Amended Report of Preliminary Geotechnical Exploration
Project Connect
Blythewood, Richland County, South Carolina
S&ME Project No. 22610625

PREPARED FOR:

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March 31, 2023

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Thomas & Hutton
1501 Main Street, Suite 760
Columbia, South Carolina 29201

Attention: Mr. John Culbreath, P.E. – Principal/Regional Director

Reference: **Amended Report of Preliminary Geotechnical Exploration**
Project Connect
Blythewood, Richland County, South Carolina
S&ME Project No. 22610625

Dear Mr. Culbreath:

As requested, S&ME, Inc. has completed field and laboratory testing for the above referenced site, located in Blythewood, Richland County, South Carolina. Our work was performed in general accordance with the following:

- S&ME Proposal No. 22610625, dated December 16, 2022.
- S&ME Change Order Request No. 1, dated January 17, 2023.
- S&ME Proposal No. 22610625A, dated January 31, 2023.
- S&ME Change Order Request No. 2, dated February 16, 2023.

This report provides information on the exploration and testing procedures used, our previous and current boring and sounding records, our previous geophysical test results and our laboratory testing results. Also included are our conclusions regarding site and subsurface conditions and IBC 2021 seismic site class and design category, as well as seasonal high-water table, shrink/swell potential, permeability and corrosivity from published literature. Furthermore, this report provides our recommendations regarding site preparation, dewatering considerations, excavation considerations, slope considerations, suitability of on-site soils for use as structural fill, fill placement and compaction, as well as preliminary shallow foundation support, ground improvement considerations, and preliminary grade slab and pavement support.

S&ME appreciates this opportunity to work with you as your geotechnical engineering consultant on this project. Please contact us at (803) 561-9024 if you have questions or need additional information regarding this report.

Sincerely,

S&ME, Inc.

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 26144 3-31-23 ROBERT C. BRUORTON

Robert C. Bruorton, P.E.
Senior Engineer/Principal Project Manager

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION S&ME, INC. No. C00473

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Office Principal

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1.0 Project Information

Initial information regarding the project was provided in email correspondence from Mr. John Culbreath, of Thomas & Hutton, to Mr. Chad Bruorton, of S&ME, on December 9, 2022. During this correspondence, project specific bearing pressure requirements and settlement tolerances (hereafter referred to as the project geotechnical specification) were provided. Additional information regarding the planned building loads and clarification of the project geotechnical specification was obtained during various in-person and video conference discussions between January 9 and 18, 2023 with members of Thomas & Hutton and the Project Connect team.

1.1 Property Description

From our review of the provided information, we understand that the project site consists of the northern majority of the Blythewood Industrial Park site which is owned by Richland County as well as adjacent abutting properties, located within the southwestern quadrant of the intersection of Interstate 77 and Blythewood Road, in Blythewood, Richland County, South Carolina, as shown in the *Site Location Plan*, attached as Figure 1 in Appendix I. The roughly 1200-acre overall site currently consists of undeveloped property consisting of woodland plots, field plots, a roughly 30-acre rough graded parcel and multiple small ponds and tributaries of Beasley Creek. The site is traversed by Lorick Road, a single lane dirt road, from northeast to southwest, and by an existing overhead power transmission right-of-way near the central portion of the site.

From our knowledge of the existing topography of the site, it appears that the site generally slopes from northwest to southeast, from a high point along Blythewood Road down to tributaries of Beasley Creek. Existing grades generally range from roughly elevation 550 feet MSL to elevation 375 feet MSL.

1.2 Planned Development

From our review of the provided information, we understand the site is being explored for a potential OEM automobile manufacturing facility. At this time, the site is to be prepared to a "ground ready development", which will include mass grading of the site to allow future development by the Project Connect team. The facility is understood to consist of two phases, and will include the following:

- Press Shop/Logistics – Two (2) buildings, each equaling 278,044 square feet in building footprint, each with a 209,050 square foot extension area cutting field and 45,934 square foot extension Polaris,
- Paint Shop – Two (2) buildings, each equaling 432,230 square feet in building footprint, each with a 39,501 square foot BDC/SQM,
- Body Construction/Logistics – Two (2) buildings, each equaling 1,003,888 square feet in building footprint, each with a 334,630 square foot expansion,
- Utility Building – one (1) building, equaling a 98,117 square foot Phase I footprint and a 49,059 square foot Phase II footprint,
- Assembly/Logistics – Two (2) buildings, each equaling 1,282,744 square feet in building footprint, each with a 167,315 square foot expansion,
- Finish – Two (2) buildings, each equaling 198,115 square feet in building footprint,
- Welcome Center – One (1) building, equaling roughly 79,000 square feet in building footprint,
- Battery – Three (3) buildings, each equaling 857,103 square feet in building footprint,
- Training – One (1) building, equaling 130,134 square feet in building footprint,

- Axle Assembly – Two (2) buildings, each equaling 334,049 square feet in building footprint,

From our discussions, we understand the planned buildings for the facility will likely be constructed of a structural steel frame system with metal siding exterior veneer. Various manufacturing/production equipment will be supported by/integrated into the building steel framework. The buildings are planned to be supported by a shallow foundation system, with slab-on-grade, with some buildings having basement/pit areas. Maximum column loading for the facility is understood to be roughly 415 metric tons (t) which equates to roughly 915 kips. Maximum floor loading for the facility is understood to be roughly 10 t/m^2 which equates to roughly 2,050 pounds per square foot (psf). Based on conversations with the Project Connect team, we understand there are isolated areas within some of the buildings with heavier structural loads that may require a deep foundation system. However, the location of these areas and the actual loading has not been provided at this time.

The geotechnical specification for the site, as provided by the Project Connect team, is understood as:

- Soils shall have a minimum allowable bearing pressure of 300 KN/m^2 (roughly 6,265 psf).
- Below the foundation bearing elevations to a depth of at least 10 m (roughly 33 feet) shall have a minimum subgrade modulus of 60 MN/m^2 (roughly 1,255 ksf).
- Maximum settlement of spread footings shall be limited to 25 mm (roughly 1 inch).
- Maximum differential settlement between adjacent spread footings shall be limited to 12 mm (roughly ½ inch) with an assumed distance of 25 m (roughly 80 feet) between adjacent footings.
- Use of a conventional ground supported slab-on-grade system where maximum differential settlement of the slab shall be limited to 6 mm (roughly ¼ inch) over an assumed one bay distance of 25 m (roughly 80 feet).

The development will also include the following infrastructure:

- Internal on-site access drives and parking lots.
- Four (4) on-site stormwater ponds.
- An on-site industrial rail spur, storage and yard.

The site is to be graded "table flat" (+/- 0%) so that no leveling is necessary prior to construction, per the Company's specifications. In order to tie planned infrastructure for the facility into the adjacent existing infrastructure, this results in a planned grade of roughly 483 feet MSL elevation. Therefore, from our knowledge of existing grades across the site, we anticipate planned grading to result in cuts of roughly 60 feet and fills approaching 110 feet.

2.0 Previous Data and Reports

S&ME is familiar with this site, having performed the following previous explorations at the site:

- *Report of Reconnaissance Level Geotechnical Exploration – Barnett Tracts,* S&ME Project No. 4261-15-181, dated December 7, 2015, and
- *Report of Reconnaissance-Level Geotechnical Exploration – Blythewood Industrial Site – Northern Portion (658 Acres)*, S&ME Project No. 4261-18-007, dated June 18, 2018.

From our review of the planned plant footprint for this project and these previous explorations, the following previous exploration results are located within, or in close proximity to, this area:

- A total of eight (8) soil test borings (15-B-1 through 15-B-8) from our above-referenced 2015 exploration, and
- A total of ten (10) soil test borings (18-B-1 through 18-B-10) and two (2) surface shear wave velocity test arrays from our above-referenced 2018 exploration.

The results of these previous explorations will be incorporated into our report with our planned exploration. The approximate previous test locations are shown on the *Testing Location Plan,* attached as Figure 2 in Appendix I. The results of the previous testing are attached in Appendix II-B.

3.0 Exploration Procedures

The subsurface exploration of this project included:

- Site reconnaissance and layout,
- Clearing of access trails to the proposed boring locations,
- Standard Penetration Test (SPT) soil test borings,
- Cone Penetration Test (CPT) test soundings,
- Collection of three (3) bulk samples, and
- Installation of temporary piezometers,
- Ground water measurements in soil test borings and temporary piezometers.

The approximate testing locations are shown in the *Testing Location Plan,* attached as Figure 2, in Appendix I.

3.1 Reconnaissance of Project Area

Prior to the subsurface exploration and in order to develop a testing plan, aerial photos of the property, previous geotechnical explorations and available topographic maps were reviewed. An S&ME representative visited the site to perform the following tasks:

- Observe topography, ground cover, and surface soils in the proposed project area.
- Lay out locations for soil test borings/soundings in the general locations shown on the attached *Test Location Plan*, Figure 2 in Appendix I, and record their approximate positions using a handheld GPS unit.
- Lay out clearing trails through wooded areas for drill/test rig access pathway clearing.

On January 3, February 9/10 and February 22/24, 2023, a representative from S&ME visited the site to observe current site conditions, layout the proposed boring/sounding locations and direct clearing activities. Boring/sounding locations were laid out using a handheld GPS unit and were marked in the field with flags with the boring/sounding numbers and S&ME company name. The boring/sounding locations indicated on the attached *Test Location Plan* must be considered as approximate. Subject to unusual restrictions, borings/soundings were performed within a machine width of their originally staked locations. The elevations shown on our boring/sounding records were provided by Thomas & Hutton from available existing topographic information. No survey of boring/sounding locations or elevations was conducted by S&ME.

3.2 Field Testing and Sampling

The location, number and depth of the two of the four sets of borings/soundings and the method and depths of sampling were provided by the Project Connect team. The following sections detail our field and sampling activities at the site. A summary of our exploration procedures is included in Appendix II-A.

3.2.1 Site Clearing

Clearing was performed by various subcontract clearing companies to S&ME, using skid steer-mounted forestry grinders and operators on January 3, February 9/10 and February 22/24, 2023, to create drill/test rig access pathways to the boring/sounding locations in wooded areas. Trails of approximately 12 to 15 feet wide were cleared with trees chipped in-place. No attempt was made to stack or remove downed trees from the site. Care was taken to limit site disturbance during this process.

3.2.2 Standard Penetration Test (SPT) Soil Borings

Soil test borings with Standard Penetration Test (SPT) sampling and testing were performed across the site. The SPT soil test borings were advanced using 2¼ to 3¼-inch inside diameter hollow-stem auger and mud rotary drilling techniques. The borings were performed as shown in the table below:

Table 3-1 – Boring Summary

Series	No. of Borings	Drilling Dates	Driller	Rig Type	Purpose	Depths (ft)
"22-B"	7	1-5/6-23	Southern Drill, Inc.	CME 550	Initial Deeper Exploration per Project Connect team	17 to 90
"23-B"	18	2-20/23-23	S&ME, Inc.	CME 550	Further Exploration for Ground Improvements per S&ME	50 to 85
"23-BB"	6	2-27/28-23	S&ME, Inc.	CME 550	Beasley Tract	10 to 55
"BS#/23"	6	3-2/7-23	S&ME, Inc.	CME 550/750	Further Exploration for ground Improvements per Project Connect team	60 to 80

Split-spoon samples and SPT Resistance N-values were obtained at selected intervals in general accordance with ASTM D1586. Sampling was performed using an automatic hammer drop system which lifts the 140-lb hammer and allows it to drop the required 30-in distance unimpeded. This method is allowed in Section 7.4 of ASTM D1586. Standard penetration test N-values obtained using one of the available autohammer systems often vary widely from those obtained using conventional rope and cathead arrangements. While corrections to the resulting N-value have been developed for certain specific applications, N-values presented on S&ME graphical boring records represent field blow counts which are not modified to account for hammer energy variations. The SPT N-values indicated on the logs are field values and were not corrected for overburden stress, rod length, borehole diameter or hammer efficiency.

Soil samples were obtained with a standard 1.4-inch I. D., 2-inch O. D., split barrel sampler. SPT sampling was performed at 2½-foot intervals within the upper 10 feet, then performed on approximate 5-foot centers to refusal/termination depths. The split-barrel sampler was opened at the drill site and sloughed material identified and separated from the recovered sample. The recovered sample was visually described, and a provisional field classification made by the driller. A selected portion of the sample was placed in a glass jar and transported to our laboratory.

3.2.3 Ground Water Measurements

Measurement of ground water was attempted in the borings shortly after drilling was completed. After a period of roughly 24 hours, ground water measurements were repeated in an attempt to obtain a stabilized ground water reading within select borings.

3.2.4 Borehole Closure

The boreholes were backfilled with auger cuttings and a plastic hole plug was placed within the boreholes at a depth of approximately two feet below existing grade after conclusion of ground water measurements.

3.2.5 Cone Penetration Test (CPT) Soundings

Soil test soundings with Cone Penetration testing (CPT) were performed across the site, using an ATV-mounted rig. Procedures for measurement of the tip resistance and side friction resistance to push generally followed those described by ASTM D5778. The soundings were performed as shown in the table below:

Table 3-2 – Sounding Summary

Series	No. of Soundings	Testing Dates	Operator	Purpose	Depths (ft)
"23-B"	12	2-13/13-23	S&ME, Inc.	Further Exploration for Ground Improvements per S&ME	6 to 23
"BS#/23"	10	3-15/16-23	S&ME, Inc.	Further Exploration for ground Improvements per Project Connect team	3 to 28

CPT soundings were advanced to push refusal. Push refusal occurred when the reaction weight of the CPT rig was exceeded by the thrust required to push the conical tip further into the ground. At that point the rig tended to lift off the ground. Push refusal may result from encountering hard cemented or indurated soils, soft weathered rock, coarse gravel, cobbles or boulders. Our policy is to discontinue the sounding where this occurs to limit risk of losing or damaging the probe.

CPT penetration pore pressures include the in-situ equilibrium pore pressure, controlled by the local ground water regime, and the excess pore pressure, generated by insertion of the probe. In clays and silts, penetration is essentially undrained and recorded pore pressures significantly exceed in-situ equilibrium pore pressures.

In sands and gravels, penetration is essentially drained and recorded pore pressures are essentially equal to the in-situ equilibrium pore pressure. The piezometric surface, defined as the point of zero equilibrium pore pressure, was obtained by plotting in-situ equilibrium pore pressure versus depth using only pore pressure data from sand or gravel soils. Where possible, derived piezometric surface was verified by tape measurement through the sounding opening after removal of the CPT rod and before collapse of the soils.

3.2.6 Temporary Piezometer Permit

On February 7, 2023, S&ME presented a *Temporary Piezometer Approval Request* to SCDHEC per South Carolina state law. The request presented a site location plan and description of the three (3) planned temporary groundwater piezometer locations, as well as the SCDHEC *Monitoring Well Application*.

On February 9, 2023, SCDHEC approved the request and issued permit number MW-13554, included in Appendix II, for the installation of the temporary groundwater-monitoring wells to be installed in general accordance with the applicable requirements of R.61-71, with SCDHEC noting the following requirements:

1. The wells are to be drilled, constructed, and abandoned by a South Carolina certified well driller per R.61-71.D.1,
2. A *Water Well Record* is to be completed and submitted to SCDHEC within 30 days after well completion or abandonment unless SCDHEC has approved another schedule. The record should contain the "as-built" construction details and all other information required by R.61-71.H.1.f,
3. All analytical data and water levels obtained from each monitoring well is to be submitted to SCDHEC within 30 days of receipt of laboratory results unless another schedule has been approved by SCDHEC as required by R.61-71.H.1.d, and
4. All temporary monitoring wells shall be abandoned within 5 days of borehole completion using appropriate methods as required by R61.71.H.4.c.

3.2.1 Temporary Piezometer

Temporary piezometers were installed for ground water measurements. To meet requirement #1 of SCDHEC permit number MW-13554, Samuel Gowan, SCDHEC certified well driller 2159, drilled and constructed the temporary piezometers.

The piezometers consisted of 1- to 2-inch I.D., Schedule 40 PVC pipe. The screened section consisted of 1- to 2-inch machine slotted PVC screen with 0.01-inch slots, capped at the bottom. Flush-jointed standpipe was used to complete the piezometer to land surface. A uniformly graded silica filter pack was installed in the annular space from total depth up to approximately 1 foot above the top of the zone of interest, followed by approximately 1 foot of bentonite pellets, which were hydrated to create a seal. The piezometers were completed with a 1- to 2-inch I.D. Schedule 40 PVC stick-up surface casing with a water-tight PVC cap. A vent-hole was installed near the top of the protective surface casing, just below the cap and the surface was finished with a roughly 3-foot by 3-foot surface concrete pad. The temporary piezometers were installed as summarized below.

Table 3-3 – Temporary Piezometer Summary

Piezometer No.	Boring No.	Total Depth (ft)	Zone of Interest Depth (ft)	Zone of Interest Elevation (ft MSL)
PZ-A	23-B-1	15	5 to 15	513 to 503
PZ-B		40	30 to 40	488 to 478
PZ-C	23-B-3	22	12 to 22	498 to 488
PZ-D		35	25 to 35	485 to 475
PZ-E	23-B-11	20	10 to 20	485 to 475

Requirement #3 of SCDHEC permit number MW-13554 does not apply, as no sampling or testing of the groundwater was performed at the temporary piezometers.

To meet requirements #2 and #4 of SCDHEC permit number MW-13554, Mr. Gowan, SCDHEC certified well driller 2159, will perform final ground water measurements, abandon the temporary piezometers by full depth grouting, and complete a *Water Well Record* for each of the temporary piezometers, which will be provided at a future date once ground water measurements are complete.

3.2.2 Bulk Samples

A total of three (3) bulk samples, consisting of 75 to 100 pounds each, were obtained by randomly taking shovel loads of auger cutting spoils from borings. The samples were placed in plastic bags and marked with appropriate descriptive information. The bulk samples were obtained as shown in the table below.

Table 3-4 – Bulk Sample Summary

Boring No.	Sample No.	Existing Ground Surface Elevation (ft MSL)	Depth Interval (ft)	Purpose
22-B-1	BS-1	520	20 to 30	Proctor and Classification
22-B-2	BS-2	507	0 to 5	
22-B-3	BS-3	514	10 to 15	

3.3 Laboratory Testing

Recovered soil samples delivered to the laboratory were visually examined by a representative of our geotechnical staff. Samples were visually evaluated to estimate the distribution of grain sizes, plasticity, organic content, moisture condition, color, presence of lenses and seams, and apparent geological origin. Soils were classified in general accordance with ASTM D 2488.

The following laboratory testing was conducted on the bulk samples representative of planned fill materials during this exploration:

Table 3-5 –Laboratory Testing Summary

Laboratory Test	Specification	Quantity
Natural Moisture Content	ASTM D2216	2
Percent Finer than #200 Sieve	ASTM D422	3
Atterberg Limits	ASTM D4318	3
Standard Proctor	ASTM D698	3

A summary of our laboratory testing procedures and the laboratory test results are included in Appendix III

4.0 Site Conditions

S&ME's assessment of the geotechnical conditions began with a reconnaissance of the topography and physical features of the site. We also consulted various available topographic and geologic maps for relevant information. Where previous S&ME field data pertinent to the project is known to exist and can be readily retrieved, such data is incorporated into our evaluation process.

4.1 Surface Conditions

From our review of available mapping and our observations during our site reconnaissance, the site is largely undeveloped and consisted of woodlands and open field areas. The exception is Lot 29 of the overall park, located within the northeastern portion of the site, that was recently rough graded to a building pad with associated stormwater ponds. Existing Lorick Road traverses the site from northeast to south and consists of a one-lane, unpaved road. An existing overhead transmission power line traverses the site from east to west within the southern portion of the site. A total of ten (10) existing ponds were observed across the site, ranging in area from roughly 1½ to 8 acres in surface area. Three (3) apparent drainage features, which appear to consist of unnamed tributaries of Beasley Creek, traverse the site from roughly north to south. These features appear to eventually flow into Beasley Creek in the southeastern portion of the site or flow off the site.

4.2 Subsurface Conditions

Recovered field samples and field boring logs were reviewed in the laboratory and the soils classified in general accordance with the visual-manual method described in ASTM D2488 by a member of our geotechnical staff. Soil test boring records and other field data are assembled in Appendix II-A.

4.2.1 Site Geology

From our review of the *Geologic Map of the Irmo Northeast Quadrangle, Richland and Fairfield Counties, South Carolina 2016*, and the *Geologic Map of the Blythewood Quadrangle, Richland and Fairfield Counties, South Carolina 1962,* prepared by the South Carolina Geological Survey, the site maps as being location along the fall-line separating the Coastal Plain and Piedmont physiographic providences of South Carolina.

The site maps as lying within the White Sand Hills Physiographic Region of the Upper Coastal Plain of South Carolina. The White Sand Hills form the most inland portion of the Coastal Plain and are underlain by mostly sandy Upper Cretaceous age sediments of the Cape Fear and Eutaw formations. These soils were eroded from a range of mountains in the northwest portion of the state approximately 65,000,000 years ago and laid down in their present positions as fan deposits, where they have weathered in place. In the Columbia metropolitan area these sediments rest unconformably on top of the underlying late-Proterozoic age Piedmont rocks of the Persimmon Fork formation at depths of between 20 and 120 feet. Massive, buff or tan kaolin beds are prevalent throughout the sequence, alternating with coarse-grained water-bearing sands and gravels which become increasingly prevalent near the base of the formation. Soil layers exhibit considerable lateral and vertical discontinuity. In many areas groundwater is relatively shallow and supports heavy forest cover. Fresh soil exposures are typically white, but become pink, purple or rusty orange with weathering. Iron-oxide cemented sandstone beds are common. In the local area, Coastal Plain sediments have been deeply eroded, exposing underlying Piedmont residuum and weathered rock in some of the deeper swales and depressions.

The underlying Piedmont residuum consist of soils weathered in place from the parent crystalline bedrock material. Residual soils of the Carolina Piedmont consist of stiff or very stiff micaceous silts and clays, grading to firm sands with depth. These soils have been completely weathered in place from the parent bedrock material, mostly fine grained schists and phyllites of the Carolina Slate Belt. There are a number of volcanic intrusive sills or dikes comprised of diabase, where hard rock lies within a few feet of the surface. Elsewhere the soil residuum retains nearly all of the relict rock foliation or bedding structure below a depth of a few feet. Soil strength derives largely from relict intermolecular bonding and remolded materials generally exhibit lower shear strength than do undisturbed samples. Piedmont soils are normally consolidated to slightly over-consolidated.

The term *partially weathered rock (PWR)* is applied to very dense micaceous sands or silty sands of the Carolina Piedmont, which register SPT N-values in excess of 100 blows per foot. PWR generally varies widely within even small areas owing to minute differences in the chemical properties of the parent bedrock, which results in widely varying rates of weathering. Isolated lenses or seams of PWR often are present within Piedmont Residuum well above the overall PWR level within a given area. PWR is considered excellent bearing material for foundations and is relatively incompressible except in highly stressed deep foundations.

It appears that portions of the natural geological profile of the site have been modified by past grading activities that appear to have resulted in the placement of fill and the disturbance of the near surface soils. Please keep in mind that fill and disturbed soils can vary in composition and consistency, and the engineering characteristics of these soils can be difficult to predict. There is no specific correlation between the degree of compaction of the existing fill or the amount of disturbance of the near surface soils from the results of standard penetration testing. However, a qualitative assessment of existing fill and the disturbed soils can often be made based on visual observation of these materials sampled in the borings/test pits and the general magnitude of the standard penetration test values and difficulty of excavation.

4.2.2 USDA Soil Survey Information

From a qualitative standpoint, the USDA Natural Resources Conservation Service's Soil Surveys can often provide helpful information. The surveys map the near surface soils (i.e., depths ≤ 6 ft.) and provide general descriptions. The data is not intended to replace geotechnical evaluations and testing but it can help identify trends. Soil maps

are often a useful indication of the geologic environment governing soil behavior as well as the seasonal depth to ground water and depth to rock.

The USDA-NCSS Web Soil Survey and USDA Natural Resource Conservation Service soils map of Richland County, South Carolina, issued in 1978, indicates thirteen (13) soil series within the project area:

- Blanton sand, 0 to 6 percent slopes (BaB) – deep, moderately well drained, nearly level to gently sloping soil on convex side slopes in the Coastal Plain uplands.
- Chewacla soils (CH) – somewhat poorly drained, nearly level soils on flood plains and low terraces along small streams and creeks.
- Fuquay sand, 2 to 6 percent slopes (FuB) – deep, well drained, gently sloping soil on narrow to broad ridgetops and on narrow side slopes parallel to streams and drainageways.
- Georgeville silt loam, 2 to 6 percent slopes (GeB) – deep, well drained, gently sloping soil on smooth, convex ridgetops on the Piedmont Plateau.
- Herndon silt loam, 6 to 10 percent slopes (HeC) – deep, well drained, sloping soil on ridgetops and side slopes in the Piedmont.
- Johnston loam (Jo) – deep, very poorly drained, nearly level soil on the flood plains of streams in the Coastal Plain.
- Lakeland sand, 2 to 6 percent slopes (LaB) – deep, excessively drained, gently sloping, sandy soil on smooth, convex ridgetops in the Sand Hills.
- Lakeland sand, 10 to 15 percent slopes (LaD) – deep, excessively drained, strongly sloping soil on side slopes along well defined drainageways in the Sand Hills.
- Nason complex, 10 to 30 percent slopes (NaE) – deep to shallow, well drained, strongly sloping soil on side slopes, toe slopes and narrow ridges in the Slate Belt of the Piedmont.
- Pelion loamy sand, 2 to 6 percent slopes (PeB) – deep, moderately well drained, gently sloping soil on side slopes and toe slopes in the Sand Hills.
- Pelion loamy sand, 6 to 12 percent slopes (PeD) – deep, moderately well drained, sloping to strongly sloping soil on irregular side slopes and knolls in the Sand Hills.
- State sandy loam, 0 to 2 percent slopes (StA) – deep, well drained, nearly level soil on smooth, uniform stream terraces in the Piedmont and adjacent Coastal Plain sections.
- Troup sand, 0 to 6 percent slopes (TrB) – deep, well drained, nearly level or gently sloping soil on smooth convex ridgetops in the Coastal plain uplands.

The soil series information is provided in the table below:

Table 4-1 – USDA Soil Series Survey

Soil Series	% Area	Soil Type	Depth to Seasonal High GW Table	Depth to Bedrock	Permeability	Shrink / Swell Potential	Corrosive Potential
BaB	24	SP-SM, SC, SM, SP-SC	> 6 ft.	> 60 in.	Moderate to Rapid	Low	Very Strongly to Medium acid
CH	2	ML, CL, MH	0.5-1.5 ft apparent (Nov-Apr)	> 60 in.	Moderate	Low	Strongly to Medium acid

Soil Series	% Area	Soil Type	Depth to Seasonal High GW Table	Depth to Bedrock	Permeability	Shrink / Swell Potential	Corrosive Potential
FuB	6	SP-SM, SM, SC-SM, SC, CL-ML, CL	2.5-4.0 ft perched (Jan-Mar)	> 60 in.	Slow to Rapid	Low	Very Strongly to Strongly acid
GeB	3	ML, CL-ML, MH	> 6 ft.	> 60 in.	Moderate	Low	Very Strongly to Medium acid
HeC	13	ML, CL-ML, MH	> 6 ft.	> 60 in.	Moderate to Moderately Rapid	Low	Extremely to Slightly acid
Jo	1	SM, SC-SM, SC, ML, CL	(1)-1.5 ft. apparent (Nov-Jun)	> 60 in.	Moderately Rapid to Rapid	Low	Very Strongly to Strongly acid
LaB	5	SP, SP-SM	> 6 ft.	> 72 in.	Very Rapid	Low	Very Strongly to Medium acid
LaD	1						
NaE	13	ML, CL-ML, CL, MH, CH	> 6 ft.	40-60 in.	Moderate	Low to Moderate	Very Strongly to Strongly acid
PeB	4	SM, SC-SM, SC, CL-ML, CL	1-2.5 ft apparent (Nov-Apr)	> 60 in.	Slow to Moderate	Low	Extremely to Slightly acid
PeD	16						
StA	3	SM, SC-SM, ML, CL-ML, CL	> 6 ft.	> 60 in.	Moderate to Moderately Rapid	Low	Very Strongly to Strongly acid
TrB	8	SM, SC-SM, SC, CL-ML, CL	> 6 ft.	> 60 in.	Moderate to Rapid	Low	Very Strongly to Strongly acid

The USDA information provided for this site points to a few items that could influence geotechnical recommendations for specific structures within the site.

- Soil series CH, FuB, Jo, PeB and PeD mapped at the site indicate the potential for shallow seasonal high ground water and perched ground water conditions.
- Soil series NaE mapped at the site indicates the potential for shallow bedrock.
- Soil series CH, GeB, HeC and NaE mapped at the site are noted as possibly having high plasticity soil types (MH and CH).
- Soil series across the site are indicated to have extremely to slightly acidic soil conditions.

The USDA Soil Survey is shown on the *USDA Soil Survey Map*, Figure 3 in Appendix I.

4.2.3 *Interpreted Subsurface Profile*

The generalized subsurface conditions at the site are described below. The discussed subsurface description is of a generalized nature to highlight the major subsurface stratification features and material characteristics. The boring records included in Appendix II-A should be reviewed for specific information at each boring location. Generalized subsurface profiles are provided as Figures 4 through 7 in Appendix I. The depth and thickness of the subsurface strata indicated on the boring records was estimated based on the drill cuttings and the samples recovered. The transition between materials may be more gradual than indicated on the boring records. Information on actual subsurface conditions exists only at the specific boring locations and is relevant to the time the exploration was performed. Variations may occur and should be expected at locations remote from the boring. The stratification lines were used for our analytical purposes and, unless specifically stated otherwise, should not be used as the basis for design or construction cost estimates.

4.2.3.1 Surface Materials

Surface materials, in the form of topsoil, were encountered in the borings performed across site, measuring up to roughly 12 inches in thickness. Topsoil was dominated by organic material and exhibited a relatively strong organic odor when wetted. Topsoil is typically associated with the pedologic "O" horizon in USDA soil maps, which represents material containing less than about 50 percent mineral matter. The underlying "A" horizon soils are often also dark stained and to some degree visually similar to the "O" horizon, though containing substantially less organic matter. For purpose of describing subsurface conditions, we have included in the designation "topsoil" all samples containing apparent organic content. We caution that varying depths of surface materials may be encountered in areas that were not explored by our borings.

4.2.3.2 Fill Materials

Beneath the surface materials in Boring 23-B-3 located within the previous graded Lot 29, fill materials were encountered to a depth of roughly 6½ feet below the existing ground surface. The fill materials consisted of fine to medium sands with little to some low to high plasticity fines (SM). Recovered samples were moist to the touch and were generally brown, orange and white in color. Standard Penetration Test (SPT) N-values ranged from 6 to 16 blows per foot (bpf), indicating loose to medium dense relative densities.

4.2.3.1 Alluvial Deposits

Beneath the surface materials in Boring 23-B-18, alluvial deposits associated with the adjacent tributary of Beasley Creek were encountered to a depth of roughly 3½ feet below the existing ground surface. Although this was the only boring that encountered these materials, it would appear that the majority of the existing tributaries traversing the site may have similar near-surface conditions.

The alluvial deposits were not recovered by the split-spoon sampler. An SPT N-value on the order of 2 bpf was obtained, indicating a very loose/very soft relative density/consistency.

4.2.3.2 Coastal Plain Deposits

Beneath the surface materials, limited fill materials and limited alluvial deposits, native Coastal Plain deposits consisting of fine to coarse sands with trace to some low to medium plasticity fines (SP, SP-SM, SP-SC, SM and SC)

and low to high plasticity fines with few to some sands (ML, CL and CH) were encountered to depths ranging from roughly 10 to 43½ feet below the existing ground surface, expect in Boring 23-BB-1 where no Coastal Plain mantle was observed. Soil behavior type based on CPT point resistance and friction ratio was typical of sands, silts and clays. We note that soil behavior type is not always indicative of the classification per ASTM D2487.

Recovered samples were generally brown, red, white, gray, orange, tan and yellow in color and were typically dry to wet to the touch. SPT N-values ranged from weight of rod (WOR) to 100+ blows per increment (bpi), but were generally 3 to 50 bpi, indicating very loose to dense relative densities in the sandy soils and soft to very stiff consistencies in the silty/clayey soils. The tip resistance q_t, was measured to vary from approximately 5 to 320 tons per square foot (tsf).

4.2.3.3 Piedmont Residuum

Beneath the Coastal Plain deposits, the borings encountered Piedmont residual soils consisting of fine sands with some low plasticity fines (SM) and low to high plasticity fines with few to some sands (ML, CL and MH) to top of PWR or termination depths. Recovered samples were generally brown, yellow, gray, white, purple and tan in color and were typically dry to moist to the touch. Many samples retained the relict rock structure and some samples contained gravel-sized rock fragments. SPT N-values ranged from 8 to 90 bpi, indicating a medium dense to dense relative density in the sandy soils and firm to very hard consistencies in the silty soils.

4.2.3.4 Partially Weathered Rock (PWR)

As previously mentioned, PWR is defined as a very dense or very hard residual material exhibiting SPT N-values in excess of 100 bpf. Layered within and beneath the Piedmont residual soils, PWR was encountered as summarized in the table below:

Table 4-2 – Summary of PWR Encountered Depth/Elevation

Boring No.	Top of PWR Depth (ft.)	Approximate Top of PWR Elevation (ft.)
22-B-1	10/30/55/75	510/490/465/445
22-B-2	25	482
22-B-3	40	474
22-B-4	10/25	469/457
22-B-5	10	460
22-B-7	10	478
23-B-1	33½/78½	484.5/439.5
23-B-2	28½/63½	479.5/444.5
23-B-3	73½	436.5
23-B-4	28½/58½/68½	476.5/446.5/436.5
23-B-7	68½	437.5
23-B-11	23½	471.5
BS1/23	23½	490.5

Boring No.	Top of PWR Depth (ft.)	Approximate Top of PWR Elevation (ft.)
BS2/23	48½	455.5
BS3/23	63½/78½	447.5/432.5
BS4/23	33½	459.5
BS5/23	43½	466.5
BS9/23	33½/53½	465.5/445.5
23-BB-4	43½	446.5

Recovered samples of the PWR were similar to the overlying residual soils, consisting of fine to medium sands with some low plasticity fines (SM), low to high plasticity fines with few to some fine to medium sands (ML, CL, MH and CH). Some samples either contained varying amounts of rock fragments and/or retained the relict rock structure. Split spoon samples were typically dry to moist to the touch and were generally white, yellow, purple, gray, red, brown and olive in color.

4.2.3.5 Refusal

Auger refusal is defined as material that could not be penetrated with the drill rig equipment used on the project. Auger refusal was encountered as summarized below:

Table 4-3 – Summary of Auger Refusal Depth/Elevation

Boring No.	Refusal Depth (ft.)	Approximate Refusal Elevation (ft.)
22-B-3	63	451
22-B-7	17	471
BS1/23	66.3	447.7

Auger refusal at this site may have occurred on noncontinuous large boulders, rock ledges, lenses, seams or the top of parent bedrock. Core drilling would be required to evaluate the character and continuity of the refusal material.

Push refusal occurred in each of the twenty-two (22) CPT soundings advanced at the site. Push refusal occurs when the reaction weight of the CPT rig was exceeded by the thrust required to push the conical tip further into the ground. At that point the rig tended to lift off the ground. Refusal may have resulted from encountering hard cemented or indurated soils, very stiff residual soils, soft weathered rock, coarse gravel, cobbles or boulders, thin rock seams, or the upper surface of sound continuous rock.

4.2.3.6 Ground Water

Ground water measurements were obtained at the time of boring and roughly 24-hours after termination of drilling activities, in order to obtain a delayed reading. A summary of ground water measurements is presented in the table below:

Table 4-4 – Summary of Groundwater

Boring No.	Time of Boring Measurement		Delayed Measurement	
	Depth (ft)	Elevation (ft-msl)	Depth (ft)	Elevation (ft-msl)
22-B-1	9.5	510.5	6	514
22-B-2	10	498	10	498
22-B-3	19	495	10	504
22-B-4	37	445	6	476
22-B-5	2.5	467.5	0	470
22-B-6	23	491	16.5 (cave-in)	467.5 (cave-in)
22-B-7	11	477	6.5	481.5
23-B-1	11.9	506.1	6.8	511.2
23-B-2	14	494	5.4	502.6
23-B-3	22	488	31.7	478.3
23-B-4	13	492	1	504
23-B-7	5	501	5	501
23-B-11	5	490	6.2	488.8
23-B-18	3	479	7.9	474.1
BS2/23	Not Measured-Mud Rotary		3.5	500.5
BS3/23	Not Measured-Mud Rotary		7.9	503.1
BS4/23	Not Measured-Mud Rotary		1.8	491.2
BS5/23	Not Measured-Mud Rotary		6.8	503.2
BS9/23	13	486	13.4	485.6
23-BB-2	35	450	Not Encountered	
23-BB-3	14	456	14.8	455.2
23-BB-4	Not Encountered		37	453

Ground water levels established during the exploration are subject to substantial variations due to seasonal changes in the rate of infiltrating surface water, surface evaporation and other factors. Seasonal variations in ground water levels could result in ground water levels substantially varying from those depicted on the boring records. Ground water levels at the site are also likely influenced by fluctuations in the level of the traversing Beasley Creek. Ground water level information is obtained by observing depth to which water accumulates in open boreholes during the exploration. These observations are often unreliable, particularly in the Coastal Plain portion of the state, for a variety of factors, including 1) insufficient time for equilibrium in borings in fine grained soils, 2) artesian pressures in confined aquifers, and 3) perched water tables in granular soils overlying fine grained soils or very dense PWR similar to the conditions encountered at the site.

As previously mentioned, temporary standpipe piezometers were installed at three locations across the site. The table below presents a summary of the water level measurements to date for these piezometers.

Table 4-5 – Piezometer Readings

Piezometer No.	Boring No.	Ground Surface Elevation (ft)	Well Screen Interval (ft)	Date of Reading	Ground Water Depth (ft)	Ground Water Elevation (ft MSL)
PZ-A	23-B-1	518	5 - 15	3-9-23	5.5	512.5
				3-13-23	5.8	512.2
				3-20-23	6.5	511.5
PZ-B	23-B-1	518	30 - 40	3-9-23	6.2	511.8
				3-13-23	6.4	511.6
				3-20-23	7.0	511.0
PZ-C	23-B-3	510	12 - 22	3-9-23	16.9	493.1
				3-13-23	16.7	493.3
				3-20-23	16.7	493.3
PZ-D	23-B-3	510	25 - 35	3-9-23	11.5	498.5
				3-13-23	16.6	493.4
				3-20-23	16.5	493.5
PZ-E	23-B-11	495	10 - 20	3-9-23	13.4	481.6
				3-13-23	16.3	478.7
				3-20-23	12.7	482.3

As previously mentioned, grading of the site could result in cuts approaching 60 feet to achieve the planned finished grade of 483 feet MSL. Therefore, it appears that ground water will impact construction at this site, specifically in cut areas. Additionally, it is important to note that based upon the observed soil stratigraphy, including granular soils overlying fine grained soils and PWR, there is the potential for water to pond at the surface or in the near surface soils and become perched after a period of precipitation. "Perched" ground water is surface water that infiltrates through the upper, more permeable soils at the site that then gets trapped or "perched" on underlying more dense or less permeable soil layers.

We note that ground-water levels are influenced by precipitation, long term climatic variations, and nearby construction. Measurements of ground water made at different times than our exploration may indicate ground-water levels substantially different than indicated on the boring records in Appendix II-A.

4.2.4 Previous Explorations

The borings from our previous explorations were reviewed during this exploration. In general, these borings encountered similar subsurface conditions, consisting of very loose to very dense sandy soils underlain by very stiff to very hard silty residuum with underlying PWR. Time of boring ground water measurements, where

encountered at the time of these explorations, ranged in depth from roughly 1 to 15 feet below the existing ground surface, and delayed measurements between roughly 1 and 12 feet.

4.3 Laboratory Physical Tests

As previously discussed, three (3) bulk samples were obtained from select borings at the site and tested for suitability for re-use as planned structural fill material.

4.3.1 Compaction Behavior

The bulk samples were compacted in standard molds using ASTM D698. Supplemental index testing was also performed. A summary of the results is provided in the table below, with laboratory results presented in Appendix III:

Table 4-6 – Moisture-Density Relationship Summary

Boring No.	Sample No.	Sample Depth (ft)	Natural Moisture Content (%)	Fines Content (%)	Atterberg Limits			Maximum Dry Density (pcf)	Optimum Moisture Content (%)	USCS
					LL	PL	PI			
22-B-1	BS-1	20 to 30	33.2	62.9	40	28	12	112.5	13.9	ML
22-B-2	BS-2	0 to 5	NT	14.0	NP	NP	NP	121.1	9.3	SM
22-B-3	BS-3	10 to 15	11.4	22.6	NP	NP	NP	122.6	11.0	SM

NT = Not Tested

5.0 Building Code Seismic Provisions

Seismic induced ground shaking at the foundation is the effect taken into account by building code seismic-resistant design provisions. Other effects, such as soil liquefaction, are not addressed in building codes but must also be considered.

5.1 IBC Site Class

Important note: A Building Code change took place on January 1, 2023, in South Carolina. The new code, which is the South Carolina adaptation of the International Building Code (IBC) 2021 edition, includes references to seismic maps based upon ASCE 7-16, which is similar to IBC 2018. It is expected that permits for new construction which are filed on or after January 1, 2023, will fall under the 2021 IBC, rather than the 2018 IBC. No change to the Seismic Design Category should occur because of this Code change since both versions reference ASCE 7-16.

The initial step in site class definition is a check for the four conditions described for Site Class F, which would require a site-specific evaluation to determine site coefficients F_A and F_V. Soils vulnerable to potential failure under item 1) including quick and highly sensitive clays or collapsible weakly cemented soils were not observed in the borings. Three other conditions, 2) peats and highly organic clays; 3) very high plasticity clays (H>25 feet); and 4) very thick, soft/medium stiff clays were also not evident in the borings performed. The remaining vulnerability, liquefaction, appears unlikely at this site due to the age, density and fines content of the soils encountered.

As previously mentioned, two (2) MASW-MAM arrays (SW-1 and SW-2) were previously conducted by S&ME at the site in 2018. Based on Sections 20 and Equation 20.4.1 of ASCE 7-16, the calculated weighted average V_{s100} values were 1,382 and 1,466 feet per second (ft/s). Based on this result, potential structures built within the cut portions of the survey area can be designed using a Seismic Site Class C. Due to the thickness of the planned fill (approaching 60 feet in some areas) within the plant footprint, potential structures within the fill portions of the site should be designed using a Seismic Site Class D.

5.2 Design Spectral Values

S&ME determined the spectral response parameters for the site using the general procedures outlined under the 2021 International Building Code Section 1613.2.3. This approach utilizes a mapped acceleration response spectrum reflecting a targeted risk of structural collapse equal to 1 percent in 50 years to determine the spectral response acceleration at the top of seismic bedrock for any period. The 2021 IBC seismic provisions of Section 1613 use Chapter 20 of ASCE 7-16 to define the base rock motion spectra.

The Site Class is used in conjunction with mapped spectral accelerations S_S and S_1 to determine Site Amplification Coefficients F_A and F_V in IBC Section 1613.2.3, tables 1613.2.3(1) and 1613.2.3(2). For purposes of computation, the Code includes probabilistic mapped acceleration parameters at periods of 0.2 seconds (S_S) and 1.0 seconds (S_1), which are then used to derive the remainder of the response spectra at all other periods. The mapped S_S and S_1 values represent motion at the top of seismic bedrock, defined as the Site Class B-C boundary. The surface ground motion response spectrum, accounting for inertial effects within the soil column overlying rock, is then determined for the design earthquake using spectral coefficients F_A and F_V for the appropriate Site Class.

The design ground motion at any period is taken as 2/3 of the smoothed spectral acceleration as allowed in section 1613.2.4. The design spectral response acceleration values at short periods, S_{DS}, and at one second periods, S_{D1}, are tabulated below for the unimproved soil profile using the IBC 2021 criteria.

ASCE 7-16 was referenced for determination of peak ground acceleration values for computation of seismic hazard. Peak ground acceleration is separately mapped in ASCE 7-16 and corresponds to the geometric mean maximum credible earthquake (MCEG). The mapped PGA value is adjusted for site class effects to arrive at a design peak ground acceleration value, designated as PGA_M.

Table 5-1 - Spectral Design Values

Code	Site Class	S_s	S_1	F_a	F_v	PGA_M	S_{DS}	S_{D1}	Design Cat.
IBC 2021	C	0.339g	0.110g	1.300	1.500	0.231g	0.293g	0.110g	B
	D			1.529	2.379	0.271g	0.345g	0.175g	C

The above Seismic Design categories are based on a structure having a Risk Category classification of I, II or III, and spectral response acceleration factors given above defined in section 1613.2.5 and Tables 1613.2.5(1) and 1613.2.5(2) of the 2021 IBC.

6.0 Conclusions and Recommendations

The following paragraphs include our conclusions and recommendations for site preparation, dewatering considerations (if necessary), excavation considerations, slope considerations, suitability of on-site soils for use as structural fill and fill placement and compaction as well as preliminary recommendations regarding shallow foundation, grade slab and pavement support, and deep ground improvement considerations. Additional geotechnical exploration and analysis will be required to provide recommendations for final site preparation and foundation/slab/pavement design, in the event the site is developed for industrial/manufacturing use.

The soil profile encountered at this site appears suitable to adaptable for the proposed development, considering the Project Connect provided geotechnical specifications. Conditions at this site do not appear to pose issues for general site grading that differ substantially from the surrounding region.

Sandy soils (SP, SP-SM, SP-SC, SM and SC) in cut portions of the site appear suitable for re-use as structural fill. Low to medium plasticity silty/clayey soils (ML and CL) in planned cut areas of the site appear marginally suitable for re-use as structural fill. The term marginally refers to the fact that these soils are moisture sensitive and can be difficult to work if allowed to become wet. These difficulties can include softening of exposed subgrade soils, excessive rutting or deflection under construction traffic, and the difficulty associated with adequately drying and compacting wet soil. Moisture-related earthwork difficulties can be reduced by performing the earthwork during the typically drier months of the year (May through October).

