REPORT OF PRELIMINARY SUBSURFACE EXPLORATION
AND
GEOTECHNICAL ENGINEERING EVALUATION

MCLENDON YOUNG SITE
FLORENCE COUNTY, SOUTH CAROLINA
ECS PROJECT No: 38-1170

Prepared By

JANUARY 24, 2014

ECS CAROLINAS, LLP

"Setting the Standard for Service"

Geotechnical • Construction Materials • Environmental • Facilities

NC Registered Engineering Firm F-1078

January 24, 2014

Re: Report of Preliminary Subsurface Exploration and Geotechnical Engineering Evaluation
McLendon Young Site
Florence County, South Carolina
ECS Project No.: 38-1170

As authorized by the task order dated November 11, 2013, ECS Carolinas, LLP (ECS) has completed the preliminary subsurface exploration and geotechnical engineering evaluation for the above-referenced project. This report contains the results of our preliminary exploration as well as our recommendations regarding geotechnical design and construction aspects for the site.

We appreciate the opportunity to be of service to you on this site and look forward to our continued involvement. If you have any questions concerning the information and recommendations presented in the accompanying report or if we can be of further assistance, please do not hesitate to contact us.

Sincerely,
ECS CAROLINAS, LLP

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 21275 1-24-14 CHARLES P. BEAM

Charles P. Beam, P.E.
Project Manager

Robert N. McLeod, P.E.
Branch Manager/Principal Engineer

SOUTH CAROLINA ECS CAROLINAS, LLP No. C3239 CERTIFICATE OF AUTHORIZATION

TABLE OF CONTENTS

1.0 EXECUTIVE SUMMARY

The site is an approximately 303-acre parcel of land located southwest of the intersection of I-95 and Center Road near Timmonsville, South Carolina. The site is currently owned by the McLendon family and is currently being used for timber land and farm land. This parcel is being evaluated for site certification per the South Carolina Department of Commerce guidelines.

Much of the site is currently an open field. The site is generally flat and has less than approximately 5 feet of elevation change.

The six soil test borings drilled for the exploration were readily accessible by an ATV drill rig without the need for mechanized clearing. As such, the subsurface exploration is preliminary in nature, and the recommendations in this report may be superseded based on the results of a final subsurface exploration.

The soil test borings were extended to depths of 25 feet. Approximately 12 inches of cultivated plow zone soil was present at each test boring location. Typical silts and clays of the Coastal Plain region were present beneath the plow zone. Typical groundwater levels were observed at depths ranging from 4 to 7 feet below grade.

It appears that lightly loaded structures can be supported by shallow foundations. At this time, a preliminary design bearing pressures in the range of 2,500 to 3,000 pounds per square foot for foundations bearing on approved in-situ soils or engineered fill are recommended. Heavy structures will likely require deep foundation support or ground modification.

As a result of the Refraction Microtremor survey performed on the site, an IBC seismic Site Class "D" is recommended in accordance with the International Building Code 2012.

Specific information regarding the subsurface exploration procedures, the site and subsurface conditions at the time of our exploration, and our conclusions and recommendations concerning the geotechnical design and construction aspects of the project are discussed in detail in the subsequent sections of this report. Please note this Executive Summary is an important part of this report but should be considered a ***"summary"*** only and is not intended to be used exclusive of the entire report. The subsequent sections of this report constitute our findings, conclusions, and recommendations in their entirety.

2.0 PROJECT INFORMATION

The site is an approximately 303-acre parcel of land located southwest of the intersection of I-95 and Center Road near Timmonsville, South Carolina. The site is bordered to the east by Young Road, to the north by I-95, and to the south by farmland. This parcel is identified by Florence County GIS as TMS #'s 0056-04-022, 0035-04-011, 00036-04-001, 00036-04-003, and 00056-04-129. The site is currently owned by the McLendon family and is currently being used for timber land and farm land. This parcel is being evaluated for site certification under South Carolina Department of Commerce guidelines.

Finished site grades were not provided to ECS at the time of this report; however, the site is relatively flat with very little topographic relief. Current land use includes farming and timber over much of the site. The site location is shown on Figures 1 and 2 in the appendix of this report. Specific development plans are not available at this time.

The six soil borings drilled for the exploration were located in areas that were readily accessible by an All Terrain Vehicle (ATV) drill rig. As such, the subsurface exploration is preliminary in nature, and the recommendations in this report may be superseded based on the results of a final subsurface exploration.

3.0 EXPLORATION PROCEDURES

3.1 Subsurface Exploration

Six test borings were drilled on the project site as shown on the Boring Location Plan in the appendix. The borings were located in the field using paced distances and estimated right angles from visible site features.

The soil test borings were performed using an ATV mounted (550 ATV) drill rig equipped with an auto-hammer, spilt-spoon driving assembly. The auto-hammer generally delivers more energy downhole to the sampler than the standard cat-head driving assembly; therefore, the recorded standard penetration test (SPT) N-Values are lower than the N_{60}-Values recorded from using the cat-head assembly. Although the differences in energy will vary, it is common to assume the auto hammer delivers about 1.3 times the energy of the cat-head assembly. The N-values recorded in the field using the auto-hammer assembly are reported on the boring logs in the appendix.

Representative soil samples were obtained by means of the split-barrel (split-spoon) sampling procedure in accordance with ASTM D-1586. In this procedure, a 2-inch O.D., split-barrel sampler is driven into the soil a distance of 18 inches by a 140-pound hammer falling 30 inches. The number of blows required to drive the sampler through a 12-inch interval is termed the Standard Penetration Test (SPT) N-value and is indicated for each sample on the boring logs. This value can be used as a qualitative indication of the in-place relative density of cohesionless soils or the consistency of cohesive soils. Split-spoon samples were obtained at 2½-foot intervals within the upper 10 feet of the borings and at 5-foot intervals thereafter.

After recovery, each sample was removed from the sampler and visually classified. Representative portions of each sample were then sealed in air tight containers and brought to our laboratory in Columbia, South Carolina for visual classification in accordance with ASTM D-2488.

3.2 Refraction Microtremor (ReMi) Survey

A Refraction Microtremor (ReMi) survey was performed on the project site using one ReMi array traverse near boring B-3 along the farm road. The data was gathered in the field using standard refraction seismic equipment to measure site characteristics using ambient vibrations (microtremors) as a seismic source. Data was collected using a 24-channel exploration seismograph with 16 geophones at 20-foot spacing. Ten unfiltered 30-second records were recorded along the array.

The data was processed using proprietary SeisOpt® ReMi ™ software to reveal a one-dimensional shear wave (S-wave) velocity image of the subsurface materials beneath the array. The survey also provided the average shear wave velocity to a depth of at least 100 feet that was used to help access the seismic site class in accordance with the International Building Code 2012 (IBC 2012).

The ReMi array location and results are presented in the appendix.

