GEOTECHNICAL ENGINEERING REPORT

Galilee Baptist Church

Prince George's County, Maryland

December 14, 2023

Prepared for:
Ricker Brothers Realty
117 Riverview Road
Stevensville, Maryland 21666

Attn: Mr. Pat Ricker

Prepared by:
Geo-Technology Associates, Inc.
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GTA Project No: 31232352

GEO-TECHNOLOGY ASSOCIATES, INC.

GEOTECHNICAL AND
ENVIRONMENTAL CONSULTANTS

A Practicing Geoprofessional Business Association Member Firm

December 14, 2023

Ricker Brothers Realty
117 Riverview Road
Stevensville, Maryland 21666

Attn: Mr. Pat Ricker

Re: Geotechnical Engineering Report
Galilee Baptist Church
Prince George's County, Maryland

Dear Pat:

In accordance with our September 29, 2023 agreement, Geo-Technology Associates, Inc. (GTA) has conducted a geotechnical engineering study in support of the Galilee Baptist Church development, to be constructed in the Upper Marlboro area of Prince George's County, Maryland. This study included the review of GTA's previous *Report of Geotechnical Exploration* and updated site development plans, as well as additional subsurface, laboratory testing, and engineering evaluations. GTA has prepared this report to convey our findings, conclusions, and recommendations about subsurface conditions that could affect foundation support, pavement design, subsurface utilities, and related geotechnical considerations for the proposed construction.

Please note that, unless you make other arrangements, GTA will discard all soil samples obtained from the 2023 explorations 60 days after the date of this report. If you have any questions or concerns about this report, or if you want additional information, please contact Daniel Grewe at (301) 471-6713 or DGrewe@gtaeng.com.

Sincerely,

GEO-TECHNOLOGY ASSOCIATES, INC.

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No.: 29184, Expiration Date: 06/16/2025. BTD

Dan C. Grewe, P.E.
Senior Engineer

Benjamin T. Dinsmore, P.E.
Vice President

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1.0 SUMMARY OF FINDINGS AND RECOMMENDATIONS

We have prepared this summary for the user's convenience only. Do not rely on it exclusively for any decision-making purpose. Please review the full text of the report which addresses each topic in further detail.

TOPIC	DESCRIPTION
Site Attributes	
Existing Conditions	Subject site comprises approximately 40.14 acres of undeveloped, formerly agricultural land, which was covered with a combination of overgrown vegetation and wooded areas at the time of GTA's investigation.
Proposed Construction	Church building with surrounding surface parking and associated infrastructure. Approximately 15 acres in the central and southwestern portions of site is planned for development.
Conditions Encountered	
Topsoil	Approximately 1 to 6 inches thick.
Native Soils	Sands and low- to high-plasticity silts and clays. Relatively loose/soft.
Groundwater	Observed at about 4 to 32 feet bgs in 18 of the 37 explorations.
Recommendations	
Groundwater	• Will likely impact mass grading, particularly in the central portion of the site where significant excavations are planned. • Perched water may be encountered in localized excavations. • Commonly used temporary dewatering techniques (e.g., sumps, gravity flow trenches) will likely be sufficient to temporarily dewater relatively shallow excavations. • Positive drainage should be maintained during mass grading.
Fill Material Criteria	Excavated soils will generally be suitable for reuse as fills, with some limitations. Clays should not be placed as structural fill or utility backfill to the extent feasible. Significant moisture-conditioning will be required for localized layers of the native fine-grained soils in order to use them as structural fills.
Fill Placement Requirements	• Place fill in maximum 12-inch (loose-measure) lifts. Break up clay clumps/clods. • Compact to minimum 95% of max. dry density (Modified Proctor) for structural fills. • Compact to minimum 97% of max. dry density (Modified Proctor) for top 12 in. of pavement subgrade.
Foundations	• Net allowable soil-bearing pressure: 2,500 psf. • Minimum widths: 16 inches (wall footings); 24 inches (column footings). • IBC Seismic Site Class of E
Slabs	Place slab on min. 4-inch-thick aggregate base covered with a min. 6-mil vapor barrier.
Utilities	• Detailed utility plans not available at the time of this report. • Localized excavations may encounter groundwater. • Break up clay clumps/clods when backfilling. • Significant moisture conditioning may be required if the fine-grained soils are to be used for utility backfill.
Pavements	Chemical stabilization of pavement subgrade likely to be required. Alternatively, undercut pavement subgrade and replace with approved granular soil.
Slopes	A 450-foot-long, 3 horizontal to 1 vertical (3H:1V), cut slope with a maximum height of approximately 28 feet is planned in the central portion of the site. Surficial drainage improvements may be required, and erosion control is recommended.

TOPIC	DESCRIPTION
Stormwater Management	• 17 micro-bioretention facilities and one SWM pond are planned. • Six borehole infiltration tests conducted. Five met MDE requirements. GTA recommends against using infiltration techniques in fine-grained soils. • Groundwater and perched groundwater may impact excavations.

*bgs = below existing ground surface

2.0 INTRODUCTION

Ricker Brothers Realty ("Client") is considering the purchase of the subject property for the development of the site and construction of the Galilee Baptist Church in the Upper Marlboro area of Prince George's County, Maryland. GTA has performed a geotechnical study and prepared this preliminary report for Ricker Brothers Realty in accordance with our proposal, dated September 29, 2023. GTA conducted this study to develop preliminary geotechnical engineering recommendations for the proposed development.

GTA's understanding of the project is based on our review of the plans, prior reports, and other references identified in the attached *List of Reference Documents*. If the site-specific reference documents are modified after the date of GTA's initial review, Client should provide the updated versions to GTA. Modifications may make it necessary for GTA to revise its geotechnical engineering recommendations.

3.0 PROJECT DESCRIPTION

Item	Description
Site Location	Located along the west side of Woodyard Road (MD-223) at its intersection with Welshire Drive. Refer to Figure No. 1, Appendix A.
Existing Site Conditions	Combination of wooded land, overgrown grass-covered land, and grass fields. Gently to moderately sloping rolling knolls. An existing wooden barn was observed in the south-central portion of the site. Minor amounts of municipal waste were observed at the ground surface in the central portion of the site.
Proposed Structure	One-story church building planned in central portion of site. • Slab-on-grade construction • Relatively lightly loaded structure. • Cuts on the order of 10 to 25 feet from existing grade for slab construction.
Site Grading	Cuts and fills of 5 to 15 feet from existing grades will generally be required to establish final surface grades. Deeper excavations of about 25 to 30 feet will be required in the vicinity of existing knolls in the central portion of the site.
Subsurface Utilities	Detailed utility plans depicting the proposed utility alignments and invert elevations were not available at the time of this report. GTA has assumed that the site will be serviced by public sewer and water connections and private storm drains.
Stormwater Management	Seventeen micro-bioretention facilities and one SWM pond • Planned to use infiltration techniques if feasible based on subsurface conditions. • Facility bottoms assumed to be 4 to 8 feet below final surface grades. • Excavations of up to 25 feet below existing grades required to establish surface grades. • Excavation of 4 to 8 feet below proposed grades required to establish facility inverts.
Pavements	A large surface parking lot is planned to the west of the building, and smaller parking areas are planned to the north and south of the building. A series of private drive lanes is planned for access to the surface parking from Woodyard Road.
Slopes	An approximately 450-foot-long, 3H:1V, cut slope with a maximum height of approximately 28 feet is planned in the northeastern portion of the site.

4.0 GEOTECHNICAL ENGINEERING STUDY

4.1 Historical Review

Based on review of historic aerial photography dating back to 1957, the site appeared to previously consist of agricultural land. The existing wooden barn appears to have already been constructed at that time. By 1980, portions of the site appeared to have been overgrown with trees. At this point, three distinct fields remained, in the central and southern portions of the site. The fields appear to have stopped being used for agricultural purposes and have become overgrown over the last 15 years.

4.2 Geologic Review

According to the *Physiographic Map of Maryland* (2008), prepared by the Maryland Geological Survey, the site is located in the Atlantic Coastal Plain Physiographic Province, characterized by interlayered sedimentary deposits from historic marine and estuarine environments. The area surrounding the site is mapped in the Uplands Deposits (Tu) and the site itself is mapped in the Calvert Formation (Tc). Note that diatomaceous silts are commonly encountered in the Calvert Formation. The *Site Geology Map* (Appendix A, Figure No. 2) provides more detail about the geologic formations mapped in the site vicinity. Refer to the geologic publications cited in the attached *List of Reference Documents* for further information.

4.3 Prior Geotechnical Information

GTA performed thirteen Standard Penetration Test (SPT) borings at the site in June of 2017. Referenced as Borings SB-1 through SB-13, the prior explorations have been incorporated into GTA's evaluation and report.

4.4 Subsurface Exploration Scope

GTA performed a subsurface exploration of the site in November of 2023, comprised of 24 SPT borings, referenced as Borings SB-14 through SB-32 and B-100 through B-104. The *Exploration Location Plan* (Appendix A, Figure No. 3) indicates the approximate exploration locations.

Soltesz, LLC (Soltesz), the project civil engineer, selected and staked the exploration locations using an instrumented survey. Soltesz provided ground-surface elevations at the exploration locations, based on the instrumented survey. GTA selected and field-located Boring SB-32 using a hand-held Global Positioning System (GPS) unit and offset Borings SB-31, B-100, and B-103 using tape measurements from the staked locations and a GPS unit. GTA estimated ground-surface elevations at these exploration locations using topographic contour lines shown on the available plans. These ground-surface elevations are approximate.

A GTA-subcontracted drill crew performed the 24 SPT borings to depths of 15 to 45 feet below existing grades, with Standard Penetration Tests performed at intervals of $2^1/_2$ to 5 feet. The Standard Penetration Test generates an SPT N-value, which indicates the relative density of coarse-grained soils and the consistency of fine-grained soils. The N-value can be correlated with the engineering properties of the soils. The summary of *Geotechnical Field Exploration Methodology* (Appendix B) provides more information about Standard Penetration Tests.

The soil samples obtained from the explorations were delivered to GTA's laboratory in Laurel, Maryland for visual classification and laboratory testing. The classifications shown on the logs are based on the Unified Soil Classification System (USCS) visual/manual methods, supplemented by laboratory testing.

4.5 Subsurface Conditions

The results of the subsurface exploration were generally consistent with the known site history and geologic setting of the project site. For more information about subsurface conditions, refer to the generalized subsurface profiles (Appendix A, Figure Nos. 4 through 6), the Subsurface Exploration Summary (Table No. 1), and individual exploration logs within Appendix B. GTA has summarized the subsurface conditions encountered in the following sections.

4.5.1 Surficial Materials

The explorations encountered about 1 to 6 inches of organic topsoil at the ground surface. The reported topsoil thicknesses generally represent the upper layer of dark and organic soil. The near-surface soils appeared to be disturbed. GTA infers that these soils comprise an agricultural plow zone.

4.5.2 Native Soils

Beneath the topsoil, the explorations encountered native soils consistent with Upland Deposits and Calvert Formation soils. GTA personnel visually classified these soils as Clayey SAND (SC), Silty SAND (SM), SILT (ML), and Elastic SILT (MH). Less commonly, the soils were also classified as Lean CLAY (CL) and Poorly Graded SAND (SP). SPT N-values typically ranged from 5 to 23 bpf in the native granular soils, indicating loose to medium dense soil conditions. Higher SPT N-values as high as 35 bpf were commonly encountered within the Upland Deposits in the top 10 feet of the existing ground surface. Lower values as low as 2 bpf were encountered within the Calvert Formation soils. SPT N-values typically ranged from 4 to 16 bpf in the native fine-grained soils, indicating soft to very stiff soil conditions. Values as low as less than 1 bpf, indicated by 18 inches of split spoon advancement under only the Weight of Hammer (WOH) and as high as 32 bpf were also encountered.

4.5.3 Groundwater

Ten out of the 37 borings encountered groundwater during drilling at depths typically ranging from 8½ to 28½ feet below existing grades. Five borings encountered groundwater at the completion of drilling. Thirteen borings encountered groundwater one to six day after drilling. In total, groundwater was encountered or observed in 18 out of the 37 borings, at depths ranging from 4 to 32 feet below the existing ground surface. Note that groundwater levels can fluctuate with seasonal variations in precipitation and as a result of development activity. Also, perched water conditions may develop in localized areas where granular soils are underlain by less permeable, fine-grained soils.

4.6 Laboratory Testing

GTA performed limited laboratory testing on selected soil samples obtained from the explorations, including natural moisture content determination, grain size analysis, Atterberg Limits testing, and moisture-density relationship testing. The natural (in-situ) moisture contents of the tested samples typically ranged from about 4 to 44 percent in sands but were as high as 80 percent in a sample below the observed groundwater level. The natural moisture contents ranged from about 11 to 60 percent in the majority of the fine-grained silts and clays. However, several localized layers of fine-grained soils exhibited natural moisture contents on the order of 80 to 117 percent. Natural moisture contents in excess of 80 percent likely indicate the presence of diatomaceous soils.

GTA performed grain size analysis and Atterberg Limits testing on six samples to determine the USCS and American Association of State Highway and Transportation Officials (AASHTO) classifications for the soil. The results of the testing are summarized below.

SUMMARY OF CLASSIFICATION TESTING

Boring No.	Depth (ft.)	USCS Classification	AASHTO Classification	Natural Moisture (%)	Liquid Limit (%)	Plasticity Index (%)
B-102	23.5 to 25.0	Silty SAND, SM	A-4	42.6	NP	NP
SB-15	2.5 to 4.0	Lean CLAY with Sand, CL	A-6	27.0	40	15
SB-28	2.5 to 4.0	Clayey SAND with Gravel, SC	A-2-6	7.7	29	13
SB-2	5.0 to 6.5	Sandy SILT, ML	A-7-5	54.6	48	11
SB-4	8.5 to 10.0	Sandy SILT, ML	A-4	30.9	35	5

SUMMARY OF CLASSIFICATION TESTING

Boring No.	Depth (ft.)	USCS Classification	AASHTO Classification	Natural Moisture (%)	Liquid Limit (%)	Plasticity Index (%)
SB-13	8.5 to 10.0	Silty SAND, SM	A-4	13.5	NP	NP

NP = Not Plastic

GTA performed moisture-density relationship testing on a bulk sample collected from Boring SB-28, in accordance with the Standard Proctor (ASTM D698). The test results are summarized in the following table:

SUMMARY OF MOISTURE-DENSITY RELATIONSHIP TESTING

Boring No.	Depth (ft.)	USCS Classification	Maximum Dry Density (pcf)	Optimum Moisture (%)	Natural Moisture (%)
SB-28	0 to 5	Clayey SAND with Gravel, SC	117.1	12.8	7.7

Additional laboratory testing information is located in Appendix C.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon the results of the geotechnical engineering study, it is GTA's professional opinion that the construction of the proposed church and associated improvements are generally feasible, provided the following geotechnical engineering recommendations are adhered to, and that applicable standard of care is maintained during construction. **The construction of the proposed church and the associated infrastructure will likely be impacted by the presence of fine-grained, plastic soils, many of which consist of relatively soft/very loose, moisture- and disturbance-sensitive Calvert soils. These challenges will be exacerbated by the significant quantity of earthwork that is planned.** GTA's recommendations for foundations, subsurface utilities, pavements, stormwater management, and other geotechnical considerations are presented in the following paragraphs. If additional details, including structural information or revised site development or grading plans, become available after the date of this report, they should be provided to GTA for review and possible revisions to the information presented herein.

5.1 Site Preparation

5.1.1 Stripping

The site should be stripped and grubbed to remove topsoil and other organic matter. The removal of topsoil and unstable surface soils should be performed before controlled fill placement. The actual

stripping thickness will depend on the localized topsoil development, soil moisture, disturbance by construction traffic, and contractor care.

5.2 Earthwork

5.2.1 Groundwater

The presence of groundwater, or perched water, will likely affect mass grading activities in areas where significant cuts are planned. As previously stated, groundwater was encountered or observed in 18 out of the 37 borings. In the central portion of the site, groundwater was typically encountered above or within 8 feet of proposed grades. The observed water levels are generally inferred to be a result of perched water conditions where water becomes trapped in granular soils underlain by less permeable soils, particularly after periods of precipitation. Also, groundwater levels may fluctuate with seasonal variations in precipitation and as a result of development activity. Accordingly, the contractor should be prepared to dewater and shore excavations during mass grading and construction.

5.2.2 Moisture Sensitivity & Fill Material Criteria

Layers of the native soils exhibited elevated natural moisture contents and the majority of the fine-grained soils are moisture- and disturbance-sensitive. These soils will lose strength and stability if disturbed in the presence of water. Additionally, near-surface materials may be soft and unstable under construction equipment. Drying of the fine-grained soils will be more cost effective during the warm, dry season of the year and may require extended drying times and discing effort to adequately dry the soils to a moisture content that is acceptable for compaction. Alternatively, drying using lime or cement can be performed to adequately stabilize subgrade soils for subsequent placement of fill. Based on the encountered fine-grained surficial soils, drying of the on-site soils should be anticipated on this project. It should be noted, however, that layers of soils exhibited extremely high moisture contents, in excess of 60 to 80 percent. Based on GTA's experience with such soils, it will not likely be cost-effective to dry these soils to within the working range of optimum. Therefore, the use of such soils as structural fills should be avoided to the extent feasible.

GTA recommends that positive drainage be maintained across the site during construction to prevent ponding of water since the exposed subgrades could destabilize in combination with construction traffic and precipitation. If the subgrade is disturbed by construction traffic and becomes unstable, undercutting and replacement of these surficial materials will be required.

The soils encountered in the explorations will generally be suitable for reuse as structural fill, with the following limitations:

- Pavement Subgrade Fills: Fine-grained and/or plastic soils (USCS Classifications ML, CL, MH, and the more-plastic SC) are considered to be unsuitable for use as fill within the top 12 inches of pavement subgrade, unless chemical stabilization of the pavement subgrade is planned. Refer to the Pavement Subgrade Preparation Section for pavement subgrade materials requirements.

- Utility Backfills: GTA recommends against using clays or high-plasticity silts (USCS Classifications CL or MH) as utility trench backfill. If fine-grained, plastic soils are nonetheless used for trench backfill due to economic or other considerations, the constructors involved must apply the construction methods described in the Utility Trench Backfill Section. Significant manipulation and moisture-conditioning will be required if such soils are to be used.

- Imported Fills: Off-site borrow materials, if required, should meet the criteria for AASHTO A-4 or more granular. These materials should be approved by the geotechnical engineer before import.

5.2.3 Fill Placement

The areas to receive fill should first be proofrolled with a loaded, tandem-axle dump truck under the observation of an approved representative of the third-party testing consultant. Any subgrade materials identified as soft/loose, wet, or otherwise unsuitable should be over-excavated to a stable bearing stratum before placement of structural fill. After an approved subgrade has been achieved, fills should be placed and compacted in controlled, compacted lifts. These fills should be placed in lifts of no more than 12 inches (as measured before compaction) and compacted to the following specifications:

COMPACTION SPECIFICATIONS

Fill Location	Compaction Specification
Below foundations, slabs-on-grade, and retaining walls; slopes steeper than 5H:1V; utility and roadway fills greater than 12 inches below pavement subgrade	95% of Maximum Dry Density per the Standard Proctor (ASTM D698)
Utility and roadway fills within the top 12 inches of pavement subgrade	97% of Maximum Dry Density per the Modified Proctor (ASTM D1557)

Fill placement should be observed full-time by a field representative working under the supervision of a licensed geotechnical engineer. All compactive effort should be evaluated by in-place density testing.

5.3 Buildings

5.3.1 Foundation Design

Shallow spread footings will be able to support the proposed church building, provided the footings are constructed on controlled, compacted fills or firm, native materials. **Footings that are supported in controlled, compacted fills, and/or natural soils can be proportioned for a net allowable soil-bearing pressure of 2,500 pounds per square foot (psf).** GTA recommends minimum widths of 24 inches for wall footings and 30 inches for column footings, where foundation design based on the recommended allowable soil-bearing pressure would otherwise yield a narrower footing. To protect exterior footings from the effects of frost, they should be founded at least 30 inches below final exterior grades.

5.3.2 Foundation Construction Considerations

The proposed footings will likely be supported on native soils. The native soils encountered during our subsurface exploration were generally soft and loose at the proposed slab elevation. New fills will be suitable for foundation support only if they are placed and compacted as we recommend in the Fill Placement Section.

Before concrete placement, a licensed geotechnical engineer or their qualified representative should evaluate footing subgrades and perform penetration testing on the exposed footing subgrades to assess the surficial materials. **Any very loose/soft soils should be over-excavated to a stable bearing stratum. Furthermore, if high-plasticity soils with significant moisture contents are encountered at footing subgrades, they should be over-excavated to a minimum of 2 feet below foundation bearing elevation.** Over-excavations should be backfilled with lean concrete, dense-graded aggregate, or controlled, compacted, soil fill. If over-excavations are replaced with soil or aggregate fill, they should be placed and compacted as recommended in the Fill Placement Section. Alternatively, the footings could be lowered to a competent bearing stratum. Over-excavation and replacement, if required, should be performed as recommended by a licensed geotechnical engineer or a qualified representative based on conditions observed in the field during construction. Footings should be concreted on the day they are excavated in order to prevent excessive disturbance and/or moisture changes. Surface water should be diverted away from foundation excavations prior to and during foundation construction.

5.3.3 Seismic Site Class Designation

The soil conditions within the upper 100 feet at this site can be categorized as Site Class E per the International Building Code (IBC). This categorization is based on the boring data, general geologic information for the region, and the information contained in the applicable code.

5.3.4 Slab Design

Lowest-level slabs may be designed as concrete slabs-on-grade by the project structural engineer based on the actual anticipated live and dead loads. To retard the rise of capillary moisture through the slab, GTA recommends that the slabs should be founded on a minimum 4-inch-thick layer of aggregate base, covered with a minimum 6-mil-thick, polyethylene vapor barrier beneath the slab. The aggregate base should comprise well-graded, non-plastic material with 100 percent passing the 1 ½-inch sieve, no more than 12 percent passing the No. 200 sieve, and with the USCS classification GW, GW-GM, SW, or SW-SM.

5.3.5 Slab Construction

Before concrete placement, a representative of the third-party testing consultant should evaluate the stability and compaction of natural and compacted fill subgrades for support of the floor slabs. Soft or loose layers should be removed from the slab subgrade and replaced as recommended in the Fill Placement Section. Floor slabs should not be rigidly connected to foundation walls, so that wall movements will not affect the slab. Control joints should be provided to control shrinkage cracking of the concrete floor system.

There is commonly a significant time lag between the mass grading, and fine grading of the slab subgrade for the placement of the aggregate base course and casting of the slab. This results in exposing the slab subgrade to elements (rain, snow, wind, etc.) and disturbance/degradation associated with utility installation and construction traffic. Such exposure/impacts may impact the slab subgrade excessively and make it unacceptable. The Contractor should control construction activities and take measures to protect the slab subgrade soils and should repair/restore the subgrade to an acceptable condition in terms of stability and compaction prior the placement of the aggregate base. This process may require discing/drying and re-compaction of the subgrade soils. The prepared subgrade should be proofrolled prior to placing aggregate base to verify stability.

Furthermore, the slab subgrade is anticipated to consist of fine-grained, plastic soils with moisture contents in excess of 40 percent. These soils will be very sensitive to moisture and disturbance and will not likely be suitable for direct slab support in their current condition. GTA recommends that the slab subgrade be chemically stabilized with cement prior to slab construction.

5.3.6 Surface and Subsurface Drainage

Final grades adjacent to buildings should be graded to drain surface water away from foundation walls. The grade should fall a minimum of 6 inches within the first 10 feet.

5.4 Utilities

5.4.1 Utility Excavations

Utility excavations can likely be accomplished using standard excavation techniques. If groundwater is encountered in utility excavations, dewatering devices like sumps or gravity-flow trenches will likely be sufficient to temporarily dewater relatively shallow excavations. Utility excavations should be properly shored and supported in accordance with the latest requirements of OSHA and such other regulatory authorities with jurisdiction.

5.4.2 Utility Support

The native soils and controlled fills placed during mass grading will likely be suitable for supporting the proposed utilities. Any soft/loose or unstable soils encountered at the utility subgrades should be over-excavated and replaced with controlled, compacted fill or open-graded stone. To facilitate compaction, provide additional protection for the pipe, and decrease the risk of excessive trench settlement, GTA recommends placing No. 57 stone, graded aggregate base (GAB), or crushed stone (CR-6) to at least 6 inches above utility pipes made of plastic or flexible metal (i.e., ductile iron) and to the spring-line of rigid pipes.

5.4.3 Utility Trench Backfill

Utilities below pavement and other structural areas should be backfilled with controlled, compacted fill. The backfill should be placed and compacted in accordance with project requirements. Utility trenches should be backfilled with the most granular material available. The soils encountered during the subsurface exploration of the project site will generally be suitable for use as utility backfill. However, clays (CL) and high-plasticity silts (MH) were encountered in some explorations and will likely be encountered in utility excavations. The use of fine-grained, plastic soils for utility backfill should be limited to the extent feasible. **To reduce the risk of trench settlement and associated impacts, moisture conditioning and breaking of clay clumps/clods must be performed for proper placement and compaction of clayey soils as utility backfill.** If fine-grained/plastic soils are used as utility backfill, they should be placed in maximum 8-inch (loose measure) lifts and compacted with a sheep's-foot type roller at a moisture content of 2 to 4 percent above optimum. Unless chemical stabilization of the pavement subgrade is planned, do not place these materials within 12 inches of final pavement subgrade.