It appears that groundwater, as well as perched groundwater, will impact construction at this site. This is particularly evident in the higher elevations of the site in planned cut areas of the site. From our review of the provided topographic information and the results of our boring and piezometer data, a summary of planned cut depths that suggest excavations may encounter groundwater is provided below:

Table 6-1 – Ground Water versus Planned Subgrade/Finished Grade

Boring/Piezometer No.	Planned Subgrade / Finished Grade Elevation (ft-MSL)	Planned Cut Depth (ft)	Depth to Delayed Groundwater Measurement (ft)	Delayed Groundwater Elevation (ft-MSL)
15-B-2	483	10	5.5	487.5
15-B-3		14	1	496
18-B-7		34	5.4	511.6
18-B-8		32	4.1	510.9
22-B-1		37	6	514
22-B-2		25	10	498
22-B-3		31	10	504
23-B-1/PZ-A/PZ-B		35	6.8/6.5/7.0	511.2/511.5/511.0
23-B-2		25	5.4	502.6
PZ-C/PZ-D		27	16.7/16.5	493.3/493.5

Boring/Piezometer No.	Planned Subgrade / Finished Grade Elevation (ft-MSL)	Planned Cut Depth (ft)	Depth to Delayed Groundwater Measurement (ft)	Delayed Groundwater Elevation (ft-MSL)
23-B-4		22	1	504
23-B-7	483	23	5	501
23-B-11/PZ-E		12	6.2/12.7	488.8/482.3
BS2/23		21	3.5	500.5
BS3/23		28	7.9	503.1
BS4/23		10	1.8	491.2
BS5/23		27	6.8	503.2
BS9/23		16	13.4	485.6

Notes: Previous 2015 and 2018 ground water measurements may not reflect current ground water conditions in these areas.

Mass excavation using conventional grading equipment, including pan scrapers, appears feasible, within the upper Coastal Plain soils across the site. Some difficulty may be realized in deeper Coastal Plain soils and the Piedmont residual soils. It is important to note that PWR was encountered at shallow depths and within the planned cut depths. If PWR or rock is encountered during excavation processes, special procedures including ripping and/or blasting will be necessary during site grading. From our review of the provided topographic information and the results of our boring data, a summary of planned cut depths that suggest excavations may encounter PWR is provided below:

Table 6-2 – PWR versus Planned Subgrade/Finished Grade

Boring No.	Planned Subgrade / Finished Grade Elevation (ft-MSL)	Planned Cut Depth (ft)	Depth to Top of PWR (ft)	Top of PWR Elevation (ft-MSL)
18-B-6	483	26	20	489
18-B-7		34	15	502
22-B-1		37	10/30	510/490
22-B-2		25	25	482
23-B-1		35	33½	484.5
BS1/23		31	23½	490.5

6.1 Site Preparation

Site preparation will need to include removal of unsuitable surface materials within proposed building and pavement footprints. This should include surface vegetation, organic laden topsoil, stumps, root bulbs, surface debris and unstable surface or subsurface soils.

Removal of stumps and roots will result in disturbance of the upper soils. In filled areas, the upper soils will need to be stabilized prior to placing fill. Stabilization, if required, may consist of removing and replacing unstable material or, where unstable soils are thin, drying and compacting in-place.

Stripping and grubbing may be limited within non-structural areas to be filled, including pavement areas, however, we caution that utilities in these areas may be at greater depths. Where new fills are at least five feet thick in non-structural areas, soft zones will be at relatively great depth below applied loads. In these areas topsoil may be left in place, vegetation cut off flush and the surface bridged with clean sandy fill material dumped and pushed in a 2-foot lift without compactive effort. Try to minimize disturbance of the surface crust and root mat to limit reworking of the upper soils.

6.1.1 Clearing, Grubbing and Stripping

Topsoil thickness encountered in our borings measured up to 12 inches in thickness. The organic soil stripping process may expose deeper organic soils in portions of the site than suggested by the boring data. These soils often have a similar color to topsoil but contain only minor amounts of organics. The organic content of the topsoil materials encountered at the existing ground surface was not tested, therefore, the depth of initial stripping is not known at this time, and could vary, depending on the actual organic content of the soils and the project specifications. If these soils are to remain in-place or are to be re-used as structural fill, the organic content should be tested, in general accordance with ASTM D2974.

Our experience also suggests that the movement of clearing and construction equipment during wet weather and/or on areas of standing water or saturated soils will result in degradation of the soils to depths of 1 to 2 feet. Repeated passes of equipment will cause rutting and the mixture of surface materials (organics) into what might otherwise be acceptable soils. Movement of construction equipment on saturated soils should be avoided where possible. Where organics and near surface soils become mixed, it will be necessary to remove and replace the mixed material.

6.1.2 Existing Water Features/Ponds, etc.

As previously discussed, ten (10) ponds exists across the site. Associated with these ponds are tributaries of Beasley Creek and associated wetlands. From our knowledge of the planned plant footprint grade of elevation 483 ft-MSL, it appears half of the existing ponds fall within cut portions of the site and half within fill portions.

6.1.2.1 Existing Ponds

The existing ponds will need to be dewatered prior to grading activities. Dewatering may be achieved by pumping or breach of the existing earthen dams. It has been our experience that organic muck and/or saturated/water-softened soils will likely be encountered within the base and along the side slopes of the ponds.

The organic muck encountered in ponds within the cut portions of the site, which may approach 3 to 4 feet in thickness, will not be suitable for reuse as structural fill and the saturated/water-softened materials will likely require extensive drying and reworking to be able to be reused as structural fill. Therefore, these materials should be spread and dried, stockpiled for future use in non-structural areas, wasted in deep fill areas, or hauled off-site.

For ponds within close proximity to the planned cut/fill line, these organic muck and saturated/water-softened soils should be over-excavated and replaced prior to fill placement or to achieve planned grade.

For ponds in deep fill areas, these materials may be left in-place, assuming they are not within the depth of influence of the building foundations and do not pose concerns with future long-term consolidation of the fill to be placed.

6.1.2.2 Existing Tributaries

Existing tributaries will need to be diverted or re-routed to dewater the area. Diversion techniques may include, but are not limited to, diversion embankments and/or temporary ditches. Although the water in these tributaries is flowing, rather than stagnant like in the ponds, organic muck and/or saturated/water-softened soils may likely be encountered within the base and along the side slopes of the creeks/streams. Typically, the depth of these materials in creeks/streams is less than found within the base of ponds.

After dewatering, these areas should be handled in similar fashion to that detailed above for ponds when existing tributaries lie within cut, near the cut/fill line and within fill areas of the site.

6.1.2.3 Existing Wetlands

The existing wetlands adjacent to and associated with the existing tributaries across the site will also require dewatering and will likely encounter organic muck and/or saturated/water-softened soils, which may approach 3 to 4 feet in thickness. Dewatering techniques will likely consist of, but are not necessarily limited to, temporary ditches and use of sumps/pumps.

After dewatering, these areas should be handled in similar fashion to that detailed above for ponds when existing wetlands lie within cut, near the cut/fill line and within fill areas of the site.

6.1.3 Dewatering Considerations

From our review of the ground water measurements collected to date, along with our understanding of a planned plant footprint at elevation 483 ft-MSL, as previously summarized in Table 6-1 above, the data suggests that ground water in unconfined or confined aquifers will likely be encountered during grading activities. While dewatering should be the sole responsibility of the contractor, we offer the following recommendations regarding practices that have been successful in the past.

6.1.3.1 Temporary Construction Dewatering

A temporary system that has performed adequately on previous projects with similar conditions consists of temporary excavations (ditches) and sump pumps. Due to the planned cut along the northwestern portion of the site, we recommend that temporary collection/diversion ditches be excavated as soon as practical and be located along the crest and toes of the planned cut slope. Temporary ditches should be excavated to a depth that will promote collection of the ground water and positioned/sloped to allow for positive drainage flow of this water to be diverted from the graded area.

Due to the size of this site, and the "table flat" planned grade across the site, intermediate temporary ditches may require sump pumps where difficulties arise in promoting positive drainage. Pumping from the sumps should be maintained until fill placement is a minimum of three feet above the water level. Other means of improving drainage at the site may be accomplished with ditches located in select areas. Ground water emerging from cut slopes may require remedial measures such as drainage or slope flattening.

Continue dewatering during fill placement to maintain groundwater at its lowered elevation. If discontinued prematurely, the ground water level will rise, saturating the fill soils and preventing effective compaction. When the area has been filled more than three feet above the natural groundwater level, dewatering may be discontinued.

If ground water or infiltrating surface water is not properly controlled during construction, the subgrade soils which will support foundations, as well as pavements or floor slabs, may be damaged. Furthermore, construction equipment mobility may be impaired.

6.1.3.2 Tributaries/Wetlands

Depending on the effectiveness of temporary dewatering and re-routing of existing tributaries and wetlands, a wrapped rock drain may be required in these areas. The wrapped rock drain should consist of needle-punched, non-woven, geotextile filter fabric placed along the stream/creek beds or within an excavated trench, with sufficient length to cover the entire bottom, sides and top with a minimum of 12 inches of overlap. Once the filter fabric has been placed, clean-washed crushed stone, such as No. 57 stone or approved equivalent should be placed. Once the drain component has been completed, the filter fabric should be overlapped over the washed stone. Due to the extent of the existing tributaries/wetlands, the wrapped rock drain may consist of trunk lines with feeder lines as necessary to reach necessary areas of dewatering while generally following the existing meandering path of the features. Drains should be extended to allow for "daylighting" of the drain beyond the structural limits of the fill areas.

6.1.3.3 Long-term Groundwater Control

As the ground water encountered may be close to or even above planned grades, temporary dewatering described above may suffice for mass grading activities, however, long-term control of this water may be required.

A system that has performed adequately on previous projects with similar conditions consists of converting the temporary ditches into permanent French drains. Due to the ground water elevation and planned grades at the site, the permanent ditches may be required to be completed as "curtain wall" drains, specifically along the northwestern cut slopes of the site. A curtain wall drain is similar to a conventional French drain in materials and construction; however, a curtain wall drain has a taller section of wrapped crushed stone to help collect groundwater at multiple elevations or through a thicker section than a conventional French drain would. Connection of the permanent drains into the planned storm water system should be provided, or they should be extended to allow for "daylighting" of the drain beyond the structural limits of the development.

6.1.4 Surface Preparation/In-place Densification

Within areas in close proximity to the planned cut/fill line, we recommend that the very loose (SPT N-value of 4 bpf or less) sandy surface soils be densified in-place using a moderate weight (6 to 8-ton static weight) vibratory

roller. We recommend that at least 3 passes be made in each direction (total 6 passes). Field results can vary and are highly dependent on the roller selected, the in-situ moisture content of the soils, and the ability to achieve confinement along at least one side of the area being densified. It should be expected that the in-place densification activities will lower the existing ground surface within the areas of densification, since the underlying sandy soils are becoming compacted, therefore, additional fill soils may be required to bring the densified area to grade after the process is complete.

In-place densification activities should be verified as the work is in progress. Densification at the surface can be evaluated using field density tests (nuclear density gage or sand cone). We recommend that the density achieved at depth be evaluated by performing hand-augered soil borings with dynamic cone penetrometer (DCP) testing at several representative locations. The frequency and depth of these verification borings and testing will be dictated by the size and depth of the area being densified in-place. As a general guide, in-place densification should achieve an average DCP blow count value of roughly 8 blows per increment (bpi). It may be necessary to excavate test pits partially through the surface sands to permit field density testing in the lower portion of the sands.

6.1.5 Surface Preparation/Proofrolling

In most areas, surface preparation can likely be limited to proofrolling of the surface. Areas that rut, pump, or move excessively under movement of the equipment need to be stabilized prior to placement of fill soil, concrete, or base course stone. If the low plasticity silts and clays (ML and CL) are proofrolled during wet conditions, additional and widespread areas of stabilization may be required, as these materials are sensitive to changes in moisture.

After removal of topsoil and unsuitable soils/materials and cutting to grade and after in-place densification activities, but prior to fill placement, the exposed ground surface should be observed by the geotechnical engineer or a representative of the geotechnical engineer to confirm that poor soils have been removed and that the exposed subgrade is suitable for support of the structures and pavements.

To aid in evaluation of the exposed soils, the area should be proofrolled using a loaded dump truck or similarly heavy piece of equipment. Areas that rut, pump, or move excessively under movement of the equipment should be stabilized prior to placement of fill soil. If left in place, soft or wet soils will exhibit substantially lower bearing for foundations, slabs and pavements. Stabilization, if required, may consist of removing and replacing unstable material with properly compacted structural fill, or where unstable soils are thin, wet/drying and compacting in-place. If large unstable areas are encountered that are cost prohibitive to undercut and replace, drying and stabilizing by chemical means (such as lime stabilization) is an option.

Care should be taken during construction so that the subgrade soils are not disturbed more than necessary. If heavily reworked or disturbed, stabilization may be required for what could otherwise be considered an acceptable subgrade.

6.1.6 Potential Subgrade Deterioration and Repair

The near-surface subgrade soils within cut portions of the site will mostly consist of residual silts (ML), while soils planned to be cut and re-used as fill consist of clayey sands with higher plasticity fines, silts and clays (SC, ML and CL), both of which are highly susceptible to weather related deterioration. The exposed subgrade soil of both cut

and fill areas can deteriorate when exposed to construction activities and environmental changes. Subgrade soil deterioration can occur from exposure to rainwater, rutting from construction traffic, freezing, and erosion. Exposed subgrades in structural areas that have deteriorated should be properly repaired by scarifying, moisture conditioning, and recompacting, or by undercutting and replacement immediately prior to construction. Drying may be accomplished by spreading and disking to maximize exposure to sun and wind during favorable drying weather or by chemical means.

6.1.7 Wet Weather Grading

Based on our experience, clayey sands with higher plasticity fines, silts and clays (SC, ML and CL) similar to those encountered at the site, can be difficult to work if allowed to become wet and may also require extended drying times. Reasonable measures by the grading contractor to grade the surface to drain and seal the surface with a smooth drum roller prior to rainfall will likely be effective to limit risk of periodic rain significantly affecting grading.

Our experience indicates that allowing heavy equipment to run on the existing ground surface will result in heavy rutting. Running heavy equipment on previously placed fill during rain events or where water is ponded will result in degradation of the fill. If these conditions are evident or persist and routinely cause issues, then during construction, gravity-drained surface ditches should be installed around the site to promote surface runoff. Ditches should have at least 6 inches of relief per 100 feet of length to facilitate flow.

6.1.8 Chemical Stabilization Techniques

Chemical stabilization techniques could be utilized, if necessary, in order to lower the moisture content (short-term) and plasticity (long-term) of the clayey sands with higher plasticity fines (SC) and the low to medium plasticity silty and clayey (ML and CL) soils encountered as potential fill soils to be obtained from cut portions of the site. These techniques should extend to a depth of at least 3 feet below structural subgrades in slab and pavement areas. It should be noted that the success of chemical stabilization techniques is highly dependent upon the means and methods utilized by the contractor.

Laboratory mix design testing on representative samples should be performed prior to use of these stabilization methods. Lime stabilization would likely be more effective in the more plastic silty and clayey soils, while cement stabilization more effective in the sandy and less plastic silty soils. A preliminary range of 3 to 7 percent by weight for lime should be considered depending on planned results. A preliminary range of 2 to 6 percent by weight for cement should be considered depending on planned results. The lower end of this preliminary range would be more effective for short-term drying, while the higher end more effective for long-term stabilization.

6.2 Excavation Considerations

Based on review of the soil test boring data to date, along with our understanding of a planned plant footprint at elevation 483 ft-MSL, it appears that very loose to very dense sandy soils and soft to very hard silty/clayey soils will mostly be encountered during general excavation. However, due to the depths at which PWR was encountered, as provided in Table 6-2 above, it appears that difficult excavation will be encountered at the site, but appears to be isolated to within the northwestern corner of the site, in the vicinity of the Battery buildings.

6.2.1 *General Excavation*

Cut areas encountering very loose to dense sandy and soft to hard silty/clayey soils can be typically excavated using pans, scrapers, backhoes and front end loaders in mass grading. The degree of difficulty that mobile equipment will encounter rises dramatically in materials exceeding about 70 to 80 blows per foot (very dense sandy and very hard silty/clayey soils). These conditions were sporadically encountered in our soil borings, while other areas detailed above as PWR were also encountered within the planned cut depths.

6.2.2 *Difficult Excavation – PWR*

Based on the subsurface conditions encountered, as detailed in Table 6-2 above, PWR will be encountered within the planned cut depth within the northern portion of the site. It is important to note that PWR elevations shown in the borings reflect the widely spaced boring locations. No generalization of the trend between boring locations is made. Such generalization would entail substantial risk since the composition and density of the soil and rock may vary between testing locations. We emphasize that there may be substantial areas on the site where PWR or rock may occur above the level indicated by the testing.

PWR can normally be excavated by hard to very hard ripping. We recommend ripping be performed with a single-tooth hydraulically articulated ripper mounted to the frame of a D-9 or larger dozer. Our experience indicates that as the consistency of partially weathered rock increases ("N" values greater than 50/4" to 50/2" as represented on the Boring Records in Appendix II-A and II-B) the probability that blasting will be required increases for both mass and local excavation. Based on the subsurface conditions encountered by the borings, it is our professional opinion that the majority of soils can be excavated by appropriately sized heavy construction equipment. Occasional blasting or hoe ram use to excavate local areas of more resistant material may be expected in both mass and confined excavations. The speed and ease of excavation will depend on the type of grading equipment, operator skill and the geologic structure of the material itself, such as the direction of bedding, planes of weakness, and spacing of discontinuities.

It has been our experience in this geological area that materials having SPT N-values of less than 50 blows/3 inches (i.e. 50/3" as represented on the Boring Records in Appendix II-A and II-B) can generally be excavated using pans and scrapers by first loosening with a single-tooth ripper attached to a suitable sized dozer, such as a Caterpillar D-8 or D-9.

6.2.3 *Ripping versus Blasting*

On earthwork projects requiring ripping, a controversy sometimes develops as to whether the materials can be removed by ripping or whether blasting is required. It should be noted that ripping is dependent on the equipment and techniques used as well as the operator's skill and experience. The success of the ripping operation is dependent on finding the proper combinations for the conditions encountered. Excavation of the weathered rock is typically much more difficult in confined excavations. Jackhammering or blasting is anticipated to be required for materials having SPT N-values in excess of 50 blows/2 inches (i.e. 50/2"), or at or near the level that auger refusal/rock is encountered.

6.2.4 Confined Areas

Excavation of dense to very dense or hard to very hard residual soils in confined areas will likely require pneumatic hammers or spades. Light blasting may be necessary to efficiently remove more resistant partially weathered rock, bedrock or dense boulders that could be present in confined excavations. We emphasize that the character of the soil and rock strata may vary widely between testing locations, and no trend between testing locations is implied.

6.2.5 Classified Excavations

For classified excavations, we suggest that massive rock excavation be defined as any material that cannot be excavated with a single tooth, hydraulically articulated ripper drawn by a crawler tractor (Caterpillar D-9 or equivalent), occupying an original volume of at least one cubic yard.

For confined excavations, we suggest that any material occupying an original volume of at least one-half of a cubic yard or more which cannot be excavated with a Caterpillar 325 or equivalent using a 24-inch wide bucket equipped with rock teeth.

6.3 General Comments on Slope Stability and Construction

Due to the existing and proposed grades at the site, it is understood that cut and fill slopes will be required.

6.3.1 Temporary Excavation Stability

Excavations should be sloped or shored in accordance with local, state, and federal regulations, including OSHA (29 CFR Part 1926) excavation trench safety standards. The contractor is usually solely responsible for site safety. This information is provided only as a service, and under no circumstances shall S&ME be assumed to be responsible for construction site safety. It is important to note that per OSHA, excavation slopes and shoring systems greater than 20 feet in height must be designed by a Professional Engineer.

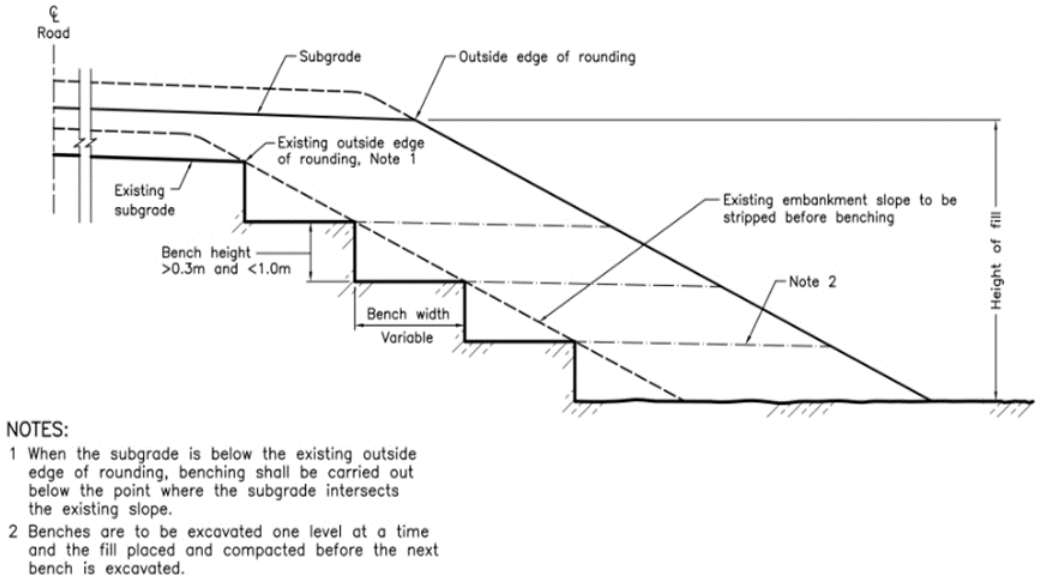
6.3.2 Excavation Slopes

The planned excavations at the site will be advanced through mostly Coastal Plain deposits and Piedmont residual soils and appear to be planned to approach about 60 feet in height. Slope stability analysis is outside of our current scope of work; however, based upon our experience and information obtained by borings at the site, we recommend the excavated cut slopes not exceed a maximum inclination of 2H:1V (horizontal:vertical). These values are for planning purposes and will need to be confirmed during construction by direct observation of the excavated slopes, and inclinations modified, if necessary, based on the observed conditions. If these slopes are to be exceeded, then temporary/permanent retainage may be necessary.

6.3.3 Fill Slopes

Fill slopes at the site are planned to approach about 110 feet in height. Slope stability analysis is outside of our current scope of work; however, based upon our experience, permanent compacted fill slopes of these heights with inclinations of 2H:1V (horizontal:vertical) are generally considered stable if properly constructed.

To ensure stability, loose material should be removed (undercut) from the toe of the proposed fill slope or compacted as indicated in this report prior to placing new fill. The fill slopes should be benched into existing sloping terrain and adequately compacted. The tops and bases of slopes should be located a minimum of 3 times the height of the slope from structural limits. Furthermore, we recommend that fill slopes constructed along existing slopes or embankments steeper than 4H:1V have a keyway constructed along the slope base to help counteract sliding failure, as shown in the example detail below. The keyway width should be at least ½ of the planned slope height, and the keyway should be embedded a minimum of 2 feet into stiff to medium dense soils.



Benching for Fill Slopes constructed along Existing Slopes

We recommend that compacted fill slopes be benched and slightly over-built, (in order to minimize the presence of a loose zone of poorly compacted soils near the slope face), and then cut back to firm, well compacted soils prior to the placement of structure or vegetative cover. Upon construction of a competent slope face, the slope face should be protected from erosion.

6.3.4 General Slope Recommendations

Recommended slopes are preliminary and assume that groundwater is controlled at the lowest level of the excavation continuously while the excavation is open. Groundwater is assumed not to flow or emerge from soil excavation slopes. As previously mentioned, due to the ground water elevation and planned grades at the site, "curtain wall" drains main be required, specifically along the northwestern cut slopes of the site. Surface water is assumed to be captured by appropriate drainage measures above the slope crest and not allowed to drain down the slope. If perched groundwater is observed emerging from the face of the slope or if surface water is adversely affecting the slope, S&ME should be contacted immediately.

It is also assumed that excavated slopes are relatively uniform such that local slopes due not significantly exceed the recommended slopes. Finally, the recommended slope inclination assumes that all slopes are monitored for indications of instability and that slopes are flattened or other measures taken if appropriate. Monitoring of the slopes during construction is presently not part of our contracted scope of services for this project.

Stability can be reduced by a number of additional factors including excessive erosion, non-uniform sloping resulting in areas of steeper grades, loose seams in the cut face, and/or ground water emerging from the cut slopes. As a result, proper channeling of surface water is critical. Surface runoff shall be directed away from the slopes via the use of berms, swales, or slope drains. For erosion protection, a protective cover of grass should be established on permanent soil slopes as soon as possible after slope construction. If loose seams are encountered within cut faces during excavation or ground water is encountered, an in-depth analysis of slope stability should be performed.

We caution against the installation of drop inlets or storm sewer lines within an improper embedment zone of the slope face, where possible over stressing and leakage may create maintenance problems or possible isolated slope failure. In general, these structures need to be installed a minimum distance of 1½ times the height of the embankment, as measured from the crest and/or toe of the slope. Furthermore, proper embedment of buried utilities beneath slope faces should be established prior to construction, with a minimum embedment for foundation recommended to be 5 feet below the down gradient portion of the slope, while a minimum embedment for buried utilities is recommended to be 3 feet below the down gradient portion of the slope.

6.4 Use of On-site Soils as Structural Fill

The on-site cut soils that are proposed for use as fill at the site range in USCS soil classification but are generally sands with varying amounts of low to medium plasticity fines (SP, SP-SM, SP-SC, SM and SC) and low to medium plasticity silts and clays with varying amounts of fines (ML and CL).

6.4.1 Sandy Proposed Fill Soils

Coarse grained sandy soils with varying amounts of fines (SP, SP-SM, SP-SC, SM and SC), similar to those encountered in cut areas of the explorations, are typically suitable for use as structural fill and for use as the immediate subgrade for pavements and floor slabs.

6.4.2 Fine Grained Low Plasticity Proposed Fill Soils

Fine grained low plasticity silts and clays (ML and CL) containing varying amounts of sands, similar to those encountered in cut areas of the explorations, are typically suitable to marginally suitable for use as structural fill. Suitability of these soils for use depends a great deal on the moisture content of the material at time of placement.

Marginal suitability refers to the fact that fine grained soils are moisture sensitive to some degree and can be difficult to work if allowed to become wet. These difficulties can include softening of exposed subgrade soils, excessive rutting or deflection under construction traffic, and the difficulty associated with adequately drying and compacting wet soil. Moisture-related earthwork difficulties can be reduced by performing the earthwork during the typically drier months of the year (May through October).

Drainage from the site should be provided and maintained to reduce the potential for ponding of water on exposed subgrades. Before beginning to place fill, sample and test each proposed fill material to determine its maximum dry density, optimum moisture content, natural moisture content, and suitability as a structural fill material.

6.4.3 Use of Rock Fill

Shot rock or partially weathered rock (PWR) excavated in large chunks can be used in deep fill areas, provided you place them well apart to allow compaction of soil between them. However, it is important to note that placement of these materials may adversely affect the planned ground improvement techniques. Avoid placing heaped large boulders in the fill, particularly in the building pad. Also, avoid placing large boulders within 2 feet of subgrades in paved areas.

Shot rock used as mass fill often contains so many fines that considerable settling will occur if the fill is not compacted. Rock fill is usually spread in 18-inch to 48-inch lifts, depending on maximum fragment size. Lift thickness must typically be greater than the maximum size. Typically, each lift should be topped by a layer of fine gravel or soil to choke off the voids in the rock fill and limit risk of dropouts forming on the surface.

Heavy compaction forces are needed to relocate large stones to increase the density and stability of the rock mass. Densification of the rock mass typically requires use of very large, high capacity smooth drum vibratory compactors. Since compactors are subject to great stresses, the vibratory drum should be constructed of thick, high-grade steel.

Procedures used to lay and spread each lift prior to compaction are very important in achieving a satisfactory fill. Dozer spreading of the layers is recommended in advance of compaction, because the dozer blade can do some reorienting of the rocks and the tracks perform some compaction. This provides a more or less even surface for the compactor.

Compaction of each lift must be monitored to judge whether the rock fragments tend to break down under the compactive effort. If there is a crushing effect on the surface material, the number of passes may have to be reduced. Or, if the machine is equipped with more than one amplitude, lower amplitude can be used to reduce surface material distortion.

6.5 Fill Placement and Compaction

Before beginning to place fill, sample and test each proposed fill material to determine maximum dry density, optimum moisture content, natural moisture content, gradation and plasticity of the soil. Structural soil fill material should have less than 5 percent organic matter, a standard Proctor maximum dry density of 90 pcf or greater and a plasticity index (PI) of 30 percent or less.

As previously mentioned, three (3) bulk samples were obtained from borings with cut portions of the site and tested for maximum dry density, optimum moisture content, gradation, and plasticity, as summarized in Table 4-6 above. From the results of our laboratory testing, the planned structural fill material from these general vicinities, or within areas with similar USCS soil classifications, appear suitable for reuse as structural fill after proper moisture conditioning.

We recommend that off-site borrow, if necessary, meet the organic content, PI and density requirements of this section. Testing will be required before fill placement begins to determine the optimum moisture-density condition for the fill materials. Material to be used as soil fill should be tested and approved by the geotechnical engineer before being placed.

6.5.1 Density and Moisture Requirements

Place fill in maximum 8-inch loose lifts and compact to at least 98 percent of maximum dry density (ASTM D698 standard Proctor) within structural areas (i.e. building, pavement, utility and rail areas). This level of compaction can be practically achieved with area soils and has been found to provide adequate support for foundations, pavements and rail lines. Fill moisture content should be maintained within +/- 3 percent of the optimum moisture content. Contractor should be prepared to wet or dry soils as necessary to achieve compaction. In addition to meeting the compaction requirement, fill material should be stable under movement of the construction equipment and should not exhibit rutting or pumping.

6.5.2 Fill Placement Near Ground Water Elevation

Due to the measured ground water levels across the site and the areas of existing ponds, tributaries and wetlands to be filled, special care should be taken during fill placement activities. Where fill will be placed at or near ground water elevations, the static setting of the roller should be used. The use of the static setting will minimize the capillary action created from an increased pore-water pressure of the underlying saturated soils, which is most commonly created with the use of a vibratory setting of the roller. This will ultimately minimize the saturation of the fill soils and the degradation of previously placed fills.

6.5.3 Compaction of Granular Soils

A vibratory smooth-drum roller will likely be effective for compaction of the sandy soils with nil to few low plasticity fines content (SP, SP-SM and SP-SC) encountered at the site.

A vibratory sheeps-foot roller will likely be more effective for compaction of the silty and clayey sandy (SM and SC) soils encountered at the site. Sheeps-foot compactors will likely be preferable because the pads better penetrate the soil and they tend to break down the natural cohesive bonds between the particles.

Sandy soils excavated above the water table are usually close enough to optimum moisture content to place and compact efficiently. However, as previously mentioned, recovered samples of near-surface sandy soils appeared to be fairly dry and therefore, may require moisture conditioning during fill placement. Soils that are initially too wet or are allowed to become wet due to rainfall are more difficult to use.

6.5.4 Compaction of Cohesive Soils

The compaction characteristics of silty and clayey soils (ML and CL) with plastic properties encountered at this site will be highly dependent on the soil moisture content at the time of construction. Sheeps-foot compactors will likely be preferable because the pads better penetrate the soil, and they tend to break down the natural cohesive bonds between the particles.

The water content of these soils is usually very difficult to modify in the field. Above or below the optimum moisture content, the soils become progressively more difficult to manipulate and compact. Soils excavated above the water table are usually close enough to optimum moisture content to place and compact efficiently with little moisture conditioning required. Soils that are initially too wet or are allowed to become wet due to rainfall are more difficult to use. Drying wet silty/clayey soils usually requires favorable weather conditions and often requires repeated disking and rolling with sheeps-foot rollers to lower the moisture content.

Slope the fill surface to drain and prevent ponding water. If rain is expected while filling is temporarily halted, roll the surface with rubber tire or steel drum equipment to improve surface run-off.

6.5.5 Deep Fill Considerations

From our understanding of the planned grades across the site, fills of up to 110 feet in depth are planned within the southern and southeastern portions of the site. Soils when subject to load may deflect, consolidate, or densify. Surcharge loading induced by these heights of fills will induce substantial compression of the underlying soils. The placed fill itself will also undergo significant volume change due to self-weight.

Based on our experience with deep fills in the Coastal Plain and Piedmont, consolidation of the fill under self-weight will mostly occur while the fill is being placed. Planned fill soils will lie above the water table and will therefore be only partially saturated. Primary consolidation will for that reason be very rapid and difficult to tell apart from immediate settlement. A small amount of additional settlement or creep will occur shortly after topping out the fill. Secondary compression will be very small and is usually neglected in settlement estimates.

Residual soils in-place consisting of silts and clays (fine grained, cohesive) exhibit consolidation behavior which is dependent on stress history, mineralogy, age, moisture content, and geologic formation. The time rate of consolidation of silt and clay materials is greatly dependent on particle sizes of the soil and drainage paths. Above the water table consolidation occurs mostly as immediate settlement. Thick deposits of high clay content materials may take years to consolidate, even under high stress. Soils with significant silt content, or free drainage conditions (such as sand seams), may consolidate relatively rapidly.

It is important to note that fill surcharge loads in the south and southeastern portions of the site may equal or exceed building and rail loads. It is essential that construction be sequenced to allow fill settlement to have largely ceased prior to erection of the building frame, placement of slabs or construction of rail.

6.5.6 Settlement Monitoring

We recommend settlement monitoring points be placed within select deep fill portions of the site, as it is understood that fills will approach up to 110 feet. Monitoring would typically include installation of settlement plates and hubs.

Settlement plates are installed to monitor the consolidation settlement of the in-situ soils at and beneath the existing ground surface. These monitoring points should consist of metal plates bearing at the base of the fill, with extendable metal rods through the fill mass to the surface. The metal rods should be enclosed by a PVC sheath to break contact between the rod and the surrounding soils. Settlement plates should be embedded in residual soils at the base of the fill at the beginning of fill placement, and additional rod sections screwed on as needed to extend vertically to the surface throughout placement. If these points become damaged during

construction, additional points should be placed on the fill after topping out. Building construction should not start in deep fill areas until settlement has substantially ended.

Settlement hubs are installed to monitor the consolidation settlement of the newly placed fill soils. These monitoring points should consist of metal plates bearing within the newly placed fill. Settlement hubs should be embedded in the newly placed fill soils at the completion of fill placement. The settlement hubs should be barricaded to prevent damage during construction. Building construction should not start in deep fill areas until settlement has substantially ended.

Care should be taken in installing the plates, reading elevations, and extending riser pipes. Settlement plates should be located such that construction traffic in the vicinity is minimized, if at all possible. Plate installations and riser pipes should be clearly and adequately marked to protect the riser pipes from impact or obliteration during fill placement, grading, and other construction activities that will be ongoing during the monitoring process.

Note also that the bench-mark (or fixed reference elevation) used to survey the settlement plates must also remain intact through the monitoring process. A stadia rod may be used to obtain the fill elevation if the top of fill is not visible from the survey point; both the elevation of the riser pipe and the top of fill should be surveyed for use in settlement data analysis.

It is essential that the settlement plates/hubs be surveyed as soon as they are placed. During initial construction of the fill and any time thereafter when fill is being actively placed, the settlement plates/hubs should be read every two to three days. After the fill placement has been completed, the plates/hubs should be read weekly. When fill is being placed, the amount of fill (lift heights) should be recorded for use in settlement data interpretation. Any extreme or unusual events should also be recorded, such as rainstorms, local flooding, or seismic activity (either natural or nearby blasting).

Settlement data shall be sent to the Geotechnical Engineer for his input and interpretation. It is preferred that the same surveyors read the settlement plates/hubs over the course of the monitoring period to reduce the opportunity for error. Project data and elevation readings should be reported in U.S. Customary Units. The locations of the plates should be surveyed at the time of installation and include project station coordinates as well as the elevation. The survey reference system and benchmark should be indicated.

6.5.7 Monitoring and Testing

Fill placement should be witnessed by an experienced soils technician working under the guidance of the geotechnical engineer. We recommend full time observation by a qualified soils technician with testing at random intervals to confirm compaction is being achieved. Part-time testing may suffice for the parking area and utility trench fills.

6.6 Shallow Foundation Support

6.6.1 Cut Areas

Based on the boring data to date, our experience in the area and the soil profile encountered, we anticipate a net allowable bearing pressure on the order of 6,000 pounds per square foot (psf), in general accordance with the

Project Connect geotechnical specification, in undisturbed cut areas. Some minor near-surface modification may be required within the upper roughly 3 to 8 feet below finished grade (down to around elevation 480 to 475 ft-MSL) in the vicinity of the cut-fill line. Near surface modifications could be accomplished with select graded aggregate fill or shallow ground improvements as discussed in the following sections. This net allowable bearing pressure is provided that total settlements of about 1 inch are able to be tolerated.

6.6.2 Fill Areas

We anticipate a net allowable bearing pressure on the order of 3,000 psf on well-engineered, compacted fill. Therefore, in order to achieve the Project Connect geotechnical specification in fill areas, deep ground improvements will be necessary. It is important to note that due to the widely-spaced borings to date, ground improvements may transition across the cut/fill line to some extent.

Potential deep ground improvement methods for this site, include, but are not limited to, the following:

1. Compacted Aggregate Piers (CAP)
2. Rigid Inclusions (RI)

The following provides general details on each.

6.6.2.1 Option 1 – Shallow Foundations on Compacted Aggregate Piers (CAP)

If this option is chosen, upon achieving the planned plant grade elevation of 483 feet MSL with well-engineered, compacted fill, the in-place structural fill soils and underlying native Coastal Plain/residual Piedmont soils would be improved by installing a series of Compacted Aggregate Piers (CAP) for support of shallow foundations (and the grade slab, where required). The CAP system is a practical refinement on the traditional over-excavation and replacement method of strengthening subsoils for foundation settlement control and bearing capacity improvement and is implemented as an intermediate step between mass grading and shallow foundation construction activities.

The CAP support elements are constructed by drilling a hole to create a cavity, removing a volume of compressible subsoil materials, then building a bottom bulb of clean, open-graded stone while vertically pre-stressing and pre-straining subsoils underlying the bottom bulb. The drilled hole must remain open and not cave to install the CAP elements. Therefore, these elements are more suited in "dirty" sands and more cohesive soils and are typically more shallow elements. The shaft is built on top of the bottom bulb, placed in thin lifts (12 inches compacted thickness). Densification of the bottom bulb and of the shaft lifts is accomplished by using the impact ramming action of a modified hydraulic hammer. The tamper consists of a special steel alloy shaft and a round, beveled tamper head. The beveled tamper head assists in transferring force laterally during impact densification, resulting in pushing of aggregate against the confined walls of the cavity. The nature of the soil is to "push back", creating significant lateral pressure buildup in the matrix soil resulting in lateral confinement to the CAP elements. In addition to increasing shear resistance at the CAP element perimeter, the increased horizontal stress in the matrix soil improves the matrix soil and makes it stiffer.

In developing design criteria for the CAP system, the actual diameter, depth and spacing should be determined by requesting a cost proposal from selected specialty contractors experienced with the method. The goal of the ground improvement program should be specified (i.e. settlement reduction/bearing capacity improvement), and

the contractor should submit a proposed ground improvement program with associated costs. The proposals should be evaluated by the design engineers, and a contractor should be selected after any necessary negotiations.

6.6.2.2 Option 2 – Shallow Foundations on Rigid Inclusions (RI)

If this option is chosen, upon achieving the planned plant grade elevation of 483 feet MSL with well-engineered, compacted fill, the in-place structural fill soils and underlying native Coastal Plain/residual Piedmont soils would be improved by installing a series of Rigid Inclusions (RI) for support of shallow foundations (and the grade slab, where required). Rigid Inclusions are a ground improvement technique that partially shares and transfers loads through weak strata to a firm underlying stratum, using high modulus grout columns. This technique has been used in the US for a couple decades to increase allowable bearing pressure and decrease settlement for structures, roadway embankments, and retaining walls.

The RI support elements are constructed by drilling a hole to create a cavity, removing a volume of compressible subsoil materials, then constructing a cast-in-place grout column. The grout is installed using a positive displacement pump. Grout should be pumped with sufficient pressure to prevent suction as the tooling is withdrawn and avoid necking or collapse of the hole. The drilled hole for the RI element is typically cased with the drill tooling, and is therefore more suited for deeper element installation.

The composition, diameter, depth, and number of inclusions are designed based on the planned loading and the foundation performance requirements. Rigid inclusions are typically not in direct contact with the foundations or slab, depending on planned spacing. A load transfer platform (LTP) is typically constructed of dense graded and well compacted crushed stone on top of the inclusions for the foundations or slab to bear on.

Design of the rigid inclusions including but not limited to diameter, spacing, grout strength, reinforcement, LTP requirement, thickness and material requirements is the responsibility of the selected specialty geotechnical contractor. The design package for the rigid inclusions should include a Design Calculation Report and Construction Drawings stamped by a licensed professional engineer, and a Means and Methods Submittal.

6.6.3 General Comments

A design-level geotechnical exploration and/or additional geotechnical analyses will be required to evaluate specific building areas once site grading plans and final building locations are established. Bearing pressures used in design of specific foundations, as well as the extent of areas requiring ground improvements, will need to be individually evaluated for the service loads of the proposed structure(s).

6.7 Grade Slab Support

Based on the boring data to date, our experience in the area and the soil profile encountered, we anticipate a modulus of subgrade reaction (k) of about 200 psi/in will be available in residual soils of cut areas and well-engineered, compacted fill for use in reinforcing design for typical, lightly loaded (i.e. on the order of 500 psf floor loads) grade slabs, assuming a subgrade consisting of compacted soils without segregation by composition. This value is based on published correlations between the type and condition of the subgrade and/or fill to be placed at this site and small-diameter plate load tests. The modulus value is considered appropriate for point loads and small-diameter wheel loads but must be modified (reduced) for wide area loads.

For heavily loaded grade slab areas, such as those suggested by the maximum floor loading of roughly 2,050 pounds per square foot (psf), the above-described ground improvements for shallow foundation support will be required where these areas are within fill areas of the site. This is not only due to the provided maximum loading conditions, but also the potential size of these grade slab areas, resulting in the potential for deep-seated/soil wedge settlement concerns.

6.8 Pavement Support

The existing sandy to silty/clayey soils encountered in our borings across the site appear suitable to marginally suitable and are typically considered to provide excellent to fair pavement support. Future exploration at the site should include classification and physical tests of the near surface soils to determine suitability of subgrade support.

Pavement performance is very dependent on drainage. Drainage should be designed to result in subsurface water levels being at least 2 feet below the top of the pavement subgrade. Design should not result in water standing on the pavement surface or behind curbing. Landscaped areas behind curbing should be at or above the elevation of the curbing.

Design should result in positive drainage being available from the stone base material. Areas adjacent to pavements (embankments, landscaped island, ditching, etc.) which can drain water (rainwater or sprinklers) should be designed so that water does not seep below the pavements. This may require the use of French drains or swales.

6.9 Recommendations for Further Exploration

From our review of the previous and current subsurface data obtained to date, we would recommend the following further exploration/future testing be performed in future or subsequent explorations for the site:

- Designation of topsoil thickness – If the measured up to 8 inches of topsoil is to remain in-place or is to be re-used as structural fill, the organic content should be tested, in general accordance with ASTM D2974.
- Mucking Quantities – Due to the extent wetlands to be filled across the site, the depth and extent of mucking should be further explored. A series of hand augers or test pit excavations within these areas would allow for visual observation of the soils and help to delineate and quantify the extents of this material for bidding purposes.
- Excavation Difficulty in PWR – Due to the elevation of the encountered PWR within the planned cut depths within the northern portion of the site, we recommend further exploration by test pit excavations. The test pit excavations could occur prior to or at the on-set of construction. Test pit excavations allow for visual observation of the excavated materials, as well as difficulty in excavation.
- Foundation recommendations – A design-level geotechnical exploration and/or additional analyses will be required to explore specific building areas once a specific plan for the development has been prepared. Bearing pressures used in design of specific foundations will need to be individually evaluated for the service loads of the proposed structure(s).

- Pavement recommendations – Future exploration at the site should include classification and physical tests, including California bearing ratio (CBR) testing, in general accordance with ASTM D1883, of the near surface soils to determine suitability of subgrade support.

7.0 Qualifications of Report

This report has been prepared in accordance with generally accepted geotechnical engineering practice for specific application to this project. The conclusions and recommendations contained in this report are based upon applicable standards of our practice in this geographic area at the time this report was prepared. No other representation or warranty either express or implied, is made.

We relied on project information given to us to develop our conclusions and recommendations. If project information described in this report is not accurate, or if it changes during project development, we should be notified of the changes so that we can modify our recommendations based on this additional information if necessary.

Our conclusions and recommendations are based on limited data from a field exploration program. Subsurface conditions can vary widely between explored areas. Some variations may not become evident until construction. If conditions are encountered which appear different than those described in our report, we should be notified. This report should not be construed to represent subsurface conditions for the entire site.

