GENERAL PROVISIONS & TECHNICAL SPECIFICATIONS – VOLUME II

FOR

TAXIWAY F EXTENSION, DEICING PAD, SOUTH CROSSFIELD TAXIWAY, AND YORKMONT ROAD REALIGNMENT PROJECT
PACKAGE 1 – EARTHWORK AND UTILITIES

CLT PROJECT NO.: AF018-008

CHARLOTTE DOUGLAS INTERNATIONAL AIRPORT
CITY OF CHARLOTTE, NORTH CAROLINA

ISSUED FOR BID – AUGUST 6, 2020

1001 Morehead Square Drive; Suite 610
Charlotte, NC 28203
NC License No.: F-0165
WSP Project No.: 188970

Appendix C: Geotechnical Report

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Final Geotechnical Data Report

Deicing Pad and South Crossfield Taxiway
Charlotte Douglas International Airport
Charlotte, North Carolina
August 4, 2020
Terracon Project Number 71195007

Prepared for:
WSP USA Inc.
Charlotte, North Carolina

Prepared by:
Terracon Consultants, Inc.
Charlotte, North Carolina

August 4, 2020

WSP USA Inc.
1001 Morehead Square Dr, Suite 610
Charlotte, NC 28203

Attn: Mr. Matt DuBose, PE
P: (980)701-3150
E: matthew.dubose@wsp.com

Re: **Final Geotechnical Data Report**
Deicing Pad and South Crossfield Taxiway
Charlotte Douglas International Airport
Charlotte, North Carolina
Terracon Project No. 71195007

Dear Mr. DuBose:

Terracon Consultants, Inc. (Terracon) has completed the full scope of geotechnical exploration and testing services for the above referenced project, including the additional investigation for the borrow sites (Appendix G) and the additional investigation for the revised box culvert and sanitary sewer alignments (Appendix H). Terracon is providing this Final Geotechnical Data Report to compile the field exploration and laboratory testing information obtained for this project in one comprehensive report.

FIELD EXPLORATION

Subsurface conditions were explored by advancing Standard Penetration Test (SPT) borings, Cone Penetration Test (CPT) soundings and Air Rotary borings. A total of 193 soil test borings up to about 100 feet below existing grades, 61 CPT soundings up to 56 feet below existing grades, and 82 Air Rotary borings up to 50 feet below existing grades have been advanced throughout the site, as shown on Field Exploration Plans in Appendix A.2. Detailed boring logs and CPT soundings are provided in Appendix B and the findings of the Air Rotary borings are shown on profiles in Appendix E.

Boring and sounding locations were located using latitude and longitude data determined from an overlay of project plans over existing site conditions in Google Earth and a Juniper Systems Geode, with a submeter accuracy. Boring and sounding elevations were determined using the latitude and longitude information imported into a project grading plan in AutoCAD. The boring and sounding locations and elevations should be considered only as accurate as the means used to determine them.

Subsurface Exploration Procedures

The following sections discuss the general procedures of investigation for each test method.

Standard Penetration Test Borings

Standard Penetration Test (SPT) borings are conducted in general accordance with ASTM D1586 "Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils." SPT borings are advanced utilizing a power drilling rig utilizing rotary wash or hollow stem auger drilling procedures. Representative samples are obtained using either split-barrel or thin-walled tube sampling procedures. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon is driven into the ground with a 140-pound hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the standard penetration resistance value (N-value). In the thin-walled tube sampling procedure, a thin-walled, seamless steel tube with a sharp cutting edge is pushed hydraulically into the ground to obtain relatively undisturbed samples of cohesive or moderately cohesive soils.

SPT sampling can only advance until auger refusal is encountered. Refusal materials are materials that cannot be penetrated with the soil drilling methods employed. Refusal, thus indicated, may result from hard cemented soil, soft weathered rock, coarse gravel or boulders, thin rock seams or the upper surface of sound continuous rock. Core drilling procedures are required to determine the character and continuity of refusal materials. Prior to coring, casing is set in the drilled hole through the overburden soils, if necessary, to keep the hole from caving. Refusal materials are then cored according to ASTM D 2113 using a diamond-studded bit fastened to the end of a hollow double tube core barrel. This device is rotated at high speeds, and the cuttings are brought to the surface by circulating water. Core samples of the material penetrated are protected and retained in the swivel-mounted inner tube. Upon completion of each drill run, the core barrel is brought to the surface, the core recovered is measured for recovery and quality, and the samples are placed in boxes for transport and storage. The percent core recovery recorded is the ratio of the sample length obtained to the depth drilled, expressed as a percent. The rock quality designation (RQD) is obtained by summing up the length of core recovered, including only the pieces of core which are four inches or longer, and dividing by the total length drilled. The percent core recovery and RQD are related to soundness and continuity of the refusal material.

For this project, we advanced SPT borings with multiple ATV-mounted drill rigs using hollow stem augers or rotatory wash procedures. Four samples were obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. Soil sampling was typically performed using split-barrel sampling procedures and some with thin-wall tube sampler. The samples were placed in

appropriate containers and returned to our laboratory for further testing and classification. In addition, we observed and recorded groundwater levels during drilling and sampling.

Our exploration team prepared field boring logs as part of standard drilling operations including sampling depths, penetration distances, and other relevant sampling information. Field logs include visual classifications of materials encountered during drilling, and our interpretation of subsurface conditions between samples.

Additionally, at seven locations rock core samples were returned to our laboratory where the refusal material was identified and the percent core recovery and rock quality designation was determined by a soils engineer or geologist.

Final boring logs, prepared from field logs, represent the Geotechnical Engineer's interpretation, and include modifications based on observations and laboratory tests. These boring logs also include refusal material descriptions, recoveries, and RQD.

Appendix B.1 provides a summary of the Unified Soils Classification System (USCS), General Notes, the final SPT boring logs, and photographs of the rock cores.

Cone Penetration Test Soundings

The Cone Penetration Test (CPT) consists of hydraulically pushing an instrumented cone through the soil while nearly continuous readings are recorded to a portable computer. The cone is equipped with electronic load cells to measure tip resistance and sleeve resistance and a pressure transducer to measure the generated ambient pore pressure. The face of the cone has an apex angle of 60° and an area of 10 cm^2. Digital data representing the tip resistance, friction resistance, pore water pressure, and probe inclination angle are recorded about every 2 centimeters while advancing through the ground at a rate between 1½ and 2½ centimeters per second. These measurements are correlated to various soil properties used for geotechnical design. No soil samples are gathered through this subsurface investigation technique.

CPT testing is conducted in general accordance with ASTM D5778 "Standard Test Method for Performing Electronic Friction Cone and Piezocone Penetration Testing of Soils." Upon completion, the data collected was downloaded and processed by the project engineer. Detailed results are included on the attached CPT Sounding Logs in Appendix B.2 and are supported with the CPT General Notes provided on Exhibit B.2.A.

Air Rotary Percussion Borings

Air Rotary Percussion (Air Rotary) drilling consists of a pneumatic reciprocating piston-driven "hammer" to drive a drill bit into rock. Borehole advancement is achieved by rapid rotation of a drill bit which is mounted at the end of the drill pipe. The drill bit "cuts" the rock formation into small pieces, called cuttings. The drill bit and advancing rod are hollow to facilitate the use of air to cool the bit, bring drill cuttings to the surface and maintain borehole integrity.

We advanced Air Rotary borings with a track mounted air-rotary rig through the overburden soil and partially weathered rock. The drill bit can typically be advanced through soil without the use of the hammer and then requires intermittent use of the hammer to advance through partially weathered rock. Once competent bedrock is encountered, continuous use of the hammer is required to advance the borehole.

Observations for the use of the hammer were made during drilling and recorded on draft logs. That information was transferred to a cross section of the appropriate alignment in Appendix E. No soil samples are gathered through this subsurface investigation technique.

Laboratory Testing

Samples were returned to our laboratory for classification and testing. A project engineer reviewed field data and assigned laboratory tests to understand the engineering properties of various soil strata. Laboratory testing was performed in general accordance with the standard procedures noted below.

- ASTM D2216 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
- ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- ASTM D7928 Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis
- ASTM D2435 Standard Test Methods for One-Dimensional Consolidation Properties of Soils Using Incremental Loading

Standards noted above include reference to other, related standards. Such references are not necessarily applicable to describe the specific test performed.

The laboratory testing program often includes examination of soil samples by an engineer. Based on the material's texture and plasticity and the laboratory test results, we describe and classify the soil samples in accordance with the Unified Soil Classification System (USCS). A

summary of the USCS is provided in Exhibit B.1.A. A summary of laboratory test data is provided in Appendix C and is also shown on the respective boring logs. Grain size distribution curves were not provided in this report but can be provided upon request.

GEOTECHNICAL CHARACTERIZATION

The following sections summarize the findings of our explorations and laboratory testing program and provides an overall geotechnical characterization of the subsurface conditions. This geotechnical characterization forms the basis of our geotechnical calculations and evaluation of site development. The characterization is based upon widely spaced exploration points across the site, and variations are likely.

Geology

The project site is located in the Piedmont Physiographic Province, an area underlain by ancient igneous and metamorphic rocks. The residual soils in this area are the product of in-place chemical weathering of rock. The typical residual soil profile consists of clayey soils near the surface where soil weathering is more advanced, underlain by sandy silts and silty sands that generally become harder with depth to the top of parent bedrock. Alluvial soils are typically present within floodplain areas along creeks and rivers in the Piedmont. According to the 1985 Geologic Map of North Carolina, the site is within the Charlotte Belt. The bedrock underlying the site generally consists of Granitic Rock.

The boundary between soil and rock in the Piedmont is not sharply defined. A transitional zone termed “partially weathered rock” is normally found overlying the parent bedrock. Partially weathered rock is defined for engineering purposes as residual material with a standard penetration test resistance exceeding 100 blows per foot. The transition between hard/dense residual soils and partially weathered rock occurs at irregular depths due to variations in degree of weathering. Groundwater is typically present in fractures within the partially weathered rock or underlying bedrock in upland areas of the Piedmont. Fluctuations in groundwater levels on the order of 2 to 4 feet are typical in residual soils and partially weathered rock in the Piedmont, depending on variations in precipitation, evaporation, and surface water runoff. Seasonal high groundwater levels are expected to occur during or just after the typically cooler months of the year (November through April).

Surface Condition

In areas that have been recently developed or recently cleared, less than 2 inches of topsoil was identified. In the wooded areas, topsoil and rootmat of 2 to 8 inches thick were encountered. The American Airlines maintenance hangar parking lot encountered 2 to 3 inches of asphalt.

Asphalt cores were obtained in Borings B-185 and B-194 at Yorkmont Road and asphalt thickness was measured to be 11.5 inches and 2.5 inches, respectively.

Three concrete cores were performed in the existing taxiways and identified the following thickness of concrete pavement:

-23.3 to 24.3 inches at Taxiway E (PC-09 and PC-10).
-25.25 inches at Taxiway U (PC-11).

Photographs of the asphalt and concrete cores are provided in Appendix F.

Subsurface Conditions

Below the surficial materials, many of the borings encountered existing fill soils, typically consisting of silty sand (SM), clayey sand (SC), sandy silt (ML) and clayey silt (CL-ML), elastic silt (MH), lean clay (CL) and fat clay (CH). With the exception of some surficial organics and debris that will be removed during stripping of the site, the borings did not encounter deleterious materials in the fill soils. Soil consistency typically ranged from soft to very stiff in the fine-grained soils and loose to medium dense in the coarse-grained soils. Many of the borings that encountered fill were performed in or near embankments constructed for Taxiway E, Taxiway U, and Yorkmont Road. Additionally, many of the borings in the existing American Airlines maintenance hangar parking lot encountered fill.

Terracon also performed Borings B-180 to B-183 in existing stockpiled soils to evaluate the suitability of these soils for reuse as fill for this project.

Alluvial soils were encountered in the lower elevations of the site in the vicinity of Coffey Creek. The thickness of alluvial soil was typically up to about 8 feet, however, some areas had alluvial soils as thick as 17 feet. The alluvial soils were identified and classified as sandy lean clay, clayey sand and fat clay.

Below the surficial materials, fill soils, and alluvial soils, the borings encountered residual soils. Residual soil extended to a maximum depth of about 57 feet in the deicing pad area and 42 feet in the taxiway area. The residual soils were mostly identified as sandy elastic silt, silt with sand and sandy silt and were underlain by Partially Weathered Rock (PWR) in most of the borings.

Most of the borings in the vicinity of the Deicing Pad were extended to auger refusal, which can be an indicator of the depth of bedrock; however, many of the borings east of the Deicing Pad footprint did not encounter auger refusal within 60 feet below existing grades and the borings were terminated at that depth. A total of six (6) borings were advanced beyond auger refusal through rock coring, as summarized in the table below:

Boring Number	Auger Refusal Depth (feet)	Length of Rock Core (feet)	Boring Number	Auger Refusal Depth (feet)	Length of Rock Core (feet)
ARC-13	10	11	B-206	71	19
ARC-23	9	11	B-207	67	15
ARC-32	8.5	21.5	B-215	70	3.5
B-203	75	25	-	-	-

Groundwater Conditions

The boreholes were observed after completion for the presence and level of groundwater. The water levels observed in the boreholes can be found on the boring logs.

Groundwater level fluctuations occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the borings were performed. Therefore, groundwater levels during construction or at other times in the life of the structure may be higher or lower than the levels indicated on the boring logs. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

Subsurface Plans and Profiles

Conditions encountered at each boring and sounding location are detailed on the individual SPT boring logs and CPT sounding logs shown in Appendix B. Stratification boundaries on the boring and sounding logs represent the approximate location of changes in native soil types; in situ, the transition between materials may be gradual.

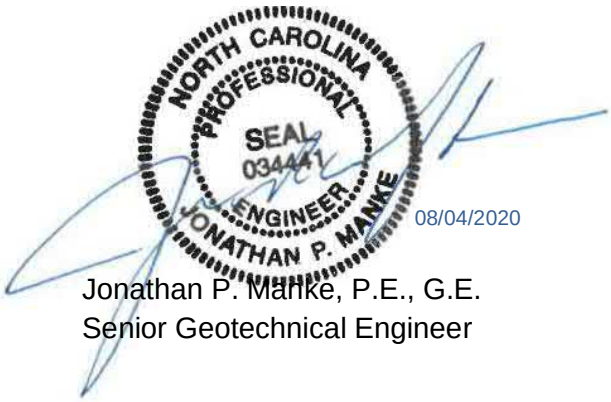
Exploration plans are provided in Appendix A. The exploration plans include tables next to each boring that summarizes surface elevation, depth and elevation of PWR, depth and elevation of Auger Refusal, and the depth and elevation of groundwater, and next to each sounding that summarizes surface elevation, depth and elevation of groundwater, and depth and elevation of penetration refusal. The depth and elevation for PWR is based on the depth at which a continuous layer of PWR above the refusal depth was encountered, not on PWR lenses that are encountered shallower. The depth and elevation for groundwater is based on the depth at which the shallowest groundwater was encountered at any time in the borings.

Cross sections are provided in Appendix D and Appendix E that show the soil and rock variability across the site. The locations of the cross sections are shown on the exploration plans in Appendix A.

CLOSURE

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.



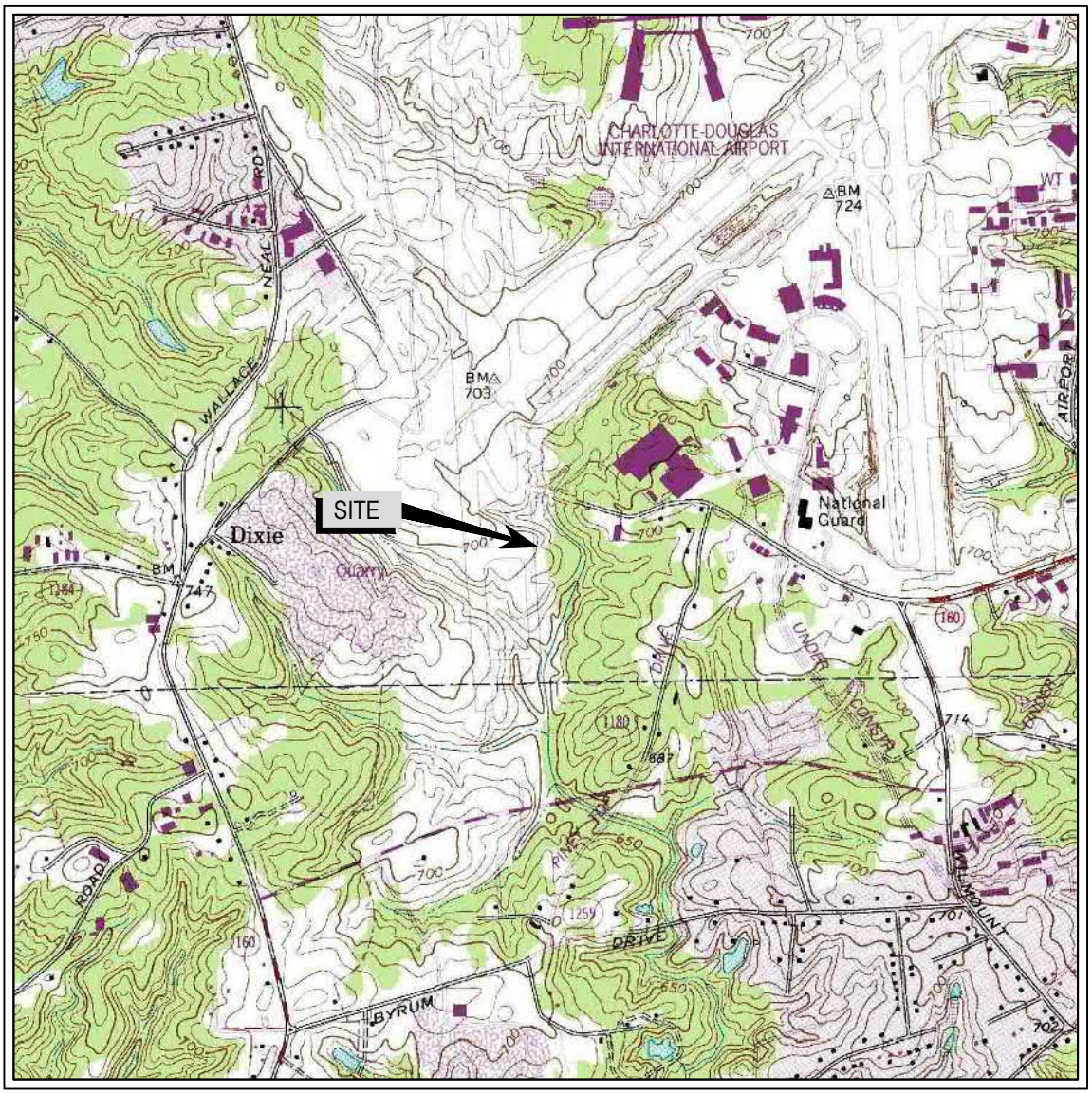
Jonathan P. Manke, P.E., G.E.
Senior Geotechnical Engineer

APPENDICES

A. PLANS

A.1 EXISTING AND PROPOSED CONDITIONS

UNITED STATES – DEPARTMENT OF THE INTERIOR – GEOLOGICAL SURVEY



SCALE 1:24 000

1 .5 0 KILOMETERS 1 2

1000 0 METERS 1000 2000

1 .5 0 1

MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10 000

FEET

CONTOUR INTERVAL 10 FEET

NATIONAL GEODETIC VERTICAL DATUM OF 1929

TOPO LINES REPRESENT 10–FOOT CONTOURS

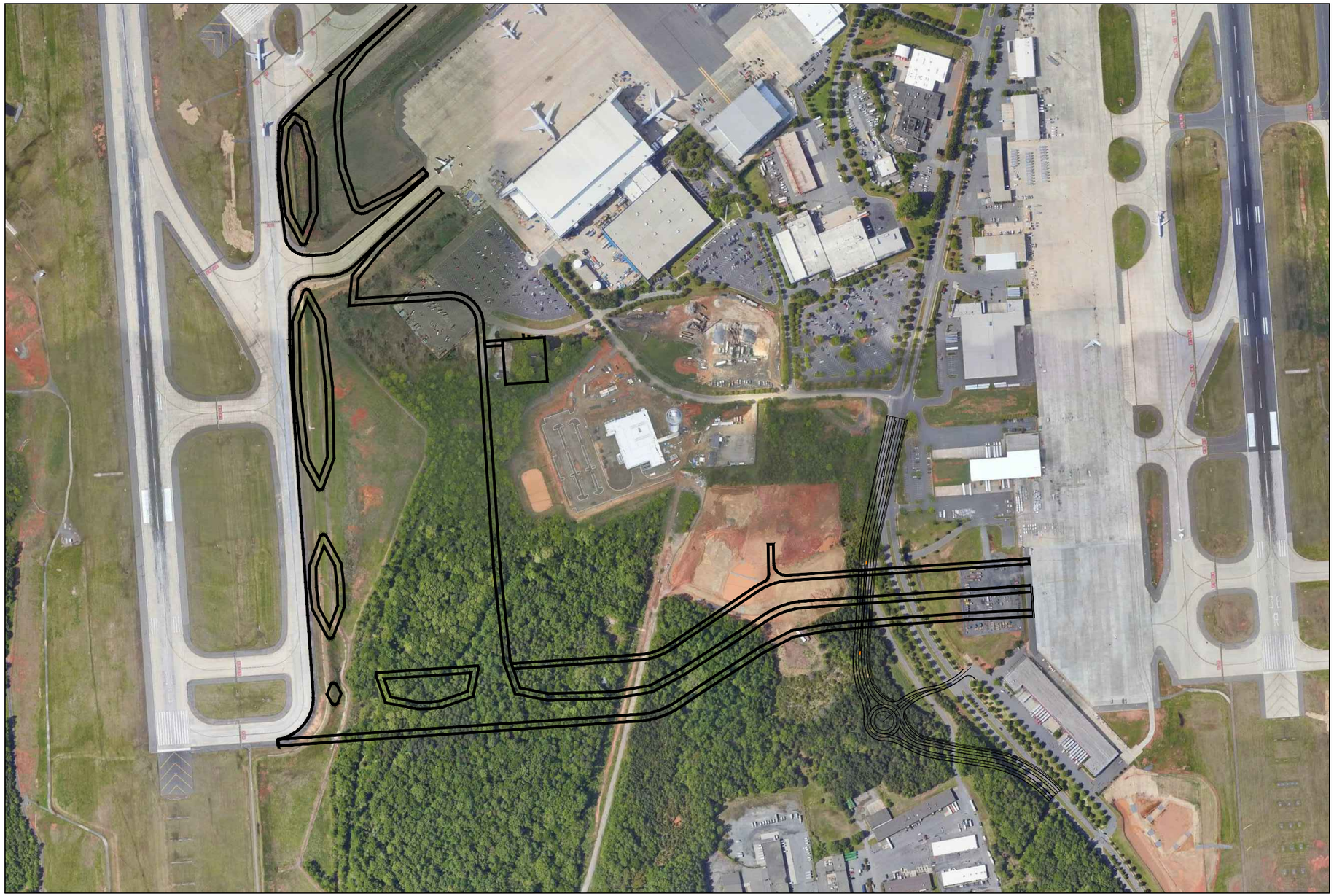
N

QUADRANGLE
CHARLOTTE WEST, NC
1993
7.5 MINUTE SERIES (TOPOGRAPHIC)

*INDICATES WHICH MAP SITE IS LOCATED ON

Project Mngr: JPM	Project No. 71195007	Terracon Consulting Engineers and Scientists	TOPOGRAPHIC VICINITY MAP
Drawn By: RLW	Scale: AS SHOWN	2701 Westport Road Charlotte, North Carolina 28208	GEOTECHNICAL ENGINEERING REPORT
Checked By: JPM/MRF	File No. GEO71195007-1	(704) 509-1777 (704) 509-1888	CLT AIRPORT DEICING PAD AND SCT
Approved By: JPM	Date: APRIL 2020		5501 JOSH BIRMINGHAM PKWY
			CHARLOTTE, NC

FIG. No. A.1.1



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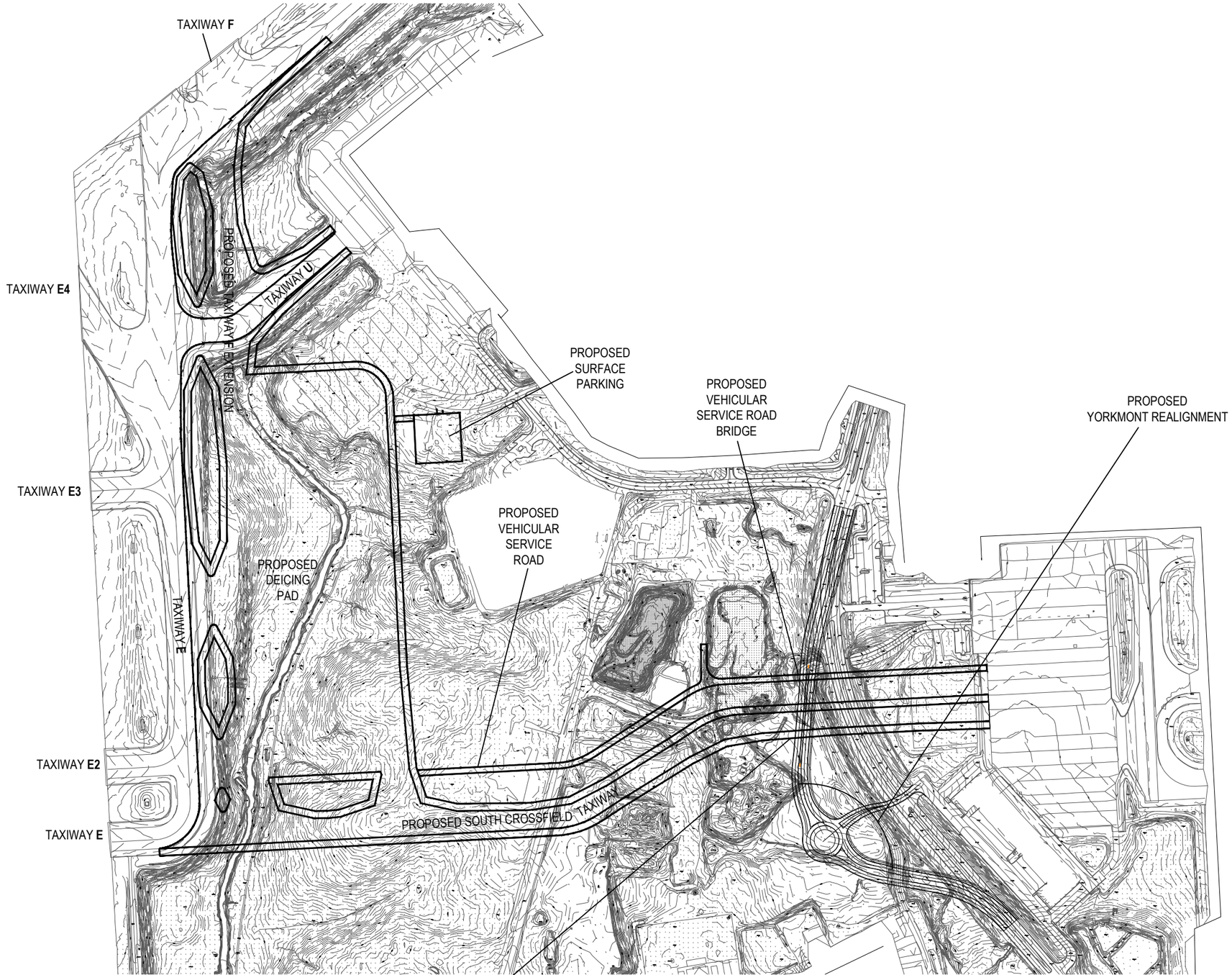
Approximate Scale
(Feet)

Project Mngr: JPM	Project No. 71195007	Terracon Consulting Engineers and Scientists	AERIAL PHOTOGRAPH
Drawn By: RLW	Scale: AS SHOWN	2701 Westport Road Charlotte, North Carolina 28208	CLT AIRPORT DEICING PAD AND SCT
Checked By: SD/MRF	File No. 71195007-2	(704) 509-1777 (704) 509-1888	CHARLOTTE, NC
Approved By: JPM	Date: APRIL 2020		EXHIBIT A.1.2



Project Mngr: JPM	Project No. 71195007	Terracon Consulting Engineers and Scientists	EXISTING GRADES WITH PROPOSED DEVELOPMENT	EXHIBIT
Drawn By: RLW	Scale: AS SHOWN			
Checked By: SD/MRF	File No. 71195007-2	2701 Westport Road Charlotte, North Carolina 28208 (704) 509-1777 (704) 509-1888	CLT AIRPORT DEICING PAD AND SCT	A.1.3
Approved By: JPM	Date: APRIL 2020		CHARLOTTE, NC	

A.2 FIELD EXPLORATION PLANS

LEGEND

- APPROXIMATE BORING LOCATION
- APPROXIMATE CPT SOUNDINGS LOCATION
- APPROXIMATE CORING LOCATION
- APPROXIMATE AIR ROTARY BORING LOCATION (SEE APPENDIX F)

Project Mngr: JPM	Project No. 71195007	Terracon Consulting Engineers and Scientists	OVERALL FIELD EXPLORATION PLAN	EXHIBIT
Drawn By: RLW	Scale: AS SHOWN	2701 Westport Road, Charlotte, North Carolina 28208	CLT AIRPORT DEICING PAD AND SCT	A.2.1
Checked By: SD/MRF	File No. 71195007	(704) 509-1777 (704) 509-1888	CHARLOTTE, NC	
Approved By: JPM	Date: APRIL 2020			

C-001	692
21.6	670.4
38.6	653.4

B-044	678
8	670
NE	NE
24	654

B-046	670
NE	NE
37	633
43	627

B-045	673
NE	NE
12	661
19.3	653.7

B-002	670
NE	NE
NE	NE
15	655

C-047	667
-	-
24	643

B-003	670
9	661
22	648
28	641.5

C-048	667
-	-
16	651

B-004	668
12	656
NE	NE
23	645

B-049	691
NE	NE
NE	NE
42.5	648.5

B-075	690
NE	NE
NE	NE
NE	NE

B-072	689
NE	NE
NE	NE
NE	NE

B-076	688
NE	NE
NE	NE
NE	NE

B-077	686
NE	NE
NE	NE
NE	NE

C-078	686
12	674
27.6	658.4

B-074	687
NE	NE
NE	NE
NE	NE

B-079	675
14	661
13	662
14.5	660.5

C-001, C-047, C-048, B-044, B-045, B-046, B-002, B-003, B-004, B-049, B-075, B-072, B-076, B-077, C-078, B-074, B-079, AR-57, AR-56, AR-55, AR-54, AR-53, AR-52, AR-51, AR-50, AR-49, AR-48, AR-47, AR-46, AR-45, AR-44, FF, A, A', B, B'

SEE EXHIBIT A.2.3

N

0 100

Approximate Scale (Feet)

LEGEND

- APPROXIMATE BORING LOCATION
- APPROXIMATE CPT SOUNDINGS LOCATION
- APPROXIMATE CORING LOCATION
- APPROXIMATE AIR ROTARY BORING LOCATION (SEE APPENDIX F)
- A A' APPROXIMATE CROSS SECTION LOCATION
- NE NOT ENCOUNTERED

THIS DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

BORING ID	BORING ELEV.
GWT DEPTH	GWT ELEV.
PWR DEPTH	PWR ELEV.
AR DEPTH	AR ELEV.

CPT ID	CPT ELEV.
GWT DEPTH	GWT ELEV.
TERMINATION DEPTH	TERMINATION ELEV.

Project Mngr:	JPM
Drawn By:	RLW
Checked By:	SD/MRF
Approved By:	JPM

Project No.	71195007
Scale:	AS SHOWN
File No.	71195007
Date:	APRIL 2020

Terracon
Consulting Engineers and Scientists
2701 Westport Road Charlotte, North Carolina 28208
(704) 509-1777 (704) 509-1888

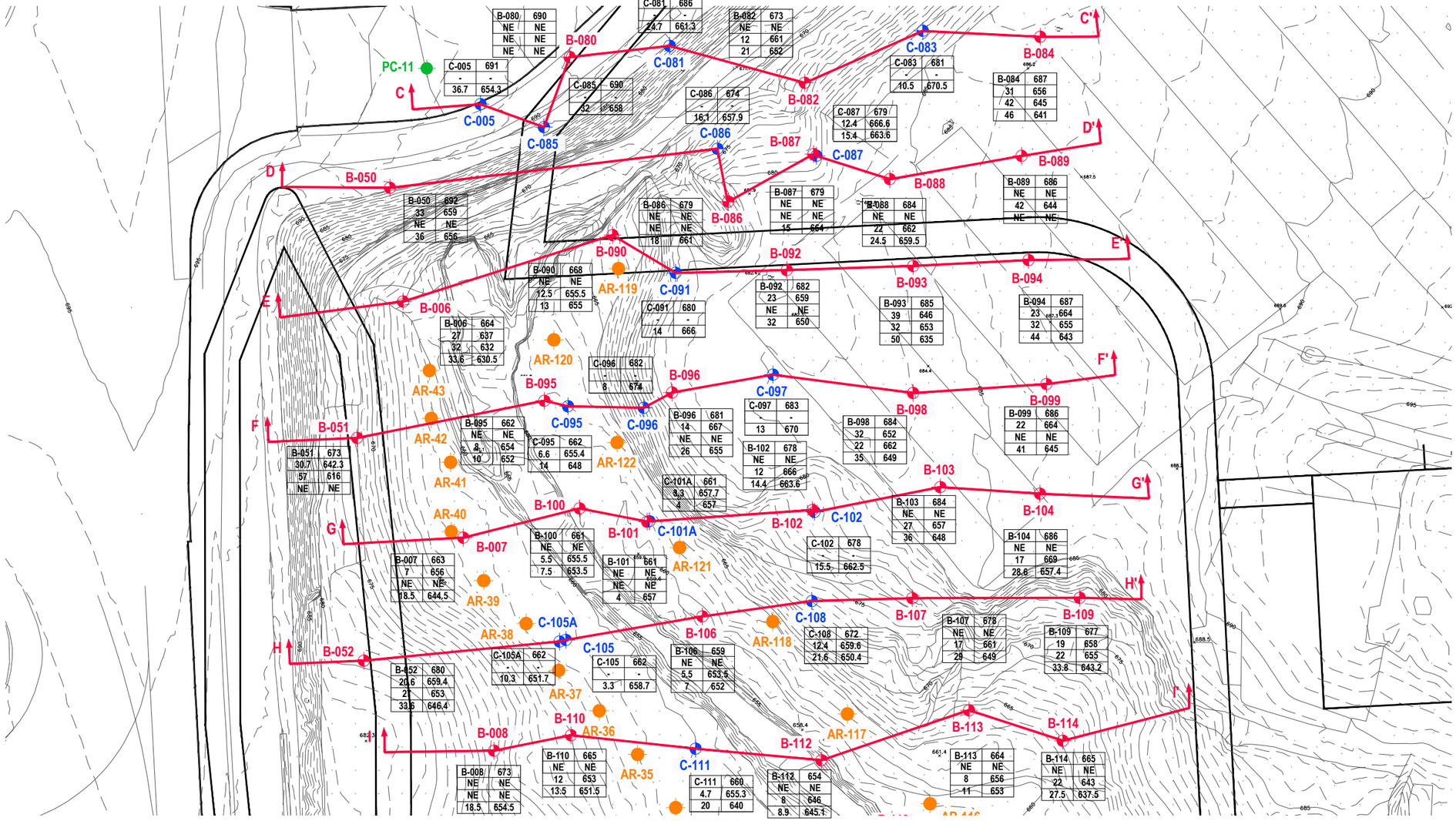
FIELD EXPLORATION PLAN

CLT AIRPORT DEICING PAD AND SCT

CHARLOTTE, NC

EXHIBIT A.2.2

SEE EXHIBIT A.2.2



SEE EXHIBIT A.2.4

N

0 100

Approximate Scale (Feet)

LEGEND

- APPROXIMATE BORING LOCATION
- APPROXIMATE CPT SOUNDINGS LOCATION
- APPROXIMATE CORING LOCATION
- APPROXIMATE AIR ROTARY BORING LOCATION (SEE APPENDIX F)
- A A' NE — APPROXIMATE CROSS SECTION LOCATION NOT ENCOUNTERED

BORING ID	BORING ELEV.
GWT DEPTH	GWT ELEV.
PWR DEPTH	PWR ELEV.
AR DEPTH	AR ELEV.

CPT ID	CPT ELEV.
GWT DEPTH	GWT ELEV.
TERMINATION DEPTH	TERMINATION ELEV.