Hand-operated equipment should be used for compaction around utility structures. Where hand-operated equipment is used for compaction, lift thicknesses should not exceed 6 inches (as measured before compaction). When backfilling around utility structures, each lift should be uniformly compacted with a sufficient number of passes to obtain the required degree of compaction.

5.5 Pavement

5.5.1 Pavement Design

Detailed traffic loading information was not available to GTA at the time this report was prepared. Based on experience with similar projects, GTA has assumed that traffic will be limited to passenger vehicles and occasional truck traffic (i.e., 1 to 2 tractor-trailer trucks per average day). Based on this level of traffic and a 20-year design life, GTA has assumed traffic loading of 200,000 equivalent single-axle loads (ESALs) for the medium duty design and 100,000 ESALs for the light duty design. GTA performed a pavement design analysis in accordance with AASHTO Flexible Pavement Design Procedures for the assumed traffic loading and subgrade soils. Based on the stated assumptions, GTA recommends the following flexible (asphalt) pavement sections:

FLEXIBLE (ASPHALT) PAVEMENT SECTION RECOMMENDATIONS

Layer	Thickness (in.)	
	Light Duty	Medium Duty
Surface Course (12.5 mm mix, PG 64-22 Superpave mix)	1.5	1.5
Base Course (19.0 mm mix, PG 64-22 Superpave mix)	2.5	3
Graded Aggregate Base (GAB)	6	6
Approved Subgrade (CBR 5% or higher) or Chemically Stabilized Subgrade	12	12

If the actual average daily traffic is different from the above assumptions, the pavement sections may need to be revised. The light duty pavement section is intended for areas where truck traffic is not expected. Any pavement areas that may be subject to truck traffic should utilize the medium duty section.

Rigid (concrete) pavements are recommended for areas where heavy truck traffic or concentrated traffic loads are anticipated, such as loading areas, dumpster pads, or entrance/exit aprons. Rigid-pavement sections should consist of 6 inches of concrete founded on a minimum 6-inch layer of GAB. Concrete used for pavements should be provided with control, isolation, and construction joints and meet the criteria of ACI Specification 330R-01.

5.5.2 Pavement Drainage

GTA recommends installation of "stub" or "finger" pavement drains in topographic low points as shown on the *Pavement Drain Detail* (Appendix A, Figure 7). The drainpipe should be connected to the on-site storm drain system and should be sloped to allow for gravity flow of collected water toward the inlet. GTA recommends that the slope of the underdrain pipe should be similar to the slope of the pavement-subgrade surface above the pipe.

5.5.3 Pavement Subgrade Preparation

The upper 12 inches of pavement subgrade should be constructed of soils meeting the following characteristics:

- Liquid Limit (AASHTO T-89): 40 percent or less
- Plasticity Index (AASHTO T-89, T-90): 12 percent or less
- California Bearing Ratio (ASTM D1883): 7 percent or higher
- Maximum Dry Density (ASTM D698): 105 pcf or higher

The on-site soils with USCS classifications of SP, SM, and the less-plastic SC, will likely meet pavement subgrade criteria. The more plastic and/or fine-grained soils (USCS classifications ML, MH, CL, and the more-plastic SC), will fail to meet pavement subgrade criteria and should not be used as fill in the top 12 inches of pavement subgrade.

Soils not meeting pavement subgrade criteria will likely be encountered on a widespread basis at the pavement subgrade. Where such soils are encountered, the top 12 inches of pavement subgrade should be chemically stabilized with cement or lime. Alternatively, the top 12 inches of pavement subgrade should be undercut and replaced with controlled, compacted fills meeting pavement subgrade criteria. If chemical treatment is considered, GTA should be engaged to perform additional laboratory testing during mass grading to provide specific recommendations for chemical application rates.

5.5.4 Pavement Construction

The third-party testing consultant should make observations of trafficability during mass grading. GTA recommends that a testing program, including CBR testing, be implemented to develop a suitable paving section for the project. The pavement subgrade should be proofrolled (using a loaded, tandem-axle dump truck) before pavement sections are constructed. An experienced representative of the third-party testing consultant should observe the entire proofrolling operation to evaluate stability. Unstable soils or otherwise unsuitable materials, if encountered, should be over-excavated to a stable stratum and replaced with controlled, compacted fill, placed as recommended in the Fill Placement Section.

Construction traffic should be controlled in order to limit disturbance of previously approved subgrade, or stone base course, or partially completed asphalt pavements. Excessive traffic can result in damage to or premature failure of the pavement. Any damaged pavement areas should be repaired adequately before placing asphalt surface courses. The chemically stabilized subgrade, if used, will provide improved pavement subgrade support and will reduce the potential and extent of pavement damage during construction.

5.6 Slopes

New fills constructed on existing slopes steeper than 5H:1V (horizontal to vertical) should be keyed into existing slopes for stability considerations. All proposed fill slopes steeper than 5H:1V should be placed as structural fill and be controlled and compacted to the densities specified in the Fill Placement section of this report. Based upon the surficial fine-grained soils encountered in our exploration, the use of fill slopes steeper than 3H:1V will require additional engineering evaluation, may warrant special erosion protection, and will likely require geosynthetic reinforcement or the use of granular materials. GTA recommends flattening slopes to 3H:1V or flatter or the use of high-quality granular materials or geogrid reinforcement will be required.

An approximately 450-foot long, 3H:1V (Horizontal to Vertical), cut slope with a maximum height of 28 feet is planned in the northeastern portion of the development. Due to the relatively soft/loose soils encountered within the existing knoll in Boring SB-32, GTA recommends erosion protection be used along the tallest portions of the slope such as the Rollmax Vmax C350 Permanent Turf Reinforcement Mat manufactured by North American Green, or the ECC-3 Coconut Turf Reinforcement Mat manufactured by East Coast Erosion Control. During excavation and construction of this slope, the geotechnical engineer, or an approved representative thereof, should observe the conditions of the surficial soils. Due to the interbedded nature of the native soils and the likelihood of perched water conditions, it is likely that water seepage and localized erosion or sloughing of the surficial soils could occur. Additional stabilization and/or drainage measures should be incorporated into this, and other, slopes on the site as necessary based on the actual conditions observed during construction.

5.7 Stormwater Management Considerations

5.7.1 SWM Design

The available plans indicate that the SWM facilities will include 17 micro-bioretention facilities throughout the site and one SWM pond in the northeastern portion of the development. Soltesz has indicated that the proposed micro-bioretention facilities are planned to incorporate infiltration techniques, if feasible based on subsurface conditions. The Maryland Department of the Environment (MDE) specifies a minimum vertical clearance of 4 feet between the infiltration elevation and groundwater or rock. In addition, the minimum acceptable average infiltration rate for stormwater

management and water quality applications, as indicated by borehole infiltration testing, is 0.52 inches per hour. A summary of the field infiltration tests and results is presented in the following table.

SUMMARY OF INFILTRATION TESTING

Boring No.	Depth of Infiltration Test (ft.)	Approximate Elevation of Test (El.)	Soil Type at Test (USCS)	Calculated Infiltration Rate (in./hr.)
SB-9	16.4	169.3	SP	> 3.0
SB-22	15.0	172.6	SM	< 0.1
SB-23	15.5	169.5	MH	2.0
SB-25	15.1	167.6	ML	1.1
SB-28	12.9	165.1	MH	0.8
SB-29	4.0	165.7	SC	> 3.0

Note that the test at SB-9 was conducted as part of the 2023 exploration at a borehole close to the 2017 boring location.

Based on the measured infiltration rates, infiltration techniques are considered feasible at the locations of Borings SB-9, SB-23, SB-25, SB-28, and SB-29 according to MDE requirements. However, GTA recommends against incorporating infiltration techniques at elevations where Calvert Formation Elastic SILT (MH) is present, as long-term performance tends to decline in such soils. Additional field infiltration tests at other proposed micro-bioretention facilities could not be performed due to relatively shallow cave-in depths and groundwater tables observed above the infiltration test elevations. Further testing could potentially be completed at the completion of mass grading to evaluate the feasibility of infiltration techniques at untested facility locations. However, it is considered unlikely that the use of infiltration techniques will be feasible at other locations due to the presence of predominantly fine-grained soils and/or relatively shallow groundwater or perched water layers.

5.7.2 SWM Construction

Based on the results of the explorations, the excavations for the proposed SWM facilities can generally be accomplished using standard scraping techniques. The presence of groundwater will likely impact the required excavations for the SWM facilities in localized areas where significant cuts were performed. Perched water conditions may be encountered, particularly where native granular soils or newly placed fills are underlain by less permeable, fine-grained materials. The contractor should be prepared to dewater excavations as necessary and maintain trafficability of the SWM areas during construction. All excavations should be properly shored and supported in accordance with OSHA requirements.

If bioretention areas are excavated using a loader, the contractor should use wide track or light equipment with turf tires to minimize compactions of the subgrade soils. Excessive compaction within the bioretention areas will result in poor performance of the facilities. The base of the bioretention

facilities should be trilled to a depth of 12 inches to alleviate compaction of the subgrade by excavation equipment. Backfill of the bioretention facility should be performed in accordance with MDE and/or county guidelines. Clay content of the planting media should be carefully controlled and maintained near the lower end of the specifications to reduce the potential for clogging of the facility. Sampling/testing of the proposed composite material should be performed to confirm the materials meet the specifications. Proposed materials for the SWM area should be sampled and tested for these parameters during construction and amended as needed.

6.0 ADDITIONAL SERVICES

We recommend that, prior to and/or during construction of the project site, a geotechnical engineer be retained to provide the following items.

- Review final site and architectural plans to evaluate if they conform with the intent of this report.
- Provide construction observation and testing services during fill placement to evaluate if the work is being performed in accordance with the project specifications and intent of this report.
- Observe the proofrolling of fill and pavement subgrades prior to placing dill or base course to evaluate stability.

7.0 LIMITATIONS

This report, including all supporting boring logs, field data, field notes, laboratory test data, calculations, estimates and other documents prepared by GTA in connection with this project have been prepared for the exclusive use of Ricker Brothers Realty pursuant to agreements between GTA and Ricker Brothers Realty in accordance with generally accepted engineering practice. All terms and conditions set forth in the Agreement and the General Provisions attached thereto are incorporated herein by reference. No warranty, express or implied, is made herein. Use and reproduction of this report by any other person without the expressed written permission of GTA and Ricker Brothers Realty is unauthorized and such use is at the sole risk of the user.

The analysis and recommendations contained in this report are based on the data obtained from limited observation and testing of the encountered materials. Test borings indicate soil conditions only at specific locations and times and only at the depths penetrated. They do not necessarily reflect strata or variations that may exist between test boring locations. Consequently, the analysis and recommendations must be considered preliminary until the subsurface conditions can be verified by direct observation at the time of construction. If variations of subsurface conditions from those described in this report are noted during construction, recommendations in this report may need to be reevaluated.

In the event that any changes in the nature, design, or location of the facilities are planned, the conclusions and recommendations contained in this report should not be considered valid unless the changes are reviewed and conclusions of this report are verified in writing. GTA is not responsible for any claims, damages, or liability associated with interpretation of subsurface data or reuse of the subsurface data or engineering analysis without the expressed written authorization of Geo-Technology Associates, Inc.

The scope of our services for this geotechnical exploration did not include any environmental assessment or investigation for the presence or absence of wetlands, or hazardous or toxic materials in the soil, surface water, groundwater or air, on or below or around this site. Any statements in this report or on the logs regarding odors or unusual or suspicious items or conditions observed are strictly for the information of our client.

This report and the attached logs are instruments of service. The subject matter of this report is limited to the facts and matters stated herein. Absence of a reference to any other conditions or subject matter shall not be construed by the reader to imply approval by the writer.

8.0 LIST OF REFERENCE DOCUMENTS

Document Title	Prepared by:	Date	Description
Google Earth Imagery	Google Earth	April 2022	Site Aerial base image
Physiographic Map of Maryland	Maryland Geological Survey	2008	Overall geology of the State of Maryland
Geologic Map of Prince George's County	Maryland Geological Survey	2003	Site Geology Map base image
Soil Borings Exhibit	Soltesz, LLC	April 2016	Exploration Location Plan base map
Report of Preliminary Geotechnical Exploration, Galilee Baptist Church, SWM Facilities	GTA	July 14, 2017	Geotechnical report previously completed under sperate contract for Colorado Commercial Construction

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

The Geoprofessional Business Association (GBA) has prepared this advisory to help you – assumedly a client representative – interpret and apply this geotechnical-engineering report as effectively as possible. In that way, you can benefit from a lowered exposure to problems associated with subsurface conditions at project sites and development of them that, for decades, have been a principal cause of construction delays, cost overruns, claims, and disputes. If you have questions or want more information about any of the issues discussed herein, contact your GBA-member geotechnical engineer. Active engagement in GBA exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project.

Understand the Geotechnical-Engineering Services Provided for this Report

Geotechnical-engineering services typically include the planning, collection, interpretation, and analysis of exploratory data from widely spaced borings and/or test pits. Field data are combined with results from laboratory tests of soil and rock samples obtained from field exploration (if applicable), observations made during site reconnaissance, and historical information to form one or more models of the expected subsurface conditions beneath the site. Local geology and alterations of the site surface and subsurface by previous and proposed construction are also important considerations. Geotechnical engineers apply their engineering training, experience, and judgment to adapt the requirements of the prospective project to the subsurface model(s). Estimates are made of the subsurface conditions that will likely be exposed during construction as well as the expected performance of foundations and other structures being planned and/or affected by construction activities.

The culmination of these geotechnical-engineering services is typically a geotechnical-engineering report providing the data obtained, a discussion of the subsurface model(s), the engineering and geologic engineering assessments and analyses made, and the recommendations developed to satisfy the given requirements of the project. These reports may be titled investigations, explorations, studies, assessments, or evaluations. Regardless of the title used, the geotechnical-engineering report is an engineering interpretation of the subsurface conditions within the context of the project and does not represent a close examination, systematic inquiry, or thorough investigation of all site and subsurface conditions.

Geotechnical-Engineering Services are Performed for Specific Purposes, Persons, and Projects, and At Specific Times

Geotechnical engineers structure their services to meet the specific needs, goals, and risk management preferences of their clients. A geotechnical-engineering study conducted for a given civil engineer will not likely meet the needs of a civil-works constructor or even a different civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client.

Likewise, geotechnical-engineering services are performed for a specific project and purpose. For example, it is unlikely that a geotechnical-engineering study for a refrigerated warehouse will be the same as one prepared for a parking garage; and a few borings drilled during a preliminary study to evaluate site feasibility will not be adequate to develop geotechnical design recommendations for the project.

Do not rely on this report if your geotechnical engineer prepared it:

- for a different client;
- for a different project or purpose;
- for a different site (that may or may not include all or a portion of the original site); or
- before important events occurred at the site or adjacent to it; e.g., man-made events like construction or environmental remediation, or natural events like floods, droughts, earthquakes, or groundwater fluctuations.

Note, too, the reliability of a geotechnical-engineering report can be affected by the passage of time, because of factors like changed subsurface conditions; new or modified codes, standards, or regulations; or new techniques or tools. *If you are the least bit uncertain* about the continued reliability of this report, contact your geotechnical engineer before applying the recommendations in it. A minor amount of additional testing or analysis after the passage of time – if any is required at all – could prevent major problems.

Read this Report in Full

Costly problems have occurred because those relying on a geotechnical-engineering report did not read the report in its entirety. Do not rely on an executive summary. Do not read selective elements only. *Read and refer to the report in full.*

You Need to Inform Your Geotechnical Engineer About Change

Your geotechnical engineer considered unique, project-specific factors when developing the scope of study behind this report and developing the confirmation-dependent recommendations the report conveys. Typical changes that could erode the reliability of this report include those that affect:

- the site's size or shape;
- the elevation, configuration, location, orientation, function or weight of the proposed structure and the desired performance criteria;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project or site changes – even minor ones – and request an assessment of their impact. *The geotechnical engineer who prepared this report cannot accept*

responsibility or liability for problems that arise because the geotechnical engineer was not informed about developments the engineer otherwise would have considered.

Most of the "Findings" Related in This Report Are Professional Opinions

Before construction begins, geotechnical engineers explore a site's subsurface using various sampling and testing procedures. *Geotechnical engineers can observe actual subsurface conditions only at those specific locations where sampling and testing is performed.* The data derived from that sampling and testing were reviewed by your geotechnical engineer, who then applied professional judgement to form opinions about subsurface conditions throughout the site. Actual sitewide-subsurface conditions may differ – maybe significantly – from those indicated in this report. Confront that risk by retaining your geotechnical engineer to serve on the design team through project completion to obtain informed guidance quickly, whenever needed.

This Report's Recommendations Are Confirmation-Dependent

The recommendations included in this report – including any options or alternatives – are confirmation-dependent. In other words, they are not final, because the geotechnical engineer who developed them relied heavily on judgement and opinion to do so. Your geotechnical engineer can finalize the recommendations *only after observing actual subsurface conditions* exposed during construction. If through observation your geotechnical engineer confirms that the conditions assumed to exist actually do exist, the recommendations can be relied upon, assuming no other changes have occurred. *The geotechnical engineer who prepared this report cannot assume responsibility or liability for confirmation-dependent recommendations if you fail to retain that engineer to perform construction observation.*

This Report Could Be Misinterpreted

Other design professionals' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer serve as a continuing member of the design team, to:

- confer with other design-team members;
- help develop specifications;
- review pertinent elements of other design professionals' plans and specifications; and
- be available whenever geotechnical-engineering guidance is needed.

You should also confront the risk of constructors misinterpreting this report. Do so by retaining your geotechnical engineer to participate in prebid and preconstruction conferences and to perform construction-phase observations.

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can shift unanticipated-subsurface-conditions liability to constructors by limiting the information they provide for bid preparation. To help prevent the costly, contentious problems this practice has caused, include the complete geotechnical-engineering report, along with any attachments or appendices, with your contract documents, *but be certain to note conspicuously that you've included the material for information purposes only.* To avoid misunderstanding, you may also want to note that "informational purposes" means constructors have no right to rely on the interpretations, opinions, conclusions, or recommendations in the report. Be certain that constructors know they may learn about specific project requirements, including options selected from the report, *only* from the design drawings and specifications. Remind constructors that they may perform their own studies if they want to, and *be sure to allow enough time* to permit them to do so. Only then might you be in a position to give constructors the information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions. Conducting prebid and preconstruction conferences can also be valuable in this respect.

Read Responsibility Provisions Closely

Some client representatives, design professionals, and constructors do not realize that geotechnical engineering is far less exact than other engineering disciplines. This happens in part because soil and rock on project sites are typically heterogeneous and not manufactured materials with well-defined engineering properties like steel and concrete. That lack of understanding has nurtured unrealistic expectations that have resulted in disappointments, delays, cost overruns, claims, and disputes. To confront that risk, geotechnical engineers commonly include explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The personnel, equipment, and techniques used to perform an environmental study – e.g., a "phase-one" or "phase-two" environmental site assessment – differ significantly from those used to perform a geotechnical-engineering study. For that reason, a geotechnical-engineering report does not usually provide environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated subsurface environmental problems have led to project failures.* If you have not obtained your own environmental information about the project site, ask your geotechnical consultant for a recommendation on how to find environmental risk-management guidance.

Obtain Professional Assistance to Deal with Moisture Infiltration and Mold

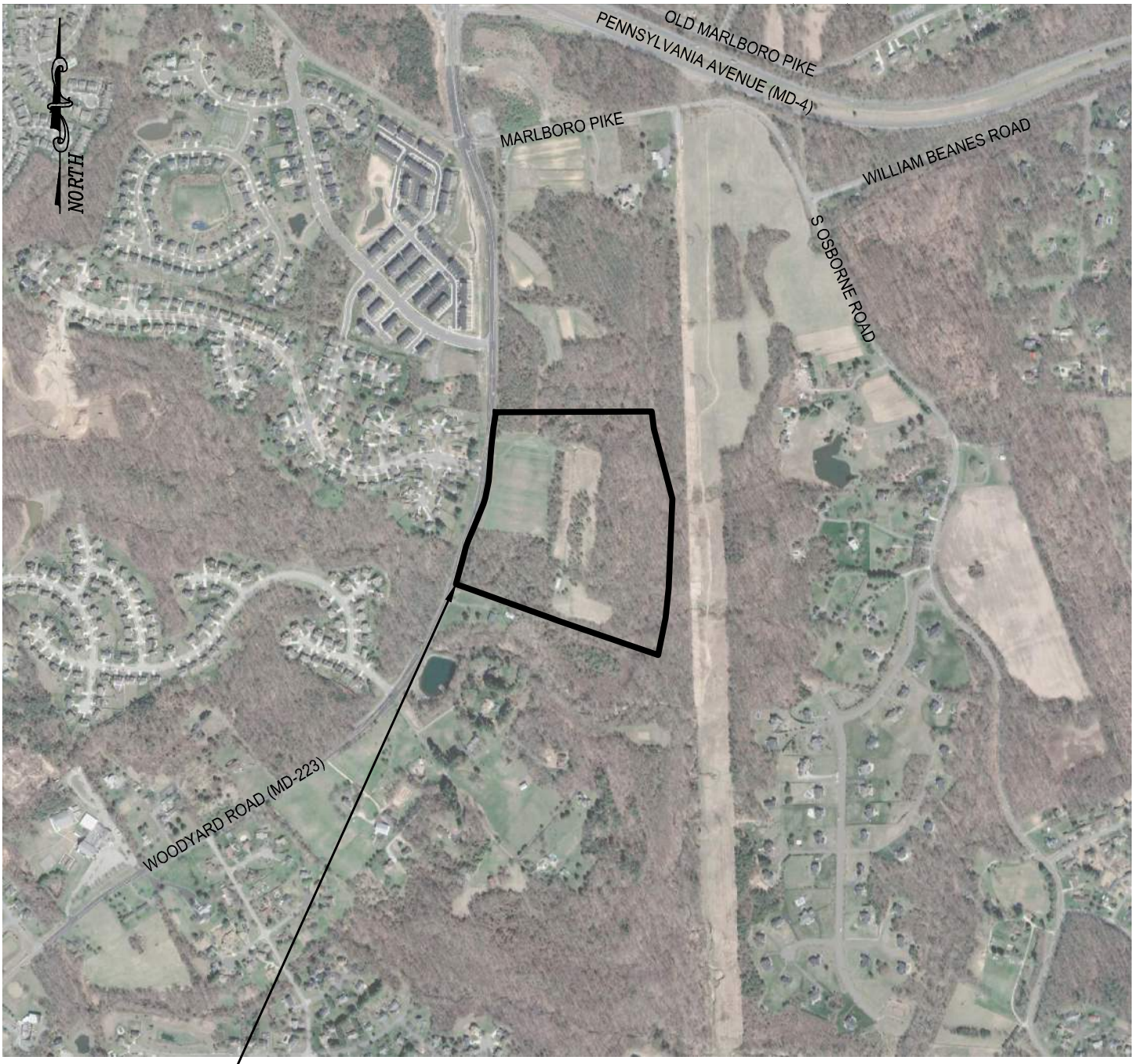
While your geotechnical engineer may have addressed groundwater, water infiltration, or similar issues in this report, the engineer's services were not designed, conducted, or intended to prevent migration of moisture – including water vapor – from the soil through building slabs and walls and into the building interior, where it can cause mold growth and material-performance deficiencies. Accordingly, ***proper implementation of the geotechnical engineer's recommendations will not of itself be sufficient to prevent moisture infiltration. Confront the risk of moisture infiltration*** by including building-envelope or mold specialists on the design team. ***Geotechnical engineers are not building-envelope or mold specialists.***

GEOPROFESSIONAL BUSINESS ASSOCIATION

Telephone: 301/565-2733
e-mail: info@geoprofessional.org www.geoprofessional.org

APPENDIX A

FIGURES



NOTES

1. BASE IMAGE WAS OBTAINED FROM GOOGLE EARTH PRO (IMAGERY DATE: APRIL, 2022).

0 500 1,000

APPROXIMATE SCALE
1 INCH = 1,000 FEET

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GALILEE BAPTIST CHURCH

PRINCE GEORGE'S COUNTY, MARYLAND

SITE AERIAL

PROJECT: 31232352	DATE: DECEMBER 2023	SCALE: 1" = 1,000'	DRAWN BY: CAAF	REVIEW BY: DCG	FIGURE: 1

Qal — ALLUVIUM (Qal) - HETEROGENEOUS, POORLY STRATIFIED SEDIMENTS OF INTERBEDDED MUDDY SAND, SILT-CLAY, AND SUBORDINATE GRAVEL. MUCH OF THIS UNIT IS SOFT AND WATER-SATURATED DUE TO PERENNIALLY HIGH WATER TABLES. LIGHT TO DARK GRAY , TAN, OR BROWN IN COLOR WHERE UNWEATHERED. WEATHERS TO A PALE GRAY, YELLOW OR BROWN. ALLUVIAL SEDIMENTS AVERAGES ABOUT 15 FEET IN THICKNESS.

