 W Stiff to hard 6 24				CANDY I FAN CLAY (CL) top you	10	2	62	18			70	29	41	*		•		
11 43 11 43 The state of th	- 5 - 			SAINDT LEAN CLAY (CL), Tan, Very stiff to hard	6			24						×				
10					9	1	63	31			45	16	29	* -				
Total Provided Head of the content of the conte					11			43						*			-	
Total Provide the state of																		
	 15			Boring terminated at approximately 15	7			52						*				
				теет.														
COMPLETION DEPTH: 15.0 Feet DEPTH TO GROUND WATER DATE: 7/14/25 SEEPAGE (ft.): NONE ENCOUNTERED				ON DEPTH: 15.0 Feet				DEP	TH ⁻	ГО	GRC	DUN	ID W	VATER				

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BORING B-54

LOCATION: See Boring Location Plan

		Ŀ	30	RING B-54								LO	CATI	ON: See B	oring Loc	ation Plan	
ОЕРТН, FT.	SYMBOL	2LES	rer	SOIL DESCRIPTION	TURE	INED #4	% PASSING #200	(N) & o (T) UES	EC.	%RQD	LIQUID LIMIT	C LIMIT	PLASTICITY INDEX	O HAND PEN	(TSF) • U	ation Plan INC CMP (TSF) 6.0 LL 60	F. COMP. SF) RY WT. U FT)
DEPT	SYM	SAME	WATER	Elevation:	MOISTURE	% RETAINED #4	% PASSI	SPT (N) & TCP (T) VALUES	% REC	%R	LIQUID	PLASTIC LIMIT	PLASI IND	PL 	WC X 40	LL 	UNCONF (TS UNIT DI (LB/C
				SANDY LEAN CLAY (CL), brown, stiff to very stiff	8	1	68	14 29			40	20		* *			
- 5 - 5 				CLAVEV SAND (SC) with CDAVE	7			26						*			
				CLAYEY SAND (SC) with GRAVEL, tan, dense	5	21	34	47			36	16	20	* + +			
		\bigvee		SANDSTONE, tan, hard	4			50/4"						*			
	COM			ON DEPTH: 15.0 Feet 1/25				DEP ⁻ SEE	ΓΗ ⁻ PAG	TO (GRO	DUN ONE E	ID W	VATER DUNTERED			

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BORING B-55

LOCATION: See Boring Location Plan

SOIL DESCRIPTION Elevation: SANDY LEAN CLAY (CL) with GRAVEL, brown, stiff to hard	MOISTURE CONTENT	% RETAINED #4	% PASSING #200	SPT (N) & TCP (T) VALUES	% REC	%RQD	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	ON: Se OHAND 2 F	PEN (1	4.0 WC	UNC (0 0	F. COMP.	YY WT.
Elevation:		% RETA	% PASS	SPT TCF VAL	% F	% R	Ĭ	STI	성본	-	OI .	WC.	- 11		15 2	<u>ე ഥ -</u>
SANDY LEAN CLAY (CL) with GRAVEL, brown, stiff to hard	3						CIC	PLA	PLA —	2	20	X	6	b 0	UNCON	ONIT D
				14						*						
	9			33						*						
FAT OLAY (OLI) to a constitute hand	7	21	52	23			49	21	28	* '						
FAT CLAY (CH), tan, very stiff to hard	16			26						*						
	17	0	98	34			78	27	51	*						
	18			20						**************************************						
Boring terminated at approximately 15 feet.																
fe	N DEPTH: 15.0 Feet	oring terminated at approximately 15 set.	oring terminated at approximately 15 eet.	oring terminated at approximately 15 set. N DEPTH: 15.0 Feet DEPTH TO GROUND W	oring terminated at approximately 15 set. N DEPTH: 15.0 Feet DEPTH TO GROUND WATER	oring terminated at approximately 15 set. N DEPTH: 15.0 Feet DEPTH TO GROUND WATER	oring terminated at approximately 15 set. N DEPTH: 15.0 Feet DEPTH TO GROUND WATER	oring terminated at approximately 15 set. N DEPTH: 15.0 Feet DEPTH TO GROUND WATER	oring terminated at approximately 15 set. N DEPTH: 15.0 Feet DEPTH TO GROUND WATER	oring terminated at approximately 15 set. N DEPTH: 15.0 Feet DEPTH TO GROUND WATER						

DATE: 7/14/25

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KEY TO TERMS AND SYMBOLS USED ON LOGS

ROCK CLASSIFICATION

RECOVERY

DESCRIPTION OF RECOVERY	% CORE RECOVERY
Incompetent	< 40
Competent	40 TO 70
Fairly Continuous	70 TO 90
Continuous	90 TO 100

ROCK QUALITY DESIGNATION (RQD)

DESCRIPTION OF ROCK QUALITY	RQD	
Very Poor (VPo)	0 TO 25	
Poor (Po)	25 TO 50	
Fair (F)	50 TO 75	
Good (Gd)	75 TO 90	
Excellent (ExInt)	90 TO 100	