4.0 SITE AND SUBSURFACE CONDITIONS

4.1 Site Observations

The site is an approximately 303-acre parcel of land located southwest of the intersection of I-95 and Center Road near Timmonsville, South Carolina. Portions of the site appeared to be recently under cultivation even though no cover crops were observed during the site visit by ECS. Observations were made just after a harvest.

A "Report of Wetland Delineation" was conducted by ECS and reported under separate cover. Wetland assessments are beyond the scope of services for this report.

4.2 Area Geology

The project site is located in the Coastal Plain Physiographic Province of South Carolina. The underlying sediments ranging in age from Late Cretaceous to Recent were deposited on the surface of basement crystalline rock. These sediments typically consist of partially-consolidated sand, clay, and silt. Local variations in the geologic profile have resulted from differences in depositional environment as well as other post-depositional influences such as desiccation, cementation, weathering, and erosion. The Coastal Plain deposits form wedges which thicken to the south/southeast and outcrop at the surface in almost parallel belts oriented perpendicular to the dip. The deposits generally dip toward the ocean at a rate of a few feet per mile.

4.3 Subsurface Conditions

4.3.1 Soil Test Borings

We have observed that a plow zone of cultivated soil approximately 12 inches thick was encountered in each of the soil test borings extended on site. Natural Coastal Plain soils were observed in the borings beneath the plow zone. The plow zone soils visible at the surface had a forage cover.

The soils beneath the plow zone were generally classified as clayey sand, sandy silt, silty clay, or clayey silt. These fine-grained soils extended from the plow zone to depths ranging from 8 to 15 feet below ground surface (bgs). The fine-grained soils in this layer were generally medium stiff to

very stiff with SPT N-values in the range of 5 to 28. At boring B-4, soft clayey silt (N=4) was encountered immediately beneath the plow zone soil.

Beneath the stiff silts and clays, a layer of silty fine to coarse sand and clayey fine to medium sand was encountered which extended to the termination depths of 25 feet. N-values recorded in the sand layer ranged from 2 to 20 bpf, generally decreasing with depth.

The above paragraphs provide a general summary of subsurface conditions encountered at the site at the time of our exploration. The boring logs included in the appendix contain detailed information regarding the subsurface conditions encountered at each boring location. The boring logs represent our visual classification of the samples retrieved during the field. The stratification lines on the boring logs designate approximate boundaries between various subsurface strata. The actual in-situ transitions are expected to be more gradual.

4.3.2 Groundwater Conditions

Groundwater was observed at depths of approximately 4 to 7 feet bgs in borings B-1 to B-5 and 18 feet in boring B-6 at the time of drilling. Please note that variations in the location of the water table may occur as a result of changes in precipitation, evaporation, surface water runoff, absorption, and other factors not immediately apparent at the time of this exploration. Consequently, fluctuations in the elevation of the groundwater table should be expected. In general, the highest groundwater levels typically occur in late winter to early spring while the lowest levels typically occur in late summer to late fall.

The potential exists for perched groundwater conditions within the type of clayey soils encountered in the borings. Perched groundwater is precipitation infiltration water that is unable to freely penetrate the clayey soil strata encountered on site. Presence of water influences the value of pore pressure acting within a soil and effectively reduces its shear bearing capacity.

4.3.3 Refraction Microtremor (ReMi) Survey

The weighted average of the shear wave velocities recorded in the upper 100 feet of the subsurface profile along the ReMi traverse was 1,138 feet per second as calculated in accordance with the International Building Code (IBC 2012).

5.0 PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS

The preliminary recommendations provided in this report are based upon our understanding of the information provided to us during this study, our past experience with similar conditions, and the results of our field testing. Once a development plan for the site is prepared and actual structure locations established, a building specific geotechnical exploration (i.e. soil test borings, test pits, etc.) should be performed to provide final geotechnical design and construction recommendations for the project.

5.1 Site and Subgrade Preparation

Prior to the start of fill placement or at-grade construction, existing vegetation, rootmat, cultivated plow zone soils, deleterious materials, and any other soft or unsuitable materials should be removed from the areas of proposed construction. The clearing and stripping operations should extend at least 5 to 10 feet beyond the planned limits of the new structures, pavements and fill

embankments. Laboratory classification testing of the plow zone soils should be conducted to determine their suitability for use as engineered fill (see Section 5.4).

After removal of deleterious surface materials and prior to fill placement or other at-grade construction, the exposed subgrade soils should be evaluated by an experienced geotechnical engineer or his authorized representative. The evaluation should include proofrolling with an approved piece of equipment such as a loaded dump truck having an axle weight of at least 10 tons to identify soft, loose or yielding subgrade materials. Unsuitable subgrade materials may require in-place stabilization or excavation and replacement with engineered fill. The most appropriate remedial activity to repair subgrades should be determined in the field by ECS at the time of proofrolling. Relatively soft near surface soils were encountered in the soil test borings particularly near boring B-4. These soils may respond unfavorably to proofrolling, and in-place stabilization or undercutting of the unstable or unsuitable soils may be required.

The preparation of fill and excavated subgrades should be observed on a full-time basis by a representative of ECS. These observations should be performed by an experienced geotechnical engineer or his representative to ensure that unsuitable materials have been removed and that the prepared subgrade is suitable for support of the proposed construction and/or new engineered fills.

5.2 Excavation Characteristics

Based on the results of the soil test borings, we expect that the soils encountered in the areas explored should generally be excavatable with conventional earth moving equipment such as pans/scrapers, loaders, bulldozers, rubber tired backhoes, etc. Areas of mass excavation, trenches and pits should meet the requirements of the most current Occupational Safety and Health Administration (OSHA) 28 CFR Part 1926, "Occupational Safety and Health Standards – Excavations". For temporary excavation purposes, the site soils typically classify as OSHA Type B and C soils. Site safety shall be the sole responsibility of the contractor and his subcontractor. See Section 5.3 for information regarding observed water levels which may affect excavation at this site.

5.3 Groundwater Control

Groundwater was observed at depths of approximately 4 to 7 feet in borings B-1 to B-5 and 18 feet in boring B-6 at the time of drilling. We suggest that site grades be established at least 2 feet above the long-term static groundwater water levels, which could be higher than the water levels observed in the borings. Higher final grades are recommended to account for fluctuations of the ground water levels. If final grades will approach the level of water observed in the borings, we recommended that a more accurate study of potential water levels at the site be conducted. Some temporary ditching may be required during construction to control standing water conditions.

The project site may be subject to perched water conditions where surface water becomes trapped by near surface fine-grained soils. Because the silts and clays just beneath the surface have relatively low hydraulic conductivities, groundwater control such as trenching, French drains, or pumping from sumps may be required. For excavations which terminate above the groundwater table, dewatering can generally be performed by sump pit and pumping operations. Deeper excavations will require project specific measures.