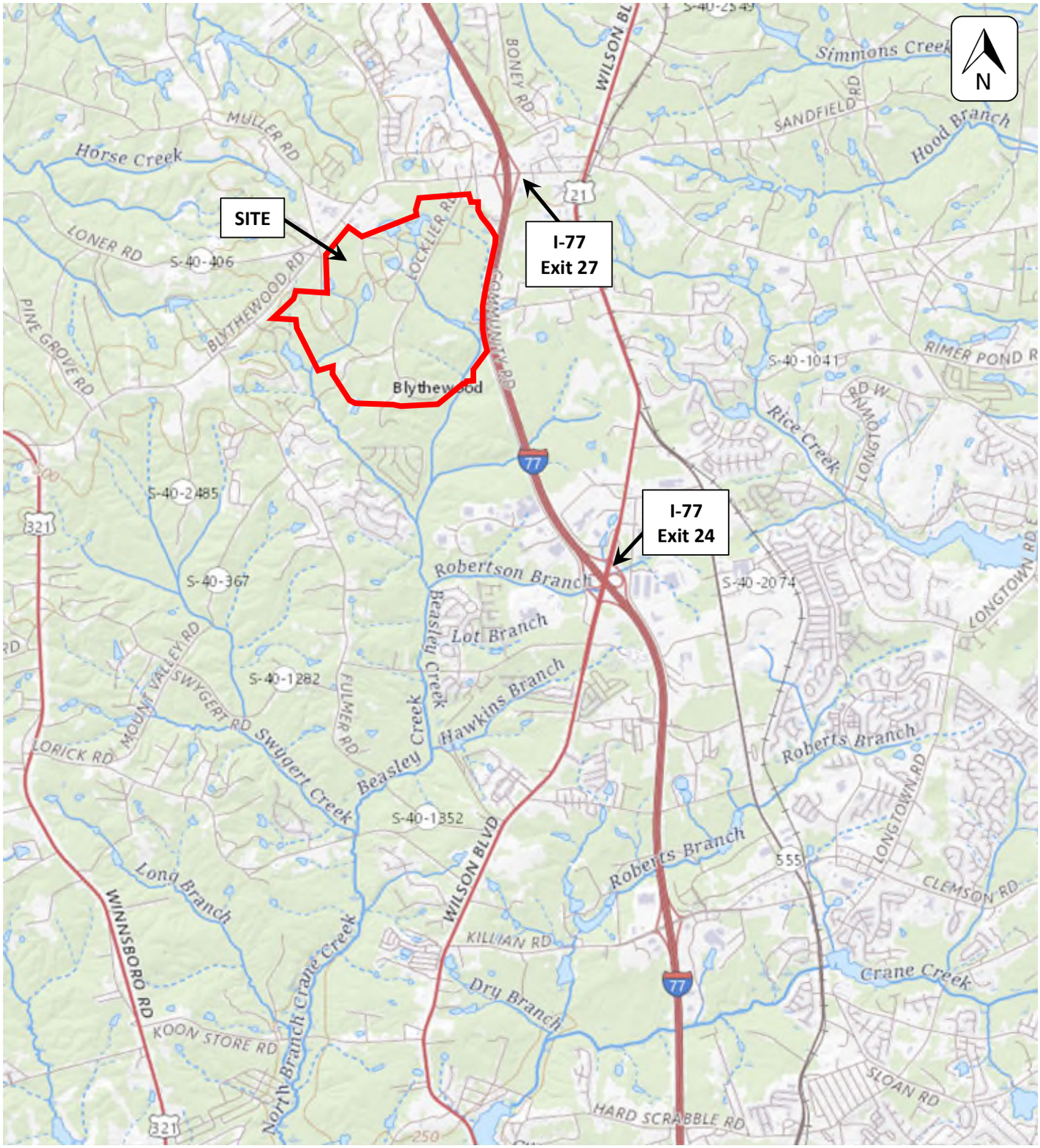
Unless specifically noted otherwise, our field exploration program did not include an assessment of regulatory compliance, environmental conditions or pollutants or presence of any biological materials (mold, fungi, bacteria). If there is a concern about these items, other studies should be performed. S&ME can provide a proposal and perform these services if requested.

Again, we note that the information provided herein is preliminary with regard to future development of the site. A final geotechnical exploration tailored to the actual development specifics must be performed before final recommendations for the proposed foundations, grade slabs and pavements can be provided.

S&ME should be retained to review the final plans and specifications to confirm that earthwork, foundation, and other recommendations are properly interpreted and implemented. The recommendations in this report are contingent on S&ME's review of final plans and specifications followed by our observation and monitoring of earthwork and foundation construction activities.

Appendices

Appendix I – Figures



SOURCE: USGS National Map

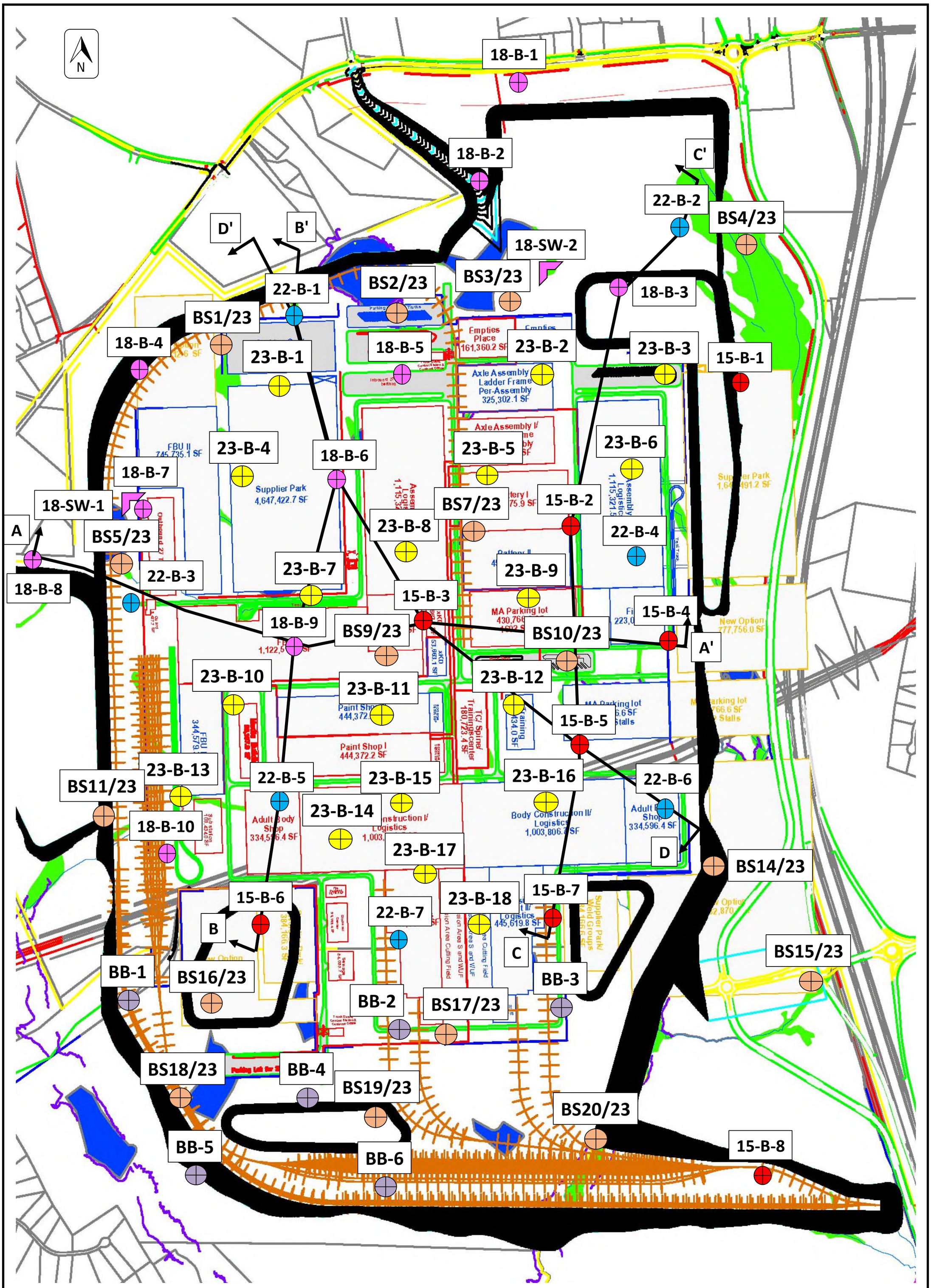
SITE LOCATION PLAN

JOB NAME:	Project Connect
LOCATION:	Locklier Rd, Blythewood Rd, Community Rd
CITY, STATE:	Blythewood, SC
JOB NO.:	22610625

FIGURE NO.

1

SCALE:	NTS	CHECKED BY:	RCB
DATE:	3/31/2023	DRAWN BY:	JPL



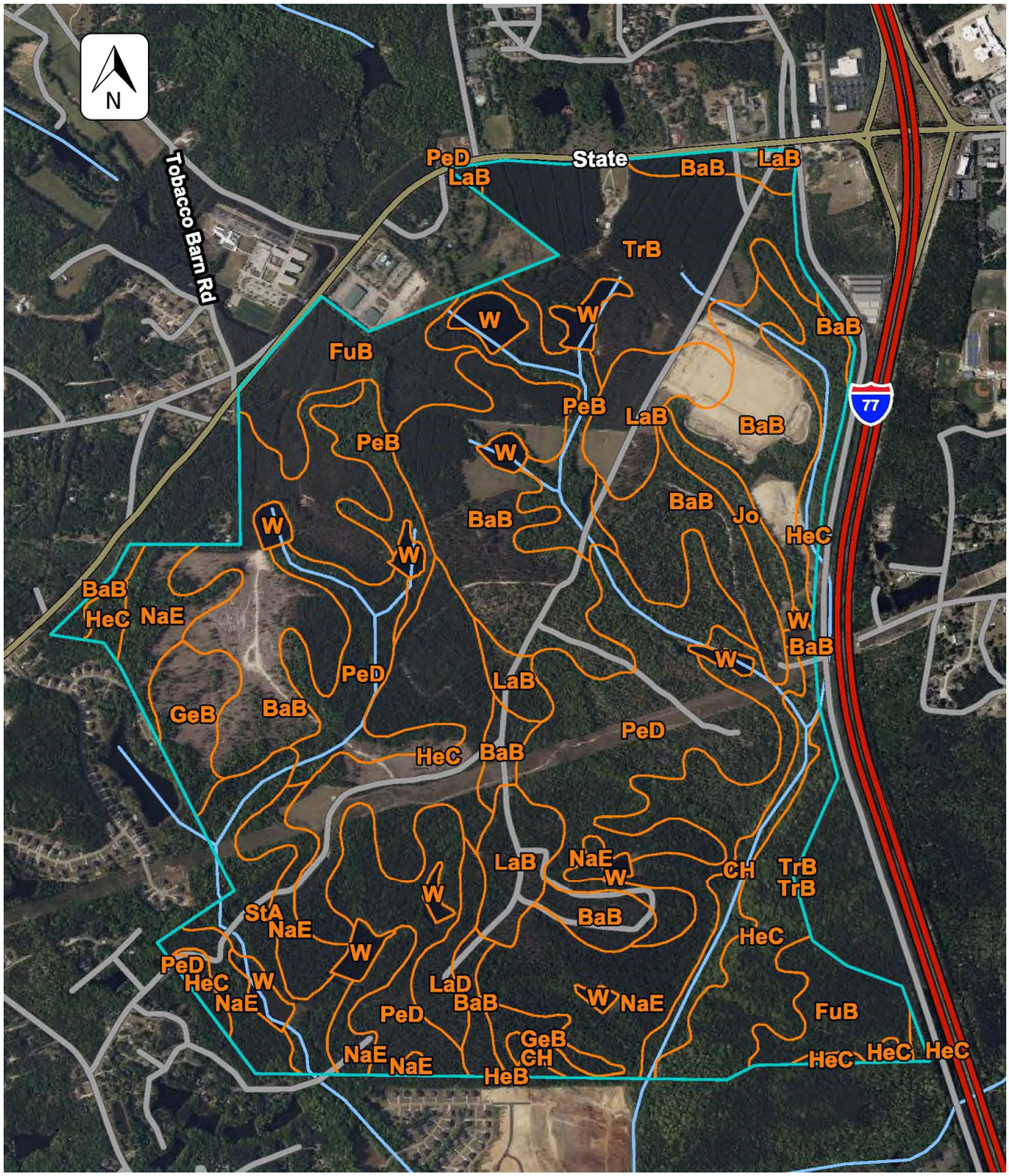
SOURCE: Conceptual Layout, provided by Thomas and Hutton, dated 1/12/22

TESTING LOCATION PLAN

JOB NAME:	Project Connect
LOCATION:	Locklier Rd, Blythewood Rd, Community Rd
CITY, STATE:	Blythewood, SC
JOB NO.:	22610625
SCALE: NTS	CHECKED BY: MFC
DATE: 3/31/2023	DRAWN BY: RCB

FIGURE NO.

2



SOURCE: USDA SoilWEB

SITE LOCATION PLAN

JOB NAME:	Project Connect
LOCATION:	Locklier Rd, Blythewood Rd, Community Rd
CITY, STATE:	Blythewood, SC
JOB NO.:	22610625

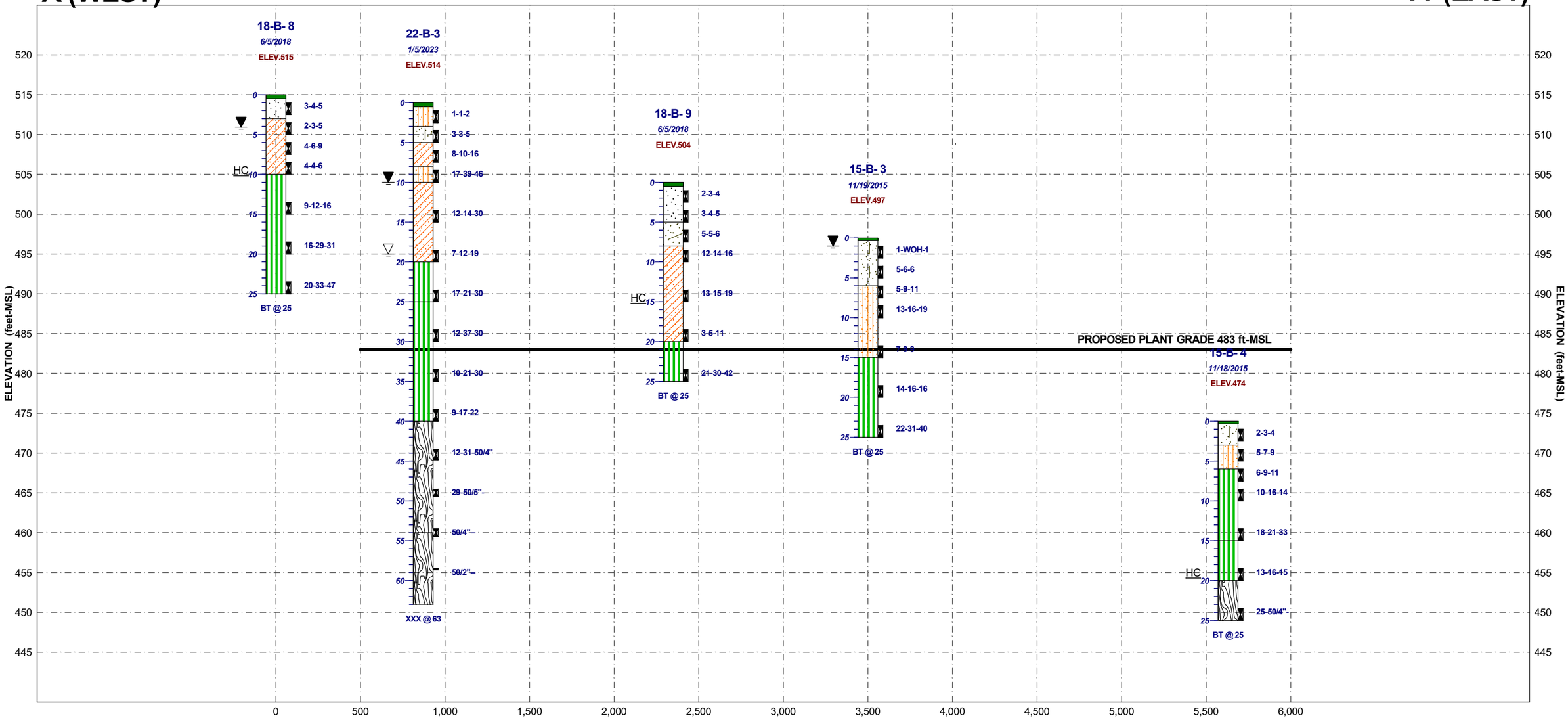
FIGURE NO.

3

SCALE:	NTS	CHECKED BY:	RCB
DATE:	3/31/2023	DRAWN BY:	JPL

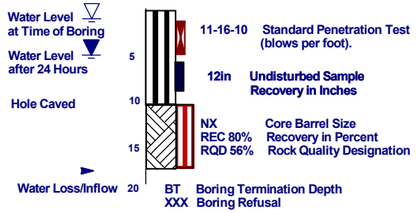
A (WEST)

A' (EAST)



SOIL TEST BORINGS

B-3 Boring Number
123.0 Elevation at GS



LEGEND OF MATERIAL GRAPHICS FOR SOIL TEST BORINGS

- SP, Poorly-graded Sand
- SP-SM, Poorly-graded Sand with Silt
- SP-SC, Poorly-graded Sand with Clay
- SM, Silty Sand
- SC, Clayey Sand
- ML, Low Plasticity Silt
- PWR, Partially Weathered Rock

The depicted stratigraphy is shown for illustrative purposes only and is not warranted. Separations between different strata may be gradual and likely vary considerably from those shown. Profiles between nearby borings have been estimated using reasonable engineering care and judgment. The actual subsurface conditions will vary between boring locations.

SUBSURFACE PROFILE A-A'

PROJECT: Project Connect

LOCATION: Blythewood, Richland County, South Carolina

FIGURE: 4

JOB NO: 22610625

DATE: 1/20/23

B (SOUTH)

B' (NORTH)

ELEVATION (feet-MSL)

ELEVATION (feet-MSL)

PROPOSED PLANT GRADE 483 ft-MSL

15-B- 6
11/19/2015
ELEV.490

0	2-2-2
5	2-2-3
10	5-6-7
HC 15	9-10-15
20	16-20-21
25	19-26-41
	16-22-30

BT @ 25

22-B-5
1/5/2023
ELEV.470

0	1-2-4
5	2-3-5
10	3-4-5
15	4-4-8
20	12-29-50/4"
25	27-50/3"-
30	10-16-20
35	8-12-14
	7-14-24

BT @ 35

18-B- 9
6/5/2018
ELEV.504

0	2-3-4
5	3-4-5
10	5-5-6
HC 15	12-14-16
20	13-15-19
25	3-5-11
	21-30-42

BT @ 25

18-B- 6
6/4/2018
ELEV.509

0	2-2-3
5	3-3-5
10	4-6-9
15	21-33-48
HC 20	16-20-34
25	6-8-13
	12-31-50/5"

BT @ 25

22-B-1
1/5/2023
ELEV.520

0	2-2-2
5	7-13-22
10	8-19-31
15	3-5-7
20	27-45-50/5"
25	34-50/4"-
30	12-49-50/2"
35	14-21-36
40	14-50/2"-
45	11-19-22
50	7-15-21
55	10-16-31
60	18-29-22
65	29-37-50/4"
70	10-31-43
75	11-17-29
80	15-30-28
85	34-50/5"-
90	41-50/3"-
	13-24-37

BT @ 90

530 520 510 500 490 480 470 460 450 440 430

0 500 1,000 1,500 2,000 2,500 3,000 3,500 4,000 4,500 5,000 5,500

SOIL TEST BORINGS

B-3 Boring Number
123.0 Elevation at GS

Water Level at Time of Boring
Water Level after 24 Hours
Hole Caved
Water Loss/Inflow

11-16-10 Standard Penetration Test (blows per foot).
12in Undisturbed Sample Recovery in Inches
NX Core Barrel Size
REC 80% Recovery in Percent
RQD 56% Rock Quality Designation
BT Boring Termination Depth
XXX Boring Refusal

LEGEND OF MATERIAL GRAPHICS FOR SOIL TEST BORINGS

- SP, Poorly-graded Sand
- SP-SM, Poorly-graded Sand with Silt
- SP-SC, Poorly-graded Sand with Clay
- SM, Silty Sand
- SC, Clayey Sand
- ML, Low Plasticity Silt
- CL, Low Plasticity Clay
- PWR, Partially Weathered Rock

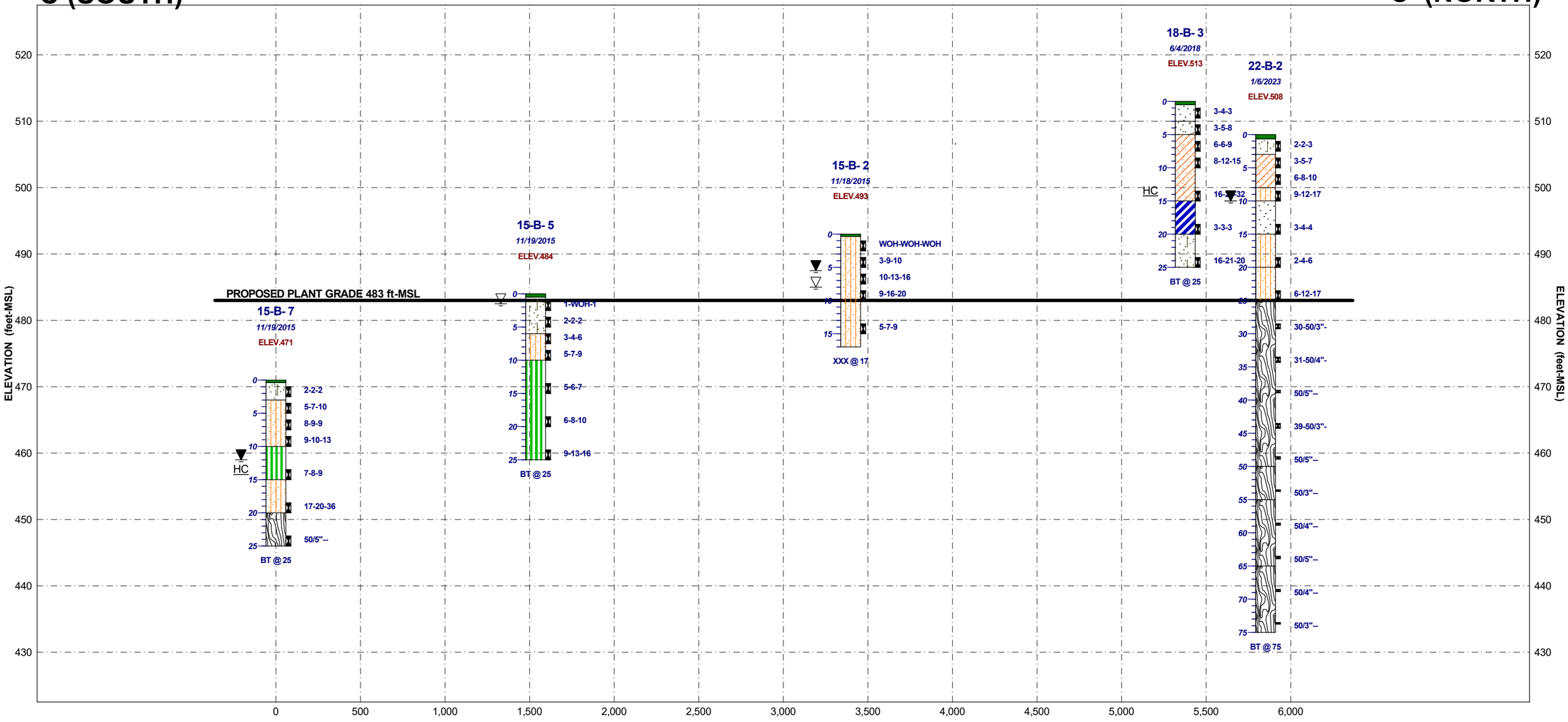
The depicted stratigraphy is shown for illustrative purposes only and is not warranted. Separations between different strata may be gradual and likely vary considerably from those shown. Profiles between nearby borings have been estimated using reasonable engineering care and judgment. The actual subsurface conditions will vary between boring locations.

SUBSURFACE PROFILE B-B'

PROJECT: Project Connect
LOCATION: Blythewood, Richland County, South Carolina
FIGURE: 5

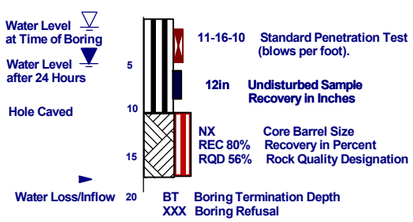
JOB NO: 22610625
DATE: 1/20/23

C (SOUTH) — C' (NORTH)



SOIL TEST BORINGS

B-3 Boring Number
123.0 Elevation at GS



LEGEND OF MATERIAL GRAPHICS FOR SOIL TEST BORINGS

- SP, Poorly-graded Sand
- SP-SM, Poorly-graded Sand with Silt
- SP-SC, Poorly-graded Sand with Clay
- SM, Silty Sand
- SC, Clayey Sand
- ML, Low Plasticity Silt
- CH, High Plasticity Clay
- PWR, Partially Weathered Rock

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SUBSURFACE PROFILE C-C'

PROJECT: Project Connect

LOCATION: Blythewood, Richland County, South Carolina

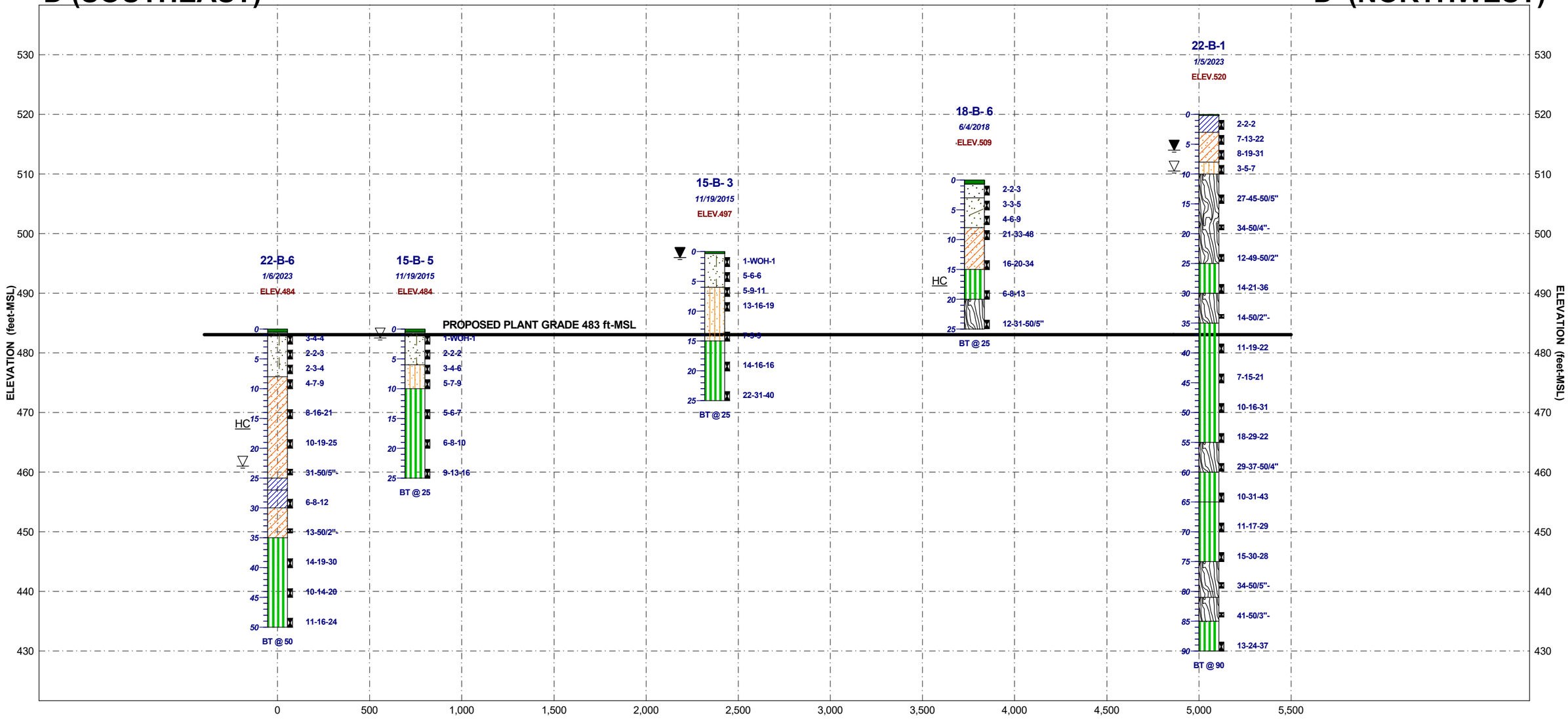
FIGURE: 6

JOB NO: 22610625

DATE: 1/20/23

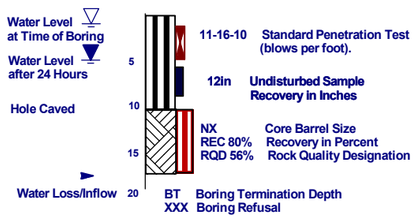
D (SOUTHEAST)

D' (NORTHWEST)



SOIL TEST BORINGS

B-3 Boring Number
123.0 Elevation at GS



LEGEND OF MATERIAL GRAPHICS FOR SOIL TEST BORINGS

- SP, Poorly-graded Sand
- SP-SM, Poorly-graded Sand with Silt
- SP-SC, Poorly-graded Sand with Clay
- SM, Silty Sand
- SC, Clayey Sand
- ML, Low Plasticity Silt
- CL, Low Plasticity Clay
- PWR, Partially Weathered Rock

The depicted stratigraphy is shown for illustrative purposes only and is not warranted. Separations between different strata may be gradual and likely vary considerably from those shown. Profiles between nearby borings have been estimated using reasonable engineering care and judgment. The actual subsurface conditions will vary between boring locations.

SUBSURFACE PROFILE D-D'

PROJECT: Project Connect

LOCATION: Blythewood, Richland County, South Carolina

FIGURE: 7

JOB NO: 22610625

DATE: 1/20/23

Appendix II-A – Current Field Data

LEGEND TO SOIL CLASSIFICATION AND SYMBOLS

SOIL TYPES

(Shown in Graphic Log)


Fill


Asphalt


Concrete


Topsoil


Gravel


Sand


Silt


Clay


Organic


Silty Sand


Clayey Sand


Sandy Silt


Clayey Silt


Sandy Clay


Silty Clay


Partially Weathered Rock


Cored Rock

WATER LEVELS

(Shown in Water Level Column)

▽ = Water Level At Termination of Boring
▼ = Water Level Taken After 24 Hours
◄ = Loss of Drilling Water
HC = Hole Cave

CONSISTENCY OF COHESIVE SOILS

CONSISTENCY	STD. PENETRATION RESISTANCE BLOWS/FOOT
Very Soft	0 to 2
Soft	3 to 4
Firm	5 to 8
Stiff	9 to 15
Very Stiff	16 to 30
Hard	31 to 50
Very Hard	Over 50

RELATIVE DENSITY OF COHESIONLESS SOILS

RELATIVE DENSITY	STD. PENETRATION RESISTANCE BLOWS/FOOT
Very Loose	0 to 4
Loose	5 to 10
Medium Dense	11 to 30
Dense	31 to 50
Very Dense	Over 50

SAMPLER TYPES

(Shown in Samples Column)


Shelby Tube


Split Spoon


Rock Core


No Recovery

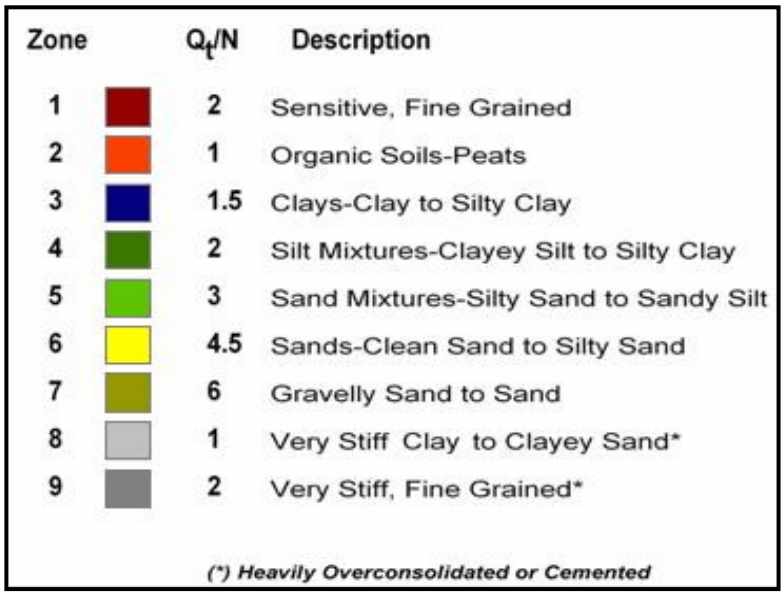
TERMS

Standard Penetration Resistance - The Number of Blows of 140 lb. Hammer Falling 30 in. Required to Drive 1.4 in. I.D. Split Spoon Sampler 1 Foot. As Specified in ASTM D-1586.

REC - Total Length of Rock Recovered in the Core Barrel Divided by the Total Length of the Core Run Times 100%.

RQD - Total Length of Sound Rock Segments Recovered that are Longer Than or Equal to 4" (mechanical breaks excluded) Divided by the Total Length of the Core Run Times 100%.

CPT Soil Classification Legend



Robertson's Soil Behavior Type (SBT), 1990			
Group #	**Description**	**Ic**	
		Min	**Max**
1	Sensitive, fine grained	N/A	
2	Organic soils - peats	3.60	N/A
3	Clays - silty clay to clay	2.95	3.60
4	Silt mixtures - clayey silt to silty clay	2.60	2.95
5	Sand mixtures - silty sand to sandy silt	2.05	2.60
6	Sands - clean sand to silty sand	1.31	2.05
7	Gravelly sand to dense sand	N/A	1.31
8	Very stiff sand to clayey sand (High OCR or cemented)	N/A	
9	Very stiff, fine grained (High OCR or cemented)	N/A	

Soil behavior type is based on empirical data and may not be representative of soil classification based on plasticity and grain size distribution.

Relative Density and Consistency Table			
SANDS		SILTS and CLAYS	
Cone Tip Stress, qt (tsf)	Relative Density	Cone Tip Stress, qt (tsf)	Consistency
Less than 20	Very Loose	Less than 5	Very Soft
20 - 40	Loose	5 - 15	Soft to Firm
40 - 120	Medium Dense	15 - 30	Stiff
120 - 200	Dense	30 - 60	Very Stiff
Greater than 200	Very Dense	Greater than 60	Hard

PROJECT: **Project Connect**
Blythewood, Richland County, South Carolina
S&ME Project No. 22610625

BORING LOG 22-B-1

DATE DRILLED: **1/5/23**	ELEVATION: **520.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **90.0 ft**
DRILLER: **H. Wessinger**	WATER LEVEL: **9.5' ATD, 6' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **JPL**
SAMPLING METHOD: **Split spoon**	NORTHING: **863729** / EASTING: **1999890**
DRILLING METHOD: **2¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation provided by Thomas & Hutton. No formal survey performed by S&ME or T&H.

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
	SURFACE MATERIALS- TOPSOIL - roughly 2 inches.								
	COASTAL PLAIN- SANDY LEAN CLAY (CL) - mostly medium plasticity fines, some fine to medium sands, moist, brown, soft.		SS-1		2	2	2		4
5	**CLAYEY SAND (SC)** - mostly fine to medium sands, little medium plasticity fines, moist, mottled red, light brown and white, dense.	515.0	SS-2		7	13	22		35
			SS-3		8	19	31		50
	SILTY SAND (SM) - mostly fine to coarse sands, some low plasticity fines, trace mica, moist, white, medium dense.		SS-4		3	5	7		12
10	**PIEDMONT RESIDUUM - PARTIALLY WEATHERED ROCK (PWR) - SILT WITH SAND (ML)** - mostly low plasticity fines, little fine to medium sands, dry to moist, laminated white and yellow, very hard.	510.0							
			SS-5		27	45	50/5"		50/5"
15	- - - @ 15 feet - few fine rock fragments.	505.0							
			SS-6		34	50/4"			50/4"
20	- - - @ 20 feet - absent rock fragments, laminated pale purple, white and purple.	500.0							
			SS-7		12	49	50/2"		50/2"
25		495.0							

S&ME BORING LOG 22610625 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 1/20/23

NOTES:

1. ***THIS LOG IS ONLY A PORTION OF A REPORT PREPARED FOR THE NAMED PROJECT AND MUST ONLY BE USED TOGETHER WITH THAT REPORT.***
2. ***BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1586.***
3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT: **Project Connect**
Blythewood, Richland County, South Carolina
S&ME Project No. 22610625

BORING LOG 22-B-1

DATE DRILLED: **1/5/23**	ELEVATION: **520.0 ft**	**NOTES:** Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation provided by Thomas & Hutton. No formal survey performed by S&ME or T&H.
DRILL RIG: **CME 550**	BORING DEPTH: **90.0 ft**	
DRILLER: **H. Wessinger**	WATER LEVEL: **9.5' ATD, 6' 24 hr**	
HAMMER TYPE: **Automatic**	LOGGED BY: **JPL**	
SAMPLING METHOD: **Split spoon**	NORTHING: **863729**	EASTING: **1999890**
DRILLING METHOD: **2¼" H.S.A.**		

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
30	**PIEDMONT RESIDUUM - SILT WITH SAND (ML)** - mostly low plasticity fines, little fine sands, dry to moist, laminated pale brown, yellow and light gray, very hard. *(continued)*	490.0	SS-8		14	21	36		57
	PARTIALLY WEATHERED ROCK (PWR) - SANDY SILT (ML) - mostly low plasticity fines, some fine sands, dry to moist, laminated light gray, gray and yellow, very hard.		SS-9		14	50/2"			50/2"
35	**PIEDMONT RESIDUUM - SILT WITH SAND (ML)** - mostly low plasticity fines, little fine sands, moist, laminated brown, yellow and white, hard.	485.0							
40	- - - @ 40 feet - laminated light gray, light brown, gray and white.	480.0	SS-10		11	19	22		41
45		475.0	SS-11		7	15	21		36
50		470.0	SS-12		10	16	31		47

10 20 30 60 80

S&ME BORING LOG 22610625 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 1/20/23

NOTES:

1. ***THIS LOG IS ONLY A PORTION OF A REPORT PREPARED FOR THE NAMED PROJECT AND MUST ONLY BE USED TOGETHER WITH THAT REPORT.***
2. ***BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1586.***
3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
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PROJECT: **Project Connect**
Blythewood, Richland County, South Carolina
S&ME Project No. 22610625

BORING LOG 22-B-1

DATE DRILLED: **1/5/23**	ELEVATION: **520.0 ft**	**NOTES:** Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation provided by Thomas & Hutton. No formal survey performed by S&ME or T&H.
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DRILLER: **H. Wessinger**	WATER LEVEL: **9.5' ATD, 6' 24 hr**	
HAMMER TYPE: **Automatic**	LOGGED BY: **JPL**	
SAMPLING METHOD: **Split spoon**	NORTHING: **863729**	EASTING: **1999890**
DRILLING METHOD: **2¼" H.S.A.**		

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
55	**PARTIALLY WEATHERED ROCK (PWR) - SILT WITH SAND (ML)** - mostly low plasticity fines, little fine sands, dry to moist, laminated red and brown, very hard.	465.0	SS-13		18	29	22		51
60	**PIEDMONT RESIDUUM - SILT WITH SAND (ML)** - mostly low plasticity fines, little fine sands, dry to moist, laminated red, light brown and gray, very hard.	460.0	SS-14		29	37	50/4"		50/4"
65	**SILT (ML)** - mostly low plasticity fines, few fine sands, dry to moist, laminated red, white and light brown, hard.	455.0	SS-15		10	31	43		74
70	- - - @ 70 feet - very hard.	450.0	SS-16		11	17	29		46
75	**PARTIALLY WEATHERED ROCK (PWR) - SANDY SILT (ML)** - mostly low plasticity fines, some fine to medium sands, dry to moist, laminated red, light brown and white, very hard.	445.0	SS-17		15	30	28		58
80		440.0	SS-18		34	50/5"			50/5"

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 22610625 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 1/20/23

NOTES:

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3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT: **Project Connect**
Blythewood, Richland County, South Carolina
S&ME Project No. 22610625

BORING LOG 22-B-1

DATE DRILLED: **1/5/23**	ELEVATION: **520.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **90.0 ft**
DRILLER: **H. Wessinger**	WATER LEVEL: **9.5' ATD, 6' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **JPL**
SAMPLING METHOD: **Split spoon**	NORTHING: **863729** / EASTING: **1999890**
DRILLING METHOD: **2¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation provided by Thomas & Hutton. No formal survey performed by S&ME or T&H.

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
85	**PIEDMONT RESIDUUM - SILT WITH SAND (ML)** - mostly low plasticity fines, little fine to medium sands, trace fine rock fragments, dry to moist, dark purple with white laminations, very hard.	435.0	SS-19		41	50/3"		50/3"	
90	Boring terminated at 90 ft	430.0	SS-20		13	24	37		61

S&ME BORING LOG 22610625 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 1/20/23

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PROJECT: **Project Connect**
Blythewood, Richland County, South Carolina
S&ME Project No. 22610625

BORING LOG 22-B-2

DATE DRILLED: **1/6/23**	ELEVATION: **508.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **75.0 ft**
DRILLER: **H. Wessinger**	WATER LEVEL: **10' ATD, 10' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RCB**
SAMPLING METHOD: **Split spoon**	NORTHING: **864425** / EASTING: **2003119**
DRILLING METHOD: **2¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation provided by Thomas & Hutton. No formal survey performed by S&ME or T&H.

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
	SURFACE MATERIALS- TOPSOIL - roughly 8 inches.								
	COASTAL PLAIN- POORLY GRADED SAND WITH SILT (SP-SM) - mostly fine to medium sands, few low plasticity fines, moist, pale brown, loose.		SS-1		2	2	3		5
			SS-2		3	5	7		12
5	**CLAYEY SAND (SC)** - mostly fine to medium sands, some low to medium plasticity fines, moist, mottled gray, orange and tan, medium dense.	503.0							
			SS-3		6	8	10		18
	SILTY SAND (SM) - mostly fine sands, some low plasticity fines, dry to moist, mottled red, light gray and tan, medium dense.		SS-4		9	12	17		29
10	**POORLY GRADED SAND (SP)** - mostly medium to coarse sands, trace low plasticity fines, wet, orangish-yellow, loose.	498.0							
			SS-5		3	4	4		8
15	**SILTY SAND (SM)** - mostly fine sands, some low plasticity fines, moist, light gray to white, loose.	493.0							
			SS-6		2	4	6		10
20	**PIEDMONT RESIDUUM - SILTY SAND (SM)** - mostly fine sands, some low plasticity fines, moist, light tan to white, medium dense.	488.0							
			SS-7		6	12	17		29
25		483.0							

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10, 20, 30, 60, 80

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3. *STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.*
4. *WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.*

S&ME BORING LOG 22610625 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 1/20/23

PROJECT: **Project Connect**
Blythewood, Richland County, South Carolina
S&ME Project No. 22610625

BORING LOG 22-B-2

DATE DRILLED: **1/6/23**	ELEVATION: **508.0 ft**	**NOTES:** Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation provided by Thomas & Hutton. No formal survey performed by S&ME or T&H.
DRILL RIG: **CME 550**	BORING DEPTH: **75.0 ft**	
DRILLER: **H. Wessinger**	WATER LEVEL: **10' ATD, 10' 24 hr**	
HAMMER TYPE: **Automatic**	LOGGED BY: **RCB**	
SAMPLING METHOD: **Split spoon**	NORTHING: **864425**	EASTING: **2003119**
DRILLING METHOD: **2¼" H.S.A.**		

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
30	**PARTIALLY WEATHERED ROCK (PWR) - SILT WITH SAND (ML)** - mostly low plasticity fines, little fine sands, moist, white, very hard, relict rock structure. *(continued)*								
	- - - @ 30 feet - pale pink to white.	478.0	SS-8		30	50/3"			50/3"
35		473.0	SS-9		31	50/4"			50/4"
			SS-10		50/5"				50/5"
40	- - - @ 40 feet - light gray.	468.0							
			SS-11		39	50/3"			50/3"
45	- - - @ 45 feet - gray.	463.0							
			SS-12		50/5"				50/5"
50	**SILTY SAND (SM)** - mostly fine to medium sands, some low plasticity fines, trace rock fragments, dry to moist, olive, very dense.	458.0							
			SS-13		50/3"				50/3"

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 22610625 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 1/20/23

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PROJECT: **Project Connect**
Blythewood, Richland County, South Carolina
S&ME Project No. 22610625

BORING LOG 22-B-2

DATE DRILLED: **1/6/23**	ELEVATION: **508.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **75.0 ft**
DRILLER: **H. Wessinger**	WATER LEVEL: **10' ATD, 10' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RCB**
SAMPLING METHOD: **Split spoon**	NORTHING: **864425** / EASTING: **2003119**
DRILLING METHOD: **2¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation provided by Thomas & Hutton. No formal survey performed by S&ME or T&H.

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
55	**SANDY SILT (ML)** - mostly low plasticity fines, some fine sands, dry to moist, light gray, very hard.	453.0					
			SS-14		50/4"		50/4"
60	- - - @ 60 feet - mottled light gray and brown, relict rock structure.	448.0					
			SS-15		50/5"		50/5"
65	**SILT WITH SAND (ML)** - mostly low plasticity fines, little fine sands, dry, light gray and brown, very hard, relict rock structure.	443.0					
			SS-16		50/4"		50/4"
70	- - - @ 70 feet - pale brown.	438.0					
			SS-17		50/3"		50/3"
75	Boring terminated at 75 ft	433.0					

S&ME BORING LOG 22610625 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 1/20/23

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PROJECT: **Project Connect**
Blythewood, Richland County, South Carolina
S&ME Project No. 22610625

BORING LOG 22-B-3

DATE DRILLED: **1/5/23**	ELEVATION: **514.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **63.0 ft**
DRILLER: **H. Wessinger**	WATER LEVEL: **19' ATD, 10' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **JPL**
SAMPLING METHOD: **Split spoon**	NORTHING: **861509** / EASTING: **1998471**
DRILLING METHOD: **2¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation provided by Thomas & Hutton. No formal survey performed by S&ME or T&H.

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
	SURFACE MATERIALS- TOPSOIL - roughly 6 inches.							
	COASTAL PLAIN- SILTY SAND (SM) - mostly fine to medium sands, little low plasticity fines, moist, light brown, very loose.		SS-1		1	1	2	3
	POORLY GRADED SAND WITH SILT (SP-SM) - mostly fine to medium sands, few low plasticity fines, moist to wet, light brown, loose.		SS-2		3	3	5	8
5		509.0						
	CLAYEY SAND (SC) - mostly fine to coarse sands, some medium plasticity fines, moist, orange with white mottles, medium dense.		SS-3		8	10	16	26
	SILTY SAND (SM) - mostly fine to medium sands, some low plasticity fines, moist, orange, very dense.		SS-4		17	39	46	85
10		504.0						
	CLAYEY SAND (SC) - mostly fine to medium sands, some medium plasticity fines, moist, light orange, dense.							
			SS-5		12	14	30	44
15		499.0						
	- - - @ 15 feet - mostly fine to coarse sands, trace mica, white with light brown mottles.							
			SS-6		7	12	19	31
20		494.0						
	PIEDMONT RESIDUUM - SILT (ML) - mostly low plasticity fines, trace fine sands, dry to moist, stratified pale brown, yellow and light brown, very hard.							
			SS-7		17	21	30	51
25		489.0						
	SILT WITH SAND (ML) - mostly low plasticity fines, little fine to coarse sands, dry to most, stratified pale brown, gray and yellow, very hard.							