THIS DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Mngr:	JPM
Drawn By:	RLW
Checked By:	SD/MRF
Approved By:	JPM

Project No.	71195007
Scale:	AS SHOWN
File No.	71195007
Date:	APRIL 2020

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Consulting Engineers and Scientists
2701 Westport Road Charlotte, North Carolina 28208
(704) 509-1777 (704) 509-1888

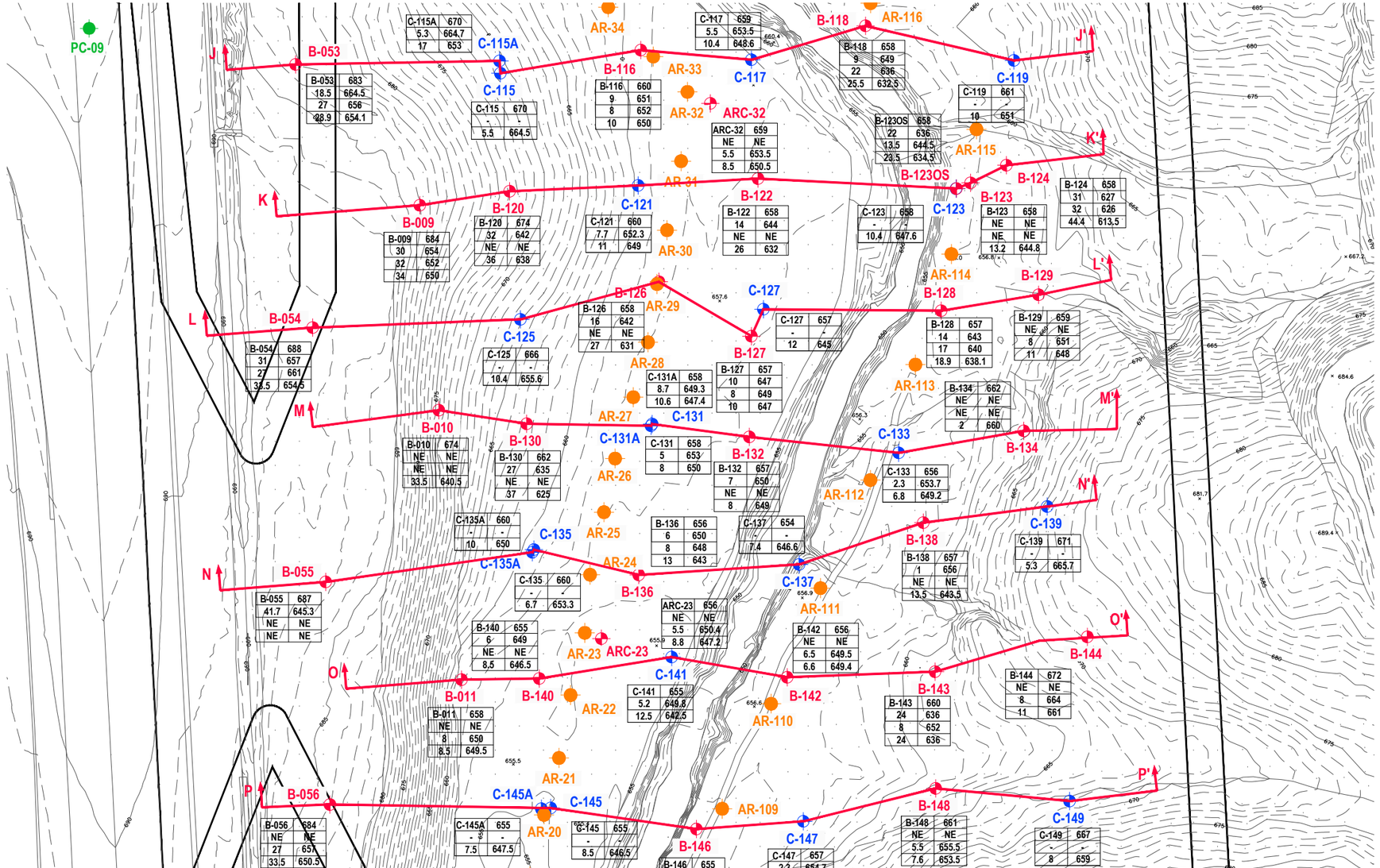
FIELD EXPLORATION PLAN

CLT AIRPORT DEICING PAD AND SCT

CHARLOTTE, NC

EXHIBIT A.2.3

SEE EXHIBIT A.2.3



SEE EXHIBIT A.2.5

N

0 100

Approximate Scale (Feet)

LEGEND

- APPROXIMATE BORING LOCATION
- APPROXIMATE CPT SOUNDINGS LOCATION
- APPROXIMATE CORING LOCATION
- APPROXIMATE AIR ROTARY BORING LOCATION (SEE APPENDIX F)
- A A' NE — APPROXIMATE CROSS SECTION LOCATION
- NOT ENCOUNTERED

BORING ID	BORING ELEV.
GWT DEPTH	GWT ELEV.
PWR DEPTH	PWR ELEV.
AR DEPTH	AR ELEV.

CPT ID	CPT ELEV.
GWT DEPTH	GWT ELEV.
TERMINATION DEPTH	TERMINATION ELEV.

THIS DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Mngr:	JPM
Drawn By:	RLW
Checked By:	SD/MRF
Approved By:	JPM
Project No.	71195007
Scale:	AS SHOWN
File No.	71195007
Date:	APRIL 2020

Terracon
Consulting Engineers and Scientists
2701 Westport Road Charlotte, North Carolina 28208
(704) 509-1777 (704) 509-1888

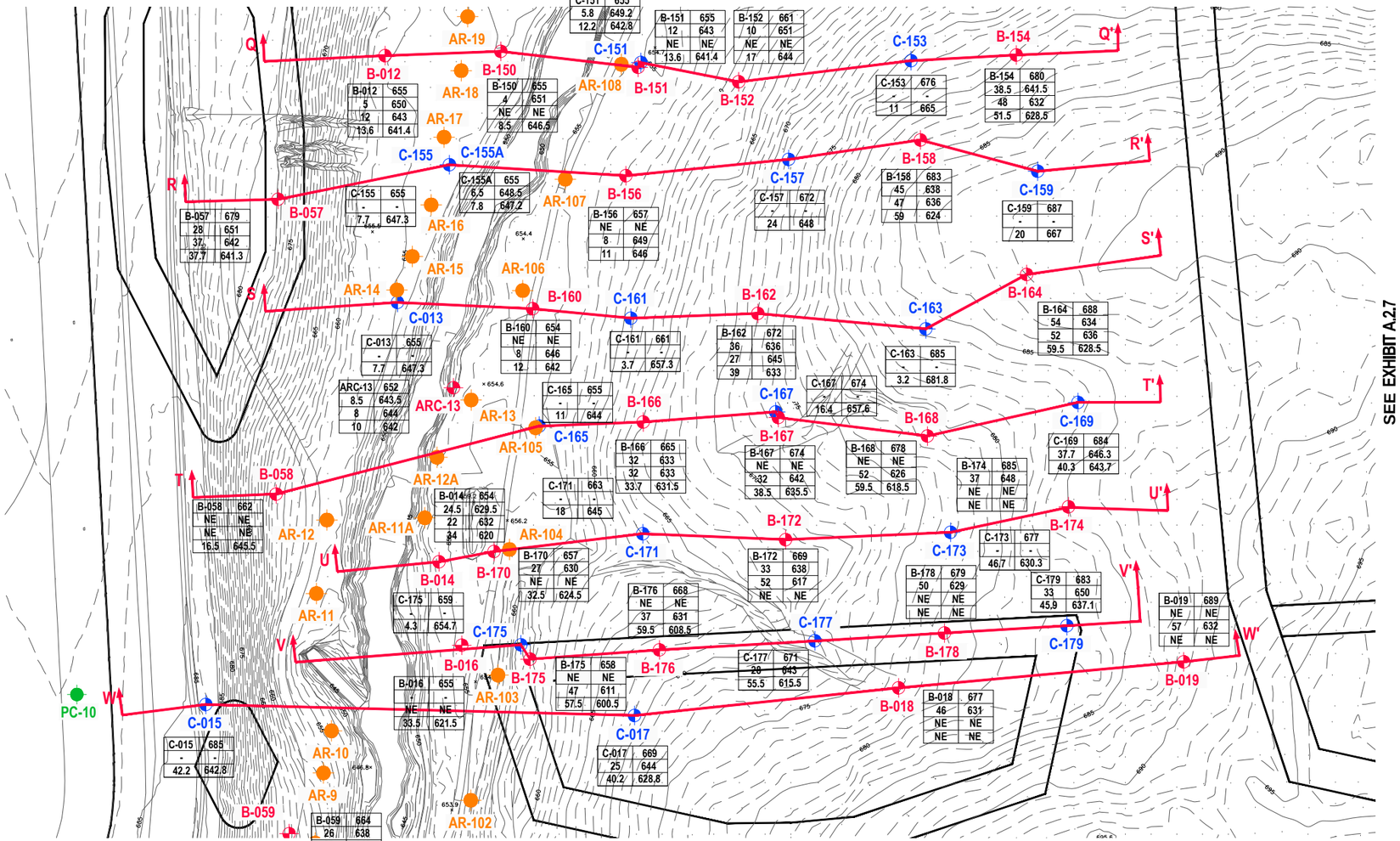
FIELD EXPLORATION PLAN

CLT AIRPORT DEICING PAD AND SCT

CHARLOTTE, NC

EXHIBIT A.2.4

SEE EXHIBIT A.2.4



N

0 100

Approximate Scale (Feet)

LEGEND

- APPROXIMATE BORING LOCATION
- APPROXIMATE CPT SOUNDINGS LOCATION
- APPROXIMATE CORING LOCATION
- APPROXIMATE AIR ROTARY BORING LOCATION (SEE APPENDIX F)
- A A' NE — APPROXIMATE CROSS SECTION LOCATION NOT ENCOUNTERED

BORING ID	BORING ELEV.
GWT DEPTH	GWT ELEV.
PWR DEPTH	PWR ELEV.
AR DEPTH	AR ELEV.

CPT ID	CPT ELEV.
GWT DEPTH	GWT ELEV.
TERMINATION DEPTH	TERMINATION ELEV.

THIS DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Mngr:	JPM
Drawn By:	RLW
Checked By:	SD/MRF
Approved By:	JPM
Project No.	71195007
Scale:	AS SHOWN
File No.	71195007
Date:	APRIL 2020

Terracon
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2701 Westport Road Charlotte, North Carolina 28208
(704) 509-1777 (704) 509-1888

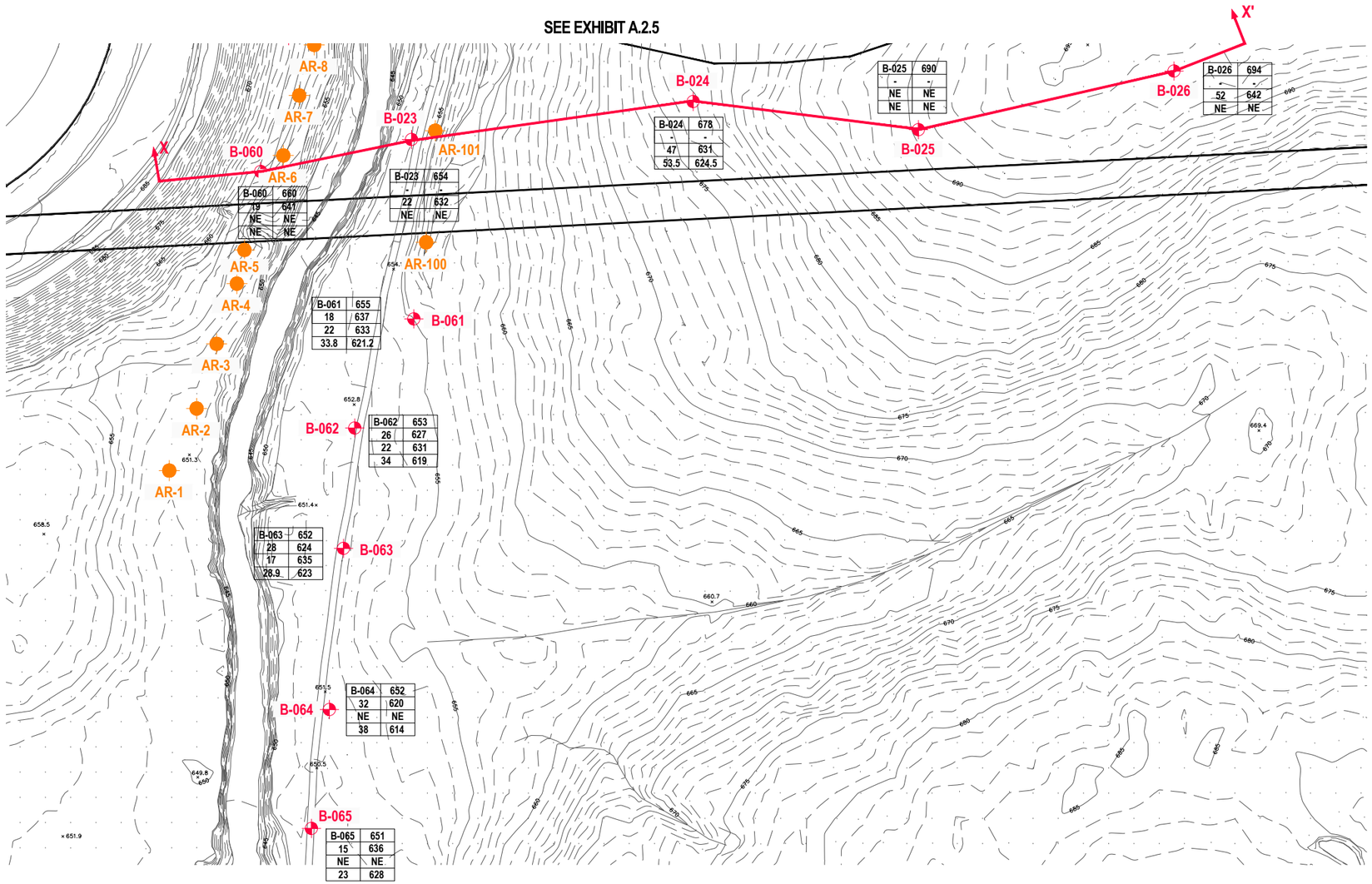
FIELD EXPLORATION PLAN

CLT AIRPORT DEICING PAD AND SCT

CHARLOTTE, NC

EXHIBIT A.2.5

SEE EXHIBIT A.2.5



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0 100

Approximate Scale (Feet)

LEGEND

- APPROXIMATE BORING LOCATION
- APPROXIMATE CPT SOUNDINGS LOCATION
- APPROXIMATE CORING LOCATION
- APPROXIMATE AIR ROTARY BORING LOCATION (SEE APPENDIX F)
- A NE A' APPROXIMATE CROSS SECTION LOCATION NOT ENCOUNTERED

THIS DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

BORING ID	BORING ELEV.
GWT DEPTH	GWT ELEV.
PWR DEPTH	PWR ELEV.
AR DEPTH	AR ELEV.

CPT ID	CPT ELEV.
GWT DEPTH	GWT ELEV.
TERMINATION DEPTH	TERMINATION ELEV.

Project Mngr:	JPM
Drawn By:	RLW
Checked By:	SD/MRF
Approved By:	JPM

Project No.	71195007
Scale:	AS SHOWN
File No.	71195007
Date:	APRIL 2020

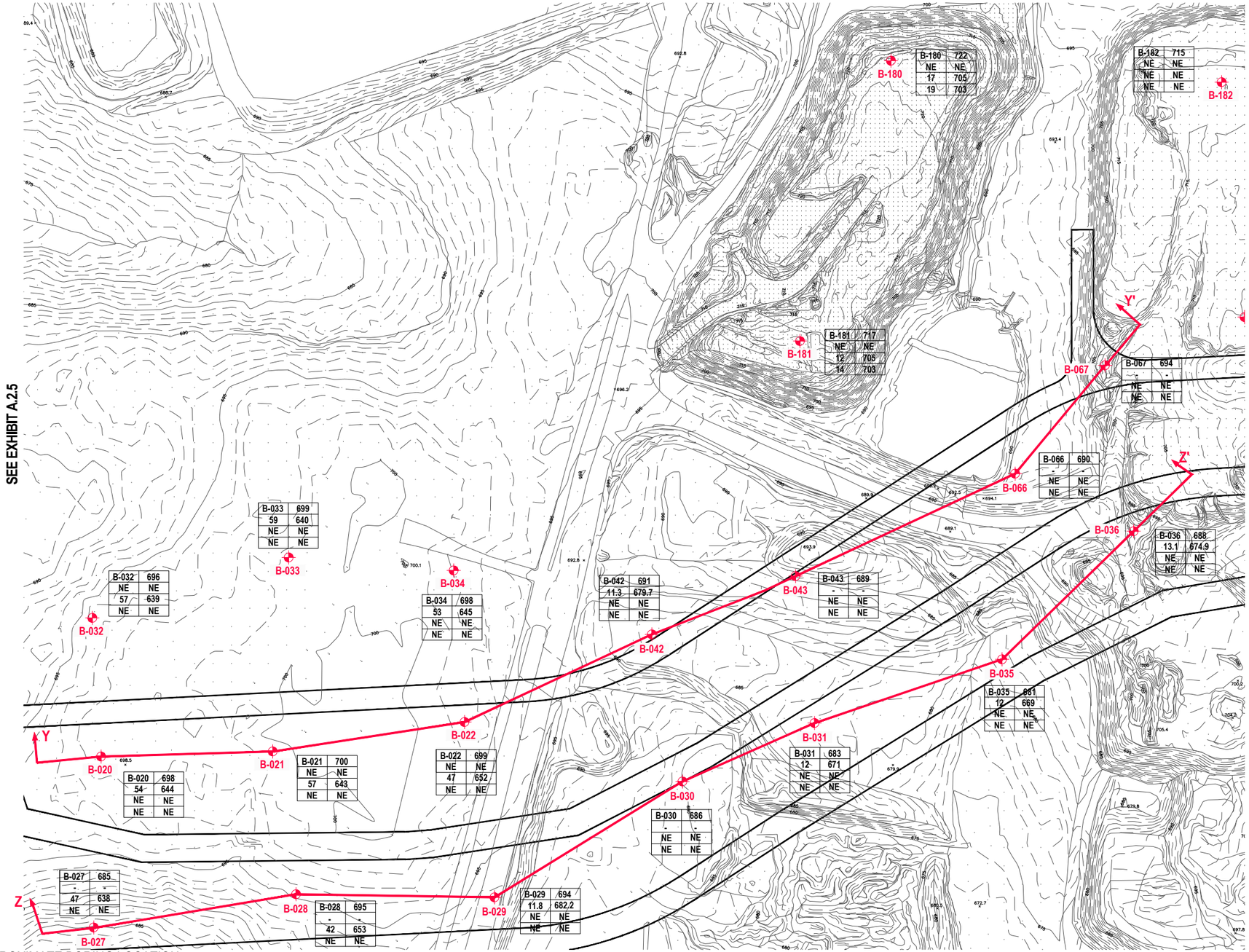
Terracon
Consulting Engineers and Scientists
2701 Westport Road Charlotte, North Carolina 28208
(704) 509-1777 (704) 509-1888

FIELD EXPLORATION PLAN

CLT AIRPORT DEICING PAD AND SCT

CHARLOTTE, NC

EXHIBIT A.2.6



N

0 120

Approximate Scale (Feet)

LEGEND

- APPROXIMATE BORING LOCATION
- APPROXIMATE CPT SOUNDINGS LOCATION
- APPROXIMATE CORING LOCATION
- APPROXIMATE AIR ROTARY BORING LOCATION (SEE APPENDIX F)
- A NE A' APPROXIMATE CROSS SECTION LOCATION
- NOT ENCOUNTERED

THIS DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

BORING ID	BORING ELEV.
GWT DEPTH	GWT ELEV.
PWR DEPTH	PWR ELEV.
AR DEPTH	AR ELEV.

CPT ID	CPT ELEV.
GWT DEPTH	GWT ELEV.
TERMINATION DEPTH	TERMINATION ELEV.

Project Mngr:	JPM
Drawn By:	RLW
Checked By:	SD/MRF
Approved By:	JPM
Project No.	71195007
Scale:	AS SHOWN
File No.	71195007
Date:	APRIL 2020

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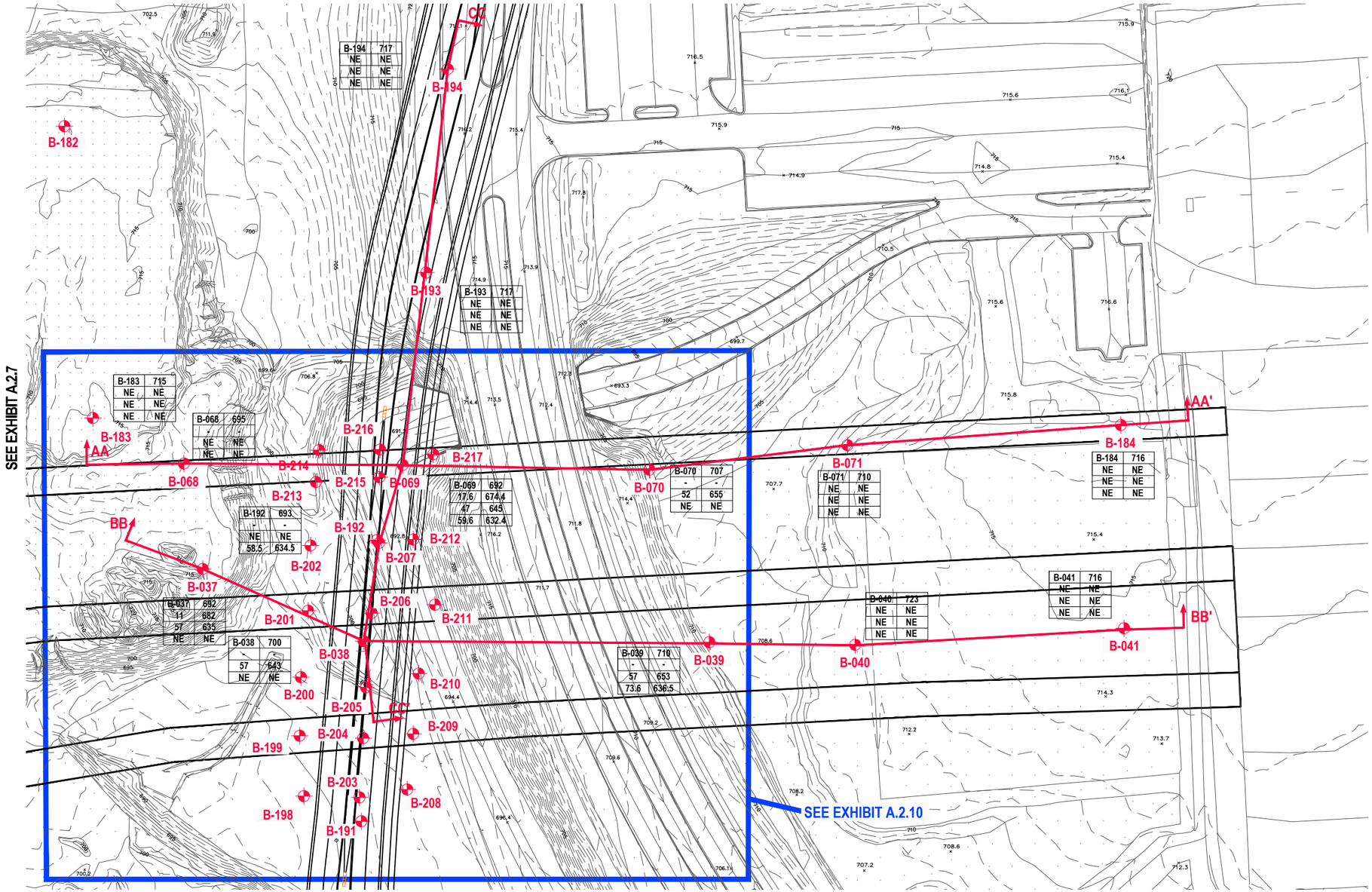
FIELD EXPLORATION PLAN

CLT AIRPORT DEICING PAD AND SCT

CHARLOTTE, NC

EXHIBIT A.2.7



N

0 100

Approximate Scale (Feet)

LEGEND

- APPROXIMATE BORING LOCATION
- APPROXIMATE CPT SOUNDINGS LOCATION
- APPROXIMATE CORING LOCATION
- APPROXIMATE AIR ROTARY BORING LOCATION (SEE APPENDIX F)
- APPROXIMATE CROSS SECTION LOCATION

A A' NE — NOT ENCOUNTERED

BORING ID	BORING ELEV.
GWT DEPTH	GWT ELEV.
PWR DEPTH	PWR ELEV.
AR DEPTH	AR ELEV.

CPT ID	CPT ELEV.
GWT DEPTH	GWT ELEV.
TERMINATION DEPTH	TERMINATION ELEV.

THIS DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Mngr:	JPM
Drawn By:	RLW
Checked By:	SD/MRF
Approved By:	JPM
Project No.	71195007
Scale:	AS SHOWN
File No.	71195007
Date:	APRIL 2020

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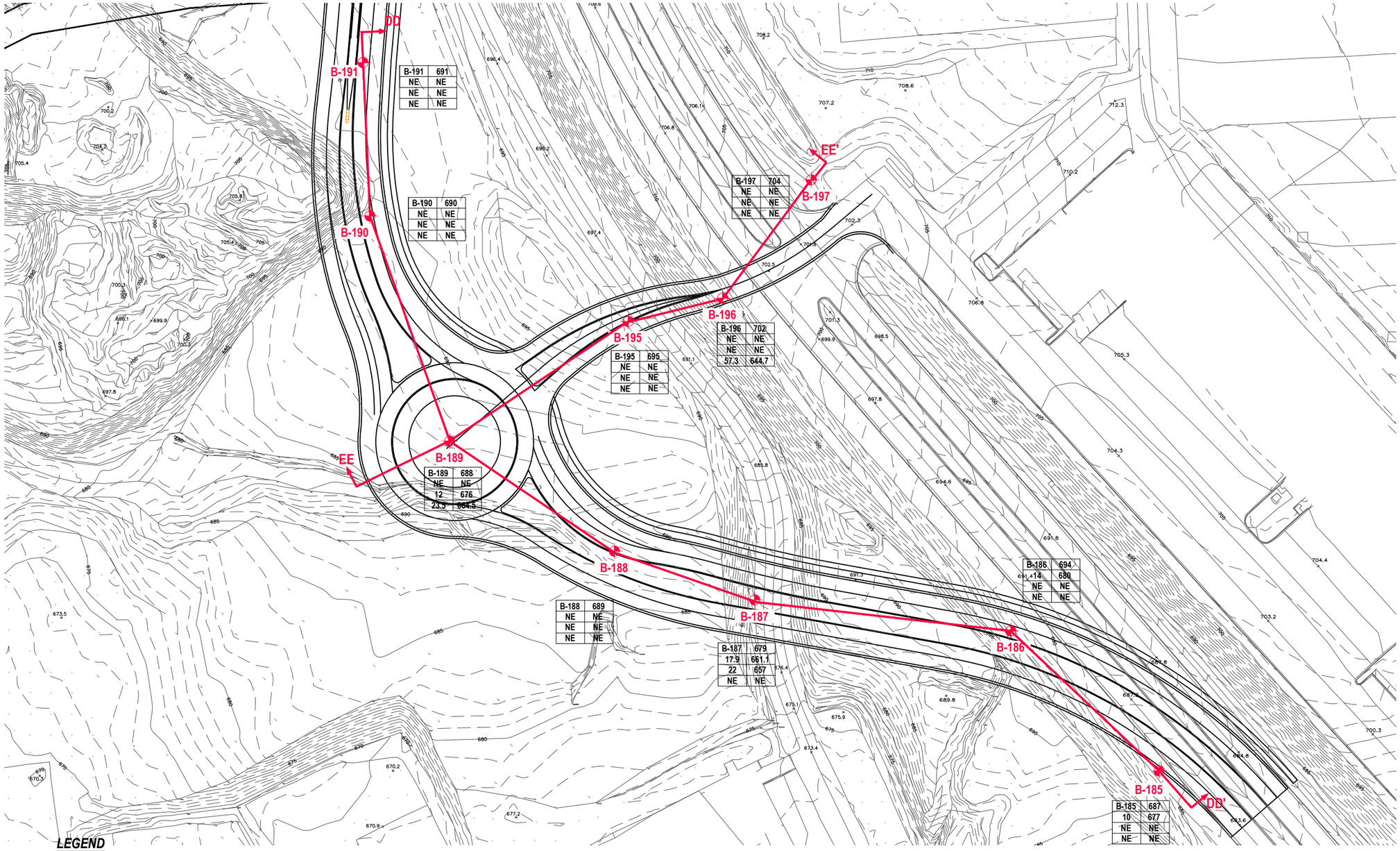
FIELD EXPLORATION PLAN

CLT AIRPORT DEICING PAD AND SCT

CHARLOTTE, NC

EXHIBIT A.2.8

SEE EXHIBIT A.2.8



LEGEND

- APPROXIMATE BORING LOCATION
- APPROXIMATE CPT SOUNDINGS LOCATION
- APPROXIMATE CORING LOCATION
- APPROXIMATE AIR ROTARY BORING LOCATION (SEE APPENDIX F)
- A ↑ NE ↑ A' APPROXIMATE CROSS SECTION LOCATION
- NE NOT ENCOUNTERED

BORING ID	BORING ELEV.
GWT DEPTH	GWT ELEV.
PWR DEPTH	PWR ELEV.
AR DEPTH	AR ELEV.

CPT ID	CPT ELEV.
GWT DEPTH	GWT ELEV.
TERMINATION DEPTH	TERMINATION ELEV.

THIS DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Mngr:	JPM
Drawn By:	RLW
Checked By:	SD/MRF
Approved By:	JPM

Project No.	71195007
Scale:	AS SHOWN
File No.	71195007
Date:	APRIL 2020

Terracon
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2701 Westport Road Charlotte, North Carolina 28208
(704) 509-1777 (704) 509-1888

FIELD EXPLORATION PLAN

CLT AIRPORT DEICING PAD AND SCT

CHARLOTTE, NC

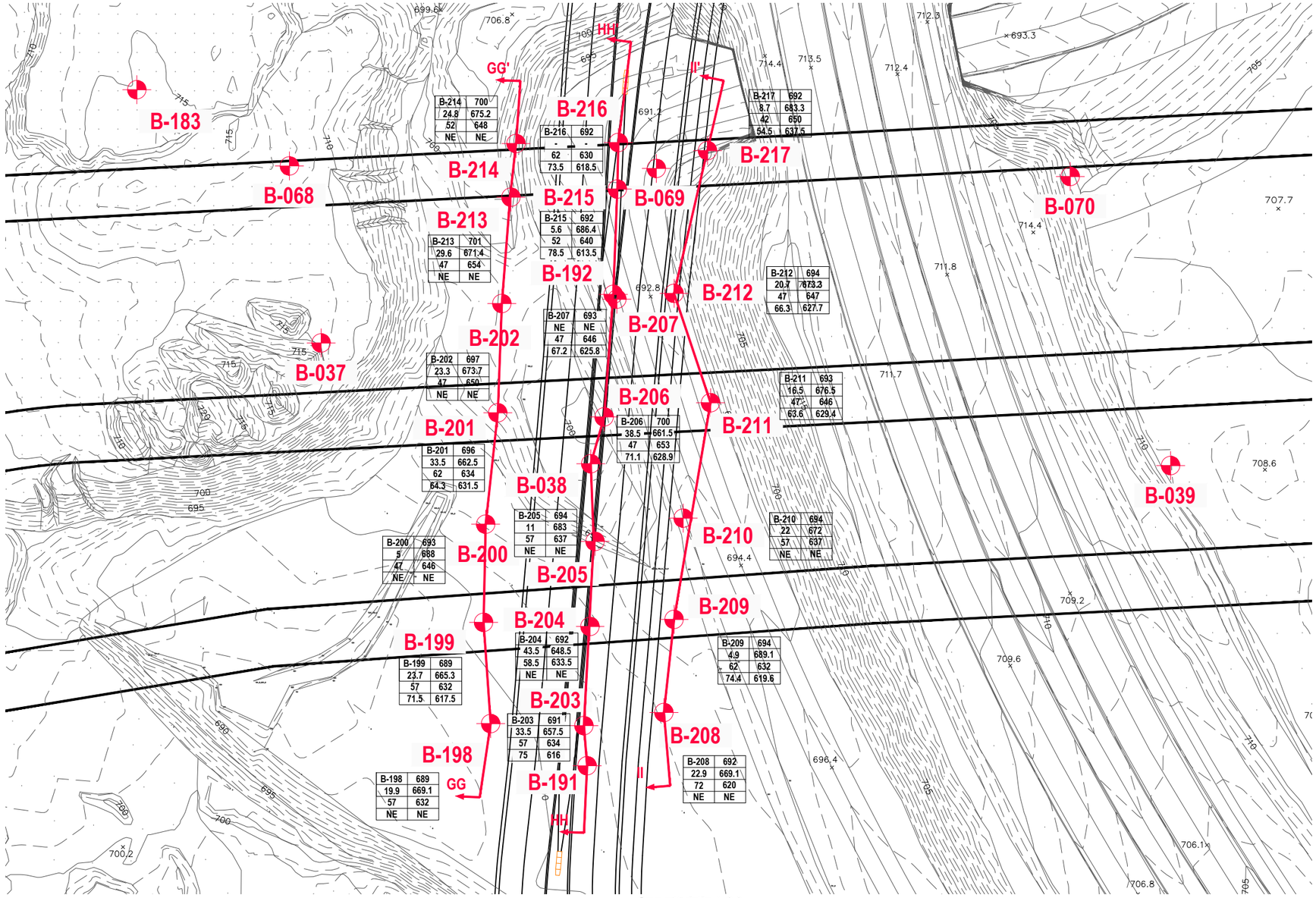
EXHIBIT A.2.9

-

SEE EXHIBIT A.2.8

SEE EXHIBIT A.2.7

SEE EXHIBIT A.2.8



SEE EXHIBIT A.2.9

N

0 60

Approximate Scale (Feet)

LEGEND

- APPROXIMATE BORING LOCATION
- APPROXIMATE CPT SOUNDINGS LOCATION
- APPROXIMATE CORING LOCATION
- APPROXIMATE AIR ROTARY BORING LOCATION (SEE APPENDIX F)
- A A' NE — APPROXIMATE CROSS SECTION LOCATION NOT ENCOUNTERED

BORING ID	BORING ELEV.
GWT DEPTH	GWT ELEV.
PWR DEPTH	PWR ELEV.
AR DEPTH	AR ELEV.

CPT ID	CPT ELEV.
GWT DEPTH	GWT ELEV.
TERMINATION DEPTH	TERMINATION ELEV.

THIS DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Mngr:	JPM
Drawn By:	RLW
Checked By:	SD/MRF
Approved By:	JPM
Project No.	71195007
Scale:	AS SHOWN
File No.	71195007
Date:	APRIL 2020

Terracon
Consulting Engineers and Scientists
2701 Westport Road Charlotte, North Carolina 28208
(704) 509-1777 (704) 509-1888

FIELD EXPLORATION PLAN

CLT AIRPORT DEICING PAD AND SCT

CHARLOTTE, NC

EXHIBIT A.2.10

B. SPT BORING AND CPT SOUNDING LOGS

B.1 USCS CLASSIFICATION, GENERAL NOTES, SPT BORING LOGS, AND ROCK CORE PHOTOGRAPHS

UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]					Soil Classification	
					Group Symbol	Group Name [B]
Coarse Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	$Cu \geq 4$ and $1 \leq Cc \leq 3$ [E]		GW	Well-graded gravel [F]
			$Cu < 4$ and/or $1 > Cc > 3$ [E]		GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH		GM	Silty gravel [F,G,H]
			Fines classify as CL or CH		GC	Clayey gravel [F,G,H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	$Cu \geq 6$ and $1 \leq Cc \leq 3$ [E]		SW	Well-graded sand [I]
			$Cu < 6$ and/or $1 > Cc > 3$ [E]		SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH		SM	Silty sand [G,H,I]
			Fines classify as CL or CH		SC	Clayey sand [G,H,I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots on or above "A" line [J]		CL	Lean clay [K,L,M]
			PI < 4 or plots below "A" line [J]		ML	Silt [K,L,M]
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay [K,L,M,N]
			Liquid limit - not dried			Organic silt [K,L,M,O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line		CH	Fat clay [K,L,M]
			PI plots below "A" line		MH	Elastic Silt [K,L,M]
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay [K,L,M,P]
			Liquid limit - not dried			Organic silt [K,L,M,Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor				PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve

[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay

[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 15% sand, add "with sand" to group name.

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H] If fines are organic, add "with organic fines" to group name.

[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.