CONSISTENCY OF COHESIVE SOILS

CONSISTENCY	N-VALUE (Blows/Foot)	SHEAR STRENGTH (tsf)	HAND PEN VALUE (tsf)
Very Soft	Very Soft 0 TO 2		0 TO 0.25
Soft	2 TO 4	0.125 TO 0.25	0.25 TO 0.5
Firm	Firm 4 TO 8		0.5 TO 1.0
Stiff	8 TO 15	0.5 TO 1.0	1.0 TO 2.0
Very Stiff	Very Stiff 15 TO 30		2.0 TO 4.0
Hard	>30	>2.0 OR 2.0+	>4.0 OR 4.0+

SOIL DENSITY OR CONSISTENCY

DENSITY (GRANULAR)	CONSISTENCY (COHESIVE)	THD (BLOWS/FT)	FIELD IDENTIFICATION	
Very Loose (VLo)	Very Soft (VSo)	0 TO 8	Core (height twice diameter) sags under own weight	
Loose (Lo)	Soft (So)	8 TO 20	Core can be pinched or imprinted easily with finger	
Slightly Compact (SICmpt)	Stiff (St)	20 TO 40	Core can be imprinted with considerable pressure	
Compact (Cmpt)	Very Stiff (VSt)	40 TO 80	Core can only be imprinted slightly with fingers	
Dense (De)	Hard (H)	80 TO 5"/100	Core cannot be imprinted with fingers but can be penetrated with pencil	
Very Dense (VDe)	Very Hard (VH)	5"/100 to 0"/100	Core cannot be penetrated with pencil	

DEGREE OF PLASTICITY OF COHESIVE SOILS

DEGREE OF PLASTICITY	PLASTICITY INDEX (PI)	SWELL POTENTIAL
None or Slight	0 to 4	None
Low	4 to 20	Low
Medium	20 to 30	Medium
High	30 to 40	High
Very High	>40	Very High

BEDROCK HARDNESS

MORHS' SCALE	CHARACTERISTICS	EXAMPLES	APPROXIMATE THD PEN TEST	
5.5 to 10	Rock will scratch knife	Sandstone, Chert, Schist, Granite, Gneiss, some Limestone	Very Hard (VH)	0" to 2"/100
3 to 5.5	Rock can be scratched with knife blade	Siltstone, Shale, Iron Deposits, most Limestone	Hard (H)	1" to 5"/100
1 to 3	Rock can be scratched with fingernail	Gypsum, Calcite, Evaporites, Chalk, some Shale	Soft (So)	4" to 6"/100

MOISTURE CONDITION OF COHESIVE SOILS

DESCRIPTION	CONDITION	
Absence of moisture, dusty, dry to touch	DRY	
Damp but no visible water	MOIST	
Visible free water	WET	

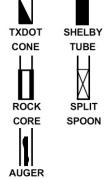
RELATIVE DENSITY FOR GRANULAR SOILS

SPT (BLOWS/FT)	CALIFORNIA SAMPLER (BLOWS/FT)	MODIFIED CA. SMAPLER (BLOWS/FT)	RELATIVE DENSITY (%)
0 to 4	0 to 5	0 to 4	0 to 15
4 to 10	5 to 15	5 to 12	15 to 35
10 to 30	15 to 40	12 to 35	35 to 65
30 to 50	40 to 70	35 to 60	65 to 85
>50	>70	>60	85 to 100
	(BLOWS/FT) 0 to 4 4 to 10 10 to 30 30 to 50	SPI (BLOWS/FT) SAMPLER (BLOWS/FT) 0 to 4 0 to 5 4 to 10 5 to 15 10 to 30 15 to 40 30 to 50 40 to 70	SPI (BLOWS/FT) SAMPLER (BLOWS/FT) SMAPLER (BLOWS/FT) 0 to 4 0 to 5 0 to 4 4 to 10 5 to 15 5 to 12 10 to 30 15 to 40 12 to 35 30 to 50 40 to 70 35 to 60

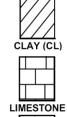
SAMPLER TYPES

SOIL TYPES

SAMPLE 0 NO RECOVERY



SAMPLE



SAND

ASPHALT



SHALE

GRAVEL

D: D

CONCRETE



SANDSTONE

FILL

CHALK

ABBREVIATIONS

PL - Plastic Limit

Q_P - Hand Penetrometer

LL – Liquid Limit WC - Percent Moisture

Q_U - Unconfined Compression Test UU - Unconsolidated Undrained Triaxial

V WATER SEEPAGE

Note: Plot Indicates Shear Strength as Obtained By Above Tests

■ WATER LEVEL AT END OF DRILLING

CLASSIFICATION OF GRANULAR SOILS

U.S. STANDARD SIEVE SIZE(S)