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS — 10 20 30 60 80

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S&ME BORING LOG 22610625 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 1/20/23

PROJECT: **Project Connect**
Blythewood, Richland County, South Carolina
S&ME Project No. 22610625

BORING LOG 22-B-3

DATE DRILLED: **1/5/23** | ELEVATION: **514.0 ft**
DRILL RIG: **CME 550** | BORING DEPTH: **63.0 ft**
DRILLER: **H. Wessinger** | WATER LEVEL: **19' ATD, 10' 24 hr**
HAMMER TYPE: **Automatic** | LOGGED BY: **JPL**
SAMPLING METHOD: **Split spoon** | NORTHING: **861509** | EASTING: **1998471**
DRILLING METHOD: **2¼" H.S.A.**

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation provided by Thomas & Hutton. No formal survey performed by S&ME or T&H.

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
30	**SILT WITH SAND (ML)** - mostly low plasticity fines, little fine to coarse sands, dry to most, stratified pale brown, gray and yellow, very hard. *(continued)* - - - @ 30 feet - trace fine rock fragments, laminated light brown, gray and brown.	484.0	SS-8		12	37	30		67
35	- - - @ 35 feet - absent rock fragments, laminated white, light gray and brown.	479.0	SS-9		10	21	30		51
40	**PARTIALLY WEATHERED ROCK (PWR) - SANDY SILT (ML)** - mostly low plasticity fines, some fine to medium sands, dry to moist, laminated gray and brown, very hard, relict rock structure.	474.0	SS-10		9	17	22		39
45		469.0	SS-11		12	31	50/4"		50/4"
50	- - - @ 50 feet - mostly medium plasticity fines, light blusih-gray.	464.0	SS-12		29	50/5"			50/5"

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 22610625 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 1/20/23

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PROJECT: **Project Connect**
Blythewood, Richland County, South Carolina
S&ME Project No. 22610625

BORING LOG 22-B-3

DATE DRILLED: **1/5/23**	ELEVATION: **514.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **63.0 ft**
DRILLER: **H. Wessinger**	WATER LEVEL: **19' ATD, 10' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **JPL**
SAMPLING METHOD: **Split spoon**	NORTHING: **861509** / EASTING: **1998471**
DRILLING METHOD: **2¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation provided by Thomas & Hutton. No formal survey performed by S&ME or T&H.

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS 10 20 30 60 80	N VALUE
55				459.0	SS-13		50/4"			50/4"	
					SS-14		50/2"			50/2"	
60				454.0							
		Boring terminated at 63 ft due to auger refusal									

S&ME BORING LOG 22610625 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 1/20/23

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PROJECT: **Project Connect**
Blythewood, Richland County, South Carolina
S&ME Project No. 22610625

BORING LOG 22-B-4

DATE DRILLED: **1/6/23** | ELEVATION: **482.0 ft**

DRILL RIG: **CME 550** | BORING DEPTH: **50.0 ft**

DRILLER: **H. Wessinger** | WATER LEVEL: **37' ATD, 6' 24 hr**

HAMMER TYPE: **Automatic** | LOGGED BY: **RCB**

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation provided by Thomas & Hutton. No formal survey performed by S&ME or T&H.

SAMPLING METHOD: **Split spoon** | NORTHING: **861835** | EASTING: **2002913**

DRILLING METHOD: **2¼" H.S.A.**

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
	SURFACE MATERIALS- TOPSOIL - roughly 8 inches.								
	COASTAL PLAIN- POORLY GRADED SAND WITH SILT (SP-SM) - mostly fine to medium sands, few low plasticity fines, moist, brown, loose.		SS-1		2	3	3		6
5	**CLAYEY SAND (SC)** - mostly fine to medium sands, little low plasticity fines, moist, red, medium dense. - - - @ 5 feet - some low plasticity fines, dense.	477.0	SS-2		7	12	15		27
			SS-3		9	21	17		38
	SILT (ML) - mostly low plasticity fines, few fine sands, dry, white, very hard.		SS-4		17	50/2"			50/2"
10	**PIEDMONT RESIDUUM - PARTIALLY WEATHERED ROCK (PWR) - SILTY SAND (SM)** - mostly fine sands, some low plasticity fines, dry, light pale tan, very dense.	472.0	SS-5		50/2"				50/2"
15	**SILT WITH SAND (ML)** - mostly low plasticity fines, little fine sands, dry to moist, pale orange to pale tan, very hard.	467.0	SS-6		29	50/3"			50/3"
20	**PIEDMONT RESIDUUM - SILT WITH SAND (ML)** - mostly low plasticity fines, little fine to medium sands, moist, very pale tan, very hard, relict rock structure.	462.0							
			SS-7		33	40	44		84
25	**PARTIALLY WEATHERED ROCK (PWR) - SILT (ML)** - mostly low plasticity fines, few fine sands, dry, very pale orange, very hard.	457.0							

WATER LEVEL ▼

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 22610625 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 1/20/23

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4. *WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.*

PROJECT: **Project Connect**
Blythewood, Richland County, South Carolina
S&ME Project No. 22610625

BORING LOG 22-B-4

DATE DRILLED: **1/6/23**	ELEVATION: **482.0 ft**	**NOTES:** Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation provided by Thomas & Hutton. No formal survey performed by S&ME or T&H.
DRILL RIG: **CME 550**	BORING DEPTH: **50.0 ft**	
DRILLER: **H. Wessinger**	WATER LEVEL: **37' ATD, 6' 24 hr**	
HAMMER TYPE: **Automatic**	LOGGED BY: **RCB**	
SAMPLING METHOD: **Split spoon**	NORTHING: **861835**	EASTING: **2002913**
DRILLING METHOD: **2¼" H.S.A.**		

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
30		452.0	SS-8		31	50/4"			50/4"
35	- - - @ 35 feet - light grayish-tan.	447.0	SS-9		22	35	50/2"		50/2"
40	- - - @ 40 feet - light gray, relict rock structure.	442.0	SS-10		30	50/4"			50/4"
			SS-11		50/5"				50/5"
45		437.0	SS-12		29	50/3"			50/3"
50	Boring terminated at 50 ft	432.0							

WATER LEVEL: ▽

S&ME BORING LOG 22610625 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 1/20/23

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PROJECT: **Project Connect**
Blythewood, Richland County, South Carolina
S&ME Project No. 22610625

BORING LOG 22-B-5

DATE DRILLED: **1/5/23**	ELEVATION: **470.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **35.0 ft**
DRILLER: **H. Wessinger**	WATER LEVEL: **2.5' ATD, 0' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **JPL**
SAMPLING METHOD: **Split spoon**	NORTHING: **859684** / EASTING: **1999908**
DRILLING METHOD: **2¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation provided by Thomas & Hutton. No formal survey performed by S&ME or T&H.

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
0	**SURFACE MATERIALS- TOPSOIL** - roughly 8 inches.								
	COASTAL PLAIN- CLAYEY SAND (SC) - mostly fine to medium sands, some medium plasticity fines, moist, gray, loose. - - - @ 3 feet - light gray.		SS-1		1	2	4		6
			SS-2		2	3	5		8
5		465.0	SS-3		3	4	5		9
	SILTY SAND (SM) - mostly fine sands, some low plasticity fines, trace mica, moist, pale gray, loose. - - - @ 8 feet - dry to moist, white, medium dense.		SS-4		4	4	8		12
10		460.0							
	PIEDMONT RESIDUUM - PARTIALLY WEATHERED ROCK (PWR) - SANDY SILT (ML) - mostly low plasticity fines, some fine to medium sands, trace fine rock fragments, dry to moist, laminated white and pale yellow, very hard. - - - @ 15 feet - laminated white, yellow and orange.		SS-5		12	29	50/4"		50/4"
15		455.0							
			SS-6		27	50/3"			50/3"
20	**PIEDMONT RESIDUUM - SANDY SILT (ML)** - mostly low plasticity fines, some fine to medium sands, dry to moist, white with pale yellow laminations, hard.	450.0							
			SS-7		10	16	20		36
25	- - - @ 25 feet - very stiff.	445.0							

S&ME BORING LOG 22610625 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 1/20/23

NOTES:

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2. ***BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1586.***
3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT: **Project Connect**
Blythewood, Richland County, South Carolina
S&ME Project No. 22610625

BORING LOG 22-B-5

DATE DRILLED: **1/5/23**	ELEVATION: **470.0 ft**	**NOTES:** Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation provided by Thomas & Hutton. No formal survey performed by S&ME or T&H.
DRILL RIG: **CME 550**	BORING DEPTH: **35.0 ft**	
DRILLER: **H. Wessinger**	WATER LEVEL: **2.5' ATD, 0' 24 hr**	
HAMMER TYPE: **Automatic**	LOGGED BY: **JPL**	
SAMPLING METHOD: **Split spoon**	NORTHING: **859684**	EASTING: **1999908**
DRILLING METHOD: **2¼" H.S.A.**		

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS (10 20 30 60 80)	N VALUE
30	- - - @ 30 feet - laminated light gray, yellow and white, hard.	440.0	SS-8		8	12	14		26
35	Boring terminated at 35 ft	435.0	SS-9		7	14	24		38

S&ME BORING LOG 22610625 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 1/20/23

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3. *STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.*
4. *WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.*

PROJECT: **Project Connect**
Blythewood, Richland County, South Carolina
S&ME Project No. 22610625

BORING LOG 22-B-6

DATE DRILLED: **1/6/23**	ELEVATION: **484.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **50.0 ft**
DRILLER: **H. Wessinger**	WATER LEVEL: **23' ATD**
HAMMER TYPE: **Automatic**	LOGGED BY: **RCB**
SAMPLING METHOD: **Split spoon**	NORTHING: **859773** / EASTING: **2003040**
DRILLING METHOD: **2¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation provided by Thomas & Hutton. No formal survey performed by S&ME or T&H.

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
	SURFACE MATERIALS- TOPSOIL - roughly 6 inches.								
	COASTAL PLAIN- POORLY GRADED SAND WITH SILT (SP-SM) - mostly fine to medium sands, few low plasticity fines, moist, brown, loose.			SS-1		3	4	4	8
	- - - @ 3 feet - light orangish-brown.			SS-2		2	2	3	5
5	- - - @ 5 feet - light brown.		479.0	SS-3		2	3	4	7
	CLAYEY SAND (SC) - mostly fine to medium sands, some low plasticity fines, moist, mottled brown, orange and light gray, medium dense.			SS-4		4	7	9	16
10	- - - @ 10 feet - mostly fine sands, little low plasticity fines, light orange, dense.		474.0						
				SS-5		8	16	21	37
15	- - - @ 15 feet - mostly fine to medium sands, some low plasticity fines, mottled light orange and tan.	HC	469.0						
				SS-6		10	19	25	44
20	- - - @ 20 feet - mostly medium to coarse sands, some medium plasticity fines, yellow, tan and white, very dense.	▽	464.0						
				SS-7		31	50/5"		50/5"
25	**SANDY LEAN CLAY (CL)** - mostly medium plasticity fines, some medium to coarse sands, moist, white, very stiff.		459.0						

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS
10 20 30 60 80

S&ME BORING LOG 22610625 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 1/20/23

NOTES:

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2. ***BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1586.***
3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT: **Project Connect**
Blythewood, Richland County, South Carolina
S&ME Project No. 22610625

BORING LOG 22-B-6

DATE DRILLED: **1/6/23**	ELEVATION: **484.0 ft**	**NOTES:** Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation provided by Thomas & Hutton. No formal survey performed by S&ME or T&H.
DRILL RIG: **CME 550**	BORING DEPTH: **50.0 ft**	
DRILLER: **H. Wessinger**	WATER LEVEL: **23' ATD**	
HAMMER TYPE: **Automatic**	LOGGED BY: **RCB**	
SAMPLING METHOD: **Split spoon**	NORTHING: **859773**	EASTING: **2003040**
DRILLING METHOD: **2¼" H.S.A.**		

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
30	**CLAYEY SAND (SC)** - mostly medium to coarse sands, some medium plasticity fines, moist to wet, light tan, yellow and white, very dense.	454.0	SS-8		6	8	12	20
			SS-9		13	50/2"		50/2"
35	**PIEDMONT RESIDUUM - SANDY SILT (ML)** - mostly low plasticity fines, some fine sands, dry to moist, pale tan, hard.	449.0						
		444.0	SS-10		14	19	30	49
40								
45		439.0	SS-11		10	14	20	34
		434.0	SS-12		11	16	24	40
50	Boring terminated at 50 ft							

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS
10 20 30 60 80

S&ME BORING LOG 22610625 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 1/20/23

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PROJECT: **Project Connect**
Blythewood, Richland County, South Carolina
S&ME Project No. 22610625

BORING LOG 22-B-7

DATE DRILLED: **1/6/23** | ELEVATION: **488.0 ft**

DRILL RIG: **CME 550** | BORING DEPTH: **17.0 ft**

DRILLER: **H. Wessinger** | WATER LEVEL: **11' ATD, 6.5' 24 hr**

HAMMER TYPE: **Automatic** | LOGGED BY: **RCB**

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation provided by Thomas & Hutton. No formal survey performed by S&ME or T&H.

SAMPLING METHOD: **Split spoon** | NORTHING: **858543** | EASTING: **2000801**

DRILLING METHOD: **2¼" H.S.A.**

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
	SURFACE MATERIALS- TOPSOIL - roughly 4 inches.							
	COASTAL PLAIN- POORLY GRADED SAND WITH SILT (SP-SM) - mostly fine to medium sands, few low plasticity fines, moist, brown, loose.		SS-1		2	2	3	5
5	**CLAYEY SAND (SC)** - mostly fine to medium sands, little low plasticity fines, moist, brown, medium dense.	483.0	SS-2		3	4	7	11
	- - - @ 5 feet - some low plasticity fines, mottled brown and orange.		SS-3		5	6	9	15
	- - - @ 8 feet - light gray.		SS-4		9	10	13	23
10	**PIEDMONT RESIDUUM - PARTIALLY WEATHERED ROCK (PWR) - SANDY SILT (ML)** - mostly low plasticity fines, some fine sands, dry to moist, mottled tan and light gray, very hard.	478.0						
			SS-5		50/4"			50/4"
15		473.0						
	Boring terminated at 17 ft due to auger refusal							

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS — 10 20 30 60 80

S&ME BORING LOG 22610625 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 1/20/23

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PROJECT: **Project Connect (Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG 23-B-1

DATE DRILLED: **2/22/23**	ELEVATION: **518.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **85.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **11.9' ATD, 6.8' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **863176** / EASTING: **1999766**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
	SURFACE MATERIAL - TOPSOIL - 12 inches							
	COASTAL PLAIN - SILTY SAND (SM) - mostly fine sands, some low plasticity fines, moist, light brown, brown, very loose.		SS-1		1/12"	0	1	1
			SS-2		1/12"	0	2	2
5	**CLAYEY SAND (SC)** - mostly fine sands, some low to medium plasticity fines, moist, light brown with orange mottles, very loose.	513.0						
	- - - @ 6 feet - mostly fine to medium sands, some medium plasticity fines, mottled light brown, gray, red, medium dense.		SS-3		5	7	12	19
	- - - @ 8.5 feet - some low to medium plasticity fines, gray with red and light brown mottles, dense.		SS-4		7	17	19	36
10		508.0						
	PIEDMONT RESIDUUM - SILT (ML) - mostly low plasticity fines, trace fine sands, dry, yellow with white mottles, hard.		SS-5		5	11	20	31
15		503.0						
	- - - @ 18.5 feet - few fine sands, moist, yellow with grayish white mottles, very hard.		SS-6		20	40	50	90
20		498.0						
	ELASTIC SILT (MH) - mostly medium to high plasticity fines, few fine sands, dry to moist, grayish white, very stiff.		SS-7		6	11	15	26
25		493.0						

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS
10 20 30 60 80

S&ME BORING LOG 22610625 PH120 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

NOTES:

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3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT: **Project Connect (Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG 23-B-1

DATE DRILLED: **2/22/23**	ELEVATION: **518.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **85.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **11.9' ATD, 6.8' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **863176** / EASTING: **1999766**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
30	**SILT (ML)** - mostly low to medium plasticity fines, few fine sands, dry, gray with light pink mottles, hard.	488.0	SS-8		10	17	27		44
35	**PARTIALLY WEATHERED ROCK (PWR) - SILT (ML)** - mostly low to medium plasticity fines, few fine sands, dry, gray, very hard.	483.0	SS-9		16	36	50/5"		50/5"
40	- - - @ 38.5 feet - light greenish gray with light brown mottles.	478.0	SS-10		20	50/5"			50/5"
45	- - - @ 43.5 feet - trace fine to coarse partially weathered lithics, dry to moist, light greenish gray with yellow mottles.	473.0	SS-11		20	50/5"			50/5"
50	- - - @ 48.5 feet - greenish gray with yellow and light pink mottles.	468.0	SS-12		16	30	50/5"		50/5"

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10, 20, 30, 60, 80

S&ME BORING LOG 22610625 PH120 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

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3. *STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.*
4. *WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.*

PROJECT: **Project Connect (Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG 23-B-1

DATE DRILLED: **2/22/23**	ELEVATION: **518.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **85.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **11.9' ATD, 6.8' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **863176** / EASTING: **1999766**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
55	**ELASTIC SILT (MH)** - mostly medium to high plasticity fines, few fine sands, dry, laminated greenish gray with yellow mottles, very hard. *(continued)*	463.0	SS-13		20	50/5"		50/5"	
60	**PIEDMONT RESIDUUM - SILT WITH SAND (ML)** - mostly medium plasticity fines, little fine sands, dry, yellow with light brown mottles, very hard.	458.0	SS-14		16	26	35		61
65	**ELASTIC SILT (MH)** - mostly medium to high plasticity fines, few fine sands, dry, yellow with light brown mottles, hard.	453.0	SS-15		10	15	22		37
70	- - - @ 68.5 feet - laminated yellow and grayish white.	448.0	SS-16		9	14	22		36
75	- - - @ 73.5 feet - laminated greenish yellow with light brown.	443.0	SS-17		8	13	29		42
80	**PARTIALLY WEATHERED ROCK (PWR) - ELASTIC SILT (MH)** - mostly medium to high plasticity fiens, few fine sands, dry, laminated greenish yellow with llight brown, very hard.	438.0	SS-18		13	23	50/5"		50/5"

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 22610625 PH120 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

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3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT: **Project Connect (Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG 23-B-1

DATE DRILLED: **2/22/23**	ELEVATION: **518.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **85.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **11.9' ATD, 6.8' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **863176** EASTING: **1999766**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
		- - - @ 83.5 feet - laminated pale grayish green.	HC		SS-19		50/4"			50/4"	
85		Boring terminated at 85 ft		433.0							

S&ME BORING LOG 22610625 PH120 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

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3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT: **Project Connect (Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG 23-B-2

DATE DRILLED: **2/22/23**	ELEVATION: **508.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **75.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **14' ATD, 5.4' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **863300** / EASTING: **2002143**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
	SURFACE MATERIAL - TOPSOIL - 4 inches									
	COASTAL PLAIN - SILTY SAND (SM) -mostly fine to medium sands, little low plasticity fines, moist, brown, light brown, very loose.			SS-1		1/12"	0	2		2
	- - - @ 3.5 feet - light brown, loose.			SS-2		2	2	3		5
5		▼	503.0	SS-3		6	13	15		28
	CLAYEY SAND (SC) - mostly fine to medium sands, some low to medium plasticity fines, moist, mottled gray, red, light brown, medium dense.			SS-4		12	22	20		42
	- - - @ 8.5 feet - red, gray, dense.									
10			498.0							
	- - - @ 13.5 feet - mostly fine sands, gray with light brown and red mottles, medium dense.	▽		SS-5		14	14	16		30
15			493.0							
	SILTY SAND (SM) - mostly fine to medium sands, some low to medium plasticity fines, moist to wet, grayish white with light brown mottles, dense.	HC		SS-6		14	15	16		31
20			488.0							
	PIEDMONT RESIDUUM - SILT (ML) - mostly low plasticity fines, trace fine sands, dry, white with yellow mottles, very stiff.			SS-7		6	8	16		24
25			483.0							

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 22610625 PH120 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

NOTES:

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3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT:	**Project Connect (Added Locations)** **Blythewood, South Carolina** **S&ME Project No. 22610625**	**BORING LOG 23-B-2**
DATE DRILLED: **2/22/23**	ELEVATION: **508.0 ft**	**NOTES:** Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME
DRILL RIG: **CME 550**	BORING DEPTH: **75.0 ft**	
DRILLER: **L. Shrader**	WATER LEVEL: **14' ATD, 5.4' 24 hr**	
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**	
SAMPLING METHOD: **Split spoon**	NORTHING: **863300**	EASTING: **2002143**
DRILLING METHOD: **Mud Rotary**		

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
30	**PARTIALLY WEATHERED ROCK (PWR) - SILT (ML)** - mostly low plasticity fines, trace fine sands, dry, yellow with white mottle, very hard.	478.0	SS-8		21	45	50/5"		50/5"
35	- - - @ 33.5 feet - few fine sands, white with yellow mottles.	473.0	SS-9		10	25	50/5"		50/5"
			SS-10		50/5"				50/5"
40		468.0							
45	- - - @ 43.5 feet - yellow with dark yellow mottles.	463.0	SS-11		17	37	50/4"		50/4"
50	**PIEDMONT RESIDUUM - SILT (ML)** - mostly low plasticity fines, trace fine sands, dry, laminated red, light brown and white, very stiff.	458.0	SS-12		10	11	16		27

S&ME BORING LOG 22610625 PH120 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

NOTES:

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2. ***BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1586.***
3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT: **Project Connect (Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG 23-B-2

DATE DRILLED: **2/22/23**	ELEVATION: **508.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **75.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **14' ATD, 5.4' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **863300** / EASTING: **2002143**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
55	**ELASTIC SILT (MH)** - mostly medium to high plasticity fines, trace fine sands, dry, yellow with white mottles, very stiff. *(continued)*	453.0	SS-13		7	9	15		24
	- - - @ 58.5 feet - few fine sands, gray with dark gray mottles, stiff.	448.0	SS-14		2	5	7		12
65	**PARTIALLY WEATHERED ROCK (PWR) - ELASTIC SILT (MH)** - mostly medium to high plasticity fines, few fine sands, dry, gray with dark gray mottles, very hard.	443.0	SS-15		46	50/3"			50/3"
70	**SANDY FAT CLAY (CH)** - mostly medium to high plasticity fines, some fine to medium sands, trace fine gravel, gray, dark gray, very hard.	438.0	SS-16		50/4"				50/4"
75	**SANDY ELASTIC SILT WITH GRAVEL (MH)** - mostly medium to high plasticity fines, some fine to medium sands, little fine gravel, dark greenish gray, very hard.	433.0	SS-17		32	50/5"			50/5"
	Boring terminated at 75 ft								

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 22610625 PH120 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

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3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT: **Project Connect (Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG 23-B-3

DATE DRILLED: **2/22/23**	ELEVATION: **510.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **75.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **22' ATD, 31.7' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **863308** / EASTING: **2003165**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
	SURFACE MATERIAL - TOPSOIL - 3 inches								
	COASTAL PLAIN - SILTY SAND (SM) - mostly fine to medium sands, little low to medium plasticity fines, trace coarse sand, trace roots, moist, light brown with orange mottles, medium dense.		SS-1		4	7	9		16
	- - - @ 3.5 feet - some medium to high plasticity fines, brown, white with yellow mottles, loose.	505.0	SS-2		4	2	5		7
5	- - - @ 6 feet - little low to medium plasticity fines, light brown.		SS-3		2	2	4		6
	CLAYEY SAND (SC) - mostly fine sands, some medium plasticity fines, dry to moist, mottled gray, light brown, red, medium dense.	500.0	SS-4		3	7	11		18
10									
15	- - - @ 13.5 feet - mottled white, gray, red, dense.	495.0	SS-5		15	18	16		34
	SILTY SAND (SM) - mostly fine sands, some low plasticity fines, moist, yellow and orange with light brown mottles, dense.	490.0	SS-6		11	15	18		33
20									
	PIEDMONT RESIDUUM - SILT (ML) - mostly low plasticity fines, trace fine sands, dry, yellow with white mottles, very stiff.	485.0	SS-7		6	12	17		29
25									

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 22610625 PH120 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

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PROJECT: **Project Connect (Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG 23-B-3

DATE DRILLED: **2/22/23**	ELEVATION: **510.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **75.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **22' ATD, 31.7' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **863308** / EASTING: **2003165**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
30	- - - @ 28.5 feet - yellow with white and light pink mottles.	480.0	SS-8	6	7	12	19
35	**ELASTIC SILT (MH)** - mostly medium to high plasticity fines, few fine sands, dry, slightly laminated yellow, light pink, white, very stiff.	475.0	SS-9	6	8	11	19
40	- - - @ 38.5 feet - laminated white with yellow mottles.	470.0	SS-10	5	8	9	17
45	- - - @ 43.5 feet - hard.	465.0	SS-11	4	15	26	41
50	- - - @ 48.5 feet - laminated yellow, white, dark yellow.	460.0	SS-12	9	11	21	32

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS — 10 20 30 60 80

S&ME BORING LOG 22610625 PH120 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

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PROJECT: **Project Connect (Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG 23-B-3

DATE DRILLED: **2/22/23**	ELEVATION: **510.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **75.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **22' ATD, 31.7' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **863308** / EASTING: **2003165**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
55	**SILT WITH SAND (ML)** - mostly low plasticity fines, little fine to medium sands, few medium to coarse partially weathered lithics, dry, laminated yellow, white, brown, very stiff. *(continued)*		455.0	SS-13		5	12	17		29
60	**ELASTIC SILT (MH)** - mostly medium to high plasticity fines, few fine sands, dry, laminated dark brown, white, light brown, very stiff.		450.0	SS-14		4	8	14		22
	- - - @ 63.5 feet - laminated red, light brown, white, hard.									
65			445.0	SS-15		5	12	22		34
70	**SILT (ML)** - mostly low plasticity fines, few fine sands, dry , laminated brownish red, light brown, white, very hard.	HC	440.0	SS-16		12	28	48		76
75	**PARTIALLY WEATHERED ROCK (PWR) - SILT (ML)** - mostly low plasticity fines, few fine sands, dry , laminated brownish red, light brown, white, very hard.		435.0	SS-17		7	28	50/5"		50/5"
	Boring terminated at 75 ft									

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10, 20, 30, 60, 80

S&ME BORING LOG 22610625 PH120 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

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PROJECT: **Project Connect (Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG 23-B-4

DATE DRILLED: **2/23/23**	ELEVATION: **505.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **70.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **13' ATD, 1' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **862433** / EASTING: **1999604**
DRILLING METHOD: **3¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
	SURFACE MATERIAL - TOPSOIL - 6 inches									
	COASTAL PLAIN - CLAYEY SAND (SC) - mostly fine to medium sands, some medium plasticity fines, few coarse sands to fine gravel, moist, gray, dark gray with yellow mottles, loose.			SS-1		1	2	3		5
				SS-2		2	2	4		6
5	**SANDY SILT (ML)** - mostly low to medium plasticity fines, some fine sands, trace coarse sands, dry to moist, gray to white, firm.		500.0							
	PIEDMONT RESIDUUM - SILT (ML) - mostly low plasticity fines, few fine sands, dry, laminated white and gray, very stiff.	HC		SS-3		7	12	15		27
	- - - @ 8.5 feet - laminated white and gray with yellow mottles.			SS-4		5	8	10		18
10			495.0							
				SS-5		6	10	14		24
15			490.0							
	- - - @ 18.5 feet - laminated gray and white with yellow mottles, hard.			SS-6		8	13	30		43
20			485.0							
	- - - @ 23.5 feet - laminated purplish gray, gray and white, very hard.			SS-7		15	20	43		63
25			480.0							

S&ME BORING LOG 22610625 PH120 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

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4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT:	**Project Connect (Added Locations)** **Blythewood, South Carolina** **S&ME Project No. 22610625**	**BORING LOG 23-B-4**
DATE DRILLED: **2/23/23**	ELEVATION: **505.0 ft**	**NOTES:** Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME
DRILL RIG: **CME 550**	BORING DEPTH: **70.0 ft**	
DRILLER: **L. Shrader**	WATER LEVEL: **13' ATD, 1' 24 hr**	
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**	
SAMPLING METHOD: **Split spoon**	NORTHING: **862433**	EASTING: **1999604**
DRILLING METHOD: **3¼" H.S.A.**		

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
30	**PARTIALLY WEATHERED ROCK - SILT (ML)** - mostly low plasticity fines, trace fine sands, dry, laminated yellow with gray mottles, very hard.	475.0	SS-8		35	50/5"		50/5"	
	- - - @ 33.5 feet - laminated gray and white.	470.0	SS-9		30	50/4"		50/4"	
35			SS-10		50/4"			50/4"	
40	**SILT WITH SAND (ML)** - mostly low plasticity fines, little fine to medium sands, little partially weathered lithics, dry, laminated gray, yellowish white, red, very hard.	465.0							
	- - - @ 43.5 feet - laminated red with gray and yellow with brown.	460.0	SS-11		22	50/5"		50/5"	
45									
50	**ELASTIC SILT (MH)** - mostly medium to high plasticity fines, few fine sands, dry, laminated, yellow, gray, brown, very stiff.	455.0	SS-12		5	6	11		17

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 22610625 PH120 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

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3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT: **Project Connect (Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG 23-B-4

DATE DRILLED: **2/23/23**	ELEVATION: **505.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **70.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **13' ATD, 1' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **862433** / EASTING: **1999604**
DRILLING METHOD: **3¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
55	- - - @ 53.5 feet - few fine to medium sands, gray with yellowish brown mottles.	450.0	SS-13		6	6	14		20
60	**PARTIALLY WEATHERED ROCK (PWR) - ELASTIC SILT WITH SAND (MH)** - mostly medium to high plasticity fines, little fine to medium partially weathered lithic, dry, laminated grayish white, yellowish brown, very hard.	445.0	SS-14		50/5"				50/5"
65	**PIEDMONT RESIDUUM - ELASTIC SILT WITH SAND (MH)** - mostly medium to high plasticity fines, little fine to coarse partially weathered lithics, dry, light brown with red and gray mottles, hard.	440.0	SS-15		4	13	25		38
70	**PARTIALLY WEATHERED ROCK (PWR) - ELASTIC SILT (MH)** - mostly medium to high plasticity fines, few coarse gravel partially weathered lithics, dry, laminated dark brown, yellow, gray, very hard.	435.0	SS-16		30	24	50/3"		50/3"
	Boring terminated at 70 ft								

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 22610625 PH120 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

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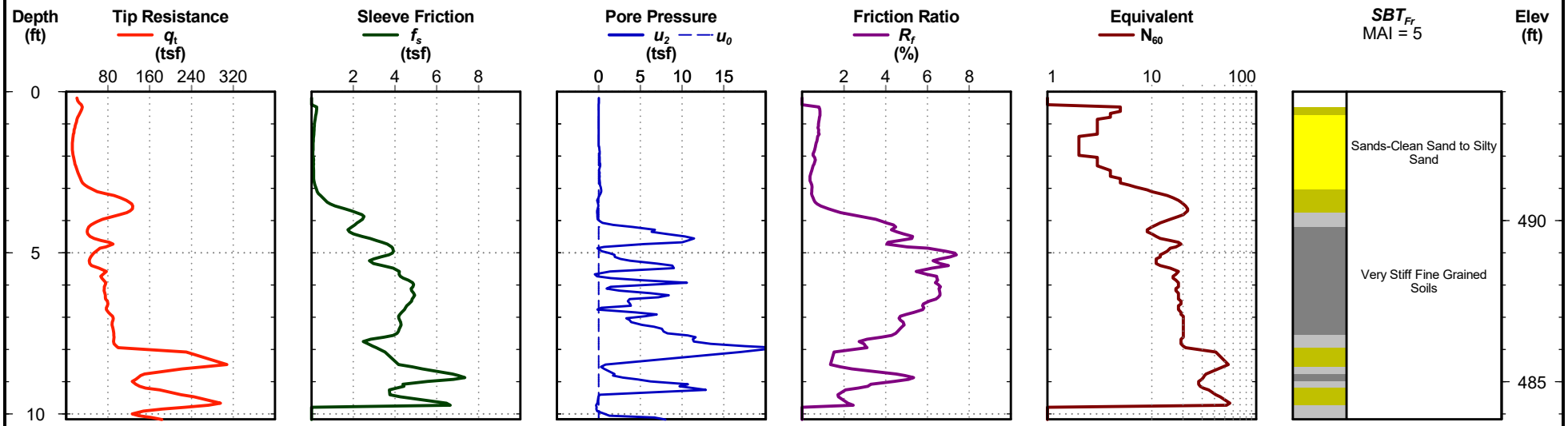
Project Connect (Added Locations)
Blythewood, SC
S&ME Project No: 22610625

Sounding ID: 23-B-5

Elevation: 494 ft
Date: Feb. 13, 2023
Estimated Water Depth: Not Encountered
Rig/Operator: Marooka/M. Wright

Northing: 862490
Easting: 2001692
Total Depth: 10.2 ft
Termination Criteria: Maximum Reaction Force
Cone Size: 1.75



Cone Penetration Test

Electronic Filename: B-05.DAT

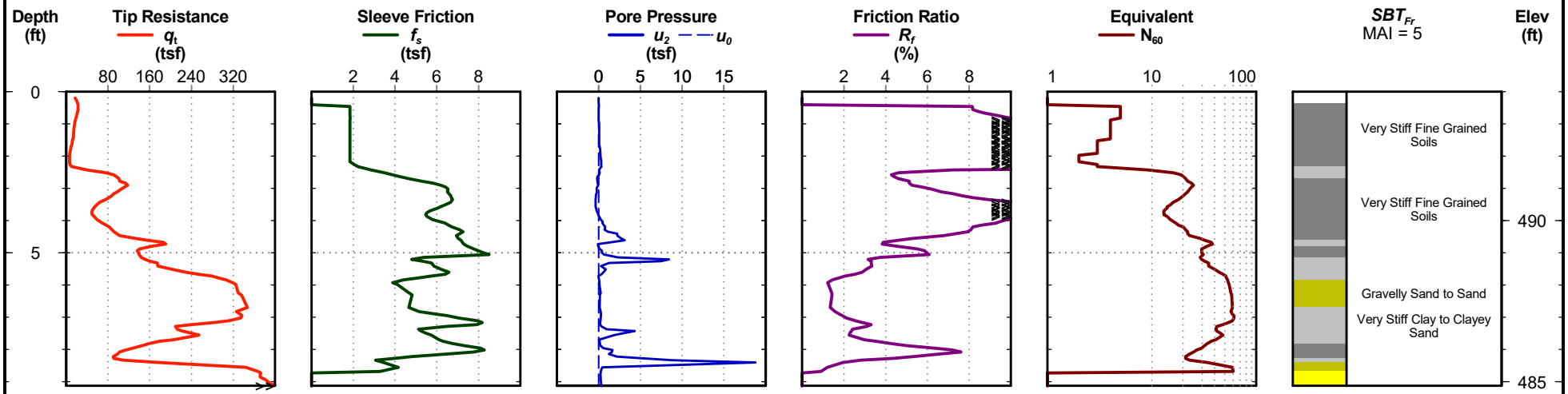
CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 2/22/23

Project Connect (Added Locations)
Blythewood, SC
S&ME Project No: 22610625

Sounding ID: 23-B-5A

Elevation: 494 ft
Date: Feb. 13, 2023
Estimated Water Depth: Not Encountered
Rig/Operator: Marooka/M. Wright

Northing: 862490
Total Depth: 9.1 ft
Termination Criteria: Maximum Reaction Force
Cone Size: 1.75



Cone Penetration Test

Electronic Filename: B-05A.DAT

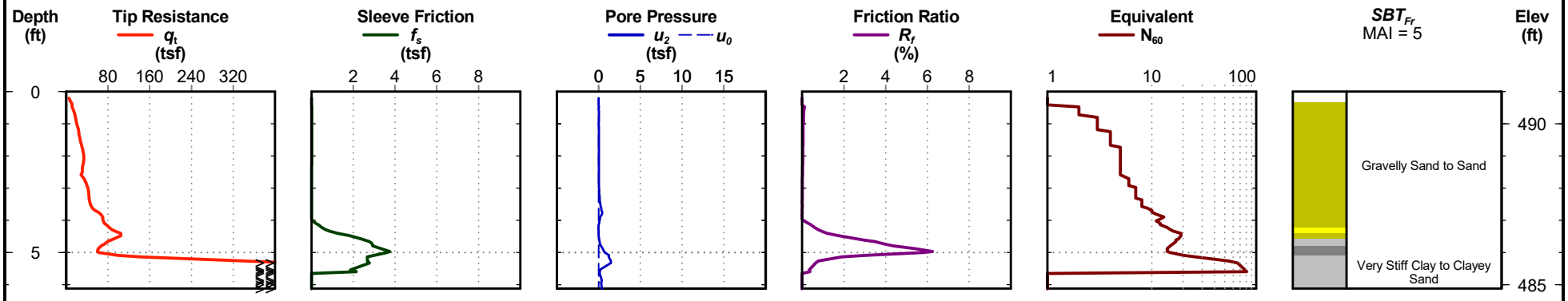
CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 2/22/23

Sounding ID: 23-B-6

Project Connect (Added Locations)
Blythewood, SC
S&ME Project No: 22610625

Elevation: 491 ft
Date: Feb. 13, 2023
Estimated Water Depth: Not Encountered
Rig/Operator: Marooka/M. Wright

Northing: 862428
Easting: 2002883
Total Depth: 6.1 ft
Termination Criteria: Maximum Reaction Force
Cone Size: 1.75



Cone Penetration Test

Electronic Filename: B-06.DAT

CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 2/22/23

PROJECT: **Project Connect (Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG 23-B-7

DATE DRILLED: **2/20/23**	ELEVATION: **506.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **75.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **5' ATD, 5' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **861457** / EASTING: **2000117**
DRILLING METHOD: **3¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
	SURFACE MATERIAL - TOPSOIL - 2 inches.									
	COASTAL PLAIN - SILTY SAND (SM) - mostly fine to medium sands, little low plasticity fines, moist, light yellowish brown, very loose.			SS-1		1/18"			1/18"	
	- - - @ 3.5 feet - yellowish brown, loose.	▼	501.0	SS-2		1	2	3		5
	CLAYEY SAND (SC) - mostly fine to medium sands, some medium plasticity fines, moist, mottled gray, red, light brown, medium dense.	HC		SS-3		4	10	10		20
	SANDY LEAN CLAY (CL) - mostly medium plasticity fines, some fine to medium sands, dry to moist, mottled gray, red and light brown, very stiff.		496.0	SS-4		4	9	13		22
	SILTY SAND (SM) - mostly fine to medium sands, little low plasticity fines, moist, light brown, orange with white mottles, medium dense.		491.0	SS-5		4	6	9		15
	- - - @ 18.5 feet - mostly fine to medium sands, little medium plasticity fines, trace fine gravel quartz, moist to wet, light brown, orange with white mottles, dense.		486.0	SS-6		6	14	17		31
	- - - @ 23.5 feet - some medium plasticity fines, gray with yellow mottles.		481.0	SS-7		4	11	23		34

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 22610625 PH120 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

NOTES:

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3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT: **Project Connect (Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG 23-B-7

DATE DRILLED: **2/20/23**	ELEVATION: **506.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **75.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **5' ATD, 5' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **861457** / EASTING: **2000117**
DRILLING METHOD: **3¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
30	**PIEDMONT RESIDUUM - SILT (ML)** - mostly low plasticity fines, few fine sands, dry, light yellowish brown with yellowish brown and white mottles, very hard.	476.0	SS-8	7	20	39	59
35	- - - @ 33.5 feet - laminated yellow, gray, brownish orange.	471.0	SS-9	14	25	43	68
40	- - - @ 38.5 feet - laminated yellowish brown, brownish yellow, stiff.	466.0	SS-10	7	11	13	24
45	**SILT WITH SAND (ML)** - mostly low to medium plasticity fines, little fine sands, dry to moist, light gray with brown mottles, firm.	461.0	SS-11	2	4	4	8
50	- - - @ 48.5 feet - light greenish gray with brownish orange mottles, stiff.	456.0	SS-12	7	6	7	13

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS — 10 20 30 60 80

S&ME BORING LOG 22610625 PH120 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

NOTES:

1. ***THIS LOG IS ONLY A PORTION OF A REPORT PREPARED FOR THE NAMED PROJECT AND MUST ONLY BE USED TOGETHER WITH THAT REPORT.***
2. ***BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1586.***
3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT: **Project Connect (Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG 23-B-7

DATE DRILLED: **2/20/23**	ELEVATION: **506.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **75.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **5' ATD, 5' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **861457** / EASTING: **2000117**
DRILLING METHOD: **3¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
55	- - - @ 53.5 feet - gray, light brown with brown speckles, very stiff.	451.0	SS-13		9	13	16		29
60	**SILT (ML)** - mostly low to medium plasticity fines, few fine to medium sands, trace partially weathered rock lithics, dry, dark greenish gray with dark gray mottles, hard.	446.0	SS-14		12	13	32		45
65	- - - @ 63.5 feet - few fine sands, dark greenish gray, very hard.	441.0	SS-15		13	15	38		53
70	**PARTIALLY WEATHERED ROCK - SILT WITH SAND (ML)** - mostly low plasticity fines, little fine to coarse sands, trace fine gravels, dry, dark greenish gray with dark gray mottles, very hard.	436.0	SS-16		50/3"				50/3"
75	**PIEDMONT RESIDUUM - SILT (ML)** - mostly low to medium plasticity fines, few fine sands, dry, laminated gray and yellowish brown, very hard.	431.0	SS-17		23	24	32		56
	Boring terminated at 75 ft								

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 22610625 PH120 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

NOTES:

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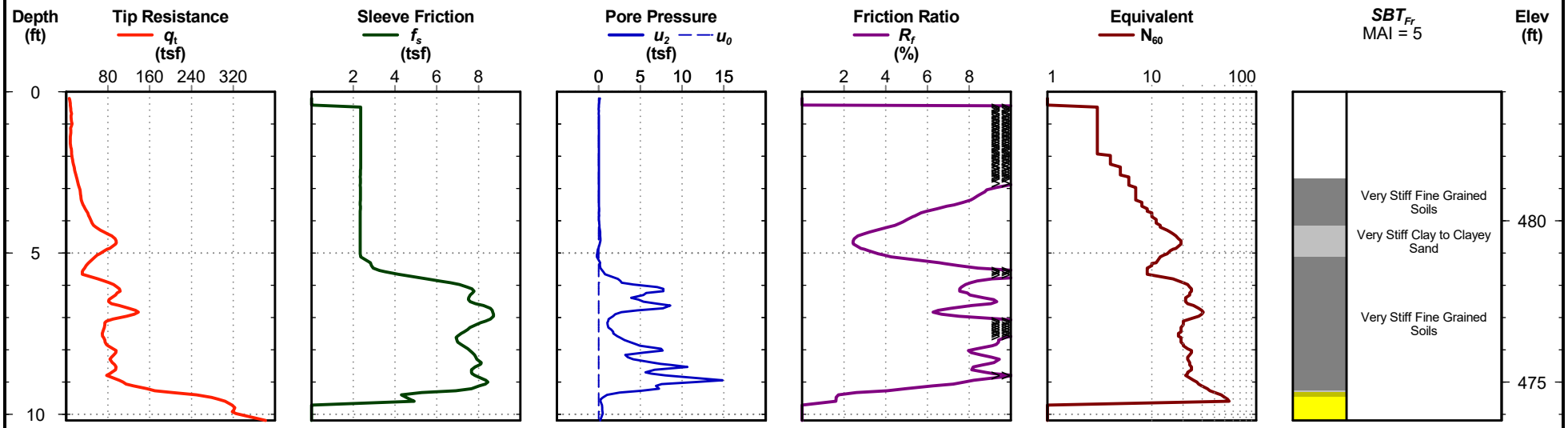
3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

Project Connect (Added Locations)
Blythewood, SC
S&ME Project No: 22610625

Sounding ID: 23-B-8

Elevation: 484 ft
Date: Feb. 13, 2023
Estimated Water Depth: Not Encountered
Rig/Operator: Marooka/M. Wright

Northing: 861817
Easting: 2001006
Total Depth: 10.2 ft
Termination Criteria: Maximum Reaction Force
Cone Size: 1.75



Cone Penetration Test

Electronic Filename: B-08.DAT

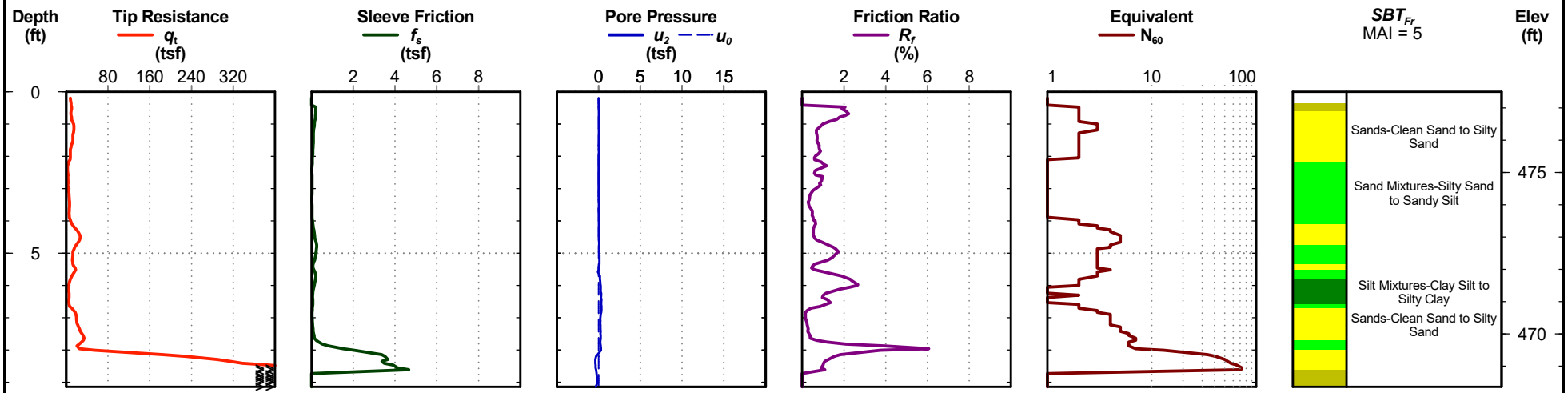
CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 2/22/23