Tu — UPLAND DEPOSITS (Tu) - POORLY SORTED, MEDIUM- TO COARSE-GRAINED QUARTZ SAND INTERBEDDED WITH PEBBLY SAND AND MEDIUM- TO COARSE-GRAINED, PEBBLY GRAVEL. PALE GRAY, TAN, OR BUFF IN COLOR THAT WEATHERS TO A YELLOW, ORANGE, OR BROWN. THICKNESS REACHES A MAXIMUM OF 40 FEET.

Tc — CALVERT FORMATION (Tc) - VERY FINE- TO FINE-GRAINED, VARIABLY CLAYEY SAND, QUARTZ SILT, AND DIATOMACEOUS SILT. OLIVE GREEN AND OLIVE GRAY IN COLOR; WEATHERS TO PALE-GRAY, TAN, BROWN, YELLOW, OR ORANGE. MUCH OF THE UNITS HAS BEEN WEATHERED TO LOOSELY TEXTURED, YELLOW OR ORANGE SAND. MAXIMUM THICKNESS OF 100 FEET.

NOTES

1. BASE IMAGE WAS ADAPTED FROM THE *GEOLOGIC MAP OF PRINCE GEORGE'S COUNTY*, DATED 2003, PREPARED BY THE MARYLAND GEOLOGICAL SURVEY.

0 500 1,000

APPROXIMATE SCALE
1 INCH = 1,000 FEET

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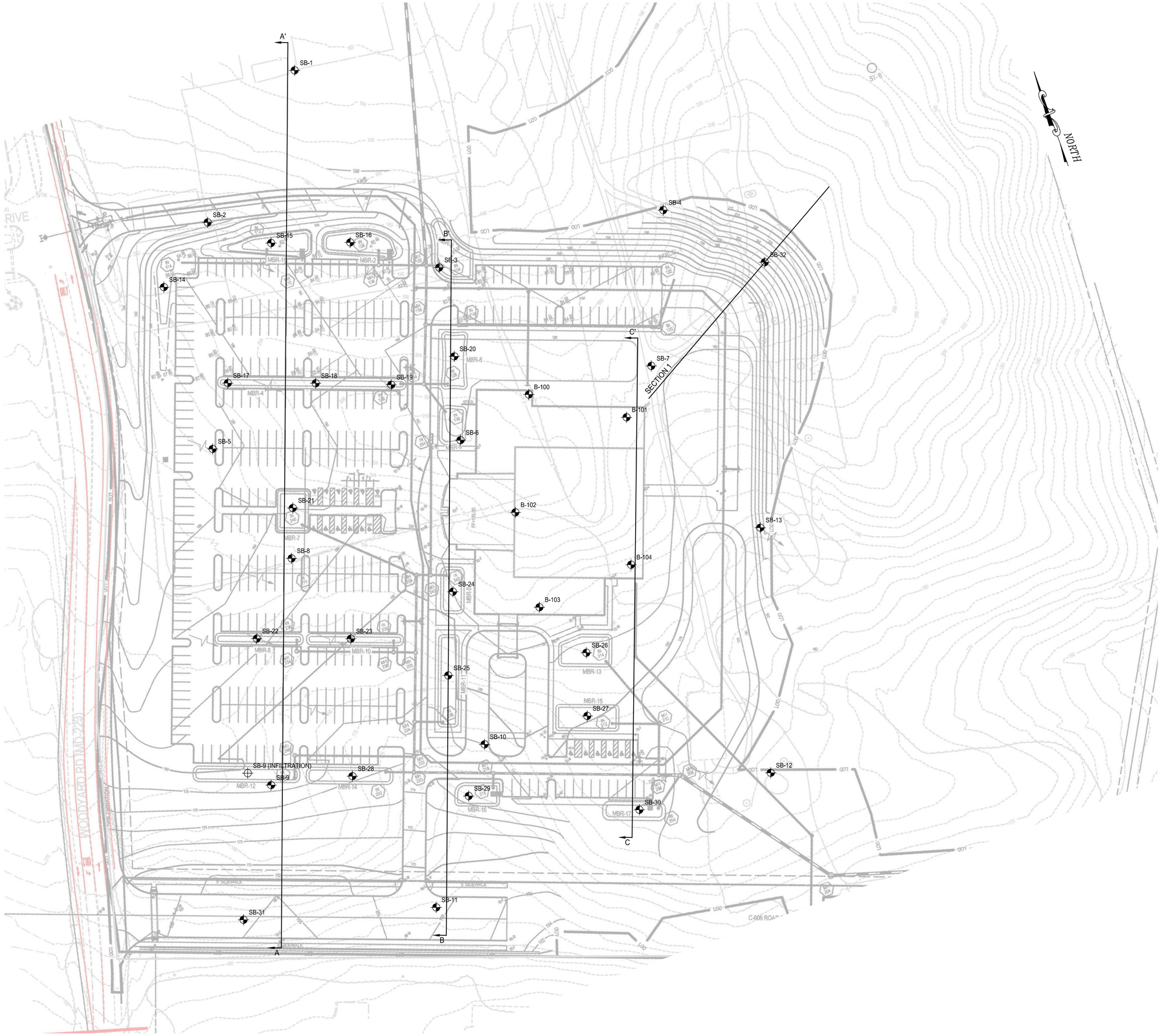
GALILEE BAPTIST CHURCH

PRINCE GEORGE'S COUNTY, MARYLAND

SITE GEOLOGY MAP

PROJECT: 31232352	DATE: DECEMBER 2023	SCALE: 1" = 1,000'	DRAWN BY: CAAF	REVIEW BY: DCG	FIGURE: 2



LEGEND

- SB-14 — IDENTIFICATION AND APPROXIMATE LOCATION OF STANDARD PENETRATION TEST (SPT) BORING PERFORMED BY GEO-TECHNOLOGY ASSOCIATES, INC. (GTA) IN NOVEMBER OF 2023.
- SB-9 — IDENTIFICATION AND APPROXIMATE LOCATION OF INFILTRATION TEST, PERFORMED NEAR A 2017 EXPLORATION, PERFORMED BY GTA IN NOVEMBER OF 2023.
- B-100 — IDENTIFICATION AND APPROXIMATE LOCATION OF SPT BORING PERFORMED BY GTA IN THE PROPOSED BUILDING FOOTPRINT, IN NOVEMBER OF 2023.
- SB-1 — IDENTIFICATION AND APPROXIMATE LOCATION OF SPT BORING PERFORMED BY GTA IN JUNE OF 2017.
- A — A' SUBSURFACE PROFILE SECTION LINE

NOTES

1. BASE IMAGE WAS ADAPTED FROM THE *GALILEE BAPTIST CHURCH SOIL BORINGS EXHIBIT*, DATED APRIL OF 2016, PREPARED BY SOLTESZ, LLC (SOLTESZ), THE PROJECT CIVIL ENGINEER.
2. THE 2017 EXPLORATION LOCATIONS WERE REFERENCED FROM GTA'S *GALILEE BAPTIST CHURCH, SWM FACILITIES REPORT OF GEOTECHNICAL EXPLORATION*, DATED JULY 14, 2017. THE 2023 EXPLORATION LOCATIONS WERE SELECTED AND STAKED IN THE FIELD BY SOLTESZ USING AN INSTRUMENTED SURVEY. EXPLORATION LOCATIONS SHOULD BE CONSIDERED ACCURATE ONLY TO THE DEGREE IMPLIED BY THE METHOD USED.

0 50 100

APPROXIMATE SCALE
1 INCH = 50 FEET

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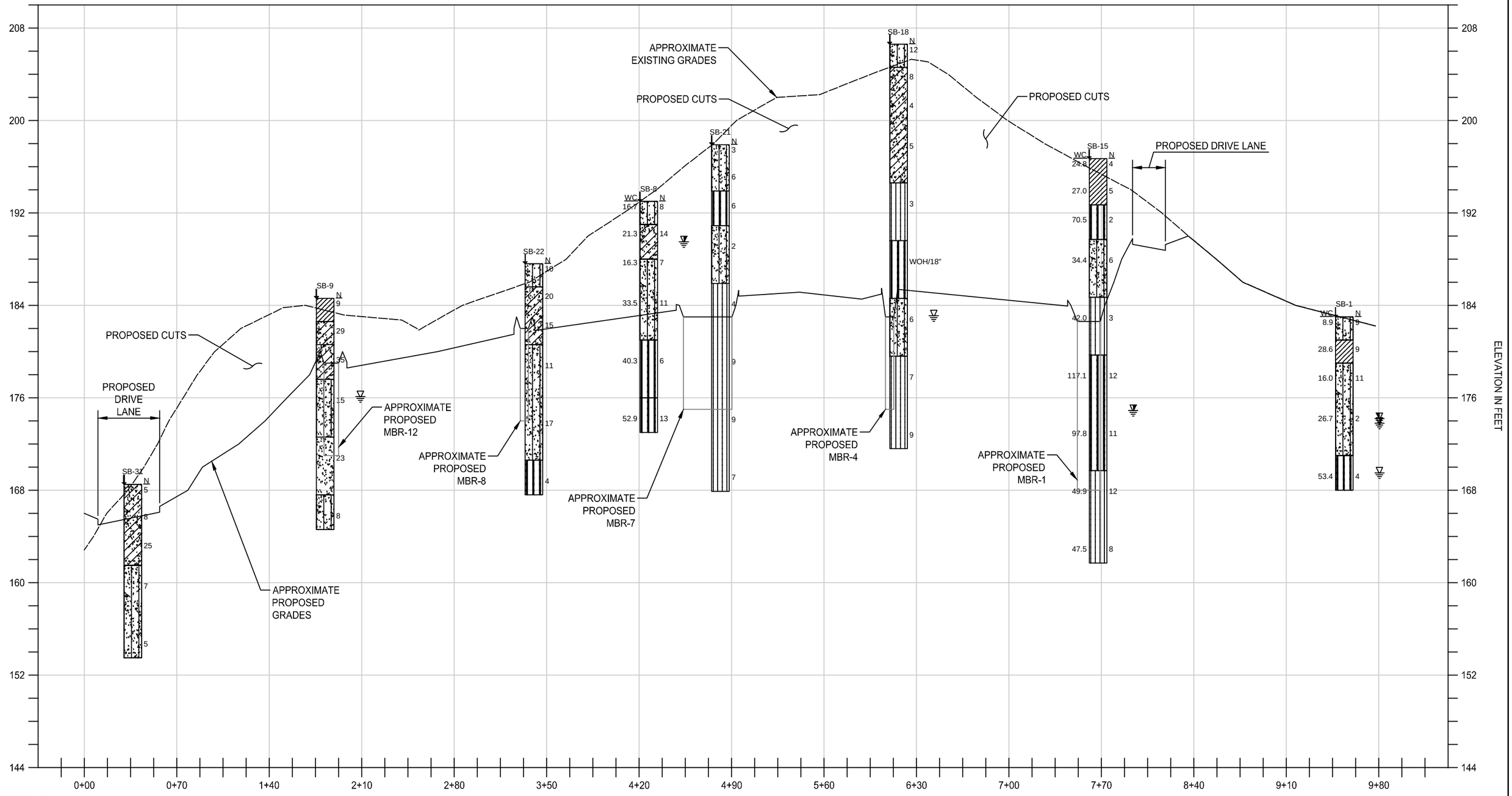
GALILEE BAPTIST CHURCH

PRINCE GEORGE'S COUNTY, MARYLAND

EXPLORATION LOCATION PLAN

PROJECT: 31232352	DATE: DECEMBER 2023	SCALE: 1" = 50'	DRAWN BY: CAAF	REVIEW BY: DCG	FIGURE: 3



LEGEND

- SC - CLAYEY SAND
- SM - SILTY SAND
- CL - LEAN CLAY
- ML - SILT
- MH - ELASTIC SILT
- APPROXIMATE LOCATION OF EXPLORATION
- WATER TABLE DURING DRILLING
- WATER TABLE AT COMPLETION
- WATER TABLE AFTER 24 HOURS

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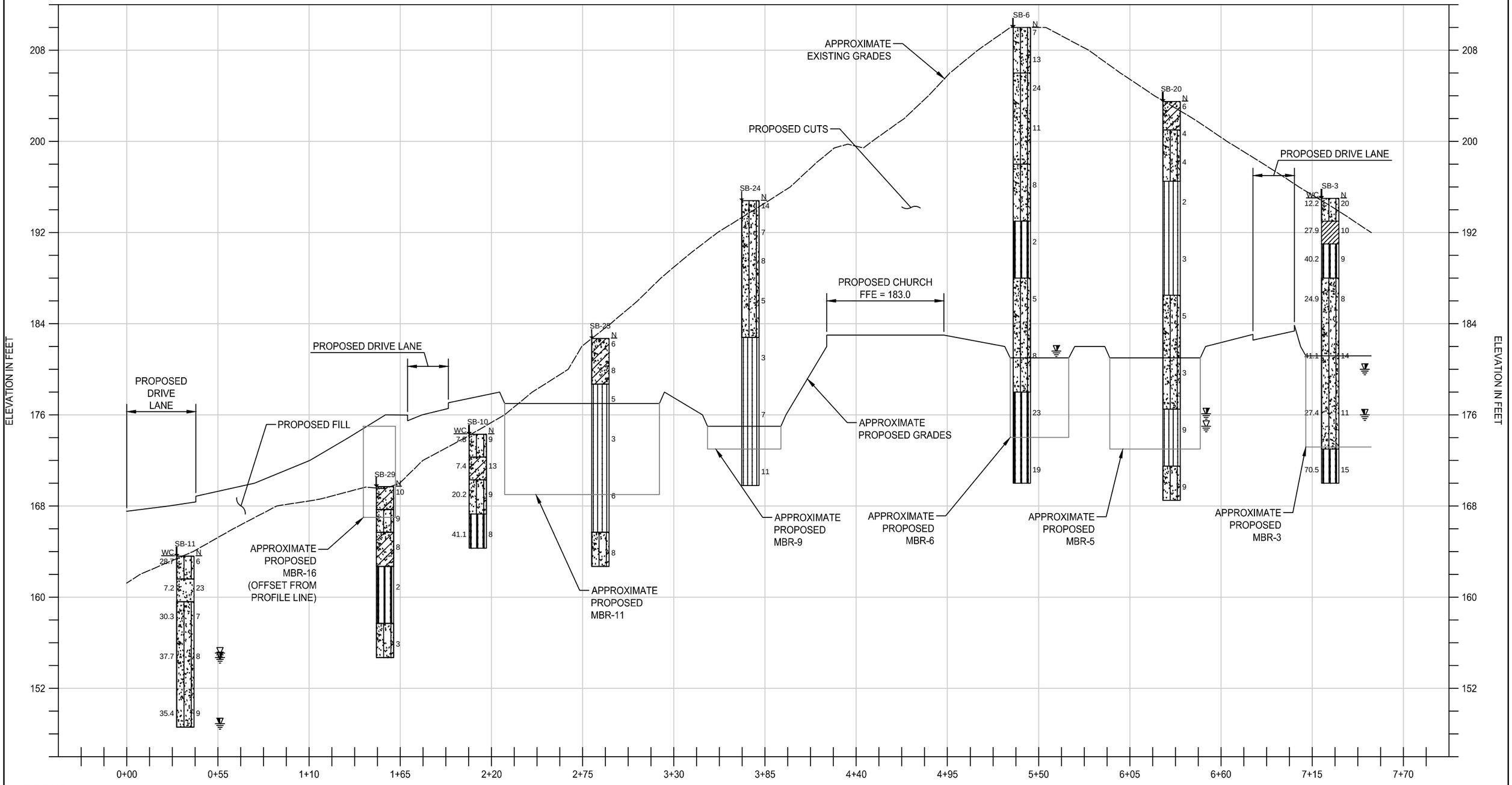
GALILEE BAPTIST CHURCH

PRINCE GEORGE'S COUNTY, MARYLAND

SUBSURFACE PROFILE A-A'

PROJECT: 31232352	DATE: DECEMBER 2023	VERT. SCALE: 1" = 8'	DRAWN BY: CAAF	REVIEW BY: DCG	FIGURE: 4



LEGEND

- SP - POORLY GRADED SAND
- SC - CLAYEY SAND
- SM - SILTY SAND
- CL - LEAN CLAY
- ML - SILT
- MH - ELASTIC SILT
- APPROXIMATE LOCATION OF EXPLORATION
- WATER TABLE DURING DRILLING
- WATER TABLE AT COMPLETION
- WATER TABLE AFTER 24 HOURS

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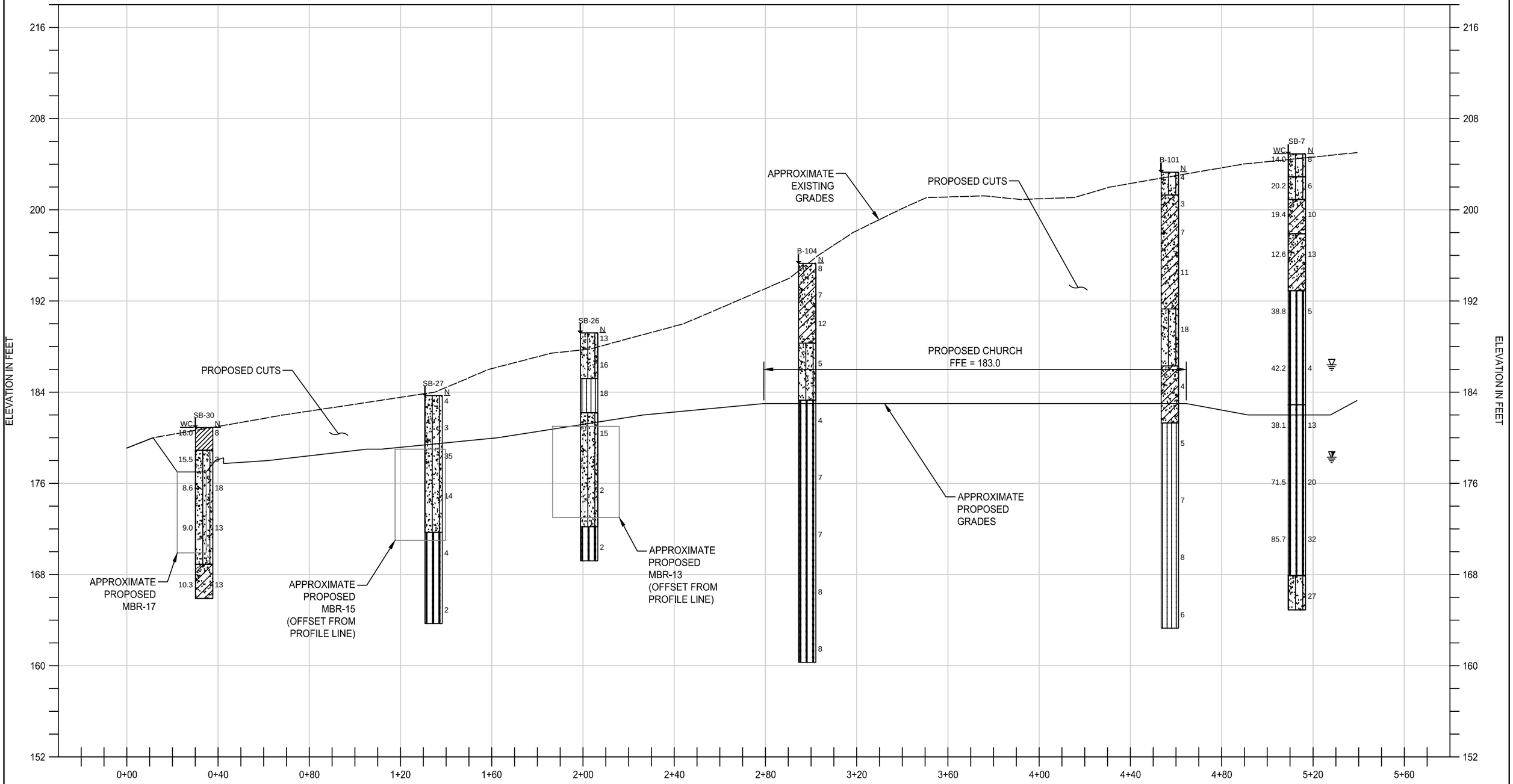
GALILEE BAPTIST CHURCH

PRINCE GEORGE'S COUNTY, MARYLAND

SUBSURFACE PROFILE B-B'

PROJECT: 31232352	DATE: DECEMBER 2023	VERT. SCALE: 1" = 8'	DRAWN BY: CAAF	REVIEW BY: DCG	FIGURE: 5



LEGEND

- SC - CLAYEY SAND
- SM - SILTY SAND
- CL - LEAN CLAY
- ML - SILT
- MH - ELASTIC SILT
- APPROXIMATE LOCATION OF EXPLORATION
- WATER TABLE DURING DRILLING
- WATER TABLE AFTER 24 HOURS

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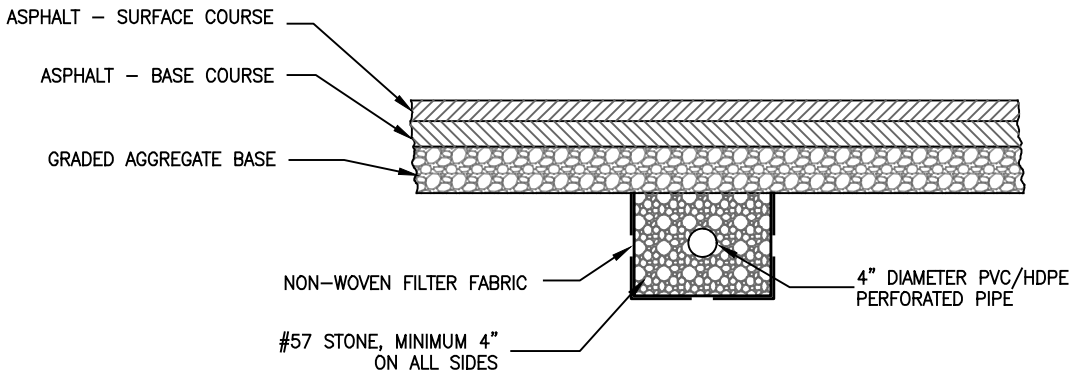
GALILEE BAPTIST CHURCH

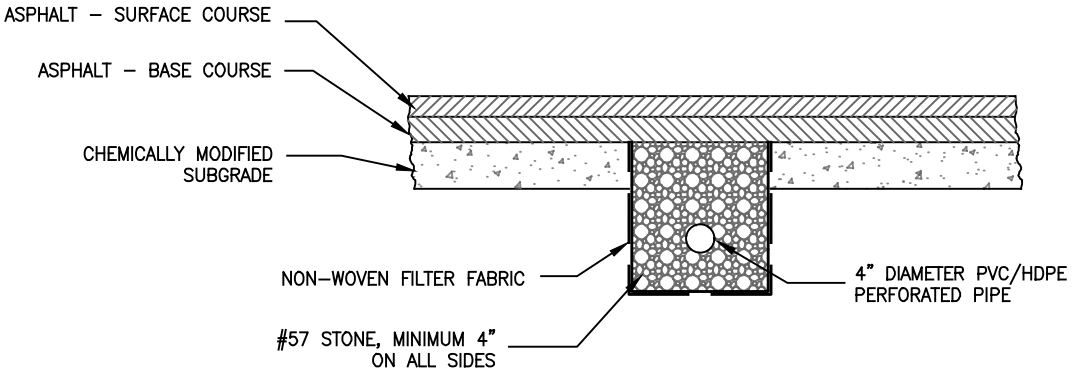
PRINCE GEORGE'S COUNTY, MARYLAND

SUBSURFACE PROFILE C-C'

PROJECT: 31232352	DATE: DECEMBER 2023	VERT. SCALE: 1" = 8'	DRAWN BY: CAAF	REVIEW BY: DCG	FIGURE: 6



UNDERDRAIN DETAIL FOR UNTREATED PAVEMENT SECTION



UNDERDRAIN DETAIL FOR TREATED PAVEMENT SECTION

NOTES

1. PERFORATED PIPE SHOULD BE CONNECTED TO THE SITE STORM DRAINAGE SYSTEM TO ALLOW GRAVITY FLOW OF COLLECTED WATER
2. INSTALL UNDERDRAINS AFTER CHEMICAL STABILIZATION OF THE SUBGRADE

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GALILEE BAPTIST CHURCH

PRINCE GEORGE'S COUNTY, MARYLAND

PAVEMENT UNDERDRAIN DETAIL

PROJECT: 31232352	DATE: DECEMBER 2023	SCALE: NTS	DRAWN BY: CAAF	REVIEW BY: DCG	FIGURE: 7

APPENDIX B
EXPLORATION LOGS

NOTES FOR EXPLORATION LOGS

KEY TO USCS TERMINOLOGY AND GRAPHIC SYMBOLS

MAJOR DIVISIONS (BASED UPON ASTM D 2488)				SYMBOLS: GRAPHIC	SYMBOLS: LETTER	
COARSE-GRAINED SOILS — MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELY SOILS — MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LESS THAN 15% PASSING THE NO. 200 SIEVE)			GW	Well-Graded GRAVEL
					GP	Poorly Graded GRAVEL
		GRAVELS WITH FINES (MORE THAN 15% PASSING THE NO. 200 SIEVE)			GM	Silty GRAVEL
					GC	Clayey GRAVEL
	SAND AND SANDY SOILS — MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LESS THAN 15% PASSING THE NO. 200 SIEVE)			SW	Well-Graded SAND
					SP	Poorly Graded SAND
		SANDS WITH FINES (MORE THAN 15% PASSING THE NO. 200 SIEVE)			SM	Silty SAND
					SC	Clayey SAND
FINE-GRAINED SOILS — MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILT OR CLAY (<15% RETAINED THE NO. 200 SIEVE); SILT OR CLAY WITH SAND OR GRAVEL (15% TO 30% RETAINED THE NO. 200 SIEVE); SANDY OR GRAVELY SILT OR CLAY (>30% RETAINED THE NO. 200 SIEVE)	SILTS AND LEAN CLAYS — LIQUID LIMIT LESS THAN 50			ML	SILT
					CL	Lean CLAY
					OL	
		ELASTIC SILTS AND FAT CLAYS — LIQUID LIMIT GREATER THAN 50			MH	Elastic SILT
					CH	Fat CLAY
					OH	
HIGHLY ORGANIC SOILS					PT	

NOTE: DUAL SYMBOLS ARE USED TO INDICATE COURSE-GRAINED SOILS CONTAINING AN ESTIMATED 5 TO 15% FINES BASED ON VISUAL CLASSIFICATION OR BETWEEN 5 AND 12 PERCENT FINES BASED ON LABORATORY TESTING; AND FINE-GRAINED SOILS WHEN THE PLOT OF LIQUID LIMIT & PLASTICITY INDEX VALUES FALL IN THE PLASTICITY CHART'S CROSSHATCHED AREA. FINE-GRAINED SOILS ARE CLASSIFIED AS ORGANIC (OL OR OH) WHEN ENOUGH ORGANIC PARTICLES ARE PRESENT TO INFLUENCE ITS PROPERTIES. LABORATORY TEST RESULTS ARE USED TO SUPPLEMENT SOIL CLASSIFICATION BY THE VISUAL-MANUAL PROCEDURES OF ASTM D 2488.