5.4 Engineered Fill

In general, soils comprising the following ASTM classifications should be used for engineered fill: SW (well-graded sands), SP (poorly-graded sands), SM (silty sands), SC (clayey sands), CL

(sandy or lean clays), or ML (sandy silts). Based on the results of our geotechnical exploration, the existing soils classified as ML, CL-ML, SM, or SC are likely acceptable for re-use as engineered fill. Moisture conditioning of these soils may be required during mass grading. Soils such as ML/MH, CL/CH, or MH/CH should be evaluated to determine suitability for use as engineered fill. These soils should meet the criteria specified in this section to be considered suitable for use as engineered fill. A qualified geotechnical engineer or his representative can determine suitability during construction activities. Additional field and laboratory testing may be required during construction operations to further clarify and identify the soil strata and possible locations of unsuitable soils.

New fill placed for support of the new buildings, pavements and other structures, and for backfill of utility lines within expanded structure and pavement limits should consist of engineered fill. Engineered fill should be an approved material, free of organic matter and other deleterious materials, and have a Liquid Limit (LL) and a Plasticity Index (PI) less than approximately 40 and 15, respectively. We also recommend that fills within structural areas have a standard Proctor (ASTM D-698) maximum dry density of at least 90 pounds per cubic foot (pcf). Soils not meeting these criteria may be used in landscaped areas.

Mass engineered fill placed within building and pavement areas should be placed in lifts not exceeding a thickness of 8 inches in loose lifts, moisture-conditioned to within 3 percent of the optimum moisture content, and compacted to a minimum of 98 percent of their standard Proctor maximum dry density as determined in accordance with ASTM D-698. Similarly, isolated areas of engineered fill such as trench line backfill should be placed in lifts not exceeding 6 inches and moisture conditioned as mentioned beforehand.

Specific frequencies for in-place density testing should be provided as part of the final geotechnical study for the project. However, for planning purposes, a testing frequency of one in-place density test for each 2,500 to 5,000 square feet area per lift is typical for mass fills, while one in-place density test for each 50 to 100 linear feet of each lift of trench backfill is typical.

5.5 Preliminary Foundation

Based on the soil data obtained at the borings locations, the on-site soils should typically be suitable for support of lightly loaded structures utilizing shallow foundation systems. In some areas, it could also be feasible to support moderately loaded structures on shallow foundations.

Loose soils were encountered below depths of about 10 to 15 feet in borings B-1 to B-5. Thus, heavy structures will likely require deep foundation support or ground modification. In boring B-6, stiff soils were encountered at the aforementioned depths. Heavy structures utilizing shallow foundations systems may be suitable for this area.

Based on the preliminary data, it appears that lightly loaded structures can be supported by shallow foundations. Preliminary design bearing pressures in the range of 2,500 to 3,000 pounds per square foot for foundations bearing on approved in-situ soils or engineered fill are recommended. Please note that the provided preliminary bearing pressures may vary once structure types and loadings are known.

To reduce the possibility of foundation bearing failure and excessive settlement due to local shear or "punching" failures, we recommend that continuous footings have a minimum width of 24 inches and that isolated column footings have a minimum lateral dimension of 36 inches. We recommend the bearing elevation for foundations be a minimum depth of 12 inches below the finished exterior grade.

The foundation subgrades should be evaluated by ECS personnel to document that the bearing soils are capable of supporting the recommended net allowable bearing pressure and are suitable for foundation construction. These evaluations should include visual observations, hand rod probing, and dynamic cone penetrometer (ASTM STP 399) testing, or other methods deemed appropriate by the geotechnical engineer at the time of construction. These evaluations should be performed within each column footing excavation and at intervals and not greater than 25 feet in continuous footing excavations.

More specific bearing pressure, settlement, and floor slab recommendations can be provided once loading information, finished grades, and bearing elevation of the proposed structures are known and additional field testing has been performed.

5.6 Liquefaction Potential

Based on a review of the borings data and our experience in the region, it appears the on-site soils could be subject to liquefaction during a seismic event. ECS recommends that a liquefaction analysis be conducted during the final geotechnical evaluation to help quantify the risk of liquefaction and associated ground surface subsidence.

If risks associated with liquefaction are not acceptable or the proposed structure cannot be designed to accommodate settlement without suffering catastrophic failure, a deep foundation or ground improvement techniques will be required. A deep foundation system such as piles bearing beneath the liquefiable layers is feasible. An alternative would be to utilize ground improvement techniques such as vibro-replacement and geo-composite drains to mitigate or reduce the site's susceptibility to liquefaction and allow support of the structure on conventional shallow foundations.

5.7 Seismic Site Class Determination

South Carolina has adopted the International Building Code (IBC 2012), and the IBC 2012 requires that a seismic site class be assigned for new structures. The IBC 2012 classifies sites with the potential for liquefaction as Seismic Site Class F. However, the IBC 2012 under ASCE 7 allows the design spectral response accelerations for a site to be determined without regard to liquefaction provided the building has a fundamental period of less than or equal to 0.5 seconds and the risks of liquefaction are considered in design. Low-rise construction typically meets this criterion; however, this should be confirmed by the Structural Engineer.

Provided the proposed construction meets the above provisions, the seismic site class for a site is determined by calculating a weighted average of the shear wave velocities of subsurface materials to a depth of 100 feet. Based on the average shear wave velocity data obtained to a depth of 100 feet below the existing ground surface from the refraction Microtremor (ReMi) surveys, the soil profile type of the site falls in the range of Seismic Site Class "D" as defined in IBC 2012. The shear wave velocity profile generated from the ReMi testing is shown in the appendix of this report.

6.0 CLOSING

The general subsurface conditions utilized in our preliminary site evaluation have been based on the subsurface data indicated by the widely spaced soil test borings. The data and recommendations included in this report are for preliminary planning purposes only, and are intended to provide general guidelines for site development and communicate potential geotechnical and site work issues. Final site and civil design will warrant additional geotechnical

exploration in order to provide final geotechnical design parameters. It is recommended that the final geotechnical exploration include soil test borings and geophysical testing.

This report has been prepared in accordance with generally accepted geotechnical engineering practice. No other warranty is expressed or implied. Our evaluation of foundation support conditions has been based on our understanding of the site and project information and the data obtained in our exploration. The general subsurface conditions utilized in our foundation evaluation have been based on interpolation of subsurface data between the borings. In evaluating the boring data, we have reviewed previous correlations between penetration resistance values and foundation bearing pressures observed in soil conditions similar to those at your site. The assessment of site environmental conditions for the presence of pollutants in the soil, rock, and groundwater of the site was beyond the scope of this geotechnical exploration and assessment.