Project Connect (Added Locations)
Blythewood, SC
S&ME Project No: 22610625

Sounding ID: 23-B-9b

Elevation: 477.5 ft
Date: Feb. 14, 2023
Estimated Water Depth: Not Encountered
Rig/Operator: Marooka/M. Wright

Northing: 861483
Easting: 2001985
Total Depth: 9.1 ft
Termination Criteria: Maximum Reaction Force
Cone Size: 1.75



Cone Penetration Test

Electronic Filename: B-09b.DAT

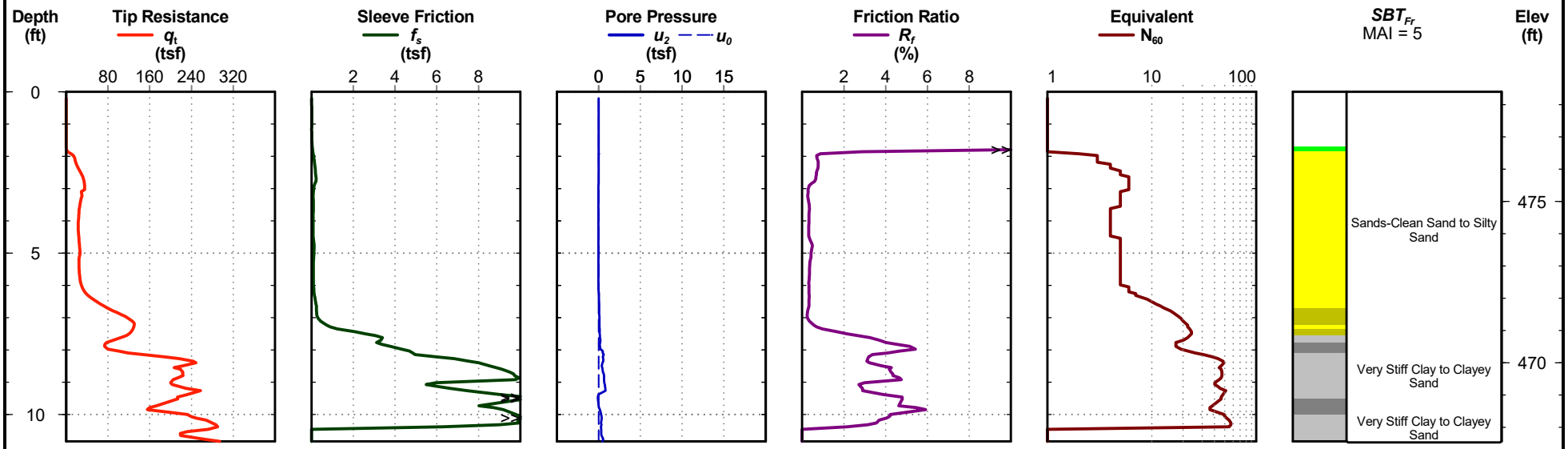
CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 2/22/23

Project Connect (Added Locations)
Blythewood, SC
S&ME Project No: 22610625

Sounding ID: 23-B-10

Elevation: 478.4 ft
Date: Feb. 14, 2023
Estimated Water Depth: Not Encountered
Rig/Operator: Marooka/M. Wright

Northing: 860407
Easting: 1999097
Total Depth: 10.8 ft
Termination Criteria: Maximum Reaction Force
Cone Size: 1.75



Cone Penetration Test

Electronic Filename: B-10.DAT

CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 2/22/23

PROJECT: **Project Connect (Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG 23-B-11

DATE DRILLED: **2/20/23**	ELEVATION: **495.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **60.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **5' ATD, 6.2' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **860424** / EASTING: **2000706**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
	SURFACE MATERIAL - TOPSOIL - 3 inches.							
	COASTAL PLAIN - POORLY GRADED SAND WITH SILT (SP-SM) - mostly fine to medium sands, few low plasticity fines, trace roots, moist, light brown, very loose.							
5	- - - @ 3.5 feet - medium dense.	490.0	SS-1		1	1	1	2
			SS-2		1	4	9	13
	CLAYEY SAND (SC) - mostly fine to medium sands, some medium plasticity fines, dry to moist, gray, light brown, orange, medium dense.		SS-3		5	8	10	18
10	- - - @ 8.5 feet - dry, few clay pockets, gray with light brown mottles, dense.	485.0	SS-4		5	20	20	40
15	- - - @ 13.5 feet - mostly medium sands, little low to medium plasticity fines, gray with light brown, orange mottles.	480.0	SS-5		13	16	17	33
20	- - - @ 18.5 feet - mostly fine to medium sands, some medium to high plasticity fines, moist to wet, gray with light brown and yellow mottles, loose.	475.0	SS-6		6	4	2	6
25	**PIEDMONT RESIDUUM - PARTIALLY WEATHERED ROCK (PWR) - SILT WITH SAND (ML)** - moslty low plasticity fines, little fine sands, dry, light yellow with yellow mottles, very hard.	470.0	SS-7		27	50/5"		50/5"

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS — 10 20 30 60 80

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3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

S&ME BORING LOG 22610625 PH120 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

PROJECT: **Project Connect (Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG 23-B-11

DATE DRILLED: **2/20/23**	ELEVATION: **495.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **60.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **5' ATD, 6.2' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **860424** / EASTING: **2000706**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
30	**PIEDMONT RESIDUUM - SILT WITH SAND (ML)** - mostly low plasticity fines, little fine sands, dry, yellow with light brown, white and light pink mottles, very hard.	465.0	SS-8	14	26	32	58
35	- - - @ 33.5 feet - yellow with gray and white laminations, hard.	460.0	SS-9	9	19	29	48
40	- - - @ 38.5 feet - gray, dark gray, white and yellow laminations.	455.0	SS-10	7	12	29	41
45	- - - @ 43.5 feet - very stiff.	450.0	SS-11	5	11	17	28
50	- - - @ 48.5 feet - gray, red, yellow laminations.	445.0	SS-12	6	10	18	28

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS — 10 20 30 60 80

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3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

S&ME BORING LOG 22610625 PH120 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

PROJECT: **Project Connect (Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG 23-B-11

DATE DRILLED: **2/20/23**	ELEVATION: **495.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **60.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **5' ATD, 6.2' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **860424** / EASTING: **2000706**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
55	- - - @ 53.5 feet - mostly medium plasticity fines, moist, red, gray, light brown laminations, hard.	440.0	SS-13		9	17	32		49
60	- - - @ 58.5 feet - dark red, dark gray, gray and light brown laminations, very hard.	435.0	SS-14		7	22	42		64
	Boring terminated at 60 ft								

NOTES:

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3. *STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.*
4. *WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.*

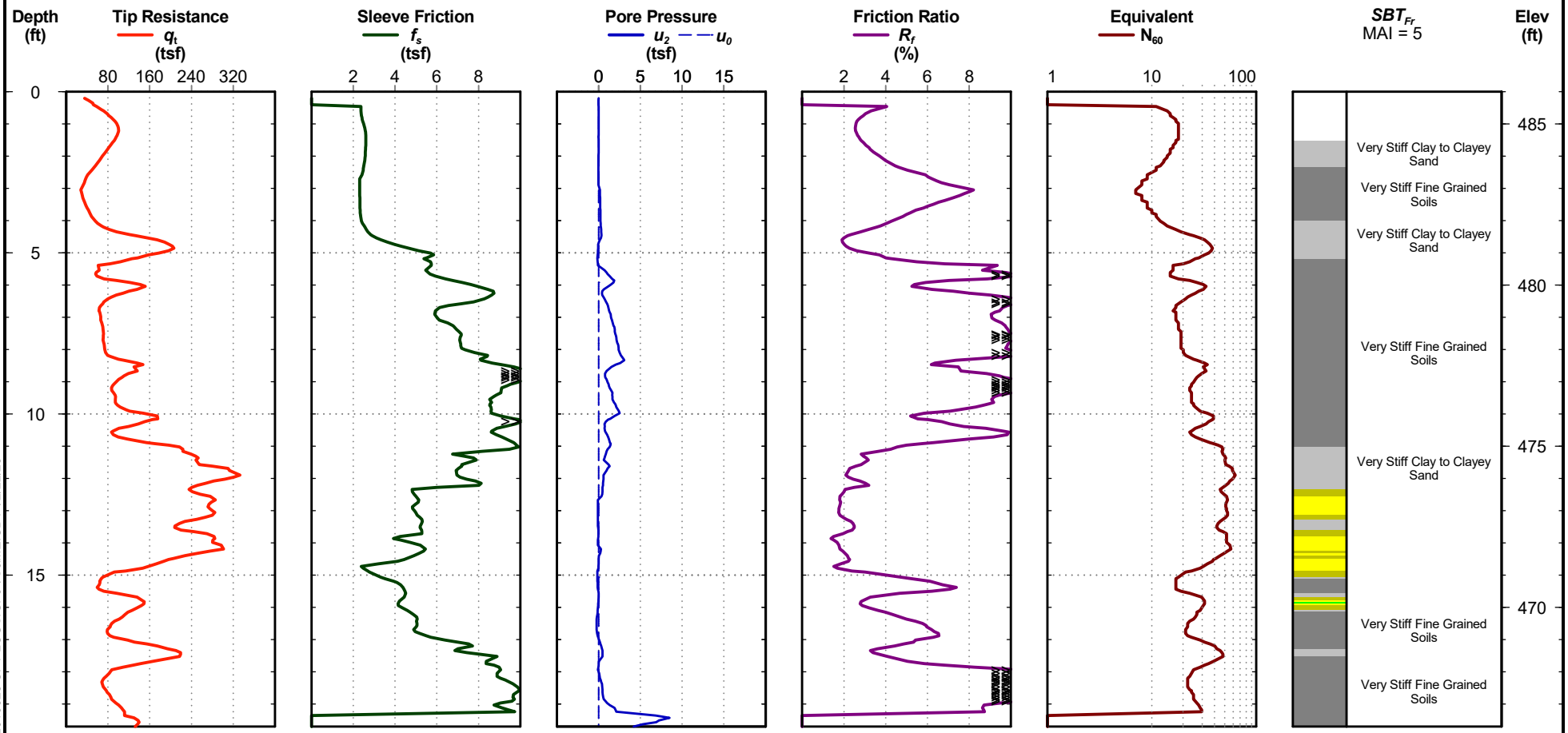
S&ME BORING LOG 22610625 PH120 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

Sounding ID: 23-B-12

Project Connect (Added Locations)
Blythewood, SC
S&ME Project No: 22610625

Elevation: 486 ft
Date: Feb. 14, 2023
Estimated Water Depth: Not Encountered
Rig/Operator: Marooka/M. Wright

Northing: 860533
Easting: 2001896
Total Depth: 19.7 ft
Termination Criteria: Maximum Reaction Force
Cone Size: 1.75



Cone Penetration Test

Electronic Filename: B-12.DAT

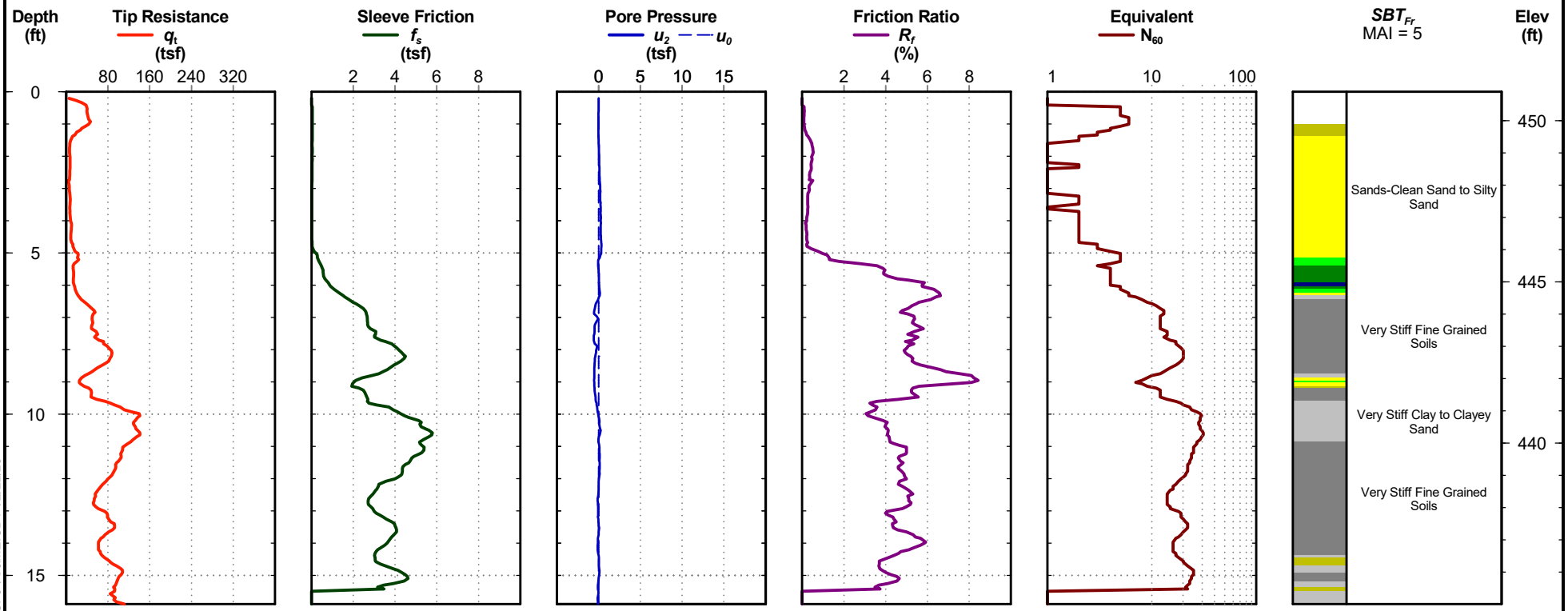
CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 2/22/23

Sounding ID: 23-B-13

Project Connect (Added Locations)
Blythewood, SC
S&ME Project No: 22610625

Elevation: 450.9 ft
Date: Feb. 14, 2023
Estimated Water Depth: Not Encountered
Rig/Operator: Marooka/M. Wright

Northing: 859770
Easting: 1998926
Total Depth: 15.9 ft
Termination Criteria: Maximum Reaction Force
Cone Size: 1.75



Cone Penetration Test

Electronic Filename: B-13.DAT

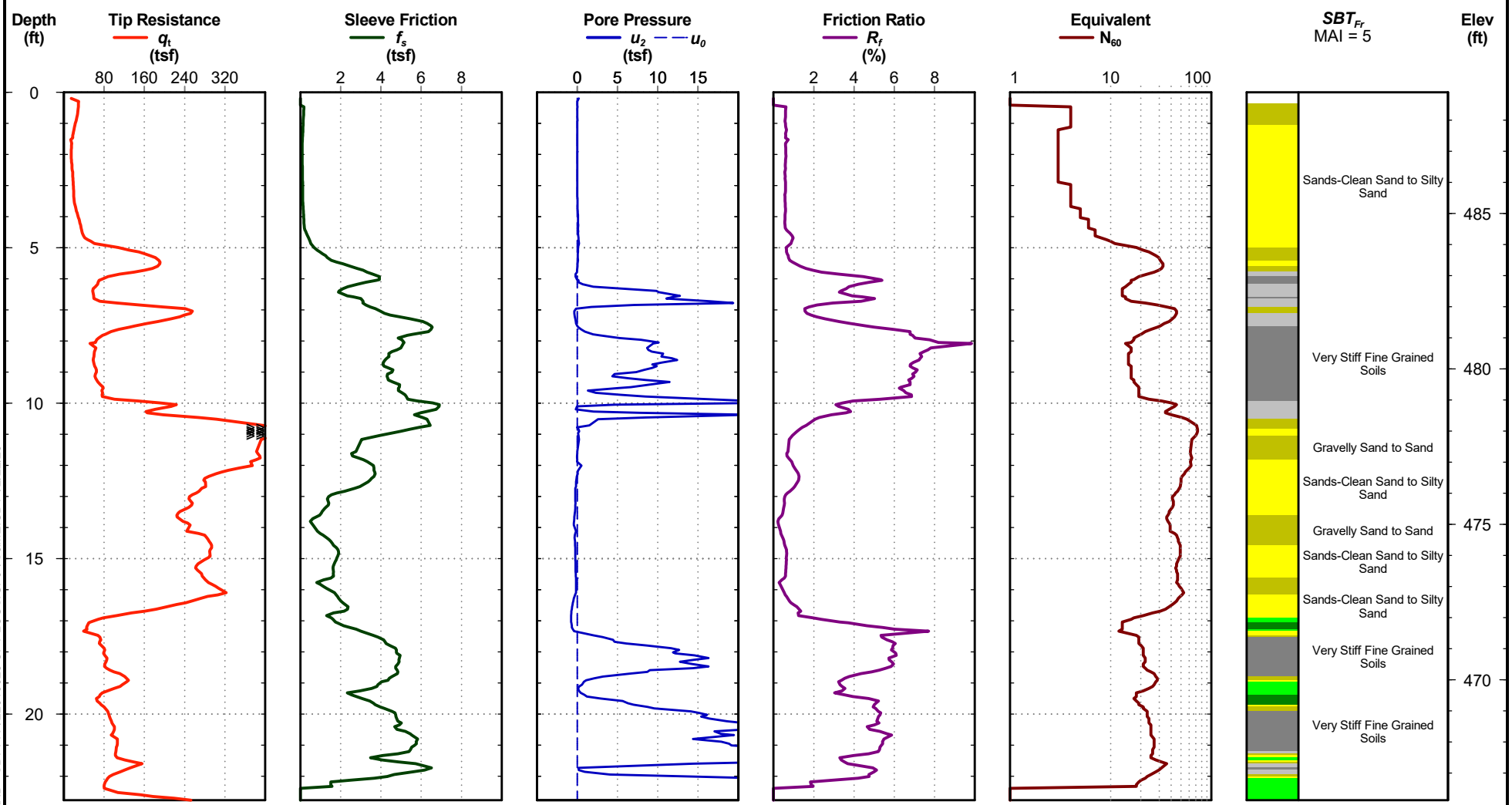
CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 2/22/23

Sounding ID: 23-B-14

Project Connect (Added Locations)
Blythewood, SC
S&ME Project No: 22610625

Elevation: 488.9 ft
Date: Feb. 14, 2023
Estimated Water Depth: Not Encountered
Rig/Operator: Marooka/M. Wright

Northing: 859441
Easting: 2000288
Total Depth: 22.8 ft
Termination Criteria: Maximum Reaction Force
Cone Size: 1.75



Cone Penetration Test

Electronic Filename: B-14.DAT

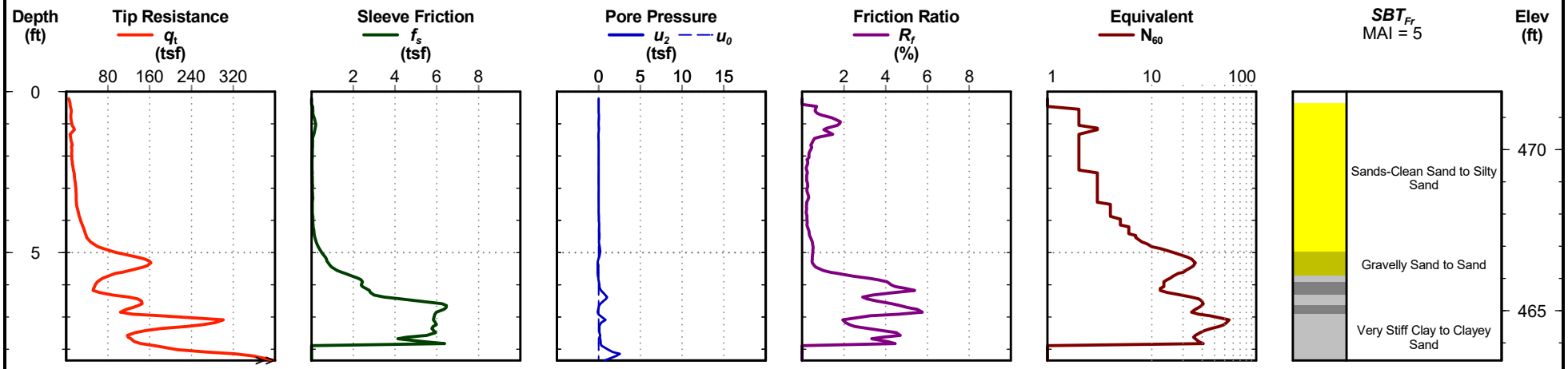
CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 2/22/23

Sounding ID: 23-B-15

Project Connect (Added Locations)
Blythewood, SC
S&ME Project No: 22610625

Elevation: 471.8 ft
Date: Feb. 14, 2023
Estimated Water Depth: Not Encount
Rig/Operator: Marooka/M. Wright

Northing: 859729
Easting: 2000903
Total Depth: 8.4 ft
Termination Criteria: Maximum Reaction Force
Cone Size: 1.75



Cone Penetration Test

Electronic Filename: B-15.DAT

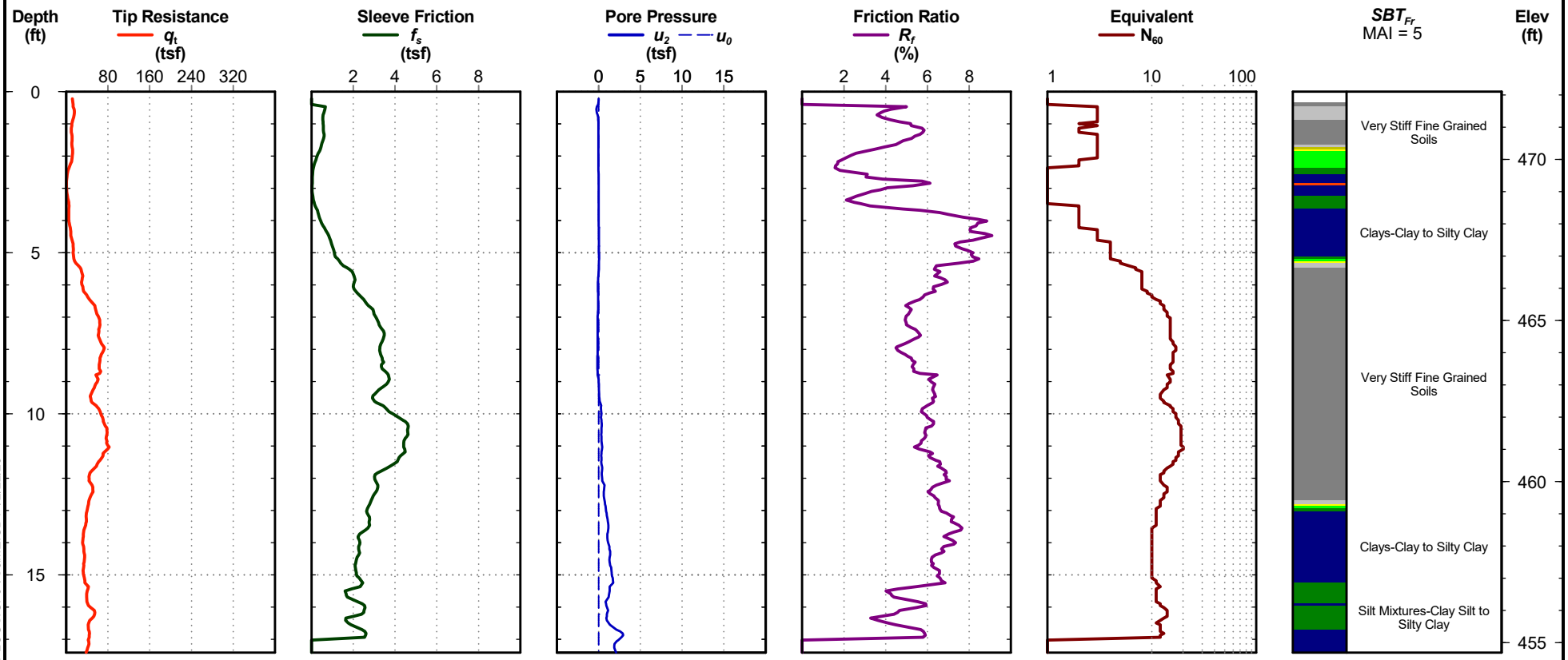
CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 2/22/23

Sounding ID: 23-B-16

Project Connect (Added Locations)
Blythewood, SC
S&ME Project No: 22610625

Elevation: 472.1 ft
Date: Feb. 14, 2023
Estimated Water Depth: 24 ft
Rig/Operator: Marooka/M. Wright

Northing: 859699 **Easting:** 2002139
Total Depth: 17.4 ft
Termination Criteria: Maximum Reaction Force
Cone Size: 1.75



Cone Penetration Test

Electronic Filename: B-16.DAT

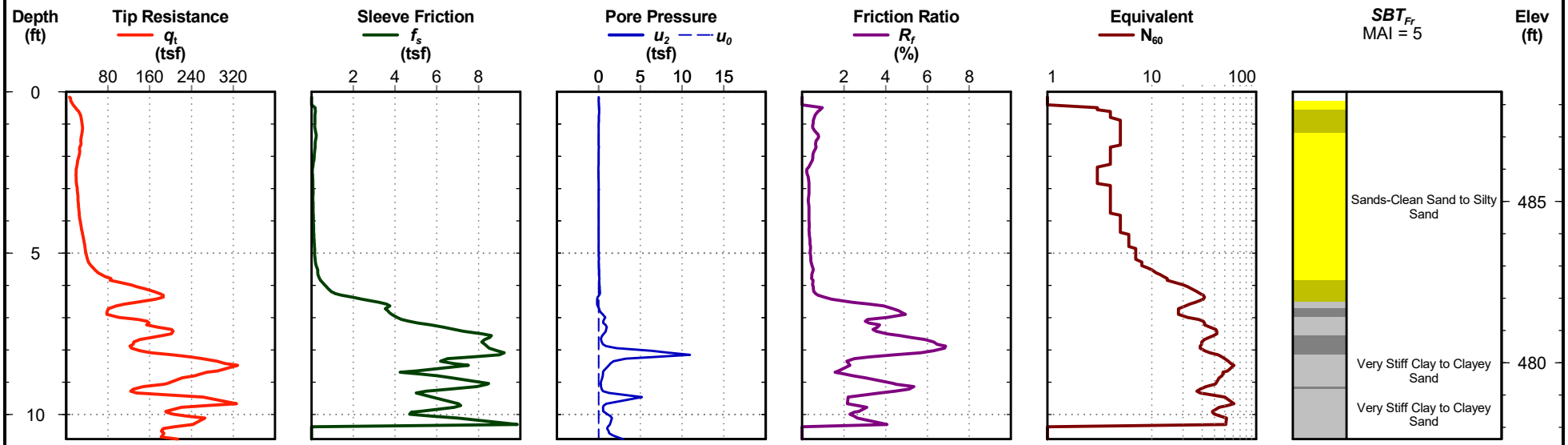
CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 2/22/23

Sounding ID: 23-B-17

Project Connect (Added Locations)
Blythewood, SC
S&ME Project No: 22610625

Elevation: 488.4 ft
Date: Feb. 14, 2023
Estimated Water Depth: Not Encountered
Rig/Operator: Marooka/M. Wright

Northing: 859122
Easting: 2001129
Total Depth: 10.8 ft
Termination Criteria: Maximum Reaction Force
Cone Size: 1.75



Cone Penetration Test

Electronic Filename: B-17.DAT

CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 2/22/23

PROJECT: **Project Connect (Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG 23-B-18

DATE DRILLED: **2/20/23**	ELEVATION: **482.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **50.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **3' ATD, 7.9' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **858585** / EASTING: **2001588**
DRILLING METHOD: **3¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
	SURFACE MATERIAL - TOPSOIL - 3 inches.									
	ALLUVIUM - @ 1 foot - No Recovery	▽		SS-1		WOH	WOH	2		2
	COASTAL PLAIN - SILTY SAND (SM) - mostly fine to medium sands, little low plasticity fines, few organics and few roots, moist, light gray with gray mottles, very loose.	HC		SS-2		1	2	2		4
5	- - - @ 6 feet - some medium plasticity fines, gray.	▼	477.0	SS-3		2	1	2		3
	POORLY GRADED SAND WITH CLAY (SP-SC) - mostly medium sands, some medium plasticity fines, moist to wet, mottled light orange, light gray and light brown, medium dense.			SS-4		4	7	12		19
10			472.0							
	PIEDMONT RESIDUUM - SILT (ML) - mostly low plasticity fines, few fine sands, dry, yellow with light brown and white mottles, hard.			SS-5		5	10	37		47
15			467.0							
	- - - @ 18.5 feet - yellow with white, light pink and light brown mottles.			SS-6		11	18	25		43
20			462.0							
				SS-7		9	12	20		32
25			457.0							

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 22610625 PH120 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

NOTES:

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3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT: **Project Connect (Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG 23-B-18

DATE DRILLED: **2/20/23**	ELEVATION: **482.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **50.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **3' ATD, 7.9' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **858585** EASTING: **2001588**
DRILLING METHOD: **3¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
30	- - - @ 28.5 feet - brownish orange with yellowish brown and white laminations, very stiff.	452.0	SS-8		3	6	16		22
35	**SILT WITH SAND (ML)** - mostly low to medium plasticity fines, little fine sands, dry, laminated red, yellowish brown, white, very stiff.	447.0	SS-9		3	8	15		23
40	- - - @ 38.5 feet - laminated red, white, light brown, hard.	442.0	SS-10		7	15	20		35
45	- - - @ 43. 5 feet - laminated red, gray and light brown.	437.0	SS-11		9	17	25		42
50	- - - @ 48.5 feet - very stiff.	432.0	SS-12		4	12	17		29
	Boring terminated at 50 ft								

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

WATER LEVEL

S&ME BORING LOG 22610625 PH120 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

NOTES:

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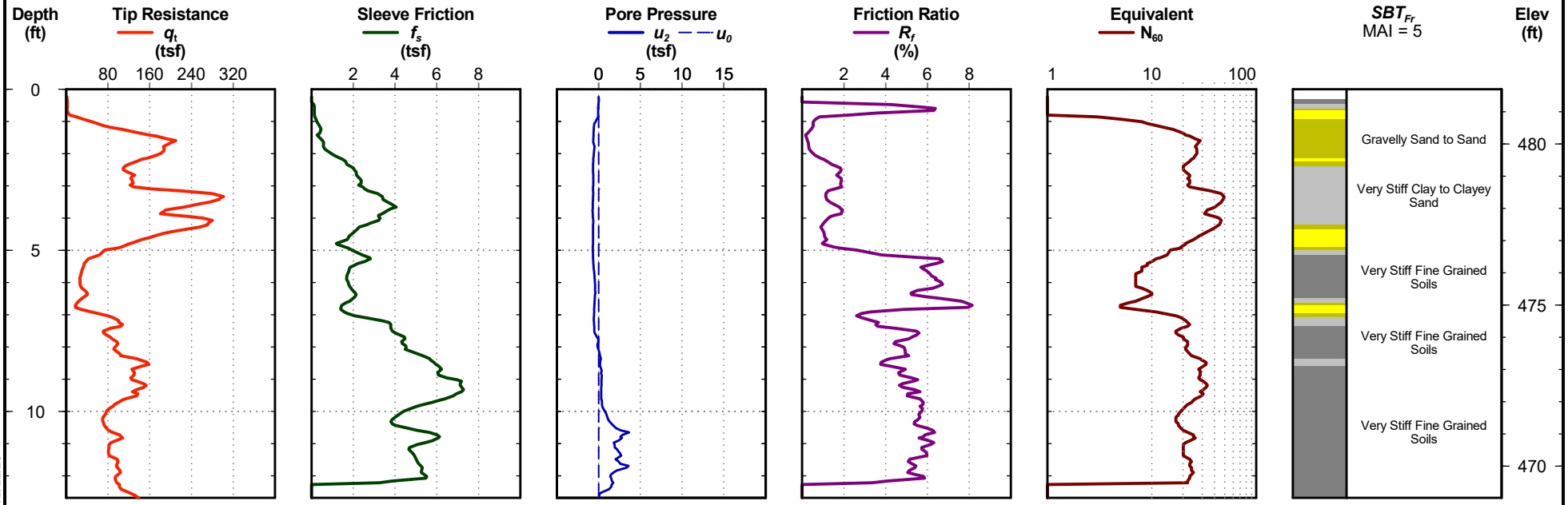
2. ***BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1586.***
3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

Sounding ID: 23-B-18

Project Connect (Added Locations)
Blythewood, SC
S&ME Project No: 22610625

Elevation: 481.7 ft
Date: Feb. 14, 2023
Estimated Water Depth: Not Encountered
Rig/Operator: Marooka/M. Wright

Northing: 858585 **Easting:** 2001588
Total Depth: 12.7 ft
Termination Criteria: Maximum Reaction Force
Cone Size: 1.75



Cone Penetration Test

Electronic Filename: B-18.DAT

CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 2/22/23

PROJECT: **Project Connect (Connect Team Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG BS1/23

DATE DRILLED: **3/6/23**	ELEVATION: **514.0 ft**
DRILL RIG: **CME 750**	BORING DEPTH: **66.3 ft**
DRILLER: **S. Gowan**	WATER LEVEL: **NM-MR TOB**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **863396** / EASTING: **1999320**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
0	**SURFACE MATERIAL- TOPSOIL** - 5 inches								
	COASTAL PLAIN- SILTY SAND (SM) - mostly fine to medium sands, little low plasticity fines, moist to wet, light grayish brown with light brown mottles, loose.		SS-1		2	3	4		7
	- - - @ 3.5 feet - some low to medium plasticity fines, moist, light brown, gray, medium dense.	509.0	SS-2		2	7	7		14
5			SS-3		6	5	6		11
	- - - @ 6 feet - few coarse sands, moist to wet, orange and pale yellow with light brown mottles.								
	- - - @ 8.5 feet - little low to medium plasticity fines, pale brown with light orange and grayish white mottles.	504.0	SS-4		2	5	10		15
10									
	PIEDMONT RESIDUUM - SILT WITH SAND (ML) - mostly low plasticity fines, little fine sands, dry, laminated grayish white and pink with yellow mottles, very stiff.	499.0	SS-5		4	11	17		28
15									
	- - - @ 18.5 feet - laminated grayish white and yellow, very hard.	494.0	SS-6		10	18	35		53
20									
	PARTIALLY WEATHERED ROCK (PWR) - SILT (ML) - mostly low plasticity fines, few fine to medium sands, dry, laminated grayish white and yellow, very hard.	489.0	SS-7		50/5"			50/5"	
25									

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S&ME BORING LOG 22610625 PH120A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/31/23

PROJECT: **Project Connect (Connect Team Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG BS1/23

DATE DRILLED: **3/6/23**	ELEVATION: **514.0 ft**
DRILL RIG: **CME 750**	BORING DEPTH: **66.3 ft**
DRILLER: **S. Gowan**	WATER LEVEL: **NM-MR TOB**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **863396** / EASTING: **1999320**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
30	- - - @ 28.5 feet - laminate grayish white, pink and yellow.	484.0	SS-8		30	50/5"			50/5"
35	- - - @ 33.5 feet - laminated purple and gray.	479.0	SS-9		20	40	50/3"		50/3"
40	- - - @ 38.5 feet - trace coarse to fine gravel lithic fragments, laminated gray, grayish white, purple.	474.0	SS-10		37	50/4"			50/4"
45	**SILT WITH SAND (ML)** - mostly low plasticity fines, little fine to medium sands, laminated grayish white and gray with yellow mottle, very hard.	469.0	SS-11		28	50/5"			50/5"
50	- - - @ 48.5 feet - laminated red, dark gray, gray (phyllitic).	464.0	SS-12		50/5"				50/5"
			SS-13		50/5"				50/5"

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S&ME BORING LOG 22610625 PH120A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/31/23

PROJECT: **Project Connect (Connect Team Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG BS1/23

DATE DRILLED: **3/6/23** | ELEVATION: **514.0 ft**

DRILL RIG: **CME 750** | BORING DEPTH: **66.3 ft**

DRILLER: **S. Gowan** | WATER LEVEL: **NM-MR TOB**

HAMMER TYPE: **Automatic** | LOGGED BY: **RZZ**

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

SAMPLING METHOD: **Split spoon** | NORTHING: **863396** | EASTING: **1999320**

DRILLING METHOD: **Mud Rotary**

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
55		- - - @ 53.5 feet - laminated red, gray and light brown.		459.0							
					SS-14		50/1"				50/1"
60		- - - @ 58.5 feet - No Recovery		454.0							
					SS-15		50/.5"				50/.5"
65		- - - @ 63.5 feet - No Recovery		449.0							
		Boring terminated at 66.3 ft due to auger refusal									

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 22610625 PH120A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/31/23

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PROJECT: **Project Connect (Connect Team Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG BS2/23

DATE DRILLED: **3/6/23**	ELEVATION: **504.0 ft**
DRILL RIG: **CME 750**	BORING DEPTH: **70.0 ft**
DRILLER: **S. Gowan**	WATER LEVEL: **NE TOB, 3.5 ft at 24-hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **863765** / EASTING: **2000844**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
	SURFACE MATERIAL- TOPSOIL - 1 inch.									
	COASTAL PLAIN- SILTY SAND (SM) - mostly fine sands, some low plasticity fines, moist to wet, gray with light brown mottles, very loose.			SS-1		3	3	1		4
	- - - @ 3.5 feet - some low to medium plasticity fines, dark gray and light brown with gray mottles.	▼		SS-2		3	2	2		4
5			499.0							
	CLAYEY SAND (SC) - mostly fine sands, some medium to high plasticity fines, moist to wet, dark gray and light brown with gray mottles, very loose.			SS-3		WOH	WOH	2		2
	- - - @ 8.5 feet - mostly fine to medium, some low to medium plasticity fines, wet, dark gray with gray mottles.			SS-4		WOH	1	1		2
10		HC	494.0							
	No Recovery			SS-5		WOR	WOR	WOR		WOR
15			489.0							
	SANDY FAT CLAY (CH) - mostly high plasticity fines, some fine sands, wet, very dark gray with gray mottles, firm.			SS-6		WOH	WOH	6		6
20	**PIEDMONT RESIDUUM - SILT WITH SAND (ML)** - mostly low plasticity fines, little fine sands, dry to moist, laminated grayish white and white, firm.		484.0							
	SILT (ML) - mostly low plasticity fines, few fine sands, dry, laminated grayish white, gray and yellow, hard.			SS-7		8	15	26		41
25			479.0							

10 20 30 60 80

S&ME BORING LOG 22610625 PH120A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/31/23

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PROJECT: **Project Connect (Connect Team Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG BS2/23

DATE DRILLED: **3/6/23**	ELEVATION: **504.0 ft**
DRILL RIG: **CME 750**	BORING DEPTH: **70.0 ft**
DRILLER: **S. Gowan**	WATER LEVEL: **NE TOB, 3.5 ft at 24-hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **863765** / EASTING: **2000844**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
30	- - - @ 28.5 feet - laminated yellow and pinkish white, very hard.	474.0	SS-8		11	23	44	67
35	- - - @ 33.5 feet - laminated pinkish white and grayish white with yellow mottles, hard.	469.0	SS-9		10	17	26	43
40	- - - @ 38.5 feet - laminated yellow and dark yellow with orange mottles, very hard.	464.0	SS-10		10	20	35	55
45	- - - @ 43.5 feet - hard.	459.0	SS-11		10	19	28	47
50	**PARTIALLY WEATHERED ROCK (PWR) - SILT WITH SAND (ML)** - mostly low plasticity fines, little fine to coarse sands, dry, laminated yellow, dark yellow, grayish white, very hard.	454.0	SS-12		50/4"			50/4"

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS — 10 20 30 60 80

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S&ME BORING LOG 22610625 PH120A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/31/23

PROJECT: **Project Connect (Connect Team Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG BS2/23

DATE DRILLED: **3/6/23**	ELEVATION: **504.0 ft**
DRILL RIG: **CME 750**	BORING DEPTH: **70.0 ft**
DRILLER: **S. Gowan**	WATER LEVEL: **NE TOB, 3.5 ft at 24-hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **863765** / EASTING: **2000844**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
55	- - - @ 53.5 feet - little fine sands, laminated yellow, dark red and grayish white.	449.0	SS-13		15	31	50/5"		50/5"
60	- - - @ 58.5 feet - laminated and fissured yellow, dark yellow and grayish white.	444.0	SS-14		45	50/3"			50/3"
65	- - - @ 63.5 feet - laminated red orange, light brown, gray and grayish white.	439.0	SS-15		18	50/3"			50/3"
70	- - - @ 68.5 feet - laminated light brown, yellow, grayish white with brown mottles.	434.0	SS-16		50/2"				50/2"
	Boring terminated at 70 ft								

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

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S&ME BORING LOG 22610625 PH120A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/31/23

PROJECT: **Project Connect (Connect Team Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG BS3/23

DATE DRILLED: **3/3/23**	ELEVATION: **511.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **80.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **NM-MR TOB, 7.9 ft at 24-hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **863891** / EASTING: **2001785**
DRILLING METHOD: **3¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
	SURFACE MATERIAL - TOPSOIL - 2 inches.								
	COASTAL PLAIN - SILTY SAND (SM) - mostly fine to medium sands, little low plasticity fines, moist, light brown, very loose.		SS-1		1	2	1		3
5	**CLAYEY SAND (SC)** - mostly fine to medium sands, some medium plasticity fines, moist, mottled gray, light brown, orange, medium dense.	506.0	SS-2		5	6	6		12
	- - - @ 6 feet - light brown with gray and orange mottles.		SS-3		6	8	11		19
10	**SILTY SAND (SM)** - mostly fine to medium sands, some low to medium plasticity fines, moist, light brown with light orange and gray mottles, dense.	501.0	SS-4		12	15	16		31
15	**PIEDMONT RESIDUUM - SILT (ML)** - mostly low plasticity fines, few fine sands, dry, laminated yellow and grayish white, very stiff.	496.0	SS-5		5	8	13		21
	- - - @ 18.5 feet - hard.								
20		491.0	SS-6		7	13	25		38
	- - - @ 23.5 feet - laminated yellow, grayish white, pinkish white, very stiff.								
25		486.0	SS-7		5	7	10		17

S&ME BORING LOG 22610625 PH120A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/31/23

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PROJECT: **Project Connect (Connect Team Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG BS3/23

DATE DRILLED: **3/3/23**	ELEVATION: **511.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **80.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **NM-MR TOB, 7.9 ft at 24-hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **863891** / EASTING: **2001785**
DRILLING METHOD: **3¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
30	- - - @ 28.5 feet - laminated yellow and grayish white with gray mottles.		481.0	SS-8		4	7	11		18
35	- - - @ 33.5 feet - laminated yellow and grayish white with brown mottles (fissures).		476.0	SS-9		5	8	14		22
40	- - - @ 38.5 feet - laminated light brown, yellow, gray and grayish white.		471.0	SS-10		4	7	14		21
45	- - - @ 43. 5 feet - laminated yellowish brown, gray and grayish white, stiff.		466.0	SS-11		2	5	8		13
50	- - - @ 48.5 feet - laminated gray and yellowish brown, hard.		461.0	SS-12		5	18	14		32

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 22610625 PH120A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/31/23

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PROJECT: **Project Connect (Connect Team Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG BS3/23

DATE DRILLED: **3/3/23**	ELEVATION: **511.0 ft**	**NOTES:** Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.
DRILL RIG: **CME 550**	BORING DEPTH: **80.0 ft**	
DRILLER: **L. Shrader**	WATER LEVEL: **NM-MR TOB, 7.9 ft at 24-hr**	
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**	
SAMPLING METHOD: **Split spoon**	NORTHING: **863891**	EASTING: **2001785**

DRILLING METHOD: **3¼" H.S.A.**

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
55			456.0	SS-13		9	15	18		33
60	- - - @ 58.5 feet - laminated gray, grayish white and yellowish brown.		451.0	SS-14		10	18	25		43
65	**PARTIALLY WEATHERED ROCK (PWR) - SILTY WITH SAND (ML)** - mostly low plasticity fines, little fine to medium sands, dry, laminated greenish gray, gray, yellowish brown, very hard.		446.0	SS-15		21	32	50/5"		50/5"
70	**PIEDMONT RESIDUUM - SILT (ML)** - mostly low plasticity fines, few fine sands, dry, laminated gray, yellowish brown, greenish gray, hard.		441.0	SS-16		13	19	30		49
75		HC	436.0	SS-17		10	18	23		41
80	**PARTIALLY WEATHERED RCOK (PWR) - SILT (ML)** - mostly low plasticity fines, few fine to medium sands, dry, laminated greenish gray and gray with yellowish brown mottles, very hard.		431.0	SS-18		18	18	50/5"		50/5"

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 22610625 PH120A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/31/23

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PROJECT: **Project Connect (Connect Team Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG BS3/23

DATE DRILLED: **3/3/23**	ELEVATION: **511.0 ft**	**NOTES:** Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.
DRILL RIG: **CME 550**	BORING DEPTH: **80.0 ft**	
DRILLER: **L. Shrader**	WATER LEVEL: **NM-MR TOB, 7.9 ft at 24-hr**	
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**	
SAMPLING METHOD: **Split spoon**	NORTHING: **863891**	EASTING: **2001785**
DRILLING METHOD: **3¼" H.S.A.**		

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS 10 20 30 60 80	N VALUE
		Boring terminated at 80 ft									

S&ME BORING LOG 22610625 PH120A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/31/23

NOTES:

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2. *BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1586.*
3. *STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.*
4. *WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.*

PROJECT: **Project Connect (Connect Team Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG BS4/23

DATE DRILLED: **3/7/23**	ELEVATION: **493.0 ft**
DRILL RIG: **CME 750**	BORING DEPTH: **60.0 ft**
DRILLER: **S. Gowan**	WATER LEVEL: **NM-MR TOB, 1.8 ft at 24-hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **JPL**
SAMPLING METHOD: **Split spoon**	NORTHING: **864421** / EASTING: **2003802**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
0	**SURFACE MATERIAL - TOPSOIL** - 1 inch									
	COASTAL PLAIN - CLAYEY SAND (SC) - mostly fine to medium sands, some medium plasticity fines, wet, light gray with light brown mottles, very loose.	▼		SS-1		1	1	2		3
	- - - @ 3.5 feet - moist to wet, pale gray, medium dense.	HC		SS-2		2	5	12		17
5			488.0							
				SS-3		10	11	9		20
	POORLY GRADED SAND WITH CLAY (SP-SC) - mostly fine sands, few medium plasticity fines, wet, very pale brown, white, yellow, medium dense.			SS-4		9	11	14		25
	- - - @ 8.5 feet - mostly fine to coarse sand.									
10			483.0							
	CLAYEY SAND (SC) - mostly fine to medium sands, little medium plasticity fines, moist to wet, white with pale yellow mottles, medium dense.			SS-5		2	9	13		22
15			478.0							
	PIEDMONT RESIDUUM - SILT (ML) - mostly low plasticity fines, trace fine sands, moist, laminated yellow and light yellow, very stiff.			SS-6		6	9	13		22
20			473.0							
	- - - @ 23.5 feet - few fine sands, dry to moist, laminated yellow, light yellow and white, very hard.			SS-7		12	29	40		69
25			468.0							