ADDITIONAL TERMINOLOGY AND GRAPHIC SYMBOLS

	DESCRIPTION		GRAPHIC SYMBOLS
ADDITIONAL DESIGNATIONS	TOPSOIL		
	MAN MADE FILL		
	GLACIAL TILL		
	COBBLES AND BOULDERS		
RESIDUAL SOIL DESIGNATIONS	DESCRIPTION	"N" VALUE	
	HIGHLY WEATHERED ROCK	50 TO 50/1"	
	PARTIALLY WEATHERED ROCK	MORE THAN 50 BLOWS FOR LESS THAN 1" OF PENETRATION, AUGER PENETRABLE	

COARSE-GRAINED SOILS
(GRAVEL AND SAND)

DESIGNATION	BLOWS PER FOOT (BPF) "N"
VERY LOOSE	0 - 4
LOOSE	5 - 10
MEDIUM DENSE	11 - 30
DENSE	31 - 50
VERY DENSE	>50

NOTE: "N" VALUE DETERMINED AS PER ASTM D 1586

FINE-GRAINED SOILS
(SILT AND CLAY)

CONSISTENCY	BPF "N"
VERY SOFT	<2
SOFT	2 - 4
MEDIUM STIFF	5 - 8
STIFF	9 - 15
VERY STIFF	16 - 30
HARD	>30

NOTE: ADDITIONAL DESIGNATIONS TO ADVANCE SAMPLER INDICATED IN BLOW COUNT COLUMN:
WOH = WEIGHT OF HAMMER
WOR = WEIGHT OR ROD(S)

SAMPLE TYPE

DESIGNATION	SYMBOL
SOIL SAMPLE	S-
SHELBY TUBE	U-
ROCK CORE	R-

WATER DESIGNATION

DESCRIPTION	SYMBOL
ENCOUNTERED DURING DRILLING	▽
UPON COMPLETION OF DRILLING	▼
24 HOURS+ AFTER DRILLING	▼
ADDITIONAL MEASUREMENTS	▼

NOTE: WATER OBSERVATIONS WERE MADE AT THE TIME INDICATED. POROSITY OF SOIL STRATA, WEATHER CONDITIONS, SITE TOPOGRAPHY, ETC. MAY CAUSE WATER LEVEL CHANGES.

GEO-TECHNOLOGY ASSOCIATES, INC.

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GEOTECHNICAL FIELD EXPLORATION METHODOLOGY

STANDARD PENETRATION TEST (SPT)

To perform a Standard Penetration Test, a drill rig is used to drill to the test depth with hollow-stem augers. Steel rods, with a split-spoon sampler at the end, are lowered to the test depth inside of the augers. A 140-pound hammer is repeatedly dropped onto the steel rod from a height of 30 inches. The numbers of blows (blow counts) required to advance the sampler into the soil are recorded in 6-inch increments. The blow counts from the second and third 6-inch increments are added together to calculate the SPT N-value, which is used to estimate soil parameters using various correlations. After the test, the steel rods are removed from the augers and a soil sample is collected from the split-spoon sampler.

CONE PENETRATION TEST (CPT)

The Cone Penetration Test is performed by a specialized rig that pushes a 1.44 or 1.75-inch-diameter steel probe into the soil. The probe measures tip and sleeve resistance at approximate ¾-inch intervals through the depth of the sounding. As such, the CPT is capable of identifying relatively thin layers of variable materials. The data is collected and recorded with an on-board data acquisition system as the cone is advanced. The CPT data is further evaluated to estimate soil parameters, including soil behavior type, pore water pressure, and equivalent SPT N-value. Note that the soil behavior type is used to estimate soil type, but is not necessarily indicative of the Unified Soil Classification System classifications.

FLAT PLATE DILATOMETER TEST (DMT)

The Dilatometer consists of a steel blade with a thin, expandable, steel membrane mounted on one face. The dilatometer is attached to steel rods and pushed to the test depth using a drill rig or other heavy equipment. Once at the test depth, the membrane is pressurized so that it expands 1.1 mm into the surrounding soil. Pressures required to expand the membrane (and thus cause deflection in the surrounding soil) are recorded and used to estimate commonly used geotechnical parameters. Modulus estimates from dilatometer tests are particularly useful for estimation of foundation settlements in relatively soft soils.

PRESSUREMETER TEST (PMT)

The Pressuremeter test is performed by lowering a probe into a specially prepared borehole, hydraulically inflating the probe's membrane into the surrounding soil, and recording the corresponding pressure at various increments. The test setup includes a probe that is covered with an outer sheath, a control unit, and a digital readout. The control unit contains electrical pressure and volume sensors, a piston, and a mechanical actuator (screw jack) that is used to raise and lower the piston, which injects a set volume of liquid into the membrane for each crank. The test is typically performed by using the controlled strain method, where increments of 40 cubic centimeters are injected and the corresponding pressure is recorded at each interval. The test is performed until the soil has yielded or the maximum expansion of the probe is reached. The PMT data is used to obtain the limit pressure and Pressuremeter modulus, which can be used to optimize shallow and deep foundation designs.

TABLE NO. 1
SUBSURFACE EXPLORATION SUMMARY
GALILEE BAPTIST CHURCH
GTA PROJECT NO. 31232352

Exploration No.	Approximate Existing Ground Surface Elevation[1] (El.)	Approximate Proposed Grade[2] (El.)	Approximate Cut/Fill (-/+) Required (ft.)	Exploration Depth (ft.)	Approximate Termination Elevation (El.)	Approximate Topsoil Thickness (in.)	Groundwater Observations						Approximate Cave-in Depth Observation		Infiltration Testing			
							Encountered During Drilling		Completion of Drilling		One to Six Days After Drilling				Approximate Test Depth (ft.)	Approximate Test Elevation (El.)	Average Infiltration (in./hr.)	Soil Type at Test Depth (USCS)
							Depth (ft.)	(El.)	Depth (ft.)	(El.)	Depth (ft.)	(El.)	Depth (ft.)	(El.)				
Standard Penetration Test (SPT) Borings Performed by GTA in June of 2017																		
SB-1	183	183	0	15	168	5	13.5	170	8.8	174	9.2	174	Pipe	---				
SB-2	197	193	-4	20	177	6	Dry	<177	Dry	<177	Dry	<177	Pipe	---				
SB-3	195.0	184	-11	25	170	4	Dry	<170	19.0	176	15.0	180	20.6	174				
SB-4	203.3	203	0	35	168	2	Dry	<168	Dry	<168	32.2	171	Pipe	---				
SB-5	196.5	187	-10	20	177	3	Dry	<177	Dry	<182	2.5	194	14.6	182			---	
SB-6	210	180	-30	40	170	3	Dry	<170	Dry	<170	28.4	182	Pipe	---				
SB-7	204.9	182	-23	40	165	4	18.5	186	Dry	<165	26.6	178	Pipe	---				
SB-8	193.0	183	-10	20	173	5	Dry	<173	Dry	<177	3.5	190	15.2	178				
SB-9	184.6	187	2	20	165	8	8.5	176	Dry	<165	Dry	<165	Pipe	---	16.4	169.3	> 3.0	SP
SB-10	174.3	178	4	10	164	6	Dry	<164	Dry	<170	Dry	<170	4.2	170				
SB-11	163.6	168	4	15	149	4	8.5	155	14.7	149	8.9	155	Pipe	---			---	
SB-12	179.7	180	0	15	165	2	Dry	<165	Dry	<165	Dry	<165	Pipe	---				
SB-13	187.6	186	-2	20	168	5	13.5	174	Dry	<174	Dry	<173	14.0	174				
SPT Borings Peformed by GTA in November of 2023																		
SB-14	201.6	183.5	-18	30	172	1	Dry	<172	Dry	<187	Dry	<197	5.1	197				
SB-15	196.7	182.6	-14	35	162	1	Dry	<162	Dry	<162	21.8	175	Pipe	---				
SB-16	193.3	180.5	-13	25	168	1	Dry	<168	Dry	<180	Dry	<189	4.3	189				
SB-17	201.5	185.0	-17	30	172	2	23.5	178	7	195	17.9	184	Pipe	---			---	
SB-18	206.6	183.0	-24	35	172	1	23.5	183	Dry	<198	Dry	<200	7.1	200				
SB-19	206.8	181.0	-26	40	167	1	28.5	178	Dry	<194	Dry	<196	11.0	196				
SB-20	203.5	181.0	-23	35	169	1	28.5	175	Dry	<169	27.4	176	Pipe	---				
SB-21	197.9	183.0	-15	30	168	1	Dry	<168	Dry	<185	Dry	<195	2.9	195				
SB-22	187.6	182.0	-6	20	168	1	Dry	<168	Dry	<178	Dry	<184	3.7	184	15.0	172.6	< 0.1	SM
SB-23	185.0	179.0	-6	20	165	1	Dry	<165	20.8	164	20.3	165	Pipe	---	15.5	169.5	2.0	ML
SB-24	194.8	181.0	-14	25	170	3	Dry	<170	Dry	<185	Dry	<189	5.7	189			---	
SB-25	182.7	177.0	-6	20	163	1	Dry	<163	Dry	<173	Dry	<180	2.3	180	15.1	167.6	1.1	ML
SB-26	189.2	181.0	-8	20	169	1	Dry	<169	Dry	<180	Dry	<182	7.1	182				
SB-27	183.7	179.0	-5	20	164	1	Dry	<164	Dry	<164	Dry	<164	Pipe	---			---	
SB-28	178.0	175.0	-3	15	163	1	Dry	<163	Dry	<163	14.1	164	Pipe	---	12.9	165.1	0.8	MH
SB-29	169.7	175.0	5	15	155	1	Dry	<155	Dry	<161	Dry	<165	5.1	165	4.0	165.7	> 3.0	SC
SB-30	180.9	177.0	-4	15	166	1	Dry	<166	Dry	<173	Dry	<178	2.6	178				
SB-31	168.5	168.5	0	15	154	1	Dry	<154	Dry	<161	Dry	<163	5.9	163				
SB-32	214	212	-2	30	184	3	Dry	<184	Dry	<184	Dry	<184	Pipe	---				
B-100	202.5	183.0	-20	45	158	1	38.5	164	Dry	<189	Dry	<191	11.8	191			---	
B-101	203.3	183.0	-20	40	163	1	Dry	<163	Dry	<172	N/A	---	0.0	203				
B-102	206.8	183.0	-24	45	162	3	Dry	<162	Dry	<193	Dry	<197	9.8	197				
B-103	196	183.0	-13	35	161	3	Dry	<161	Dry	<182	Dry	<188	7.8	188				
B-104	195.3	183.0	-12	35	160	3	Dry	<160	Dry	<180	N/A	---	0.0	195				

Notes:

The approximate cave-in depth observations are the shallowest cave-in depths observed within each boring.

< (El.) = Groundwater was not observed and is therefore anticipated to be at or below the specified cave-in depth for the borings, or the exploration depth for the borings with temporary pipes.

Pipe = Temporary 3/4 inch PVC pipe installed to facilitate groundwater readings. Cave-in depth/elevation could not be measured.

[1] The existing ground surface elevations were provided by Soltesz, Inc. based on an instrumented survey. Borings SB-31, B-100, and B-103 were offset from their staked locations. Boring B-32 was staked by GTA using a hand-held GPS unit. The existing ground surface elevations at these locations were visually estimated based on topographic contours shown on the available plans. Existing ground surface elevations of the 2017 explorations were referenced from the previous geotechnical report.

[2] The proposed grades for the 2023 explorations were provided by Soltesz. The proposed grades for the 2017 explorations were interpolated from the topographic contours shown on the available site plans and should be considered approximate.

2017

EXPLORATION LOGS

LOG OF BORING NO. SB-1

PROJECT: **Galilee Baptist Church, SWM Facilities**
PROJECT NO.: **171186**
PROJECT LOCATION: **Prince George's County**

WATER LEVEL (ft): 8.8 | 9.2 |
DATE: 6/19/17 | 6/20/17 |
CAVED (ft): Pipe | Pipe |

DATE STARTED: **6/19/17**
DATE COMPLETED: **6/19/17**
DRILLING CONTRACTOR: **Geo-Technology Associates, Inc.**
DRILLER: **C. Mollineau**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **Split Spoon / Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **13.5**
GROUND SURFACE ELEVATION: **183**
DATUM: **Topo***
EQUIPMENT: **CME-55**
LOGGED BY: **DCG**
CHECKED BY: **APM**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	6	6-4-5	9	183.0	0	SM		Brown, dry to moist, loose, Silty SAND.	Topsoil: 5 in.
					181.0		CL		Gray Brown, moist, stiff, Sandy Lean CLAY.	
S-2	2.5	10	3-4-5	9	179.0		SM		Gray, moist, very loose to medium dense, Silty SAND.	
S-3	5.0	12	5-6-5	11						
S-4	8.5	10	2-1-1	2		10				▽
					171.0		MH		Brown, moist, soft, Sandy Elastic SILT.	▽
S-5	13.5	18	1-2-2	4	168.0				Boring terminated at 15 feet.	
						20				
						30				
						40				
						50				
						60				

NOTES: *** Boring offset 9 feet to the southwest of the staked location due to access. Ground surface elevation estimated from available topographic plans.**

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LOG OF BORING NO. SB-1

LOG OF BORING NO. SB-2

PROJECT: **Galilee Baptist Church, SWM Facilities**
PROJECT NO.: **171186**
PROJECT LOCATION: **Prince George's County**

WATER LEVEL (ft): **Dry** | **20.0** |
DATE: **6/19/17** | **6/20/17** |
CAVED (ft): **Pipe** | **Pipe** |

DATE STARTED: **6/19/17**
DATE COMPLETED: **6/19/17**
DRILLING CONTRACTOR: **Geo-Technology Associates, Inc.**
DRILLER: **C. Mollineau**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **Split Spoon / Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **197**
DATUM: **Topo***
EQUIPMENT: **CME-55**
LOGGED BY: **DCG**
CHECKED BY: **APM**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	6	7-5-4	9	197.0	0	SM		Brown, moist, loose, Silty SAND, trace Topsoil.	Topsoil: 6 in.
					195.0		SM		Light Brown to Gray, moist, loose, Silty SAND.	
S-2	2.5	12	3-3-3	6	193.0		ML		Tannish Brown, moist, soft, Sandy SILT.	
S-3	5.0	14	2-1-1	2						
S-4	8.5	6	2-2-1	3		10				
					185.0		SM		Light Brown, moist, loose, Silty SAND.	
S-5	13.5	18	3-3-7	10						
					180.0		MH		Light Brown, moist, medium stiff, Sandy Elastic SILT.	
S-6	18.5	16	2-3-3	6	177.0	20			Boring terminated at 20 feet.	
						30				
						40				
						50				
						60				

NOTES: *** Boring offset 31 feet to the west of the staked location due to access. Ground surface elevation estimated from available topographic plans.**

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LOG OF BORING NO. SB-2

LOG OF BORING NO. SB-3

PROJECT: **Galilee Baptist Church, SWM Facilities**
PROJECT NO.: **171186**
PROJECT LOCATION: **Prince George's County**

WATER LEVEL (ft):	19.0	15.0	
DATE:	6/19/17	6/20/17	
CAVED (ft):	20.6	20.7	

DATE STARTED: **6/19/17**
DATE COMPLETED: **6/19/17**
DRILLING CONTRACTOR: **Geo-Technology Associates, Inc.**
DRILLER: **C. Mollineau**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **Split Spoon / Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **195.0**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **DCG**
CHECKED BY: **APM**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	6	10-10-10	20	195.0	0	SM		Brown, moist, medium dense, Silty SAND, trace Topsoil.	Topsoil: 4 in.
					193.0		CL		Light Brown, moist, stiff, Sandy Lean CLAY.	
S-2	2.5	16	6-5-5	10	191.0		MH		Gray with Light Brown, moist, stiff, Sandy Elastic SILT.	
S-3	5.0	12	5-4-5	9						
					188.0		SM		Gray to Gray Brown, moist, loose to medium dense, Silty SAND.	
S-4	8.5	14	3-3-5	8		10				
S-5	13.5	12	6-6-8	14						▼
S-6	18.5	6	5-5-6	11		20				▼
					173.0		MH		Dark Greenish Gray, moist, stiff, Sandy Elastic SILT.	
S-7	23.5	8	7-7-8	15	170.0				Boring terminated at 25 feet.	
						30				
						40				
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-3

LOG OF BORING NO. SB-4

PROJECT: **Galilee Baptist Church, SWM Facilities**
PROJECT NO.: **171186**
PROJECT LOCATION: **Prince George's County**

WATER LEVEL (ft):	Dry	32.2	
DATE:	6/15/17	6/16/17	
CAVED (ft):	Pipe	Pipe	

DATE STARTED: **6/15/17**
DATE COMPLETED: **6/15/17**
DRILLING CONTRACTOR: **Geo-Technology Associates, Inc.**
DRILLER: **G. Palmer**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **Split Spoon / Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **203.3**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **DCG**
CHECKED BY: **APM**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	6	7-9-7	16	203.3	0	SM		Light Brown, dry to moist, medium dense, Silty SAND.	Topsoil: 2 in.
					201.3		SM		Gray with Light Brown, moist, loose to medium dense, Silty SAND.	
S-2	2.5	10	5-6-6	12						
S-3	5.0	12	2-3-3	6						
					196.3		ML		Tannish Brown, moist, medium stiff, Sandy SILT.	
S-4	8.5	8	2-3-3	6		10				
					191.3		MH		Gray with Light Brown, moist, soft, Elastic SILT.	
S-5	13.5	18	2-2-1	3						
					186.3		MH		Light Brown with Orange, moist, medium stiff, Sandy Elastic SILT, trace Iron Cemented Soil Fragments.	
S-6	18.5	18	2-2-3	5		20				
					181.3		MH		Dark Greenish Gray, moist, stiff to very stiff, Sandy Elastic SILT.	
S-7	23.5	18	4-6-6	12						
S-8	28.5	18	6-8-10	18		30				
S-9	33.5	18	6-8-11	19						
					168.3				Boring terminated at 35 feet.	
						40				
						50				
						60				

NOTES:

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Laurel, MD 20707

LOG OF BORING NO. SB-4

LOG OF BORING NO. SB-5

PROJECT: **Galilee Baptist Church, SWM Facilities**
PROJECT NO.: **171186**
PROJECT LOCATION: **Prince George's County**

WATER LEVEL (ft): **Dry** | **2.5** |
DATE: **6/19/17** | **6/20/17** |
CAVED (ft): **14.6** | **14.6** |

DATE STARTED: **6/19/17**
DATE COMPLETED: **6/19/17**
DRILLING CONTRACTOR: **Geo-Technology Associates, Inc.**
DRILLER: **C. Mollineau**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **Split Spoon / Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **196.5**
DATUM: **Topo***
EQUIPMENT: **CME-55**
LOGGED BY: **DCG**
CHECKED BY: **APM**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	5	4-5-6	11	196.5	0	SM		Brown, moist, medium dense, Silty SAND, trace Topsoil.	Topsoil: 3 in.
					194.5		SM		Gray with Light Brown, moist, medium dense, Silty SAND.	▼
S-2	2.5	12	6-5-7	12	192.5		CL		Gray with Light Brown, moist, stiff, Lean CLAY with Sand.	
S-3	5.0	18	5-4-5	9	189.5		SM		Light Brown to Gray, moist, loose to medium dense, Silty SAND.	
S-4	8.5	16	3-3-3	6		10				
S-5	13.5	10	4-5-6	11						
					179.5		MH		Dark Greenish Gray, moist, stiff, Sandy Elastic SILT.	
S-6	18.5	18	4-6-7	13	176.5	20			Boring terminated at 20 feet.	
						30				
						40				
						50				
						60				

NOTES: *** Boring offset 7 feet to the north of the staked location due to access. Ground surface elevation estimated from available topographic plans.**

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LOG OF BORING NO. SB-5

LOG OF BORING NO. SB-6

PROJECT: **Galilee Baptist Church, SWM Facilities**
PROJECT NO.: **171186**
PROJECT LOCATION: **Prince George's County**

WATER LEVEL (ft):	Dry	28.4	
DATE:	6/16/17	6/19/17	
CAVED (ft):	Pipe	Pipe	

DATE STARTED: **6/16/17**
DATE COMPLETED: **6/16/17**
DRILLING CONTRACTOR: **Geo-Technology Associates, Inc.**
DRILLER: **C. Mollineau**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **Split Spoon / Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **210**
DATUM: **Topo***
EQUIPMENT: **CME-55**
LOGGED BY: **DCG**
CHECKED BY: **APM**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	2	3-3-4	7	210.0	0	SM		Light Brown, dry to moist, loose to medium dense, Silty SAND.	Topsoil: 3 in.
S-2	2.5	18	6-6-7	13	206.0		SM		Gray Brown to Light Brown, moist, medium dense, Silty SAND, trace Gravel.	
S-3	5.0	18	8-12-12	24		10				
S-4	8.5	14	6-5-6	11	198.0		SM		Light Brown, moist, loose, Silty SAND.	
S-5	13.5	12	4-4-4	8	193.0		MH		Gray with Light Brown, moist, soft, Sandy Elastic SILT.	
S-6	18.5	18	1-1-1	2	188.0	20	SM		Gray to Gray Brown, moist, loose, Silty SAND.	▼
S-7	23.5	18	1-2-3	5						
S-8	28.5	18	4-4-4	8	178.0	30	MH		Dark Greenish Gray, moist, very stiff, Sandy Elastic SILT.	
S-9	33.5	18	7-10-13	23						
S-10	38.5	18	7-8-11	19	170.0	40			Boring terminated at 40 feet.	
						50				
						60				

NOTES: *** Boring offset 23 feet to the south of the staked location due to access. Ground surface elevation estimated from available topographic plans.**

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LOG OF BORING NO. SB-6

LOG OF BORING NO. SB-7

PROJECT: **Galilee Baptist Church, SWM Facilities**
PROJECT NO.: **171186**
PROJECT LOCATION: **Prince George's County**

WATER LEVEL (ft):	Dry	26.6	
DATE:	6/15/17	6/16/17	
CAVED (ft):	Pipe	Pipe	

DATE STARTED: **6/15/17**
DATE COMPLETED: **6/15/17**
DRILLING CONTRACTOR: **Geo-Technology Associates, Inc.**
DRILLER: **G. Palmer**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **Split Spoon / Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **18.5**
GROUND SURFACE ELEVATION: **204.9**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **DCG**
CHECKED BY: **APM**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	10	4-4-4	8	204.9	0	SM		Brown to Light Brown, moist, loose, Silty SAND, trace Gravel.	Topsoil: 4 in.
					202.9		SM		Light Brown, moist, loose, Silty SAND.	
S-2	2.5	18	3-3-3	6	200.9		SC		Light Brown, moist, loose, Clayey SAND, trace Gravel.	
S-3	5.0	18	4-4-6	10	197.9		SC		Light Brown, moist, medium dense, Clayey SAND with Gravel.	
S-4	8.5	18	5-6-7	13		10				
					192.9		MH		Gray with Light Brown, moist, soft to medium stiff, Sandy Elastic SILT.	
S-5	13.5	18	3-2-3	5						
S-6	18.5	18	2-2-2	4		20				
					182.9		MH		Dark Greenish Gray, moist, stiff to hard, Sandy Elastic SILT.	
S-7	23.5	18	5-6-7	13						
S-8	28.5	18	6-9-11	20		30				
S-9	33.5	18	10-15-17	32						
					167.9		SM		Dark Greenish Gray, moist, medium dense, Silty SAND.	
S-10	38.5	18	9-14-13	27	164.9	40			Boring terminated at 40 feet.	
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-7