[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

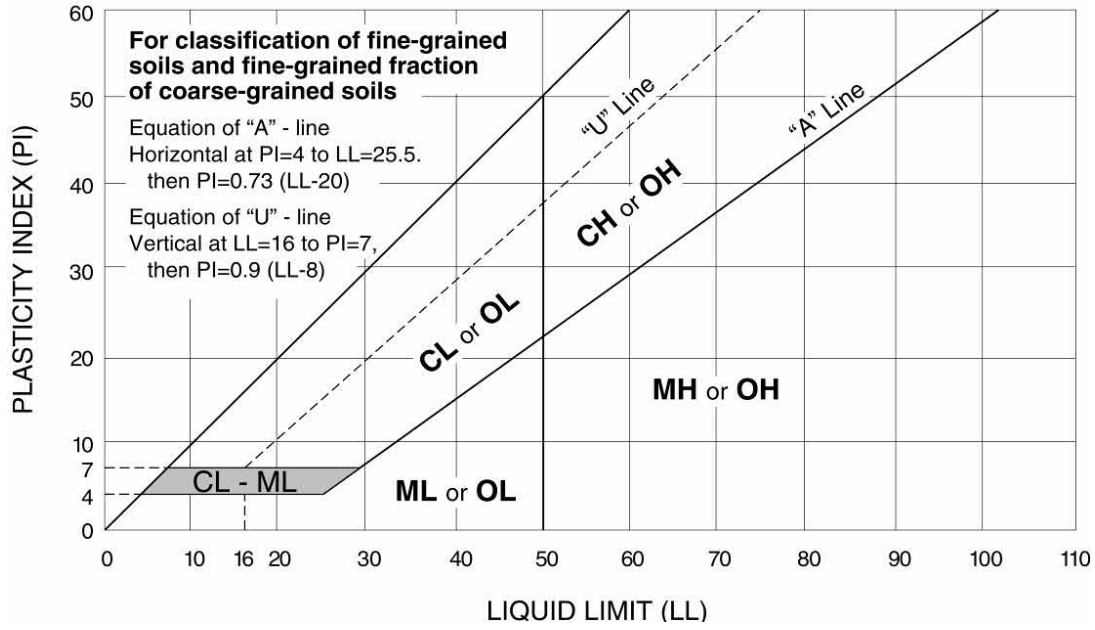
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N] PI ≥ 4 and plots on or above "A" line.

[O] PI < 4 or plots below "A" line.

[P] PI plots on or above "A" line.

[Q] PI plots below "A" line.



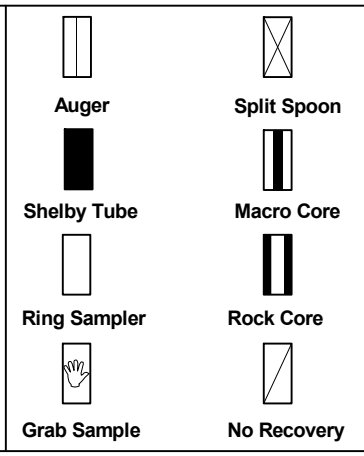
Terracon

Exhibit B.1.A

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

SAMPLING



WATER LEVEL

Water Initially Encountered

Water Level After a Specified Period of Time

Water Level After a Specified Period of Time

Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.

FIELD TESTS

(HP)	Hand Penetrometer
(T)	Torvane
(b/f)	Standard Penetration Test (blows per foot)
(PID)	Photo-Ionization Detector
(OVA)	Organic Vapor Analyzer

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS

RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance Includes gravels, sands and silts.			CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance			
Descriptive Term (Density)	**Standard Penetration or N-Value Blows/Ft.**	**Ring Sampler Blows/Ft.**	**Descriptive Term (Consistency)**	**Unconfined Compressive Strength, Qu, psf**	**Standard Penetration or N-Value Blows/Ft.**	**Ring Sampler Blows/Ft.**
Very Loose	0 - 3	0 - 6	Very Soft	less than 500	0 - 1	< 3
Loose	4 - 9	7 - 18	Soft	500 to 1,000	2 - 4	3 - 4
Medium Dense	10 - 29	19 - 58	Medium-Stiff	1,000 to 2,000	4 - 8	5 - 9
Dense	30 - 50	59 - 98	Stiff	2,000 to 4,000	8 - 15	10 - 18
Very Dense	> 50	≥ 99	Very Stiff	4,000 to 8,000	15 - 30	19 - 42
			Hard	> 8,000	> 30	> 42

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 15
With	15 - 29
Modifier	> 30

GRAIN SIZE TERMINOLOGY

Major Component of Sample	Particle Size
Boulders	Over 12 in. (300 mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm
Silt or Clay	Passing #200 sieve (0.075mm)

RELATIVE PROPORTIONS OF FINES

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 5
With	5 - 12
Modifier	> 12

PLASTICITY DESCRIPTION

Term	Plasticity Index
Non-plastic	0
Low	1 - 10
Medium	11 - 30
High	> 30

BORING LOG NO. ARC-13

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2015° Longitude: -80.9479°

Surface Elev.: 652 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.5	651.5	**TOPSOIL**, 6-inches							
		SANDY LEAN CLAY (CL), trace roots, brown and black, medium stiff, residuum				3-3-4 N=7	22	34-20-14	64
5.5	646.5		5			2-4-3 N=7	25	38-22-16	57
		SILTY SAND (SM), trace roots, fine to medium grained, brown and black, medium dense, residuum				4-6-5 N=11	17	NP	16
8.0	644			▽					
		PARTIALLY WEATHERED ROCK (PWR), sampled as brown and green gravelly silty SAND				15-6-100/1"			
10.0	642	Auger refusal at 10.0 feet.	10			60/0"			
		GRANITE, gray and green Granite, very strong to strong, fresh to slightly weathered, very slightly to slightly fractured				REC= 76.1% RQD= 70.1%			
			15			REC= 96.7% RQD= 93.3%			
21.0	631		20						
		Boring Terminated at 21 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *While drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-27-2020 | Boring Completed: 01-27-2020

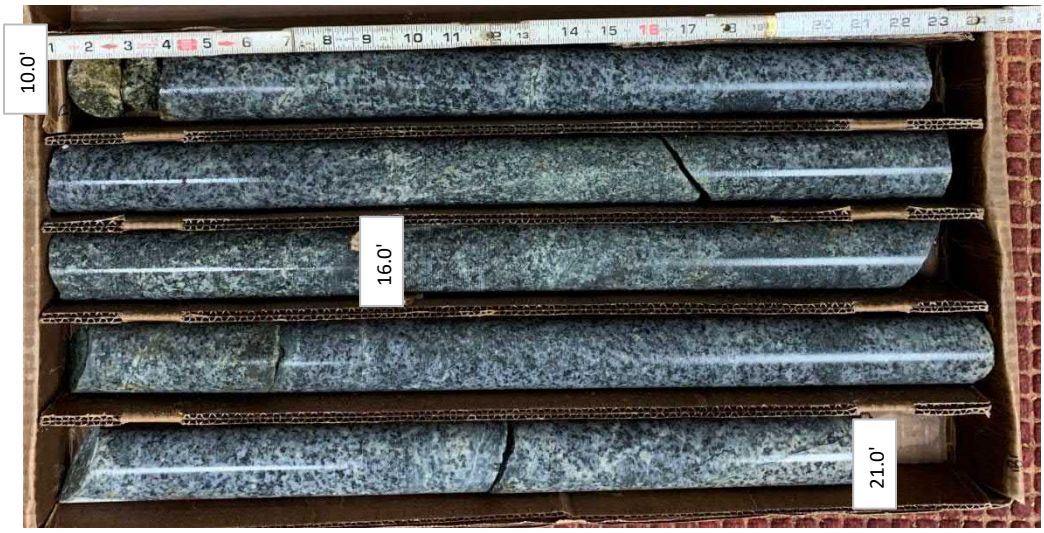
Drill Rig: D-50 | Driller: C. Odom

Project No.: 71195007

ROCK CORE PHOTOGRAPHS
CLT Airport Bridge ■ Charlotte, North Carolina
April 6, 2020 ■ Terracon Project No. 71195007

Site Description: CLT Airport Bridge	*County*: Mecklenburg	*Boring Location:* ARC-13
Driller: C. Odom	*Core Size*: NQ	*Drill Machine:* D-50
Geologist / Engineer: Y. Li	*Total Core Length:* 11 feet	*Date:* 1/27/2020

R-1 and R-2: Run 1: 10' to 16' and Run 2: 16' to 21'



Notes:
1) Used NQ wireline core barrel

2701 Westport Road
Charlotte, North Carolina

Abandonment Method:
Boring backfilled with auger cutting upon completion

BORING LOG NO. ARC-23

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2028° Longitude: -80.9477°

Surface Elev.: 656 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.6	655.5	**TOPSOIL**, 7-inches
3.0	653	**SANDY LEAN CLAY (CL)**, dark brown, medium stiff, residuum
5.5	650.5	**SILTY CLAYEY SAND (SC-SM)**, fine to medium grained, brown and gray, very loose, residuum
8.8	647	**PARTIALLY WEATHERED ROCK (PWR)**, sampled as brown and gray silty SAND Auger refusal at 8.8 feet.
20.0	636	**GRANITE**, green, yellow, and gray Granite, strong to weak, fresh to highly weathered, slightly to highly fractured
		Boring Terminated at 20 Feet

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		2-2-3 N=5	24	33-21-12	53
		0-0-0 N=0	25	25-19-6	42
5		100/4"			
10		100/0" REC= 78.5% RQD= 0%			
		REC= 100% RQD= 86.7%			
15		REC= 77.5% RQD= 52.5%			
20					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-28-2020 | Boring Completed: 01-28-2020

Drill Rig: D-50 | Driller: C. Odom

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

ROCK CORE PHOTOGRAPHS
CLT Airport Bridge ■ Charlotte, North Carolina
April 6, 2020 ■ Terracon Project No. 71195007

Site Description: CLT Airport Bridge	*County*: Mecklenburg	*Boring Location:* ARC-23
Driller: C. Odom	*Core Size*: NQ	*Drill Machine:* D-50
Geologist / Engineer: E. Kennedy	*Total Core Length:* 11.2 feet	*Date:* 1/28/2020

R-1, R-2, and R-3: Run 1: 8.8' to 10.0', Run 2: 10.0’ to 15.0’, and Run 3: 15.0’ to 20.0’

R-3: Run 3: 15.0’ to 20.0'

Notes:
1) Used NQ wireline core barrel

Terracon
2701 Westport Road
Charlotte, North Carolina

Abandonment Method:
Boring backfilled with auger cutting upon completion

BORING LOG NO. ARC-32

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2041° Longitude: -80.9474°

Surface Elev.: 659 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.5	658.5	**TOPSOIL**, 6-inches				
3.0	656	**SILTY SAND (SM)**, fine to medium grained, brown, loose, residuum	3-2-4 N=6	20	19-16-3	39
5.5	653.5	**SANDY LEAN CLAY (CL)**, trace quartz, brown, very stiff, residuum	3-7-13 N=20	16	31-22-9	51
8.5	650.5	**PARTIALLY WEATHERED ROCK (PWR)**, sampled as brown and gray silty SAND with trace rock fragments Auger refusal at 8.5 feet.	27-41-59/3"	8	NP	25
30.0	629	**GRANITE**, green, gray, and brown Granite, very strong to weak, fresh to highly weathered, very slightly to intensely fractured	100/0" REC= 61.1% RQD= 50.0% REC= 28.3% RQD= 0% REC= 16.7% RQD= 76.7% REC= 35.0% RQD= 25.0% REC= 93.3% RQD= 100%			
		Boring Terminated at 30 Feet				

DEPTH (Ft.): 5, 10, 15, 20, 25, 30

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-28-2020 | Boring Completed: 01-28-2020

Drill Rig: D-50 | Driller: C. Odom

Project No.: 71195007

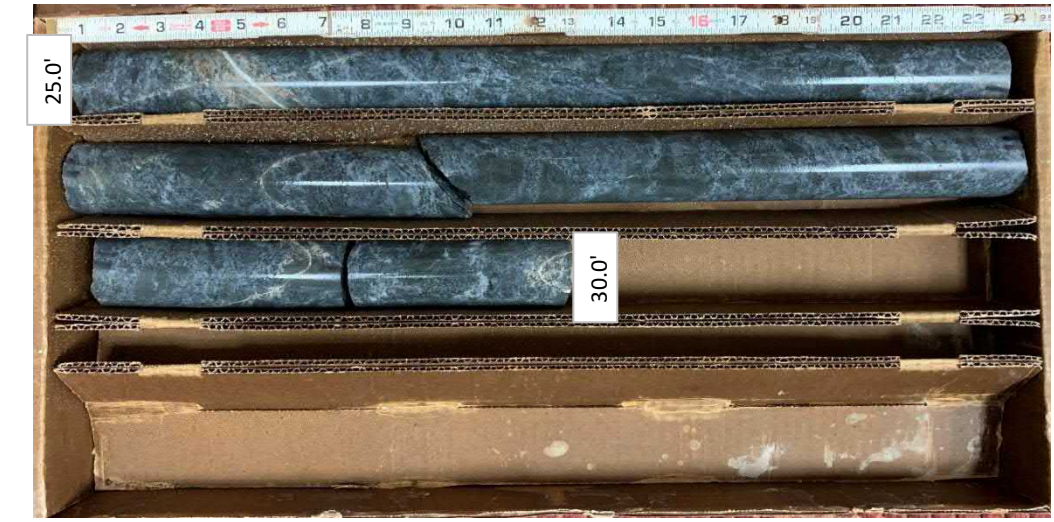
THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

ROCK CORE PHOTOGRAPHS
CLT Airport Bridge ■ Charlotte, North Carolina
April 6, 2020 ■ Terracon Project No. 71195007

Site Description: CLT Airport Bridge	*County*: Mecklenburg	*Boring Location:* ARC-32
Driller: C. Odom	*Core Size*: NQ	*Drill Machine:* D-50
Geologist / Engineer: E. Kennedy	*Total Core Length:* 21.5 feet	*Date:* 1/28/2020

R-1, R-2, R-3, and R-4:
Run 1: 8.5' to 10.0', Run 2: 10.0’ to 15.0', Run 3: 15.0’ to 20.0’, and Run 4: 20.0’ to 25.0’

R-5: Run 5: 25.0’ to 30.0'



Notes:
1) Used NQ wireline core barrel

2701 Westport Road
Charlotte, North Carolina

Abandonment Method:
Boring backfilled with auger cutting upon completion

BORING LOG NO. B-002

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2075° Longitude: -80.9484°

Surface Elev.: 670 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SANDY LEAN CLAY (CL), red and brown, medium stiff, Residuum					
3.0	667		3-3-3 N=6	21	43-23-20	61
	CLAYEY SAND (SC), fine grained, red and brown, loose, Residuum		4-4-4 N=8	20	38-15-23	49
	fine grained, gray, medium dense, Residuum	5	5-7-7 N=14	23	38-13-25	49
8.0	662					
	SANDY LEAN CLAY (CL), green, stiff, Residuum		5-6-6 N=12	25	40-25-15	56
10.0	660	10				
	SANDY SILT (ML)			15	32-27-5	53
12.0	658					
	SILTY CLAYEY SAND (SC-SM), fine to coarse grained, brown and white, medium dense, Residuum		9-13-16 N=29	12	27-21-6	33
15.0	655	15				
	Auger Refusal at 15 Feet					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-22-2019 | Boring Completed: 03-22-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-003

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2072° Longitude: -80.9485°
Surface Elev.: 670 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.0	670	**FILL - SANDY FAT CLAY (CH)**, brown, very stiff
		brown, stiff
5.5	664.5	
		SANDY ELASTIC SILT (MH), gray, brown, and green, stiff, Residuum
8.0	662	
		SANDY LEAN CLAY (CL), gray, brown, and green, stiff, Residuum
		green, stiff to very stiff, Residuum
17.0	653	
		SILTY CLAYEY SAND (SC-SM), fine to medium grained, green, dense, Residuum
22.0	648	
		PARTIALLY WEATHERED ROCK
28.5	641.5	
		Auger Refusal at 28.5 Feet

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0						
			3-10-6 N=16	19	67-32-35	57
5			5-5-5 N=10	35	56-22-34	58
			6-7-6 N=13	35	54-31-23	65
10	▽		3-8-5 N=13	27	38-23-15	54
			6-7-8 N=15	20	39-25-14	55
15						
			12-12-20 N=32	10	29-22-7	18
20						
			50/3"			
25						
			50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-22-2019 | Boring Completed: 03-22-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-004

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2066° Longitude: -80.9484°

Surface Elev.: 668 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SANDY ELASTIC SILT (MH), red and brown, stiff, Residuum							
3.0	665				3-5-8 N=13	35	61-32-29	53
	SANDY FAT CLAY (CH), red and orange, stiff, Residuum							
5.5	662.5	5			5-4-5 N=9	30	53-26-27	65
	CLAYEY SAND (SC), fine grained, red, brown, and orange, medium dense, Residuum				5-5-6 N=11	22	34-12-22	35
	fine grained, gray and green, medium dense, Residuum	10	▽		3-4-6 N=10	35	38-22-16	36
	fine grained, white, brown, and red, medium dense, Residuum	15			5-6-7 N=13	22	29-12-17	40
17.0	651							
	SANDY LEAN CLAY (CL), green, hard, Residuum	20			11-19-35 N=54	13	27-12-15	53
23.0	645							
	Auger Refusal at 23 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-23-2019 | Boring Completed: 03-23-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-006

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2055° Longitude: -80.9485°
Surface Elev.: 664 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.0	664	**FILL - SANDY FAT CLAY (CH)**, red, soft
3.0	661	**FILL - CLAYEY SAND (SC)**, fine grained, gray and tan, loose
5.5	658.5	**SANDY LEAN CLAY (CL)**, gray and red, medium stiff, Alluvium
8.0	656	**SILTY SAND (SM)**, with rock, fine to coarse grained, red, brown, and gray, medium dense, Residuum
		fine to coarse grained, brown and black, dense, Residuum
		fine to medium grained, black and gray, medium dense, Residuum
		fine to medium grained, black and gray, medium dense, Residuum
		fine to medium grained, gray and white, medium dense, Residuum
32.0	632	
33.6	630.5	**PARTIALLY WEATHERED ROCK**
		Auger Refusal at 33.6 Feet

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0					
		2-1-2 N=3	30	51-27-24	63
5		2-2-2 N=4	19	26-17-9	46
		2-3-3 N=6	20	31-16-15	55
10		3-5-5 N=10	28	NP	29
15		17-14-18 N=32	24	NP	19
20		6-7-8 N=15	20	NP	42
25		6-6-8 N=14	21	NP	30
30		8-10-9 N=19	18	26-25-1	29
		50/1"			

WATER LEVEL OBSERVATIONS: ▽ At completion of drilling

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-04-2019 | Boring Completed: 03-04-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-007

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2049° Longitude: -80.9483°

Surface Elev.: 663 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		ELASTIC SILT WITH SAND (MH), red, soft to medium stiff, Alluvium							
2.5	660.5					1-2-2 N=4	35	55-38-17	84
		SILTY CLAYEY SAND (SC-SM), Alluvium					21	26-21-5	41
4.5	658.5								
		SANDY LEAN CLAY (CL), orange and tan, stiff, Alluvium	5			3-4-8 N=12	20	45-24-21	52
6.0	657								
		CLAYEY SAND (SC), fine grained, orange and gray, medium dense, Alluvium		▽		6-7-7 N=14	13		31
8.0	655								
		SILTY SAND (SM), with gravel, fine to coarse grained, brown, dense, Residuum	10			10-17-25 N=42	6		13
		fine to medium grained, dark gray and black, dense, Residuum	15			17-18-21 N=39	10	NP	37
18.5	644.5								
		Auger Refusal at 18.5 Feet				50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-04-2019 | Boring Completed: 03-04-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-008

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2044° Longitude: -80.9482°

Surface Elev.: 673 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		ELASTIC SILT (MH), red, medium stiff, Alluvium							
		red and tan, medium stiff, Alluvium				2-3-3 N=6	46	71-38-33	87
5.5	667.5		5			1-3-2 N=5	53	60-37-23	92
		SILT (ML), red and orange, soft to medium stiff, Residuum				3-2-2 N=4	54	45-38-7	86
8.0	665								
		SANDY SILT (ML), red and tan, medium stiff, Residuum				3-2-3 N=5	41	47-40-7	64
12.0	661		10						
		SILT WITH SAND (ML), Residuum					36	42-35-7	73
18.5	654.5		15						
		Auger Refusal at 18.5 Feet				50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-04-2019 | Boring Completed: 03-04-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-009

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2038° Longitude: -80.9482°
Surface Elev.: 684 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.0	684	**ELASTIC SILT (MH)**, red, medium stiff, Alluvium
5.5	678.5	red, medium stiff, Alluvium
8.0	676	**FAT CLAY (CH)**, reddish orange, stiff, Alluvium
		ELASTIC SILT (MH), orange and tan, medium stiff, Residuum
		orange and tan, medium stiff, Residuum
		tan, soft to medium stiff, Residuum
22.0	662	**SILT (ML)**, tan and white, stiff, Residuum
27.0	657	**SANDY SILT (ML)**, orange, tan, black, and white, stiff, Residuum
32.0	652	**PARTIALLY WEATHERED ROCK**
34.0	650	***Auger Refusal at 34 Feet***

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0					
		3-3-3 N=6	33	82-41-41	98
		3-3-4 N=7	33	61-33-28	90
5		4-4-5 N=9	30	60-28-32	98
		3-2-3 N=5	48	56-40-16	90
10					
		2-2-3 N=5	42	53-39-14	97
15					
		2-2-2 N=4	41	51-37-14	98
20					
		5-6-8 N=14	37	41-34-7	96
25					
		5-6-8 N=14	26	37-33-4	57
30					
		42-50/1"			

WATER LEVEL OBSERVATIONS: ▽ At completion of drilling

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-04-2019 | Boring Completed: 03-04-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-010

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2033° Longitude: -80.9481°
Surface Elev.: 674 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		FILL - SANDY SILT (ML), red and brown, medium stiff							
						3-2-3 N=5	29	47-28-19	66
5.5	668.5		5			3-3-4 N=7	32	45-30-15	59
		SILTY CLAY (CL), with organics, brown, soft, Alluvium				3-1-1 N=2	74		59
8.0	666								
		ELASTIC SILT (MH), red and gray, soft, Residuum				2-1-1 N=2	47	54-31-23	92
		soft, Residuum	10						
12.0	662								
		SILT (ML), gray and green, stiff, Residuum				4-5-4 N=9	40	44-28-16	86
17.0	657		15						
		LEAN CLAY (CL), gray and tan, stiff, Residuum				4-4-5 N=9	34	37-24-13	77
22.0	652		20						
		SILT WITH SAND (ML), gray and tan, medium stiff to stiff, Residuum				5-3-5 N=8	33	40-30-10	79
			25						
		gray and tan, medium stiff, Residuum				2-2-5 N=7	41	39-28-11	76
33.5	640.5		30						
		Auger Refusal at 33.5 Feet				50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-05-2019 | Boring Completed: 03-05-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-011

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2027° Longitude: -80.948°
Surface Elev.: 658 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	FILL - SANDY SILT (ML), red, medium stiff							
3.0	655				2-2-3 N=5	27	45-29-16	52
	CLAYEY SAND (SC), fine to medium grained, black and tan, medium dense, Alluvium	5			6-8-11 N=19	20	32-22-10	48
5.5	652.5							
	SILTY SAND (SM), fine to coarse grained, tan and white, very dense, Residuum				11-23-32 N=55	15	25-23-2	38
8.0	650							
8.6	649.5 **PARTIALLY WEATHERED ROCK**				50/1"			
	Auger Refusal at 8.6 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-05-2019 | Boring Completed: 03-05-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-012

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2022° Longitude: -80.9481°
Surface Elev.: 655 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
SANDY LEAN CLAY (CL), red and brown, soft to medium stiff, Residuum					3-2-2 N=4	27	32-18-14	60
						24	28-18-10	50
tan and gray, medium stiff, Residuum		5	▽		1-2-3 N=5	24	30-15-15	64
gray and orange, stiff, Residuum					4-5-4 N=9	20	33-14-19	65
black, brown, and gray, hard, Residuum		10			9-13-18 N=31	16	28-19-9	53
12.0	643							
PARTIALLY WEATHERED ROCK								
13.6	641.5				50/1"			
Auger Refusal at 13.6 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-05-2019 | Boring Completed: 03-05-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-014

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2011° Longitude: -80.9479°
Surface Elev.: 654 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	654	**TOPSOIL**, 2-inches
		SANDY LEAN CLAY (CL), trace organics, red, stiff, Alluvium
		trace organics, red, medium stiff, Alluvium
		red and gray, medium stiff, Alluvium
11.0	643	
		SILTY CLAYEY SAND (SC-SM), Residuum
13.0	641	
		SILTY SAND (SM), fine to coarse grained, red and brown, medium dense, Residuum
		red and brown, very dense, Residuum
22.0	632	
		PARTIALLY WEATHERED ROCK
34.0	620	
		Auger Refusal at 34 Feet

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		4-4-5 N=9	17	25-16-9	53
		3-3-3 N=6	21	26-16-10	54
5		3-4-3 N=7	20	23-13-10	52
10			16	22-18-4	37
		8-12-12 N=24	10	NP	14
15					
		22-26-32 N=58	8	NP	18
20					
		48-50/5"			
25					
		36-45-50/4"			
30					
		50/5"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-13-2019 | Boring Completed: 02-13-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-016

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2009° Longitude: -80.9478°

Surface Elev.: 655 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.4	654.5	**TOPSOIL**, 5-inches
3.0	652	**FILL - SANDY LEAN CLAY (CL)**, brown, black, and white, stiff
5.5	649.5	**FILL - LEAN CLAY WITH SAND (CL)**, brown and gray, stiff to very stiff
8.0	647	**SANDY LEAN CLAY (CL)**, brown, orange, and white, stiff, Residuum
12.0	643	**CLAYEY SAND (SC)**, fine to medium grained, brown, orange, and white, medium dense, Residuum
17.0	638	**SANDY SILT (ML)**, trace gravel, brown and green, very stiff, Residuum
		SILTY SAND (SM), fine to coarse grained, brown, green, and yellow, medium dense, Residuum
		brown, green, and yellow, dense, Residuum
		brown, green, and yellow, dense, Residuum
33.5	621.5	***Auger Refusal at 33.5 Feet***

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		5-6-6 N=12	16	36-23-13	59
5		10-7-8 N=15	16	30-22-8	78
		5-5-5 N=10	21	31-18-13	67
10		4-4-5 N=9	21	33-19-14	38
		8-8-12 N=20	33	42-34-8	61
15					
		18-14-14 N=28	22	28-25-3	41
20					
		12-15-25 N=40	20	29-27-2	38
25					
		8-15-22 N=37	21	29-24-5	34
30					
		60/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-30-2019 | Boring Completed: 10-30-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-018

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2009° Longitude: -80.9467°
Surface Elev.: 677 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	677	**TOPSOIL**, 2-inches
		SANDY LEAN CLAY (CL), brown, medium stiff, Alluvium
3.5	673.5	
		SANDY FAT CLAY (CH), red, stiff, Alluvium
5.5	671.5	
		CLAYEY SAND (SC), red, medium dense, Alluvium
8.0	669	
		ELASTIC SILT (MH), brown, stiff, Residuum
12.0	665	
		LEAN CLAY WITH SAND (CL), brown and gray, medium stiff to stiff, Residuum
17.0	660	
		SANDY SILT (ML), green, medium stiff, Residuum
22.0	655	
		SANDY LEAN CLAY (CL), green, gray, and orange, stiff, Residuum
27.0	650	
		LEAN CLAY WITH SAND (CL), green and gray, medium stiff to stiff, Residuum
		green, medium stiff, Residuum
37.0	640	
		SILT WITH SAND (ML), green, very stiff, Residuum
42.0	635	

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
			2-2-3 N=5	22	33-21-12	56
5			3-4-5 N=9	25	59-26-33	64
			5-5-6 N=11	39	71-33-38	48
10			3-4-5 N=9	46	70-35-35	91
15			3-3-5 N=8	32	48-27-21	78
20			2-3-4 N=7	30	38-25-13	66
25			2-3-6 N=9	31	42-25-17	63
30			5-4-4 N=8	36	39-25-14	77
35			5-3-4 N=7	35	36-23-13	81
40			3-10-8 N=18	30	34-24-10	70

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-25-2019 | Boring Completed: 02-25-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-018

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2009° Longitude: -80.9467°
Surface Elev.: 677 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		GRAVELLY SILT WITH SAND (ML), blue and green, very stiff, Residuum							
47.0	630		45	▽	X	6-8-9 N=17	21	30-26-4	57
		SILT WITH SAND (ML), blue and green, very stiff, Residuum							
52.0	625		50		X	5-11-13 N=24	27	34-24-10	73
		SANDY SILT (ML), black and green, very stiff, Residuum							
57.0	620		55		X	14-13-14 N=27	20	30-23-7	68
		SILTY SAND WITH GRAVEL (SM), fine grained, black and green, medium dense, Residuum							
60.0	617		60		X	9-9-19 N=28	17	35-28-7	47
		Boring Terminated at 60 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-25-2019 | Boring Completed: 02-25-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-019

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2009° Longitude: -80.946°
Surface Elev.: 689 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	689	**TOPSOIL**, 2-inches
		ELASTIC SILT (MH), red, stiff, Alluvium
3.0	686	
		ELASTIC SILT WITH SAND (MH), red, stiff, Residuum
		red, very stiff, Residuum
		red and light brown, stiff to very stiff, Residuum
		light brown, stiff, Residuum
17.0	672	
		SANDY SILT (ML), light brown, stiff, Residuum
		light brown, very stiff, Residuum
27.0	662	
		SM - SILTY SAND (SM), light brown, dense, Residuum
32.0	657	
		SILTY SAND (SM), fine grained, light brown, medium dense, Residuum
		fine grained, light brown, medium dense, Residuum
42.0	647	

DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	3-5-5 N=10	34	88-49-39	86
5	4-6-7 N=13	34	76-50-26	79
	8-8-10 N=18	33	77-49-28	78
10	5-6-9 N=15	30	68-43-25	79
	4-5-7 N=12	22	50-37-13	76
15				
	5-5-7 N=12	16	37-34-3	62
20				
	6-12-10 N=22	22	34-32-2	61
25				
	15-22-16 N=38			
30				
	10-8-9 N=17	20		68
35				
	9-12-14 N=26	18	NP	47
40				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-28-2019 | Boring Completed: 02-28-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-019

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2009° Longitude: -80.946°
Surface Elev.: 689 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
SANDY SILT (ML), light brown, hard, Residuum								
					18-17-50 N=67	21	41-26-15	60
47.0	642	45						
PARTIALLY WEATHERED ROCK					50/6"			
52.0	637	50						
SANDY SILT (ML), green and light brown, hard, Residuum								
					18-24-28 N=52	19		84
57.0	632	55						
PARTIALLY WEATHERED ROCK					50/6"			
60.0	629	60						
Boring Terminated at 60 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-28-2019 | Boring Completed: 02-28-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

BORING LOG NO. B-020

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2009° Longitude: -80.9453°

Surface Elev.: 698 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.3	697.5	**TOPSOIL**, 4-inches
3.0	695	**SANDY FAT CLAY (CH)**, red, medium stiff to stiff, Residuum
5.5	692.5	**ELASTIC SILT WITH SAND (MH)**, red, very stiff, Residuum
8.0	690	**ELASTIC SILT (MH)**, red, very stiff, Residuum
12.0	686	**ELASTIC SILT WITH SAND (MH)**, red, medium stiff, Residuum
17.0	681	**SANDY SILT (ML)**, light brown, stiff to very stiff, Residuum
		SILT (ML), light brown and green, stiff to very stiff, Residuum
		light brown, green, and white, stiff, Residuum
		light brown, green, and white, stiff, Residuum
		green and white, stiff, Residuum
		green and white, stiff, Residuum

DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0	3-5-3 N=8	23	62-29-33	68
5	9-10-9 N=19	43	78-42-36	83
	8-8-9 N=17	50	76-41-35	91
10	3-4-3 N=7	49	54-45-9	78
15	6-7-8 N=15	30	37-37-NP	66
20	6-6-9 N=15	31	49-35-14	89
25	5-6-7 N=13	34	44-33-11	86
30	4-6-7 N=13	41	45-29-16	92
35	4-5-8 N=13	43	46-32-14	90
40	4-6-8 N=14	36	49-29-20	91

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-28-2019 | Boring Completed: 02-28-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-020

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2009° Longitude: -80.9453°

Surface Elev.: 698 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SILT (ML), light brown and green, stiff to very stiff, Residuum *(continued)*							
		green and white, very stiff, Residuum	45			4-10-17 N=27	42	47-30-17	89
		green and white, hard, Residuum	50			22-23-40 N=63	14		39
52.0	646								
		PARTIALLY WEATHERED ROCK	55	▽		50/6"			
57.0	641								
		SILT WITH SAND (ML), green and white, hard, Residuum							
60.0	638		60			11-14-18 N=32	21	32-27-5	77
		Boring Terminated at 60 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-28-2019 | Boring Completed: 02-28-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-021

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.201° Longitude: -80.9447°
Surface Elev.: 700 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	700	**TOPSOIL**, 2-inches
		ELASTIC SILT (MH), red, medium stiff, Residuum
		red, very stiff, Residuum
		red, very stiff, Residuum
		red, very stiff, Residuum
12.0	688	**SANDY SILT (ML)**, red and light brown, stiff, Residuum
17.0	683	**ELASTIC SILT (MH)**, light brown to dark brown, and white, stiff, Residuum
22.0	678	**ELASTIC SILT WITH SAND (MH)**, light brown to dark brown, and white, stiff, Residuum
27.0	673	**SANDY SILT (ML)**, light brown to dark brown, and white, stiff, Residuum
		light brown to dark brown, and white, medium stiff to stiff, Residuum
37.0	663	**SILTY SAND (SM)**, fine grained, light brown to dark brown, and white, medium dense, Residuum

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		3-4-3 N=7	44	89-48-41	97
5		8-11-11 N=22	42	76-43-33	91
		13-14-14 N=28	43	77-52-25	97
10		15-13-8 N=21	43	83-48-35	99
15		4-7-7 N=14	35	49-41-8	69
20		7-7-6 N=13	31	54-40-14	89
25		5-5-4 N=9	30	52-42-10	79
30		2-4-5 N=9	36	49-39-10	63
35		3-4-4 N=8	34	43-40-3	55
40		5-7-9 N=16	26	38-32-6	48

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-28-2019 | Boring Completed: 02-28-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-021

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.201° Longitude: -80.9447°

Surface Elev.: 700 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SILTY SAND (SM), fine grained, light brown to dark brown, and white, medium dense, Residuum *(continued)*							
		fine grained, light brown, medium dense, Residuum	45		X	7-10-13 N=23	25	37-31-6	49
		fine to medium grained, light brown and white, medium dense, Residuum	50		X	7-11-18 N=29	20	NP	40
	52.0								
		SILT (ML), light brown and white, hard, Residuum	55		X	22-34-40 N=74	13	27-26-1	89
	57.0	643							
		PARTIALLY WEATHERED ROCK			X	31-50/6"			
	59.5	640.5							
		Boring Terminated at 59.5 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-28-2019 | Boring Completed: 02-28-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

BORING LOG NO. B-022

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2011° Longitude: -80.944°

Surface Elev.: 699 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	699	**TOPSOIL**, 2-inches
3.0	696	**ELASTIC SILT WITH SAND (MH)**, light brown, medium stiff to stiff, Residuum
5.5	693.5	**ELASTIC SILT (MH)**, light brown and green, hard, Residuum
12.0	687	**LEAN CLAY WITH SAND (CL)**, light brown and green, hard, Residuum light brown and green, very stiff, Residuum
32.0	667	**SANDY SILT (ML)**, light brown and green, very stiff, Residuum light brown and green, very stiff, Residuum light brown and green, very stiff, Residuum green, very stiff, Residuum
37.0	662	**SILTY SAND (SM)**, green, dense, Residuum
42.0	657	**SANDY SILT (ML)**, green, very hard, Residuum

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		3-4-4 N=8	36	63-39-24	83
		12-15-17 N=32	24	53-36-17	87
10		19-17-21 N=38	15	45-23-22	73
		9-9-12 N=21	18	47-23-24	80
15		13-9-10 N=19	21	40-27-13	68
20		13-15-14 N=29	15	32-24-8	56
25		6-10-15 N=25	21	37-25-12	58
30		7-8-11 N=19	19	38-28-10	54
35		11-15-16 N=31	17	31-24-7	49
40		25-29-31 N=60	13	37-27-10	57

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-01-2019 | Boring Completed: 03-01-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-022

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2011° Longitude: -80.944°
Surface Elev.: 699 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SILT WITH SAND (ML), green, hard, Residuum								
	47.0	652				13-17-20 N=37	21	32-26-6	77
	PARTIALLY WEATHERED ROCK		45						
						41-50/5"			
			50						
						27-50/6"			
			55						
	59.7	639.5				41-45-50/3"			
	Boring Terminated at 59.7 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-01-2019 | Boring Completed: 03-01-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-023

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2003° Longitude: -80.9479°

Surface Elev.: 654 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	654	**TOPSOIL**, 2-inches				
3.0	651	**FILL - LEAN CLAY WITH SAND (CL)**, brown, yellow, black, and white, medium stiff	2-2-4 N=6	20	34-17-17	76
5.5	648.5	**FILL - SANDY LEAN CLAY (CL)**, brown, yellow, black, and white, stiff	7-6-6 N=12	15	31-14-17	65
8.0	646	**SANDY LEAN CLAY (CL)**, brown, yellow, black, and white, stiff, Residuum	4-5-6 N=11	21	36-14-22	56
12.0	642	**CLAYEY SAND (SC)**, fine to coarse grained, brown, yellow, black, and white, medium dense, Residuum	5-5-5 N=10	19	48-21-27	28
22.0	632	**SILTY SAND (SM)**, fine to coarse grained, brown, green, and yellow, medium dense, Residuum trace gravel, fine to coarse grained, brown, green, and yellow, very loose, Residuum	6-6-5 N=11	23	31-25-6	39
			2-2-1 N=3	29	38-30-8	29
		PARTIALLY WEATHERED ROCK	27-36-64 N=100			
			38-62			
			46-54/5"			
			100			