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 22610625 PH120A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/31/23

NOTES:

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3. *STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.*
4. *WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.*

PROJECT: **Project Connect (Connect Team Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG BS4/23

DATE DRILLED: **3/7/23**	ELEVATION: **493.0 ft**
DRILL RIG: **CME 750**	BORING DEPTH: **60.0 ft**
DRILLER: **S. Gowan**	WATER LEVEL: **NM-MR TOB, 1.8 ft at 24-hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **JPL**
SAMPLING METHOD: **Split spoon**	NORTHING: **864421** / EASTING: **2003802**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
30		463.0	SS-8		11	20	44		64
35	**PARTIALLY WEATHERED ROCK (PWR) - SANDY SILT (ML)** - mostly low plasticity fines, some fine to medium sands, dry to moist, laminated yellow, white, light gray, very hard.	458.0	SS-9		15	32	50/5"		50/5"
40	**PIEDMONT RESIDUUM - SANDY SILT (ML)** - mostly low plasticity fines, some fine to medium sands, dry to moist, laminated dark red, white, light brown, very stiff.	453.0	SS-10		6	7	9		16
45	- - - @ 43.5 feet - some fine sands, laminated light brown, light gray, pale brown.	448.0	SS-11		5	6	10		16
50	- - - @ 48.5 feet - some fine to medium sands, moist, laminated light brown, light gray, yellowish brown.	443.0	SS-12		6	7	11		18

S&ME BORING LOG 22610625 PH120A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/31/23

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PROJECT: **Project Connect (Connect Team Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG BS4/23

DATE DRILLED: **3/7/23**	ELEVATION: **493.0 ft**
DRILL RIG: **CME 750**	BORING DEPTH: **60.0 ft**
DRILLER: **S. Gowan**	WATER LEVEL: **NM-MR TOB, 1.8 ft at 24-hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **JPL**
SAMPLING METHOD: **Split spoon**	NORTHING: **864421** / EASTING: **2003802**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
55		- - - @ 53.5 feet - dry to moist, speckled light gray, pale brown, brown, dark gray, very hard.		438.0	SS-13		13	19	34		53
					SS-14		12	19	32		51
60		Boring terminated at 60 ft		433.0							

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 22610625 PH120A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/31/23

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PROJECT: **Project Connect (Connect Team Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG BS5/23

DATE DRILLED: **3/2/23**	ELEVATION: **510.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **60.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **NM-MR TOB, 6.8 ft at 24-hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **861725** / EASTING: **1998323**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
0	**SURFACE MATERIAL- TOPSOIL** - 3 inches								
	COASTAL PLAIN- CLAYEY SAND (SC) - mostly fine sands, some low to mediium plasticity fines, moist, brown with gray and orange mottles, very loose.		SS-1		2	2	2		4
	- - - @ 3.5 feet - mostly fine to medium sands, some medium plasticity fines, light yellowish brown with light brown, gray and orange mottles, loose.	505.0	SS-2		4	3	2		5
	- - - @ 6 feet - very loose. ▼		SS-3		2	2	2		4
	- - - @ 8.5 feet - few coarse sands, moist to wet, gray with light brown and grayish white mottles.	500.0	SS-4		1	1	1		2
	- - - @ 13.5 feet - wet, grayish brown with gray motttles.	495.0	SS-5		WOH/18"			WOH/18"	
	PIEDMONT RESIDUUM - SILT (ML) - mostly low plasticity fines, few fine sands, dry, gray with yellow mottles, very stiff..	490.0	SS-6		6	12	16		28
	- - - @ 23.5 feet - laminated gray and whitish gray with yellow mottles.	485.0	SS-7		6	12	16		28

S&ME BORING LOG 22610625 PH120A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/31/23

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PROJECT: **Project Connect (Connect Team Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG BS5/23

DATE DRILLED: **3/2/23**	ELEVATION: **510.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **60.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **NM-MR TOB, 6.8 ft at 24-hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **861725** / EASTING: **1998323**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
30	**SILT WITH SAND (ML)** - mostly low plasticity fines, little fine to medium sands, dry, laminated gray and whitish gray with yellow and pink mottles, very hard.	480.0	SS-8		11	24	42		66
35	**SILT (ML)** - mostly low plasticity fines, few fine sands, dry, laminated dark gray and gray with yellow mottles, very stiff.	475.0	SS-9		4	6	11		17
40		470.0	SS-10		3	6	12		18
45	**PARTIALLY WEATHERED ROCK (PWR) - SILT WITH SAND (ML)** - mostly low plasticity fines, little fine to medium sands, dry, laminated dark gray and grayish white with yellow and yellow brown mottles, very hard.	465.0	SS-11		42	50/3"			50/3"
50	- - - @ 48.5 feet - mottled very dark gray and greenish gray, slightly fissured.	460.0	SS-12		50/5"				50/5"
			SS-13		50/2"				50/2"

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 22610625 PH120A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/31/23

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PROJECT: **Project Connect (Connect Team Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG BS5/23

DATE DRILLED: **3/2/23**	ELEVATION: **510.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **60.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **NM-MR TOB, 6.8 ft at 24-hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **861725** / EASTING: **1998323**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
55		**SANDY SILT (ML)** - mostly low plasticity fines, some fine to medium sands, dry, fissured gray and dark greenish gray, very hard. *(continued)*		455.0							
					SS-14		50/2"				50/2"
			HC								
60		Boring terminated at 60 ft		450.0							

10 20 30 60 80

S&ME BORING LOG 22610625 PH120A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/31/23

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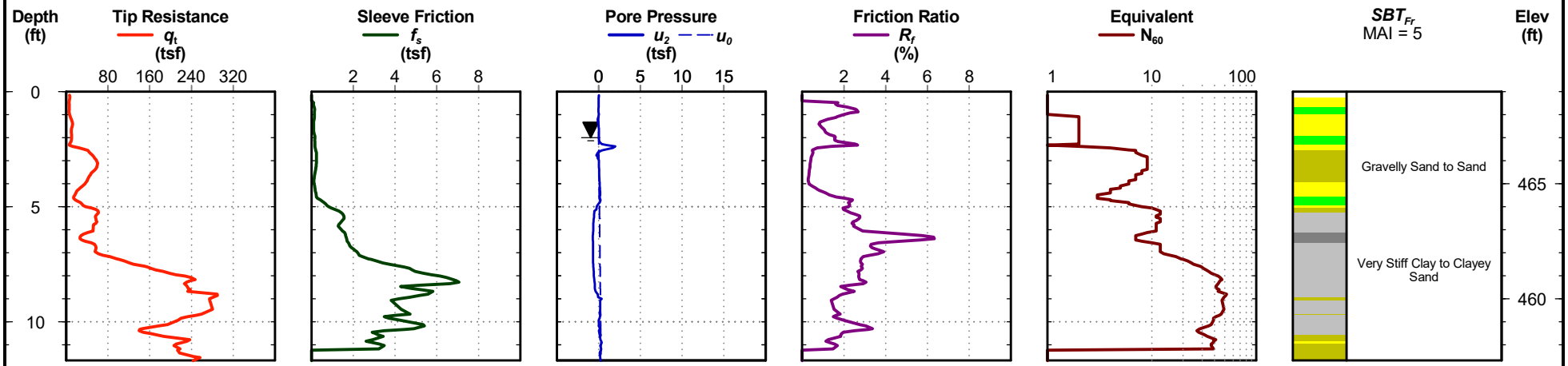
Project Connect (Connect Team Added Locations)
Blythewood SC
S&ME Project No: 22610625

Sounding ID: BS7/23

Northing:	861961
Easting:	2001468
Elevation:	469 ft
Date:	Mar. 15, 2023
Estimated Water Depth:	2 ft
Rig/Operator:	Marooka/T. Chew

Total Depth:	11.7 ft
Termination Criteria:	Maximum Reaction Force
Cone Size:	1.75



Cone Penetration Test

Electronic Filename: BS-07.DAT

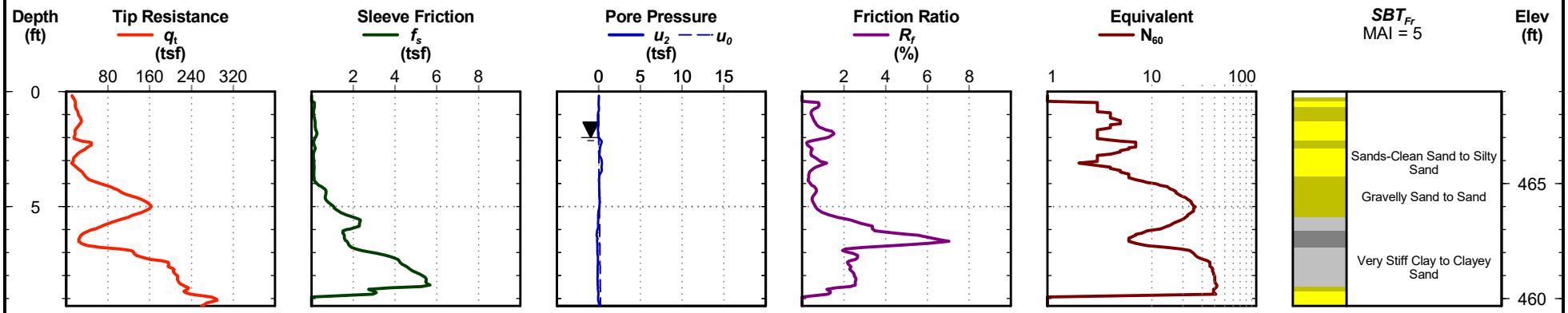
CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 3/23/23

Project Connect (Connect Team Added Locations)
Blythewood SC
S&ME Project No: 22610625

Sounding ID: BS7A/23

Northing:	861961
Easting:	2001468
Elevation:	469 ft
Date:	Mar. 15, 2023
Estimated Water Depth:	2 ft
Rig/Operator:	Marooka/T. Chew

Total Depth:	9.3 ft
Termination Criteria:	Maximum Reaction Force
Cone Size:	1.75



Cone Penetration Test

Electronic Filename: BS-07-A.DAT

CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 3/23/23

PROJECT: **Project Connect (Connect Team Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG BS9/23

DATE DRILLED: **3/3/23**	ELEVATION: **499.0 ft**
DRILL RIG: **CME 750**	BORING DEPTH: **65.0 ft**
DRILLER: **S. Gowan**	WATER LEVEL: **13' ATD, 13.4' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **860828** / EASTING: **2000689**
DRILLING METHOD: **Mud Rotary**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
	SURFACE MATERIAL- TOPSOIL - 1 inch									
	COASTAL PLAIN- SILTY SAND (SM) - mostly fine sands, little low plasticity fines, moist, light brown, loose			SS-1		3	3	3		6
	- - - @ 3.5 feet - wet.			SS-2		2	2	3		5
5			494.0							
	CLAYEY SAND (SC) - mostly fine to medium sands, some medium plasticity fines, moist, gray with orange and light brown mottles, medium dense.	HC		SS-3		8	11	11		22
	- - - @ 8.5 feet - dry to moist, red orange with light brown and gray mottles, very dense.			SS-4		12	34	32		66
10			489.0							
	SILTY SAND (SM) - mostly fine to coarse sands, some low plasticity fines, moist, light orange with white mottles, medium dense.			SS-5		13	16	12		28
15			484.0							
	- - - @ 18.5 feet - some low plasticity fines, grayish white with yellow mottles.			SS-6		6	7	8		15
20			479.0							
				SS-7		50/.5"			50/.5"	
	No Recovery									
25			474.0							

S&ME BORING LOG 22610625 PH120A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/31/23

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PROJECT: **Project Connect (Connect Team Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG BS9/23

DATE DRILLED: **3/3/23**	ELEVATION: **499.0 ft**
DRILL RIG: **CME 750**	BORING DEPTH: **65.0 ft**
DRILLER: **S. Gowan**	WATER LEVEL: **13' ATD, 13.4' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **860828** / EASTING: **2000689**
DRILLING METHOD: **Mud Rotary**	

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DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
30	**PIEDMONT RESIDUUM - SILT (ML)** - mostly low plasticity fines, few fine to medium sands, dry, laminated gray and grayish white with yellow and pink mottles, very hard.	469.0	SS-8		12	26	33	59
35	**PARTIALLY WEATHERED ROCK (PWR) - SILT (ML)** - mostly low plasticity fines, few fine to medium sands, dry, laminated gray and light gray with yellow mottles, very hard.	464.0	SS-9		15	21	50/5"	50/5"
40	**PIEDMONT RESIDUUM - SILT (ML)** - mostly low plasticity fines, few fine to medium sands, dry, laminated dark gray, gray and yellow , very stiff.	459.0	SS-10		6	12	17	29
45	- - - @ 43.5 feet - few fine sands, laminated red, dark gray, yellow, very hard.	454.0	SS-11		16	22	33	55
50	- - - @ 48.5 feet - few fine to medium sands, red, dark gray, light brown, hard.	449.0	SS-12		10	20	25	45

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS — 10 20 30 60 80

S&ME BORING LOG 22610625 PH120A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/31/23

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PROJECT: **Project Connect (Connect Team Added Locations)**
Blythewood, South Carolina
S&ME Project No. 22610625

BORING LOG BS9/23

DATE DRILLED: **3/3/23**	ELEVATION: **499.0 ft**
DRILL RIG: **CME 750**	BORING DEPTH: **65.0 ft**
DRILLER: **S. Gowan**	WATER LEVEL: **13' ATD, 13.4' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **RZZ**
SAMPLING METHOD: **Split spoon**	NORTHING: **860828** / EASTING: **2000689**
DRILLING METHOD: **Mud Rotary**	

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DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
55		**PARTIALLY WEATHERED ROCK (PWR) - SANDY SILT (ML)** - mostly low plasticity fines, some fine to medium sands, dry, laminated and fissured reddish gray with yellow mottles, very hard. *(continued)*		444.0	SS-13		13	36	50/5"		50/5"
60				439.0	SS-14		23	41	50/5"		50/5"
65		Boring terminated at 65 ft		434.0	SS-15		20	46	50/4"		50/4"

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 22610625 PH120A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/31/23

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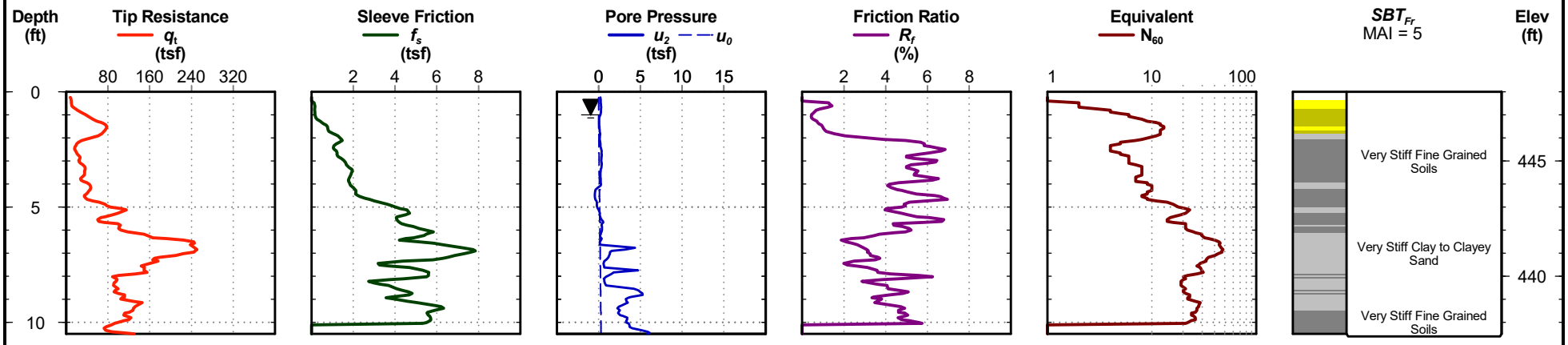
Project Connect (Connect Team Added Locations)
Blythewood SC
S&ME Project No: 22610625

Sounding ID: BS10/23

Northing:	860846
Easting:	2002279
Elevation:	448 ft
Date:	Mar. 15, 2023
Estimated Water Depth:	1 ft
Rig/Operator:	Marooka/T. Chew

Total Depth:	10.5 ft
Termination Criteria:	Maximum Reaction Force
Cone Size:	1.75



Cone Penetration Test

Electronic Filename: BS-10.DAT

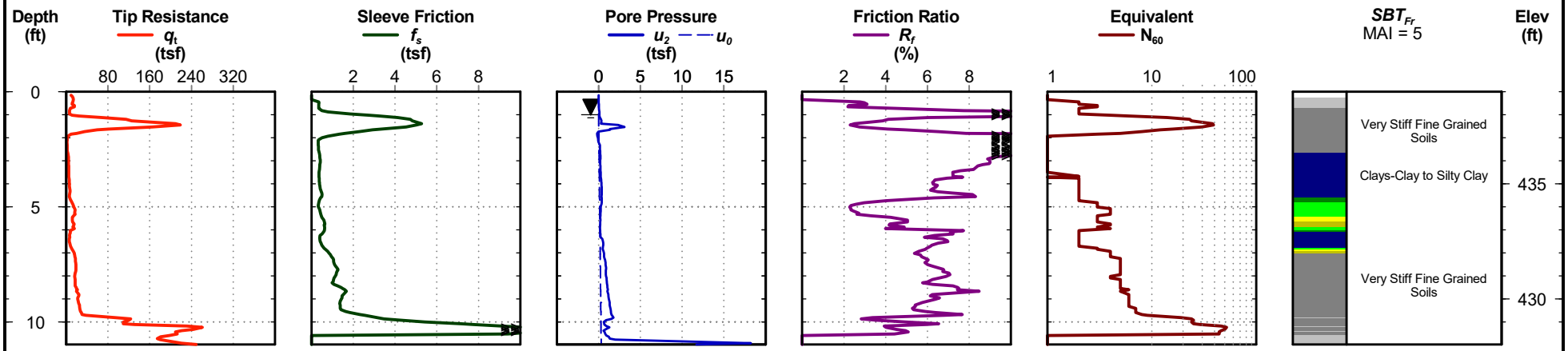
CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 3/23/23

Project Connect (Connect Team Added Locations)
Blythewood SC
S&ME Project No: 22610625

Sounding ID: BS11/23

Northing:	859404
Easting:	1998253
Elevation:	439 ft
Date:	Mar. 15, 2023
Estimated Water Depth:	1 ft
Rig/Operator:	Marooka/T. Chew

Total Depth:	11.0 ft
Termination Criteria:	Maximum Reaction Force
Cone Size:	1.75



Cone Penetration Test

Electronic Filename: BS-11.DAT

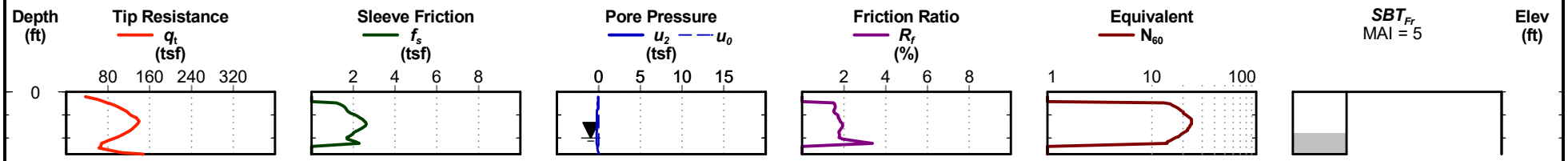
CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 3/23/23

Project Connect (Connect Team Added Locations)
Blythewood SC
S&ME Project No: 22610625

Sounding ID: BS14/23

Northing:	858880
Easting:	2003540
Elevation:	404 ft
Date:	Mar. 16, 2023
Estimated Water Depth:	2 ft
Rig/Operator:	Marooka/T. Chew

Total Depth:	2.7 ft
Termination Criteria:	Maximum Reaction Force
Cone Size:	1.75



Cone Penetration Test

Electronic Filename: BS-14.DAT

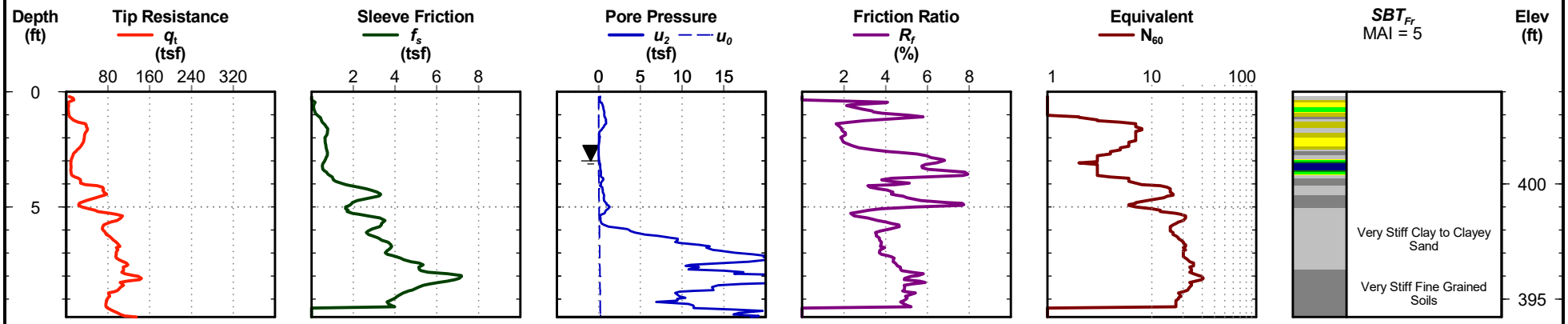
CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 3/23/23

Project Connect (Connect Team Added Locations)
Blythewood SC
S&ME Project No: 22610625

Sounding ID: BS14A/23

Northing:	858880
Easting:	2003540
Elevation:	404 ft
Date:	Mar. 16, 2023
Estimated Water Depth:	3 ft
Rig/Operator:	Marooka/T. Chew

Total Depth:	9.8 ft
Termination Criteria:	Maximum Reaction Force
Cone Size:	1.75



Cone Penetration Test

Electronic Filename: BS-14-A.DAT

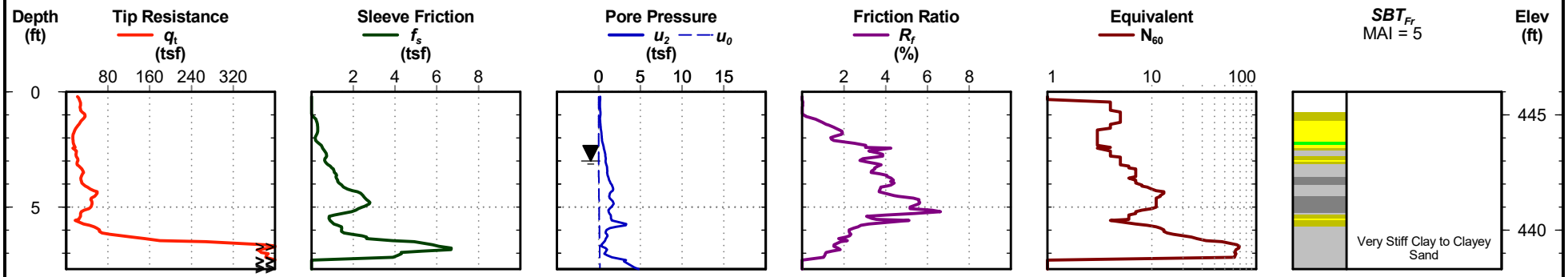
CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 3/23/23

Project Connect (Connect Team Added Locations)
Blythewood SC
S&ME Project No: 22610625

Northing: 858110
Easting: 2004504
Elevation: 446 ft
Date: Mar. 16, 2023
Estimated Water Depth: 3 ft
Rig/Operator: Marooka/T. Chew

Sounding ID: BS15/23

Total Depth: 7.7 ft
Termination Criteria: Maximum Reaction Force
Cone Size: 1.75



Cone Penetration Test

Electronic Filename: BS-15.DAT

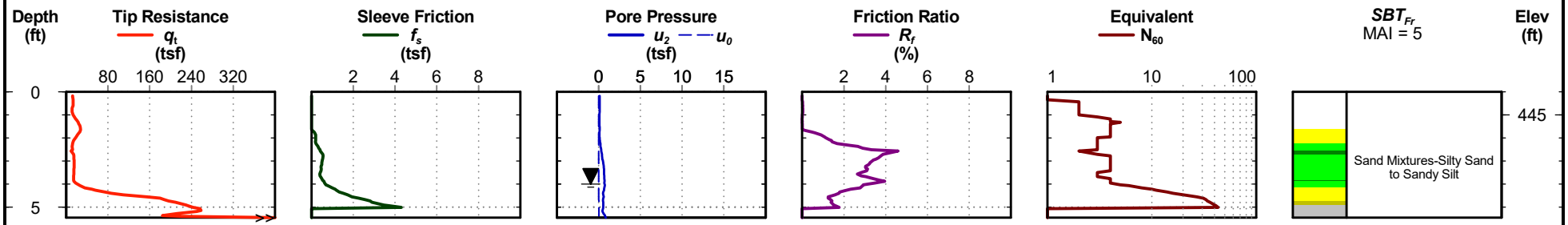
CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 3/23/23

Project Connect (Connect Team Added Locations)
Blythewood SC
S&ME Project No: 22610625

Sounding ID: BS15A/23

Northing:	858110
Easting:	2004504
Elevation:	446 ft
Date:	Mar. 16, 2023
Estimated Water Depth:	4 ft
Rig/Operator:	Marooka/T. Chew

Total Depth:	5.5 ft
Termination Criteria:	Maximum Reaction Force
Cone Size:	1.75



Cone Penetration Test

Electronic Filename: BS-15-A.DAT

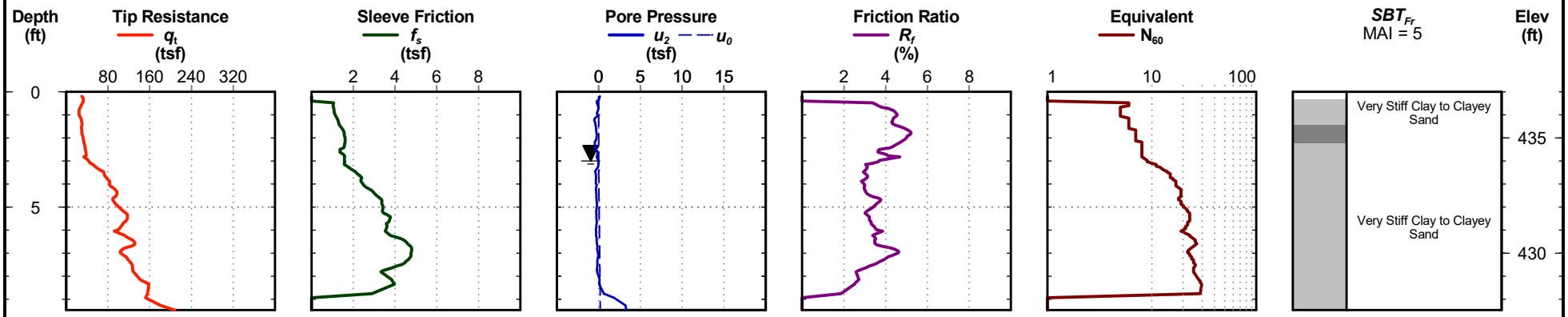
CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 3/23/23

Project Connect (Connect Team Added Locations)
Blythewood SC
S&ME Project No: 22610625

Sounding ID: BS16/23

Northing:	857925
Easting:	1999160
Elevation:	437 ft
Date:	Mar. 16, 2023
Estimated Water Depth:	3 ft
Rig/Operator:	Marooka/T. Chew

Total Depth:	9.5 ft
Termination Criteria:	Maximum Reaction Force
Cone Size:	1.75



Cone Penetration Test

Electronic Filename: BS-16.DAT

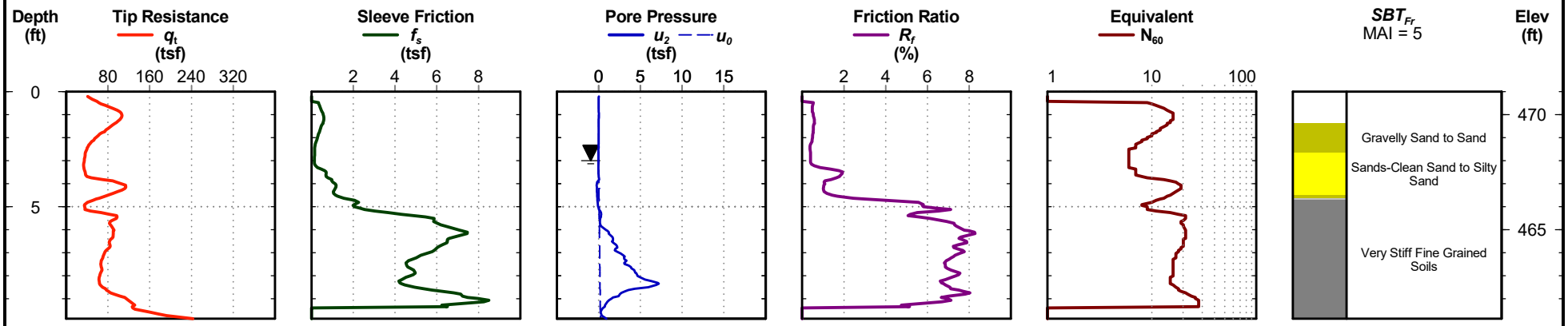
CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 3/23/23

Project Connect (Connect Team Added Locations)
Blythewood SC
S&ME Project No: 22610625

Sounding ID: BS17/23

Northing:	857630
Easting:	2001339
Elevation:	471 ft
Date:	Mar. 16, 2023
Estimated Water Depth:	3 ft
Rig/Operator:	Marooka/T. Chew

Total Depth:	9.9 ft
Termination Criteria:	Maximum Reaction Force
Cone Size:	1.75



Cone Penetration Test

Electronic Filename: BS-17.DAT

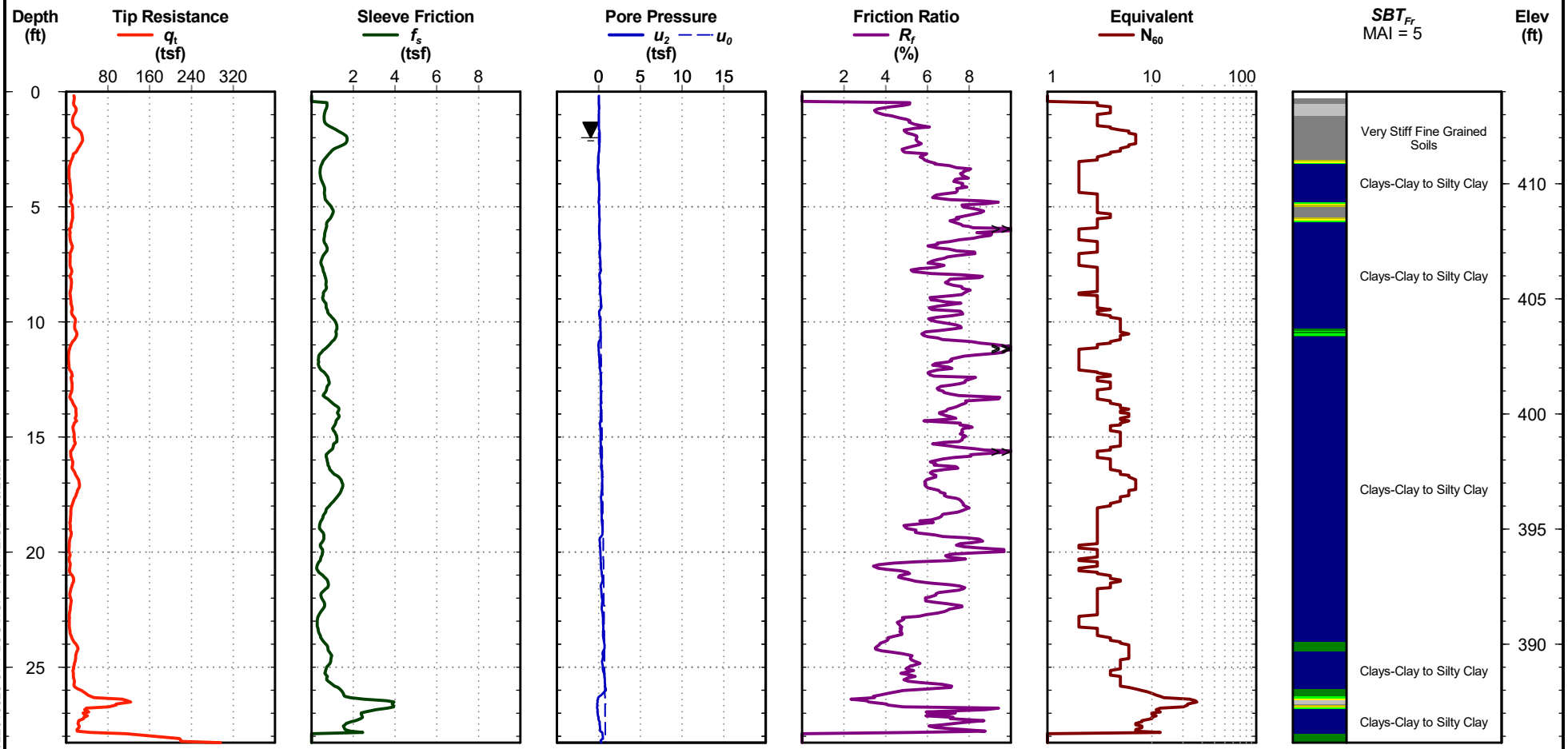
CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 3/23/23

Project Connect (Connect Team Added Locations)
Blythewood SC
S&ME Project No: 22610625

Sounding ID: BS18/23

Northing:	857039
Easting:	1999011
Elevation:	414 ft
Date:	Mar. 16, 2023
Estimated Water Depth:	2 ft
Rig/Operator:	Marooka/T. Chew

Total Depth:	28.3 ft
Termination Criteria:	Maximum Reaction Force
Cone Size:	1.75



Cone Penetration Test

Electronic Filename: BS-18.DAT

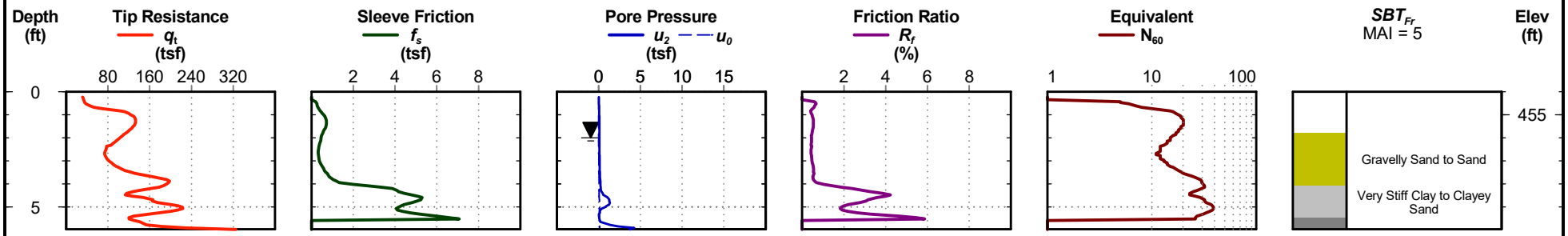
CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 3/23/23

Project Connect (Connect Team Added Locations)
Blythewood SC
S&ME Project No: 22610625

Sounding ID: BS19/23

Northing:	857007
Easting:	2000656
Elevation:	456 ft
Date:	Mar. 16, 2023
Estimated Water Depth:	2 ft
Rig/Operator:	Marooka/T. Chew

Total Depth:	6.0 ft
Termination Criteria:	Maximum Reaction Force
Cone Size:	1.75



Cone Penetration Test

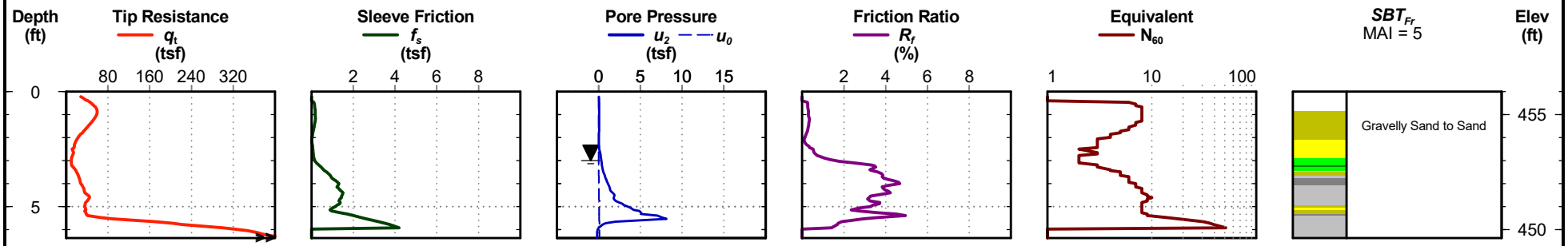
Electronic Filename: BS-19.DAT

CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 3/23/23

Project Connect (Connect Team Added Locations)
Blythewood SC
S&ME Project No: 22610625

Sounding ID: BS19A/23

Northing:	857007		
Easting:	2000656		
Elevation:	456 ft		
Date:	Mar. 16, 2023	**Total Depth:**	6.4 ft
Estimated Water Depth:	3 ft	**Termination Criteria:**	Maximum Reaction Force
Rig/Operator:	Marooka/T. Chew	**Cone Size:**	1.75



Cone Penetration Test

Electronic Filename: BS-19-A.DAT

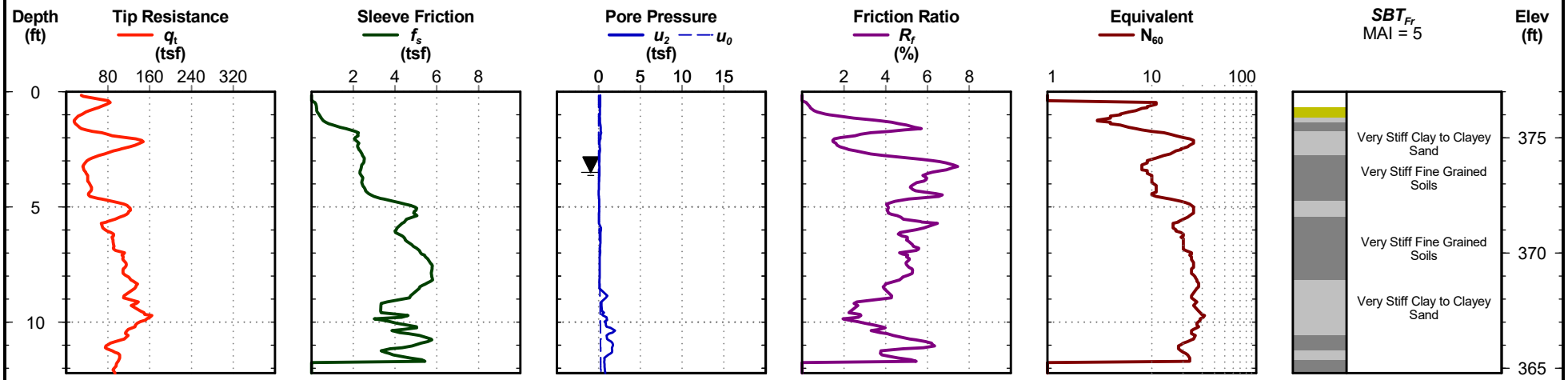
CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 3/23/23

Project Connect (Connect Team Added Locations)
Blythewood SC
S&ME Project No: 22610625

Sounding ID: BS20/23

Northing:	856790
Easting:	2002581
Elevation:	377 ft
Date:	Mar. 16, 2023
Estimated Water Depth:	3.5 ft
Rig/Operator:	Marooka/T. Chew

Total Depth:	12.2 ft
Termination Criteria:	Maximum Reaction Force
Cone Size:	1.75



Cone Penetration Test

Electronic Filename: BS-20.DAT

CPT REPORT - STANDARD - SBT FR \ 22610625 CPT LOGS.GPJ \ S&ME.GDT \ 3/23/23

PROJECT: **Project Connect (Beasley Tract)**
Blythewood, South Carolina
S&ME Project No. 22610625A

BORING LOG 23-BB-1

DATE DRILLED: **2/27/23**	ELEVATION: **452.0 ft**
DRILL RIG: **CME 550X**	BORING DEPTH: **15.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **Not Encountered**
HAMMER TYPE: **Automatic**	LOGGED BY: **JPL**
SAMPLING METHOD: **Split spoon**	NORTHING: **858026** / EASTING: **1998501**
DRILLING METHOD: **3¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2/10/23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
0	**SURFACE MATERIALS - TOPSOIL** - 3 inches.									
	PIEDMONT RESIDUUM - SILT (ML) - mostly low plasticity fines, few fine sands, dry to moist, laminated light brown, light gray and brown, stiff.			SS-1		2	7	8		15
				SS-2		4	7	9		16
5	- - - @3.5 feet - dry, laminated light brown, light gray, white, very stiff.		447.0							
				SS-3		3	6	9		15
	- - - @6 feet - dry to moist, laminated yellow and light gray, stiff.									
				SS-4		3	5	6		11
10	- - - @8.5 feet - mostly medium plasticity fines, laminated yellowish-brown, purple, light gray white.	HC	442.0							
				SS-5		3	4	6		10
15	Boring terminated at 15 ft		437.0							

10 20 30 60 80

S&ME BORING LOG 22610625A BORING LOGS.GPJ SME COLUMBIA.GINT DATA TEMPLATE.GDT 3/23/23

NOTES:

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2. *BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1586.*
3. *STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.*
4. *WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.*

PROJECT: **Project Connect (Beasley Tract)**
Blythewood, South Carolina
S&ME Project No. 22610625A

BORING LOG 23-BB-2

DATE DRILLED: **2/28/23**	ELEVATION: **485.0 ft**
DRILL RIG: **CME 550X**	BORING DEPTH: **55.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **35' ATD**
HAMMER TYPE: **Automatic**	LOGGED BY: **JPL**
SAMPLING METHOD: **Split spoon**	NORTHING: **858015** / EASTING: **2000847**
DRILLING METHOD: **3¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2/10/23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
	SURFACE MATERIALS - TOPSOIL - 4 inches.									
	COASTAL PLAIN - POORLY GRADED SAND WITH SILT (SP-SM) - mostly fine to medium sands, few low plasticity fines, moist, wet, light brown, very loose.	HC								
5	**CLAYEY SAND (SC)** - mostly fine to medium sands, some medium plasticity fines, moist, mottled light brown, light gray, red, loose.		480.0	SS-1		3	2	2		4
	- - - @6 feet - mottled pale gray, red, light brown, dense.			SS-2		5	4	5		9
				SS-3		12	17	21		38
	- - - @8.5 feet - mostly fine sands, mottled white, pale brown, red, medium dense.			SS-4		4	8	9		17
10			475.0							
				SS-5		4	6	12		18
15	**PIEDMONT RESIDUUM - LEAN CLAY (CL)** - mostly medium plasticity fines, trace fine sands, dry to moist, laminated white and pale yellow, very stiff.		470.0							
				SS-6		12	21	35		56
20	**LEAN CLAY WITH SAND (CL)** - mostly medium plasticity fines, little fine sands, dry to moist, laminated white and pale yellow, very hard.		465.0							
				SS-7		4	13	22		35
25	**LEAN CLAY (CL)** - mostly medium plasticity fines, few fine sands, dry to moist, laminated white and pale yellow, hard.		460.0							

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10, 20, 30, 60, 80

NOTES:

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3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

S&ME BORING LOG 22610625A BORING LOGS.GPJ SME COLUMBIA.GINT DATA TEMPLATE.GDT 3/23/23

PROJECT:	**Project Connect (Beasley Tract)** **Blythewood, South Carolina** **S&ME Project No. 22610625A**	**BORING LOG 23-BB-2**
DATE DRILLED: **2/28/23**	ELEVATION: **485.0 ft**	**NOTES:** Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2/10/23. No formal survey performed by S&ME.
DRILL RIG: **CME 550X**	BORING DEPTH: **55.0 ft**	
DRILLER: **L. Shrader**	WATER LEVEL: **35' ATD**	
HAMMER TYPE: **Automatic**	LOGGED BY: **JPL**	
SAMPLING METHOD: **Split spoon**	NORTHING: **858015**	EASTING: **2000847**
DRILLING METHOD: **3¼" H.S.A.**		

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
30		455.0	SS-8		5	11	20	31
35	**LEAN CLAY WITH SAND (CL)** - mostly medium plasticity fines, little fine sands, dry to moist, laminated pale yellow, white, purple, very stiff. ▽	450.0	SS-9		4	11	19	30
40	- - - @38.5 feet - laminated white and pale yellow.	445.0	SS-10		9	9	18	27
45	**SILT WITH SAND (ML)** - mostly low plasticity fines, little fine sands, dry to moist, light blueish-gray with white laminations, hard.	440.0	SS-11		5	12	21	33
50		435.0	SS-12		5	12	21	33

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS — 10 20 30 60 80

S&ME BORING LOG 22610625A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

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3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT: **Project Connect (Beasley Tract)**
Blythewood, South Carolina
S&ME Project No. 22610625A

BORING LOG 23-BB-2

DATE DRILLED: **2/28/23**	ELEVATION: **485.0 ft**
DRILL RIG: **CME 550X**	BORING DEPTH: **55.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **35' ATD**
HAMMER TYPE: **Automatic**	LOGGED BY: **JPL**
SAMPLING METHOD: **Split spoon**	NORTHING: **858015** / EASTING: **2000847**
DRILLING METHOD: **3¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2/10/23. No formal survey performed by S&ME.