LOG OF BORING NO. SB-8

PROJECT: **Galilee Baptist Church, SWM Facilities**
PROJECT NO.: **171186**
PROJECT LOCATION: **Prince George's County**

WATER LEVEL (ft):	Dry	3.5	
DATE:	6/19/17	6/20/17	
CAVED (ft):	16.4	15.2	

DATE STARTED: **6/19/17**
DATE COMPLETED: **6/19/17**
DRILLING CONTRACTOR: **Geo-Technology Associates, Inc.**
DRILLER: **C. Mollineau**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **Split Spoon / Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **193.0**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **DCG**
CHECKED BY: **APM**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	8	4-4-4	8	193.0	0	SM		Brown, moist, loose, Silty SAND.	Topsoil: 5 in.
					191.0		SC		Light Brown, moist, medium dense, Clayey SAND.	
S-2	2.5	14	4-6-8	14						
S-3	5.0	12	3-3-4	7	188.0		SM		Light Brown to Gray, moist, loose to medium dense, Silty SAND.	
S-4	8.5	14	3-4-7	11		10				
					181.0		MH		Light Brown with Gray, moist, medium stiff, Sandy Elastic SILT, trace Iron Cemented Sand Fragments.	
S-5	13.5	16	3-3-3	6						
					176.0		MH		Dark Greenish Gray, moist, stiff, Sandy Elastic SILT.	
S-6	18.5	18	6-7-6	13	173.0	20			Boring terminated at 20 feet.	
						30				
						40				
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-8

LOG OF BORING NO. SB-9

PROJECT: **Galilee Baptist Church, SWM Facilities**
PROJECT NO.: **171186**
PROJECT LOCATION: **Prince George's County**

WATER LEVEL (ft):	Dry	Dry	
DATE:	6/16/17	6/19/17	
CAVED (ft):	Pipe	Pipe	

DATE STARTED: **6/16/17**
DATE COMPLETED: **6/16/17**
DRILLING CONTRACTOR: **Geo-Technology Associates, Inc.**
DRILLER: **C. Mollineau**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **Split Spoon / Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft) ▽ **8.5**
GROUND SURFACE ELEVATION: **184.6**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **DCG**
CHECKED BY: **APM**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	8	2-4-5	9	184.6	0	CL		Light Brown, moist, stiff, Sandy Lean CLAY, trace Gravel.	Topsoil: 8 in.
S-2	2.5	18	12-14-15	29	182.6		SC		Light Brown, moist, medium dense, Clayey SAND with Gravel.	
S-3	5.0	14	10-16-19	35	180.6		SC		Light Brown, moist, dense, Clayey SAND, trace Root Fragments.	
S-4	8.5	18	5-8-7	15	177.6	8	SM		Light Gray Brown, moist, medium dense, Silty SAND.	▽
S-5	13.5	12	9-12-11	23	172.6		SP		White to Light Brown, dry, medium dense, Poorly-Graded SAND with Gravel, trace Silt.	
S-6	18.5	10	4-4-4	8	167.6	16	SM		Gray, moist, loose, Silty SAND with Gravel.	
					164.6				Boring terminated at 20 feet. Infiltration Test Depth: 16.4 feet Approximate Test Elevation: 169.3 Average Infiltration Rate: > 3.00 in./hr.	
						24				
						32				
						40				
						48				

NOTES:

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LOG OF BORING NO. SB-9

LOG OF BORING NO. SB-10

PROJECT: **Galilee Baptist Church, SWM Facilities**
PROJECT NO.: **171186**
PROJECT LOCATION: **Prince George's County**

WATER LEVEL (ft):	Dry	Dry	
DATE:	6/16/17	6/19/17	
CAVED (ft):	4.4	4.2	

DATE STARTED: **6/16/17**
DATE COMPLETED: **6/16/17**
DRILLING CONTRACTOR: **Geo-Technology Associates, Inc.**
DRILLER: **C. Mollineau**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **Split Spoon / Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **174.3**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **DCG**
CHECKED BY: **APM**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	12	3-4-5	9	174.3	0	SM		Brown, moist, loose, Silty SAND with Gravel.	Topsoil: 6 in.
					172.3		SC		Brown, moist, medium dense, Clayey SAND with Gravel.	
S-2	2.5	10	7-8-5	13	170.3		SM		Light Brown to Gray, moist, loose, Silty SAND.	
S-3	5.0	14	3-4-5	9						
					167.3		MH		Light Brown to Gray, moist, medium stiff, Sandy Elastic SILT.	
S-4	8.5	18	4-4-4	8	164.3	10			Boring terminated at 10 feet.	
						20				
						30				
						40				
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-10

LOG OF BORING NO. SB-11

PROJECT: **Galilee Baptist Church, SWM Facilities**
PROJECT NO.: **171186**
PROJECT LOCATION: **Prince George's County**

WATER LEVEL (ft): **14.7** | **8.9**
DATE: **6/16/17** | **6/19/17**
CAVED (ft): **Pipe** | **Pipe**

DATE STARTED: **6/16/17**
DATE COMPLETED: **6/16/17**
DRILLING CONTRACTOR: **Geo-Technology Associates, Inc.**
DRILLER: **C. Mollineau**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **Split Spoon / Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **8.5**
GROUND SURFACE ELEVATION: **163.6**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **DCG**
CHECKED BY: **APM**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	6	2-3-3	6	163.6	0	SM		Brown, moist, loose, Silty SAND with Gravel, trace Topsoil.	Topsoil: 4 in.
					161.6		SP		Gray to Light Brown, moist, medium dense, Poorly-Graded SAND with Gravel, trace Clay.	
S-2	2.5	16	3-9-14	23	159.6		SM		Gray Brown to Dark Greenish Gray, moist, loose, Silty SAND.	
S-3	5.0	14	3-3-4	7						
S-4	8.5	18	3-4-4	8		10				
S-5	13.5	10	3-4-5	9	148.6				Boring terminated at 15 feet.	
						20				
						30				
						40				
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-11

LOG OF BORING NO. SB-12

PROJECT: **Galilee Baptist Church, SWM Facilities**
PROJECT NO.: **171186**
PROJECT LOCATION: **Prince George's County**

WATER LEVEL (ft): **Dry** | **Dry** |
DATE: **6/16/17** | **6/19/17** |
CAVED (ft): **Pipe** | **Pipe** |

DATE STARTED: **6/16/17**
DATE COMPLETED: **6/16/17**
DRILLING CONTRACTOR: **Geo-Technology Associates, Inc.**
DRILLER: **C. Mollineau**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **Split Spoon / Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **179.7**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **DCG**
CHECKED BY: **APM**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	6	6-10-10	20	179.7	0	ML		Light Brown, dry to moist, very stiff, Sandy SILT.	Topsoil: 2 in.
					177.7		SM		Gray with Light Brown, moist, Silty SAND, trace Gravel.	
S-2	2.5	16	6-13-12	25	175.7		SC		Gray, moist, Clayey SAND, trace Gravel.	
S-3	5.0	14	8-17-14	31	172.7		CL		Gray, moist, very stiff, Lean CLAY with Sand.	
S-4	8.5	18	7-9-7	16		10				
					167.7		CL		Gray with Light Brown, moist, stiff, Sandy Lean CLAY, trace Gravel.	
S-5	13.5	18	4-6-9	15	164.7				Boring terminated at 15 feet.	
						20				
						30				
						40				
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-12

LOG OF BORING NO. SB-13

PROJECT: **Galilee Baptist Church, SWM Facilities**
PROJECT NO.: **171186**
PROJECT LOCATION: **Prince George's County**

WATER LEVEL (ft): **Dry** | **Dry** |
DATE: **6/15/17** | **6/16/17** |
CAVED (ft): **14.0** | **14.2** |

DATE STARTED: **6/15/17**
DATE COMPLETED: **6/15/17**
DRILLING CONTRACTOR: **Geo-Technology Associates, Inc.**
DRILLER: **G. Palmer**
DRILLING METHOD: **HSA**
SAMPLING METHOD: **Split Spoon / Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **13.5**
GROUND SURFACE ELEVATION: **187.6**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **DCG**
CHECKED BY: **APM**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	8	2-4-5	9	187.6	0	ML		Brown, dry to moist, stiff, Sandy SILT, trace Root Fragments.	Topsoil: 5 in.
					185.6		CL		Brown, moist, stiff, Sandy Lean CLAY.	
S-2	2.5	18	4-4-7	11	183.6		SM		Gray, moist, medium dense, Silty SAND.	
S-3	5.0	18	8-10-14	24	180.6		SM		Dark Gray, moist, medium dense, Silty SAND.	
S-4	8.5	18	14-14-16	30		10				
					175.6		SM		Orange Brown, moist, medium dense, Silty SAND.	▽
S-5	13.5	18	9-10-11	21						
					170.6		MH		Dark Greenish Gray, moist, stiff, Sandy Elastic SILT.	
S-6	18.5	18	4-4-5	9	167.6	20			Boring terminated at 20 feet.	
						30				
						40				
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-13

2023

EXPLORATION LOGS

LOG OF BORING NO. SB-14

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft): **Dry** | **Dry** |
DATE: **11/10/2023** | **11/14/2023** |
CAVED (ft): **15** | **5.1** |

DATE STARTED: **11/10/2023**
DATE COMPLETED: **11/10/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **201.6**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	12	1-2-2	4	201.6	0	CL		Brown, moist, soft, Sandy Lean CLAY.	Topsoil: 1 in.
S-2	2.5	15	2-1-2	3						Qu > 4.5 tsf
S-3	5.0	14	2-3-4	7					Same, Light Brown, medium stiff	Qu = 3.0 tsf
					194.6		SM		Gray, moist, medium dense, Silty SAND.	
S-4	8.5	16	5-5-8	13		10				
S-5	13.5	18	1-1-2	3					Same, very loose	
S-6	18.5	18	3-3-3	6					Same, Dark Gray, loose	
					179.6	20	ML		Dark Gray, moist, stiff, SILT.	
S-7	23.5	18	3-4-7	11						Qu > 4.5 tsf
S-8	28.5	18	3-5-7	12					Same, Sandy	Qu > 4.5 tsf
					171.6	30			Boring terminated at 30 feet.	
									"Qu" is the unconfined compressive strength, given in tons per square foot (tsf), as measured by a pocket penetrometer.	
						40				
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-14

LOG OF BORING NO. SB-15

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft): **Dry** | **21.8**
DATE: **11/10/2023** | **11/14/2023**
CAVED (ft): **Pipe** | **Pipe**

DATE STARTED: **11/10/2023**
DATE COMPLETED: **11/10/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **196.7**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	16	2-2-2	4	196.7	0	CL		Light Brown, moist, soft, Sandy Lean CLAY.	Topsoil: 1 in.
S-2	2.5	15	2-3-2	5					Same, Light Brown, and Gray, medium stiff, with Sand	Qu = 2.25 tsf
S-3	5.0	12	1-1-1	2	192.7		MH		Light Brown, moist, soft, Sandy Elastic SILT.	
S-4	8.5	12	2-3-3	6	189.7		SM		Light Brown, moist, loose, Silty SAND.	
S-5	13.5	8	2-2-1	3	184.7	10	ML		Gray and Light Brown, moist, soft, Sandy SILT.	Qu = 0.75 tsf
S-6	18.5	18	2-5-7	12	179.7		MH		Brown, moist, stiff, Elastic SILT.	Qu = 3.5 tsf
S-7	23.5	18	3-4-7	11		20			Same, Brown and Dark Gray	Qu > 4.5 tsf
S-8	28.5	18	3-5-7	12	169.7		ML		Dark Gray, moist, stiff, Sandy SILT.	Qu = 3.25 tsf
S-9	33.5	18	2-3-5	8		30			Same, medium stiff	Qu = 2.0 tsf
					161.7				Boring terminated at 35 feet.	
						40			"Qu" is the unconfined compressive strength, given in tons per square foot (tsf), as measured by a pocket penetrometer.	
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-15

LOG OF BORING NO. SB-16

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft): **Dry** | **Dry** |
DATE: **11/10/2023** | **11/14/2023** |
CAVED (ft): **13** | **4.3** |

DATE STARTED: **11/10/2023**
DATE COMPLETED: **11/10/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **193.3**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	15	2-2-3	5	193.3	0	SM		Brown, moist, loose, Silty SAND.	Topsoil: 1 in.
S-2	2.5	16	2-3-2	5					Same, Light Brown, very loose	
S-3	5.0	15	2-1-2	3					Same, Gray, loose	
S-4	8.5	12	2-2-3	5		10				
					181.3		ML		Light Brown, moist, soft, SILT.	
S-5	13.5	18	2-1-2	3						
S-6	18.5	18	2-3-5	8		20			Same, medium stiff, Sandy	Qu = 3.75 tsf
S-7	23.5	18	3-3-5	8						Qu = 3.5 tsf
					168.3				Boring terminated at 25 feet.	
						30			"Qu" is the unconfined compressive strength, given in tons per square foot (tsf), as measured by a pocket penetrometer.	
						40				
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-16

LOG OF BORING NO. SB-17

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft): 7 | 17.9 |
DATE: 11/08/2023 | 11/14/2023 |
CAVED (ft): Pipe | Pipe |

DATE STARTED: **11/08/2023**
DATE COMPLETED: **11/08/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft) ▽ **23.5**
GROUND SURFACE ELEVATION: **201.5**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	15	2-3-3	6	201.5	0	SC		Brown, moist, loose, Clayey SAND.	Topsoil: 2 in.
S-2	2.5	18	3-3-3	6	197.5		CL		Brown, moist, medium stiff, Sandy Lean CLAY.	Qu = 3.0
S-3	5.0	15	2-3-4	7	194.5		SM		Light Gray, moist, medium dense, Silty SAND.	▽
S-4	8.5	18	4-5-6	11		10				
S-5	13.5	18	1-2-1	3					Same, Light Brown, very loose	
S-6	18.5	18	1-2-4	6		20			Same, Brown, loose	▽
S-7	23.5	18	3-4-4	8	179.5		MH		Dark Gray, moist, medium stiff, Sandy Elastic SILT.	▽ Qu = 2.75 tsf
S-8	28.5	18	6-5-6	11	171.5	30			Same, stiff, no Sand	Qu = 4.25 tsf
									Boring terminated at 30 feet.	
									"Qu" is the unconfined compressive strength, given in tons per square foot (tsf), as measured by a pocket penetrometer.	
						40				
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-17

LOG OF BORING NO. SB-18

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft): **Dry** | **Dry** |
DATE: **11/09/2023** | **11/14/2023** |
CAVED (ft): **9** | **7.1** |

DATE STARTED: **11/09/2023**
DATE COMPLETED: **11/09/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft) ▽ **23.5**
GROUND SURFACE ELEVATION: **206.6**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	12	3-6-6	12	206.6	0	SM		Brown, moist, medium dense, Silty SAND.	Topsoil: 1 in.
					204.6		SC		Brown, moist, loose, Clayey SAND.	
S-2	2.5	12	2-3-5	8						
S-3	5.0	12	3-2-2	4					Same, Light Brown, very loose	
S-4	8.5	15	2-2-3	5		10			Same, Brown and Gray, loose	
					194.6		ML		Gray, moist, soft, Sandy SILT.	
S-5	13.5	18	1-1-2	3						Qu = 0.75 tsf
					189.6		MH		Light Brown, moist, very soft, Sandy Elastic SILT.	
S-6	18.5	15	WOH/18"	WOH/ 18"		20				Qu = 0.75 tsf
					184.6		SM		Brown, moist, loose, Silty SAND.	▽
S-7	23.5	18	1-2-4	6						
					179.6		ML		Dark Gray, moist, medium stiff, SILT.	
S-8	28.5	18	2-3-4	7		30				Qu = 2.75 tsf
S-9	33.5	18	2-3-6	9					Same, stiff	Qu > 4.5 tsf
					171.6				Boring terminated at 35 feet.	
									"Qu" is the unconfined compressive strength, given in tons per square foot (tsf), as measured by a pocket penetrometer.	
						40				
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-18

LOG OF BORING NO. SB-19

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft):	Dry	Dry	
DATE:	11/09/2023	11/14/2023	
CAVED (ft):	13	11.0	

DATE STARTED: **11/09/2023**
DATE COMPLETED: **11/09/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft) ▽ **28.5**
GROUND SURFACE ELEVATION: **206.8**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	10	2-2-4	6	206.8	0	CL		Brown, moist, medium stiff, Sandy Lean CLAY.	Topsoil: 1 in.
					204.8		SM		Brown, moist, loose, Silty SAND.	
S-2	2.5	15	3-2-3	5						
S-3	5.0	14	2-2-3	5					Same, Light Brown	
S-4	8.5	15	2-4-4	8		10			Same, Gray and Light Brown	
					194.8		ML		Gray and Light Brown, moist, soft, Sandy SILT.	
S-5	13.5	12	1-1-2	3						Qu = 1.25 tsf
					189.8		SM		Light Brown, moist, very loose, Silty SAND.	
S-6	18.5	18	1-1-2	3		20				
S-7	23.5	15	1-3-4	7					Same, Gray, loose	
					179.8		ML		Gray, moist, soft, SILT, trace Sand.	▽ Qu = 2.0 tsf
S-8	28.5	15	2-2-2	4		30				
S-9	33.5	18	3-5-7	12					Same, Dark Gray, stiff, no Sand	Qu > 4.5 tsf
S-10	38.5		2-5-7	12					Same, Sandy	Qu = 3.5 tsf
					166.8	40			Boring terminated at 40 feet.	
									"Qu" is the unconfined compressive strength, given in tons per square foot (tsf), as measured by a pocket penetrometer.	
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-19

LOG OF BORING NO. SB-20

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft): **Dry** | **27.4**
DATE: **11/09/2023** | **11/14/2023**
CAVED (ft): **Pipe** | **Pipe**

DATE STARTED: **11/09/2023**
DATE COMPLETED: **11/09/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **28.5**
GROUND SURFACE ELEVATION: **203.5**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	15	2-3-3	6	203.5	0	SC		Brown, moist, loose, Clayey SAND.	Topsoil: 1 in.
					201.5		SM		Light Brown, moist, very loose, Silty SAND.	
S-2	2.5	15	2-2-2	4						
S-3	5.0	15	3-2-2	4					Same, Light Gray	
					196.5		ML		Light Gray, moist, soft, Sandy SILT.	
S-4	8.5	18	1-1-1	2		10				
S-5	13.5	12	1-1-2	3						
					186.5		SM		Gray, moist, loose, Silty SAND.	
S-6	18.5	15	1-2-3	5		20				
S-7	23.5	15	1-1-2	3					Same, very loose	
					176.5		ML		Dark Gray, moist, stiff, Sandy SILT.	Qu = 3.25
S-8	28.5	18	2-4-5	9		30				
					171.5		SM		Dark Gray, moist, loose, Silty SAND.	
S-9	33.5	18	3-4-5	9	168.5				Boring terminated at 35 feet.	
						40			"Qu" is the unconfined compressive strength, given in tons per square foot (tsf), as measured by a pocket penetrometer.	
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-20

LOG OF BORING NO. SB-21

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft): **Dry** | **Dry** |
DATE: **11/09/2023** | **11/14/2023** |
CAVED (ft): **13** | **2.9** |

DATE STARTED: **11/09/2023**
DATE COMPLETED: **11/09/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **197.9**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	12	2-2-1	3	197.9	0	SM		Brown, moist, very loose, Silty SAND.	Topsoil: 1 in.
S-2	2.5	15	3-2-4	6					Same, Light Brown, loose	
S-3	5.0	15	2-3-3	6	193.9		MH		Light Brown and Gray, moist, soft, Sandy Elastic SILT.	
S-4	8.5	12	1-1-1	2	190.9		SM		Gray, moist, very loose, Silty SAND.	
S-5	13.5	15	1-2-2	4	185.9	10	ML		Dark Gray, moist, stiff, Sandy SILT.	
S-6	18.5	18	2-4-5	9					Same, no Sand	Qu = 2.75 tsf
S-7	23.5	18	2-4-5	9		20			Same, Sandy	Qu = 4.25 tsf
S-8	28.5	18	3-3-4	7	167.9	30			Same, medium stiff	Qu = 3.5 tsf
									Boring terminated at 30 feet.	
									"Qu" is the unconfined compressive strength, given in tons per square foot (tsf), as measured by a pocket penetrometer.	
						40				
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-21

LOG OF BORING NO. SB-22

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft): Dry | Dry |
DATE: 11/14/2023 | 11/15/2023 |
CAVED (ft): 10 | 3.7 |

DATE STARTED: **11/14/2023**
DATE COMPLETED: **11/14/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **187.6**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	12	2-4-6	10	187.6	0	SM		Brown, moist, loose, Silty SAND.	Topsoil: 1 in.
					185.6		SC		Brown, moist, medium dense, Clayey SAND, trace Gravel.	
S-2	2.5	12	3-9-11	20						
S-3	5.0	12	2-7-8	15						
					180.6		SM		Gray, moist, medium dense, Silty SAND.	
S-4	8.5	16	3-5-6	11		10				
S-5	13.5	15	3-6-11	17					Same, trace Gravel	
					170.6		MH		Gray to Dark Gray, moist, soft, Elatic SILT, trace Sand and Gravel.	Qu = 1.75 tsf
S-6	18.5	18	2-3-1	4	167.6	20			Boring terminated at 20 feet.	
									"Qu" is the unconfined compressive strength, given in tons per square foot (tsf), as measured by a pocket penetrometer.	
						30			Infiltration Test Depth: 15.0 feet Average Infiltration Rate: < 0.10 in./hr.	
						40				
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-22

LOG OF BORING NO. SB-23

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft): **20.8** | **20.3** |
DATE: **11/14/2023** | **11/15/2023** |
CAVED (ft): **Pipe** | **Pipe** |

DATE STARTED: **11/14/2023**
DATE COMPLETED: **11/14/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **185.0**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	12	3-2-4	6	185.0	0	SC		Brown, moist, loose, Clayey SAND.	Topsoil: 1 in.
S-2	2.5	16	1-6-6	12					Same, Light Brown, medium dense, trace Gravel	
S-3	5.0	15	5-4-5	9					Same, loose	
					178.0		ML		Brown to Light Brown, moist, medium stiff, Sandy SILT.	
S-4	8.5	8	1-4-3	7		10				Qu = 1.0 tsf
S-5	13.5	18	2-3-3	6	171.5		MH		Dark Gray, moist, medium stiff, Sandy Elastic SILT.	Qu = 2.5 tsf
S-6	18.5	18	2-3-4	7						Qu = 2.0 tsf
					165.0	20			Boring terminated at 20 feet.	
									"Qu" is the unconfined compressive strength, given in tons per square foot (tsf), as measured by a pocket penetrometer.	
									Infiltration Test Depth: 15.5 feet Average Infiltration Rate: 2.00 in./hr.	
						30				
						40				
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-23

LOG OF BORING NO. SB-24

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft): **Dry** | **Dry** |
DATE: **11/13/2023** | **11/15/2023** |
CAVED (ft): **10** | **5.7** |

DATE STARTED: **11/13/2023**
DATE COMPLETED: **11/13/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **194.8**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	7	1-5-9	14	194.8	0	SM		Brown, moist, medium dense, Silty SAND, trace Gravel.	Topsoil: 3 in.
S-2	2.5	17	3-4-3	7					Same, Light Brown, loose, no Gravel	
S-3	5.0	17	3-3-5	8						
S-4	8.5	10	1-2-3	5		10				
					182.8		ML		Gray and Brown, moist, soft, Sandy SILT.	
S-5	13.5	7	1-2-1	3						Qu = 1.25 tsf
S-6	18.5	18	3-3-4	7		20			Same, Dark Gray, medium stiff	Qu = 2.75 tsf
S-7	23.5	18	5-6-5	11					Same, stiff	Qu = 2.0 tsf
					169.8				Boring terminated at 25 feet.	
						30			"Qu" is the unconfined compressive strength, given in tons per square foot (tsf), as measured by a pocket penetrometer.	
						40				
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-24

LOG OF BORING NO. SB-25

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft):	Dry	Dry	
DATE:	11/14/2023	11/15/2023	
CAVED (ft):	10	2.3	