DEPTH (Ft.): 5, 10, 15, 20, 25, 30, 35, 40

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-30-2019 | Boring Completed: 10-30-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-023

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2003° Longitude: -80.9479°

Surface Elev.: 654 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		PARTIALLY WEATHERED ROCK *(continued)*							
			45			100/3"			
			50			100/4"			
			55			34-66			
	57.0	597							
		SILTY CLAYEY SAND (SC-SM), fine to coarse grained, brown, pink, and white, very dense, Residuum							
	60.0	594	60			37-34-34 N=68	14	26-21-5	23
		Boring Terminated at 60 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-30-2019 | Boring Completed: 10-30-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

BORING LOG NO. B-024

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2004° Longitude: -80.9472°
Surface Elev.: 678 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.1	678	**TOPSOIL**, 1-inch
3.0	675	**LEAN CLAY WITH SAND (CL)**, trace roots, brown, black, and red, stiff, Residuum
6.0	672	**FAT CLAY (CH)**, trace roots, green, orange, white, and black, very stiff, Residuum
7.5	670.5	**No Recovery**
17.0	661	**SILT WITH SAND (ML)**, trace roots, green, orange, and black, stiff, Residuum trace roots, green, orange, and black, stiff, Residuum
22.0	656	**PARTIALLY WEATHERED ROCK**
27.0	651	**SANDY SILT (ML)**, brown, black, and white, very stiff, Residuum
32.0	646	**SILT (ML)**, brown, black, and white, very stiff, Residuum
37.0	641	**PARTIALLY WEATHERED ROCK**
42.0	636	**SANDY SILT (ML)**, brown and white, very stiff, Residuum

DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5	3-4-6 N=10	30	41-20-21	83
	5-7-9 N=16	27	70-27-43	91
	4-5-4 N=9			
10	4-6-6 N=12	39	36-26-10	78
15	4-5-7 N=12	29	40-32-8	79
20	100/3"			
25	4-5-19 N=24	27	27-23-4	51
30	4-5-11 N=16	31	31-26-5	85
35	25-61-39/2"			
40	6-6-12 N=18	30	25-22-3	62

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-29-2019 | Boring Completed: 10-29-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-024

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2004° Longitude: -80.9472°

Surface Elev.: 678 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SANDY SILT (ML), trace gravel, brown, yellow, and white, hard, Residuum								
						6-15-50 N=65	23	28-23-5	53
	47.0	631	45						
	PARTIALLY WEATHERED ROCK								
						100/3"			
	53.5	624.5	50						
	Auger Refusal at 53.5 Feet					60/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-29-2019 | Boring Completed: 10-29-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-025

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2004° Longitude: -80.9466°

Surface Elev.: 690 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	690	**TOPSOIL**, 2-inches
		ELASTIC SILT (MH), brown, black, red, and yellow, stiff, Residuum
		brown, black, red, and yellow, very stiff, Residuum
		brown, red, and black, stiff, Residuum
8.0	682	
		SILT (ML), brown, red, and black, stiff, Residuum
12.0	678	
		SILT WITH SAND (ML), white, stiff, Residuum
17.0	673	
		SANDY SILT (ML), brown and white, very stiff, Residuum
22.0	668	
		SILTY SAND (SM), fine to medium grained, brown and white, medium dense, Residuum
		fine to medium grained, brown and white, medium dense, Residuum
		fine to medium grained, brown and white, dense, Residuum
		fine to coarse grained, brown, black, and white, very dense, Residuum

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0					
		5-6-7 N=13	42	89-45-44	96
5		13-13-14 N=27	27	62-43-19	94
		4-5-5 N=10	32	52-35-17	93
10		4-4-6 N=10	39	44-34-10	92
		4-5-6 N=11	25	38-32-6	72
15					
		6-7-9 N=16	24	34-26-8	58
20					
		6-7-10 N=17	22	33-30-3	46
25					
		9-11-12 N=23	20	30-29-1	43
30					
		10-13-17 N=30	18	NP	34
35					
		18-26-43 N=69	15	NP	35
40					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-29-2019 | Boring Completed: 10-29-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-025

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2004° Longitude: -80.9466°
Surface Elev.: 690 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SILTY SAND (SM), fine to medium grained, brown and white, medium dense, Residuum *(continued)*							
		fine to coarse grained, brown, black, and white, very dense, Residuum	45			28-40-57 N=97	15	NP	27
	47.0								
		PARTIALLY WEATHERED ROCK				41-59/6"			
	52.0		50						
		SILTY SAND (SM), fine to coarse grained, brown, black, and white, very dense, Residuum				28-36-60 N=96	17	NP	32
	57.0		55						
		SILT (ML), green, yellow, and white, very stiff, Residuum				8-11-15 N=26	34	38-30-8	93
	60.0		60						
		Boring Terminated at 60 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-29-2019 | Boring Completed: 10-29-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

BORING LOG NO. B-026

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2005° Longitude: -80.9459°
Surface Elev.: 694 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	694	**TOPSOIL**, 2-inches
		FAT CLAY WITH SAND (CH), trace roots, brown, red, and black, stiff to very stiff, Residuum
3.5	690.5	
		ELASTIC SILT (MH), brown and orange, very stiff, Residuum
5.5	688.5	
		ELASTIC SILT WITH SAND (MH), brown and orange, stiff, Residuum
		brown and orange, very stiff, Residuum
		brown, black, and yellow, stiff, Residuum
17.0	677	
		SANDY SILT (ML), brown, black, and yellow, stiff, Residuum
		brown, black, and yellow, stiff, Residuum
		brown and white, stiff, Residuum
32.0	662	
		SILTY SAND (SM), fine to medium grained, brown and white, medium dense, Residuum
		fine to medium grained, brown and white, very dense, Residuum
42.0	652	

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		4-6-9 N=15	24	76-30-46	74
5		10-11-11 N=22	36	81-45-36	97
		6-8-11 N=19	35	71-44-27	82
10		5-8-11 N=19	40	66-41-25	80
		4-5-7 N=12	44	59-48-11	74
15					
		3-4-6 N=10	38	49-44-5	62
20					
		3-4-7 N=11	38	49-41-8	63
25					
		3-5-8 N=13	41	41-37-4	63
30					
		8-11-18 N=29	28	33-30-3	42
35					
		15-28-32 N=60	16	NP	35
40					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-28-2019 | Boring Completed: 10-29-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-026

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2005° Longitude: -80.9459°

Surface Elev.: 694 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	PARTIALLY WEATHERED ROCK								
			45			50-50/5"			
	47.0	647							
	SILT WITH SAND (ML), brown and green, very stiff, Residuum								
			50			11-14-15 N=29	27	30-28-2	71
	52.0	642							
	PARTIALLY WEATHERED ROCK								
			55			48-52/4"			
	59.4	634.5				48-52/5"			
	Boring Terminated at 59.4 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-28-2019 | Boring Completed: 10-29-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

BORING LOG NO. B-027

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2004° Longitude: -80.9453°

Surface Elev.: 685 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	685	**TOPSOIL**, 2-inches					
3.0	682	**ELASTIC SILT WITH SAND (MH)**, brown, black, and yellow, stiff, Residuum		4-5-9 N=14	30	68-36-32	78
5.5	679.5	**SANDY ELASTIC SILT (MH)**, brown, black, and yellow, very stiff, Residuum	5	12-14-15 N=29	23	52-34-18	56
		SANDY SILT (ML), brown, black, and yellow, very stiff, Residuum		5-8-9 N=17	25	48-29-19	60
		brown, black, and white, stiff, Residuum	10	5-4-6 N=10	28	34-32-2	52
12.0	673	**SILTY SAND (SM)**, fine to coarse grained, brown, black, and white, medium dense, Residuum	15	7-8-15 N=23	26	35-28-7	37
		fine to coarse grained, brown, black, and white, medium dense, Residuum	20	8-12-16 N=28	31	33-26-7	35
		fine to coarse grained, brown, black, and white, dense, Residuum	25	16-18-22 N=40	20	28-23-5	34
		fine to coarse grained, brown, black, and white, dense, Residuum	30	9-18-22 N=40	18	32-26-6	27
32.0	653	**SANDY SILT (ML)**, brown, black, and white, very hard, Residuum	35	17-15-51 N=66	19	32-25-7	54
37.0	648	**SILTY SAND (SM)**, fine to coarse grained, brown and green, very dense, Residuum	40	20-34-50 N=84	71	25-22-3	17
42.0	643						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-24-2019 | Boring Completed: 10-24-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-027

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2004° Longitude: -80.9453°

Surface Elev.: 685 (Ft.)

DEPTH	ELEVATION (Ft.)	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
SILT WITH SAND (ML), brown and green, hard, Residuum									
						9-17-27 N=44	29	31-28-3	76
47.0	638		45						
PARTIALLY WEATHERED ROCK						16-50-50/3"			
			50						
						100/6"			
			55						
59.3	625.5					65-35/3"			
Boring Terminated at 59.3 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-24-2019 | Boring Completed: 10-24-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-028

PROJECT: CLT Airport-Deicing Pad and SCT

**CLIENT: WSP USA Inc.
Charlotte, NC**

**SITE: Old Piney Top and West Blvd
Charlotte, NC**

LOCATION

Latitude: 35.2005° Longitude: -80.9446°

Surface Elev.: 695 (Ft.)

DEPTH	Description	ELEVATION (Ft.)	Sample depth (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	**TOPSOIL**, 2-inches	695						
	SANDY LEAN CLAY (CL), brown, red, and black, stiff, Residuum			X	4-6-8 N=14	17	34-18-16	57
3.0		692						
	ELASTIC SILT WITH SAND (MH), brown, red, and yellow, very stiff, Residuum		5	X	10-12-15 N=27	30	82-39-43	81
	brown, red, and yellow, very stiff, Residuum			X	6-9-12 N=21	38	72-40-32	81
	brown, red, and yellow, very stiff, Residuum		10	X	6-9-15 N=24	32	64-37-27	77
	brown, red, and white, stiff, Residuum		15	X	5-5-9 N=14	35	55-36-19	71
17.0		678						
	SANDY SILT (ML), brown and white, stiff, Residuum		20	X	4-4-5 N=9	49	49-39-10	65
22.0		673						
	SILTY SAND (SM), fine to medium grained, brown and white, medium dense, Residuum		25	X	5-6-9 N=15	32	40-36-4	48
	fine to medium grained, brown and white, medium dense, Residuum		30	X	5-6-10 N=16	44	40-34-6	47
	fine to medium grained, brown and white, medium dense, Residuum		35	X	8-9-12 N=21	28	36-32-4	38
	fine to medium grained, brown and white, dense, Residuum		40	X	15-17-21 N=38	23	29-26-3	38
42.0		653						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-23-2019	Boring Completed: 10-24-2019
Drill Rig: D-50	Driller: Raleigh, NC
Project No.: 71195007	

BORING LOG NO. B-028

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2005° Longitude: -80.9446°

Surface Elev.: 695 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	PARTIALLY WEATHERED ROCK		45			20-28-72/5"			
			50			45-55/5"			
			55			100/6"			
	59.3	635.5				39-61/4"			
	Boring Terminated at 59.3 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-23-2019 | Boring Completed: 10-24-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-029

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2005° Longitude: -80.9439°

Surface Elev.: 694 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		FILL - ELASTIC SILT WITH SAND (MH), trace roots, brown, red, and pink, stiff							
3.0	691					4-4-6 N=10	25	66-33-33	77
		FILL - FAT CLAY (CH), trace roots, brown, orange, and white, very stiff				5-8-9 N=17	33	82-35-47	99
5.5	688.5	**ELASTIC SILT (MH)**, brown, white, orange, and black, very stiff, Residuum	5			4-7-10 N=17	43	69-38-31	95
		brown, white, orange, and black, stiff, Residuum	10	▽		4-6-7 N=13	48	71-39-32	94
		brown, white, orange, and black, soft, Residuum	15			0-0-4 N=4	62	75-35-40	99
		brown, white, orange, and black, medium stiff, Residuum	20			2-2-3 N=5	74	72-36-36	98
22.0	672								
		SANDY SILT (ML), black, white, and orange, stiff, Residuum	25			4-4-5 N=9	48	45-38-7	57
27.0	667								
		ELASTIC SILT (MH), brown, black, and green, medium stiff, Residuum	30			3-3-3 N=6	64	56-42-14	92
32.0	662								
		SILTY SAND (SM), fine to coarse grained, brown, black, green, and yellow, medium dense, Residuum	35			5-5-5 N=10	28	40-34-6	31
37.0	657								
		SILT (ML), brown, green, and yellow, stiff, Residuum	40			4-4-6 N=10	50	48-35-13	91
42.0	652								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-18-2019 | Boring Completed: 10-18-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

BORING LOG NO. B-029

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2005° Longitude: -80.9439°

Surface Elev.: 694 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SANDY SILT (ML), brown, green, and yellow, very stiff, Residuum							
					X	7-10-13 N=23	34	45-34-11	66
47.0	647		45						
		SILTY SAND (SM), fine to coarse grained, brown, black, and pink, dense, Residuum			X	9-14-19 N=33	26	32-26-6	46
52.0	642		50						
		SANDY SILT (ML), brown, pink, and white, hard, Residuum			X	9-12-21 N=33	26	29-25-4	56
			55						
60.0	634	brown, pink, and white, hard, Residuum			X	16-25-50 N=75	23	29-26-3	59
		Boring Terminated at 60 Feet	60						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-18-2019 | Boring Completed: 10-18-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

BORING LOG NO. B-030

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2009° Longitude: -80.9432°
Surface Elev.: 686 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.1	686	**TOPSOIL**, 1.5-inches						
		SANDY SILT (ML), brown, red, yellow, and black, medium stiff to stiff, Residuum			3-4-4 N=8	19	47-30-17	58
3.0	683							
		ELASTIC SILT WITH SAND (MH), brown, red, yellow, and black, stiff, Residuum			4-4-6 N=10	37	54-40-14	77
5.5	680.5		5					
		SANDY SILT (ML), brown, red, yellow, and black, medium stiff, Residuum			3-3-3 N=6	38	48-40-8	68
		brown, red, yellow, and black, medium stiff, Residuum			3-3-4 N=7	38	49-39-10	63
			10					
		brown, black, and white, medium stiff, Residuum			2-3-4 N=7	47	48-37-11	66
			15					
		brown, black, and white, medium stiff, Residuum			2-3-4 N=7	44	48-38-10	61
			20					
		brown and red, stiff, Residuum			3-4-6 N=10	40	38-33-5	58
27.0	659		25					
		SILTY SAND (SM), fine to medium grained, brown and red, medium dense, Residuum			3-4-7 N=11	34	NP	44
			30					
		trace gravel, fine to medium grained, brown, black, and white, medium dense, Residuum			5-8-10 N=18	27	35-29-6	35
			35					
		fine to medium grained, brown, black, and white, dense, Residuum			9-20-24 N=44	23	NP	33
			40					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-18-2019 | Boring Completed: 10-18-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-030

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2009° Longitude: -80.9432°

Surface Elev.: 686 (Ft.)

DEPTH	ELEVATION (Ft.)	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
			45						
					X	12-15-21 N=36	21	NP	30
			50		X	14-25-29 N=54	20	NP	30
			55		X	14-21-27 N=48	24	32-25-7	60
			60		X	22-31-35 N=66	18	26-21-5	23

SILTY SAND (SM), fine to medium grained, brown and red, medium dense, Residuum *(continued)*

fine to medium grained, brown, black, and white, dense, Residuum

fine to medium grained, brown, black, and white, very dense, Residuum

52.0 — 634

SANDY SILT (ML), brown, green, and yellow, hard, Residuum

57.0 — 629

SILTY CLAYEY SAND (SC-SM), fine grained, brown, black, and white, very dense, Residuum

60.0 — 626

Boring Terminated at 60 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-18-2019 | Boring Completed: 10-18-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

BORING LOG NO. B-031

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2011° Longitude: -80.9427°

Surface Elev.: 683 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.1	683	**TOPSOIL**, 1.5-inches							
3.0	680	**SANDY LEAN CLAY (CL)**, fine to medium grained, brown, orange, and black, stiff, Residuum				3-5-6 N=11	17	33-20-13	59
5.5	677.5	**CLAYEY SAND (SC)**, fine to medium grained, brown, orange, and black, medium dense, Residuum	5			8-7-10 N=17	12	31-16-15	49
8.0	675	**SANDY LEAN CLAY (CL)**, fine to medium grained, brown, orange, and black, stiff, Residuum				5-6-6 N=12	22	30-12-18	59
12.0	671	**CLAYEY SAND (SC)**, fine to medium grained, brown, orange, and black, loose, Residuum	10	▽		3-3-6 N=9	17	31-14-17	49
17.0	666	**SANDY SILT (ML)**, brown, green, and yellow, medium stiff, Residuum	15			3-3-3 N=6	42	45-32-13	69
22.0	661	**SILTY SAND (SM)**, fine to coarse grained, brown, green, and yellow, medium dense, Residuum	20			4-6-11 N=17	25	34-27-7	38
27.0	656	**SILT WITH SAND (ML)**, brown, red, and green, very stiff, Residuum	25			7-7-10 N=17	40	44-34-10	80
32.0	651	**SANDY SILT (ML)**, brown, red, and green, very stiff, Residuum	30			6-9-14 N=23	33	38-31-7	62
37.0	646	**SILT WITH SAND (ML)**, brown, red, and green, stiff, Residuum	35			6-6-8 N=14	37	44-33-11	83
42.0	641	**SILT (ML)**, brown, red, and green, stiff to very stiff, Residuum	40			6-6-9 N=15	41	47-35-12	87

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-21-2019 | Boring Completed: 10-22-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-031

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2011° Longitude: -80.9427°

Surface Elev.: 683 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SILT WITH SAND (ML), brown, red, and green, very stiff to hard, Residuum							
			45		X	8-14-16 N=30	31	44-32-12	77
		brown, red, and green, very stiff, Residuum			X	9-12-16 N=28	32	43-31-12	82
52.0	631		50						
		SILT (ML), brown, red, and green, very stiff, Residuum			X	6-8-10 N=18	37	45-34-11	87
57.0	626		55						
		SILTY SAND (SM), fine to coarse grained, brown, red, and white, dense, Residuum			X	13-19-19 N=38	18	29-25-4	30
60.0	623		60						
		Boring Terminated at 60 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-21-2019 | Boring Completed: 10-22-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

BORING LOG NO. B-032

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2013° Longitude: -80.9454°
Surface Elev.: 696 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	696	**TOPSOIL**, 2-inches
		ELASTIC SILT WITH SAND (MH), red, medium stiff, Residuum
		red, very stiff, Residuum
5.5	690.5	**SANDY ELASTIC SILT (MH)**, red and light brown, very stiff, Residuum
		red and light brown, stiff, Residuum
12.0	684	**SILT WITH SAND (ML)**, light brown, medium stiff to stiff, Residuum
17.0	679	**SANDY SILT (ML)**, light brown, stiff, Residuum
22.0	674	**SILT WITH SAND (ML)**, light brown, medium stiff, Residuum
		light brown, stiff, Residuum
32.0	664	**SANDY SILT (ML)**, light brown, medium stiff, Residuum
37.0	659	**SILT (ML)**, light brown, stiff, Residuum
42.0	654	

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		1-3-3 N=6	32	58-40-18	79
		5-8-9 N=17	32	71-42-29	79
		9-11-12 N=23	27	54-45-9	59
10		4-5-6 N=11	25	54-48-6	67
15		3-3-5 N=8	22	48-38-10	71
20		3-5-4 N=9	27	48-41-7	56
25		2-3-4 N=7	27	46-36-10	74
30		2-4-5 N=9	30	NP	74
35		2-2-3 N=5	31	42-36-6	69
40		5-7-7 N=14	33	45-36-9	89

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-01-2019 | Boring Completed: 03-01-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-032

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2013° Longitude: -80.9454°
Surface Elev.: 696 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
SILT WITH SAND (ML), light brown, very stiff, Residuum								
					4-7-9 N=16	33	44-38-6	81
47.0	649	45						
LEAN CLAY WITH SAND (CL), green, hard, Residuum								
					9-16-19 N=35	78	42-15-27	72
52.0	644	50						
SANDY SILT (ML), green, hard, Residuum								
					10-19-17 N=36	22	34-29-5	64
57.0	639	55						
PARTIALLY WEATHERED ROCK								
58.9	637				50/6"			
Boring Terminated at 58.9 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-01-2019 | Boring Completed: 03-01-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

BORING LOG NO. B-033

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2015° Longitude: -80.9447°
Surface Elev.: 699 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	699	**TOPSOIL**, 2-inches
		ELASTIC SILT WITH SAND (MH), red, medium stiff, Residuum
3.5	695.5	
		ELASTIC SILT (MH), red and light brown, very stiff, Residuum
		red and light brown, very stiff, Residuum
		red and light brown, medium stiff to stiff, Residuum
12.0	687	
		SANDY SILT (ML), red and light brown, stiff, Residuum
		light brown and green, very stiff, Residuum
		light brown and green, very stiff, Residuum
		green, stiff, Residuum
32.0	667	
		SILT WITH SAND (ML), green, very stiff, Residuum
37.0	662	
		SANDY SILT (ML), green, very stiff, Residuum

DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	1-3-3 N=6	37	86-39-47	82
5	7-8-9 N=17	38	92-48-44	88
	14-8-10 N=18	46	96-51-45	96
10	2-4-4 N=8	63	80-44-36	88
15	4-5-7 N=12	34	NP	61
20	5-7-10 N=17	23	NP	52
25	6-9-13 N=22	20	NP	53
30	6-6-8 N=14	21	NP	51
35	7-10-10 N=20	32	45-34-11	75
40	6-8-11 N=19	24	NP	53

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-04-2019 | Boring Completed: 03-04-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

BORING LOG NO. B-033

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2015° Longitude: -80.9447°
Surface Elev.: 699 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SANDY SILT (ML), green, very stiff, Residuum *(continued)*							
		45			8-11-16 N=27	24	NP	58
	green, very stiff, Residuum							
		50			11-13-14 N=27	21	NP	57
	green, very stiff, Residuum							
		55			7-7-15 N=22	21	NP	54
	green, hard, Residuum		▽					
60.0	639	60			14-23-31 N=54	19	NP	55
	Boring Terminated at 60 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-04-2019 | Boring Completed: 03-04-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

BORING LOG NO. B-034

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2015° Longitude: -80.9441°

Surface Elev.: 698 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	698	**TOPSOIL**, 2-inches					
3.0	695	**FAT CLAY WITH SAND (CH)**, red and brown, soft to medium stiff, Residuum		1-2-2 N=4	33	68-32-36	74
		ELASTIC SILT WITH SAND (MH), red and brown, very stiff, Residuum	5	8-8-12 N=20	32	83-49-34	76
		red and brown, very stiff, Residuum		13-12-15 N=27	35	75-47-28	70
		red and brown, stiff, Residuum	10	4-6-8 N=14	34	78-47-31	73
12.0	686						
		SANDY SILT (ML), red and light brown, stiff, Residuum	15	4-4-6 N=10	32	NP	54
18.0	680						
		SILTY SAND (SM), fine to medium grained, red and light brown, loose, Residuum	20	5-4-5 N=9	28	NP	48
		fine to medium grained, red and light brown, loose, Residuum	25	2-3-5 N=8	31	NP	49
		fine to medium grained, red and light brown, medium dense, Residuum	30	4-5-6 N=11	26	NP	48
		fine to medium grained, red and light brown, medium dense, Residuum	35	4-5-8 N=13	18	NP	35
		fine to medium grained, red and light brown, medium dense, Residuum	40	8-11-14 N=25	18	32-28-4	45

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-04-2019 | Boring Completed: 03-04-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

BORING LOG NO. B-034

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2015° Longitude: -80.9441°

Surface Elev.: 698 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SILTY SAND (SM), fine to medium grained, red and light brown, loose, Residuum *(continued)*							
	fine to medium grained, light brown, medium dense, Residuum	45			9-10-16 N=26	17	NP	36
47.0	651							
	SILT (ML), green and gray, hard, Residuum	50			9-14-20 N=34	22	NP	96
52.0	646		▽					
	SANDY SILT (ML), green and gray, hard, Residuum	55			17-24-41 N=65	19	NP	61
57.0	641							
	SILTY SAND (SM), fine to medium grained, light brown and white, green, very dense, Residuum				18-23-31 N=54	11	NP	33
60.0	638	60						
	Boring Terminated at 60 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-04-2019 | Boring Completed: 03-04-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

BORING LOG NO. B-035

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2013° Longitude: -80.9421°

Surface Elev.: 681 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.1	681	**TOPSOIL**, 1-inch				
3.0	678	**SILTY CLAY WITH SAND (CL-ML)**, trace gravel, black, brown, and red, stiff, Residuum	4-6-5 N=11	25	26-20-6	74
5.5	675.5	**LEAN CLAY (CL)**, brown, green, and yellow, stiff, Residuum	5-5-6 N=11	37	49-24-25	91
8.0	673	**SILT (ML)**, brown, green, and yellow, stiff, Residuum	3-4-6 N=10	39	44-35-9	92
		SILT WITH SAND (ML), brown, green, and yellow, stiff, Residuum	4-5-6 N=11	33	42-32-10	75
		brown, green, and yellow, stiff, Residuum	3-5-8 N=13	34	40-33-7	79
22.0	659	brown, green, and yellow, very stiff, Residuum	5-6-10 N=16	32	35-29-6	78
27.0	654	**SILTY SAND (SM)**, fine to medium grained, brown, green, and yellow, medium dense, Residuum	8-6-8 N=14	21	30-26-4	25
		SILT WITH SAND (ML), brown, green, and yellow, very stiff, Residuum	5-7-10 N=17	33	34-29-5	78
37.0	644	brown, green, and yellow, very stiff, Residuum	7-8-14 N=22	35	37-31-6	76
		SANDY SILT (ML), brown, green, and yellow, hard, Residuum	14-15-23 N=38	26	28-26-2	64

DEPTH (Ft.): 5, 10, 15, 20, 25, 30, 35, 40

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-17-2019 | Boring Completed: 10-18-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

BORING LOG NO. B-035

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2013° Longitude: -80.9421°
Surface Elev.: 681 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
SANDY SILT (ML), brown, green, and yellow, hard, Residuum *(continued)*								
black, white, and brown, very stiff, Residuum		45		X	8-11-16 N=27	26	34-25-9	66
47.0	634							
SANDY SILTY CLAY (CL-ML), black, white, and brown, hard, Residuum		50		X	8-13-21 N=34	23	24-20-4	54
52.0	629							
SILTY SAND (SM), fine to medium grained, black and white, dense, Residuum		55		X	11-16-27 N=43	15	27-23-4	24
fine to medium grained, black and white, very dense, Residuum				X	20-31-47 N=78	16	24-22-2	24
60.0	621	60						
Boring Terminated at 60 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-17-2019 | Boring Completed: 10-18-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

BORING LOG NO. B-036

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2016° Longitude: -80.9416°
Surface Elev.: 688 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.0	688	**FILL - POORLY GRADED SAND WITH SILT (SP-SM)**, trace gravel, fine to coarse grained, brown and red, medium dense
3.0	685	**FILL - SILTY GRAVEL WITH SAND (GM)**, brown and red, medium dense
5.5	682.5	**SANDY FAT CLAY (CH)**, brown, red, and white, very stiff, Residuum
8.0	680	**ELASTIC SILT WITH SAND (MH)**, brown, red, and white, very stiff, Residuum
12.0	676	**SILTY CLAYEY SAND (SC-SM)**, trace gravel, fine to coarse grained, gray, brown, and red, medium dense, Residuum
17.0	671	**SILTY SAND (SM)**, fine to coarse grained, brown, black, and white, medium dense, Residuum
		fine to coarse grained, brown, black, and white, medium dense, Residuum
		fine to coarse grained, brown, black, and white, medium dense, Residuum
		coarse to medium grained, brown, black, and white, medium dense, Residuum
37.0	651	**SANDY SILT (ML)**, brown, green, and yellow, very stiff, Residuum
42.0	646	

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
			5-5-6 N=11	16		41
			4-4-6 N=10	14	44-30-14	43
5			5-9-15 N=24	20	51-27-24	57
			5-9-12 N=21	34	57-30-27	80
10	▽					
			10-10-10 N=20	15	27-21-6	37
15						
			9-12-12 N=24	22	NP	28
20						
			8-9-12 N=21	19	33-26-7	26
25						
			9-10-13 N=23	21	30-27-3	25
30						
			6-8-10 N=18	24	32-25-7	27
35						
			9-12-17 N=29	28	NP	53
40						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-17-2019 | Boring Completed: 10-17-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-036

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2016° Longitude: -80.9416°
Surface Elev.: 688 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SILTY SAND (SM), fine to coarse grained, brown, green, and yellow, medium dense, Residuum							
					X	6-10-12 N=22	38	40-32-8	48
47.0	641		45						
		SANDY SILT (ML), brown, green, and yellow, very stiff, Residuum							
					X	6-10-15 N=25	39	36-26-10	65
			50						
		brown, black, and white, hard, Residuum			X	11-16-21 N=37	29	37-29-8	54
57.0	631		55						
		SILTY SAND (SM), fine to coarse grained, brown, black, and white, very dense, Residuum							
					X	14-21-33 N=54	13	32-26-6	24
60.0	628		60						
		Boring Terminated at 60 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-17-2019 | Boring Completed: 10-17-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-037

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2019° Longitude: -80.9409°
Surface Elev.: 692 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
3.0	689	**ELASTIC SILT (MH)**, trace roots, brown, yellow, and black, medium stiff, Residuum				3-2-4 N=6	45	63-47-16	93
5.5	686.5	**SILT WITH SAND (ML)**, brown, green, and black, stiff, Residuum	5			6-7-7 N=14	32	49-39-10	72
8.0	684	**SANDY SILT (ML)**, brown, green, and black, stiff, Residuum				5-6-8 N=14	25	38-34-4	54
12.0	680	**SILTY SAND (SM)**, fine to medium grained, brown and black, medium dense, Residuum	10	▽		6-8-11 N=19	26	41-35-6	48
17.0	675	**SANDY SILT (ML)**, brown and red, very stiff, Residuum	15			5-10-19 N=29	29	40-33-7	51
		SILTY SAND (SM), fine to medium grained, brown, black, and yellow, medium dense, Residuum	20			9-10-12 N=22	27	40-31-9	41
		fine to coarse grained, brown, white, and yellow, medium dense, Residuum	25			6-8-12 N=20	26	35-30-5	31
		fine to coarse grained, brown, white, and yellow, dense, Residuum	30			10-15-18 N=33	25	31-27-4	33
		fine to coarse grained, brown, white, and yellow, dense, Residuum	35			11-15-20 N=35	21	28-27-1	30
		fine to coarse grained, brown, white, and yellow, dense, Residuum	40			10-13-21 N=34	22	33-28-5	31

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-17-2019 | Boring Completed: 10-17-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

BORING LOG NO. B-037

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2019° Longitude: -80.9409°

Surface Elev.: 692 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SILTY SAND (SM), fine to medium grained, brown, black, and yellow, medium dense, Residuum *(continued)*							
	fine to coarse grained, brown, white, and yellow, dense, Residuum	45			14-19-29 N=48	21	30-26-4	30
	fine to coarse grained, brown, white, and yellow, very dense, Residuum	50			24-34-46 N=80	18	NP	27
52.0	640							
	SANDY SILT (ML), brown and green, hard, Residuum	55			24-16-21 N=37	23	29-27-2	52
57.0	635							
	PARTIALLY WEATHERED ROCK							
59.3	632.5				55-45/3"			
	Boring Terminated at 59.3 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-17-2019 | Boring Completed: 10-17-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

BORING LOG NO. B-038

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2018° Longitude: -80.9404°
Surface Elev.: 700 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	700	**TOPSOIL**, 2-inches
		ELASTIC SILT WITH SAND (MH), with roots, red and brown, medium stiff, Residuum
		with roots, red and brown, medium stiff, Residuum
5.5	694.5	**ELASTIC SILT (MH)**, red and brown, stiff, Residuum
8.0	692	**ELASTIC SILT WITH SAND (MH)**, red and brown, stiff, Residuum
12.0	688	**SANDY SILT (ML)**, red, brown, and black, medium stiff to stiff, Residuum
17.0	683	**ELASTIC SILT (MH)**, black, yellow, and brown, stiff, Residuum
22.0	678	**SANDY SILT (ML)**, black, yellow, and brown, very stiff, Residuum
		black, yellow, and brown, very stiff, Residuum
32.0	668	**SILTY SAND (SM)**, fine grained, black, yellow, and brown, dense, Residuum
		fine grained, black, white, brown, medium dense, Residuum

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		3-2-3 N=5	24	53-40-13	76
		3-3-2 N=5	27	58-39-19	81
		3-4-5 N=9	43	56-45-11	96
10		4-4-5 N=9	46	55-45-10	80
		3-4-4 N=8	34	43-39-4	58
15		3-3-6 N=9	54	52-40-12	89
20		8-13-14 N=27	21	34-25-9	51
25		8-8-12 N=20	30	41-29-12	60
30		11-14-18 N=32	31	40-32-8	47
35		10-7-11 N=18	31	37-29-8	43
40					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-08-2019 | Boring Completed: 10-08-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-038

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2018° Longitude: -80.9404°

Surface Elev.: 700 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SILTY SAND (SM), fine grained, black, yellow, and brown, dense, Residuum *(continued)*							
	fine grained, black, white, brown, medium dense, Residuum	45			9-9-9 N=18	30	37-30-7	42
	fine grained, black, white, brown, medium dense, Residuum	50			8-7-13 N=20	29	34-26-8	37
	fine grained, black, white, brown, very dense, Residuum	55			18-16-53 N=69	19	30-24-6	33
57.0	643							
	PARTIALLY WEATHERED ROCK							
58.9	641				100/5"			
	Boring Terminated at 58.9 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-08-2019 | Boring Completed: 10-08-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

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BORING LOG NO. B-039

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2018° Longitude: -80.9394°

Surface Elev.: 710 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.0	710					
TOPSOIL, 0.5-inch						
3.0 **FILL - ELASTIC SILT WITH SAND (MH)**, trace roots and gravel, brown and red, very stiff	707		9-8-8 N=16	11		61
SANDY ELASTIC SILT (MH), trace roots and gravel, brown and red, medium stiff, Residuum		5	4-4-4 N=7	25	53-37-16	68
brown, black, and red, medium stiff to stiff, Residuum			2-3-5 N=8	33	50-39-11	62
brown, black, and red, medium stiff, Residuum		10	3-3-4 N=7	37	51-39-12	62
12.0	698					
SANDY SILT (ML), brown, black, and red, medium stiff, Residuum		15	3-3-3 N=6	36	46-36-10	57
17.0	693					
SILT WITH SAND (ML), brown, black, and red, medium stiff, Residuum		20	3-3-4 N=7	46	48-36-12	71
22.0	688					
SANDY SILT (ML), brown, black, and red, medium stiff, Residuum		25	3-2-4 N=6	40	40-33-7	61
brown and red, stiff, Residuum		30	2-6-6 N=12	36	40-36-4	58
brown and white, stiff, Residuum		35	11-6-8 N=14	33	33-27-6	57
37.0	673					
SILTY SAND (SM), fine to medium grained, brown and white, dense, Residuum		40	8-12-18 N=30	23	39-31-8	44
42.0	668					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-11-2019 | Boring Completed: 10-11-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-039

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2018° Longitude: -80.9394°

Surface Elev.: 710 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SANDY SILT (ML), brown and white, stiff, Residuum				
			7-5-8 N=13	30	46-34-12	65
47.0	663					
		SILT WITH SAND (ML), brown and black, stiff, Residuum				
			8-6-6 N=12	35	49-32-17	71
52.0	658					
		SANDY SILT (ML), brown and black, very hard, Residuum				
			9-12-72 N=84	31	39-33-6	58
57.0	653					
		PARTIALLY WEATHERED ROCK				
			35-65/5"			
			36-64/6"			
			100/3"			
73.6	636.5					
		Auger Refusal at 73.6 Feet	60/0"			

DEPTH (Ft.): 45, 50, 55, 60, 65, 70

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-11-2019 | Boring Completed: 10-11-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

BORING LOG NO. B-040

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2018° Longitude: -80.939°
Surface Elev.: 723 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.0	723	**TOPSOIL**, 0.5-inch				
		FILL - ELASTIC SILT (MH), brown and red, medium stiff to stiff	4-3-5 N=8	25	62-36-26	88
3.0	720					
		SANDY ELASTIC SILT (MH), brown, red, and black, stiff, Residuum	3-3-7 N=10	22	53-35-18	70
5.5	717.5					
		ELASTIC SILT WITH SAND (MH), brown, red, and black, stiff, Residuum	4-4-5 N=9	31	53-39-14	81
8.0	715					
		ELASTIC SILT (MH), brown, red, and black, medium stiff, Residuum	4-2-3 N=5	45	91-49-42	86
		brown, red, and black, stiff, Residuum	4-4-5 N=9	56	69-48-21	90
17.0	706					
		SILT WITH SAND (ML), brown, white, and black, medium stiff, Residuum	3-3-4 N=7	35	46-35-11	76
22.0	701					
		SANDY SILT (ML), brown, white, and black, medium stiff, Residuum	3-2-4 N=6	29	40-33-7	68
27.0	696					
		SILT WITH SAND (ML), brown, white, and black, medium stiff, Residuum	2-3-2 N=5	38	42-33-9	82
30.0	693					
		Boring Terminated at 30 Feet				

DEPTH (Ft.): 5, 10, 15, 20, 25, 30

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-10-2019 | Boring Completed: 10-10-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-041

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2018° Longitude: -80.9382°
Surface Elev.: 716 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		FILL - SILT WITH SAND (ML), red, brown, yellow, and white, medium stiff							
3.0	713				X	3-3-3 N=6	31	41-34-7	82
		SILT WITH SAND (ML), red, brown, yellow, and white, medium stiff to stiff, Residuum			X	3-3-5 N=8	25	46-39-7	71
5.5	710.5		5						
		SANDY SILT (ML), red, brown, yellow, and white, stiff, Residuum			X	3-4-5 N=9	26	49-46-3	65
		red, brown, yellow, and white, stiff, Residuum			X	4-4-6 N=10	27	49-44-5	61
			10						
		red, brown, yellow, and white, stiff, Residuum			X	4-4-5 N=9	28	47-40-7	64
			15						
20.0	696	brown, red, and white, medium stiff, Residuum			X	2-2-4 N=6	33	47-42-5	64
			20						
		Boring Terminated at 20 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-11-2019 | Boring Completed: 10-11-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-042

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2013° Longitude: -80.9433°
Surface Elev.: 691 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.1	691	**TOPSOIL**, 1-inch							
		SANDY LEAN CLAY (CL), trace gravel, brown, stiff to very stiff, Residuum			X	7-8-7 N=15	9	28-18-10	51
3.0	688								
		CLAYEY SAND (SC), trace gravel, fine to medium grained, brown, white, and black, medium dense, Residuum			X	11-10-9 N=19	13	36-22-14	48
		fine to medium grained, brown, orange, and black, loose, Residuum	5		X	4-3-3 N=6	22	39-23-16	45
		fine to coarse grained, brown, white, and green, medium dense, Residuum			X	6-8-10 N=18	20	44-21-23	46
12.0	679		10	▽					
		SILTY SAND (SM), fine to coarse grained, brown, black, white, and orange, medium dense, Residuum			X	9-11-17 N=28	21	35-29-6	36
		fine to coarse grained, brown, black, white, and orange, medium dense, Residuum	15		X	10-12-17 N=29	17	30-25-5	24
		fine to coarse grained, brown, black, white, and orange, dense, Residuum	20		X	13-15-19 N=34	21	30-25-5	24
		fine to coarse grained, brown, black, white, and orange, dense, Residuum	25		X	14-15-22 N=37	21	27-24-3	27
		fine to coarse grained, brown, black, white, and orange, very dense, Residuum	30		X	18-26-31 N=57	16	25-23-2	27
37.0	654		35						
		SILTY SAND WITH GRAVEL (SM), fine to coarse grained, brown and green, very dense, Residuum			X	49-41-22 N=63	14	NP	14
42.0	649		40						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-21-2019 | Boring Completed: 10-21-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

BORING LOG NO. B-042

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2013° Longitude: -80.9433°

Surface Elev.: 691 (Ft.)