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS (10 20 30 60 80)	N VALUE
55		- - - @53.5 feet - light blueish gray with white and yellow laminations, very hard.		430.0	SS-13		14	24	52		76
		Boring terminated at 55 ft									

S&ME BORING LOG 22610625A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

NOTES:

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2. *BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1586.*
3. *STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.*
4. *WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.*

PROJECT:	**Project Connect (Beasley Tract)** **Blythewood, South Carolina** **S&ME Project No. 22610625A**	**BORING LOG 23-BB-3**
DATE DRILLED: **2/28/23**	ELEVATION: **470.0 ft**	**NOTES:** Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2/10/23. No formal survey performed by S&ME.
DRILL RIG: **CME 550X**	BORING DEPTH: **40.0 ft**	
DRILLER: **L. Shrader**	WATER LEVEL: **14' ATD, 14.8' 24 hr**	
HAMMER TYPE: **Automatic**	LOGGED BY: **JPL**	
SAMPLING METHOD: **Split spoon**	NORTHING: **857968**	EASTING: **2002232**
DRILLING METHOD: **3¼" H.S.A.**		

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
	SURFACE MATERIALS - TOPSOIL - 3 inches.								
	COASTAL PLAIN - POORLY GRADED SAND WITH SILT (SP-SM) - mostly fine to medium sands, few nonplastic fines, dry to moist, pale brown, very loose.			SS-1		1	2	1	3
5	**POORLY GRADED SAND WITH CLAY (SP-SC)** - mostly fine to medium sands, few medium plasticity fines, moist, pale brown with light brown mottles, medium dense.		465.0	SS-2		2	5	10	15
	CLAYEY SAND (SC) - mostly fine to medium sands, little medium plasticity fines, moist, light red with light brown mottles, dense.			SS-3		14	16	20	36
10	**SILTY SAND (SM)** - mostly fine to medium sands, little low plasticity fines, moist, light brown, trace fine quartz gravels, dense.		460.0	SS-4		8	16	21	37
15	**POORLY GRADED SAND WITH SILT (SP-SM)** - mostly fine to medium sands, few low plasticity fines, dry to moist, white with pale brown, very dense.	▽ ▼	455.0	SS-5		16	40	50/5"	50/5"
20	**PIEDMONT RESIDUUM - SILT (ML)** - mostly low plasticity fines, few fine sands, moist, laminated yellowish-brown, white, brown, stiff.		450.0	SS-6		3	5	9	14
25	**SILT WITH SAND (ML)** - mostly low plasticity fines, little fine sands, dry, laminated yellowish-brown, light gray, very hard.	HC	445.0	SS-7		18	33	47	80

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS — 10 20 30 60 80

S&ME BORING LOG 22610625A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

NOTES:

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3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT: **Project Connect (Beasley Tract)**
Blythewood, South Carolina
S&ME Project No. 22610625A

BORING LOG 23-BB-3

DATE DRILLED: **2/28/23** | ELEVATION: **470.0 ft**

DRILL RIG: **CME 550X** | BORING DEPTH: **40.0 ft**

DRILLER: **L. Shrader** | WATER LEVEL: **14' ATD, 14.8' 24 hr**

HAMMER TYPE: **Automatic** | LOGGED BY: **JPL**

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2/10/23. No formal survey performed by S&ME.

SAMPLING METHOD: **Split spoon** | NORTHING: **857968** | EASTING: **2002232**

DRILLING METHOD: **3¼" H.S.A.**

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
30	**SANDY SILT (ML)** - mostly low plasticity fines, some fine sands, dry to moist, laminated brownish-yellow, light gray, white, hard.	440.0	SS-8		9	14	28		42
35	- - - @33.5 feet - some fine to medium sands, trace fine to medium rock fragments, laminated light brown, light gray, very hard.	435.0	SS-9		18	33	38		71
40	Boring terminated at 40 ft	430.0	SS-10		18	27	49		76

S&ME BORING LOG 22610625A BORING LOGS.GPJ SME COLUMBIA.GINT DATA TEMPLATE.GDT 3/23/23

NOTES:

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3. *STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.*
4. *WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.*

PROJECT: **Project Connect (Beasley Tract)**
Blythewood, South Carolina
S&ME Project No. 22610625A

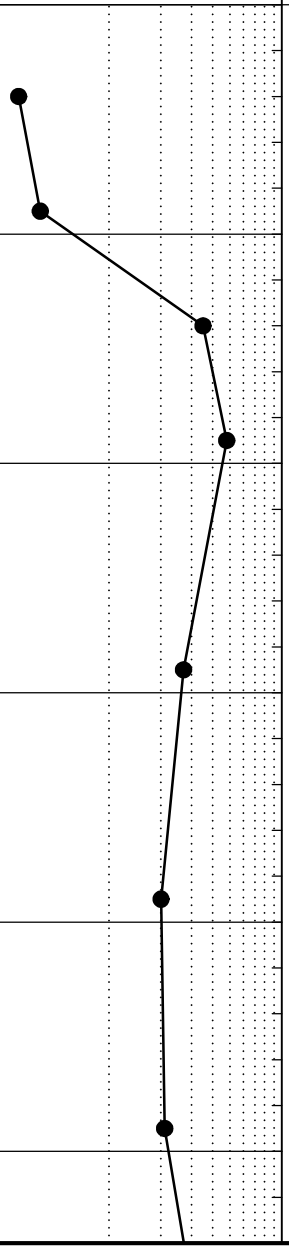
BORING LOG 23-BB-4

DATE DRILLED: **2/27/23**	ELEVATION: **490.0 ft**
DRILL RIG: **CME 550X**	BORING DEPTH: **55.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **NE ATD, 37' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **JPL**
SAMPLING METHOD: **Split spoon**	NORTHING: **857160** / EASTING: **2000120**
DRILLING METHOD: **3¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2/10/23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
	SURFACE MATERIALS - TOPSOIL - 3 inches.							
	COASTAL PLAIN - POORLY GRADED SAND WITH SILT (SP-SM) - mostly fine to medium sands, few low plasticity fines, moist, light brown, very loose.		SS-1		2	1	2	3
	- - - @3.5 feet - pale brown, dry to moist.		SS-2		1	2	2	4
5		485.0						
	CLAYEY SAND (SC) - mostly fine to medium sands, some medium plasticity fines, moist, mottled red and light brown, light gray, dense.		SS-3		7	15	20	35
	POORLY GRADED SAND WITH CLAY (SP-SC) - mostly fine sands, few medium plasticity fines, moist, mottled pale brown, white, red, dense.		SS-4		11	24	24	48
10		480.0						
	- - - @13.5 feet - medium dense.		SS-5		9	12	15	27
15		475.0						
	CLAYEY SAND (SC) - mostly fine to medium sands, little medium plasticity fines, moist, mottled pale brown, white, light red, medium dense.		SS-6		12	12	8	20
20		470.0						
	- - - @23.5 feet - white with pale brown mottles.		SS-7		6	10	11	21
25		465.0						

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS
10 20 30 60 80



S&ME BORING LOG 22610625A BORING LOGS.GPJ SME COLUMBIA.GINT DATA TEMPLATE.GDT 3/23/23

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3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT: **Project Connect (Beasley Tract)**
Blythewood, South Carolina
S&ME Project No. 22610625A

BORING LOG 23-BB-4

DATE DRILLED: **2/27/23**	ELEVATION: **490.0 ft**
DRILL RIG: **CME 550X**	BORING DEPTH: **55.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **NE ATD, 37' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **JPL**
SAMPLING METHOD: **Split spoon**	NORTHING: **857160** / EASTING: **2000120**
DRILLING METHOD: **3¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2/10/23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
30	- - - @28.5 feet - white, dense.		460.0	SS-8		10	15	20		35
35	**POORLY GRADED SAND WITH CLAY (SP-SC)** - mostly fine to medium sands, few medium plasticity fines, moist, white, very dense.	▼	455.0	SS-9		33	50/4"			50/4"
40	**PIEDMONT RESIDUUM - LEAN CLAY WITH SAND (CL)** - mostly medium plasticity fines, little fine sands, dry to moist, laminated very pale brown, white, yellow, hard.	HC	450.0	SS-10		8	18	30		48
45	**PARTIALLY WEATHERED ROCK - LEAN CLAY WITH SAND (CL)** - mostly medium plasticity fines, little fine sands, dry to moist, laminated very pale brown, white, yellow, very hard.		445.0	SS-11		11	35	50/5"		50/5"
50	- - - @48.5 feet - very pale brown, white, light gray.		440.0	SS-12		15	35	50/5"		50/5"

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 22610625A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

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PROJECT: **Project Connect (Beasley Tract)**
Blythewood, South Carolina
S&ME Project No. 22610625A

BORING LOG 23-BB-4

DATE DRILLED: **2/27/23**	ELEVATION: **490.0 ft**
DRILL RIG: **CME 550X**	BORING DEPTH: **55.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **NE ATD, 37' 24 hr**
HAMMER TYPE: **Automatic**	LOGGED BY: **JPL**
SAMPLING METHOD: **Split spoon**	NORTHING: **857160** / EASTING: **2000120**
DRILLING METHOD: **3¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2/10/23. No formal survey performed by S&ME.

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
55		**PIEDMONT RESIDUUM - LEAN CLAY (CL) -** mostly medium plasticity fines, few fine sands, dry to moist, laminated pale brown, white, light brown, gray, hard. *(continued)*		435.0	SS-13		11	15	16	10 20 30 60 80	31
		Boring terminated at 55 ft									

S&ME BORING LOG 22610625A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

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4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT: **Project Connect (Beasley Tract)**
Blythewood, South Carolina
S&ME Project No. 22610625A

BORING LOG 23-BB-5

DATE DRILLED: **2/27/23**	ELEVATION: **419.0 ft**
DRILL RIG: **CME 550X**	BORING DEPTH: **10.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **Not Encountered**
HAMMER TYPE: **Automatic**	LOGGED BY: **JPL**
SAMPLING METHOD: **Split spoon**	NORTHING: **856575** / EASTING: **1999056**
DRILLING METHOD: **3¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2/10/23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
0	**SURFACE MATERIALS - TOPSOIL** - 4 inches.		419.0							
	COASTAL PLAIN - CLAYEY SAND (SC) - mostly fine to medium sands, some medium plasticity fines, moist, brownish-red with light light brown mottles, loose.			SS-1		2	4	6		10
	- - - @3.5 feet - mostly fine to coarse sands, few fine quartz subangular gravels, light brown with red mottles, medium dense.			SS-2		2	5	7		12
5			414.0							
	SANDY LEAN CLAY (CL) - mostly medium plasticity fines, some fine to medium sands, moist, yellowish-brown with white and red layers, stiff.	HC		SS-3		4	4	8		12
	- - - @8.5 feet - some fine sands, laminated light blueish-gray, light brown red, white.			SS-4		2	4	6		10
10	Boring terminated at 10 ft		409.0							

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

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S&ME BORING LOG 22610625A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

PROJECT: **Project Connect (Beasley Tract)**
Blythewood, South Carolina
S&ME Project No. 22610625A

BORING LOG 23-BB-6

DATE DRILLED: **2/28/23**	ELEVATION: **440.0 ft**
DRILL RIG: **CME 550X**	BORING DEPTH: **15.0 ft**
DRILLER: **L. Shrader**	WATER LEVEL: **Not Encountered**
HAMMER TYPE: **Automatic**	LOGGED BY: **JPL**
SAMPLING METHOD: **Split spoon**	NORTHING: **856475** / EASTING: **2000821**
DRILLING METHOD: **3¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation estimated from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2/10/23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
	SURFACE MATERIALS - TOPSOIL - 3 inches.									
	COASTAL PLAIN - SANDY LEAN CLAY (CL) - mostly medium plasticity fines, some fine to medium sands, moist, yellowish-red, firm.			SS-1		2	3	5		8
	PIEDMONT RESIDUUM - LEAN CLAY WITH SAND (CL) - mostly medium plasticity fines, little fine to medium sands, moist, laminated light brown, red, white, stiff.			SS-2		3	5	7		12
5			435.0							
	SANDY SILT (ML) - mostly low to medium plasticity fines, some fine to medium sands, moist, stratified yellowish-brown, white, very stiff.	HC		SS-3		4	7	11		18
	- - - @8.5 feet - speckled very pale brown, yellowish-brown, white, dry to moist.			SS-4		6	10	18		28
10			430.0							
				SS-5		7	12	16		28
15	Boring terminated at 15 ft		425.0							

10 20 30 60 80

S&ME BORING LOG 22610625A BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

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4. *WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.*

Temporary Piezometer Approval

Approval is hereby granted to:	Chad Bruorton/S&ME
on behalf of:	Jeff Ruble/Richland County Economic Development
Facility:	SW Quadrant of I-77 and Blythewood Rd
Site Identification:	MW-13554
County:	Richland

This approval is for the installation of 3 temporary piezometers. The temporary piezometers are to be installed in the locations as illustrated on the submitted map and per the proposed construction details provided by your correspondence 2/8/23. The piezometers are to be installed following all of the applicable requirements of R.61-71.

Please note that R.61-71 requires the following:

1. All piezometers shall be drilled, constructed, and abandoned by a South Carolina certified well driller per R.61-71.D.1.

2. A Water Well Record Form or other form provided or approved by the Department shall be completed and submitted to the Department within 30 days after piezometer completion or abandonment unless the Department has approved another schedule. The form should contain the "as-built" construction details and all other information required by R.61-71.H.1.f

3. All analytical data and water levels obtained from each piezometer shall be submitted to the Department within 30 days of receipt of laboratory results unless another schedule has been approved by the Department as required by R.61-71.H.1.d.

4. All temporary piezometers shall be abandoned within 5 days of borehole completion using appropriate methods as required by R.61-71.H.4.c.

5. If any of the information provided to the Department changes, Karen Morrison (803-898-0792, morrisks@dhec.sc.gov) shall be notified a minimum of twenty-four hours prior to piezometer construction as required by R.61-71.H.1.a.

This approval is pursuant to the provisions of Section 44-55-40 of the 1976 South Carolina Code of Laws and R.61-71 of the South Carolina Well Standards and Regulations, dated April 26, 2002.

Date of Issuance: 2/9/23 **Approval #: 13554**

Robert Cole, Manager
Division of Site Assessment Remediation & Revitalization (SARR)
Federal & State Site Assessment Section
Bureau of Land & Waste Management

2/9/23

Jeff Ruble
Richland County Economic Development
1201 Min St, Suite 110
Columbia, SC 29201

Re: Piezometer Approval Request received 2/8/23
Richland County Site ID: MW-13554

Dear Mr Ruble:

The South Carolina Department of Health and Environmental Control (SCDHEC) has reviewed and approved the referenced temporary Piezometer approval request submitted 2/8/23. The original temporary piezometer approval has been sent to Chad Bruorton/S&ME, Inc. and a copy is enclosed for your records. The analytical results from the groundwater samples should be submitted to my attention on or before 4/9/23. Please note the following:

- Piezometer construction and sampling derived waste including but not limited to drill cuttings, drilling fluids, and development/purge water should be managed properly and in compliance with applicable requirements. If containerized, each vessel should be clearly labeled with regards to contents, source, and date of activity.

- Piezometers are to yield groundwater samples representative of the zone monitored per R.61-71 H.1.c of the South Carolina Well Standards and Regulations (e.g. low flow sampling techniques are recommended for samples to be analyzed for metals to reduce induced turbidity).

- If this investigation is conducted as part of a potential real estate transaction, the potential purchaser may want to contact SCDHEC's Brownfields Program before this work is performed. The Brownfields Program offers a mechanism to avoid liability for contamination that may be found during this investigation. The investigation proposed may satisfy part or all of the required assessment if pre-approved by the Brownfields Program. The Brownfields Program may be reached at 1-866-576-3432.

If you have any questions, please contact me at (803) 898-0802.

Sincerely,

Robert Cole, Manager
Division of Site Assessment, Remediation & Revitalization (SARR)
Federal & State Site Assessment Section

enc: Piezometer approval

cc: SCDHEC EQC Region

Summary of Field Procedures

Boring and Sampling

Soil Test Boring with Hollow-Stem Auger

Soil sampling and penetration testing were performed in general accordance with ASTM D1586, *Standard Test Method for Penetration Test and Split Barrel Sampling of Soils*. Borings were made by mechanically twisting a continuous steel hollow stem auger into the soil. At regular intervals, soil samples were obtained with a standard 1.4-inch I. D., 2-inch O. D., split barrel sampler. The sampler was first seated six inches to penetrate any loose cuttings, then driven an additional 12 inches with blows of a 140-pound hammer falling 30 inches. The number of hammer blows required to drive the sampler through the two final six inch increments was recorded as the penetration resistance (SPT N) value. The N-value, when properly interpreted by qualified professional staff, is an index of the soil strength and foundation support capability.

Soil Test Boring with Rotary Wash

Soil sampling and penetration testing were performed in general accordance with ASTM D1586, *Standard Test Method for Penetration Test and Split Barrel Sampling of Soils*. A rotary drilling process was used to advance the hole and a heavy drilling fluid was circulated in the bore holes to stabilize the sides and flush the cuttings. At regular intervals, drilling tools were removed and soil samples were obtained with a standard 1.4 inch I. D., 2-inch O. D., split barrel sampler. The sampler was first seated six inches to penetrate any loose cuttings, then driven an additional 12 inches with blows of a 140-pound hammer falling 30 inches. The number of hammer blows required to drive the sampler through the two final six inch increments was recorded as the penetration resistance (SPT N) value. The N-value, when properly interpreted by qualified professional staff, is an index of the soil strength and foundation support capability.

Electronic Cone Penetrometer (CPT) Soundings

CPT soundings consist of a conical pointed penetrometer which is hydraulically pushed into the soil at a slow, measured rate. Procedures for measurement of the tip resistance and side friction resistance to push generally follow those described by ASTM D5778, *Standard Test Method for Performing Electronic Friction Cone and Piezocone Penetration Testing of Soils*.

A penetrometer with a conical tip having a 60 degree apex angle and a cone base area of 10 cm2 was advanced into the soil at a constant rate of 20 mm/s. The force on the conical point required to penetrate the soil was measured electronically every 50 mm penetration to obtain the cone resistance q_c. A friction sleeve is present on the penetrometer immediately behind the cone tip. The force exerted on the sleeve was measured electronically at a minimum of every 50 mm penetration and divided by the surface area of the sleeve to obtain the friction sleeve resistance value f_s. A pore pressure element mounted immediately behind the cone tip was used to measure the pore pressure induced during advancement of the cone into the soil.

Using this procedure soil samples are not obtained. Soil classification was made on the basis of comparison of the tip resistance, sleeve resistance and pore pressure values to values measured at other locations in known soil types, using experience with similar soils and exercising engineering judgment.

Bulk Samples

At selected locations and depths, representative bulk samples of the soils were obtained by randomly taking shovel loads from the cuttings or spoil brought to the surface, until a sample of 30 to 50 pounds was obtained. The sample was placed in a cloth or plastic sack marked with appropriate descriptive information. Samples were protected from freezing at all times.

Refusal to Drilling

Refusal to the soil drilling methods used at this site may result from encountering hard cemented soil, soft weathered rock, coarse gravel, cobbles or boulders, thin rock seams, or the upper surface of sound continuous rock. Core drilling would be required to determine the character and continuity of materials below refusal of the soil auger in natural soils. Where fills are present, refusal to drilling may also result from encountering buried debris, building materials, or objects. Backhoe test pits would be required to expose and identify buried materials below refusal levels in filled areas.

Refusal to CPT Push

Refusal to the cone penetrometer equipment occurred when the reaction weight of the CPT rig was exceeded by the thrust required to push the conical tip further into the ground. At that point the rig tended to lift off the ground. Refusal may have resulted from encountering hard cemented or indurated soils, soft weathered rock, coarse gravel, cobbles or boulders, thin rock seams, or the upper surface of sound continuous rock. Where fills are present, refusal to the CPT rig may also have resulted from encountering buried debris, building materials, or objects.

Installation of Temporary PVC Casing (Observation Well)

Water level readings taken during boring operations do not provide information on long term fluctuations of the water table. In several of the borings, a temporary observation well will be constructed by inserting PVC casing to the indicated depth. A slotted PVC well screen will be attached to the bottom of the PVC pipe to allow subsurface water to enter the well. Soil will be mounded around the observation wells at the ground surface to prevent surface runoff from entering the borehole.

Borehole Closure

Following collection of relevant geotechnical data, boreholes were filled by slowly pouring auger cuttings into the open hole such that minimal "bridging" of the material occurred in the hole. Backfilling of the upper two feet of each hole was tamped as heavily as possible with a shovel handle or other hand held equipment, and the backfill crowned to direct rainfall away on the surface. Where boreholes exceeded five feet in depth, a plastic hole plug was firmly tamped into place within the backfill at a depth of about two feet.

Preservation and Transporting of Soil Samples with Control of Field Moisture

Procedures for preserving soil samples obtained in the field and transportation of samples to the laboratory generally followed those given in ASTM D4220, *Standard Practice for Preserving and Transporting Soil Samples* for Group B samples as defined in Section 4. Group B samples are those samples not suspected of being contaminated and for which only water content and classification, proctor, relative density, or profile logging will be performed. Group B samples also include bulk samples that are intended to be remolded in the

laboratory for compaction, swell pressure, percent swell, consolidation, permeability, CBR, or shear testing. Representative samples of the cuttings or split spoon samples, or representative bulk samples, were placed in suitably identified, sealed glass jars or plastic containers and transported to the laboratory. Sample identification numbers on the containers corresponded to sample numbers recorded on field boring records or test pit records. Thin-walled tube samples were sealed at the ends with paraffin and capped with plastic end caps.

Field Tests of Earth Materials

The subsurface conditions encountered during drilling were reported on a field test boring record by the chief driller. The record contains information about the drilling method, samples attempted and sample recovery, indications of materials in the borings such as coarse gravel, cobbles, etc., and indications of materials encountered between sample intervals. Representative soil samples were placed in glass jars and transported to the laboratory along with the field boring records. Recovered samples not expended in laboratory tests are commonly retained in our laboratory for 60 days following completion of drilling. Field boring records are retained at our office.

Measurement of Static Water Levels

Water level readings were made in the open boreholes immediately after completing drilling and withdrawal of the tools. Where feasible, measurements were repeated after an elapsed period of 24 hours to gauge the stabilized water level. Procedures for measurement of liquid levels in open boreholes are described in ASTM D4750, *Standard Test Method for Determining Subsurface Liquid Levels in a Borehole or Monitoring Well (Observation Well)*. A calibrated cable with electrical wire encased, equipped with a weighted sensing tip at one end and an electric meter at the other, was slowly lowered into each borehole until the liquid surface was penetrated by the weighted end. Contact with the water closed an electric circuit and was recorded by the meter. The depth reading on the cable was then recorded relative to a reference point on the surface. Measurements made by this method were then repeated until approximately consistent values were obtained.

Appendix II-B – Previous Field Data

PROJECT: **Project Connect (fka - Barnett Tracts)**
Blythewood, South Carolina
S&ME Project No. 22610625 (fka 4261-15-181)

BORING LOG 15-B-1

DATE DRILLED: **11/18/15** | ELEVATION: **509.0 ft**
DRILL RIG: **CME 450** | BORING DEPTH: **25.0 ft**
DRILLER: **H. Wessinger** | WATER LEVEL: **Not Encountered**
HAMMER TYPE: **Auto** | LOGGED BY: **HGM**
SAMPLING METHOD: **Split spoon**
DRILLING METHOD: **2¼" H.S.A.**

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation obtained from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

NORTHING: **863220** | EASTING: **2003840**

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
	SURFACE MATERIALS - 3 inches of TOPSOIL.									
	PIEDMONT - SILTY SAND (SM) - mostly fine to medium sands, some low plasticity fines, saturated, tan, very loose.			SS-1		1	1	2		3
5	- - - @ 3 feet - mostly medium to coarse sands, little low to medium plasticity fines, moist, mottled reddish-brown, tan and gray, medium dense.		504.0	SS-2		11	9	12		21
	- - - @ 6 feet - some low plasticity fines.			SS-3		10	13	15		28
	- - - @ 8 feet - mostly fine to medium sands, yellowish-brown, very dense.			SS-4		39	50/5"		50/5"	
10	**SANDY SILT (ML)** - mostly low plasticity fines, some fine sands, dry to moist, tan, hard.		499.0							
				SS-5		13	16	21		37
15	**SILT WITH SAND (ML)** - mostly low plasticity fines, little fine sands, dry to moist, tan, very stiff.		494.0							
				SS-6		10	13	15		28
20	- - - @ 20 feet - tan and white.	HC	489.0							
				SS-7		3	6	10		16
25	Boring terminated at 25 ft		484.0							

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10, 20, 30, 60, 80

S&ME BORING LOG 4261-15-181 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

NOTES:

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3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT: **Project Connect (fka - Barnett Tracts)**
Blythewood, South Carolina
S&ME Project No. 22610625 (fka 4261-15-181)

BORING LOG 15-B-2

DATE DRILLED: **11/18/15** | ELEVATION: **493.0 ft**
DRILL RIG: **CME 450** | BORING DEPTH: **17.0 ft**
DRILLER: **H. Wessinger** | WATER LEVEL: **8' ATD, 5.5' 24 hr**
HAMMER TYPE: **Auto** | LOGGED BY: **HGM**
SAMPLING METHOD: **Split spoon** | NORTHING: **862060** | EASTING: **2002403**
DRILLING METHOD: **2¼" H.S.A.**

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation obtained from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
	SURFACE MATERIALS - 4 inches of TOPSOIL.							
	PIEDMONT - SILTY SAND (SM) - mostly fine to medium sands, little low plasticity fines, saturated, brown, very loose.		SS-1		WOH	WOH	WOH	WOH
	- - - @ 3 feet - moist, reddish-brown, medium dense.	488.0	SS-2		3	9	10	19
			SS-3		10	13	16	29
	- - - @ 8 feet - mostly medium to coarse sands, some low plasticity fines, trace organics, dense.		SS-4		9	16	20	36
		483.0						
	- - - @ 12 feet - light gray and black, medium dense.		SS-5		5	7	9	16
		478.0						
	Boring terminated at 17 ft due to auger refusal							

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS — 10 20 30 60 80

S&ME BORING LOG 4261-15-181 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

NOTES:

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PROJECT: **Project Connect (fka - Barnett Tracts)**
Blythewood, South Carolina
S&ME Project No. 22610625 (fka 4261-15-181)

BORING LOG 15-B-3

DATE DRILLED: **11/19/15** | ELEVATION: **497.0 ft**
DRILL RIG: **CME 450** | BORING DEPTH: **25.0 ft**
DRILLER: **H. Wessinger** | WATER LEVEL: **1' ATD, 1' 24 hr**
HAMMER TYPE: **Auto** | LOGGED BY: **HGM**
SAMPLING METHOD: **Split spoon**
DRILLING METHOD: **2¼" H.S.A.**

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation obtained from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

NORTHING: **861220** | EASTING: **2001084**

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
	SURFACE MATERIALS - 4 inches of TOPSOIL.							
	PIEDMONT - POORLY GRADED SAND WITH SILT (SP-SM) - mostly fine to medium sands, few low plasticity fines, trace organics, moist to wet, brown, very loose.		SS-1		1	WOH	1	1
5	- - - @ 3 feet - absent organics, medium dense.	492.0	SS-2		5	6	6	12
			SS-3		5	9	11	20
	SILTY SAND (SM) - mostly fine to medium sands, little low plasticity fines, moist, brown, medium dense.		SS-4		13	16	19	35
10	- - - @ 8 feet - reddish-brown, dense.	487.0						
	- - - @ 10 feet - some low plasticity fines, trace mica, tan and white, medium dense.		SS-5		7	9	9	18
15	**SILT (ML)** - mostly low plasticity fines, few fine sands, moist, light gray, hard.	482.0						
			SS-6		14	16	16	32
20	- - - @ 20 feet - very hard.	477.0						
			SS-7		22	31	40	71
25	Boring terminated at 25 ft	472.0						

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS
10 20 30 60 80

S&ME BORING LOG 4261-15-181 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

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PROJECT: **Project Connect (fka - Barnett Tracts)**
Blythewood, South Carolina
S&ME Project No. 22610625 (fka 4261-15-181)

BORING LOG 15-B-4

DATE DRILLED: **11/18/15** | ELEVATION: **474.0 ft**
DRILL RIG: **CME 450** | BORING DEPTH: **25.0 ft**
DRILLER: **H. Wessinger** | WATER LEVEL: **Not Encountered**
HAMMER TYPE: **Auto** | LOGGED BY: **HGM**
SAMPLING METHOD: **Split spoon**
DRILLING METHOD: **2¼" H.S.A.**

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NORTHING: **861010** | EASTING: **2003203**

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
	SURFACE MATERIALS - 4 inches of TOPSOIL.								
	PIEDMONT - POORLY GRADED SAND WITH SILT (SP-SM) - mostly fine to medium sands, few low plasticity fines, moist to wet, brown, loose.			SS-1		2	3	4	7
5	**SILTY SAND (SM)** - mostly medium to coarse sands, little low plasticity fines, trace gravel, moist, reddish-brown and tan, medium dense.		469.0	SS-2		5	7	9	16
	SANDY SILT (ML) - mostly low plasticity fines, some fine sands, moist, light gray and yellowish-brown, very stiff.			SS-3		6	9	11	20
10	- - - @ 10 feet - 1" quartz gravel lense, light tan, very hard.		464.0	SS-4		10	16	14	30
15	**SILT WITH SAND (ML)** - mostly low plasticity fines, little fine sands, moist, white, hard.	HC	459.0	SS-5		18	21	33	54
20	**PARTIALLY WEATHERED ROCK (PWR) - SANDY SILT (ML)** - mostly low plasticity fines, some fine sands, moist, white, very hard.		454.0	SS-6		13	16	15	31
25	Boring terminated at 25 ft		449.0	SS-7		25	50/4"		50/4"

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS
10 20 30 60 80

S&ME BORING LOG 4261-15-181 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

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PROJECT: **Project Connect (fka - Barnett Tracts)**
Blythewood, South Carolina
S&ME Project No. 22610625 (fka 4261-15-181)

BORING LOG 15-B-5

DATE DRILLED: **11/19/15**	ELEVATION: **484.0 ft**
DRILL RIG: **CME 450**	BORING DEPTH: **25.0 ft**
DRILLER: **H. Wessinger**	WATER LEVEL: **1.5' ATD**
HAMMER TYPE: **Auto**	LOGGED BY: **HGM**
SAMPLING METHOD: **Split spoon**	NORTHING: **860175** / EASTING: **2002364**
DRILLING METHOD: **2¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation obtained from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
	SURFACE MATERIALS - 6 inches of TOPSOIL.						
	PIEDMONT - POORLY GRADED SAND WITH SILT (SP-SM) - mostly fine to medium sands, few low plasticity fines, trace organics, moist to wet, brown, very loose.						
	- - - @ 3 feet - absent organics, gray.		SS-1	1	WOH	1	1
5		479.0	SS-2	2	2	2	4
	SILTY SAND (SM) - mostly fine to medium sands, little low plasticity fines, moist, reddish-brown, loose.		SS-3	3	4	6	10
	- - - @ 8 feet - some low plasticity fines, medium dense.		SS-4	5	7	9	16
10	**SILT (ML)** - mostly low plasticity fines, few fine sands, trace mica, moist, light gray and tan, stiff.	474.0					
			SS-5	5	6	7	13
15	- - - @ 15 feet - absent mica, light reddish-brown, very stiff.	469.0					
			SS-6	6	8	10	18
20	- - - @ 20 feet - yellowish-brown.	464.0					
			SS-7	9	13	16	29
25	Boring terminated at 25 ft	459.0					

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS — 10 20 30 60 80

S&ME BORING LOG 4261-15-181 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

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PROJECT: **Project Connect (fka - Barnett Tracts)**
Blythewood, South Carolina
S&ME Project No. 22610625 (fka 4261-15-181)

BORING LOG 15-B-6

DATE DRILLED: **11/19/15** | ELEVATION: **490.0 ft**
DRILL RIG: **CME 450** | BORING DEPTH: **25.0 ft**
DRILLER: **H. Wessinger** | WATER LEVEL: **Not Encountered**
HAMMER TYPE: **Auto** | LOGGED BY: **HGM**
SAMPLING METHOD: **Split spoon**
DRILLING METHOD: **2¼" H.S.A.**

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NORTHING: **858689** | EASTING: **1999639**

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
	SURFACE MATERIALS - 6 inches of TOPSOIL.									
	PIEDMONT - POORLY GRADED SAND WITH SILT (SP-SM) - mostly fine to medium sands, few low plasticity fines, moist, brown, very loose.			SS-1		2	2	2		4
	- - - @ 3 feet - moist to wet, light brown, loose.			SS-2		2	2	3		5
5			485.0							
	SILTY SAND (SM) - mostly fine to medium sands, some low plasticity fines, moist, light brown, medium dense.			SS-3		5	6	7		13
	- - - @ 8 feet - little low plasticity fines, mottled tan, gray and reddish-brown.			SS-4		9	10	15		25
10	- - - @ 10 feet - dense.		480.0							
				SS-5		16	20	21		41
15	- - - @ 15 feet - some low plasticity fines, dry to moist, tan, very dense.	HC	475.0							
				SS-6		19	26	41		67
20	**SILT (ML)** - mostly low plasticity fines, trace fine sands, moist, white, very hard.		470.0							
				SS-7		16	22	30		52
25	Boring terminated at 25 ft		465.0							

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10, 20, 30, 60, 80

S&ME BORING LOG 4261-15-181 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

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PROJECT: **Project Connect (fka - Barnett Tracts)**
Blythewood, South Carolina
S&ME Project No. 22610625 (fka 4261-15-181)

BORING LOG 15-B-7

DATE DRILLED: **11/19/15** | ELEVATION: **471.0 ft**
DRILL RIG: **CME 450** | BORING DEPTH: **25.0 ft**
DRILLER: **H. Wessinger** | WATER LEVEL: **Not Encountered**
HAMMER TYPE: **Auto** | LOGGED BY: **HGM**
SAMPLING METHOD: **Split spoon**
DRILLING METHOD: **2¼" H.S.A.**

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NORTHING: **858669** | EASTING: **2002063**

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
	SURFACE MATERIALS - 4 inches of TOPSOIL.							
	PIEDMONT - POORLY GRADED SAND WITH SILT (SP-SM) - mostly fine to medium sands, few low plasticity fines, moist, brown, very loose.		SS-1		2	2	2	4
5	**SILTY SAND (SM)** - mostly fine to medium sands, some low plasticity fines, dry to moist, reddish-brown, medium dense.	466.0	SS-2		5	7	10	17
	- - - @ 6 feet - mottled reddish-brown, tan and gray.		SS-3		8	9	9	18
	- - - @ 8 feet - tan and light gray.		SS-4		9	10	13	23
10	**SILT WITH SAND (ML)** - mostly low plasticity fines, little fine sands, moist, very light tan, very stiff.	461.0						
			SS-5		7	8	9	17
15	**SILTY SAND (SM)** - mostly medium to coarse sands, some low plasticity fines, moist to wet, white and light brown, very dense.	456.0						
			SS-6		17	20	36	56
20	**PARTIALLY WEATHERED ROCK (PWR) - SILTY SAND (SM)** - mostly fine to medium sands, little low plasticity fines, moist, tan, very dense.	451.0						
			SS-7		50/5"			50/5"
25	Boring terminated at 25 ft	446.0						

HC

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS
10 20 30 60 80

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S&ME BORING LOG 4261-15-181 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

PROJECT: **Project Connect (fka Blythewood Industrial Site - N. Portion (658 Acres))**
Blythewood, South Carolina
S&ME Project No. 22610625 (fka 4261-18-077)

BORING LOG 18-B-10

DATE DRILLED: **6/5/18**	ELEVATION: **488.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **17.5 ft**
DRILLER: **H. Wessinger**	WATER LEVEL: **Not Encountered**
HAMMER TYPE: **Auto**	LOGGED BY: **RCB**
SAMPLING METHOD: **Split spoon**	NORTHING: **859151** / EASTING: **1998783**
DRILLING METHOD: **2¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation obtained from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
	SURFACE MATERIALS - 8 inches of TOPSOIL.									
	COASTAL PLAIN - PORLY GRADED SAND (SP) - mostly fine to medium sands, moist, grayish-tan, loose.			SS-1		2	3	2		5
5	**CLAYEY SAND (SC)** - mostly fine to medium sands, little low to medium plasticity fines, moist, mottled orange, gray and tan, medium dense.		483.0	SS-2		3	5	6		11
	- - - @ 5 feet - some low to medium plasticity fines, mottled gray and tan.			SS-3		5	7	12		19
	- - - @ 8 feet - little low plasticity fines, orangish-tan, dense.			SS-4		10	13	21		34
10	**PIEDMONT - PARTIALLY WEATHERED ROCK (PWR) - SILTY SAND (SM)** - mostly fine sands, little low plasticity fines, dry, tannish-orange, very dense, relict rock structure.	HC	478.0							
				SS-5		31	50/5"		50/5"	
15			473.0							
	Boring terminated at 17.5 ft due to auger refusal									

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10 20 30 60 80

S&ME BORING LOG 4261-18-077 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

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PROJECT: **Project Connect (fka Blythewood Industrial Site - N. Portion (658 Acres))**
Blythewood, South Carolina
S&ME Project No. 22610625 (fka 4261-18-077)

BORING LOG 18-B-3

DATE DRILLED: **6/4/18**	ELEVATION: **513.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **25.0 ft**
DRILLER: **H. Wessinger**	WATER LEVEL: **Not Encountered**
HAMMER TYPE: **Auto**	LOGGED BY: **RCB**
SAMPLING METHOD: **Split spoon**	NORTHING: **864015** / EASTING: **2002710**
DRILLING METHOD: **2¼" H.S.A.**	

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DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
	SURFACE MATERIALS - 6 inches of TOPSOIL.								
	COASTAL PLAIN - POORLY GRADED SAND (SP) - mostly fine to medium sands, dry to moist, brown, loose.			SS-1		3	4	3	7
				SS-2		3	5	8	13
5	**POORLY GRADED SAND WITH CLAY (SP-SC)** - mostly fine to medium sands, few low plasticity fines, dry to moist, mottled orange, tan and light gray, medium dense.		508.0						
				SS-3		6	6	9	15
	CLAYEY SAND (SC) - mostly fine to medium sands, some low plasticity fines, moist, mottled orange, tan and light gray, medium dense.			SS-4		8	12	15	27
10	- - - @ 8 feet - dry to moist, tan and white.		503.0						
	- - - @ 10 feet - mostly fine sands, little low plasticity fines, wet, mottled light orange and tan, very dense.	HC		SS-5		16	21	32	53
15	**PIEDMONT - FAT CLAY (CH)** - mostly medium to high plasticity fines, moist, light gray and white, firm.		498.0						
				SS-6		3	3	3	6
20	**POORLY GRADED SAND WITH SILT (SP-SM)** - mostly fine to medium sands, few non-plastic to low plasticity fines, wet, tannish-white, dense.		493.0						
				SS-7		16	21	20	41
25	Boring terminated at 25 ft		488.0						

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS
10 20 30 60 80

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S&ME BORING LOG 4261-18-077 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

PROJECT: **Project Connect (fka Blythewood Industrial Site - N. Portion (658 Acres))**
Blythewood, South Carolina
S&ME Project No. 22610625 (fka 4261-18-077)

BORING LOG 18-B-4

DATE DRILLED: **6/5/18**	ELEVATION: **540.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **25.0 ft**
DRILLER: **H. Wessinger**	WATER LEVEL: **Not Encountered**
HAMMER TYPE: **Auto**	LOGGED BY: **RCB**
SAMPLING METHOD: **Split spoon**	NORTHING: **863347** / EASTING: **1998589**
DRILLING METHOD: **2¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation obtained from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
	SURFACE MATERIALS - 4 inches of TOPSOIL.								
	COASTAL PLAIN - CLAYEY SAND (SC) - mostly fine to medium sands, some low to medium plasticity fines, dry to moist, reddish-orange, medium dense.								
	- - - @ 3 feet - light brown.			SS-1		4	6	8	14
5	- - - @ 5 feet - little low plasticity fines, mottled light brown and red.		535.0	SS-2		9	12	14	26
				SS-3		6	6	10	16
	- - - @ 8 feet - mostly medium to coarse sands, light orangish-red, dense.			SS-4		10	16	21	37
10	**SILTY SAND (SM)** - mostly fine to medium sands, some low plasticity fines, moist, light orange and white, medium dense.	HC	530.0						
				SS-5		8	10	15	25
15	- - - @ 15 feet - white.		525.0						
				SS-6		9	12	17	29
20	- - - @ 20 feet - wet, light tan and white, dense.		520.0						
				SS-7		11	19	20	39
25	Boring terminated at 25 ft		515.0						

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS
10 20 30 60 80

S&ME BORING LOG 4261-18-077 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

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PROJECT: **Project Connect (fka Blythewood Industrial Site - N. Portion (658 Acres))**
Blythewood, South Carolina
S&ME Project No. 22610625 (fka 4261-18-077)

BORING LOG 18-B-5

DATE DRILLED: **6/5/18**	ELEVATION: **506.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **25.0 ft**
DRILLER: **H. Wessinger**	WATER LEVEL: **Not Encountered**
HAMMER TYPE: **Auto**	LOGGED BY: **RCB**
SAMPLING METHOD: **Split spoon**	NORTHING: **863269** / EASTING: **2000949**
DRILLING METHOD: **2¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation obtained from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
	SURFACE MATERIALS - 8 inches of TOPSOIL.									
	COASTAL PLAIN - CLAYEY SAND (SC) - mostly fine to medium sands, little low plasticity fines, dry to moist, mottled brown and red, loose.			SS-1		2	3	3		6
	- - - @ 3 feet - mottled tan and orange.			SS-2		3	5	4		9
5	- - - @ 5 feet - medium dense.		501.0	SS-3		5	5	10		15
	- - - @ 8 feet - mostly medium to coarse sands, some low to medium plasticity fines, trace gravel, moist, tannish-white.			SS-4		8	11	14		25
10	**PIEDMONT - SILTY CLAY (CL-ML)** - mostly low plasticity fines, dry to moist, white, very stiff, relict rock structure.		496.0							
		HC		SS-5		9	12	10		22
15			491.0							
				SS-6		10	16	21		37
20	**SILT WITH SAND (ML)** - mostly low plasticity fines, little fine sands, dry, white, very hard.		486.0							
				SS-7		19	31	46		77
25	Boring terminated at 25 ft		481.0							

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10, 20, 30, 60, 80

S&ME BORING LOG 4261-18-077 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

NOTES:

1. ***THIS LOG IS ONLY A PORTION OF A REPORT PREPARED FOR THE NAMED PROJECT AND MUST ONLY BE USED TOGETHER WITH THAT REPORT.***
2. ***BORING, SAMPLING AND PENETRATION TEST DATA IN GENERAL ACCORDANCE WITH ASTM D-1586.***
3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT: **Project Connect (fka Blythewood Industrial Site - N. Portion (658 Acres))**
Blythewood, South Carolina
S&ME Project No. 22610625 (fka 4261-18-077)

BORING LOG 18-B-6

DATE DRILLED: **6/4/18**	ELEVATION: **509.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **25.0 ft**
DRILLER: **H. Wessinger**	WATER LEVEL: **Not Encountered**
HAMMER TYPE: **Auto**	LOGGED BY: **RCB**
SAMPLING METHOD: **Split spoon**	NORTHING: **862395** / EASTING: **2000290**
DRILLING METHOD: **2¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation obtained from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
	SURFACE MATERIALS - 8 inches of TOPSOIL.									
	COASTAL PLAIN - POORLY GRADED SAND (SP) - mostly fine to medium sands, dry to moist, tannish-gray, loose.			SS-1		2	2	3		5
5	**POORLY GRADED SAND WITH CLAY (SP-SC)** - mostly fine to medium sands, few low plasticity fines, moist, light brown, loose. - - - @ 5 feet - medium dense.		504.0	SS-2		3	3	5		8
				SS-3		4	6	9		15
10	**CLAYEY SAND (SC)** - mostly fine to medium sands, some low to medium plasticity fines, dry to moist, mottled orange, tan and light gray, very dense.		499.0	SS-4		21	33	48		81
				SS-5		16	20	34		54
15	**PIEDMONT - SILT (ML)** - mostly low to medium plasticity fines, moist, tannish-white, very stiff, relict rock structure.	HC	494.0							
				SS-6		6	8	13		21
20	**PARTIALLY WEATHERED ROCK (PWR) - SANDY SILT (ML)** - mostly low plasticity fines, some fine sands, dry, light gray to white, very hard, relict rock structure.		489.0							
				SS-7		12	31	50/5"	50/5"	
25	Boring terminated at 25 ft		484.0							

S&ME BORING LOG 4261-18-077 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

NOTES:

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3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT: **Project Connect (fka Blythewood Industrial Site - N. Portion (658 Acres))**
Blythewood, South Carolina
S&ME Project No. 22610625 (fka 4261-18-077)

BORING LOG 18-B-7

DATE DRILLED: **6/5/18**	ELEVATION: **517.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **25.0 ft**
DRILLER: **H. Wessinger**	WATER LEVEL: **15' ATD, 5.4' 24 hr**
HAMMER TYPE: **Auto**	LOGGED BY: **RCB**
SAMPLING METHOD: **Split spoon**	NORTHING: **862161** / EASTING: **1998605**
DRILLING METHOD: **2¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation obtained from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
	SURFACE MATERIALS - 8 inches of TOPSOIL.							
	<u>COASTAL PLAIN</u> - POORLY GRADED SAND (SP) - mostly fine to medium sands, dry, light grayish-tan, very loose.							
5	**POORLY GRADED SAND WITH CLAY (SP-SC)** - mostly fine to medium sands, few low plasticity fines, moist, brown, loose.	512.0	SS-1		1	2	2	4
			SS-2		3	4	3	7
	CLAYEY SAND (SC) - mostly fine to medium sands, some low plasticity fines, moist, orangish-brown, medium dense.		SS-3		5	7	9	16
	- - - @ 8 feet - mostly medium to coarse sands, some low to medium plasticity fines, light orange.		SS-4		6	10	13	23
10	**<u>PIEDMONT</u> - SILT (ML)** - mostly low plasticity fines, dry, yellowish-white, very stiff.	507.0						
			SS-5		9	12	14	26
15	**<u>PARTIALLY WEATHERED ROCK (PWR)</u> - SANDY SILT (ML)** - mostly low plasticity fines, some fine to medium sands, dry, white, very hard, relict rock structure.	502.0						
			SS-6		50/5"			50/5"
20	**SILT WITH SAND (ML)** - mostly low plasticity fines, little fine sands, dry, tannish-white, hard, relict rock structure.	497.0						
			SS-7		10	16	21	37
25	Boring terminated at 25 ft	492.0						

HC

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS
10 20 30 60 80

S&ME BORING LOG 4261-18-077 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

NOTES:

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3. ***STRATIFICATION AND GROUNDWATER DEPTHS ARE NOT EXACT.***
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

PROJECT: **Project Connect (fka Blythewood Industrial Site - N. Portion (658 Acres))**
Blythewood, South Carolina
S&ME Project No. 22610625 (fka 4261-18-077)

BORING LOG 18-B-8

DATE DRILLED: **6/5/18**	ELEVATION: **515.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **25.0 ft**
DRILLER: **H. Wessinger**	WATER LEVEL: **4.1' 24 hr**
HAMMER TYPE: **Auto**	LOGGED BY: **RCB**
SAMPLING METHOD: **Split spoon**	NORTHING: **861714** / EASTING: **1997618**
DRILLING METHOD: **2¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation obtained from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	N VALUE
	SURFACE MATERIALS - 6 inches of TOPSOIL.							
	<u>COASTAL PLAIN</u> - POORLY GRADED SAND (SP) - mostly fine to medium sands, moist, light gray, loose.							
5	**CLAYEY SAND (SC)** - mostly fine to medium sands, some low to medium plasticity fines, moist, mottled orange, tan and gray, loose. - - - @ 5 feet - medium dense.	510.0	SS-1		3	4	5	9
			SS-2		2	3	5	8
			SS-3		4	6	9	15
	- - - @ 8 feet - mostly medium to coarse sands, some low plasticity fines, moist to wet, yellowish-tan, loose.		SS-4		4	4	6	10
10	**<u>PIEDMONT</u> - SILT WITH SAND (ML)** - mostly low plasticity fines, little fine sands, dry, white, very stiff, relict rock structure. HC	505.0						
			SS-5		9	12	16	28
15	**SILT (ML)** - mostly low plasticity fines, dry, white, very hard, relict rock structure.	500.0						
			SS-6		16	29	31	60
20		495.0						
			SS-7		20	33	47	80
25	Boring terminated at 25 ft	490.0						

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS — 10 20 30 60 80

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S&ME BORING LOG 4261-18-077 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

PROJECT: **Project Connect (fka Blythewood Industrial Site - N. Portion (658 Acres))**
Blythewood, South Carolina
S&ME Project No. 22610625 (fka 4261-18-077)

BORING LOG 18-B-9

DATE DRILLED: **6/5/18**	ELEVATION: **504.0 ft**
DRILL RIG: **CME 550**	BORING DEPTH: **25.0 ft**
DRILLER: **H. Wessinger**	WATER LEVEL: **Not Encountered**
HAMMER TYPE: **Auto**	LOGGED BY: **RCB**
SAMPLING METHOD: **Split spoon**	NORTHING: **860961** / EASTING: **1999894**
DRILLING METHOD: **2¼" H.S.A.**	

NOTES: Northing & Easting converted from Latitude & Longitude estimated from Google Earth. Elevation obtained from Mass Grading Exhibit, prepared by Thomas & Hutton, dated 2-10-23. No formal survey performed by S&ME.