DATE STARTED: **11/14/2023**
DATE COMPLETED: **11/14/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft) ▽ **Dry**
GROUND SURFACE ELEVATION: **182.7**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	12	3-1-5	6	182.7	0	SC		Brown, moist, loose, Clayey SAND.	Topsoil: 1 in.
S-2	2.5	12	2-4-4	8					Same	
					178.7		ML		Gray and Brown, moist, medium stiff, Sandy SILT.	
S-3	5.0	16	3-2-3	5						
S-4	8.5	15	1-2-1	3		10			Same, Gray, soft	Qu = 1.75 tsf
S-5	13.5	18	2-3-3	6					Same, Dark Gray, medium stiff	Qu = 2.0 tsf
					165.7		SM		Dark Gray, moist, loose, Silty SAND.	
S-6	18.5	18	2-3-5	8	162.7	20			Boring terminated at 20 feet.	
									"Qu" is the unconfined compressive strength, given in tons per square foot (tsf), as measured by a pocket penetrometer.	
						30			Infiltration Test Depth: 15.1 feet Average Infiltration Rate: 1.11 in./hr.	
						40				
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-25

LOG OF BORING NO. SB-26

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft): **Dry** | **Dry** |
DATE: **11/14/2023** | **11/15/2023** |
CAVED (ft): **9** | **7.1** |

DATE STARTED: **11/14/2023**
DATE COMPLETED: **11/14/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft) ▽ **Dry**
GROUND SURFACE ELEVATION: **189.2**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	12	3-5-8	13	189.2	0	SM		Brown, moist, medium dense, Silty SAND.	Topsoil: 1 in.
S-2	2.5	14	2-7-9	16	185.2		ML		Brown, moist, very stiff, Sandy SILT.	Qu > 4.5 tsf
S-3	5.0	16	4-9-9	18	182.2		SM		Gray, moist, medium dense, Silty SAND.	
S-4	8.5	15	3-6-9	15		10				
S-5	13.5	15	2-1-1	2					Same, very loose	
S-6	18.5	16	2-1-1	2	172.2		MH		Brown, moist, soft, Sandy Elastic SILT.	Qu = 1.0 tsf
					169.2	20			Boring terminated at 20 feet.	
									"Qu" is the unconfined compressive strength, given in tons per square foot (tsf), as measured by a pocket penetrometer.	
						30				
						40				
						50				
						60				

NOTES:

GEO-TECHNOLOGY ASSOCIATES, INC.
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LOG OF BORING NO. SB-26

LOG OF BORING NO. SB-27

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft): **Dry** | **Dry** |
DATE: **11/14/2023** | **11/15/2023** |
CAVED (ft): **Pipe** | **Pipe** |

DATE STARTED: **11/14/2023**
DATE COMPLETED: **11/14/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft) **Dry**
GROUND SURFACE ELEVATION: **183.7**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	16	3-2-2	4	183.7	0	SM		Brown, moist, very loose, Silty SAND.	Topsoil: 1 in.
S-2	2.5	16	3-1-2	3						
S-3	5.0	15	4-15-20	35					Same, dense	
S-4	8.5	15	1-5-9	14		10			Same, Light Brown, medium dense	
					171.7		MH		Gray and Light Brown, moist, soft, Elastic SILT.	
S-5	13.5	15	1-2-2	4						Qu = 0.75 tsf
S-6	18.5	18	1-1-1	2					Same, Sandy	Qu = 0.75 tsf
					163.7	20			Boring terminated at 20 feet.	
									"Qu" is the unconfined compressive strength, given in tons per square foot (tsf), as measured by a pocket penetrometer.	
						30				
						40				
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-27

LOG OF BORING NO. SB-28

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft): **Dry** | **14.1**
DATE: **11/14/2023** | **11/15/2023**
CAVED (ft): **Pipe** | **Pipe**

DATE STARTED: **11/14/2023**
DATE COMPLETED: **11/14/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **178.0**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	8	2-1-2	3	178.0	0	SC		Brown, moist, very loose, Clayey SAND with Gravel.	Topsoil: 1 in.
S-2	2.5	15	12-11-21	32					Same, dense	
S-3	5.0	15	5-6-8	14					Same, medium dense, trace Gravel	
S-4	8.5	16	3-7-9	16	171.0	10	SM		Gray, moist, medium dense, Silty SAND.	
S-5	13.5	18	2-1-1	2	166.0		MH		Dark Gray, moist, soft, Sandy Elastic SILT.	
					163.0	20			Boring terminated at 15 feet. Infiltration Test Depth: 12.9 feet Average Infiltration Rate: 0.78 in./hr.	
						30				
						40				
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-28

LOG OF BORING NO. SB-29

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft): **Dry** | **Dry** |
DATE: **11/14/2023** | **11/15/2023** |
CAVED (ft): **9** | **5.1** |

DATE STARTED: **11/14/2023**
DATE COMPLETED: **11/14/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **169.7**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	12	3-5-5	10	169.7	0	SC		Brown, moist, loose, Clayey SAND with Gravel.	Topsoil: 1 in.
					167.7		SM		Gray, moist, loose, Silty SAND with Gravel.	
S-2	2.5	16	2-3-6	9						
					165.7		SC		Gray and Light Brown, moist, loose, Clayey SAND with Gravel.	
S-3	5.0	15	3-3-5	8						
					162.7		MH		Gray and Light Brown, moist, soft, Sandy Elastic SILT.	Qu = 0.75 tsf
S-4	8.5	16	1-1-1	2		10				
					157.7		SM		Dark Gray, moist, very loose, Silty SAND.	
S-5	13.5	18	2-1-2	3	154.7				Boring terminated at 15 feet.	
									"Qu" is the unconfined compressive strength, given in tons per square foot (tsf), as measured by a pocket penetrometer.	
						20			Infiltration Test Depth: 4.0 feet Average Infiltration Rate: > 3.00 in./hr.	
						30				
						40				
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-29

LOG OF BORING NO. SB-30

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft): **Dry** | **Dry** |
DATE: **11/14/2023** | **11/15/2023** |
CAVED (ft): **8** | **2.6** |

DATE STARTED: **11/14/2023**
DATE COMPLETED: **11/14/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft) **Dry**
GROUND SURFACE ELEVATION: **180.9**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	12	1-2-6	8	180.9	0	CL		Brown, moist, medium stiff, Sandy Lean CLAY.	Topsoil: 1 in.
					178.9		SM		Brown, moist, very loose, Silty SAND.	
S-2	2.5	14	2-1-2	3						
S-3	5.0	12	4-8-10	18					Same, Light Brown, medium dense	
S-4	8.5	15	8-7-6	13		10			Same, Gray	
					168.9		SC		Brown and Gray, moist, medium dense, Clayey SAND, trace Gravel.	
S-5	13.5	18	4-6-7	13	165.9				Boring terminated at 15 feet.	
						20				
						30				
						40				
						50				
						60				

NOTES:

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LOG OF BORING NO. SB-30

LOG OF BORING NO. SB-31

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft): **Dry** | **Dry** |
DATE: **11/14/2023** | **11/15/2023** |
CAVED (ft): **8** | **5.9** |

DATE STARTED: **11/14/2023**
DATE COMPLETED: **11/14/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft) **Dry**
GROUND SURFACE ELEVATION: **168.5**
DATUM: **Topo***
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	12	2-2-3	5	168.5	0	SC		Brown, moist, loose, Clayey SAND, trace Gravel.	Topsoil: 1 in.
S-2	2.5	12	2-4-4	8						
S-3	5.0	15	10-11-14	25					Same, Light Brown, medium dense, with Gravel	
					161.5		SM		Gray, moist, loose, Silty SAND.	
S-4	8.5	12	2-3-4	7		10				
S-5	13.5	18	1-2-3	5					Same, Dark Gray	
					153.5				Boring terminated at 15 feet.	
						20				
						30				
						40				
						50				
						60				

NOTES: ***Boring offset approximately 129 feet southeast of the stake. Elevation estimated to the nearest 0.5 foot based on topographic contours on the available plans.**

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LOG OF BORING NO. SB-31

LOG OF BORING NO. SB-32

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft): **Dry** | **Dry** |
DATE: **11/13/2023** | **11/14/2023** |
CAVED (ft): **Pipe** | **Pipe** |

DATE STARTED: **11/13/2023**
DATE COMPLETED: **11/13/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **214**
DATUM: **Topo***
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	10	3-3-4	7	214.0	0	SM		Brown, moist, loose, Silty SAND.	Topsoil: 3 in.
					212.0		ML		Brown, moist, stiff, Sandy SILT.	
S-2	2.5	18	3-4-7	11						Qu = 3.0 tsf
S-3	5.0	18	3-5-5	10						Qu = 3.5 tsf
					207.0		SM		Light Brown, moist, loose, Silty SAND.	
S-4	8.5	15	4-5-5	10		10				
S-5	13.5	14	2-2-4	6					Same, Gray	
S-6	18.5	18	2-2-3	5					Same, Light Brown	
						20				
					192.0		MH		Dark Gray, moist, medium stiff, Elastic SILT.	
S-7	23.5	18	1-2-3	5						Qu = 1.5 tsf
					185.5					
S-8	28.5	18	2-2-3	5			ML		Dark Gray, moist, medium stiff Sandy SILT.	Qu = 1.25 tsf
					184.0	30			Boring terminated at 30 feet.	
									"Qu" is the unconfined compressive strength, given in tons per square foot (tsf), as measured by a pocket penetrometer.	
						40				
						50				
						60				

NOTES: ***Boring was staked in the field by GTA, using a hand-held GPS unit. Elevation estimated to the nearest 0.5 foot based on topographic contours on the available plans.**

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LOG OF BORING NO. SB-32

LOG OF BORING NO. B-100

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft): Dry | Dry |
DATE: 11/09/2023 | 11/14/2023 |
CAVED (ft): 14 | 11.8 |

DATE STARTED: **11/09/2023**
DATE COMPLETED: **11/09/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft) ▽ **38.5**
GROUND SURFACE ELEVATION: **202.5**
DATUM: **Topo***
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	17	1-2-2	4	202.5	0	SM		Brown, moist, very loose, Silty SAND.	Topsoil: 1 in.
S-2	2.5	18	2-3-3	6					Same, loose	
S-3	5.0	18	4-5-5	10	198.5		SC		Brown, moist, loose, Clayey SAND.	
S-4	8.5	15	2-3-3	6	195.5	10	SM		Light Brown, moist, loose, Silty SAND.	
S-5	13.5	12	2-1-2	3					Same, very loose	
S-6	18.5	18	WOH/18"	WOH/ 18"	185.5		MH		Light Gray, moist, very soft, Sandy Elastic SILT.	Qu = 0.75 tsf
						20				FFE = 183.0
S-7	23.5	15	1-3-2	5	180.5		SM		Gray, moist, loose, Silty SAND.	
S-8	28.5	15	1-2-3	5	175.5		ML		Brown, moist, medium stiff, SILT.	Qu = 2.0 tsf
S-9	33.5	18	2-4-5	9		30			Same, Dark Gray	Qu = 3.25 tsf
S-10	38.5	18	2-3-4	7					Same, medium stiff, Sandy	▽ Qu = 4.0 tsf
S-11	43.5	18	2-3-5	8	160.5	40	SM		Dark Gray, moist, loose, Silty SAND.	
					157.5				Boring terminated at 45 feet.	
									"Qu" is the unconfined compressive strength, given in tons per square foot (tsf), as measured by a pocket penetrometer.	
						50				
						60				

NOTES: ***Boring offset approximately 50 feet east by southeast of the stake. Elevation estimated to the nearest 0.5 foot based on topographic contours on the available plans.**

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LOG OF BORING NO. B-100

LOG OF BORING NO. B-101

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft):	Dry	N/A	
DATE:	11/10/2023	11/14/2023	
CAVED (ft):	31	N/A*	

DATE STARTED: **11/10/2023**
DATE COMPLETED: **11/10/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **203.3**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	12	2-2-2	4	203.3	0	SM		Brown, moist, very loose, Silty SAND.	Topsoil: 1 in.
					201.3		SC		Brown, moist, very loose, Clayey SAND.	
S-2	2.5	12	2-1-2	3						
S-3	5.0	15	2-3-4	7					Same, Light Brown, loose	
S-4	8.5	15	2-3-8	11		10			Same, Gray, medium dense	
					191.3		SM		Gray, moist, medium dense, Silty SAND.	
S-5	13.5	16	3-8-10	18						
					186.3		SC		Gray, moist, very loose, Silty SAND, trace Gravel	
S-6	18.5	12	2-1-3	4		20				FFE = 183.0
					181.3		ML		Dark Gray, moist, medium stiff, SILT.	
S-7	23.5	15	1-2-3	5						Qu = 1.5 tsf
S-8	28.5	18	2-3-4	7		30				Qu = 2.75 tsf
S-9	33.5	18	2-3-5	8					Same, Sandy	Qu = 3.0 tsf
S-10	38.5	18	2-3-3	6						Qu = 3.0 tsf
					163.3	40			Boring terminated at 40 feet.	
									"Qu" is the unconfined compressive strength, given in tons per square foot (tsf), as measured by a pocket penetrometer.	
						50				
						60				

NOTES: **N/A is Not Available. The borehole could not be located for additional groundwater and cave-in depth measurements.**

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LOG OF BORING NO. B-101

LOG OF BORING NO. B-102

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft):	Dry	Dry	
DATE:	11/13/2023	11/14/2023	
CAVED (ft):	14	9.8	

DATE STARTED: **11/13/2023**
DATE COMPLETED: **11/13/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft) ▽ **Dry**
GROUND SURFACE ELEVATION: **206.8**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	15	3-3-4	7	206.8	0	SM		Brown, moist, loose, Silty SAND.	Topsoil: 3 in.
					204.8		SC		Light Brown, moist, loose, Clayey SAND.	
S-2	2.5	15	4-3-4	7						
S-3	5.0	18	3-7-11	18					Same, medium dense	
S-4	8.5	18	5-6-11	17		10			Same, Gray, trace Gravel	
					194.8		ML		Light Brown, moist, medium stiff, Sandy SILT.	
S-5	13.5	18	4-3-3	6						Qu = 3.0 tsf
					189.8		MH		Light Brown, moist, soft, Sandy Elastic SILT.	
S-6	18.5	18	1-1-1	2		20				Qu = 0.5 tsf
					184.8		SM		Gray, moist, very loose, Silty SAND.	FFE = 183.0
S-7	23.5	16	2-1-2	3						
					179.8		MH		Dark Gray, moist, stiff, Sandy Elastic SILT.	
S-8	28.5	18	3-5-5	10		30				Qu = 3.25 tsf
S-9	33.5	18	4-5-4	9					Same, no Sand	Qu = 3.5 tsf
S-10	38.5	18	3-4-5	9		40				Qu = 3.5 tsf
					164.8		ML		Dark Gray, moist, stiff, Sandy SILT.	
S-11	43.5	18	5-5-4	9	161.8					Qu = 2.75 tsf
									Boring terminated at 45 feet.	
						50			"Qu" is the unconfined compressive strength, given in tons per square foot (tsf), as measured by a pocket penetrometer.	
						60				

NOTES:

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LOG OF BORING NO. B-102

LOG OF BORING NO. B-103

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft):	Dry	Dry	
DATE:	11/13/2023	11/14/2023	
CAVED (ft):	14	7.8	

DATE STARTED: **11/13/2023**
DATE COMPLETED: **11/13/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **196**
DATUM: **Topo***
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	8	3-9-9	18	196.0	0	SC		Brown, moist, medium dense, Clayey SAND, trace Gravel.	Topsoil: 3 in.
S-2	2.5	15	6-11-17	28					Same, with Gravel	
S-3	5.0	15	5-9-14	23						
S-4	8.5	18	7-11-19	30		10				
					184.0		SM		Gray, moist, very loose, Silty SAND.	FFE = 183.0
S-5	13.5	18	2-1-3	4						
					179.0		ML		Dark Gray, moist, soft, SILT.	Qu = 1.25 tsf
S-6	18.5	18	1-1-2	3		20				
S-7	23.5	18	2-3-4	7					Same, medium stiff	Qu = 2.25 tsf
S-8	28.5	18	3-2-4	6		30			Same, Sandy	Qu = 2.0 tsf
S-9	33.5	18	1-2-3	5						Qu = 1.5 tsf
					161.0				Boring terminated at 35 feet.	
						40			"Qu" is the unconfined compressive strength, given in tons per square foot (tsf), as measured by a pocket penetrometer.	
						50				
						60				

NOTES: ***Boring offset approximately 64 feet southeast of the stake. Elevation estimated to the nearest 0.5 foot based on topographic contours on the available plans.**

GEO-TECHNOLOGY ASSOCIATES, INC.
14280 Park Center Drive, Suite A
Laurel, MD 20707

LOG OF BORING NO. B-103

LOG OF BORING NO. B-104

PROJECT: **Galilee Baptist Church**
PROJECT NO.: **31232352**
PROJECT LOCATION: **Prince George's County, Maryland**

WATER LEVEL (ft):	Dry	N/A	
DATE:	11/13/2023	11/14/2023	
CAVED (ft):	15	N/A*	

DATE STARTED: **11/13/2023**
DATE COMPLETED: **11/13/2023**
DRILLING CONTRACTOR: **Connelly & Associates, Inc.**
DRILLER: **J. Cogan**
DRILLING METHOD: **3.25-in. HSA**
SAMPLING METHOD: **Split Spoon/Automatic Hammer**

WATER ENCOUNTERED DURING DRILLING (ft): **Dry**
GROUND SURFACE ELEVATION: **195.3**
DATUM: **Survey**
EQUIPMENT: **CME-55**
LOGGED BY: **CAAF**
CHECKED BY: **DCG**

SAMPLE NUMBER	SAMPLE DEPTH (ft.)	SAMPLE RECOVERY (in.)	SAMPLE BLOWS/6 inches	N (blows/ft.)	ELEVATION (ft.)	DEPTH (ft.)	USCS	GRAPHIC SYMBOL	DESCRIPTION	REMARKS
S-1	0.0	18	4-4-4	8	195.3	0	SC		Brown, moist, loose, Clayey SAND with Gravel.	Topsoil: 3 in.
S-2	2.5	18	3-4-3	7					Same, no Gravel	
S-3	5.0	10	5-6-6	12					Same, medium dense, trace Gravel	
					188.3		SM		Light Brown, moist, loose, Silty SAND.	
S-4	8.5	14	1-2-3	5		10				
					183.3					FFE = 183.0
S-5	13.5	18	1-2-2	4			MH		Light Gray, moist, soft, Sandy Elastic SILT.	Qu = 1.5 tsf
S-6	18.5	18	2-3-4	7		20			Same, Sandy, medium stiff	Qu = 2.25 tsf
S-7	23.5	18	4-4-3	7						Qu = 3.0 tsf
S-8	28.5	18	3-4-4	8		30				Qu = 2.75 tsf
S-9	33.5	18	4-4-4	8						Qu = 2.0 tsf
					160.3				Boring terminated at 35 feet.	
						40			"Qu" is the unconfined compressive strength, given in tons per square foot (tsf), as measured by a pocket penetrometer.	
						50				
						60				

NOTES: **The borehole could not be located for additional groundwater and cave-in depth measurements.**

GEO-TECHNOLOGY ASSOCIATES, INC.
14280 Park Center Drive, Suite A
Laurel, MD 20707

LOG OF BORING NO. B-104

APPENDIX C
LABORATORY DATA

2017

LABORATORY DATA

GEO-TECHNOLOGY ASSOCIATES, INC.
Natural Moisture Content Summary

Galilee Baptist Church
June 28, 2017
171186

Test Method: ASTM D 2216

BORING No.	SAMPLE No.	DEPTH (FT)	NATURAL MOISTURE CONTENT %
SB-1	S-1	0.0-1.5	8.9
	S-2	2.5-4.0	28.6
	S-3	5.0-6.5	16.0
	S-4	8.5-10.0	26.7
	S-5	13.5-15.0	53.4
SB-2	S-1	0.0-1.5	21.7
	S-2	2.5-4.0	23.1
	S-3	5.0-6.5	54.6
	S-4	8.5-10.0	29.1
	S-5	13.5-15.0	36.7
	S-6	18.5-20.0	62.1
SB-3	S-1	0.0-1.5	12.2
	S-2	2.5-4.0	27.9
	S-3	5.0-6.5	40.2
	S-4	8.5-10.0	24.9
	S-5	13.5-15.0	41.1
	S-6	18.5-20.0	27.4
	S-7	23.5-25.0	70.5
SB-4	S-1	0.0-1.5	10.2
	S-2	2.5-4.0	19.2
	S-3	5.0-6.5	22.4
	S-4	8.5-10.0	30.9
	S-5	13.5-15.0	64.6
	S-6	18.5-20.0	44.5
	S-7	23.5-25.0	42.8
	S-8	28.5-30.0	71.6
	S-9	33.5-35.0	80.9

Checked By: J.Ayala

GEO-TECHNOLOGY ASSOCIATES, INC.
Natural Moisture Content Summary

Galilee Baptist Church
June 28, 2017
171186

Test Method: ASTM D 2216

BORING No.	SAMPLE No.	DEPTH (FT)	NATURAL MOISTURE CONTENT %
SB-5	S-1	0.0-1.5	9.4
	S-2	2.5-4.0	21.6
	S-3	5.0-6.5	39.5
	S-4	8.5-10.0	25.5
	S-5	13.5-15.0	35.9
	S-6	18.5-20.0	51.4
SB-7	S-1	0.0-1.5	14.0
	S-2	2.5-4.0	20.2
	S-3	5.0-6.5	19.4
	S-4	8.5-10.0	12.6
	S-5	13.5-15.0	38.8
	S-6	18.5-20.0	42.2
	S-7	23.5-25.0	38.1
	S-8	28.5-30.0	71.5
	S-9	33.5-35.0	85.7
	S-10	38.5-40.0	80.4
SB-8	S-1	0.0-1.5	16.7
	S-2	2.5-4.0	21.3
	S-3	5.0-6.5	16.3
	S-4	8.5-10.0	33.5
	S-5	13.5-15.0	40.3
	S-6	18.5-20.0	52.9
SB-10	S-1	0.0-1.5	7.8
	S-2	2.5-4.0	7.4
	S-3	5.0-6.5	20.2
	S-4	8.5-10.0	41.1

Checked By: J.Ayala

GEO-TECHNOLOGY ASSOCIATES, INC.
Natural Moisture Content Summary

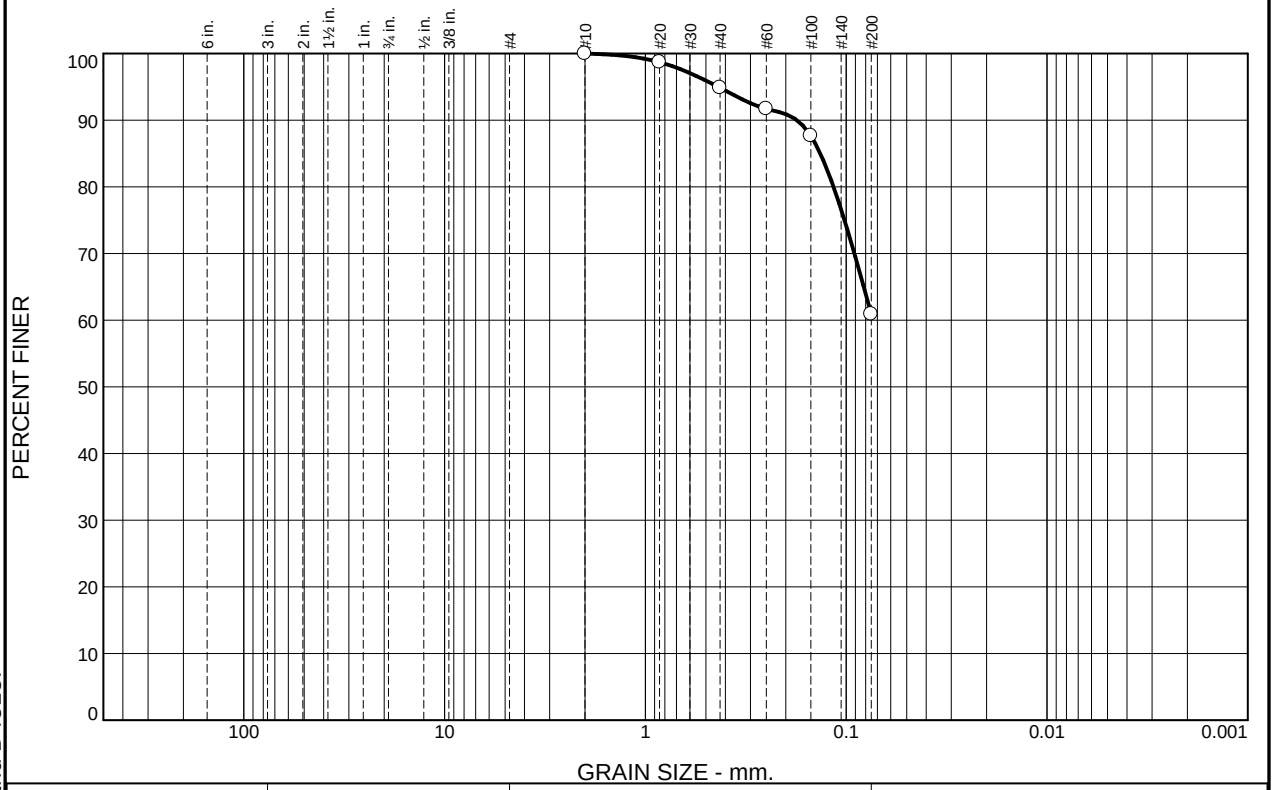
Galilee Baptist Church
June 28, 2017
171186