APPENDIX

Site Vicinity Map

Boring Location Plan

Unified Soil Classification System

Reference Notes for Boring Logs

Boring Logs (B-1 to B-6)

ReMi Test Results

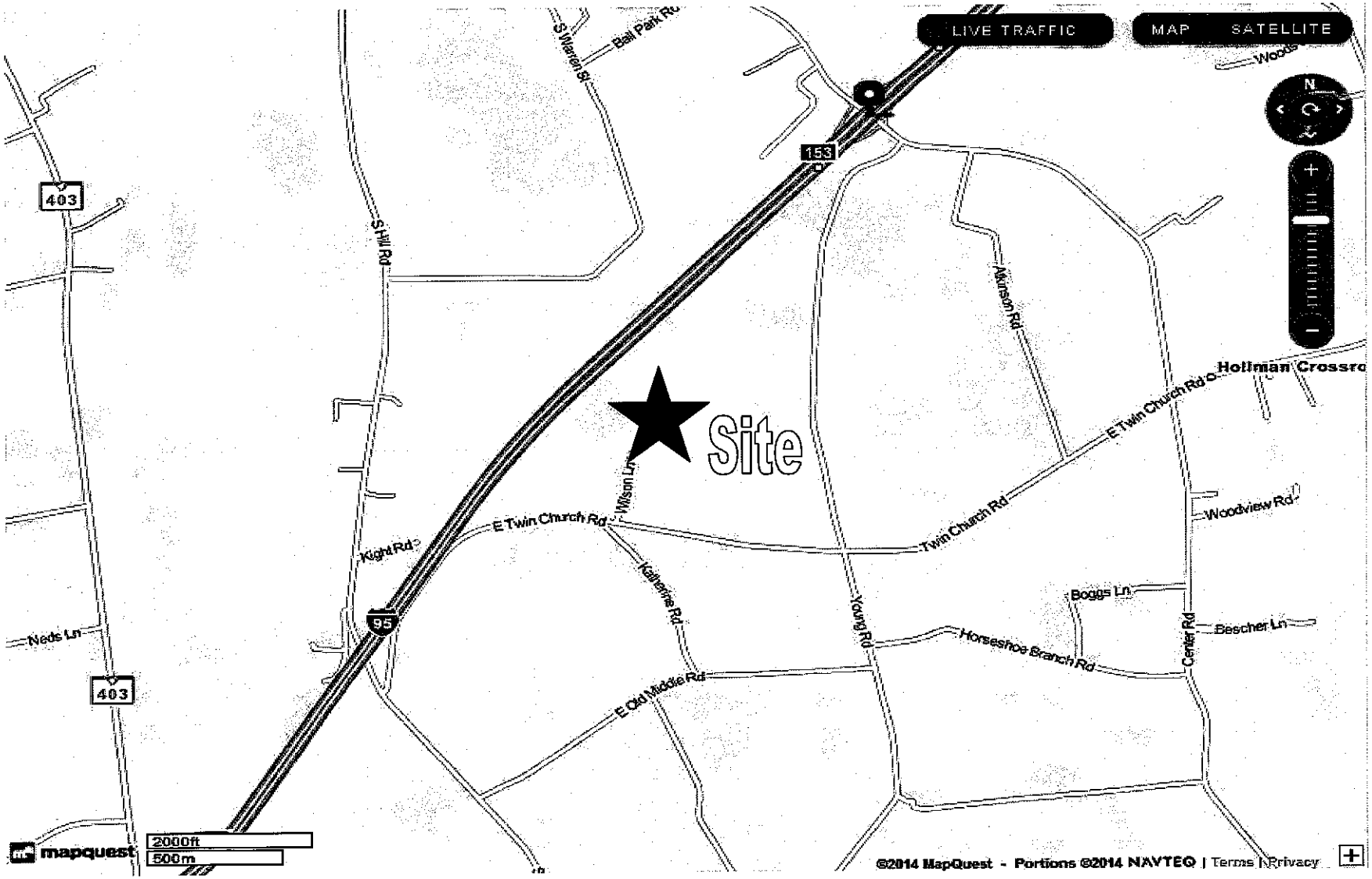
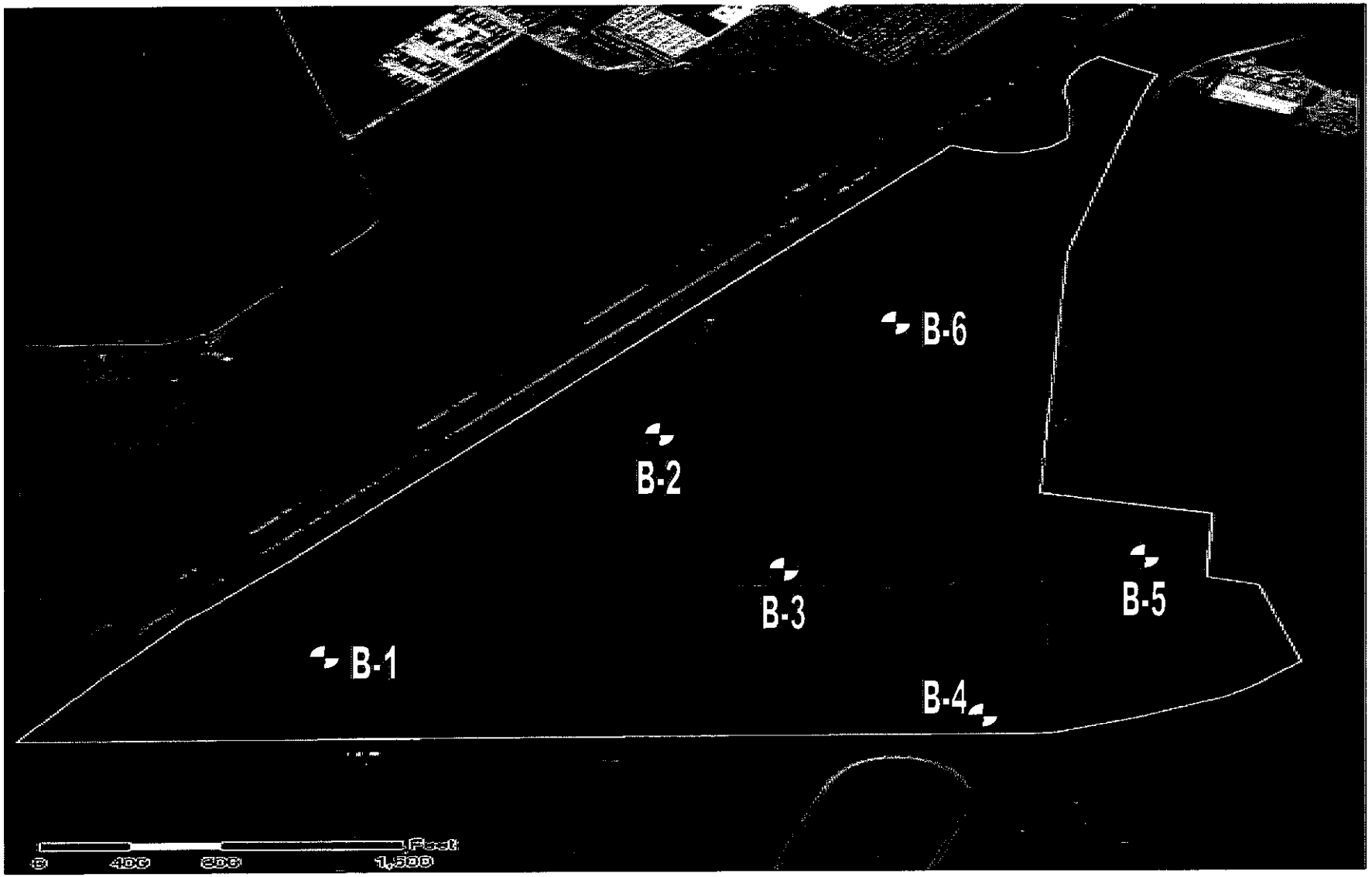