DEPTH	ELEVATION (Ft.)	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
			45						
					X	12-11-18 N=29	28	36-31-5	46
			50		X	11-24-28 N=52	23	32-28-4	40
			55		X	25-29-35 N=64	14	NP	12
			60		X	10-18-25 N=43	26	34-28-6	48

SILTY SAND (SM), trace gravel, fine to coarse grained, brown and green, medium dense, Residuum

trace gravel, fine to coarse grained, brown, orange, green, and pink, very dense, Residuum

52.0 639

SILTY SAND WITH GRAVEL (SM), fine to coarse grained, brown and green, very dense, Residuum

57.0 634

SILTY SAND (SM), fine to coarse grained, brown, black, green, and orange, dense, Residuum

60.0 631

Boring Terminated at 60 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-21-2019 | Boring Completed: 10-21-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

BORING LOG NO. B-043

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2015° Longitude: -80.9428°
Surface Elev.: 689 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION
0.2	689	**TOPSOIL**, 2-inches
3.0	686	**FILL - SANDY LEAN CLAY (CL)**, trace roots, fine to medium grained, brown and red, medium stiff to stiff
5.5	683.5	**SANDY LEAN CLAY (CL)**, trace roots, brown and red, medium stiff, Residuum
8.0	681	**LEAN CLAY WITH SAND (CL)**, trace roots, fine to medium grained, brown and red, stiff, Residuum
12.0	677	**SANDY LEAN CLAY (CL)**, brown and yellow, stiff, Residuum
17.0	672	**SILT (ML)**, brown, black, and yellow, very stiff, Residuum
22.0	667	**CLAYEY SAND (SC)**, fine to medium grained, brown, black, and yellow, medium dense, Residuum
		SILTY SAND (SM), fine to medium grained, brown, black, and yellow, medium dense, Residuum
		fine to medium grained, brown, black, and yellow, medium dense, Residuum
		fine to medium grained, brown, black, and yellow, medium dense, Residuum
37.0	652	
		SANDY SILT (ML), brown, black, and yellow, very stiff, Residuum
42.0	647	

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		2-4-4 N=8	24	45-22-23	67
5		5-3-4 N=7	16	36-20-16	64
		8-7-6 N=13	26	43-21-22	73
		4-5-6 N=11	28	42-23-19	69
10					
		6-10-12 N=22	41	49-36-13	93
15					
		8-9-13 N=22	17	37-24-13	28
20					
		5-7-8 N=15	34	36-29-7	38
25					
		6-6-8 N=14	31	37-30-7	47
30					
		9-12-16 N=28			
35					
		6-10-15 N=25	26	34-30-4	57
40					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-22-2019 | Boring Completed: 10-22-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-043

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2015° Longitude: -80.9428°

Surface Elev.: 689 (Ft.)

DEPTH	ELEVATION (Ft.)	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
			45						
SILTY SAND (SM), fine grained, brown and green, medium dense, Residuum									
					X	6-11-11 N=22	32	37-32-5	46
47.0	642								
SILT WITH SAND (ML), brown and green, stiff to very stiff, Residuum			50						
					X	4-5-10 N=15	22	49-34-15	75
52.0	637								
SANDY SILT (ML), brown and green, hard, Residuum									
			55						
					X	8-14-19 N=33	27	41-37-4	65
brown and green, hard, Residuum									
60.0	629								
			60		X	12-14-18 N=32	28	45-38-7	58
Boring Terminated at 60 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-22-2019 | Boring Completed: 10-22-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

BORING LOG NO. B-044

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2082° Longitude: -80.9476°
Surface Elev.: 678 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.0	678	**FILL**, asphalt debris
3.0	675	
5.5	672.5	**SANDY LEAN CLAY (CL)**, brown and light brown, medium stiff to stiff, Alluvium
8.0	670	**CLAYEY SAND WITH GRAVEL (SC)**, fine grained, brown and light brown, medium dense, Alluvium
12.0	666	**SANDY LEAN CLAY (CL)**, brown and light brown, soft to medium stiff, Alluvium
17.0	661	**SILT WITH SAND (ML)**, brown and light brown, medium stiff, Residuum
24.0	654	**SANDY LEAN CLAY (CL)**, light brown, stiff, Residuum
		Auger Refusal at 24 Feet

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0					61
5		4-4-4 N=8	23	47-21-26	56
		6-6-7 N=13	18	45-24-21	40
10		2-2-2 N=4	35	47-26-21	61
15		2-3-2 N=5	44	48-30-18	77
20		4-4-5 N=9	40	46-25-21	68

WATER LEVEL OBSERVATIONS: ▽ At completion of drilling

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.
Surface capped with asphalt.

Notes:

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-24-2019 | Boring Completed: 03-24-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-045

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2079° Longitude: -80.9479°
Surface Elev.: 673 (Ft.)

DEPTH	ELEVATION (Ft.)	Material Description
		SANDY LEAN CLAY (CL), red and brown, medium stiff, Alluvium
		red and brown, stiff, Alluvium
		red and brown, very stiff, Alluvium
8.0	665	
		CLAYEY SAND (SC), fine grained, brown, loose, Residuum
		fine grained, green, loose, Residuum
12.0	661	
		PARTIALLY WEATHERED ROCK
19.3	653.5	
		Auger Refusal at 19.3 Feet

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		3-2-3 N=5	19	39-20-19	53
5		4-3-6 N=9	18	39-20-19	59
		7-7-9 N=16	19	39-23-16	55
		2-3-4 N=7	21	36-23-13	49
10		3-3-3 N=6	20	33-22-11	48
		50/1"			
15		10-50/3"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-22-2019 | Boring Completed: 03-22-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-046

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2078° Longitude: -80.9482°
Surface Elev.: 670 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SANDY LEAN CLAY (CL), brown, medium stiff to stiff, Alluvium					
		brown, medium stiff to stiff, Alluvium		2-3-5 N=8	20	37-24-13	54
5.5	664.5		5	5-2-6 N=8	23	40-25-15	58
		SILTY SAND (SM), fine grained, brown, medium dense, Alluvium		5-5-6 N=11	21	36-26-10	35
8.0	662						
		GRAVEL (GP), medium dense, Alluvium	10	6-7-7 N=14			
12.0	658						
		CLAYEY SAND (SC), fine grained, brown, medium dense, Residuum					
			15	4-6-7 N=13	19	32-22-10	38
		fine grained, brown, medium dense, Residuum		7-8-10 N=18	16	32-23-9	35
			20				
		brown, very dense, Residuum		17-24-34 N=58	13	36-23-13	49
			25				
		brown, very dense, Residuum		8-17-38 N=55	18	41-25-16	47
32.0	638		30				
		SANDY SILT (ML), brown, hard, Residuum		12-18-21 N=39	13	36-26-10	69
37.0	633		35				
		PARTIALLY WEATHERED ROCK		50/2"			
			40				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-24-2019 | Boring Completed: 03-24-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-046

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

GRAPHIC LOG	LOCATION / DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	Latitude: 35.2078° Longitude: -80.9482° Surface Elev.: 670 (Ft.)								
	43.0	627							
	Auger Refusal at 43 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-24-2019 | Boring Completed: 03-24-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-049

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2062° Longitude: -80.9484°
Surface Elev.: 691 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.0	691	**FILL - SILT WITH SAND (ML)**, red and brown, medium stiff
3.0	688	**FILL - ELASTIC SILT WITH SAND (MH)**, red and brown, stiff
5.5	685.5	**FILL - SANDY SILT (ML)**, red and brown, very stiff
8.0	683	**FILL - SILT WITH SAND (ML)**, red and brown, medium stiff to stiff
12.0	679	**FILL - ELASTIC SILT WITH SAND (MH)**, red and brown, stiff
17.0	674	**FILL - FAT CLAY WITH SAND (CH)**, red and brown, stiff
22.0	669	**FILL - ELASTIC SILT WITH SAND (MH)**, red and brown, stiff
27.0	664	**SANDY LEAN CLAY (CL)**, gray, medium stiff, Alluvium
32.0	659	**SANDY SILT (ML)**, gray and green, medium stiff to very stiff, Residuum
		gray and green, very stiff, Residuum

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		3-3-3 N=6	31	48-30-18	77
		3-5-6 N=11	29	55-31-24	77
		8-8-8 N=16	30	47-35-12	66
10		2-3-5 N=8	30	46-31-15	73
		3-4-7 N=11	32	52-35-17	78
15		6-6-7 N=13	24	57-27-30	73
20		6-7-7 N=14	31	66-34-32	84
		3-3-4 N=7	25	38-17-21	64
25		3-3-5 N=8	35	44-34-10	55
30		3-6-22 N=28	31	31-25-6	59
35					
40					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-23-2019 | Boring Completed: 03-23-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-049

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

GRAPHIC LOG	LOCATION / DEPTH / ELEVATION	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	Latitude: 35.2062° Longitude: -80.9484° Surface Elev.: 691 (Ft.) 42.5 / 648.5 ***Auger Refusal at 42.5 Feet***							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-23-2019 | Boring Completed: 03-23-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-050

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2057° Longitude: -80.9485°
Surface Elev.: 692 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		FILL - ELASTIC SILT WITH SAND (MH), red, medium stiff							
						2-3-3 N=6	27	53-29-24	76
		red, stiff				4-5-6 N=11	29	50-29-21	81
		red and brown, stiff	5			5-6-6 N=12	32	56-36-20	73
8.0	684								
		FILL - SANDY SILT (ML), red and brown, stiff				4-6-6 N=12	23	47-28-19	65
			10						
		red, medium stiff to stiff				3-4-4 N=8	32	45-30-15	66
			15						
22.0	670								
		FILL - SANDY FAT CLAY (CH), brown to dark brown and red, soft to medium stiff	20						
						1-2-2 N=4	36	50-28-22	56
27.0	665		25						
		FILL - FAT CLAY WITH SAND (CH), brown to dark brown and red, stiff				4-7-7 N=14	27	50-28-22	76
			30						
32.0	660								
		SILTY SAND (SM), brown, medium dense, Residuum		▽					
						8-8-20 N=28			
36.0	656		35						
		Auger Refusal at 36 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-24-2019 | Boring Completed: 03-24-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-051

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2051° Longitude: -80.9486°
Surface Elev.: 673 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.0	673	**FILL - SANDY LEAN CLAY (CL)**, red, medium stiff to stiff
5.5	667.5	red, stiff
8.0	665	**FILL - FAT CLAY WITH SAND (CH)**, red, very stiff
12.0	661	**FILL - SANDY LEAN CLAY (CL)**, red and brown, stiff
17.0	656	**CLAYEY SAND (SC)**, fine grained, red and brown, medium dense, Residuum
22.0	651	**SANDY LEAN CLAY (CL)**, gray and light brown, medium stiff to stiff, Residuum
32.0	641	**SILTY CLAYEY SAND (SC-SM)**, fine grained, dark brown, medium dense, Residuum fine to coarse grained, light brown, medium dense, Residuum
37.0	636	**LEAN CLAY WITH SAND (CL)**, green, very stiff, Residuum
42.0	631	**SILT WITH SAND (ML)**, green, hard, Residuum

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0					
		3-4-4 N=8	16	43-19-24	57
5		3-5-8 N=13	23	43-22-21	64
		5-8-11 N=19	27	53-24-29	71
10		12-5-6 N=11	22	48-27-21	61
		3-4-6 N=10	23	40-23-17	49
15					
		3-3-5 N=8	28	31-16-15	61
20					
		6-7-14 N=21	17	26-21-5	17
25					
		11-10-14 N=24	15	26-20-6	23
30					
		12-8-10 N=18	29	35-24-11	76
35					
		8-15-21 N=36	27	32-24-8	80
40					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-06-2019 | Boring Completed: 03-06-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

BORING LOG NO. B-051

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2051° Longitude: -80.9486°
Surface Elev.: 673 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SANDY SILT (ML), green, very stiff, Residuum					
47.0	626	45	7-11-14 N=25	25	31-24-7	66
	SANDY LEAN CLAY (CL), green, very stiff to hard, Residuum	50	9-13-17 N=30	23	30-21-9	58
52.0	621					
	SANDY SILT (ML), green, very stiff, Residuum	55	5-5-15 N=20	25	31-23-8	58
57.0	616					
58.6	**PARTIALLY WEATHERED ROCK** 614.5		50/1"			
	Boring Terminated at 58.6 Feet					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-06-2019 | Boring Completed: 03-06-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-052

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2046° Longitude: -80.9486°
Surface Elev.: 680 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.0	680	**SANDY LEAN CLAY (CL)**, red, medium stiff, Residuum
		red, very stiff, Residuum
5.5	674.5	
		SILT WITH SAND (ML), light brown, very stiff, Residuum
8.0	672	
		CLAYEY SAND (SC), fine to coarse grained, light brown, medium dense, Residuum
12.0	668	
		SILTY SAND (SM), fine to coarse grained, light brown, medium dense, Residuum
17.0	663	
		CLAYEY SAND (SC), fine to coarse grained, light brown, medium dense, Residuum
22.0	658	
		SILTY SAND (SM), fine to coarse grained, light brown, dense, Residuum
27.0	653	
		PARTIALLY WEATHERED ROCK
33.6	646.5	
		Auger Refusal at 33.6 Feet

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0						
			3-3-4 N=7	18	42-19-23	56
5			6-9-8 N=17	27	45-24-21	68
			12-9-10 N=19	28	42-30-12	71
10			10-13-10 N=23	15	33-23-10	38
			6-11-6 N=17	13	NP	25
15						
	▽		8-8-8 N=16	16	35-23-12	25
20						
			7-15-20 N=35	15	30-23-7	33
25						
			50/3"			
30						
			50/1"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-06-2019 | Boring Completed: 03-06-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-053

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2041° Longitude: -80.9485°
Surface Elev.: 683 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.0	683	**FILL - SANDY LEAN CLAY (CL)**, red, medium stiff
3.0	680	**LEAN CLAY WITH SAND (CL)**, red, stiff, Residuum
5.5	677.5	**ELASTIC SILT (MH)**, red, very stiff, Residuum
8.0	675	**ELASTIC SILT WITH SAND (MH)**, orange and light brown, medium stiff, Residuum
12.0	671	**SANDY ELASTIC SILT (MH)**, orange and light brown, medium stiff, Residuum
17.0	666	**SANDY SILT (ML)**, orange and light brown, medium stiff, Residuum
		orange, green, and brown, stiff, Residuum
27.0	656	**PARTIALLY WEATHERED ROCK**
28.9	654	***Auger Refusal at 28.9 Feet***

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0					
		1-2-3 N=5	25	42-25-17	67
		4-4-7 N=11	26	45-23-22	75
5		9-9-10 N=19	30	54-32-22	95
		4-3-4 N=7	47	58-48-10	72
10					
		3-3-4 N=7	41	54-44-10	64
15					
		3-4-3 N=7	40	45-37-8	65
20					
		2-5-6 N=11	28	47-35-12	65
25					
		50/5"			

WATER LEVEL OBSERVATIONS: ▽ at 20

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-07-2019 | Boring Completed: 03-07-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

BORING LOG NO. B-054

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2035° Longitude: -80.9485°
Surface Elev.: 688 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0	688	**FILL - SANDY LEAN CLAY (CL)**, red, medium stiff to stiff	3-4-4 N=8	18	48-26-22	63
		red and brown, stiff	5-5-5 N=10	24	37-23-14	62
5.5	682.5	**FILL - SANDY SILT (ML)**, red and brown, very stiff to hard	6-8-22 N=30	23	40-28-12	59
8.0	680	**LEAN CLAY (CL)**, red and brown, medium stiff, Residuum	3-3-4 N=7	19	36-18-18	85
12.0	676	**ELASTIC SILT (MH)**, red, stiff, Residuum	5-5-5 N=10	42	65-44-21	99
17.0	671	**SANDY ELASTIC SILT (MH)**, orange, medium stiff, Residuum	3-2-3 N=5	36	54-43-11	55
22.0	666	**SANDY SILT (ML)**, tan, soft to medium stiff, Residuum	1-2-2 N=4	40	46-39-7	69
27.0	661	**PARTIALLY WEATHERED ROCK**	50/4"			
33.5	654.5	***Auger Refusal at 33.5 Feet***	50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-07-2019 | Boring Completed: 03-07-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-055

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.203° Longitude: -80.9484°
Surface Elev.: 687 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0	687	**FILL - SANDY LEAN CLAY (CL)**, red, medium stiff to stiff	5-3-5 N=8	18	43-23-20	58
3.0	684	**FILL - CLAYEY SAND (SC)**, fine grained, red, medium dense	5-5-7 N=12	22	41-25-16	49
5.5	681.5	**FILL - SANDY LEAN CLAY (CL)**, red and brown, very stiff	7-7-14 N=21	23	44-22-22	53
8.0	679	**FAT CLAY WITH SAND (CH)**, gray and green, medium stiff to stiff, Residuum	4-4-4 N=8	29	50-24-26	84
12.0	675	**ELASTIC SILT WITH SAND (MH)**, gray, tan, and red, stiff, Residuum	7-7-7 N=14	38	52-35-17	80
17.0	670	**SILT WITH SAND (ML)**, gray, tan, and red, stiff, Residuum	4-5-6 N=11	36	46-33-13	72
22.0	665	**SANDY SILT (ML)**, gray, tan, and red, very stiff, Residuum	5-7-9 N=16	38	45-28-17	58
27.0	660	**ELASTIC SILT WITH SAND (MH)**, gray, tan, and red, stiff, Residuum	4-4-5 N=9	38	51-30-21	80
32.0	655	**FAT CLAY WITH SAND (CH)**, gray, tan, and red, stiff, Residuum	4-5-4 N=9	40	52-28-24	79
37.0	650	**SILT WITH SAND (ML)**, gray, tan, and red, medium stiff to stiff, Residuum	3-4-4 N=8	39	48-29-19	79
42.0	645					

DEPTH (Ft.): 5, 10, 15, 20, 25, 30, 35, 40

WATER LEVEL OBSERVATIONS: ▽ at 42.0

SAMPLE TYPE: ⊠

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-06-2019 | Boring Completed: 03-06-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-055

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.203° Longitude: -80.9484°
Surface Elev.: 687 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SANDY ELASTIC SILT (MH), gray, tan, and red, stiff, Residuum							
			45		X	5-6-6 N=12	35	52-30-22	69
47.0	640								
		LEAN CLAY WITH SAND (CL), gray, tan, and red, stiff to very stiff, Residuum	50		X	6-6-9 N=15	32	46-27-19	71
52.0	635								
		SANDY SILT (ML), gray, tan, and red, stiff, Residuum	55		X	5-7-7 N=14	30	48-31-17	58
57.0	630								
		SILTY SAND (SM), fine to medium grained, gray, tan, and red, medium dense, Residuum	60		X	10-13-12 N=25	29	41-29-12	40
62.0	625								
		SANDY SILT (ML), gray, tan, and red, very stiff, Residuum	65		X	10-11-15 N=26	26	41-27-14	52
65.0	622								
		Boring Terminated at 65 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-06-2019 | Boring Completed: 03-06-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-056

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2024° Longitude: -80.9484°
Surface Elev.: 684 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		FILL - SANDY LEAN CLAY (CL), red, medium stiff			3-3-3 N=6	19	42-23-19	58
		red, stiff	5		4-6-4 N=10	22	45-25-20	57
8.0	676	brown and red, stiff			4-4-5 N=9	28	47-25-22	58
		FILL - SANDY SILT (ML), brown and black, soft to medium stiff	10		2-2-2 N=4	30	45-27-18	52
12.0	672	**FILL - SANDY LEAN CLAY (CL)**, trace debris, black and red, medium stiff			4-2-3 N=5	31	44-24-20	50
		black and red, medium stiff	15					
22.0	662				3-2-3 N=5	36	47-25-22	57
		SILT WITH SAND (ML), gray and green, very stiff, Residuum	20					
27.0	657				7-10-12 N=22	29		84
		PARTIALLY WEATHERED ROCK	25					
					50/6"			
33.5	650.5		30					
		Auger Refusal at 33.5 Feet			50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:
Offset refused at 31 feet

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-06-2019 | Boring Completed: 03-06-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-057

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2019° Longitude: -80.9483°
Surface Elev.: 679 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.0	679	**FILL - POORLY GRADED GRAVEL WITH SAND (GP)**, red, dense
3.0	676	**FILL - SANDY ELASTIC SILT (MH)**, red and brown, stiff
5.5	673.5	**FILL - SANDY LEAN CLAY (CL)**, black and brown, stiff
		brown, soft to medium stiff
		brown, soft to medium stiff
17.0	662	**FILL - SANDY FAT CLAY (CH)**, red and brown, medium stiff
22.0	657	**FILL - SANDY ELASTIC SILT (MH)**, red, stiff
27.0	652	**SANDY LEAN CLAY (CL)**, gray and orange, medium stiff, Residuum
		gray and orange, very stiff, Residuum
37.0	642	
37.7	641.5	**PARTIALLY WEATHERED ROCK**
		Auger Refusal at 37.7 Feet

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0					
		6-8-30 N=38	11		0
5		6-8-5 N=13	40	56-34-22	62
		6-6-6 N=12	27	42-24-18	59
10		2-2-2 N=4	25	44-25-19	55
		3-2-2 N=4	27	44-24-20	53
15					
		3-3-4 N=7	34	53-26-27	61
20					
		4-4-5 N=9	29	59-33-26	68
25					
		2-3-4 N=7	17	23-15-8	57
30					
		4-9-8 N=17	22	25-14-11	64
35					
		50/2"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-06-2019 | Boring Completed: 03-06-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-058

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2013° Longitude: -80.9483°
Surface Elev.: 662 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
3.0	659	**FILL - SANDY SILT (ML)**, red and brown, stiff				6-5-6 N=11	20	35-25-10	54
5.0	657	**FILL - SANDY ELASTIC SILT (MH)**, red and brown, stiff	5			4-5-7 N=12	27	52-33-19	65
7.0	655	**SANDY SILTY CLAY (CL-ML)**, Alluvium					21	22-16-6	50
12.0	650	**SILTY SAND (SM)**, medium grained, gray, loose, Residuum	10			2-2-2 N=4	20	17-14-3	38
16.5	645.5	**SILTY CLAYEY SAND (SC-SM)**, fine to coarse grained, brown and white, medium dense, Residuum	15			10-11-13 N=24	11	28-21-7	19
		Auger Refusal at 16.5 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-21-2019 | Boring Completed: 03-21-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-059

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2005° Longitude: -80.9483°
Surface Elev.: 664 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.0	664	**FILL - SILTY SAND (SM)**, fine grained, red and brown, loose
3.0	661	**FILL - CLAYEY SAND (SC)**, medium grained, brown, loose
5.5	658.5	**FILL - SANDY SILT (ML)**, red and brown, medium stiff
		red and brown, medium stiff
12.0	652	**SANDY LEAN CLAY (CL)**, red and gray, medium stiff to stiff, Residuum
17.0	647	**SILTY SAND (SM)**, medium grained, gray, medium dense, Residuum
22.0	642	**PARTIALLY WEATHERED ROCK**
26.5	637.5	***Auger Refusal at 26.5 Feet***

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0					
		2-2-4 N=6	22	38-25-13	46
		5-5-3 N=8	19	23-15-8	24
5		2-3-4 N=7	30	48-31-17	60
		4-3-4 N=7			
10					
		3-4-4 N=8	22	35-17-18	64
15					
		4-5-5 N=10	12	NP	16
20					
		20-50/5"			
25					

WATER LEVEL OBSERVATIONS: ▽ at 25 ft

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-21-2019 | Boring Completed: 03-21-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-060

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2002° Longitude: -80.9483°
Surface Elev.: 660 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
3.0	657	**SILTY SAND (SM)**, fine to medium grained, brown, loose, Alluvium				2-2-2 N=4	24	35-25-10	46
5.5	654.5	**CLAYEY SAND (SC)**, fine to medium grained, brown, loose, Alluvium	5			4-4-4 N=8	14	35-21-14	40
8.0	652	**SANDY LEAN CLAY (CL)**, gray and brown, stiff, Alluvium				4-4-6 N=10	27	49-22-27	66
12.0	648	**LEAN CLAY WITH SAND (CL)**, gray and brown, medium stiff, Alluvium	10			2-3-3 N=6	27	48-17-31	72
							25	34-21-13	94
17.0	643	**CLAYEY SAND (SC)**, fine to medium grained, gray, loose, Alluvium	15			3-3-3 N=6	21	27-17-10	43
27.0	633	**SANDY SILT (ML)**, gray, medium stiff, Residuum green and gray, stiff, Residuum	20	▽		3-3-4 N=7	39	42-35-7	60
			25			4-5-6 N=11	27	36-32-4	54
37.0	623	**SILTY SAND (SM)**, fine grained, green and white, medium dense, Residuum fine grained, green and white, medium dense, Residuum	30			8-8-8 N=16	21	29-23-6	47
			35			10-12-14 N=26	18	30-23-7	46
42.0	618	**SILTY CLAYEY SAND (SC-SM)**, fine to medium grained, green, dense, Residuum	40			24-22-18 N=40	9	24-18-6	34

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-20-2019 | Boring Completed: 03-20-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-060

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2002° Longitude: -80.9483°

Surface Elev.: 660 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION
47.0	613	**SANDY SILT (ML)**, green, very hard, Residuum
52.0	608	**SILT WITH SAND (ML)**, green, hard, Residuum
57.0	603	**CLAYEY SAND (SC)**, fine grained, green, very dense, Residuum
60.0	600	**SILTY SAND (SM)**, green, very dense, Residuum
		Boring Terminated at 60 Feet

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
45		31-22-40 N=62	14	28-23-5	55
50		13-21-18 N=39	20	34-27-7	72
55		21-21-39 N=60	14	64-26-38	48
60		27-47-39 N=86			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-20-2019 | Boring Completed: 03-20-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-061

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.1999° Longitude: -80.9479°
Surface Elev.: 655 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.3	655	**TOPSOIL**, 3-inches
		CLAYEY SAND (SC), fine grained, red, loose, Alluvium
3.5	651.5	
		SANDY LEAN CLAY (CL), brown, medium stiff to stiff, Alluvium
5.5	649.5	
		CLAYEY SAND (SC), fine grained, brown, medium dense, Alluvium
8.0	647	
		SILTY SAND (SM), Residuum
12.0	643	
		POORLY GRADED SAND WITH CLAY (SP-SC), fine to coarse grained, orange and brown, very dense, Residuum
		fine to coarse grained, orange and brown, very dense, Residuum
22.0	633	
		PARTIALLY WEATHERED ROCK
33.8	621	
		Auger Refusal at 33.8 Feet

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0					
		17-4-5 N=9	16	44-16-28	49
5		3-4-4 N=8	18	42-16-26	53
		4-7-7 N=14	36	29-11-18	41
			18	NP	36
10					
		23-25-30 N=55	11		18
15					
		22-32-30 N=62	7		18
20					
		50/2"			
25					
		50/4"			
30					
		50/3"			

WATER LEVEL OBSERVATIONS

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-22-2019 | Boring Completed: 02-22-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-062

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.1997° Longitude: -80.9481°
Surface Elev.: 653 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.1	653	**TOPSOIL**, 1.5-inches
		LEAN CLAY (CL), red and brown, medium stiff, Alluvium
3.0	650	
		SANDY LEAN CLAY (CL), gray, medium stiff, Alluvium
5.5	647.5	
		SILTY SAND (SM), fine to coarse grained, light brown and white, medium dense, Alluvium
8.0	645	
		SANDY LEAN CLAY (CL), red, brown, and green, medium stiff, Alluvium
12.0	641	
		CLAYEY SAND (CLAYEY SAND), fine grained, green and brown, medium dense, Residuum
17.0	636	
		WELL GRADED SAND WITH GRAVEL (SW), fine to coarse grained, brown and gray, dense, Residuum
22.0	631	
		PARTIALLY WEATHERED ROCK
34.0	619	
		Auger Refusal at 34 Feet

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		2-2-5 N=7	17	31-18-13	87
		3-3-4 N=7	21	42-15-27	64
		5-8-12 N=20	10	31-24-7	18
10		3-3-3 N=6	49	42-25-17	59
		4-5-8 N=13	20	31-22-9	49
15		18-23-20 N=43	7	NP	1
		30-40-50/5"			
20		50/3"			
25		50/5"			
30					

WATER LEVEL OBSERVATIONS: ▽ At completion of drilling

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-24-2019 | Boring Completed: 02-24-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-063

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.1994° Longitude: -80.9481°

Surface Elev.: 652 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	652	**TOPSOIL**, 2-inches
		SANDY LEAN CLAY (CL), red and brown, stiff, Alluvium
		brown and green, stiff, Alluvium
5.5	646.5	
		CLAYEY SAND (SC), fine grained, green and white, medium dense, Residuum
		fine grained, green, medium dense, Residuum
		fine grained, green, medium dense, Residuum
17.0	635	
		PARTIALLY WEATHERED ROCK
28.9	623	
		Auger Refusal at 28.9 Feet

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		3-3-6 N=9	21	43-19-24	51
5		4-4-5 N=9	25	47-21-26	61
		6-6-9 N=15	19	33-21-12	47
10		7-12-11 N=23	11	30-21-9	30
		10-13-14 N=27	9	32-19-13	35
15		17-50/3"			
20		50/5"			
25		50/4"			

WATER LEVEL OBSERVATIONS

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-24-2019 | Boring Completed: 02-24-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-064

PROJECT: CLT Airport-Deicing Pad and SCT

**CLIENT: WSP USA Inc.
Charlotte, NC**

**SITE: Old Piney Top and West Blvd
Charlotte, NC**

LOCATION

Latitude: 35.1991° Longitude: -80.9481°

Surface Elev.: 652 (Ft.)

DEPTH	Description	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	**TOPSOIL**, 2-inches	652							
3.0	**SANDY LEAN CLAY (CL)**, red and brown, stiff, Alluvium	649			X	5-6-5 N=11	16	34-18-16	51
5.5	**CLAYEY SAND (SC)**, fine to coarse grained, light brown, medium dense, Residuum	646.5	5		X	5-7-7 N=14	10	34-18-16	19
8.0	**SAND WITH CLAY (SP-SC)**, fine to coarse grained, light brown, medium dense, Residuum	644			X	10-12-11 N=23	21		8
12.0	**CLAYEY SAND (SC)**, fine to coarse grained, light brown, dense, Residuum	640	10		X	18-18-15 N=33	9		18
	SILTY SAND (SM), fine to coarse grained, light brown and white, dense, Residuum		15		X	17-20-22 N=42	9		16
	fine to coarse grained, light brown and white, medium dense, Residuum		20		X	18-15-12 N=27	8	31-23-8	14
27.0	fine to coarse grained, light brown and white, very dense, Residuum	625	25		X	22-30-27 N=57	12		17
32.0	**SANDY SILT (ML)**, green and brown, hard, Residuum	620	30		X	13-18-21 N=39	16	31-23-8	53
38.0	**CLAYEY SAND (SC)**, fine grained, green and brown, very dense, Residuum	614	35	∇ (approx. 32 ft)	X	14-17-45 N=62	15	33-20-13	32

Auger Refusal at 38 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

∇ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-24-2019	Boring Completed: 02-24-2019
Drill Rig: CME 55	Driller: Charleston, WV
Project No.: 71195007	

BORING LOG NO. B-065

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.1988° Longitude: -80.9482°

Surface Elev.: 651 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	651	**TOPSOIL**, 2-inches
		SANDY LEAN CLAY (CL), red, brown, and gray, soft, Alluvium
		red, brown, and gray, medium stiff, Alluvium
5.5	645.5	
		SANDY LEAN CLAY WITH GRAVEL (CL), red, brown, and gray, medium stiff, Alluvium
8.0	643	
		LEAN CLAY WITH SAND (CL), brown and green, stiff, Alluvium
12.0	639	
		PARTIALLY WEATHERED ROCK
16.0	635	
		SILTY SAND WITH GRAVEL (SM), medium grained, brown and green, medium dense, Residuum
23.0	628	
		Auger Refusal at 23 Feet

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		7-1-1 N=2	29		61
5		3-3-2 N=5	27	33-19-14	66
		3-3-2 N=5	25	33-22-11	55
		5-6-5 N=11	20	37-24-13	74
10					
		47-50/5"			
15					
		10-10-13 N=23	14	27-22-5	29
20					

WATER LEVEL OBSERVATIONS

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-24-2019 | Boring Completed: 02-24-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-066

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2018° Longitude: -80.942°
Surface Elev.: 690 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	690	**TOPSOIL**, 2-inches
3.0	687	**FILL - SANDY SILT (ML)**, trace roots, brown and red, medium stiff to stiff
5.5	684.5	**FILL - SILT WITH SAND (ML)**, trace roots, brown and black, soft
8.0	682	**FILL - SANDY SILT (ML)**, brown and black, stiff
12.0	678	**FILL - SANDY LEAN CLAY (CL)**, brown and white, stiff
17.0	673	**SANDY ELASTIC SILT (MH)**, brown and white, medium stiff, Residuum
27.0	663	**ELASTIC SILT (MH)**, brown and white, soft to medium stiff, Residuum
		brown and white, stiff, Residuum
		SILTY SAND (SM), fine to coarse grained, brown, black, and white, medium dense, Residuum
		fine to coarse grained, brown, black, and white, medium dense, Residuum
		fine to coarse grained, brown, black, and white, medium dense, Residuum

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		4-4-4 N=8	20	47-29-18	69
		2-2-2 N=4	27	41-27-14	70
		3-3-7 N=10	25	38-25-13	65
10		3-3-7 N=10	27	48-22-26	67
		2-2-4 N=6	36	72-38-34	62
15		2-2-2 N=4	58	66-38-28	97
		2-4-8 N=12	49	53-35-18	87
20		5-6-9 N=15	22	37-31-6	30
		6-9-12 N=21	23	37-30-7	28
25		9-10-12 N=22	23	34-27-7	31
30					
35					
40					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-22-2019 | Boring Completed: 10-22-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-066

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2018° Longitude: -80.942°
Surface Elev.: 690 (Ft.)