DEPTH (feet)	MATERIAL DESCRIPTION	WATER LEVEL	ELEVATION (feet-MSL)	SAMPLE NO.	SAMPLE TYPE	BLOW COUNT / CORE DATA 1st 6in / RUN #	2nd 6in / REC	3rd 6in / RQD	STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS	N VALUE
	SURFACE MATERIALS - 6 inches of TOPSOIL.									
	COASTAL PLAIN - POORLY GRADED SAND (SP) - mostly fine to medium sands, dry to moist, tannish-gray, loose.			SS-1		2	3	4		7
	- - - @ 3 feet - tan.			SS-2		3	4	5		9
5	**POORLY GRADED SAND WITH CLAY (SP-SC)** - mostly fine to medium sands, few low plasticity fines, moist, mottled orange and tan, medium dense.		499.0	SS-3		5	5	6		11
	CLAYEY SAND (SC) - mostly fine to medium sands, little low plasticity fines, moist orangish-red, medium dense.			SS-4		12	14	16		30
10	- - - @ 10 feet - light tan and orange, dense.		494.0							
		HC		SS-5		13	15	19		34
15	- - - @ 15 feet - mostly medium to coarse sands, some low to medium plasticity fines, wet, light tan, medium dense.		489.0							
				SS-6		3	5	11		16
20	**PIEDMONT - SILT WITH SAND (ML)** - mostly low plasticity fines, little fine sands, dry, yellowish-white, very hard, relict rock structure.		484.0							
				SS-7		21	30	42		72
25	Boring terminated at 25 ft		479.0							

STANDARD PENETRATION TEST DATA (blows/ft) / REMARKS: 10, 20, 30, 60, 80

S&ME BORING LOG 4261-18-077 BORING LOGS.GPJ SME COLUMBIA GINT DATA TEMPLATE.GDT 3/23/23

NOTES:

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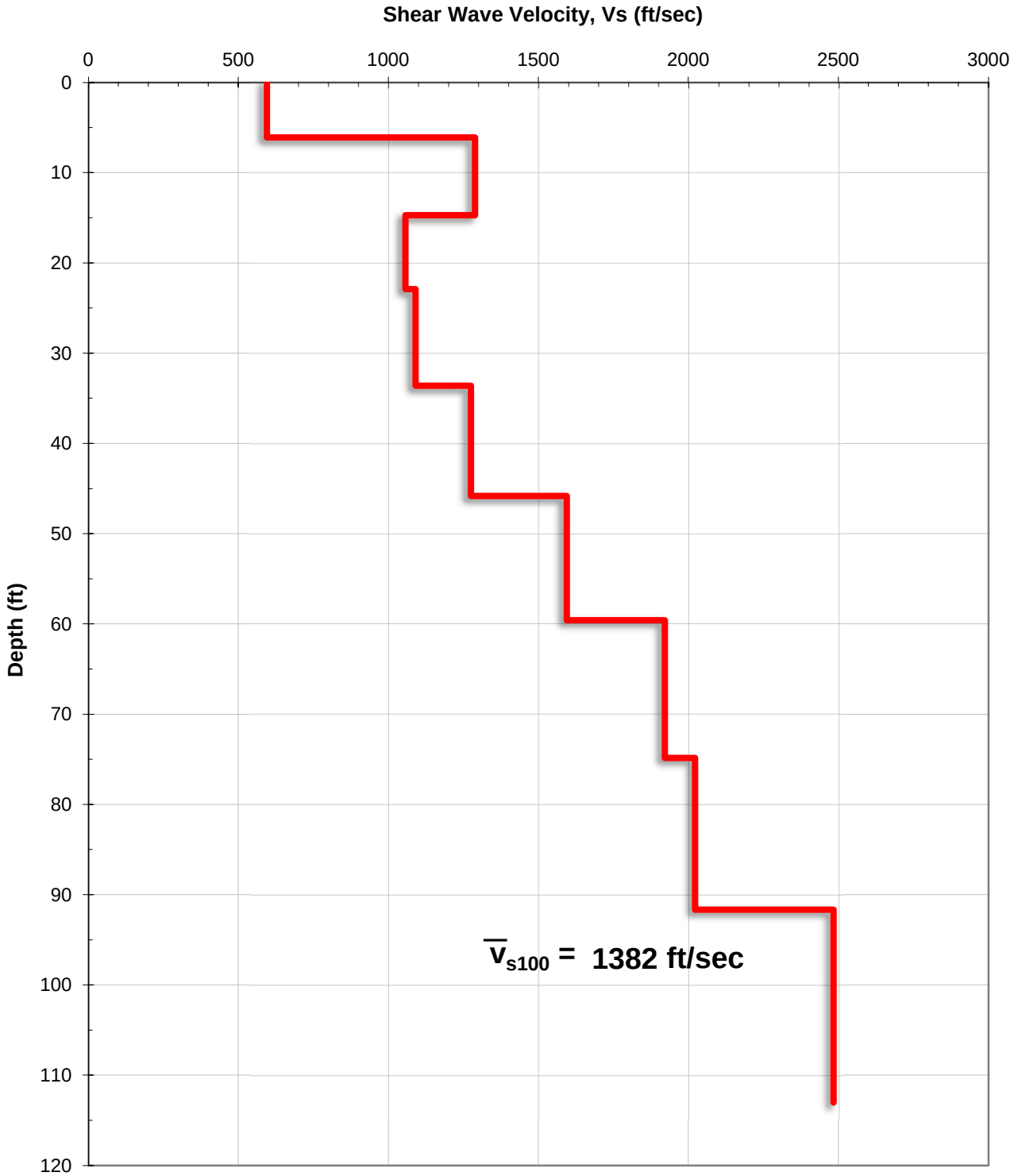
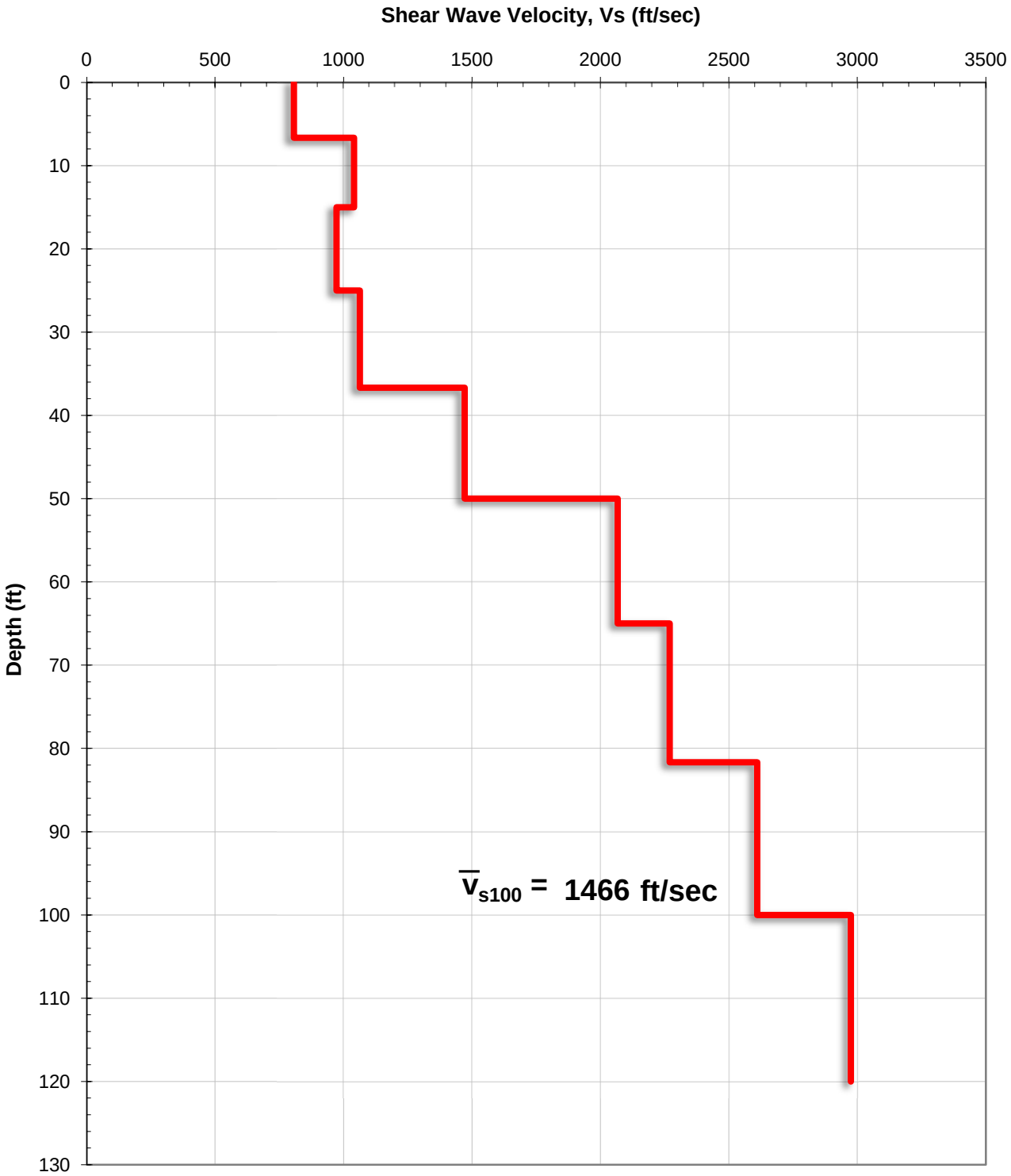
4. ***WATER LEVEL IS AT TIME OF EXPLORATION AND WILL VARY.***

Shear Wave Velocity Profile SW-1
Blythewood Industrial Site - Northern Portion (658 Acres
Blythewood, South Carolina
4261-18-007



Shear Wave Velocity Profile SW-2
Blythewood Industrial Site - Northern Portion (658 Acres)
Blythewood, South Carolina
4261-18-007



Appendix III – Laboratory Test Results

Form No: TR-D1140-3
Revision No. 1
Revision Date: 8/2/17

MATERIAL FINER THAN THE #200 SIEVE

ASTM D1140 / D2216

S&ME, Inc. - Columbia: 134 Suber Road, Columbia, SC 29210

Project #:	22610625	Report Date:	1/18/2023
Project Name:	Project Connect	Test Date(s):	1/9-1/12
Client Name:	Thomas & Hutton		
Client Address:	1501 Main Street, Suite 760, Columbia SC		
Sample by:	Southern Drill	Sample Dates:	1/5-6/2023
Sampling Method:	Bulk	Drill Rig :	CME-550

Method: **A** ☐ **B** ☑ Soaked ☑ Soak Time 3hrs

Sample Identification	Tare Weight	Tare Wt.+ Wet Wt	Tare Wt. + Dry Wt	Tare Wt. + Dry Wt. after Wash	Water Wt.	Percent Moisture	% Passing #200
Boring #, Sample #, Depth	grams	grams	grams	grams	grams	%	%
22-B-1, BS-1, 20-30	122.68	755.36	597.80	299.03	157.56	**33.2%**	**62.9%**
22-B-2, BS-2, 0-5	120.50	648.40	640.80	568.00	---	**---**	**14.0%**
22-B-3, BS-3, 10-15	129.34	555.30	511.76	425.27	43.54	**11.4%**	**22.6%**

Balance ID. *28686* *Calibration Date:* *12/12/2022* *#200 Sieve* *28686* *Calibration Date:* *1/12/2023*

Notes / Deviations / References: ASTM D1140: Amount of Material in Soil Finer Than the No. 200 (75-um)) Sieve

Method B uses a deflocculating agent such as Sodium Hexametaphosphate while soaking the specimen for at least 2 hours.

John Thornton	Laboratory Technician	1/18/2023
Technician Name	*Title*	*Date*
Robert C. Bruorton, P.E.	Senior Engineer	1/20/2023
Technical Responsibility	*Position*	*Date*

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Form No. TR-D4318-T89-90
Revision No. 1
Revision Date: 7/26/17

LIQUID LIMIT, PLASTIC LIMIT, & PLASTIC INDEX

ASTM D 4318 ☒ *AASHTO T 89* ☐ *AASHTO T 90* ☐

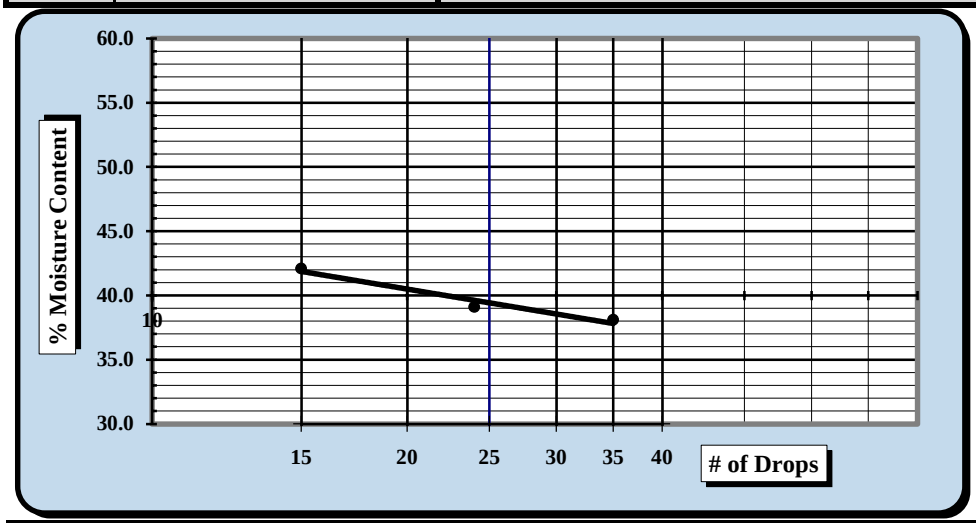
S&ME, Inc. - Columbia: 134 Suber Road, Columbia, SC 29210

Project #:	22610625	Report Date:	1/18/23
Project Name:	Project Connect	Test Date:	1/11/23
Client Name:	Thomas & Hutton		
Client Address:	1501 Main Street, Suite 760, Columbia, SC 29201		

Boring #:	22-B-1	Sample #:	BS-1	Sample Date:	1/5/23
Location:	cut	Type:	bulk	Depth:	20-30'
Sample Description:	White Sandy SILT (ML)				

Type and Specification	*S&ME ID #*	*Cal Date:*	*Type and Specification*	*S&ME ID #*	*Cal Date:*
Balance (0.01 g)	15425	12/12/2022	Grooving tool	28839	8/2/2022
LL Apparatus	28651	12/12/2022			
Oven	25722	1/9/2023			

Pan #		Liquid Limit						Plastic Limit		
	Tare #:	30	32	214				31	146	
A	Tare Weight	20.86	20.56	20.86				20.84	20.55	
B	Wet Soil Weight + A	31.87	33.66	33.01				27.71	26.49	
C	Dry Soil Weight + A	28.83	29.98	29.41				26.24	25.16	
D	Water Weight (B-C)	3.04	3.68	3.60				1.47	1.33	
E	Dry Soil Weight (C-A)	7.97	9.42	8.55				5.40	4.61	
F	% Moisture (D/E)*100	38.1%	39.1%	42.1%				27.2%	28.9%	
N	# OF DROPS	35	24	15				*Moisture Contents determined by ASTM D 2216*		
LL	LL = **F** * FACTOR									
Ave.	*Average*							28.1%		



One Point Liquid Limit			
N	**Factor**	**N**	**Factor**
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic ☒

Liquid Limit	**40**
Plastic Limit	**28**
Plastic Index	**12**
Group Symbol	**ML**

Multipoint Method ☑
One-point Method ☐

Wet Preparation ☐ Dry Preparation ☑ Air Dried ☑ *% Passing the #200 Sieve:* 62.9%

Notes / Deviations / References:

Group Symbol refers to material passing the No. 40 sieve.

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

Keyonna Bundridge	1/18/23	Robert C. Bruorton, P.E.	1/18/23
Technician Name	*Date*	*Technical Responsibility*	*Date*

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Form No. TR-D698-2
Revision No. : 1
Revision Date: 07/25/17

MOISTURE - DENSITY REPORT

Quality Assurance

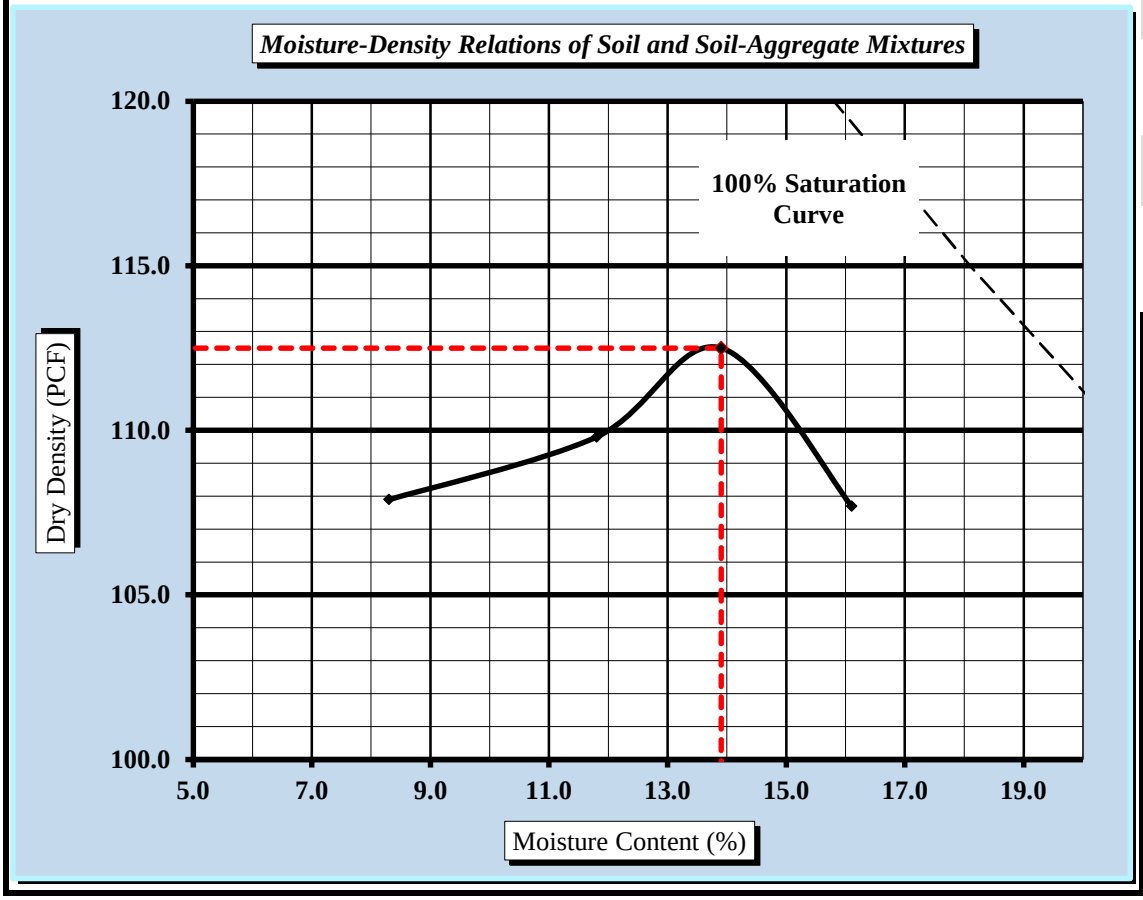
S&ME, Inc. - Columbia: 134 Suber Road, Columbia, SC 29210

S&ME Project #:	22610625	Report Date:	1/18/23
Project Name:	Project Connect	Test Date(s):	1/9-1/15
Client Name:	Thomas & Hutton		
Client Address:	1501 Main Street, Suite 760, Columbia, SC 29201		

Boring #:	22-B-1	Sample #:	BS-1	Sample Date:	1/5/2023
Location:	cut	Offset:	NA	Depth:	N/A
Sample Description:	White Sandy SILT (ML)				

Maximum Dry Density 112.5 PCF. Optimum Moisture Content 13.9%

ASTM D 698 - - Method A



Soil Properties

Moisture Content	
Liquid Limit	40
Plastic Limit	28
Plastic Index	12
% Passing	
3/4"	
3/8"	
#4	97.8%
#200	62.9%
Oversize Fraction	
Bulk Gravity	
% Absorption	
% Oversize	0.4%
MDD	
Opt. MC	

Moisture-Density Curve Displayed: Fine Fraction ☒ Corrected for Oversize Fraction (ASTM D 4718) ☒

Sieve Size used to separate the Oversize Fraction: #4 Sieve ☒ 3/8 inch Sieve ☐ 3/4 inch Sieve ☐

Mechanical Rammer ☐ Manual Rammer ☒ Moist Preparation ☐ Dry Preparation ☒

References / Comments / Deviations:

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 698: Laboratory Compaction Characteristics of Soil Using Standard Effort

Robert C. Bruorton, P.E.	Senior Engineer	1/18/2023
Technical Responsibility	*Position*	*Date*

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Form No. TR-D4318-T89-90
Revision No. 1
Revision Date: 7/26/17

LIQUID LIMIT, PLASTIC LIMIT, & PLASTIC INDEX

ASTM D 4318 ☒ *AASHTO T 89* ☐ *AASHTO T 90* ☐

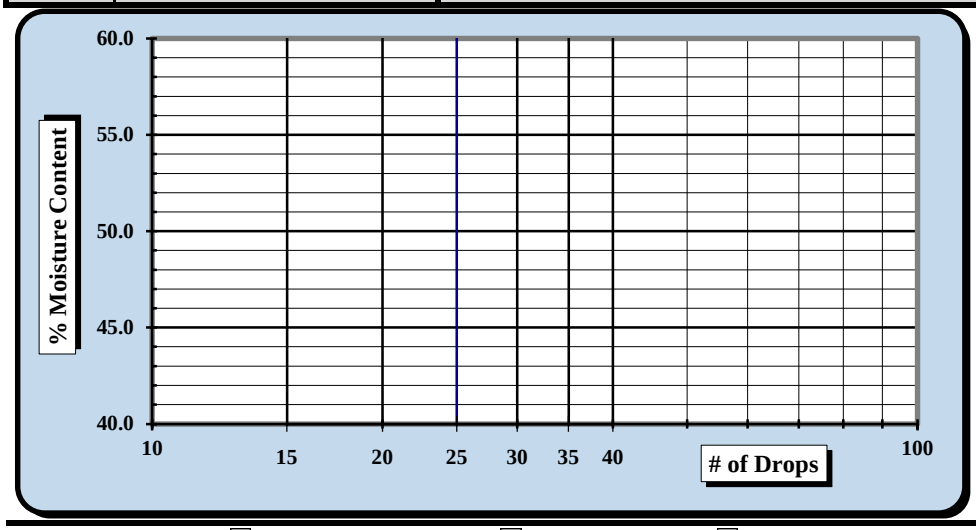
S&ME, Inc. - Columbia: 134 Suber Road, Columbia, SC 29210

Project #:	22610625	Report Date:	1/13/23
Project Name:	Project Connect	Test Date:	1/11/23
Client Name:	Thomas & Hutton		
Client Address:	1501 Main Street, Suite 760, Columbia, SC 29201		

Boring #:	22-B-2	Sample #:	BS-2	Sample Date:	1/6/23
Location:	cut	Type:	bulk	Depth:	0-5'
Sample Description:	Tan Silty SAND (SM)				

Type and Specification	*S&ME ID #*	*Cal Date:*	*Type and Specification*	*S&ME ID #*	*Cal Date:*
Balance (0.01 g)	15425	12/12/2022	Grooving tool	28839	8/2/2022
LL Apparatus	28651	12/20/2021			
Oven	25722	1/9/2023			

Pan #		Liquid Limit						Plastic Limit		
	Tare #:									
A	Tare Weight									
B	Wet Soil Weight + A									
C	Dry Soil Weight + A									
D	Water Weight (B-C)									
E	Dry Soil Weight (C-A)									
F	% Moisture (D/E)*100									
N	# OF DROPS							*Moisture Contents determined by ASTM D 2216*		
LL	LL = **F** * FACTOR									
Ave.	*Average*									



One Point Liquid Limit

N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic ☒

Liquid Limit	#####
Plastic Limit	#####
Plastic Index	#####
Group Symbol	**NP**

Multipoint Method ☑
One-point Method ☐

Wet Preparation ☐ Dry Preparation ☑ Air Dried ☑ *% Passing the #200 Sieve:* 14.0%

Notes / Deviations / References:

Group Symbol refers to material passing the No. 40 sieve.

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

Keyonna Bundridge	1/13/23	Robert C. Bruorton, P.E.	1/13/23
Technician Name	*Date*	*Technical Responsibility*	*Date*

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Form No. TR-D698-2
Revision No. : 1
Revision Date: 07/25/17

MOISTURE - DENSITY REPORT

Quality Assurance

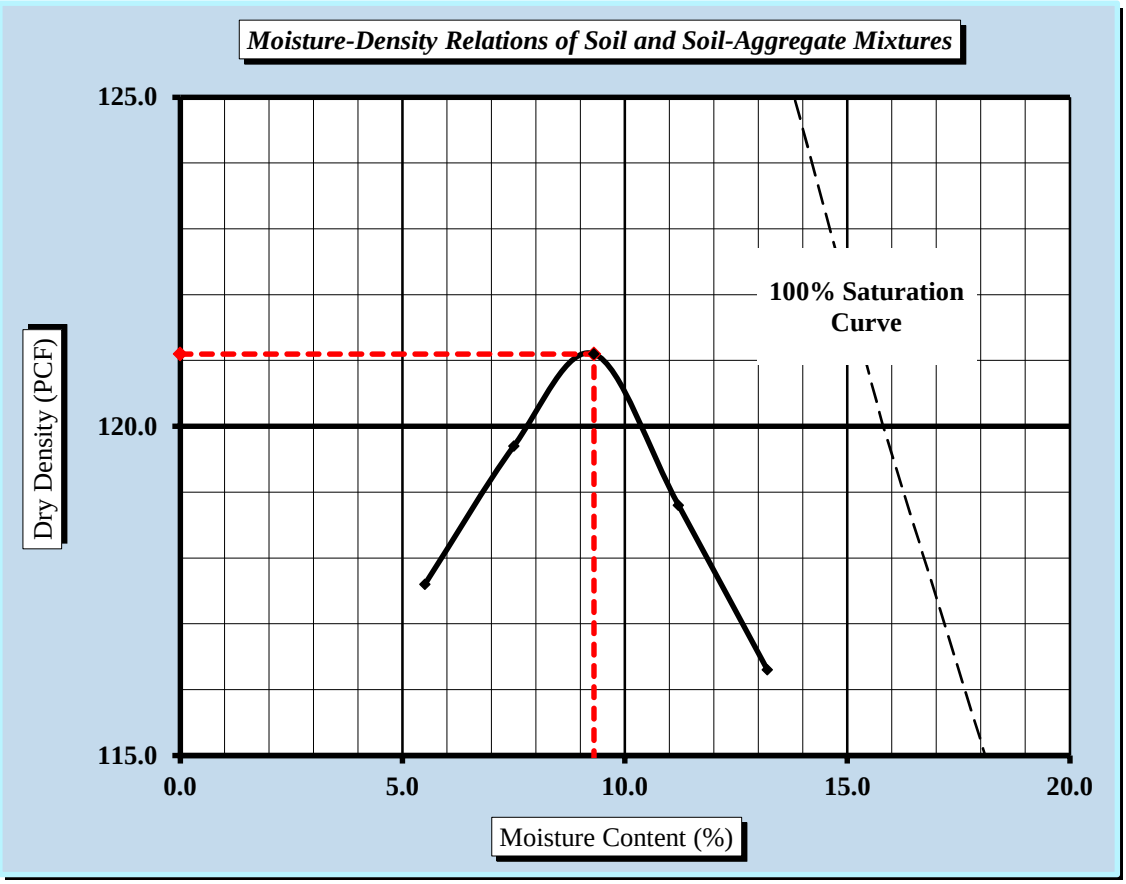
S&ME, Inc. - Columbia: 134 Suber Road, Columbia, SC 29210

S&ME Project #:	22610625	Report Date:	10/
Project Name:	Project Connect	Test Date(s):	1/11-1/12
Client Name:	Thomas & Hutton		
Client Address:	1501 Main Street, Suite 760, Columbia, SC 29201		

Boring #:	22-B-2	Sample #:	BS-2	Sample Date:	1/6/2023
Location:	cut	Offset:	NA	Depth:	N/A
Sample Description:	Tan Silty SAND (SM)				

Maximum Dry Density 121.1 PCF. Optimum Moisture Content 9.3%

ASTM D 698 - - Method B



Soil Properties

Moisture Content	
Liquid Limit	
Plastic Limit	
Plastic Index	NP

% Passing

3/4"	
3/8"	100.0%
#4	
#200	14.0%

Oversize Fraction

Bulk Gravity	
% Absorption	
% Oversize	0.4%
MDD	
Opt. MC	

Moisture-Density Curve Displayed: Fine Fraction ☒ Corrected for Oversize Fraction (ASTM D 4718) ☒

Sieve Size used to separate the Oversize Fraction: #4 Sieve ☐ 3/8 inch Sieve ☒ 3/4 inch Sieve ☐

Mechanical Rammer ☐ Manual Rammer ☒ Moist Preparation ☐ Dry Preparation ☒

References / Comments / Deviations:

AASHTO T265: Laboratory Determination of Moisture Content of Soils

ASTM D 698: Laboratory Compaction Characteristics of Soil Using Standard Effort

Robert C. Bruorton, P.E.	Senior Engineer	1/13/2023
Technical Responsibility	*Position*	*Date*

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Form No. TR-D4318-T89-90
Revision No. 1
Revision Date: 7/26/17

LIQUID LIMIT, PLASTIC LIMIT, & PLASTIC INDEX

ASTM D 4318 ☒ *AASHTO T 89* ☐ *AASHTO T 90* ☐

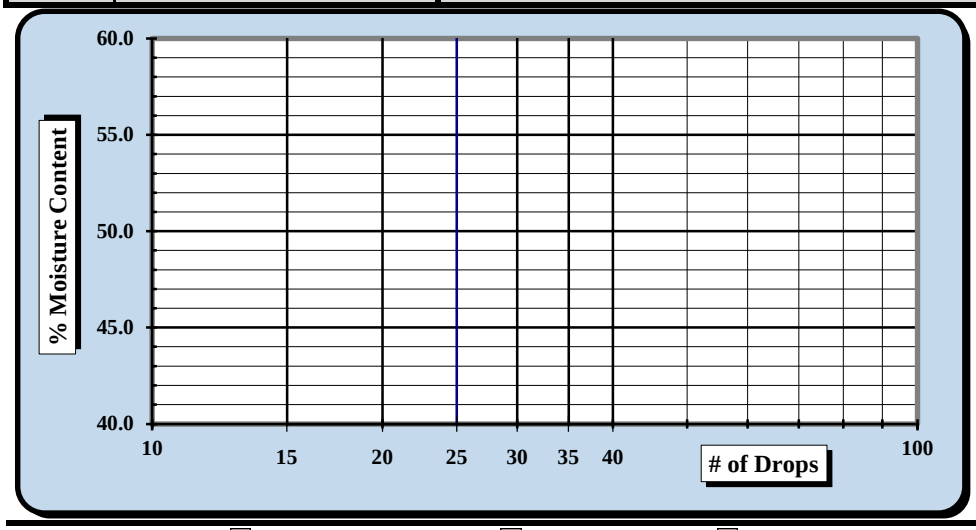
S&ME, Inc. - Columbia: 134 Suber Road, Columbia, SC 29210

Project #:	22610625	Report Date:	1/18/23
Project Name:	Project Connect	Test Date:	1/11/23
Client Name:	Thomas & Hutton		
Client Address:	1501 Main Street, Suite 760, Columbia, SC 29201		

Boring #:	22-B-3	Sample #:	BS-3	Sample Date:	1/5/23
Location:	cut	Type:	bulk	Depth:	10-15'
Sample Description:	Red Silty SAND (SM)				

Type and Specification	*S&ME ID #*	*Cal Date:*	*Type and Specification*	*S&ME ID #*	*Cal Date:*
Balance (0.01 g)	15425	12/12/2022	Grooving tool	28839	8/2/2022
LL Apparatus	28651	12/12/2022			
Oven	25722	1/9/2023			

Pan #		Liquid Limit						Plastic Limit		
	Tare #:									
A	Tare Weight									
B	Wet Soil Weight + A									
C	Dry Soil Weight + A									
D	Water Weight (B-C)									
E	Dry Soil Weight (C-A)									
F	% Moisture (D/E)*100									
N	# OF DROPS							*Moisture Contents determined by ASTM D 2216*		
LL	LL = **F** * FACTOR									
Ave.	*Average*									



One Point Liquid Limit

N	Factor	N	Factor
20	0.974	26	1.005
21	0.979	27	1.009
22	0.985	28	1.014
23	0.99	29	1.018
24	0.995	30	1.022
25	1.000		

NP, Non-Plastic ☒

Liquid Limit	#####
Plastic Limit	#####
Plastic Index	#####
Group Symbol	**NP**

Multipoint Method ☑
One-point Method ☐

Wet Preparation ☐ Dry Preparation ☑ Air Dried ☑ *% Passing the #200 Sieve:* 22.6%

Notes / Deviations / References:

Group Symbol refers to material passing the No. 40 sieve.

ASTM D 4318: Liquid Limit, Plastic Limit, & Plastic Index of Soils

Keyonna Bundridge	1/18/23	Robert C. Bruorton, P.E.	1/18/23
Technician Name	*Date*	*Technical Responsibility*	*Date*

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Form No. TR-D698-2
Revision No. : 1
Revision Date: 07/25/17

MOISTURE - DENSITY REPORT

Quality Assurance

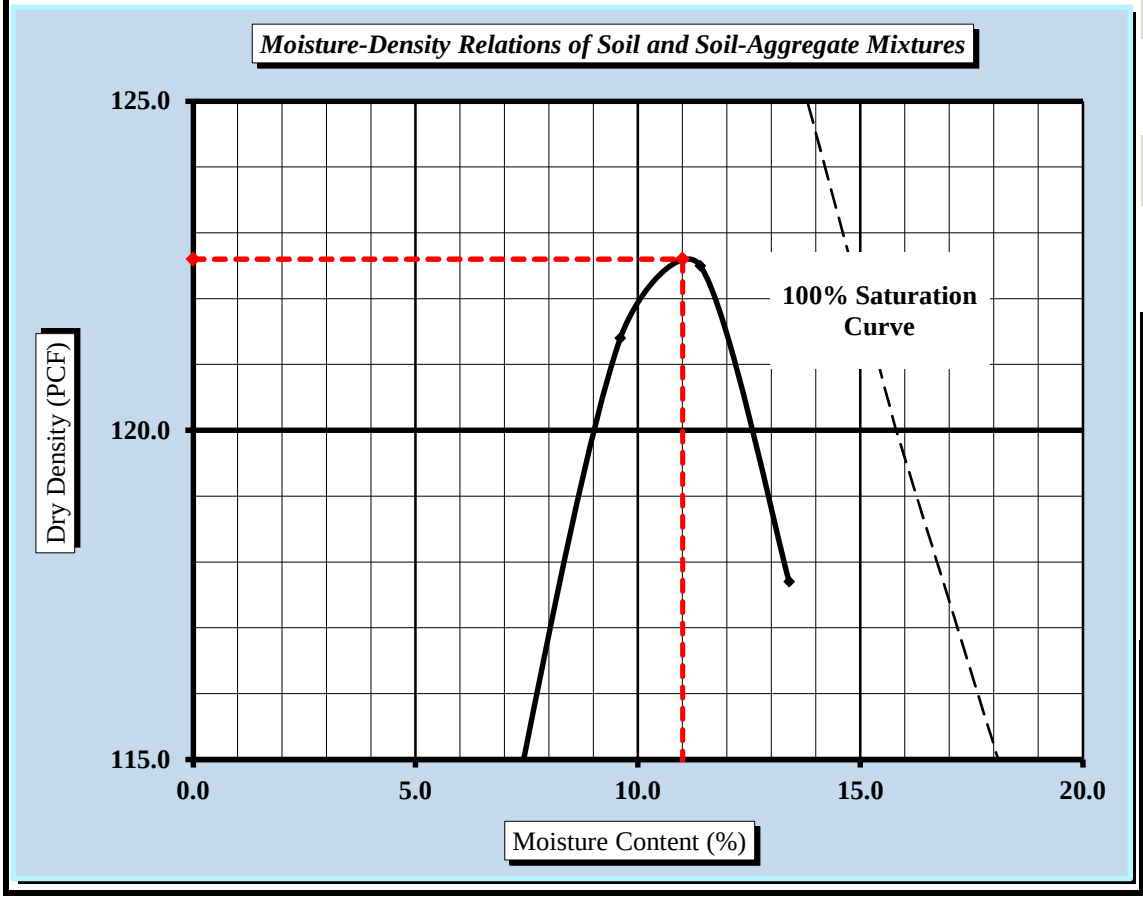
S&ME, Inc. - Columbia: 134 Suber Road, Columbia, SC 29210

S&ME Project #:	22610625	Report Date:	1/18/23
Project Name:	Project Connect	Test Date(s):	1/9-1/15
Client Name:	Thomas & Hutton		
Client Address:	1501 Main Street, Suite 760, Columbia, SC 29201		

Boring #:	22-B-3	Sample #:	BS-2	Sample Date:	1/5/2023
Location:	cut	Offset:	NA	Depth:	N/A
Sample Description:	Red Silty SAND (SM)				

Maximum Dry Density 122.6 PCF. Optimum Moisture Content 11.0%

ASTM D 698 - - Method A



Soil Properties

Moisture Content	
Liquid Limit	
Plastic Limit	
Plastic Index	NP

% Passing

3/4"	
3/8"	
#4	100.0%
#200	22.6%

Oversize Fraction

Bulk Gravity	
% Absorption	
% Oversize	0.4%
MDD	
Opt. MC	

Moisture-Density Curve Displayed: Fine Fraction ☒ Corrected for Oversize Fraction (ASTM D 4718) ☒

Sieve Size used to separate the Oversize Fraction: #4 Sieve ☒ 3/8 inch Sieve ☐ 3/4 inch Sieve ☐

Mechanical Rammer ☐ Manual Rammer ☒ Moist Preparation ☐ Dry Preparation ☒

References / Comments / Deviations:

ASTM D 2216: Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass

ASTM D 698: Laboratory Compaction Characteristics of Soil Using Standard Effort

Robert C. Bruorton, P.E.	Senior Engineer	1/18/2023
Technical Responsibility	*Position*	*Date*

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Summary of Laboratory Procedures

Recovered disturbed and undisturbed samples and the drillers' field logs were transported to the laboratory where they were examined by the geotechnical engineer. Selected samples representative of certain groups of soils were subjected to simple classification tests by hand or other simple means. Other samples were tested in the laboratory to determine their strength or consolidation properties.

Laboratory Tests of Soil

Examination of Split Spoon Soil Samples

Soil and rock samples and field boring records were reviewed in the laboratory by the geotechnical engineer. Soils were classified in general accordance with the visual-manual method described in ASTM D 2488, *Standard Practice for Description and Identification of Soils (Visual-Manual Method)*. The geotechnical engineer also prepared the final boring records enclosed with this report.

Moisture Content Testing of Soil Samples by Oven Drying

Moisture content was determined in general conformance with the methods outlined in ASTM D2216, "Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil or Rock by Mass." This method is limited in scope to Group B, C, or D samples of earth materials which do not contain appreciable amounts of organic material, soluble solids such as salt or reactive solids such as cement. This method is also limited to samples which do not contain contamination.

A representative portion of the soil was divided from the sample using one of the methods described in Section 9 of ASTM D2216. The split portion was then placed in a drying oven and heated to approximately 110 degrees C overnight or until a constant mass was achieved after repetitive weighing. The moisture content of the soil was then computed as the mass of water removed from the sample by drying, divided by the mass of the sample dry, times 100 percent. No attempt was made to exclude any particular particle size from the portion split from the sample.

Liquid and Plastic Limits Testing

Atterberg limits of the soils was determined generally following the methods described by ASTM D4318, *Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils*. Albert Atterberg originally defined "limits of consistency" of fine grained soils in terms of their relative ease of deformation at various moisture contents. In current engineering usage, the liquid limit of a soil is defined as the moisture content, in percent, marking the upper limit of viscous flow and the boundary with a semi-liquid state. The plastic limit defines the lower limit of plastic behavior, above which a soil behaves plastically below which it retains its shape upon drying. The plasticity index (PI) is the range of water content over which a soil behaves plastically. Numerically, the PI is the difference between liquid limit and plastic limit values.

Representative portions of fine grained Group A, B, C, or D samples were prepared using the wet method described in Section 10.1 of ASTM D4318. The liquid limit of each sample was determined using the multipoint method (Method A) described in Section 11. The liquid limit is by definition the moisture content

where 25 drops of a hand operated liquid limit device are required to close a standard width groove cut in a soil sample placed in the device. After each test, the moisture content of the sample was adjusted and the sample replaced in the device. The test was repeated to provide a minimum of three widely spaced combinations of N versus moisture content. When plotted on semilog paper, the liquid limit moisture content was determined by straight line interpolation between the data points at N equals 25 blows.

The plastic limit was determined using the procedure described in Section 17 of ASTM D4318. A selected portion of the soil used in the liquid limit test was kneaded and rolled by hand until it could no longer be rolled to a 3.2 mm thread on a glass plate. This procedure was repeated until at least 6 grams of material was accumulated, at which point the moisture content was determined using the methods described in ASTM D2216.

Percent Fines Determination of Samples

A selected specimen of soils was washed over a No. 200 sieve after being thoroughly mixed and dried. This test was conducted in general accordance with ASTM D1140, *Standard Test Method for Amount of Material Finer Than the No. 200 Sieve*. Method A, using water to wash the sample through the sieve without soaking the sample for a prescribed period of time, was used and the percentage by weight of material washing through the sieve was deemed the "percent fines" or percent clay and silt fraction.

Compaction Tests of Soils Using Standard Effort

Soil placed as engineering fill is compacted to a dense state to obtain satisfactory engineering properties. Laboratory compaction tests provide the basis for determining the percent compaction and water content needed to achieve the required engineering properties, and for controlling construction to assure the required compaction and water contents are achieved. Test procedures generally followed those described by ASTM D698, *Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 lbf/ft3)*.

The relationship between water content and the dry unit weight is determined for soils compacted in either 4 or 6 inch diameter molds with a 5.5 lbf rammer dropped from a height of 12 inches, producing a compactive effort of 12,400 lbf/ft3. ASTM D 698 provides three alternative procedures depending on material gradation:

Method A (Shall be used if 20 percent or less by weight is retained on No. 4 sieve)

- All material passes No. 4 sieve size
- 4 inch diameter mold
- Soil in 3 layers with 25 blows per layer

Method B (Shall be used if 20 percent by weight is retained on the No. 4 sieve and 20 percent or less by weight is retained on the 3/8-inch sieve)

- All material passes 3/8 inch sieve
- 4 inch diameter mold
- Soil in 3 layers with 25 blows per layer

Method C (Shall be used if more than 20 percent by weight is retained on the 3/8-inch sieve and less than 30 percent is retained on the 3/4-inch sieve)

- All material passes ¾ inch sieve
- 6-inch diameter mold
- Soil in 3 layers with 56 blows per layer

Soil was compacted in the mold in three layers of approximately equal thickness, each compacted with either 25 or 56 blows of the rammer. After compaction of the sample in the mold, the resulting dry density and moisture content was determined and the procedure repeated. Separate soils were used for each sample point, adjusting the moisture content of the soil as described in Section 10.2 (Moist Preparation Method). The procedure was repeated for a sufficient number of water content values to allow the dry density vs. water content values to be plotted and the maximum dry density and optimum moisture content to be determined from the resulting curvilinear relationship.