Test Method: ASTM D 2216

BORING No.	SAMPLE No.	DEPTH (FT)	NATURAL MOISTURE CONTENT %
SB-11	S-1	0.0-1.5	28.7
	S-2	2.5-4.0	7.2
	S-3	5.0-6.5	30.3
	S-4	8.5-10.0	37.7
	S-5	13.5-15.0	35.4
SB-13	S-1	0.0-1.5	10.6
	S-2	2.5-4.0	21.6
	S-3	5.0-6.5	13.8
	S-4	8.5-10.0	13.5
	S-5	13.5-15.0	23.1
	S-6	18.5-20.0	74.2

Checked By: J.Ayala

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	5.1	34.0	60.9	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	98.7		
#40	94.9		
#60	91.7		
#100	87.7		
#200	60.9		

* (no specification provided)

Soil Description

Tanish Brown, Sandy SILT

Atterberg Limits

PL= 37 LL= 48 PI= 11 NM= 54.6

Coefficients

D_{90}= 0.1761 D_{85}= 0.1345 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-7-5(7)

Remarks

Location: SB-2
Sample Number: S-3 **Depth:** 5.0-6.5 **Date:** 6/28/17

GEO-TECHNOLOGY ASSOCIATES, INC.
14280 Park Center Drive, Suite A
Laurel, MD 20707

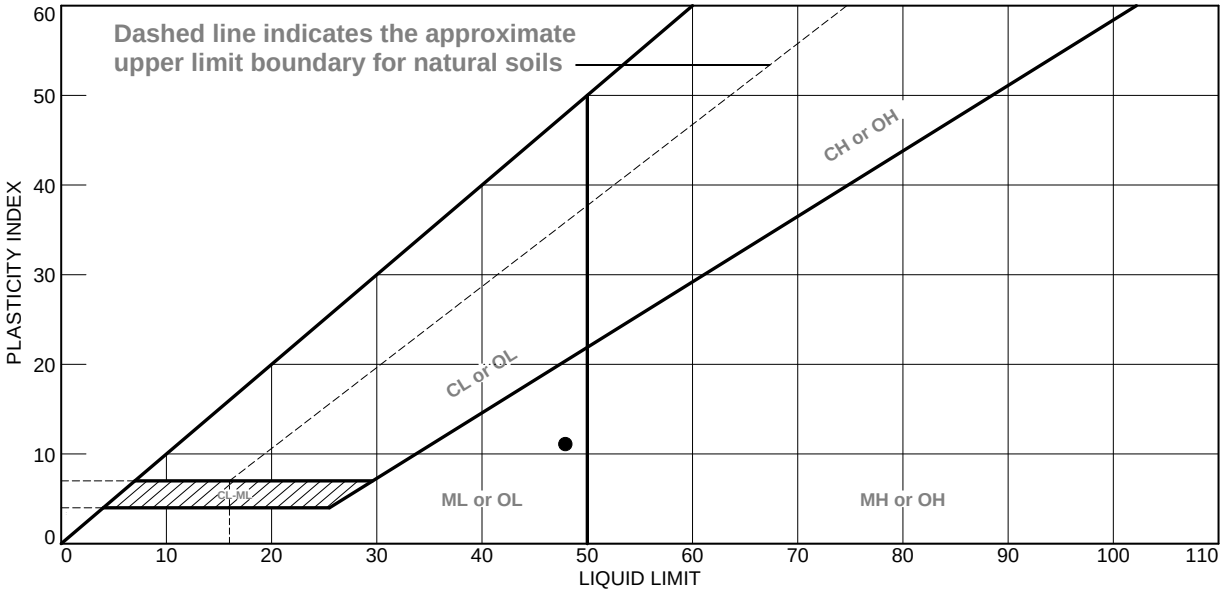
Client: Colorado Commercial Construction
Project: Galilee Baptist Church

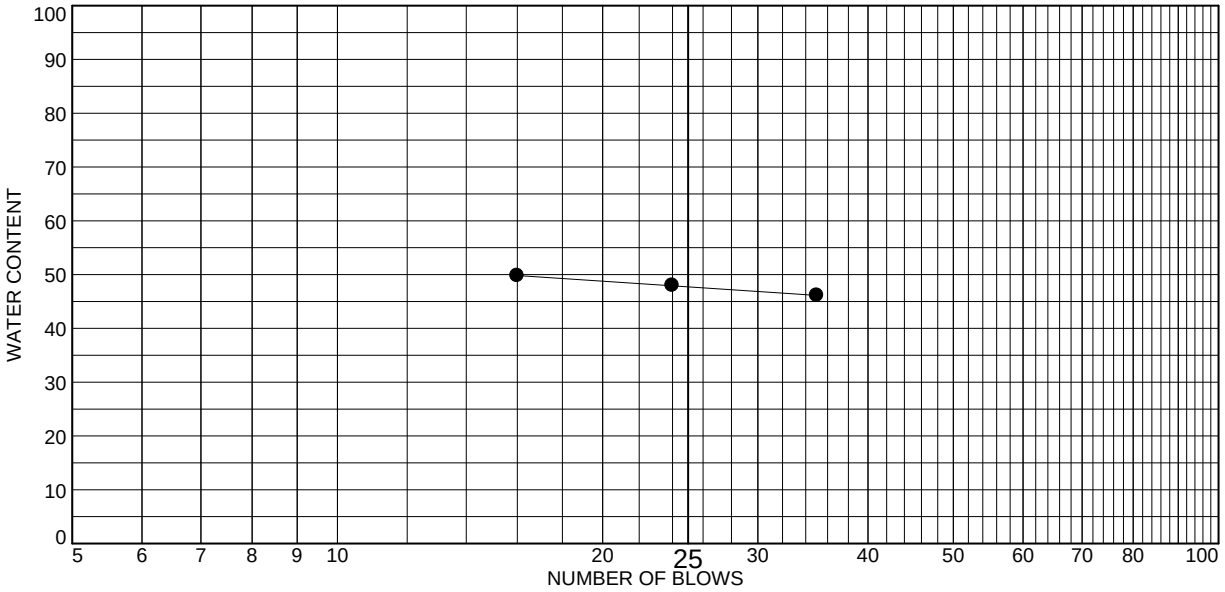
Project No: 171186 **Figure**

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

Tested By: J.Ayala **Checked By:** J.Andrews

LIQUID AND PLASTIC LIMITS TEST REPORT - ASTM D4318





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Tanish Brown, Sandy SILT	48	37	11	94.9	60.9	ML

Project No. 171186 **Client:** Colorado Commercial Construction

Project: Galilee Baptist Church

Location: SB-2
Sample Number: S-3 **Depth:** 5.0-6.5

Remarks:

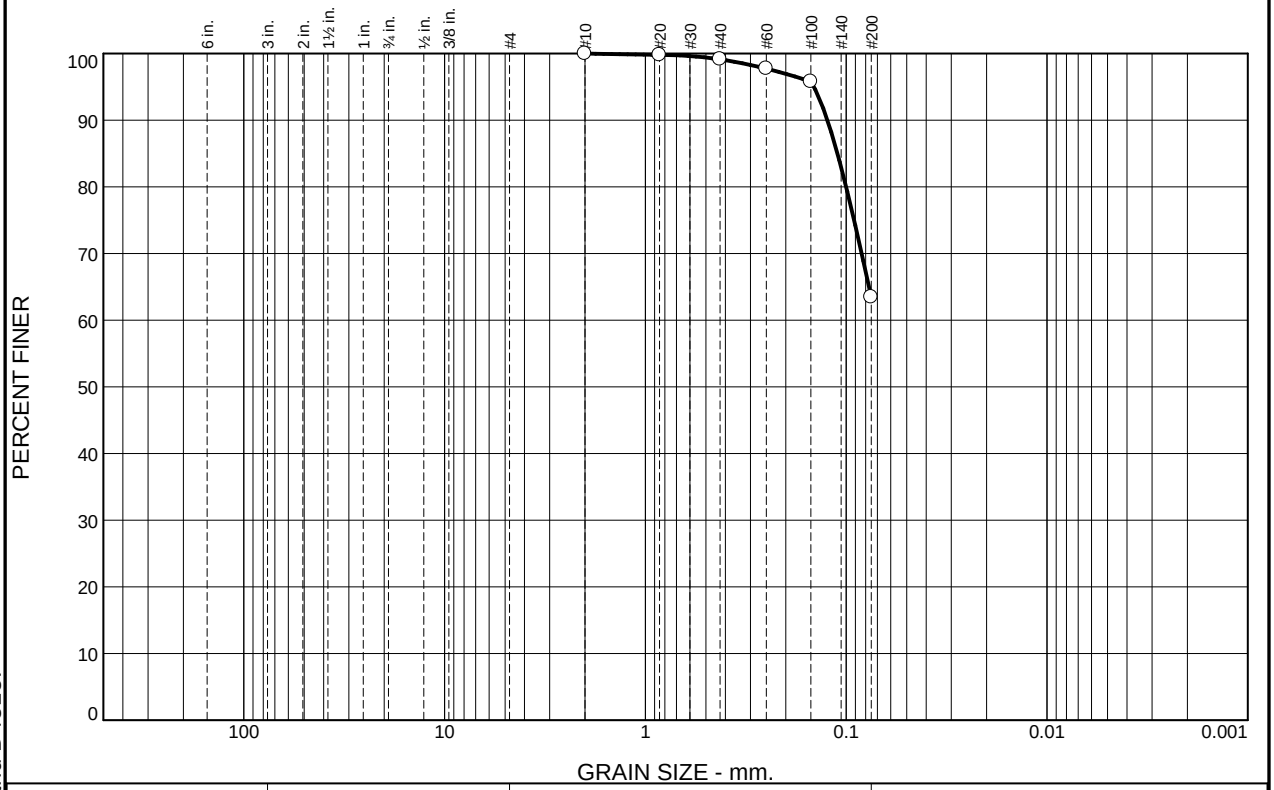
GEO-TECHNOLOGY ASSOCIATES, INC.
14280 Park Center Drive, Suite A
Laurel, MD 20707

Figure

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

Tested By: J.Ayala **Checked By:** J.Andrews

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.9	35.6	63.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	99.8		
#40	99.1		
#60	97.7		
#100	95.8		
#200	63.5		

* (no specification provided)

Soil Description

Tanish Brown, Sandy SILT

Atterberg Limits

PL= 30 LL= 35 PI= 5 NM= 30.9

Coefficients

D_{90}= 0.1240 D_{85}= 0.1105 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= ML AASHTO= A-4(3)

Remarks

Location: SB-4
Sample Number: S-4 **Depth:** 8.5-10.0 **Date:** 6/28/17

GEO-TECHNOLOGY ASSOCIATES, INC.
14280 Park Center Drive, Suite A
Laurel, MD 20707

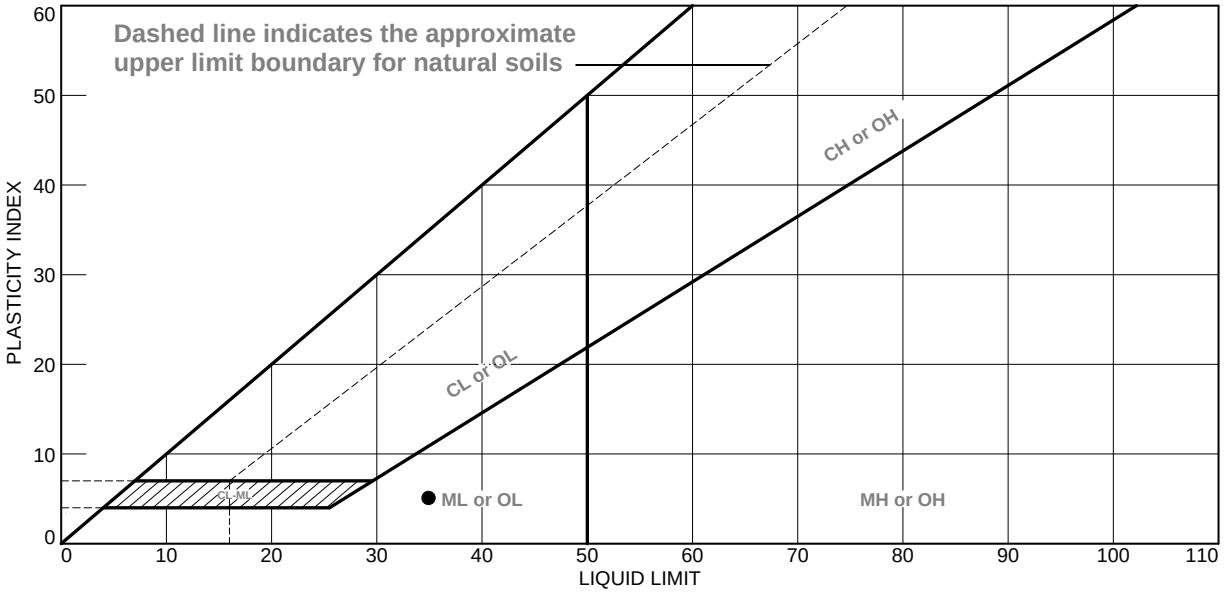
Client: Colorado Commercial Construction
Project: Galilee Baptist Church

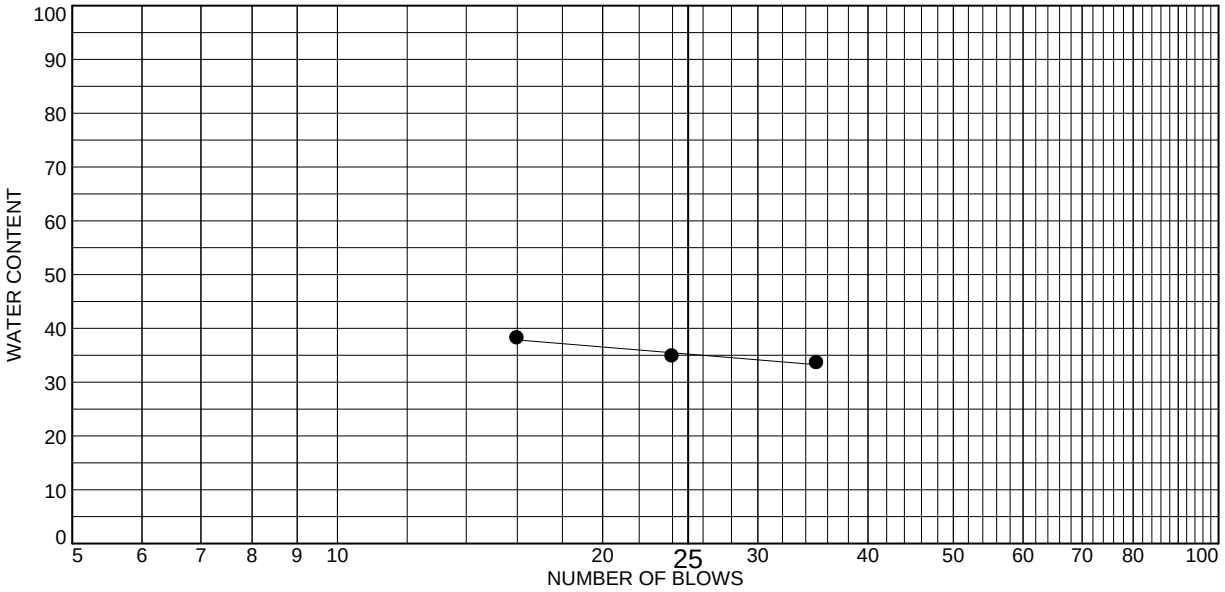
Project No: 171186 **Figure**

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

Tested By: J.Ayala **Checked By:** J.Andrews

LIQUID AND PLASTIC LIMITS TEST REPORT - ASTM D4318





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Tanish Brown, Sandy SILT	35	30	5	99.1	63.5	ML

Project No. 171186 **Client:** Colorado Commercial Construction

Project: Galilee Baptist Church

Location: SB-4

Sample Number: S-4 **Depth:** 8.5-10.0

GEO-TECHNOLOGY ASSOCIATES, INC.
14280 Park Center Drive, Suite A
Laurel, MD 20707

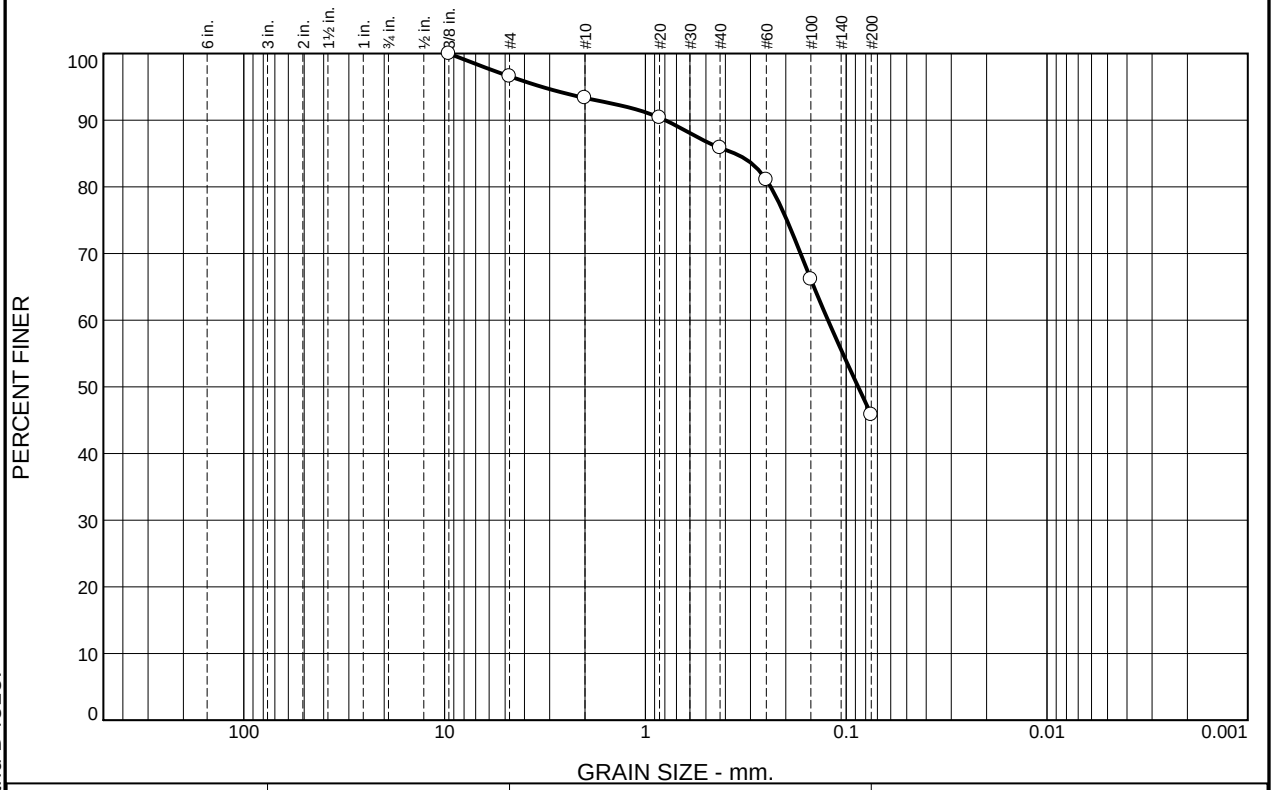
Remarks:

Figure

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

Tested By: J.Ayala **Checked By:** J.Andrews

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	3.4	3.3	7.4	40.1	45.8	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/8	100.0		
#4	96.6		
#10	93.3		
#20	90.4		
#40	85.9		
#60	81.1		
#100	66.1		
#200	45.8		

* (no specification provided)

Soil Description

Green to Gray, Silty SAND

Atterberg Limits

PL= NP LL= NP PI= NP NM= 13.5

Coefficients

D_{90}= 0.7966 D_{85}= 0.3585 D_{60}= 0.1232
D_{50}= 0.0871 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-4(0)

Remarks

Location: SB-13
Sample Number: S-4 **Depth:** 8.5-10.0 **Date:** 6/28/17

GEO-TECHNOLOGY ASSOCIATES, INC.
14280 Park Center Drive, Suite A
Laurel, MD 20707

Client: Colorado Commercial Construction
Project: Galilee Baptist Church

Project No: 171186 **Figure**

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

Tested By: J.Ayala **Checked By:** J.Andrews

2023

LABORATORY DATA

GEO-TECHNOLOGY ASSOCIATES, INC.
Natural Moisture Content Summary

Galilee Baptist Church
November 22, 2023
31232352

Test Method: ASTM D 2216

BORING No.	SAMPLE No.	DEPTH (FT)	NATURAL MOISTURE CONTENT %
B-102	S-1	0.0-1.5	11.6
	S-2	2.5-4.0	10.1
	S-3	5.0-6.5	8.1
	S-4	8.5-10.0	14.9
	S-5	13.5-15.0	17.2
	S-6	18.5-20.0	58.6
	S-7	23.5-25.0	42.6
	S-8	28.5-30.0	62.1
	S-9	33.5-35.0	77.2
	S-10	38.5-40.0	65.6
	S-11	43.5-45.0	44.1
SB-15	S-1	0.0-1.5	24.8
	S-2	2.5-4.0	27.0
	S-3	5.0-6.5	70.5
	S-4	8.5-10.0	34.4
	S-5	13.5-15.0	42.0
	S-6	18.5-20.0	117.1
	S-7	23.5-25.0	97.8
	S-8	28.5-30.0	49.9
	S-9	33.5-35.0	47.5
SB-17	S-1	0.0-1.5	9.3
	S-2	2.5-4.0	12.9
	S-3	5.0-6.5	37.8
	S-4	8.5-10.0	16.1
	S-5	13.5-15.0	38.7
	S-6	18.5-20.0	44.1
	S-7	23.5-25.0	100.2
	S-8	28.5-30.0	96.4

Checked By: SMQ

GEO-TECHNOLOGY ASSOCIATES, INC.
Natural Moisture Content Summary

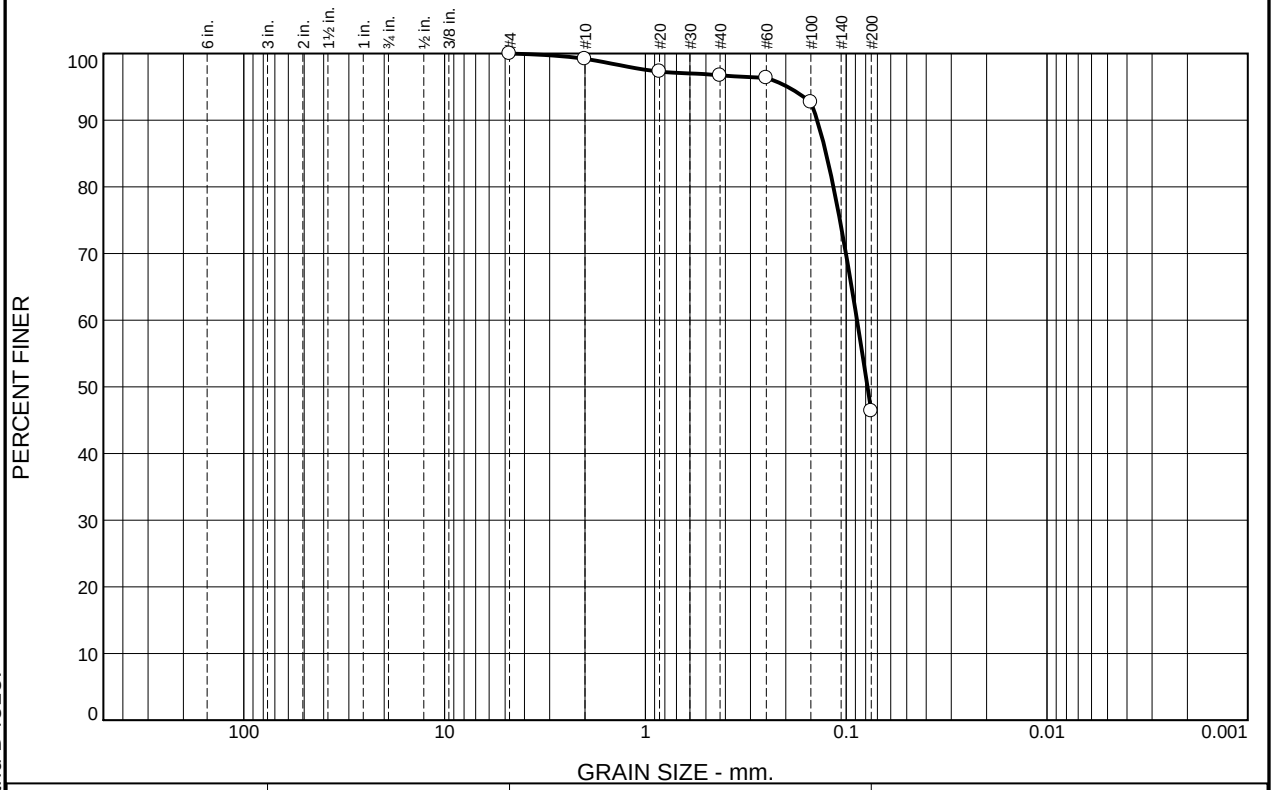
Galilee Baptist Church
November 22, 2023
31232352