Figure 1: Site Location Plan
McLendon Young Site
Florence County, South Carolina
ECS Project No. 38-1170



LEGEND

Boring Locations (Approximate)

Figure 2: Boring Location Plan
McLendon Young Site
Florence County, South Carolina
ECS Project No. 38-1170

REFERENCE NOTES FOR BORING LOGS

I. Drilling and Sampling Symbols:

SS:	Split Spoon Sampler	RB:	Rock Bit Drilling
ST:	Shelby Tube Sampler	BS:	Bulk Sample of Cuttings
RC:	Rock Core; NX, BX, AX	PA:	Power Auger (no sample)
PM:	Pressuremeter	HSA:	Hollow Stem Auger
DC:	Dutch Cone Penetrometer	WS:	Wash Sample

Standard Penetration (Blows/Ft) refers to the blows per foot of a 140 lb. hammer falling 30 inches on a 2 inch O.D. split spoon sample, as specified in ASTM D-1586. The blow count is commonly referred to as the N value.

II. Correlation of Penetration Resistances to Soil Properties:

Relative Density of Cohesionless Soils

SPT-N	Relative Density
0 - 4	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
51 or more	Very Dense

Consistency of Cohesive Soils

SPT-N	Consistency
0 - 2	Very Soft
3 - 4	Soft
5 - 8	Firm
9 - 15	Stiff
16 - 30	Very Stiff
31 - 50	Hard
50 or more	Very Hard

III. Unified Soil Classification Symbols:

GP:	Poorly Graded Gravel	ML:	Low Plasticity Silts
GW:	Well Graded Gravel	MH:	High Plasticity Silts
GM:	Silty Gravel	CL:	Low Plasticity Clays
GC:	Clayey Gravel	CH:	High Plasticity Clays
SP:	Poorly Graded Sands	OL:	Low Plasticity Organics
SW:	Well Graded Sands	OH:	High Plasticity Organics
SM:	Silty Sands	CL - ML:	Dual Classification (Typical)
SC:	Clayey Sands		

IV. Water Level Measurement Symbols:

WL:	Water Level	BCR:	Before Casing Removal
WS:	While Sampling	ACR:	After Casing Removal
WD:	While Drilling	WCI:	Wet Cave In
		DCI:	Dry Cave In

The water levels are those water levels actually measured in the borehole at the times indicated by the symbol. The measurements are relatively reliable when auguring, without adding fluids, in a granular soil. In clays and plastic silts, the accurate determination of water levels may require several days for the water level to stabilize. In such cases, additional methods of measurement are generally applied.

The elevations indicated on the boring logs should be considered approximate and were not determined using accepted surveying techniques.

ECS

CLIENT	JOB #	BORING #	SHEET
Alliance Consulting Engineers, Inc	1170	B-1	1 OF 1
PROJECT NAME	**ARCHITECT-ENGINEER**		
McLendon Young - Geotech			

SITE LOCATION: SW of I-95 and Center Rd. Florence County

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT²

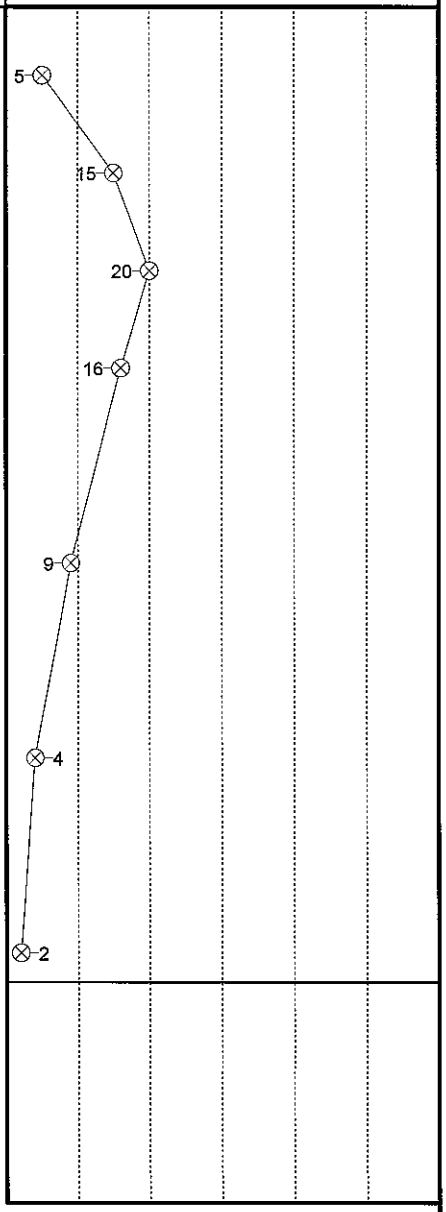
ROCK QUALITY DESIGNATION & RECOVERY
RQD% - — - REC%

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

BOTTOM OF CASING | LOSS OF CIRCULATION | SURFACE ELEVATION | ENGLISH UNITS

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Plow Zone Depth [12"]			
	S-1	SS	18	18	RESIDUUM - Fine to Medium Sandy SILT, Brown and Light Gray, Moist, Medium Stiff (ML/ MH)			3 2 3
	S-2	SS	18	18	RESIDUUM - Fine to Medium Sandy SILT, Yellowish Brown to Reddish Brown, Moist, Stiff to Very Stiff (ML)			5 7 8
5	S-3	SS	18	18		▽		7 9 11
	S-4	SS	18	18	RESIDUUM - Silty Fine to Coarse SAND, Orangish Brown to Light Red to Yellowish Brown, Moist to Saturated to Wet, Medium Dense to Very Loose, (SM)			9 8 8
10								
	S-5	SS	18	18				4 5 4
15								
	S-6	SS	18	18				2 2 2
20								
	S-7	SS	18	18				1 1 1
25					END OF BORING @ 25.00'			
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

▽ WL 7.00 WS☐ WD☐	BORING STARTED 01/06/14	
▽ WL(BCR) ▼ WL(ACR)	BORING COMPLETED 01/06/14	CAVE IN DEPTH
▽ WL	RIG 550 ATV FOREMAN Howard Wessinger	DRILLING METHOD Hollow Stem Auger

CLIENT	JOB #	BORING #	SHEET
Alliance Consulting Engineers, Inc	1170	B-2	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
McLendon Young - Geotech	