DEPTH	ELEVATION (Ft.)	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
SILTY SAND (SM), fine to coarse grained, brown, black, and white, medium dense, Residuum *(continued)*									
fine to coarse grained, brown, black, and white, medium dense, Residuum			45			9-11-15 N=26	22	34-27-7	29
fine to coarse grained, brown, black, and white, medium dense, Residuum			50			10-13-16 N=29	22	32-26-6	26
fine to coarse grained, brown, black, and white, medium dense, Residuum			55			9-13-15 N=28	18	32-26-6	22
fine to coarse grained, brown, black, and white, dense, Residuum			60			11-17-18 N=35	23	35-28-7	33
60.0	630								
Boring Terminated at 60 Feet									

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-22-2019 | Boring Completed: 10-22-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-067

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2021° Longitude: -80.9417°
Surface Elev.: 694 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
3.5	690.5	**FILL - SANDY SILT (ML)**, with rocks, brown and orange, stiff
5.0	689	**No Recovery**
8.0	686	**FILL - SILTY SAND WITH GRAVEL (SM)**, fine to medium grained, brown, orange, black, and white, loose
17.0	677	**FILL - SILT WITH SAND (ML)**, brown, orange, black, and white, soft to medium stiff brown, orange, black, and white, soft
22.0	672	**SANDY FAT CLAY (CH)**, brown, orange, black, and white, stiff, Residuum
32.0	662	**ELASTIC SILT (MH)**, brown, green, and white, medium stiff to stiff, Residuum brown, green, and white, medium stiff, Residuum
37.0	657	**SILT WITH SAND (ML)**, brown, green, and white, stiff, Residuum
42.0	652	**ELASTIC SILT (MH)**, brown, green, and white, stiff to very stiff, Residuum

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0					
		6-6-7 N=13	11	NP	
		4-3-4 N=7			
5		3-2-3 N=5	36	36-25-11	50
		2-2-2 N=4	33	45-28-17	72
10					
		2-2-2 N=4	45	48-33-15	75
15					
		5-5-5 N=10	26	52-25-27	69
20					
		3-4-4 N=8	48	55-32-23	86
25					
		3-3-4 N=7	48	53-34-19	86
30					
		4-5-5 N=10	44	47-31-16	78
35					
		3-5-10 N=15	50	53-38-15	86
40					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-23-2019 | Boring Completed: 10-23-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-067

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2021° Longitude: -80.9417°
Surface Elev.: 694 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		ELASTIC SILT WITH SAND (MH), brown and green, very stiff, Residuum							
			45		X	4-5-11 N=16	51	52-35-17	77
47.0	647	**SANDY SILT (ML)**, brown, green, and white, very stiff, Residuum							
			50		X	5-10-11 N=21	36	43-30-13	66
		brown, green, and white, very stiff, Residuum			X	8-10-13 N=23	32	42-30-12	54
			55						
60.0	634	brown, green, and white, hard, Residuum			X	8-15-23 N=38	24	41-26-15	54
		Boring Terminated at 60 Feet	60						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-23-2019 | Boring Completed: 10-23-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

BORING LOG NO. B-068

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2022° Longitude: -80.9409°
Surface Elev.: 695 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.0	695	**FILL - SANDY SILT (ML)**, trace roots and gravel, brown and grey, stiff
3.0	692	**FILL - SILT WITH SAND (ML)**, brown, orange, black, and white, stiff
5.5	689.5	**FILL - SANDY SILT (ML)**, brown, orange, black, and white, very stiff
		brown, orange, black, and white, medium stiff to stiff
13.5	681.5	**NO RECOVERY**
15.0	680	**ELASTIC SILT WITH SAND (MH)**, brown, black, white, and green, stiff, Residuum
22.0	673	**SILT WITH SAND (ML)**, brown, black, white, and green, stiff, Residuum
		brown, black, white, and green, stiff to very stiff, Residuum
32.0	663	**SANDY SILT (ML)**, brown, black, white, and green, stiff, Residuum
37.0	658	**SILT WITH SAND (ML)**, brown, black, white, and green, stiff to very stiff, Residuum

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0					
		5-6-6 N=12	11	42-28-14	55
5		7-7-7 N=14	27	46-33-13	78
		5-7-10 N=17	20	33-24-9	53
10		5-4-4 N=8	25	45-29-16	53
15		3-2-5 N=7			
20		3-4-6 N=10	40	53-35-18	74
25		3-4-5 N=9	37	46-36-10	83
30		3-6-9 N=15	38	42-37-5	72
35		4-5-8 N=13	37	40-29-11	59
40		5-6-9 N=15	41	38-32-6	76

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-23-2019 | Boring Completed: 10-23-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-068

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2022° Longitude: -80.9409°
Surface Elev.: 695 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SILT WITH SAND (ML), brown, black, white, and green, stiff to very stiff, Residuum *(continued)*							
	brown, black, white, and green, very stiff, Residuum	45			4-5-11 N=16	28	39-30-9	75
47.0								
	648							
	SANDY SILT (ML), brown, black, white, and green, very stiff, Residuum	50			7-9-15 N=24	26	35-27-8	52
	brown, black, white, and green, very stiff, Residuum	55			6-8-15 N=23	27	32-27-5	54
	brown, black, white, and green, hard, Residuum	60			18-23-32 N=55	22	25-23-2	54
60.0								
	635							
	Boring Terminated at 60 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-23-2019 | Boring Completed: 10-23-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

BORING LOG NO. B-069

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2022° Longitude: -80.9403°
Surface Elev.: 692 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	692	**TOPSOIL**, 2-inches					
3.0	689	**FILL - SANDY ELASTIC SILT (MH)**, brown, medium stiff		3-3-4 N=7	24	53-41-12	63
5.5	686.5	**FILL - SANDY SILT (ML)**, brown, stiff	5	3-4-5 N=9	26	48-37-11	57
8.0	684	**SANDY SILT (ML)**, black, white, and brown, soft, Residuum		0-2-1 N=3	27	44-34-10	63
12.0	680	**SILT WITH SAND (ML)**, black, white, and brown, medium stiff, Residuum	10	3-3-3 N=6	30	41-33-8	72
		SANDY SILT (ML), brown, medium stiff to stiff, Residuum	15	3-4-4 N=8	27	41-32-9	60
22.0	670	black, brown, and white, medium stiff, Residuum	20	3-2-4 N=6	27	35-31-4	60
27.0	665	**SILTY SAND (SM)**, fine grained, black, brown, and white, loose, Residuum	25	3-3-5 N=8	28	36-32-4	47
32.0	660	**SANDY SILT (ML)**, black, brown, and white, medium stiff to stiff, Residuum	30	3-3-5 N=8	28	35-31-4	64
		SILTY SAND (SM), fine to coarse grained, brown and white, medium dense, Residuum	35	5-7-11 N=18	26	33-28-5	48
42.0	650	fine grained, black and brown, very dense, Residuum	40	8-21-29 N=50	38	34-29-5	48

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

- *While drilling*
- *At completion of drilling*
- *Measured on 10/8/2019*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-07-2019 | Boring Completed: 10-07-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-069

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2022° Longitude: -80.9403°

Surface Elev.: 692 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SANDY SILT (ML), fine to coarse grained, black and brown, hard, Residuum								
	47.0	645	45			23-23-42 N=65	16	27-23-4	56
	PARTIALLY WEATHERED ROCK					70-30/2"			
			50						
						30-70			
			55						
	59.6	632.5				70-60-21/1"			
	Auger Refusal at 59.6 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

- *While drilling*
- *At completion of drilling*
- *Measured on 10/8/2019*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-07-2019 | Boring Completed: 10-07-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-070

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2022° Longitude: -80.9396°
Surface Elev.: 707 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		FILL - ELASTIC SILT WITH SAND (MH), brown, red, black, and white, medium stiff		3-3-4 N=7	27	67-34-33	78
		brown, red, black, and white, stiff	5	4-4-5 N=9	29	54-41-13	72
5.5	701.5			3-3-4 N=7	40	53-44-9	69
		FILL - SANDY ELASTIC SILT (MH), brown, red, black, and white, medium stiff		3-3-5 N=8	42	57-44-13	69
8.0	699		10				
		SANDY ELASTIC SILT (MH), brown, red, black, and white, medium stiff to stiff, Residuum					
		brown, red, black, and white, stiff, Residuum	15	3-5-5 N=10	41	51-41-10	59
17.0	690						
		ELASTIC SILT (MH), brown and white, stiff, Residuum	20	3-4-5 N=9	62	68-46-22	87
22.0	685						
		ELASTIC SILT WITH SAND (MH), brown and white, medium stiff, Residuum	25	4-2-4 N=6	59	56-41-15	80
27.0	680						
		SILT (ML), brown and white, medium stiff, Residuum	30	3-2-5 N=7	54	48-39-9	89
32.0	675						
		SANDY SILT (ML), brown and white, stiff, Residuum	35	3-4-6 N=10	39	36-32-4	67
		brown and white, hard, Residuum	40	8-13-21 N=34	31	32-29-3	68
42.0	665						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-14-2019 | Boring Completed: 10-14-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

BORING LOG NO. B-070

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2022° Longitude: -80.9396°
Surface Elev.: 707 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	PARTIALLY WEATHERED ROCK								
	47.0	660	45			75-25/1"			
	SILT WITH SAND (ML), brown and white, hard, Residuum					11-25-37 N=62	30	36-33-3	73
	52.0	655	50						
	PARTIALLY WEATHERED ROCK					80-20/1"			
	59.4	647.5	55			60-40/5"			
	Boring Terminated at 59.4 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-14-2019 | Boring Completed: 10-14-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-071

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2023° Longitude: -80.939°

Surface Elev.: 710 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		FILL - SANDY SILT WITH GRAVEL (ML), trace gravel, brown and red, stiff							
3.0	707					5-4-6 N=10	12	44-29-15	54
		FILL - ELASTIC SILT WITH SAND (ML), trace gravel, brown and red, soft to medium stiff							
5.5	704.5					3-2-2 N=4	16	57-46-11	72
		SILT WITH SAND (ML), black, white, brown, and yellow, medium stiff, Residuum	5			3-2-3 N=5	30	45-38-7	75
		black, white, brown, and yellow, medium stiff, Residuum	10			3-2-3 N=5	33	49-40-9	78
12.0	698								
		SANDY ELASTIC SILT (MH), black, white, brown, and yellow, medium stiff, Residuum	15			2-3-3 N=6	32	52-45-7	66
17.0	693								
		SANDY SILT (ML), black, white, brown, and yellow, medium stiff, Residuum	20			2-3-3 N=6	36	43-39-4	65
20.0	690								
		Boring Terminated at 20 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-10-2019 | Boring Completed: 10-10-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-072

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2065° Longitude: -80.9479°
Surface Elev.: 689 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	FILL - SANDY ELASTIC SILT (MH), red, medium stiff							
3.0	686				2-2-4 N=6	32	62-32-30	64
	FILL - CLAYEY SAND WITH GRAVEL (SC), fine to medium grained, red, medium dense				6-6-8 N=14	36	51-27-24	49
5.5	683.5	5						
	FILL - SANDY FAT CLAY (CH), red and light brown, stiff				5-5-7 N=12	30	55-28-27	57
8.0	681							
	FILL - ELASTIC SILT WITH SAND (MH), red and light brown, stiff				3-5-7 N=12	28	65-39-26	70
10.0	679	10						
	Boring Terminated at 10 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-23-2019 | Boring Completed: 03-23-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-074

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2066° Longitude: -80.9472°

Surface Elev.: 687 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	FILL - FAT CLAY WITH SAND (CH), red and brown, stiff							
3.0	684				2-4-5 N=9	24	72-34-38	73
	FILL - SANDY ELASTIC SILT (MH), red and brown, stiff							
5.5	681.5	5			4-6-6 N=12	28	65-37-28	68
	FILL - SANDY FAT CLAY (CH), red, very stiff							
8.0	679				8-8-10 N=18	27	73-20-53	66
	FILL - ELASTIC SILT WITH SAND (MH), red, stiff							
10.0	677	10			4-6-8 N=14	30	60-34-26	74
	Boring Terminated at 10 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-23-2019 | Boring Completed: 03-23-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-075

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2064° Longitude: -80.9481°
Surface Elev.: 690 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	FILL - ELASTIC SILT WITH SAND (MH), red, medium stiff to stiff							
3.0	687				3-3-5 N=8	28	62-36-26	76
	FILL - FAT CLAY WITH SAND (CH), red, medium stiff to stiff							
5.5	684.5	5			3-4-4 N=8	33	58-18-40	71
	FILL - SANDY LEAN CLAY (CL), red, stiff							
8.0	682				7-7-7 N=14	31	46-16-30	68
	FILL - FAT CLAY WITH SAND (CH), red, stiff							
10.0	680	10			4-3-6 N=9	33	57-17-40	71
	Boring Terminated at 10 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-23-2019 | Boring Completed: 03-23-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-076

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2062° Longitude: -80.9477°
Surface Elev.: 688 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
FILL - SANDY ELASTIC SILT (MH), red, stiff								
3.0	685				2-4-6 N=10	28	68-34-34	69
FILL - FAT CLAY WITH SAND (CH), red and brown, stiff								
5.5	682.5	5			3-4-6 N=10	36	65-22-43	79
FILL - SANDY ELASTIC SILT (MH), red and brown, stiff to very stiff								
8.0	680				6-8-7 N=15	23	52-32-20	64
FILL - ELASTIC SILT WITH SAND (MH), red and brown, stiff								
10.0	678	10			4-6-8 N=14	28	71-36-35	74
Boring Terminated at 10 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-24-2019 | Boring Completed: 03-24-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-077

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2063° Longitude: -80.9475°
Surface Elev.: 686 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	FILL - SANDY ELASTIC SILT (MH), red and brown, medium stiff				3-3-4 N=7	30	51-31-20	67
	red, stiff				4-4-7 N=11	32	55-37-18	67
5.5	680.5	5						
	FILL - SANDY FAT CLAY (CH), red, very stiff				8-9-9 N=18	25	76-33-43	70
12.0	674	10						
	Boring Terminated at 12 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-24-2019 | Boring Completed: 03-24-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-079

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2064° Longitude: -80.9468°

Surface Elev.: 675 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	675							
TOPSOIL, 2-inches								
SANDY LEAN CLAY (CL), red and brown, medium stiff to stiff, Alluvium					4-3-5 N=8	18	40-22-18	54
3.5	671.5							
CLAYEY SAND WITH GRAVEL (SC), fine grained, red and brown, medium dense, Alluvium					6-4-6 N=10	16	46-24-22	49
5.5	669.5	5						
SILTY SAND (SM), fine to medium grained, brown and green, loose, Residuum					3-2-4 N=6	12	NP	27
fine to medium grained, brown and green, medium dense, Residuum					3-2-8 N=10	13	NP	30
		10						
13.0	662							
PARTIALLY WEATHERED ROCK			▽		50/1"			
14.5	660.5							
Auger Refusal at 14.5 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-18-2019 | Boring Completed: 02-18-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-080

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.206° Longitude: -80.948°

Surface Elev.: 690 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.0						
	FILL - WELL GRADED GRAVEL WITH SILT AND SAND (GW-GM), dense		35-27-6 N=33	5	NP	7
2.0	688					
	FILL - SANDY SILT (ML), red and brown, stiff		4-5-6 N=11	33	46-30-16	70
5.5	684.5	5				
	FILL - SILT WITH SAND (ML), red and brown, stiff		7-7-7 N=14	58	48-37-11	73
			4-5-7 N=12			
10.0	680	10				
	Boring Terminated at 10 Feet					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-24-2019 | Boring Completed: 03-24-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-082

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.206° Longitude: -80.9473°
Surface Elev.: 673 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.1	673	**TOPSOIL**, 1-inch
3.0	670	**SANDY LEAN CLAY (CL)**, brown, medium stiff, Alluvium
8.0	665	**LEAN CLAY WITH SAND (CL)**, brown, stiff, Alluvium orange and brown, very stiff, Alluvium
12.0	661	**ELASTIC SILT (MH)**, gray, stiff, Residuum
21.0	652	**PARTIALLY WEATHERED ROCK**
		Auger Refusal at 21 Feet

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		2-2-3 N=5	25	35-21-14	68
		4-4-6 N=10	30	49-26-23	81
		6-10-8 N=18	25	42-25-17	83
10		4-5-6 N=11	29	55-38-17	93
		34-50/6"	6		26
15					
		22-32-50/4"			
20					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-01-2019 | Boring Completed: 03-01-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-084

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2061° Longitude: -80.9467°

Surface Elev.: 687 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.1	687	**TOPSOIL**, 1-inch				
		FILL - FAT CLAY WITH SAND (CH), red, medium stiff	3-4-3 N=7	28	56-28-28	74
3.5	683.5					
		FILL - SANDY FAT CLAY (CH), red, medium stiff	2-3-4 N=7	25	51-25-26	59
		red, medium stiff	3-3-4 N=7	25	59-26-33	64
		red, stiff	3-5-6 N=11	26	50-27-23	67
12.0	675					
		SANDY SILT (ML), light brown, hard, Residuum	14-17-14 N=31	11	NP	51
17.0	670					
		SANDY SILT WITH GRAVEL (ML), light brown, very stiff to hard, Residuum	13-13-17 N=30	18	NP	58
22.0	665					
		SILTY SAND (SM), fine grained, light brown, medium dense, Residuum	9-10-10 N=20	14	NP	37
27.0	660					
		SANDY LEAN CLAY (CL), light brown, hard, Residuum	21-28-18 N=46	17	32-22-10	50
32.0	655					
		SILTY SAND (SM), fine grained, light brown, medium dense, Residuum	7-7-8 N=15	15	NP	40
37.0	650					
		SANDY SILT (ML), light brown, very stiff, Residuum	3-7-10 N=17	26	40-28-12	66
42.0	645					

DEPTH (Ft.): 5, 10, 15, 20, 25, 30, 35, 40

WATER LEVEL OBSERVATIONS: ▽ at 30

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-22-2019 | Boring Completed: 02-22-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-084

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

GRAPHIC LOG	LOCATION / DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	Latitude: 35.2061° Longitude: -80.9467° Surface Elev.: 687 (Ft.)								
	PARTIALLY WEATHERED ROCK		45			50/1"			
	46.0	641							
	Auger Refusal at 46 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-22-2019 | Boring Completed: 02-22-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

BORING LOG NO. B-086

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2057° Longitude: -80.9476°

Surface Elev.: 679 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.3	679					
TOPSOIL, 3-inches						
SANDY FAT CLAY (CH), red, medium stiff, Alluvium			2-3-2 N=5	26	52-28-24	70
3.0	676					
CLAYEY SAND (SC), red, loose, Alluvium			2-2-5 N=7	30		41
5.5	673.5	5				
LEAN CLAY WITH SAND (CL), red, stiff to very stiff, Residuum			10-8-7 N=15	21		71
8.0	671					
ELASTIC SILT WITH SAND (MH), red, medium stiff, Residuum			3-3-4 N=7	37	52-31-21	72
12.0	667	10				
LEAN CLAY WITH SAND (CL), trace gravel, red and brown, stiff, Residuum			2-3-11 N=14	20	28-17-11	73
18.0	661	15				
Auger Refusal at 18 Feet						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-19-2019 | Boring Completed: 02-19-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

BORING LOG NO. B-087

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2058° Longitude: -80.9473°

Surface Elev.: 679 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.1	679					
TOPSOIL, 1-inch						
SANDY FAT CLAY (CH), red and brown, medium stiff to stiff, Alluvium			3-5-3 N=8	19	50-26-24	56
3.0	676					
CLAYEY SAND WITH GRAVEL (SC), fine to medium grained, red and brown, medium dense, Alluvium			6-7-5 N=12	17	30-19-11	30
5.5	673.5	5				
FAT CLAY WITH SAND (CH), red and brown, stiff, Residuum			5-7-7 N=14	21	51-24-27	74
8.0	671					
FAT CLAY (CH), red and brown, stiff, Residuum			3-5-7 N=12	38	62-30-32	92
12.0	667	10				
SILTY SAND (SM), fine to medium grained, very dense, Residuum			27-32-20 N=52			
15.0	664	15				
Auger Refusal at 15 Feet						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-19-2019 | Boring Completed: 02-19-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

BORING LOG NO. B-088

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2058° Longitude: -80.9471°

Surface Elev.: 684 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	684	**ASPHALT**, 2.4-inches
		FILL - CLAYEY SAND WITH GRAVEL (CL), red, medium dense
5.5	678.5	
		FILL - SANDY FAT CLAY (CH), red and light brown, stiff
8.0	676	
		FILL - SILT WITH SAND (ML), light brown and orange, very stiff
12.0	672	
		SANDY SILT WITH GRAVEL (ML), orange and gray, hard, Residuum
17.0	667	
		SILTY SAND (SM), fine to coarse grained, light brown, orange, and gray, very dense, Residuum
22.0	662	
		PARTIALLY WEATHERED ROCK
24.5	659.5	
		Auger Refusal at 24.5 Feet

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		12-13-6 N=19			
5		3-3-9 N=12	22	49-26-23	41
		3-3-11 N=14	22	58-23-35	65
10		7-8-15 N=23	30	44-34-10	82
		25-25-19 N=44	26	45-29-16	59
15		17-29-33 N=62	9	NP	35
20		31-50/6"	12	NP	53

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.
Surface capped with asphalt.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-20-2019 | Boring Completed: 02-21-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-089

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2058° Longitude: -80.9467°

Surface Elev.: 686 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	686	**ASPHALT**, 2.4-inches
3.0	683	**FILL - SANDY FAT CLAY (CH)**, red, medium stiff
8.0	678	**FILL - FAT CLAY WITH SAND (CH)**, red and brown, stiff red and brown, stiff
12.0	674	**ELASTIC SILT WITH SAND (MH)**, orange and brown, stiff, Residuum
17.0	669	**SILT WITH SAND (ML)**, light brown, stiff, Residuum
32.0	654	**SANDY SILT (ML)**, light brown, very stiff, Residuum green and brown, hard, Residuum green and brown, hard, Residuum
37.0	649	**SILT WITH SAND (ML)**, green and brown, very stiff, Residuum
42.0	644	**CLAYEY SAND (SC)**, fine to coarse grained, light brown and green, dense, Residuum

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0					
5		3-3-3 N=6	26	51-28-23	61
		3-3-7 N=10	25	55-26-29	70
		3-6-8 N=14	26	54-28-26	72
10		4-6-7 N=13	35	75-35-40	85
15		5-5-7 N=12	32	46-31-15	73
20		6-7-14 N=21	25	NP	63
25		7-12-19 N=31	19	36-26-10	51
30		7-13-18 N=31	21	44-32-12	62
35		10-14-16 N=30	18	41-30-11	71
40		15-25-20 N=45	14	39-25-14	48

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.
Surface capped with asphalt.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-21-2019 | Boring Completed: 02-21-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-089

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2058° Longitude: -80.9467°
Surface Elev.: 686 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	PARTIALLY WEATHERED ROCK		45			41-50/4"			
			50			50/5"			
	53.9	632				50/5"			
	Boring Terminated at 53.9 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.
Surface capped with asphalt.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-21-2019 | Boring Completed: 02-21-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-090

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2056° Longitude: -80.9479°

Surface Elev.: 668 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	668							
TOPSOIL, 2-inches								
FILL - SILT WITH SAND (ML), red, soft to medium stiff				X	1-2-2 N=4	25	44-31-13	72
3.0	665							
SANDY FAT CLAY (CH), red, medium stiff, Alluvium				X	3-3-4 N=7	22	50-26-24	61
		5						
red, medium stiff, Alluvium				X	3-3-4 N=7	30	50-26-24	65
8.0	660							
SANDY LEAN CLAY (CL), gray, soft, Alluvium				X	2-1-2 N=3	30	28-18-10	60
		10						
12.5	655.5							
13.0 **PARTIALLY WEATHERED ROCK**	655				50/0"			
Auger Refusal at 13 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-28-2019 | Boring Completed: 02-28-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-092

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2056° Longitude: -80.9474°
Surface Elev.: 682 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	682	**ASPHALT**, 2.4-inches							
		FILL - CLAYEY SAND WITH GRAVEL (SC), fine grained, red and gray, loose				8-4-4 N=8	14	44-23-21	38
		red and gray, loose				3-2-4 N=6	18	43-22-21	36
5.5	676.5		5						
		FILL - CLAYEY SAND (SC), fine grained, red and brown, loose				2-2-2 N=4	18	32-19-13	46
8.0	674								
		SILTY SAND (SM), fine to medium grained, green and light brown, medium dense, Residuum				3-4-11 N=15	19	41-27-14	48
12.0	670		10						
		CLAYEY SAND (SC), fine to medium grained, green and light brown, very dense, Residuum				15-28-28 N=56	13	34-23-11	48
17.0	665		15						
		SILTY SAND (SM), fine to coarse grained, green, gray, and orange, very dense, Residuum				11-18-35 N=53	11	33-24-9	40
			20	▽					
		fine to coarse grained, green, gray, and orange, very dense, Residuum				21-38-27 N=65	10	NP	42
			25						
		fine to coarse grained, green, gray, and orange, dense, Residuum				13-17-17 N=34	13	NP	44
			30						
32.0	650								
		Auger Refusal at 32 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.
Surface capped with asphalt.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-21-2019 | Boring Completed: 02-21-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-093

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2056° Longitude: -80.947°
Surface Elev.: 685 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	684.8	**ASPHALT**, 2.4-inches
		FILL - SANDY LEAN CLAY (CL), red and brown, stiff
		red and brown, soft to medium stiff
5.5	679.5	
		SANDY SILT (ML), brown, orange, and white, stiff, Residuum
8.0	677	
		SILT WITH SAND (ML), brown, orange, and white, very stiff, Residuum
		brown, orange, and white, stiff, Residuum
18.5	666.5	
		ELASTIC SILT WITH SAND (MH), brown, orange, and white, stiff, Residuum
22.0	663	
		SANDY LEAN CLAY (CL), brown and green, hard, Residuum
27.0	658	
		SILT WITH SAND (ML), brown and green, hard, Residuum
32.0	653	
		PARTIALLY WEATHERED ROCK
37.0	648	
		SANDY LEAN CLAY (CL), green, hard, Residuum

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		3-4-6 N=10	22	41-19-22	67
		2-1-3 N=4	23	41-16-25	66
		5-5-6 N=11	30	47-29-18	70
10		4-7-9 N=16	33	45-34-11	75
15		3-4-6 N=10	32	43-27-16	70
20		3-5-6 N=11	38	51-33-18	74
25		10-21-28 N=49	25	39-25-14	64
30		13-20-26 N=46	26	41-26-15	78
35		26-50/6"	11	26-18-8	40
40		16-19-26 N=45	15	32-22-10	64

WATER LEVEL OBSERVATIONS: ▽ at 40

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.
Surface capped with asphalt.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-26-2019 | Boring Completed: 02-26-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-093

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2056° Longitude: -80.947°
Surface Elev.: 685 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SANDY LEAN CLAY (CL), green, hard, Residuum *(continued)*								
	green, hard, Residuum		45			21-24-29 N=53	19	31-19-12	70
	47.0	638							
	PARTIALLY WEATHERED ROCK					50/3"			
	50.0	635	50						
	Auger Refusal at 50 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.
Surface capped with asphalt.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-26-2019 | Boring Completed: 02-26-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

BORING LOG NO. B-094

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2056° Longitude: -80.9467°
Surface Elev.: 687 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.1	687	**ASPHALT**, 1.2-inches
		FILL - SANDY LEAN CLAY (CL), red, medium stiff
3.0	684	
		ELASTIC SILT WITH SAND (MH), red and brown, medium stiff to stiff, Residuum
5.5	681.5	
		ELASTIC SILT (MH), brown and gray, stiff, Residuum
8.0	679	
		SANDY SILT (ML), brown and gray, very stiff, Residuum
12.0	675	
		SILTY SAND (SM), fine to coarse grained, light brown, medium dense, Residuum
		fine to coarse grained, light brown, medium dense, Residuum
		fine to coarse grained, light brown, dense, Residuum
		fine to coarse grained, light brown, very dense, Residuum
32.0	655	
		PARTIALLY WEATHERED ROCK

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		2-3-3 N=6	19	42-22-20	62
		2-3-5 N=8	22	55-31-24	71
5		3-4-6 N=10	36	53-29-24	86
		7-9-14 N=23	27	43-30-13	58
10					
		6-8-9 N=17	20	35-30-5	43
15					
		9-11-11 N=22	15	32-24-8	38
20					
		8-15-19 N=34	12	27-22-5	32
25					
		17-26-33 N=59	16	29-23-6	27
30					
		27-45-50/5"	17	28-19-9	38
35					
		50/6"			
40					

WATER LEVEL OBSERVATIONS

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.
Surface capped with asphalt.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-26-2019 | Boring Completed: 02-26-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-094

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

GRAPHIC LOG	LOCATION / DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	Latitude: 35.2056° Longitude: -80.9467° Surface Elev.: 687 (Ft.)								
	PARTIALLY WEATHERED ROCK *(continued)*								
	44.0	643				50/4"			
	Auger Refusal at 44 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.
Surface capped with asphalt.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-26-2019 | Boring Completed: 02-26-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-095

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2052° Longitude: -80.9481°
Surface Elev.: 662 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	0.1 **TOPSOIL**, 1-inch	662							
	SILTY SAND (SM), fine grained, brown, loose, Residuum					3-3-3 N=6	28	45-29-16	48
	fine grained, tan, loose, Residuum		5			3-2-3 N=5	18	NP	34
	fine grained, tan, very dense, Residuum					3-8-47 N=55	18	NP	19
	8.0	654							
	PARTIALLY WEATHERED ROCK					50/2"			
	10.0	652	10						
	Auger Refusal at 10 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-28-2019 | Boring Completed: 02-28-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-096

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2053° Longitude: -80.9477°

Surface Elev.: 681 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.1	681	**TOPSOIL**, 1-inch							
		FILL - CLAYEY SAND (SC), trace organics, medium grained, red and brown, loose			X	2-3-2 N=5	17	43-19-24	
		medium grained, red and brown, loose	5		X	2-3-3 N=6	31	56-26-30	43
		medium grained, red and brown, loose			X	2-3-3 N=6	17	44-18-26	39
		medium grained, red and brown, loose	10		X	3-2-3 N=5	26	42-22-20	45
		medium grained, red and brown, loose		▽	X	2-2-2 N=4	24	44-22-22	28
17.0	664	**CLAYEY SAND (SC)**, with gravel, medium grained, green, gray, and red, dense, Residuum	15		X	7-7-31 N=38	10		13
22.0	659	**SANDY LEAN CLAY (CL)**, gray and red, very stiff, Residuum	20		X	9-12-14 N=26	23	29-16-13	
26.0	655	***Auger Refusal at 26 Feet***	25						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-18-2019 | Boring Completed: 02-18-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

BORING LOG NO. B-098

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2053° Longitude: -80.947°
Surface Elev.: 684 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.1	684	**ASPHALT**, 1.2-inches
		FILL - SANDY FAT CLAY (CH), red and brown, medium stiff
3.0	681	
		CLAYEY SAND (SC), fine grained, light brown and green, dense, Residuum
5.5	678.5	
		SILTY CLAYEY SAND (SC-SM), fine grained, light brown and green, very dense, Residuum
		fine grained, light brown and green, very dense, Residuum
		fine grained, light brown and green, very dense, Residuum
		fine grained, light brown and green, very dense, Residuum
22.0	662	
		PARTIALLY WEATHERED ROCK
35.0	649	
		Auger Refusal at 35 Feet

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
			2-2-3 N=5	31	53-21-32	60
5			13-17-20 N=37	12	26-17-9	22
			23-34-39 N=73	9	21-17-4	47
10			22-29-33 N=62	7		23
15			24-29-31 N=60	8		37
20			25-27-30 N=57	7		21
25			18-37-50/4"	9	22-17-5	28
30	▽		50/3"			
35			50/4"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.
Surface capped with asphalt.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-27-2019 | Boring Completed: 02-27-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-099

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2053° Longitude: -80.9466°

Surface Elev.: 686 (Ft.)

GRAPHIC LOG	DEPTH	MATERIAL DESCRIPTION	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	0.1	**ASPHALT**, 1.2-inches	686							
	3.0	**FILL - SANDY LEAN CLAY (CL)**, red and brown, stiff	683			X	2-3-8 N=11	22	46-22-24	69
	5.5	**SILTY SAND (SM)**, fine to medium grained, light brown, very dense, Residuum	680.5	5		X	26-32-25 N=57	7	NP	47
	8.0	**PARTIALLY WEATHERED ROCK**	678			X	44-50/5"	4	23-20-3	29
	12.0	**SANDY SILT (ML)**, light brown, very hard, Residuum	674	10		X	27-33-27 N=60	7	27-22-5	54
	22.0	**PARTIALLY WEATHERED ROCK**	664	15, 20	▽	X	50/6"; 50/1"			
	27.0	**CLAYEY SAND (SC)**, green and brown, dense, Residuum	659	25		X	35-22-25 N=47	12	26-15-11	47
	32.0	**SANDY SILT (ML)**, green and brown, very stiff, Residuum	654	30		X	21-8-10 N=18	19	34-28-6	63
	37.0	**PARTIALLY WEATHERED ROCK**	649	35		X	12-50/6"	21	33-26-7	78
	41.0	**SILT (ML)**, light brown, hard, Residuum	645	40		X	24-26-20 N=46	23	42-26-16	85

Auger Refusal at 41 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.
Surface capped with asphalt.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-26-2019	Boring Completed: 02-26-2019
Drill Rig: CME 750	Driller: A&E
Project No.: 71195007	

BORING LOG NO. B-100

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.205° Longitude: -80.948°

Surface Elev.: 661 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	0.1 **TOPSOIL**, 1-inch	661							
	SANDY LEAN CLAY (CL), brown, soft, Alluvium					2-1-1 N=2	23	32-21-11	56
	3.0	658							
	CLAYEY SAND (SC), fine grained, gray and brown, loose, Alluvium					4-3-3 N=6	19	29-18-11	44
	5.5	655.5	5						
	PARTIALLY WEATHERED ROCK					5-50/2"			
	7.5	653.5							
	Auger Refusal at 7.5 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-28-2019 | Boring Completed: 02-28-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-101

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.205° Longitude: -80.9478°

Surface Elev.: 661 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	0.1 **TOPSOIL**, 1-inch	661							
	SANDY LEAN CLAY (CL), brown, medium stiff, Alluvium				X	1-2-3 N=5	19	28-17-11	60
	4.0	657							
	Auger Refusal at 4 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-27-2019 | Boring Completed: 02-27-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-102

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.205° Longitude: -80.9473°

Surface Elev.: 678 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.3	678					
TOPSOIL, 3-inches						
FAT CLAY (CH), tan, stiff, Alluvium			4-4-5 N=9	28	55-24-31	86
3.0	675					
ELASTIC SILT WITH SAND (MH), orange, very stiff, Residuum			5-8-15 N=23	32	50-34-16	73
5.5	672.5	5				
SILT WITH SAND (ML), fine grained, orange, very stiff, Residuum			6-12-17 N=29	26	49-30-19	79
fine grained, orange, very stiff, Residuum			7-10-15 N=25	30	40-27-13	77
12.0	666	10				
PARTIALLY WEATHERED ROCK						
14.4	663.5		8-50/5"			
Auger Refusal at 14.4 Feet						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-19-2019 | Boring Completed: 02-19-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

BORING LOG NO. B-103

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.205° Longitude: -80.9469°
Surface Elev.: 684 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	684	**ASPHALT**, 2.4-inches
3.0	681	**FILL - SILTY SAND (SM)**, red, loose
5.5	678.5	**SANDY LEAN CLAY (CL)**, green and tan, very stiff, Residuum
8.0	676	**SANDY SILT (ML)**, green and tan, very stiff, Residuum
12.0	672	**SILTY SAND (SM)**, green and tan, medium dense, Residuum
17.0	667	**POORLY GRADED SAND WITH GRAVEL (SP)**, medium grained, brown and gray, dense, Residuum
22.0	662	**SANDY SILT (ML)**, green and tan, very stiff, Residuum
27.0	657	**SILTY SAND (SM)**, fine grained, green and tan, medium dense, Residuum
36.0	648	**PARTIALLY WEATHERED ROCK**
		Auger Refusal at 36 Feet

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		2-2-4 N=6	24	NP	46
5		9-14-13 N=27	17	32-22-10	54
		8-13-10 N=23	14	NP	51
10		9-13-13 N=26	15	32-24-8	47
15		17-23-17 N=40	5		6
20		7-8-10 N=18	24	35-28-7	55
25		5-6-9 N=15	27	NP	44
30		50/6"			
35		50/1"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.
Surface capped with asphalt.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-27-2019 | Boring Completed: 02-27-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-104

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.205° Longitude: -80.9467°

Surface Elev.: 686 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	686	**ASPHALT**, 2.4-inches						
		SILTY SAND (SM), medium grained, red and light brown, medium dense, Residuum			3-4-6 N=10	27	51-31-20	47
		fine grained, light brown, dense, Residuum	5		11-20-20 N=40	11		32
		fine grained, light brown, dense, Residuum			18-27-17 N=44	7	NP	20
8.0	678							
		SILT WITH SAND (ML), green and tan, hard, Residuum	10		12-14-18 N=32	19	NP	81
12.0	674							
		SILTY SAND (SM), fine to coarse grained, green and tan, dense, Residuum			9-19-23 N=42	8	NP	20
17.0	669		15					
		PARTIALLY WEATHERED ROCK			37-50/6"			
			20					
					50/6"			
			25					
28.6	657.5							
		Auger Refusal at 28.6 Feet			50/1"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.
Surface capped with asphalt.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-27-2019 | Boring Completed: 02-27-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-106

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2047° Longitude: -80.9476°

Surface Elev.: 659 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
LEAN CLAY WITH SAND (CL), brown, medium stiff to stiff, Alluvium								
3.0	656				2-3-5 N=8	33	40-21-19	78
SILTY SAND (SM), fine grained, brown, dense, Residuum								
5.5	653.5	5			5-15-23 N=38	7		22
PARTIALLY WEATHERED ROCK								
7.0	652				50/5"			
Auger Refusal at 7 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-27-2019 | Boring Completed: 02-27-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-107

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2048° Longitude: -80.947°

Surface Elev.: 678 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	678	**TOPSOIL**, 2-inches							
2.5	675.5	**SILTY CLAYEY SAND (SC-SM)**, fine grained, brown to orange, loose, Alluvium				3-3-4 N=7	11 26	23-17-6 44-30-14	31 83
3.5	674.5	**SILT WITH SAND (ML)**, brown, medium stiff, Residuum							
6.0	672	**SANDY SILT (ML)**, green, very hard, Residuum	5			10-30-30 N=60	25	32-25-7	70
8.5	669.5	**PARTIALLY WEATHERED ROCK**				49-50/4"	10	29-22-7	68
12.0	666	**SANDY LEAN CLAY (CL)**, green, very hard, Residuum	10			10-29-30 N=59	11	30-22-8	55
17.0	661	**SILTY CLAYEY SAND (SC-SM)**, fine grained, green, very dense, Residuum	15			21-25-30 N=55	7	24-20-4	44
29.0	649	**PARTIALLY WEATHERED ROCK**	20			22-50/4"			
			25			50/4"			
		Auger Refusal at 29 Feet				50/5"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-26-2019 | Boring Completed: 02-26-2019

Drill Rig: CME 55 | Driller: A&E

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-109

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2048° Longitude: -80.9465°

Surface Elev.: 677 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	677	**TOPSOIL**, 2-inches				
		SANDY LEAN CLAY (CL), brown and gray, medium stiff to stiff, Alluvium	3-5-3 N=8	19	42-24-18	59
3.0	674	**LEAN CLAY WITH SAND (CL)**, green and white, stiff, Residuum	4-5-6 N=11	37	45-18-27	85
5.5	671.5	**SILTY SAND (SM)**, medium grained, green and tan, medium dense, Residuum	7-12-14 N=26	14	33-25-8	31
		medium grained, tan, medium dense, Residuum	6-8-5 N=13	15	NP	24
		with rock, medium grained, tan, dense, Residuum	15-18-16 N=34	7	26-22-4	26
		medium grained, tan, medium dense, Residuum	11-8-10 N=18	13	27-23-4	29
22.0	655	**PARTIALLY WEATHERED ROCK**	29-46-50/4"			
			50/4"			
33.8	643	***Auger Refusal at 33.8 Feet***	50/4"			

DEPTH (Ft.): 5, 10, 15, 20, 25, 30

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-28-2019 | Boring Completed: 02-28-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-110

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2044° Longitude: -80.948°

Surface Elev.: 665 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		ELASTIC SILT WITH SAND (MH), red, stiff, Alluvium							
						8-5-4 N=9	26	56-30-26	72
		red, very stiff, Alluvium							
5.5	659.5		5			7-10-8 N=18	35	71-34-37	82
		SILT WITH SAND (ML), red and light brown, stiff to very stiff, Alluvium							
8.0	657					10-8-7 N=15	31	48-29-19	71
		SILTY SAND (SM), fine grained, red and light brown, medium dense, Residuum							
						3-4-6 N=10	28	37-32-5	42
12.0	653		10						
13.5	651.5	**PARTIALLY WEATHERED ROCK**							
		Auger Refusal at 13.5 Feet				50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:
Offset boring refused at 15 feet.