Test Method: ASTM D 2216

BORING No.	SAMPLE No.	DEPTH (FT)	NATURAL MOISTURE CONTENT %
SB-23	S-1	0.0-1.5	17.7
	S-2	2.5-4.0	17.0
	S-3	5.0-6.5	12.8
	S-4	8.5-10.0	39.4
	S-5	13.5-15.0	88.0
	S-6	18.5-20.0	67.6
SB-28	S-1	0.0-1.5	9.6
	S-2	2.5-4.0	7.7
	S-3	5.0-6.5	3.5
	S-4	8.5-10.0	17.3
	S-5	13.5-15.0	50.5
SB-30	S-1	0.0-1.5	18.0
	S-2	2.5-4.0	15.5
	S-3	5.0-6.5	8.6
	S-4	8.5-10.0	9.0
	S-5	13.5-15.0	10.3
SB-32	S-1	0.0-1.5	17.3
	S-2	2.5-4.0	23.0
	S-3	5.0-6.5	17.7
	S-4	8.5-10.0	17.0
	S-5	13.5-15.0	21.4
	S-6	18.5-20.0	29.5
	S-7	23.5-25.0	80.9
	S-8	28.5-30.0	36.1

Checked By: SMQ

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.8	2.5	50.3	46.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#4	100.0		
#10	99.2		
#20	97.3		
#40	96.7		
#60	96.3		
#100	92.7		
#200	46.4		

* (no specification provided)

Soil Description

Gray, Silty SAND

Atterberg Limits

PL= NP LL= NP PI= NP NM= 42.6

Coefficients

D_{90}= 0.1394 D_{85}= 0.1258 D_{60}= 0.0883
D_{50}= 0.0783 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SM AASHTO= A-4(0)

Remarks

Location: B-102
Sample Number: S-7 **Depth:** 23.5-25.0 **Date:** 11/22/2023

GEO-TECHNOLOGY ASSOCIATES, INC.
14280 Park Center Drive, Suite A
Laurel, MD 20707

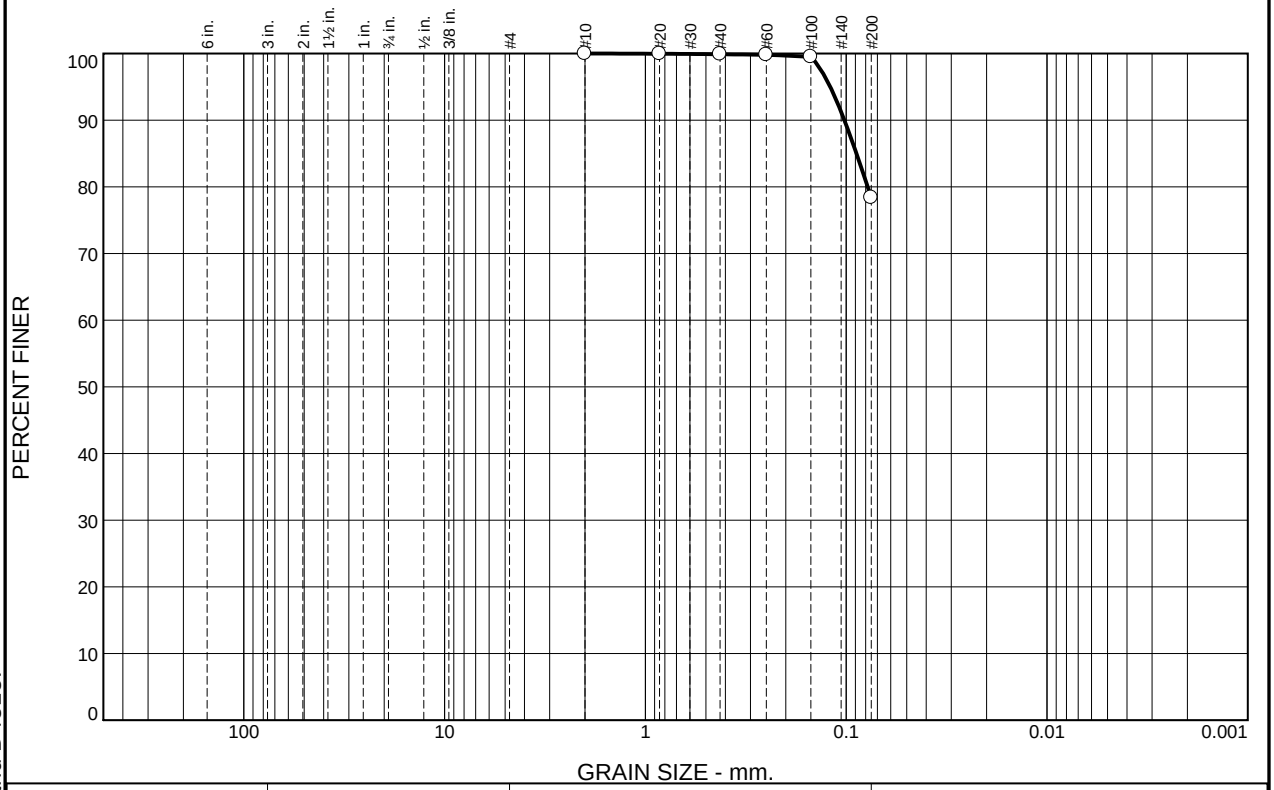
Client: Ricker Brothers Realty Company
Project: Galilee Baptist Church

Project No: 31232352 **Figure**

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

Tested By: S. Quidas **Checked By:** S. Quidas

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	0.1	21.5	78.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#10	100.0		
#20	100.0		
#40	99.9		
#60	99.8		
#100	99.5		
#200	78.4		

* (no specification provided)

Soil Description

Light Brown, Lean CLAY with Sand

Atterberg Limits

PL= 25 LL= 40 PI= 15 NM= 27.0

Coefficients

D_{90}= 0.1020 D_{85}= 0.0889 D_{60}=
D_{50}= D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= CL AASHTO= A-6(12)

Remarks

Location: SB-15
Sample Number: S-2 **Depth:** 2.5-4.0 **Date:** 11/22/2023

GEO-TECHNOLOGY ASSOCIATES, INC.
14280 Park Center Drive, Suite A
Laurel, MD 20707

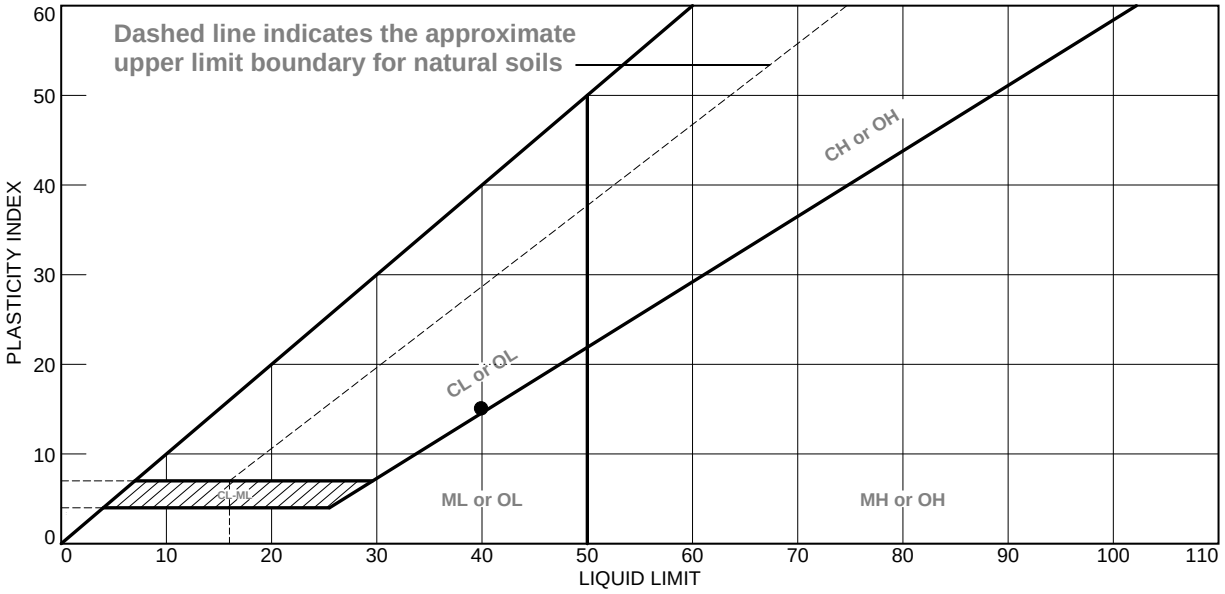
Client: Ricker Brothers Realty Company
Project: Galilee Baptist Church

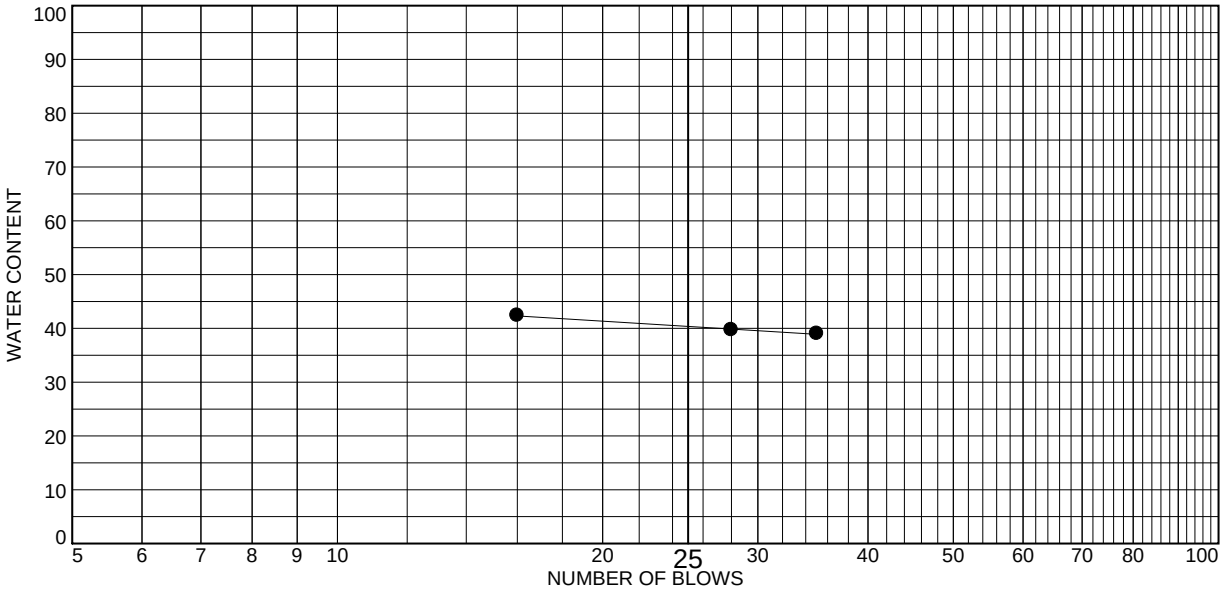
Project No: 31232352 **Figure**

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

Tested By: S. Quidas **Checked By:** S. Quidas

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Light Brown, Lean CLAY with Sand	40	25	15	99.9	78.4	CL

Project No. 31232352 **Client:** Ricker Brothers Realty Company

Project: Galilee Baptist Church

Location: SB-15
Sample Number: S-2 **Depth:** 2.5-4.0

GEO-TECHNOLOGY ASSOCIATES, INC.
14280 Park Center Drive, Suite A
Laurel, MD 20707

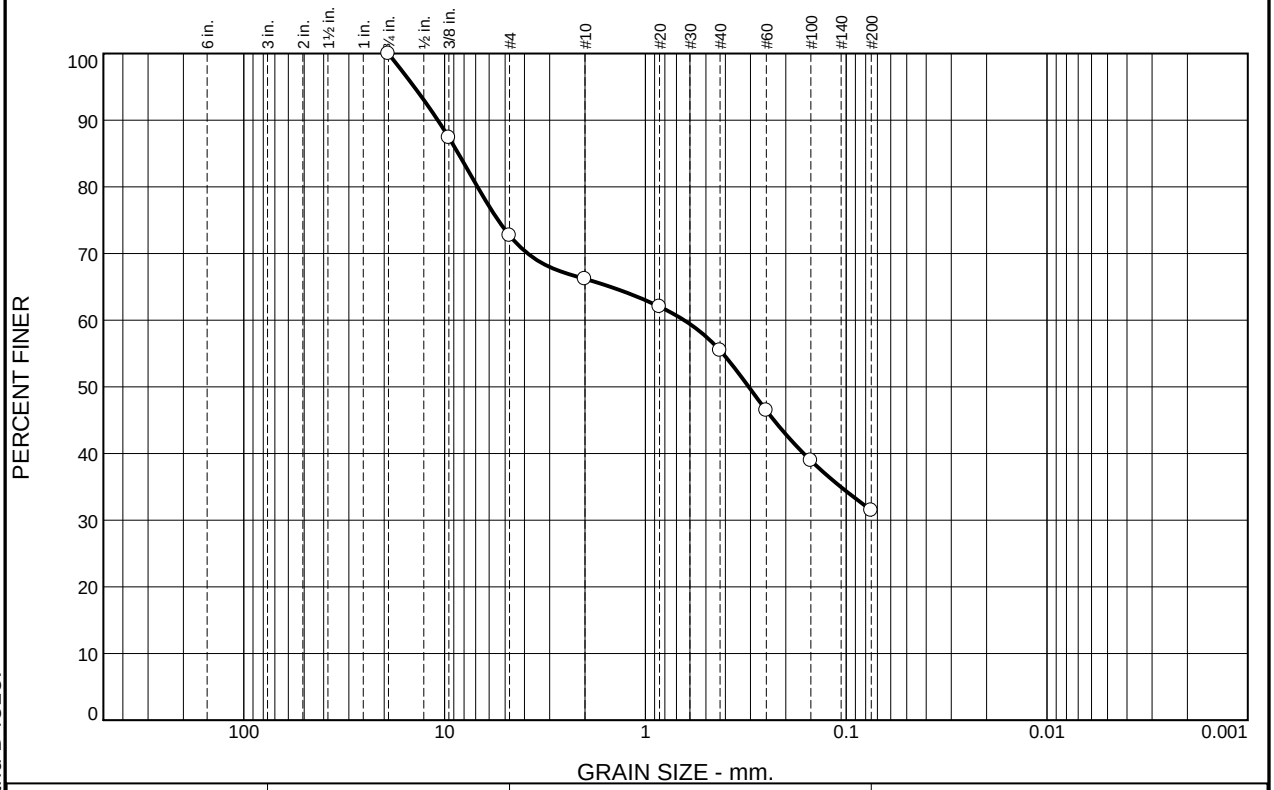
Remarks:

Figure

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

Tested By: S. Quidas **Checked By:** S. Quidas

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	27.3	6.5	10.7	24.0	31.5	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
3/4	100.0		
3/8	87.4		
#4	72.7		
#10	66.2		
#20	62.0		
#40	55.5		
#60	46.5		
#100	38.9		
#200	31.5		

* (no specification provided)

Soil Description

Light Brown, Clayey SAND with Gravel

Atterberg Limits

PL= 16 LL= 29 PI= 13 NM= 7.7

Coefficients

D_{90}= 10.8125 D_{85}= 8.5413 D_{60}= 0.6410
D_{50}= 0.3058 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Classification

USCS= SC AASHTO= A-2-6(1)

Remarks

Location: SB-28
Sample Number: S-2 **Depth:** 2.5-4.0 **Date:** 11/22/2023

GEO-TECHNOLOGY ASSOCIATES, INC.
14280 Park Center Drive, Suite A
Laurel, MD 20707

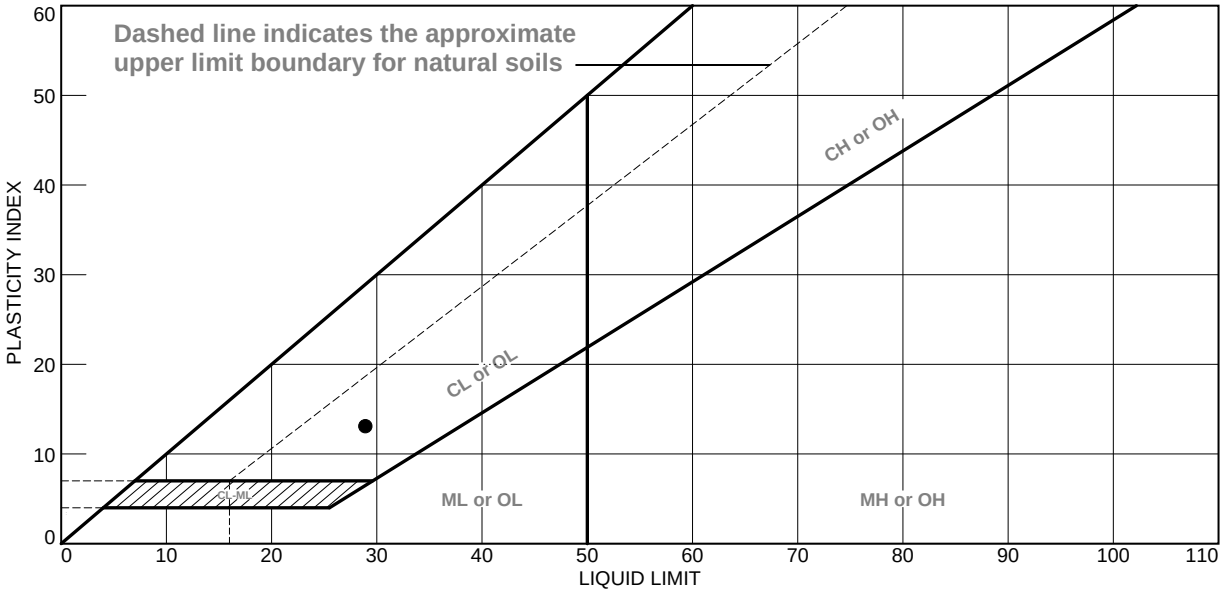
Client: Ricker Brothers Realty Company
Project: Galilee Baptist Church

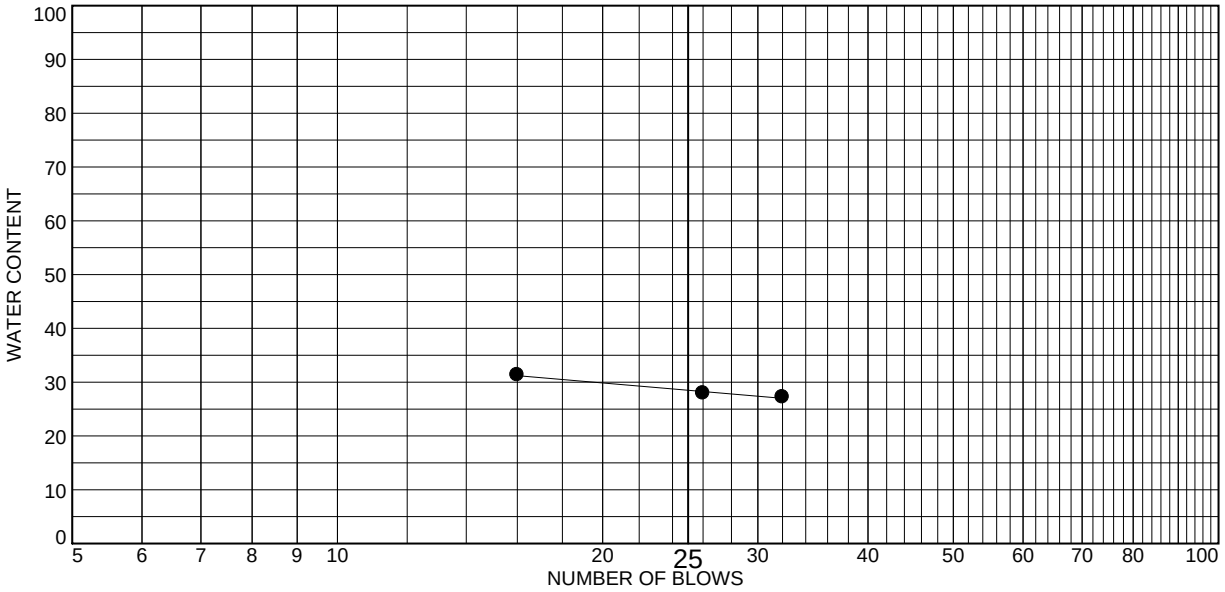
Project No: 31232352 **Figure**

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

Tested By: S. Quidas **Checked By:** S. Quidas

LIQUID AND PLASTIC LIMITS TEST REPORT





	MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
●	Light Brown, Clayey SAND with Gravel	29	16	13	55.5	31.5	SC

Project No. 31232352 **Client:** Ricker Brothers Realty Company

Project: Galilee Baptist Church

Location: SB-28
Sample Number: S-2 **Depth:** 2.5-4.0

GEO-TECHNOLOGY ASSOCIATES, INC.
14280 Park Center Drive, Suite A
Laurel, MD 20707

Remarks:

Figure

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

Tested By: S. Quidas **Checked By:** S. Quidas

COMPACTION TEST REPORT
ASTM D 698-12 Method B Standard

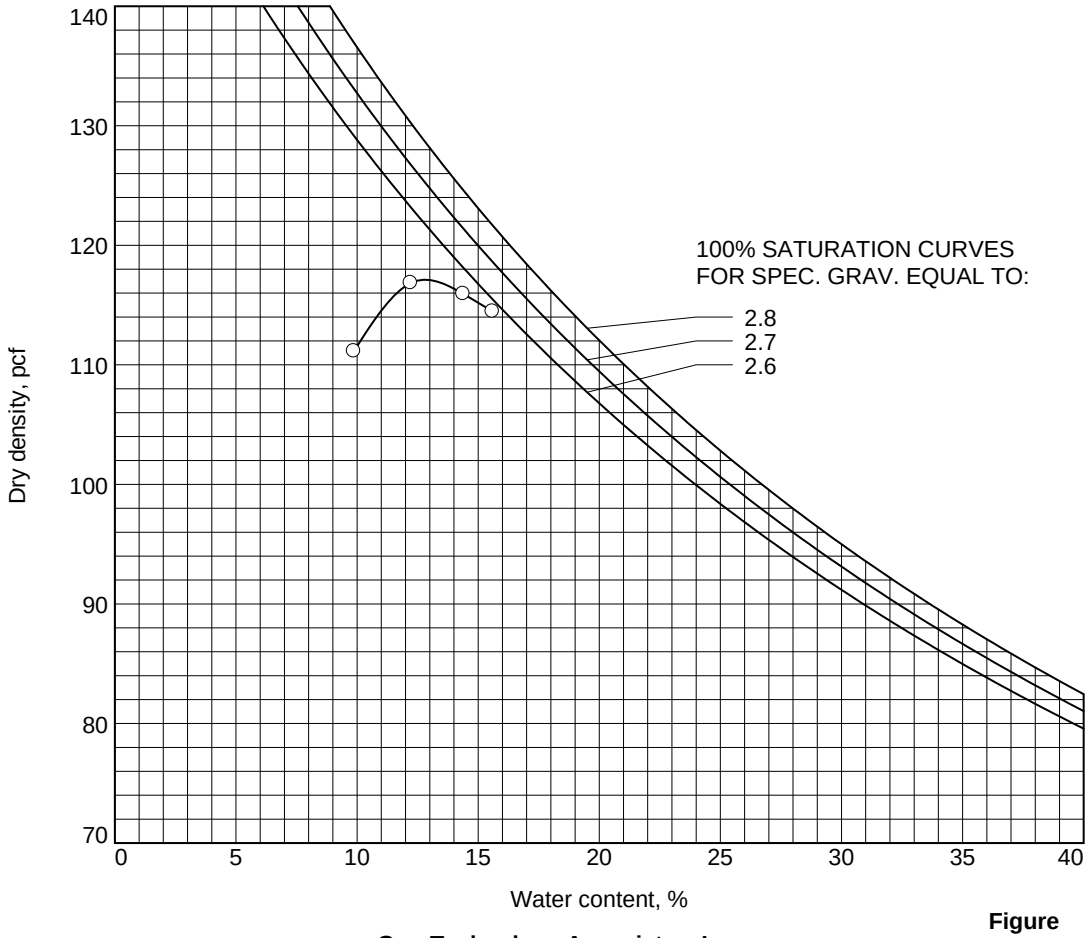
Project No.: 31232352 **Date:** 11/22/2023
Project: Galilee Baptist Church
Client: Ricker Brothers Realty Company
Location: SB-28
Sample Number: Bulk
Remarks:

MATERIAL DESCRIPTION

Description: Light Brown, Clayey SAND with Gravel

Classifications - **USCS:** SC **AASHTO:** A-2-6(1)
Nat. Moist. = 7.7 % **Sp.G. =**
Liquid Limit = 29 **Plasticity Index =** 13
% < No.200 = 31.5 %

TEST RESULTS
Maximum dry density = 117.1 pcf
Optimum moisture = 12.8 %



Figure

Geo-Technology Associates, Inc.

ASTM Specifications performed my include: D421, D422, D2216, D2217, and D4318.

Tested By: S. Quidas **Checked By:** S. Quidas