SITE LOCATION: SW of I-95 and Center Rd. Florence County

NORTHING | EASTING | STATION

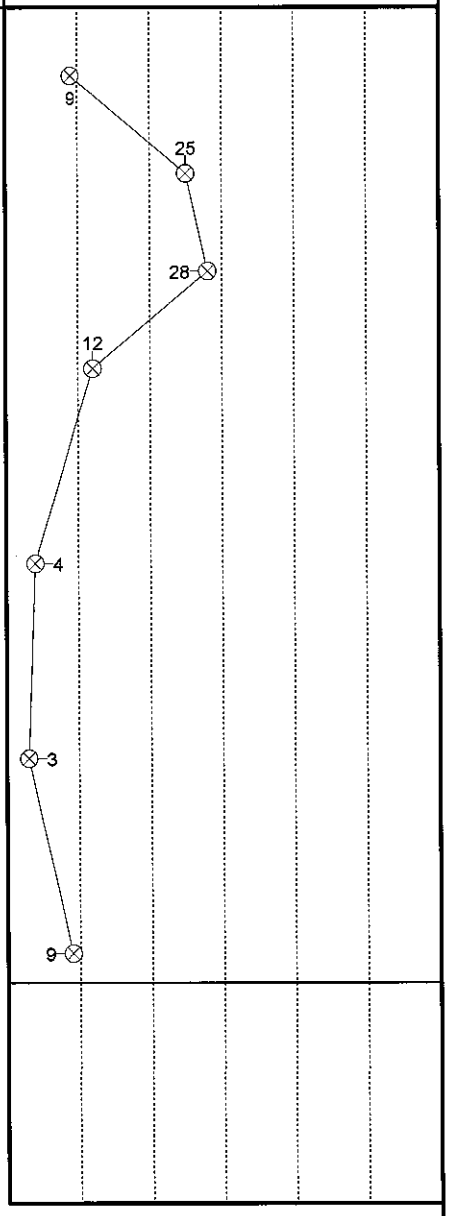
CALIBRATED PENETROMETER TONS/FT²

ROCK QUALITY DESIGNATION & RECOVERY
RQD% - — - REC% ——

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

⊗ STANDARD PENETRATION BLOWS/FT

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL (ENGLISH UNITS)	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Plow Zone Depth [12"]			
	S-1	SS	18	18	RESIDUUM - Silty CLAY, Brown and Gray, Moist, Stiff (CL-ML)			3 4 5
	S-2	SS	18	18	RESIDUUM - SILT with Fine to Medium Sand, Gray, Moist, Very Stiff (ML)			6 11 14
5	S-3	SS	18	18	RESIDUUM - Silty CLAY with Sand, Yellowish Brown to Light Gray, Moist, Stiff (CL/CH)			9 12 16
	S-4	SS	18	18				4 6 6
10					RESIDUUM - Clayey Fine to Medium SAND, Orange and Tannish Brown, Moist to Wet, Very Loose (SC)			
	S-5	SS	18	18				2 2 2
15								
	S-6	SS	18	18				1 2 1
20								
	S-7	SS	18	18	RESIDUUM - Silty SAND with Gravel, Yellowish Brown, Saturated, Loose (SM)			4 4 5
25					END OF BORING @ 25.00'			
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 8.00 WS ☐ WD ☐	BORING STARTED 01/06/14	
WL(BCR) WL(ACR)	BORING COMPLETED 01/06/14	CAVE IN DEPTH
WL	RIG 550 ATV FOREMAN Howard Wessinger	DRILLING METHOD Hollow Stem Auger

CLIENT	JOB #	BORING #	SHEET
Alliance Consulting Engineers, Inc	1170	B-3	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
McLendon Young - Geotech	

SITE LOCATION: SW of I-95 and Center Rd. Florence County

NORTHING | EASTING | STATION

CALIBRATED PENETROMETER TONS/FT²

ROCK QUALITY DESIGNATION & RECOVERY
RQD% - - - REC% ——

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

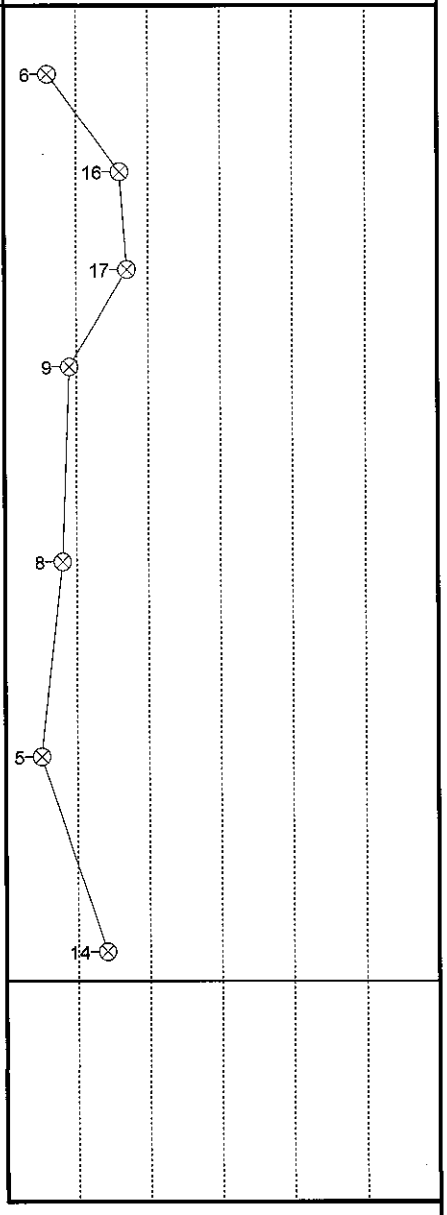
STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING | LOSS OF CIRCULATION

SURFACE ELEVATION

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Plow Zone Depth [12"]			
	S-1	SS	18	18	RESIDUUM - Clayey SILT with Sand, Brown to Gray to Yellowish Brown, Moist, Medium Stiff to Very Stiff (ML/CL)			2 2 4
	S-2	SS	18	18		▽		4 6 10
5	S-3	SS	18	18				7 9 8
	S-4	SS	18	18				3 4 5
10								
	S-5	SS	18	18	RESIDUUM - Silty SAND with Gravel Fragments, Brown to Gray, Saturated to Wet, Loose to Medium Dense (SM)			4 4 4
15								
	S-6	SS	18	18				2 2 3
20								
	S-7	SS	18	18				5 7 7
25					END OF BORING @ 25.00'			
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

▽ WL 4.00 WS ☐ WD ☐	BORING STARTED 01/06/14	
▽ WL(BCR) ▼ WL(ACR)	BORING COMPLETED 01/06/14	CAVE IN DEPTH
▽ WL	RIG 550 ATV FOREMAN Howard Wessinger	DRILLING METHOD Hollow Stem Auger

CLIENT	JOB #	BORING #	SHEET
Alliance Consulting Engineers, Inc	1170	B-4	1 OF 1
PROJECT NAME	**ARCHITECT-ENGINEER**		
McLendon Young - Geotech			