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-05-2019 | Boring Completed: 03-05-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

BORING LOG NO. B-112

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2044° Longitude: -80.9473°

Surface Elev.: 654 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
CLAYEY SAND (SC), medium grained, red and brown, very loose, Alluvium					1-2-1 N=3	21	45-25-20	37
fine grained, brown and gray, loose, Alluvium		5			1-2-2 N=4	20	35-19-16	30
fine grained, gray, loose, Alluvium					2-3-5 N=8	20		17
8.0	646							
8.9 **PARTIALLY WEATHERED ROCK**	645				50/2"			
Auger Refusal at 8.9 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:
Offset refused at 10 feet.

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-27-2019 | Boring Completed: 02-27-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-113

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2045° Longitude: -80.9468°
Surface Elev.: 664 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.3	664	**TOPSOIL**, 3-inches					
		SANDY LEAN CLAY (CL), brown, soft, Alluvium		3-2-2 N=4	28	35-20-15	63
3.0	661	**CLAYEY SAND (SC)**, fine grained, tan, medium dense, Residuum	5	5-6-7 N=13	21	41-24-17	43
		coarse grained, brown, medium dense, Residuum		10-13-12 N=25	17	36-23-13	32
8.0	656	**PARTIALLY WEATHERED ROCK**	10	50/5"			
11.0	653	***Auger Refusal at 11 Feet***					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-28-2019 | Boring Completed: 02-28-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-114

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2045° Longitude: -80.9466°
Surface Elev.: 665 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.3	665	**TOPSOIL**, 3-inches
		SANDY LEAN CLAY (CL), red, stiff, Alluvium
		red, very stiff, Alluvium
5.5	659.5	
		LEAN CLAY WITH SAND (CL), red and tan, stiff, Alluvium
8.0	657	
		SANDY SILT (ML), red and brown, very stiff, Residuum
12.0	653	
		SILTY SAND (SM), fine grained, green and brown, medium dense, Residuum
17.0	648	
		SANDY SILT (ML), fine grained, green and brown, stiff to very stiff, Residuum
22.0	643	
		PARTIALLY WEATHERED ROCK
27.5	637.5	
		Auger Refusal at 27.5 Feet

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		3-5-6 N=11	23	45-22-23	65
		5-8-13 N=21	26	39-21-18	60
		3-3-6 N=9	30	45-26-19	75
10		5-7-10 N=17	24	32-29-3	53
		4-7-9 N=16	25	34-33-1	46
15		6-6-9 N=15	20	35-32-3	50
20		18-42-50/3"			
25					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-19-2019 | Boring Completed: 02-19-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-116

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2042° Longitude: -80.9476°
Surface Elev.: 660 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SANDY LEAN CLAY (CL), red and brown, medium stiff, Alluvium							
3.0	657				2-2-4 N=6	24	26-17-9	60
	SILT (ML), light brown, stiff, Alluvium				5-5-9 N=14	27	35-25-10	93
5.5	654.5	5						
	SANDY FAT CLAY (CH), light brown, stiff, Alluvium				8-6-8 N=14	33	54-22-32	66
8.0	652							
	PARTIALLY WEATHERED ROCK		▽		4-50/5"	30	42-30-12	58
10.0	650	10						
	Auger Refusal at 10 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:
Offset boring refused at 10 feet.

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-05-2019 | Boring Completed: 03-05-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

BORING LOG NO. B-118

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2043° Longitude: -80.947°
Surface Elev.: 658 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SILTY SAND (SM), fine grained, red, loose, Alluvium							
3.0	655				X	1-2-2 N=4	28	32-25-7	40
		LEAN CLAY WITH SAND (CL), brown, soft, Alluvium			X	2-1-1 N=2	33	31-19-12	74
5.5	652.5		5						
		SANDY LEAN CLAY (CL), tan, very soft, Alluvium			X	0-0-0 N=0	24	25-15-10	66
8.0	650								
		SILTY SAND (SM), coarse grained, blue and brown, medium dense, Residuum		▽	X	4-5-7 N=12	16	NP	27
			10						
		coarse grained, red and brown, dense, Residuum			X	9-20-14 N=34	14	NP	21
			15						
		coarse grained, brown and gray, very dense, Residuum			X	28-33-30 N=63	7	NP	19
22.0	636		20						
		PARTIALLY WEATHERED ROCK			X	50/5"			
25.5	632.5		25						
		Auger Refusal at 25.5 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-27-2019 | Boring Completed: 02-27-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-120

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2039° Longitude: -80.9479°
Surface Elev.: 674 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SILT (ML), green, medium stiff to stiff, Residuum							
						5-5-3 N=8	27	36-31-5	92
		green, very stiff, Residuum	5			6-8-9 N=17	27	43-33-10	92
		green, stiff to very stiff, Residuum				5-7-8 N=15	30	38-33-5	90
		green, stiff, Residuum	10			4-7-7 N=14	29	37-31-6	93
		green, very stiff, Residuum	15			6-7-10 N=17	28	36-30-6	93
		green, very stiff, Residuum	20			6-7-12 N=19	30	39-31-8	95
22.0	652								
		LEAN CLAY (CL), green, very stiff, Residuum	25			5-6-10 N=16	27	37-21-16	95
27.0	647								
		SILT (ML), green, hard, Residuum	30	▽		11-10-23 N=33	22	40-28-12	88
		green, orange, and dark brown, hard, Residuum	35			10-16-22 N=38	24	38-32-6	93
36.0	638								
		Auger Refusal at 36 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-05-2019 | Boring Completed: 03-05-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-122

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2039° Longitude: -80.9473°
Surface Elev.: 658 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SANDY LEAN CLAY (CL), red, soft to medium stiff, Alluvium							
						1-2-2 N=4	32	29-18-11	66
		red, medium stiff, Alluvium							
5.5	652.5		5			2-3-2 N=5	27	38-22-16	65
		SILTY SAND (SM), fine to medium grained, red to brown, loose, Alluvium							
8.0	650					3-4-4 N=8	18	NP	21
		SILT WITH SAND (ML), green, medium stiff to stiff, Residuum							
			10			3-3-5 N=8	32	36-26-10	75
		green, stiff to very stiff, Residuum		▽					
			15			7-7-8 N=15	27	34-24-10	74
		green, stiff, Residuum							
			20			5-6-8 N=14	27	34-24-10	73
		green, very stiff, Residuum							
						8-11-16 N=27	33	39-28-11	74
26.0	632		25						
		Auger Refusal at 26 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-05-2019 | Boring Completed: 03-05-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

BORING LOG NO. B-123

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2039° Longitude: -80.9467°
Surface Elev.: 658 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
SANDY LEAN CLAY (CL), brown, stiff, Alluvium			4-4-5 N=9	16	34-20-14	70
3.0	655					
CLAYEY SAND (SC), fine grained, brown and gray, very loose, Alluvium		5	1-1-1 N=2	26	29-18-11	46
6.0	652					
No Recovery						
8.0	650					
SILTY SAND (SM), with rock, medium grained, green and gray, dense, Residuum		10	17-7-34 N=41	8	NP	36
13.2	645					
Auger Refusal at 13.2 Feet			50/1"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:
Offset boring 123OS

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-26-2019 | Boring Completed: 02-26-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-123OS

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2039° Longitude: -80.9467°

Surface Elev.: 658 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION
0.3	658	**TOPSOIL**, 3-inches
1.0	657	**AUGER PROBE**
3.0	655	**LEAN CLAY WITH SAND (CL)**, brown, stiff, Alluvium
		AUGER PROBE
13.5	644.5	**PARTIALLY WEATHERED ROCK**
23.6	634.5	***Auger Refusal at 23.6 Feet***

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5			24	34-21-13	82
10		50/4"			
15					
20		38-42-50/6"			
		50/1"			

WATER LEVEL OBSERVATIONS

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-27-2019 | Boring Completed: 02-27-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-124

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2039° Longitude: -80.9466°
Surface Elev.: 658 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.3	658	**TOPSOIL**, 3-inches
3.0	655	**LEAN CLAY WITH SAND (CL)**, red, medium stiff to stiff, Alluvium
8.0	650	**SANDY LEAN CLAY (CL)**, brown and gray, medium stiff, Alluvium blue and gray, stiff, Alluvium
12.0	646	**CLAYEY SAND (SC)**, fine to medium grained, green and brown, medium dense, Residuum
17.0	641	**SILTY CLAYEY SAND (SC-SM)**, fine to medium grained, brown, blue, and orange, medium dense, Residuum
27.0	631	**CLAYEY SAND (SC)**, fine to medium grained, brown and green, medium dense, Residuum fine to medium grained, green, gray, and white, dense, Residuum
32.0	626	**SILTY CLAYEY SAND (SC-SM)**, fine to medium grained, green, gray, and white, dense, Residuum
		PARTIALLY WEATHERED ROCK

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0					
3		3-4-4 N=8	24	28-19-9	71
5		2-3-3 N=6	22	33-16-17	58
		5-6-5 N=11	29	37-16-21	69
10		4-5-8 N=13	19	29-20-9	42
15		6-8-10 N=18	17	29-22-7	40
20		6-9-10 N=19	14	28-18-10	32
25		14-19-18 N=37	11	26-18-8	37
30		9-15-29 N=44	12	26-19-7	40
35		27-40-50/5"	10	25-18-7	40
40		32-50/5"			

WATER LEVEL OBSERVATIONS: ▽ at completion of drilling

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-26-2019 | Boring Completed: 02-26-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-124

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2039° Longitude: -80.9466°

Surface Elev.: 658 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	PARTIALLY WEATHERED ROCK *(continued)*								
	44.4	613.5				29-50/5"			
	Auger Refusal at 44.4 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-26-2019 | Boring Completed: 02-26-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-126

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2037° Longitude: -80.9475°
Surface Elev.: 658 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0	658	**CLAYEY SAND (SC)**, fine to medium grained, brown, loose, Alluvium	3-2-2 N=4	19	27-19-8	44
		fine to medium grained, light brown, medium dense, Alluvium	8-4-6 N=10	19	42-22-20	36
5.5	652.5	**SILT WITH SAND (ML)**, light brown, stiff to very stiff, Alluvium	8-8-7 N=15	34	49-37-12	75
8.0	650	**SANDY SILT (ML)**, brown and green, very stiff, Residuum	7-9-10 N=19	25	NP	57
		brown and green, stiff, Residuum	4-6-6 N=12	25	39-33-6	65
		brown and green, stiff, Residuum	4-3-6 N=9	33	45-36-9	66
22.0	636	**SILT WITH SAND (ML)**, brown and green, very stiff, Residuum	8-11-14 N=25	31	44-34-10	76
27.0	631	***Auger Refusal at 27 Feet***				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-05-2019 | Boring Completed: 03-05-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

BORING LOG NO. B-127

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2035° Longitude: -80.9473°

Surface Elev.: 657 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
CLAYEY SAND (SC), fine to medium grained, red and brown, very loose, Alluvium					1-2-1 N=3	34	32-19-13	40
fine to medium grained, red and brown, loose, Alluvium		5			2-4-2 N=6	18	26-18-8	41
5.5	651.5							
CLAYEY SAND WITH GRAVEL (SC), fine to medium grained, red and brown, medium dense, Alluvium					2-5-8 N=13	14	28-13-15	29
8.0	649							
PARTIALLY WEATHERED ROCK					50/6"			
10.0	647	10	▽					
Auger Refusal at 10 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-05-2019 | Boring Completed: 03-05-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

BORING LOG NO. B-128

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2036° Longitude: -80.9467°

Surface Elev.: 657 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	657	**TOPSOIL**, 2-inches							
		SANDY LEAN CLAY (CL), brown, stiff, Alluvium				3-5-5 N=10	19	34-16-18	53
3.0	654								
		CLAYEY SAND (SC), fine grained, brown, loose, Alluvium				3-3-2 N=5	25	31-18-13	47
			5						
		fine grained, gray and brown, loose, Alluvium				3-2-2 N=4	18	24-15-9	24
8.0	649								
		CLAYEY SAND (SC), fine grained, green and black, medium dense, Residuum				12-12-12 N=24	10		19
			10						
		fine grained, tan, very dense, Residuum		▽		12-34-32 N=66	19	32-23-9	19
			15						
17.0	640								
		PARTIALLY WEATHERED ROCK							
18.9	638					50/5"			
		Auger Refusal at 18.9 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-27-2019 | Boring Completed: 02-27-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-129

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2036° Longitude: -80.9465°

Surface Elev.: 659 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.3	659					
TOPSOIL, 3-inches						
SANDY LEAN CLAY (CL), brown, soft, Alluvium			2-2-1 N=3	27	26-18-8	54
3.0	656					
SILTY SAND (SM), fine grained, brown, medium dense, Residuum			4-6-11 N=17	20	31-25-6	49
		5				
medium grained, brown, medium dense, Residuum			9-14-15 N=29	15	26-22-4	34
8.0	651					
PARTIALLY WEATHERED ROCK			19-48-50/2"	7	NP	48
		10				
11.0	648					
Auger Refusal at 11 Feet						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-28-2019 | Boring Completed: 02-28-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-130

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2033° Longitude: -80.9479°
Surface Elev.: 662 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.0	662	**ELASTIC SILT WITH SAND (MH)**, red, brown, and gray, soft, Alluvium
3.0	659	**SANDY FAT CLAY (CH)**, red, brown, and gray, very soft, Alluvium
6.0	656	No Recovery
7.5	654.5	**SANDY SILT (ML)**, red, brown, and gray, medium stiff, Residuum
12.0	650	**SILT WITH SAND (ML)**, red, brown, and gray, stiff, Residuum
17.0	645	**LEAN CLAY WITH SAND (CL)**, light brown, very stiff, Residuum
22.0	640	**SILT WITH SAND (ML)**, light brown, green, and white, very stiff, Residuum
32.0	630	**SANDY SILT (ML)**, green, hard, Residuum
37.0	625	***Auger Refusal at 37 Feet***

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0					
		0-1-1 N=2	38	50-31-19	71
		0-0-0 N=0	35	52-26-26	61
5		3-3-3 N=6			
		3-3-4 N=7	38	37-26-11	66
10					
		3-6-7 N=13	36	39-27-12	77
15					
		11-13-15 N=28	25	38-24-14	73
20					
		7-8-11 N=19	22	44-33-11	73
25					
		12-8-10 N=18	35	47-34-13	78
30					
		9-15-22 N=37	24	36-29-7	64
35					

GRAPHIC LOG

WATER LEVEL OBSERVATIONS

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-06-2019 | Boring Completed: 03-06-2019
Drill Rig: CME 750 | Driller: A&E
Project No.: 71195007

BORING LOG NO. B-132

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2033° Longitude: -80.9473°

Surface Elev.: 657 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
SANDY LEAN CLAY (CL), red, brown, and gray, soft, Alluvium								
3.0	654				1-1-2 N=3	30	27-19-8	67
SANDY SILT (ML), red, brown, and gray, soft to medium stiff, Residuum								
5.5	651.5	5			2-2-2 N=4	34	40-32-8	66
SILTY SAND (SM), medium grained, red, brown, and gray, very loose, Residuum			▽		2-1-1 N=2	25	NP	32
8.0	649							
Auger Refusal at 8 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-05-2019 | Boring Completed: 03-05-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

BORING LOG NO. B-134

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2033° Longitude: -80.9465°

Surface Elev.: 662 (Ft.)

GRAPHIC LOG	DEPTH		ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	0.3	**TOPSOIL**, 4-inches	661.5							
	2.0	**SANDY LEAN CLAY (CL)**, red, hard, Alluvium	660				1-10-50/0"	23	40-17-23	55
		Auger Refusal at 2 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-22-2019 | Boring Completed: 02-22-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-136

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.203° Longitude: -80.9476°

Surface Elev.: 656 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
CLAYEY SAND (SC), fine to medium grained, red, brown, and gray, very loose, Alluvium					1-1-2 N=3	19	25-17-8	18
fine to medium grained, red, brown, and gray, loose, Alluvium	650.5	5			4-4-3 N=7	37	29-21-8	48
5.5								
SILTY SAND (SM), fine to medium grained, red and brown, loose, Residuum	648				3-2-3 N=5	8	NP	20
8.0								
PARTIALLY WEATHERED ROCK		10			50/1"			
13.0	643							
Auger Refusal at 13 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-06-2019 | Boring Completed: 03-06-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

BORING LOG NO. B-138

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2031° Longitude: -80.9468°

Surface Elev.: 657 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.1	657					
TOPSOIL, 1-inch						
SANDY LEAN CLAY (CL), red, medium stiff, Alluvium			1-2-4 N=6	19	23-15-8	60
3.0	654					
LEAN CLAY WITH SAND (CL), red, stiff, Alluvium			5-5-5 N=10	31	44-26-18	72
5.5	651.5	5				
SANDY LEAN CLAY (CL), brown, very stiff, Alluvium			5-7-9 N=16	24	37-21-16	67
8.0	649					
CLAYEY SAND (SC), fine grained, brown, medium dense, Alluvium			8-5-10 N=15	12	25-17-8	41
		10				
13.5	643.5					
Auger Refusal at 13.5 Feet			50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-22-2019 | Boring Completed: 02-22-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-140

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2027° Longitude: -80.9478°

Surface Elev.: 655 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		FILL - SANDY LEAN CLAY (CL), red to brown, soft				2-2-2 N=4	25	27-17-10	55
		fine to medium grained, gray to brown, stiff				5-6-8 N=14	21	25-16-9	68
	5.5		5	▽					
		CLAYEY SAND (SC), fine to medium grained, gray to brown, dense, Residuum				10-15-22 N=37	17	27-17-10	46
	8.5	649.5 / 646.5							
		Auger Refusal at 8.5 Feet				50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-06-2019 | Boring Completed: 03-06-2019

Drill Rig: CME 750 | Driller: A&E

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-142

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2028° Longitude: -80.9472°

Surface Elev.: 656 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	656							
TOPSOIL, 2-inches								
FILL - SANDY LEAN CLAY WITH GRAVEL (CL), brown, gray, and orange, stiff				X	1-3-9 N=12	20	36-21-15	54
4.5	651.5							
CLAYEY SAND WITH GRAVEL (SC), fine grained, brown, gray, and orange, medium dense, Alluvium		5		X	0-2-22 N=24	24	28-17-11	48
6.5	649.5							
6.6	649.5			X	8-50/1"			
PARTIALLY WEATHERED ROCK								
Auger Refusal at 6.6 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-21-2019 | Boring Completed: 02-21-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-143

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2028° Longitude: -80.9468°

Surface Elev.: 660 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.1	660	**TOPSOIL**, 1-inch
		SANDY LEAN CLAY (CL), red, medium stiff, Alluvium
3.5	656.5	
		SILT WITH SAND (ML), red, hard, Residuum
5.5	654.5	
		SANDY SILT (ML), gray and brown, hard, Residuum
8.0	652	
		PARTIALLY WEATHERED ROCK
24.0	636	
		Auger Refusal at 24 Feet

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		1-1-4 N=5	23	35-19-16	65
		10-15-26 N=41	18	NP	80
5		25-28-23 N=51	19	38-27-11	67
		50/2"			
10					
		44-50/6"			
15					
		50/5"			
20					
		50/4"			

WATER LEVEL OBSERVATIONS

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-21-2019 | Boring Completed: 02-21-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-144

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2029° Longitude: -80.9463°

Surface Elev.: 672 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.3	672						
TOPSOIL, 3-inches							
FAT CLAY (CH), red, very soft, Alluvium				0-0-1 N=1	40	69-25-44	87
3.0	669						
PARTIALLY WEATHERED ROCK				25-50/4"	6	NP	52
5.5	666.5	5					
SANDY SILT (ML), tan, hard, Residuum				10-27-22 N=49	10	NP	59
8.0	664						
PARTIALLY WEATHERED ROCK				50/2"			
11.0	661	10					
Auger Refusal at 11 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-21-2019 | Boring Completed: 02-21-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-146

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2024° Longitude: -80.9474°

Surface Elev.: 655 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	655							
TOPSOIL, 2-inches								
SANDY LEAN CLAY (CL), red, medium stiff to stiff, Alluvium				X	2-4-4 N=8	18	38-20-18	54
red to gray, medium stiff to stiff, Alluvium		5		X	3-3-5 N=8	25	37-19-18	53
5.5	649.5							
CLAYEY SAND (SC), fine grained, red to gray, medium dense, Alluvium				X	5-5-6 N=11	15	32-13-19	42
8.5	646.5							
8.6 **PARTIALLY WEATHERED ROCK**	646.5				50/1"			
Auger Refusal at 8.6 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-21-2019 | Boring Completed: 02-21-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-148

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2025° Longitude: -80.9468°

Surface Elev.: 661 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	0.2 **TOPSOIL**, 2-inches	661							
	SANDY LEAN CLAY (CL), red, soft, Alluvium					1-1-2 N=3	23	26-18-8	62
	3.0	658							
	SILTY SAND (SM), fine to medium grained, gray to white, dense, Residuum					6-11-35 N=46	11	NP	47
	5.5	655.5	5						
	PARTIALLY WEATHERED ROCK					45-50/3"			
	7.6	653.5				50/1"			
	Auger Refusal at 7.6 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-21-2019 | Boring Completed: 02-21-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-150

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2022° Longitude: -80.9478°

Surface Elev.: 655 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	FILL - POORLY GRADED SAND WITH SILT (SP-SM), fine to medium grained, red, loose				3-3-3 N=6	12	NP	8
3.0	652							
	FILL - SILTY SAND (SM), fine grained, gray, very loose		▽		2-1-2 N=3	25	NP	32
	fine grained, gray, loose	5			3-3-2 N=5	25	NP	16
8.5	646.5							
	Auger Refusal at 8.5 Feet				50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-05-2019 | Boring Completed: 03-05-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-151

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2022° Longitude: -80.9474°

Surface Elev.: 655 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.1	655	**TOPSOIL**, 1-inch							
		AUGER PROBE							
3.5	651.5								
		LEAN CLAY (CL), trace organics, brown and gray, medium stiff to stiff, Alluvium				2-4-4 N=8	29	39-18-21	
5.5	649.5		5						
		SANDY LEAN CLAY (CL), trace gravel, green and gray, very stiff, Alluvium				7-10-10 N=20	22	39-15-24	
8.0	647								
		SILTY SAND (SM), fine grained, gray, green, and brown, medium dense, Residuum				13-11-10 N=21	16	NP	29
			10	▽					
13.5	641.5								
		Auger Refusal at 13.5 Feet				50/1"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:
Offset 1 feet from drilled location after getting blow counts of 50/0".

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-18-2019 | Boring Completed: 02-18-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-152

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2022° Longitude: -80.9471°

Surface Elev.: 661 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	661							
TOPSOIL, 2-inches								
SANDY LEAN CLAY (CL), red, medium stiff, Alluvium				X	2-3-3 N=6	22	31-19-12	66
3.0	658							
CLAYEY SAND WITH GRAVEL (SC), fine to medium grained, brown and red, medium dense, Residuum				X	7-12-17 N=29	26		39
5.5	655.5	5						
SANDY SILT (ML), green, hard, Residuum				X	17-35-36 N=71	17	28-26-2	65
8.0	653							
SILTY SAND (SM), fine grained, green, dense, Residuum			▽	X	10-20-20 N=40	13	26-22-4	46
		10						
fine grained, green and brown, medium dense, Residuum				X	22-17-12 N=29	10	21-19-2	41
		15						
17.0	644							
Auger Refusal at 17 Feet					50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 09-20-2019 | Boring Completed: 09-20-2019

Drill Rig: CME 55 | Driller: A&E

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-154

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2022° Longitude: -80.9464°
Surface Elev.: 680 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	680	**TOPSOIL**, 2-inches
3.0	677	**FAT CLAY WITH SAND (CH)**, red, medium stiff to stiff, Alluvium
8.0	672	**LEAN CLAY WITH SAND (CL)**, brown and orange, stiff, Residuum brown and orange, very stiff, Residuum
17.0	663	**SANDY SILT (ML)**, green, very stiff, Residuum green, hard, Residuum
32.0	648	**SILT WITH SAND (ML)**, fine grained, green, very stiff, Residuum fine grained, green and brown, very stiff to hard, Residuum
37.0	643	**SILTY SAND (SM)**, fine grained, green and brown, dense, Residuum
42.0	638	**SILTY SAND (SM)**, trace gravel, fine grained, green, dense, Residuum

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0					
		2-4-4 N=8	31	56-23-33	79
5		5-6-8 N=14	27	43-26-17	84
		9-11-13 N=24	26	37-31-6	79
10		7-10-12 N=22	15	34-26-8	62
		13-19-17 N=36	9	29-24-5	60
15					
		7-9-11 N=20	21	36-27-9	81
20					
		9-14-16 N=30	18	35-29-6	71
25					
			25	33-30-3	80
30					
		7-12-19 N=31	18	33-28-5	39
35					
		9-19-17 N=36	13	26-23-3	45
40					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-19-2019 | Boring Completed: 02-19-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-154

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2022° Longitude: -80.9464°

Surface Elev.: 680 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SANDY SILT (ML), green and brown, very stiff, Residuum								
					X	9-11-11 N=22	17	33-26-7	51
			45						
	48.0	632							
	PARTIALLY WEATHERED ROCK				X	20-44-50/4"	20	35-27-8	62
			50						
	51.5	628.5							
	Auger Refusal at 51.5 Feet					50/1"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-19-2019 | Boring Completed: 02-19-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-156

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.202° Longitude: -80.9474°

Surface Elev.: 657 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.3	657					
TOPSOIL, 3-inches						
SANDY FAT CLAY (CH), green, stiff, Alluvium			7-7-4 N=11	29	65-19-46	
3.0	654					
SILT (ML), green, very stiff, Alluvium			4-8-8 N=16	20	30-27-3	94
5.5	651.5	5				
SILTY SAND (SM), fine grained, green, medium dense, Residuum			7-14-12 N=26	21	NP	48
8.0	649					
PARTIALLY WEATHERED ROCK			26-50/6"			
11.0	646	10				
Auger Refusal at 11 Feet						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-18-2019 | Boring Completed: 02-18-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-158

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.202° Longitude: -80.9467°
Surface Elev.: 683 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	683	**TOPSOIL**, 2-inches
3.0	680	**SANDY FAT CLAY (CH)**, gray, medium stiff, Residuum
5.5	677.5	**SANDY SILT (ML)**, gray and brown, hard, Residuum
8.0	675	**SILT (ML)**, green, hard, Residuum
12.0	671	**SILTY GRAVEL WITH SAND (GM)**, fine grained, gray and green, dense, Residuum
22.0	661	**SILT (ML)**, green, very stiff, Residuum green, very stiff, Residuum
27.0	656	**SILT WITH SAND (ML)**, green, very stiff, Residuum
		SILTY SAND (SM), fine to coarse grained, brown, very dense, Residuum fine to coarse grained, gray, dense, Residuum medium grained, gray, very dense, Residuum

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		2-2-3 N=5	24	50-26-24	65
		6-18-21 N=39	14	NP	53
		18-21-27 N=48	15	34-29-5	87
10		16-19-21 N=40	5	NP	18
15		15-15-15 N=30	12	33-28-5	90
20		8-11-11 N=22	15	33-28-5	89
25		7-10-13 N=23	13	32-28-4	72
30		14-29-34 N=63	4	NP	19
35		18-23-24 N=47	8	NP	30
40		21-28-33 N=61	10	NP	40

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-18-2019 | Boring Completed: 02-18-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-158

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.202° Longitude: -80.9467°
Surface Elev.: 683 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
SILTY SAND (SM), fine to coarse grained, brown, very dense, Residuum *(continued)* fine to medium grained, gray, very dense, Residuum								
		45	▽		18-32-24 N=56	10	NP	36
47.0	636							
PARTIALLY WEATHERED ROCK		50			23-50/3"			
					50/4"			
		55			50/3"			
59.0	624							
Auger Refusal at 59 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-18-2019 | Boring Completed: 02-18-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-160

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2017° Longitude: -80.9477°

Surface Elev.: 654 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	654							
TOPSOIL, 2-inches								
SANDY LEAN CLAY (CL), red, soft, Alluvium				X	1-2-1 N=3	28	31-18-13	61
red, medium stiff, Alluvium				X	2-2-3 N=5	24	45-24-21	
5.5	648.5	5						
CLAYEY SAND (SC), fine grained, red, loose, Alluvium				X	3-3-6 N=9	21	50-19-31	47
8.0	646							
PARTIALLY WEATHERED ROCK				X	9-41-50/1"	14	34-26-8	
12.0	642	10						
Auger Refusal at 12 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:
Offset boring refused at 12 feet.