SITE LOCATION: SW of I-95 and Center Rd. Florence County

NORTHING | EASTING | STATION

-○- CALIBRATED PENETROMETER TONS/FT²

ROCK QUALITY DESIGNATION & RECOVERY
RQD% – — – REC% ——

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

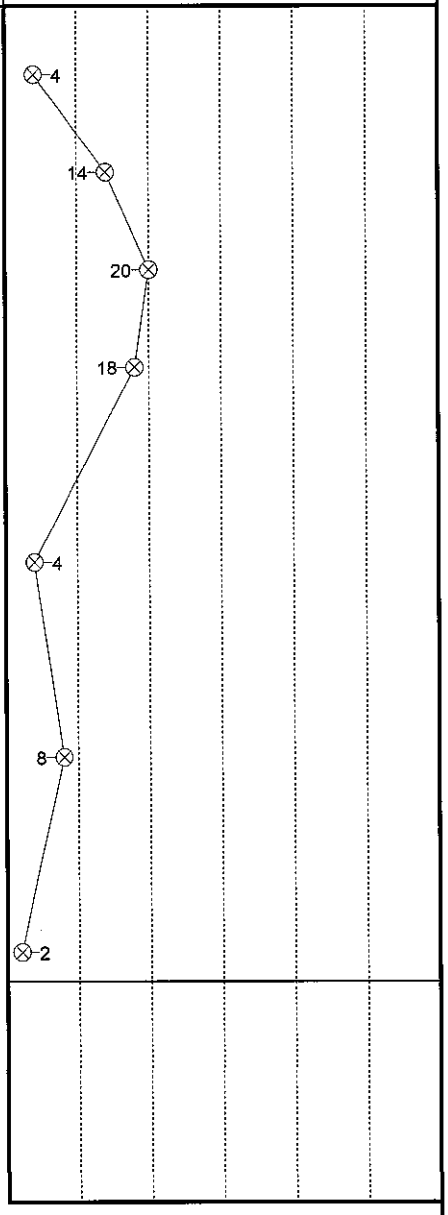
⊗ STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▰ — LOSS OF CIRCULATION

SURFACE ELEVATION

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Plow Zone Depth [12"]			
	S-1	SS	18	18	RESIDUUM - Clayey SILT with Fine to Medium Sand, Brown and Yellowish Brown to Light Gray, Moist, Soft to Very Stiff (ML/CL)			1 2 2
	S-2	SS	18	18		▽		3 6 8
5	S-3	SS	18	18				7 9 11
	S-4	SS	18	18	RESIDUUM - Silty Fine to Coarse SAND, Gray to Pinkish White to Light Brown to Yellowish Brown, Saturated to Wet, Very Loose to Medium Dense (SM)			5 8 10
10								
	S-5	SS	18	18				2 2 2
15								
	S-6	SS	18	18				3 4 4
20								
	S-7	SS	18	18				1 1 1
25					END OF BORING @ 25.00'			
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

▽ WL 5.00 WS☐ WD☐	BORING STARTED 01/06/14	
▽ WL(BCR) ▼ WL(ACR)	BORING COMPLETED 01/06/14	CAVE IN DEPTH
▽ WL	RIG 550 ATV FOREMAN Howard Wessinger	DRILLING METHOD Hollow Stem Auger

CLIENT	JOB #	BORING #	SHEET
Alliance Consulting Engineers, Inc	1170	B-5	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
McLendon Young - Geotech	

SITE LOCATION

SW of I-95 and Center Rd. Florence County

NORTHING | EASTING | STATION

-○- CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% - — - REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

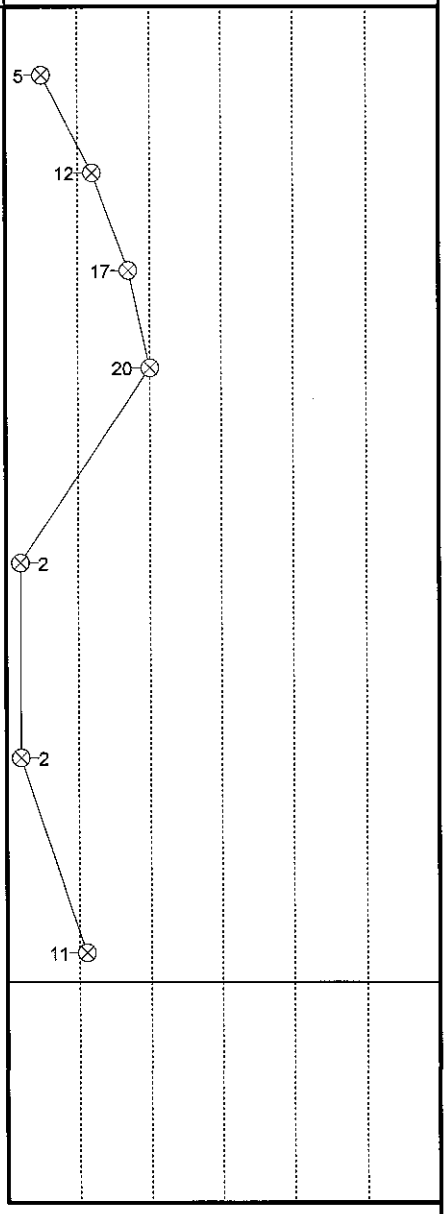
⊗ STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING ▰ — LOSS OF CIRCULATION (100%)

SURFACE ELEVATION

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Plow Zone Depth [12"]			
	S-1	SS	18	18	RESIDUUM - Clayey SILT, Brown to Reddish and Yellowish Brown, Moist, Medium Stiff to Very Stiff (MH/ML)			2 3 2
	S-2	SS	18	18				4 5 7
5								
	S-3	SS	18	18		▽		6 8 9
	S-4	SS	18	18	RESIDUUM - Silty Fine to Medium SAND with Gravel Fragments, Light Reddish Brown to Yellowish Brown to Gray, Moist to Wet, Medium Dense to Very Loose (SM)			7 8 12
10								
	S-5	SS	18	18				1 1 1
15								
	S-6	SS	18	18				1 1 1
20								
	S-7	SS	18	18				5 6 5
25					END OF BORING @ 25.00'			
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

▽ WL 7.00 WS☐ WD☐	BORING STARTED 01/06/14	
▽ WL(BCR) ▼ WL(ACR)	BORING COMPLETED 01/06/14	CAVE IN DEPTH
▽ WL	RIG 550 ATV FOREMAN Howard Wessinger	DRILLING METHOD Hollow Stem Auger

CLIENT	JOB #	BORING #	SHEET
Alliance Consulting Engineers, Inc	1170	B-6	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
McLendon Young - Geotech	

SITE LOCATION: SW of I-95 and Center Rd. Florence County

NORTHING | EASTING | STATION

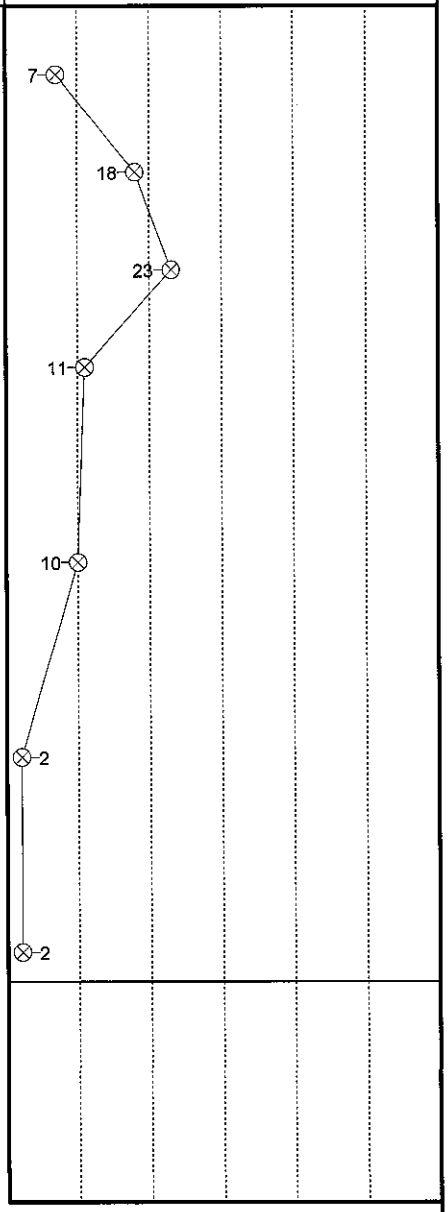
CALIBRATED PENETROMETER TONS/FT^2

ROCK QUALITY DESIGNATION & RECOVERY
RQD% - — - REC% ———

PLASTIC LIMIT% | WATER CONTENT% | LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT

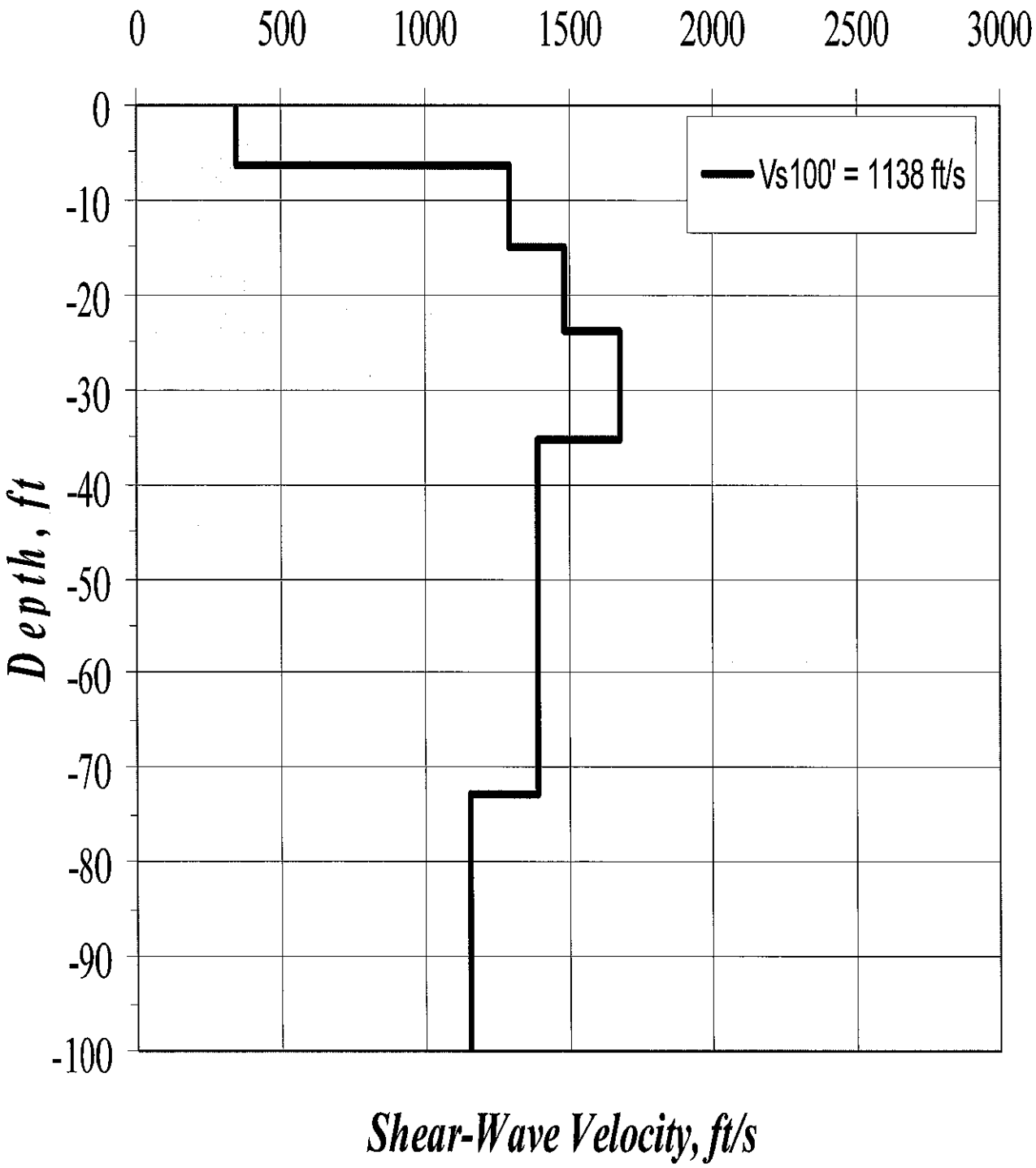
DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL (ENGLISH UNITS)	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Plow Zone Depth [12"]			
	S-1	SS	18	18	RESIDUUM - Clayey SILT, Yellowish Brown to Light Gray and Brown, Moist, Medium Stiff to Very Stiff (MH/CH)			2 3 4
	S-2	SS	18	18				5 7 11
5	S-3	SS	18	18				6 10 13
	S-4	SS	18	18				4 5 6
10					RESIDUUM - Silty CLAY with Trace Mica, Tannish Brown, Moist, Stiff (CL-ML)			
	S-5	SS	18	18				3 5 5
15					RESIDUUM - Fine to Medium Sandy CLAY with Trace Mica, Light Brownish White, Moist, Very Soft (CL/CH)	▽		
	S-6	SS	18	18				1 1 1
20					RESIDUUM - Silty Fine to Medium SAND, Yellowish Brown, Wet, Very Loose (SM)			
	S-7	SS	18	18				1 1 1
25					END OF BORING @ 25.00'			
30								



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

▽ WL 18.00 WS☐ WD☐	BORING STARTED 01/06/14	
▽ WL(BCR) ▼ WL(ACR)	BORING COMPLETED 01/06/14	CAVE IN DEPTH
▽ WL	RIG 550 ATV FOREMAN Howard Wessinger	DRILLING METHOD Hollow Stem Auger

McLendon Young Site - Vs Model



ReMi Test Results
Line 1
Site Class 'D'

McLendon Young Site
Florence County, South Carolina
ECS Project No. 38-