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-18-2019 | Boring Completed: 02-18-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-162

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2017° Longitude: -80.9471°
Surface Elev.: 672 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	672	**TOPSOIL**, 2-inches
		SANDY LEAN CLAY (CL), brown, very stiff, Alluvium
3.0	669	
		PARTIALLY WEATHERED ROCK
8.0	664	
		CLAYEY SAND (SC), medium grained, green, dense, Residuum
12.0	660	
		SILTY SAND (SM), very dense, Residuum
		with gravel, fine to coarse grained, brown, green, and gray, medium dense, Residuum
		fine to medium grained, green, dense, Residuum
27.0	645	
		PARTIALLY WEATHERED ROCK
39.0	633	
		Auger Refusal at 39 Feet

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0			4-4-14 N=18	12	32-23-9	60
			50/4"	3		27
5			50/3"	3		24
			11-18-18 N=36	10	35-24-11	41
10						
			21-42-16 N=58			
15						
			21-13-8 N=21	4		14
20						
			15-23-26 N=49	11	27-25-2	39
25						
			19-38-50/5"	11	25-22-3	28
30						
			50/5"			
35	▽					
			50/4"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-18-2019 | Boring Completed: 02-18-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-164

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2018° Longitude: -80.9464°

Surface Elev.: 688 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION
0.3	688	**TOPSOIL**, 3-inches
		SANDY LEAN CLAY (CL), trace organics, red, soft, Alluvium
		trace organics, light brown, hard, Alluvium
5.5	682.5	
		PARTIALLY WEATHERED ROCK
8.0	680	
		SILTY SAND (SM), fine grained, green and brown, dense, Residuum
12.0	676	
		ELASTIC SILT WITH SAND (MH), light brown and green, stiff, Residuum
17.0	671	
		SILTY SAND (SM), fine grained, light brown, medium dense, Residuum
22.0	666	
		ELASTIC SILT (MH), green and brown, medium stiff to stiff, Residuum
27.0	661	
		SANDY SILT (ML), light brown and tan, hard, Residuum
32.0	656	
		SILT WITH SAND (ML), green, brown, and blue, stiff, Residuum
37.0	651	
		SILT (ML), green, brown, and blue, very stiff, Residuum
42.0	646	

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		2-1-2 N=3	25	41-20-21	61
		6-8-28 N=36	20	41-25-16	65
		43-50/4"			
10		15-16-15 N=31	10	NP	41
15		5-5-7 N=12	31	51-31-20	84
20		12-13-12 N=25	10	NP	48
25		3-4-4 N=8	45	53-33-20	85
30		9-18-21 N=39	29	NP	58
35		4-5-6 N=11	37	49-31-18	72
40		6-7-10 N=17	25	36-29-7	93

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-15-2019 | Boring Completed: 02-15-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-164

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2018° Longitude: -80.9464°
Surface Elev.: 688 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
SILT WITH SAND (ML), blue, very stiff, Residuum								
					10-10-12 N=22	27	37-29-8	84
47.0	641	45						
SILT (ML), green, brown, and blue, very stiff, Residuum								
		50			7-14-15 N=29	22	38-30-8	93
52.0	636							
PARTIALLY WEATHERED ROCK			▽		33-50/6"			
		55						
59.5	628.5				41-50/5"			
Auger Refusal at 59.5 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-15-2019 | Boring Completed: 02-15-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-166

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2014° Longitude: -80.9474°

Surface Elev.: 665 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	665	**TOPSOIL**, 2-inches							
3.0	662	**CLAYEY SAND (SC)**, fine to medium grained, red to brown, medium dense, Alluvium				1-3-7 N=10	23	37-16-21	49
8.0	657	**CLAYEY SAND (SC)**, fine to medium grained, light brown to light gray, orange, dense, Residuum fine to medium grained, light brown to light gray, orange, medium dense, Residuum	5			17-17-17 N=34	12	31-18-13	36
						15-14-14 N=28	19	34-18-16	33
12.0	653	**SILTY CLAYEY SAND (SC-SM)**, fine grained, gray to green, very dense, Residuum	10			20-34-27 N=61	11	26-20-6	49
17.0	648	**SANDY SILT (ML)**, green, hard, Residuum	15			19-23-22 N=45	11	30-24-6	53
27.0	638	**SILTY CLAYEY SAND (SC-SM)**, fine grained, green, dense, Residuum fine grained, green, dense, Residuum	20			20-26-23 N=49	11	25-19-6	48
			25			13-26-23 N=49	10	27-20-7	48
32.0	633	**SILTY SAND (SM)**, fine grained, green, dense, Residuum	30	▽		12-21-20 N=41	11	31-24-7	31
33.7	631.5	**PARTIALLY WEATHERED ROCK**				50/2"			
		Auger Refusal at 33.7 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-14-2019 | Boring Completed: 02-14-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-167

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2015° Longitude: -80.947°
Surface Elev.: 674 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.3	674	**TOPSOIL**, 3-inches
3.0	671	**FAT CLAY WITH SAND (CH)**, red and brown, medium stiff, Residuum
5.5	668.5	**SANDY LEAN CLAY (CL)**, brown and green, hard, Residuum
8.0	666	**SILT WITH SAND (ML)**, gray, green, and brown, hard, Residuum
12.0	662	**SANDY LEAN CLAY (CL)**, gray, green, and brown, hard, Residuum
17.0	657	**SILTY CLAYEY SAND (SC-SM)**, medium grained, gray, green, and brown, very dense, Residuum
22.0	652	**PARTIALLY WEATHERED ROCK**
27.0	647	**CLAYEY SAND (SC)**, fine to medium grained, brown, orange, and gray, very dense, Residuum
32.0	642	**SILTY CLAYEY SAND WITH GRAVEL (SC-SM)**, fine to medium grained, brown, orange, and gray, very dense, Residuum
38.6	635.5	**PARTIALLY WEATHERED ROCK**
		Auger Refusal at 38.6 Feet

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		2-2-4 N=6	32	60-23-37	83
		21-25-25 N=50	12	27-19-8	50
		23-33-43 N=76	22	40-27-13	75
10		22-34-39 N=73	10	31-20-11	54
		23-27-27 N=54	4	24-20-4	40
15		34-43-50/5"			
20		27-34-25 N=59	8	28-20-8	30
		28-38-41 N=79	6	27-20-7	23
25		48-50/3"			
30		50/1"			
35					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-14-2019 | Boring Completed: 02-14-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-168

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2014° Longitude: -80.9466°
Surface Elev.: 678 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.3	678	**TOPSOIL**, 3-inches				
		SANDY LEAN CLAY (CL), red, medium stiff, Alluvium	2-3-4 N=7	23	42-21-21	53
		brown and tan, very stiff, Alluvium	6-16-7 N=23	21	46-22-24	56
5.5	672.5	**SILT (ML)**, green, hard, Residuum	24-26-24 N=50	15	36-27-9	94
			9-11-11 N=22	14	37-29-8	88
12.0	666	**SILT WITH SAND (ML)**, green, very stiff, Residuum	6-9-9 N=18	18	35-28-7	77
17.0	661	**SANDY SILT (ML)**, green and brown, stiff to very stiff, Residuum	7-7-8 N=15	29	43-28-15	67
22.0	656	**SILT (ML)**, green and brown, stiff, Residuum	5-6-7 N=13	30	38-29-9	93
27.0	651					
28.5	649.5	**SILT WITH SAND (ML)**		27	34-30-4	74
		SANDY SILT (ML), green and brown, stiff to very stiff, Residuum	4-7-8 N=15	25	NP	57
		green and brown, very stiff, Residuum	8-10-14 N=24	22	37-26-11	60
		green and brown, hard, Residuum	11-17-21 N=38	18	NP	54

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-15-2019 | Boring Completed: 02-15-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-168

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2014° Longitude: -80.9466°
Surface Elev.: 678 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SANDY SILT (ML), green and brown, stiff to very stiff, Residuum *(continued)*						
		green and brown, very stiff, Residuum	45		11-11-18 N=29	21	NP	52
47.0	631							
		SILTY SAND (SM), medium grained, green and brown, dense, Residuum	50		7-11-24 N=35	21	NP	44
52.0	626							
		PARTIALLY WEATHERED ROCK	55		26-47-50/5"			
59.5	618.5				25-50/6"			
		Auger Refusal at 59.5 Feet						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-15-2019 | Boring Completed: 02-15-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-170

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2012° Longitude: -80.9477°

Surface Elev.: 657 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	657	**TOPSOIL**, 2-inches							
3.0	654	**CLAYEY SAND (SC)**, fine to medium grained, red and brown, loose, Alluvium				4-4-4 N=8	18	28-16-12	46
		SANDY LEAN CLAY (CL), red, stiff, Alluvium				4-5-7 N=12	30	42-24-18	69
8.0	649	red, very stiff, Alluvium	5			8-8-8 N=16	24	40-22-18	68
12.0	645	**SANDY LEAN CLAY (CL)**, red and brown, stiff, Residuum				4-4-7 N=11	14	47-26-21	52
13.5	643.5	**SILTY SAND (SM)**, brown	10				11		15
17.0	640	**CLAYEY SAND (SC)**, fine to coarse grained, brown, white, and orange, medium dense, Residuum				10-11-9 N=20	27	31-21-10	15
22.0	635	**SILTY CLAYEY SAND (SC-SM)**, fine to medium grained, dark green, very dense, Residuum	15			22-34-34 N=68	9	26-21-5	39
		CLAYEY SAND (SC), fine to medium grained, dark green, dense, Residuum	20			12-17-24 N=41	14	30-21-9	40
32.5	624.5	fine to medium grained, brown, orange, and gray, very dense, Residuum	25	▽		13-19-50 N=69	13	33-23-10	40
		Auger Refusal at 32.5 Feet	30			50/1"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-13-2019 | Boring Completed: 02-13-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-172

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2012° Longitude: -80.947°
Surface Elev.: 669 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.1	669	**TOPSOIL**, 1-inch					
		FAT CLAY WITH SAND (CH), red and brown, medium stiff to stiff, Residuum		3-4-4 N=8	22	51-26-25	71
		red, very stiff, Residuum	5	5-9-9 N=18	23	54-26-28	71
5.5	663.5						
		SANDY FAT CLAY (CH), orange and gray, very stiff, Residuum		10-13-12 N=25	26	59-25-34	64
8.0	661						
		SANDY LEAN CLAY (CL), red, brown, and light gray, very stiff, Residuum	10	5-8-8 N=16	19	42-21-21	54
12.0	657						
		CLAYEY SAND (SC), fine to coarse grained, brown and white, medium dense, Residuum	15	8-8-13 N=21	10	34-20-14	39
17.0	652						
		SILTY SAND (SM), fine to coarse grained, brown and tan, loose, Residuum	20	6-3-4 N=7	16	40-26-14	29
22.0	647						
		CLAYEY SAND (SC), fine to coarse grained, brown and tan, medium dense, Residuum	25	7-11-11 N=22	8	31-17-14	18
		fine grained, brown and green, dense, Residuum	30	14-20-22 N=42	11	31-20-11	44
32.0	637						
		SILTY CLAYEY SAND (SC-SM), fine to medium grained, green, very dense, Residuum	35	25-34-26 N=60	11	28-22-6	40
		fine to medium grained, green, very dense, Residuum	40	19-45-50 N=95	12	29-22-7	48
42.0	627						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-14-2019 | Boring Completed: 02-14-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-172

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2012° Longitude: -80.947°
Surface Elev.: 669 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SANDY LEAN CLAY (CL), brown and green, hard, Residuum							
			45			24-48-49 N=97	10	31-21-10	53
		brown and orange, hard, Residuum	50			24-36-50 N=86	12	32-21-11	52
	52.0								
		617							
		PARTIALLY WEATHERED ROCK				24-50/4"			
			55						
	58.9								
		610				50/5"			
		Boring Terminated at 58.9 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-14-2019 | Boring Completed: 02-14-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-174

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2013° Longitude: -80.9463°
Surface Elev.: 685 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	685	**TOPSOIL**, 2-inches
		ELASTIC SILT WITH SAND (MH), red, stiff, Residuum
3.0	682	
		SANDY ELASTIC SILT (MH), red and white, very stiff, Residuum
5.5	679.5	
		ELASTIC SILT WITH SAND (MH), tan, very stiff, Residuum
8.0	677	
		SILT WITH SAND (ML), tan, stiff, Residuum
17.0	668	
		SILTY SAND (SM), coarse grained, tan, medium dense, Residuum
		coarse grained, tan, medium dense, Residuum
		coarse grained, tan, medium dense, Residuum
		coarse grained, tan, medium dense, Residuum
		coarse grained, tan, medium dense, Residuum

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
3		3-5-8 N=13	27	75-39-36	78
5		7-9-10 N=19	27	59-37-22	69
8		9-12-12 N=24	20	55-35-20	82
10		5-6-8 N=14	18	44-35-9	72
15		3-4-6 N=10	19	44-34-10	75
20			16	39-33-6	49
25		7-10-12 N=22	9	NP	24
30		8-9-11 N=20	15	NP	36
35		5-9-12 N=21	17	NP	36
40		5-6-11 N=17	21	NP	47

WATER LEVEL OBSERVATIONS

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-25-2019 | Boring Completed: 02-25-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-174

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2013° Longitude: -80.9463°

Surface Elev.: 685 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
SILTY SAND (SM), coarse grained, tan, medium dense, Residuum *(continued)*								
coarse grained, tan, medium dense, Residuum		45			9-10-11 N=21	18	NP	38
coarse grained, tan, medium dense, Residuum		50			9-12-17 N=29	14	NP	32
coarse grained, tan, dense, Residuum		55			16-24-25 N=49	12	NP	33
coarse grained, tan, very dense, Residuum		60			32-34-35 N=69	11	NP	28
60.0	625							
Boring Terminated at 60 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-25-2019 | Boring Completed: 02-25-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-175

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2009° Longitude: -80.9477°
Surface Elev.: 658 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION
0.2	658	**TOPSOIL**, 2-inches
3.0	655	**SANDY LEAN CLAY (CL)**, brown, very soft, Alluvium
5.5	652.5	**CLAYEY SAND (SC)**, with gravel, fine to medium grained, brown, medium dense, Alluvium
8.0	650	**ELASTIC SILT WITH SAND (MH)**, brown, stiff, Alluvium
12.0	646	**CLAYEY GRAVEL WITH SAND (GC)**, coarse grained, brown to orange, dense, Residuum
17.0	641	**SANDY LEAN CLAY (CL)**, brown, very stiff, Residuum
22.0	636	**PARTIALLY WEATHERED ROCK**
27.0	631	**CLAYEY SAND (SC)**, with gravel, fine to medium grained, gray, dense, Residuum
32.0	626	**PARTIALLY WEATHERED ROCK**
37.0	621	**SILTY SAND WITH GRAVEL (SM)**, fine to medium grained, gray, medium dense, Residuum
42.0	616	**POORLY GRADED GRAVEL WITH SILT AND SAND (GP-GM)**, fine to medium grained, dark gray, very dense, Residuum

DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5	2-0-0 N=0	19	35-20-15	59
	3-6-22 N=28	30	28-20-8	47
	3-6-5 N=11	31	53-37-16	82
10	15-17-30 N=47	16	32-22-10	14
15	7-8-10 N=18	22	37-22-15	59
20	44-50/6"			
25	18-22-28 N=50	12	42-24-18	45
30	16-40-50/4"			
35	10-13-15 N=28	11	24-21-3	29
40	34-28-30 N=58	11	NP	9

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-12-2019 | Boring Completed: 02-12-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-175

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2009° Longitude: -80.9477°

Surface Elev.: 658 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SILTY SAND (SM), fine grained, dark gray, dense, Residuum								
	47.0	611	45			8-17-14 N=31	15	27-24-3	36
	PARTIALLY WEATHERED ROCK		50			20-50/6"			
	57.5	600.5	55			50/4"			
	Auger Refusal at 57.5 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-12-2019 | Boring Completed: 02-12-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-176

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.201° Longitude: -80.9473°

Surface Elev.: 668 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.3	667.5	**TOPSOIL**, 4-inches				
		AUGER PROBE				
3.5	664.5					
		SANDY SILT (ML), tan, very stiff, Residuum	6-8-11 N=19	21	42-31-11	56
5.5	662.5					
		SILTY SAND (SM), fine to medium grained, tan and white, dense, Residuum	10-13-18 N=31	15	39-30-9	38
		fine to medium grained, tan and white, medium dense, Residuum	6-6-6 N=12	10	40-32-8	28
		fine to medium grained, brown and white, medium dense, Residuum	7-7-8 N=15	13	35-27-8	30
		fine to medium grained, white, brown, and tan, medium dense, Residuum	6-8-9 N=17	20	34-29-5	42
22.0	646					
		SILT WITH SAND (ML), light brown and white, stiff, Residuum	5-4-8 N=12	35	38-36-2	76
27.0	641					
		SILTY SAND (SM), fine to coarse grained, brown, medium dense, Residuum	8-13-9 N=22	14	35-29-6	35
		fine to coarse grained, red and brown, dense, Residuum	12-19-17 N=36	9	29-24-5	19
37.0	631					
		PARTIALLY WEATHERED ROCK	46-50/6"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-13-2019 | Boring Completed: 02-13-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-176

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.201° Longitude: -80.9473°

Surface Elev.: 668 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	PARTIALLY WEATHERED ROCK *(continued)*		45			28-50/4"			
			50			50/6"			
			55			50/6"			
	59.5	608.5				43-50/5"			
	Auger Refusal at 59.5 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-13-2019 | Boring Completed: 02-13-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-178

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.201° Longitude: -80.9466°
Surface Elev.: 679 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.1	679	**TOPSOIL**, 1-inch					
		SANDY LEAN CLAY (CL), red, medium stiff, Residuum		2-2-3 N=5	21	35-20-15	55
3.0	676						
		FAT CLAY WITH SAND (CH), red, medium stiff to stiff, Residuum		2-3-5 N=8	32	62-29-33	81
		red, very stiff, Residuum	5	7-7-9 N=16	26	77-35-42	75
8.0	671						
		SANDY ELASTIC SILT (MH), red and brown, stiff, Residuum		5-5-8 N=13	34	79-45-34	69
		red and brown, medium stiff, Residuum	10	3-3-4 N=7	6	54-37-17	69
17.0	662		15				
		SILTY SAND (SM), medium grained, tan, medium dense, Residuum		3-4-6 N=10	21	NP	42
		medium grained, tan, medium dense, Residuum	20	7-8-10 N=18	16	NP	35
		medium grained, tan, medium dense, Residuum	25	7-8-10 N=18	17	NP	33
		medium grained, tan, medium dense, Residuum	30	7-12-14 N=26	15	NP	31
		medium grained, tan, dense, Residuum	35	9-17-20 N=37	13	NP	28
			40				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-25-2019 | Boring Completed: 02-26-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-178

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.201° Longitude: -80.9466°

Surface Elev.: 679 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
SILTY SAND (SM), medium grained, tan, medium dense, Residuum *(continued)*								
medium grained, tan, dense, Residuum		45			10-14-17 N=31	12	NP	25
medium grained, tan, very dense, Residuum		50	▽		16-28-29 N=57	11	NP	30
medium grained, tan, very dense, Residuum		55			26-39-35 N=74	11	NP	26
medium grained, tan, very dense, Residuum		60			30-48-48 N=96	9	NP	24
60.0	619							
Boring Terminated at 60 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-25-2019 | Boring Completed: 02-26-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-180

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.203° Longitude: -80.9424°
Surface Elev.: 722 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0		**FILL - CLAYEY SAND WITH GRAVEL (SC)**, medium grained, red to brown, loose
7.0	715	
		FILL - SANDY FAT CLAY (CH), red to brown, stiff
12.0	710	
		FILL - CLAYEY SAND (SC), medium grained, red to brown, medium dense
17.0	705	
		PARTIALLY WEATHERED ROCK
19.0	703	
		Auger Refusal at 19 Feet

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5			2-3-6 N=9	16	51-26-25	37
10			8-4-6 N=10	24	56-27-29	56
15			20-13-11 N=24	12	39-18-21	43
			50/6"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:
First offset refused at 20 feet and second offset refused at 15 feet.

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-12-2019 | Boring Completed: 02-12-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-181

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2022° Longitude: -80.9428°
Surface Elev.: 717 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
FILL - SANDY LEAN CLAY (CL), red, medium stiff								
					3-3-4 N=7	29	46-22-24	52
7.0	710	5						
FILL - SANDY FAT CLAY (CH), red, very stiff								
					17-6-10 N=16	27	50-24-26	59
12.0	705	10						
PARTIALLY WEATHERED ROCK								
14.0	703				50/6"	20	53-24-29	52
Auger Refusal at 14 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:
First offset refused at 10 feet and second offset refused at 13 feet.

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-12-2019 | Boring Completed: 02-12-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-182

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.203° Longitude: -80.9413°
Surface Elev.: 715 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		FILL - CLAYEY GRAVEL WITH SAND (GC), coarse grained, red, loose					
			5	2-4-5 N=9	15	48-21-27	39
		coarse grained, red, medium dense	10	12-11-12 N=23	13	52-25-27	32
		coarse grained, red, very dense	15	10-50/6"	33	48-26-22	21
18.5	696.5						
		FILL - CLAYEY SAND WITH GRAVEL (SC), fine to coarse grained, red, medium dense	20	5-8-4 N=12	15	78-35-43	36
23.0	692						
		SANDY LEAN CLAY (CL), light gray and red, medium stiff to stiff, Alluvium	25	3-3-5 N=8	21	46-22-24	62
		light gray and red, stiff, Alluvium	30	2-4-6 N=10	21	45-17-28	70
30.0	685						
		Boring Terminated at 30 Feet					

GRAPHIC LOG | WATER LEVEL OBSERVATIONS | SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:
Offset refused at 15 feet.

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-11-2019 | Boring Completed: 02-11-2019
Drill Rig: CME 55 | Driller: Charleston, WV
Project No.: 71195007

BORING LOG NO. B-183

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2023° Longitude: -80.9412°

Surface Elev.: 715 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.1	715	**TOPSOIL**, 1-inch							
		FILL - CLAYEY SAND WITH GRAVEL (SC), coarse to medium grained, red, loose							
			5		X	2-2-2 N=4	21	54-24-30	45
		with brick debris, red, loose	10		X	3-4-3 N=7	33	51-23-28	27
13.0	702								
		FILL - SANDY FAT CLAY (CH), red, soft	15		X	2-3-1 N=4	19	50-24-26	59
		red, soft to medium stiff	20		X	2-1-2 N=3	22	72-34-38	64
23.0	692								
		ELASTIC SILT WITH SAND (MH), brown and gray, stiff, Alluvium	25		X	5-6-5 N=11	36	56-32-24	84
28.5	686.5								
30.0	685	**SANDY SILT (ML)**, brown and gray, stiff, Alluvium	30		X	4-4-5 N=9	33	49-31-18	70
		Boring Terminated at 30 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-12-2019 | Boring Completed: 02-12-2019

Drill Rig: CME 55 | Driller: Charleston, WV

Project No.: 71195007

BORING LOG NO. B-184

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2023° Longitude: -80.9382°
Surface Elev.: 716 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.0	716	**FILL - SANDY SILT WITH GRAVEL (ML)**, brown and red, medium stiff
3.0	713	**FILL - SANDY SILT (ML)**, brown and red, stiff
5.5	710.5	**SILT (ML)**, brown and red, stiff, Residuum
8.0	708	**SILT WITH SAND (ML)**, brown, stiff, Residuum
12.0	704	**SANDY SILT (ML)**, brown, stiff, Residuum
		brown, medium stiff to stiff, Residuum
22.0	694	**SILT (ML)**, brown, medium stiff, Residuum
25.0	691	***Boring Terminated at 25 Feet***

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0					
		4-3-4 N=7	19	49-31-18	59
5		3-4-5 N=9	24	47-39-8	64
		3-4-5 N=9	24	47-38-9	93
10		4-4-7 N=11	26	45-41-4	82
		4-3-6 N=9	23	41-36-5	67
15					
		3-3-5 N=8	26	NP	67
20					
		3-2-3 N=5	38	39-35-4	89
25					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-10-2019 | Boring Completed: 10-10-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-185

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.1995° Longitude: -80.9378°
Surface Elev.: 687 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
1.0	686	**ASPHALT**, 12-inches
3.0	684	**FILL - ELASTIC SILT WITH SAND (MH)**, trace roots, brown and red, stiff to very stiff
5.5	681.5	**FILL - SILT WITH SAND (ML)**, brown and red, very stiff
8.0	679	**FILL - SANDY LEAN CLAY (CL)**, brown, orange, and white, stiff
12.0	675	**SANDY FAT CLAY (CH)**, brown, orange, and white, stiff, Residuum
22.0	665	**SILTY SAND (SM)**, fine to coarse grained, brown and white, medium dense, Residuum fine to coarse grained, brown and white, dense, Residuum
32.0	655	**SILT WITH SAND (ML)**, brown, green, black, and white, stiff, Residuum brown, green, black, and white, stiff, Residuum
37.0	650	**SANDY SILT (ML)**, brown, green, black, and white, very stiff, Residuum
42.0	645	**SILT WITH SAND (ML)**, brown, grey, green, and white, hard, Residuum

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		5-6-9 N=15	28	73-36-37	79
		10-12-15 N=27	23	42-29-13	79
		5-5-8 N=13	29	49-22-27	59
10		4-5-6 N=11	25	53-23-30	55
15		8-8-11 N=19	22	32-26-6	38
20		14-13-17 N=30	18	30-26-4	36
25		5-4-5 N=9	40	42-34-8	76
30		4-5-8 N=13	35	40-34-6	73
35		6-7-12 N=19	30	39-32-7	63
40		8-15-22 N=37	29	35-29-6	73

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion. Surface capped with asphalt.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-15-2019 | Boring Completed: 10-15-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

BORING LOG NO. B-185

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.1995° Longitude: -80.9378°
Surface Elev.: 687 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SILTY SAND (SM), fine to medium grained, brown, green, yellow, and white, dense, Residuum								
	47.0	640	45			14-18-30 N=48	29	29-25-4	44
	PARTIALLY WEATHERED ROCK					100/3"			
	52.0	635	50						
	SANDY SILT (ML), brown, green, and white, hard, Residuum					18-34-52 N=86	19	28-24-4	59
	60.0 brown, green, and white, hard, Residuum	627	55						
	Boring Terminated at 60 Feet		60			18-25-41 N=66	19	29-24-5	52

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion. Surface capped with asphalt.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-15-2019 | Boring Completed: 10-15-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-186

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.1999° Longitude: -80.9383°

Surface Elev.: 694 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.1	694	**TOPSOIL**, 1-inch
3.0	691	**FILL - LEAN CLAY WITH SAND (CL)**, trace roots and gravel, brown, yellow, and white, medium stiff
5.5	688.5	**FILL - FAT CLAY WITH SAND (CH)**, trace roots and gravel, brown, yellow, and white, medium stiff to stiff
8.0	686	**FILL - SANDY FAT CLAY (CH)**, trace gravel, brown, red, black, white, and yellow, medium stiff to stiff
12.0	682	**FILL - SANDY ELASTIC SILT (MH)**, trace gravel, brown, red, black, white, and yellow, stiff
17.0	677	**SANDY SILT (ML)**, brown, white, and black, stiff, Residuum
		SILTY SAND (SM), fine to medium grained, brown, white, and black, medium dense, Residuum
		fine to medium grained, brown, white, and black, medium dense, Residuum
		fine to coarse grained, brown and white, medium dense, Residuum
		fine grained, green and brown, medium dense, Residuum
37.0	657	**SILT WITH SAND (ML)**, brown, very stiff, Residuum

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
			3-3-4 N=7	21	49-27-22	72
			4-4-4 N=8	28	59-28-31	79
5			4-3-5 N=8	23	51-25-26	62
			4-4-5 N=9	48	67-33-34	68
10						
	▽		6-6-7 N=13	28	41-33-8	50
15						
			4-5-7 N=12	28	43-37-6	47
20						
			6-6-9 N=15	31	39-33-6	43
25						
			6-7-9 N=16	28	34-26-8	38
30						
			12-7-12 N=19	44	31-29-2	39
35						
			33-9-9 N=18	40	36-31-5	70
40						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-16-2019 | Boring Completed: 10-16-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-186

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.1999° Longitude: -80.9383°
Surface Elev.: 694 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SILT WITH SAND (ML), brown, very stiff, Residuum *(continued)*						
		green and brown, stiff, Residuum	45					
47.0	647				4-5-6 N=11	38	38-32-6	74
		SANDY SILT (ML), green and brown, very stiff, Residuum	50		6-10-17 N=27	30	32-26-6	69
52.0	642							
		SILT WITH SAND (ML), green and brown, hard, Residuum	55		9-14-19 N=33	25	31-27-4	73
57.0	637							
		SANDY SILT (ML), green and brown, hard, Residuum						
60.0	634		60		18-18-39 N=57	30	29-26-3	62
		Boring Terminated at 60 Feet						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-16-2019 | Boring Completed: 10-16-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

BORING LOG NO. B-187

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2° Longitude: -80.9391°

Surface Elev.: 679 (Ft.)

DEPTH	Description	ELEVATION (Ft.)
	SILTY SAND (SM), fine to medium grained, black and white, medium dense, Residuum fine to medium grained, black and white, medium dense, Residuum	
5.5		673.5
	SANDY ELASTIC SILT (MH), black and brown, medium stiff, Residuum	
8.0		671
	SILTY SAND (SM), fine to medium grained, black and brown, medium dense, Residuum	
12.0		667
	SANDY SILT (ML), black and brown, very stiff, Residuum	
17.0		662
	SILTY SAND (SM), fine to medium grained, black and brown, dense, Residuum	
22.0		657
	PARTIALLY WEATHERED ROCK	
28.9		650
	Boring Terminated at 28.9 Feet	

FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
6-7-7 N=14	11	32-30-2	43
6-6-6 N=12	10	NP	39
3-3-4 N=7	30	52-37-15	70
4-5-8 N=13	18	31-28-3	48
6-10-11 N=21	13	33-27-6	54
11-15-20 N=35	11	NP	37
23-68-32/3"			
100/5"			

DEPTH (Ft.): 5, 10, 15, 20, 25

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-10-2019	Boring Completed: 10-10-2019
Drill Rig: D-50	Driller: Raleigh, NC
Project No.: 71195007	

BORING LOG NO. B-188

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2001° Longitude: -80.9396°

Surface Elev.: 689 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	689	**TOPSOIL**, 2-inches				
		ELASTIC SILT (MH), brown, red, yellow, and white, medium stiff, Residuum	2-2-3 N=5	52	67-52-15	93
		brown, red, yellow, and white, medium stiff, Residuum	3-3-4 N=7	54	71-53-18	92
		brown, red, yellow, and white, medium stiff, Residuum	3-3-4 N=7	65	74-56-18	93
		brown, red, yellow, and white, medium stiff, Residuum	3-2-5 N=7	45	66-46-20	92
		brown, red, yellow, and white, medium stiff, Residuum	2-2-5 N=7	43	53-47-6	88
17.0	672					
		SANDY SILT (ML), brown, yellow, white, and black, medium stiff, Residuum	3-3-3 N=6	32	44-41-3	60
22.0	667					
		SANDY ELASTIC SILT (MH), brown, yellow, white, and black, medium stiff, Residuum	3-2-3 N=5	39	50-47-3	54
27.0	662					
		SILTY SAND (SM), fine grained, brown and white, medium dense, Residuum	5-9-15 N=24	29	39-36-3	48
30.0	659					
		Boring Terminated at 30 Feet				

DEPTH (Ft.): 5, 10, 15, 20, 25, 30

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

GRAPHIC LOG

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-09-2019 | Boring Completed: 10-09-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

BORING LOG NO. B-189

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2004° Longitude: -80.9401°

Surface Elev.: 688 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	688	**TOPSOIL**, 2.5-inches
		SANDY SILT (ML), brown, yellow, and white, medium stiff, Residuum
		brown, yellow, and white, stiff, Residuum
5.5	682.5	
		SANDY ELASTIC SILT (MH), brown, yellow, and white, stiff, Residuum
8.0	680	
		SANDY SILT (ML), brown, yellow, and white, stiff, Residuum
12.0	676	
		PARTIALLY WEATHERED ROCK
23.5	664.5	
		Auger Refusal at 23.5 Feet

DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	4-3-4 N=7	12	49-45-4	53
5	4-5-6 N=11	15	49-45-4	56
	3-3-6 N=9	16	52-47-5	51
10	5-6-6 N=12	14	45-41-4	58
	32-68/4"			
15				
	100/3"			
20				
	60/0"			

WATER LEVEL OBSERVATIONS: SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-09-2019 | Boring Completed: 10-09-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

BORING LOG NO. B-190

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2009° Longitude: -80.9404°

Surface Elev.: 690 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.2	690							
TOPSOIL, 2-inches								
SANDY SILT (ML), brown and yellow, stiff, Residuum				X	5-4-5 N=9	16	40-36-4	59
brown and yellow, stiff, Residuum		5		X	5-6-4 N=10	21	37-34-3	59
brown and yellow, soft to medium stiff, Residuum				X	4-3-5 N=8	31	39-34-5	57
black, brown, and white, soft to medium stiff, Residuum		10		X	2-4-4 N=8	32	39-33-6	57
black, brown, and white, medium stiff, Residuum		15		X	3-3-4 N=7	37	37-34-3	57
black, brown, and white, stiff, Residuum		20		X	3-4-4 N=8	39	37-34-3	53
black, brown, and white, very stiff, Residuum		25		X	3-3-4 N=7	40	37-35-2	57
black, brown, and white, very stiff, Residuum		30		X	4-5-9 N=14	35	36-33-3	51
30.0	660							
Boring Terminated at 30 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-09-2019 | Boring Completed: 10-09-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-191

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2013° Longitude: -80.9404°

Surface Elev.: 691 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.1	691							
TOPSOIL, 1-inch								
FILL - SANDY SILT (ML), brown, red, and yellow, medium stiff				X	3-3-4 N=7	25	46-43-3	67
3.0	688							
FILL - SANDY ELASTIC SILT (MH), brown, red, and yellow, medium stiff to stiff, Residuum				X	3-4-4 N=8	23	52-42-10	62
5.5	685.5	5						
SANDY ELASTIC SILT (MH), brown, red, and yellow, soft to medium stiff, Residuum				X	2-2-2 N=4	25	50-41-9	68
8.0	683							
SANDY SILT (ML), brown, red, and yellow, soft to medium stiff, Residuum				X	2-2-2 N=4	33	49-38-11	66
		10						
brown, white, and red, medium stiff, Residuum				X	3-3-2 N=5	27	46-36-10	57
		15						
brown, white, and red, medium stiff, Residuum				X	3-4-5 N=9	27	41-34-7	64
22.0	669	20						
SILT WITH SAND (ML), brown, white, and red, very stiff, Residuum				X	5-7-9 N=16	38	48-36-12	77
		25						
27.0	664							
SANDY SILT (ML), brown, white, and red, very stiff, Residuum				X	5-8-10 N=18	37	38-29-9	65
30.0	661	30						
Boring Terminated at 30 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-09-2019 | Boring Completed: 10-09-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-192

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.202° Longitude: -80.9404°
Surface Elev.: 693 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	693	**TOPSOIL**, 2.5-inches
3.0	690	**FILL - WELL GRADED GRAVEL WITH SAND (GW)**, fine to coarse grained, black and brown, loose
8.0	685	**FILL - SILTY GRAVEL WITH SAND (GM)**, fine to coarse grained, black and brown, loose fine to coarse grained, black and brown, loose
12.0	681	**SANDY ELASTIC SILT (MH)**, black and brown, medium stiff, Residuum
17.0	676	**SANDY SILT (ML)**, black and brown, medium stiff, Residuum
32.0	661	**SILTY SAND (SM)**, fine grained, black and brown, loose, Residuum fine grained, black and brown, medium dense, Residuum fine grained, black, green, and yellow, medium dense, Residuum
37.0	656	**SILT WITH SAND (ML)**, brown, green, and yellow, very stiff, Residuum
42.0	651	**SANDY SILT (ML)**, brown, green, and yellow, hard, Residuum

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0					
		6-3-3 N=6	11	NP	5
5		5-5-4 N=9	20	48-40-8	27
		2-3-3 N=6	36	52-44-8	25
10		3-2-4 N=6	40	51-45-6	61
		2-3-4 N=7	47	44-42-2	53
15		3-4-5 N=9	37	36-33-3	37
20		4-4-6 N=10	33	33-30-3	30
25		2-4-6 N=10	33	35-32-3	43
30		6-9-12 N=21	36	41-34-7	72
35		8-13-21 N=34	33	33-28-5	58
40					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-08-2019 | Boring Completed: 10-08-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-192

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.202° Longitude: -80.9404°

Surface Elev.: 693 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SILT WITH SAND (ML), brown, green, and yellow, very stiff, Residuum							
		45		X	6-9-19 N=28	32	36-28-8	76
47.0	646							
	SILTY SAND (SM), fine grained, brown, green, and white, very dense, Residuum	50		X	14-25-33 N=58	21	27-23-4	32
52.0	641							
	SILT WITH SAND (ML), brown and green, very stiff, Residuum	55		X	8-11-18 N=29	32	34-28-6	72
58.5	634.5							
	Auger Refusal at 58.5 Feet				60/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-08-2019 | Boring Completed: 10-08-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

BORING LOG NO. B-193

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2027° Longitude: -80.9402°
Surface Elev.: 717 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.1	717	**TOPSOIL**, 1.5-inches							
		FILL - SANDY LEAN CLAY (CL), trace roots, brown, red, and black, medium stiff				5-3-3 N=6	11	38-21-17	62
3.0	714	**FILL - ELASTIC SILT WITH SAND (MH)**, trace roots, brown, red, and black, very stiff				8-10-15 N=25	26	77-43-34	83
		trace roots, brown, red, and black, very stiff	5			6-8-11 N=19	24	61-42-19	71
8.0	709	**SANDY ELASTIC SILT (MH)**, brown, red, and yellow, stiff, Residuum				5-4-7 N=11	24	58-41-17	69
		black, red, and brown, stiff, Residuum	10			5-6-8 N=14	25	56-42-14	61
		black, red, and brown, stiff, Residuum	15			3-4-7 N=11	27	55-44-11	62
		black, red, and brown, stiff, Residuum	20			4-4-6 N=10	29	53-40-13	63
		brown, black, red, and white, stiff, Residuum	25			4-4-5 N=9	31	50-39-11	63
30.0	687	***Boring Terminated at 30 Feet***	30						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-15-2019 | Boring Completed: 10-15-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

BORING LOG NO. B-194

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2032° Longitude: -80.9402°

Surface Elev.: 717 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	717	**ASPHALT**, 2.5-inches
0.6	716.5	**AGGREGATE BASE COURSE**, 4.5-inches
1.5	715.5	**FILL - SANDY LEAN CLAY (CL)**, black, brown, and yellow, stiff
2.0	715	**ASPHALT**, 5-inches
2.5	714.5	**AGGREGATE BASE COURSE**, 5-inches
5.5	711.5	**FILL - SANDY LEAN CLAY (CL)**, brown and red, stiff
		ELASTIC SILT (MH), brown, red, and white, very stiff, Residuum
		brown, red, and white, stiff, Residuum
		brown, red, and white, medium stiff, Residuum
17.0	700	
		SILT (ML), brown, red, and white, medium stiff, Residuum
22.0	695	
		SILT WITH SAND (ML), brown, red, and white, medium stiff, Residuum
27.0	690	
		ELASTIC SILT (MH), brown, red, and white, medium stiff, Residuum
30.0	687	
		Boring Terminated at 30 Feet

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		4-4-5 N=9	19	35-22-13	51
		6-6-8 N=14	22	39-20-19	70
		4-6-10 N=16	40	76-45-31	97
10		3-5-7 N=12	42	75-43-32	86
		2-3-2 N=5	60	71-42-29	88
15		2-3-4 N=7	56	48-35-13	90
20		2-3-3 N=6	47	41-33-8	82
25		2-3-3 N=6	54	52-32-20	98
30					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion. Surface capped with asphalt.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-15-2019 | Boring Completed: 10-15-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

BORING LOG NO. B-195

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2007° Longitude: -80.9395°
Surface Elev.: 695 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.0	695	**TOPSOIL**, 0.5-inch							
		SANDY SILT (ML), brown, red, yellow, and white, stiff, Residuum				4-4-5 N=9	20	47-44-3	58
		brown, red, yellow, and white, stiff, Residuum	5			5-4-5 N=9	20	43-39-4	54
		brown, red, yellow, and white, stiff, Residuum				4-4-6 N=10	23	47-45-2	60
		brown, red, and white, medium stiff to stiff, Residuum	10			4-3-5 N=8	27	45-39-6	58
		brown, red, and white, medium stiff to stiff, Residuum	15			4-3-5 N=8	22	39-37-2	54
17.0	678								
		SILT WITH SAND (ML), brown, stiff, Residuum	20			3-3-6 N=9	35	44-38-6	78
22.0	673								
		SILTY SAND (SM), fine grained, brown and white, medium dense, Residuum	25			4-5-12 N=17	24	NP	46
27.0	668								
		SANDY SILT (ML), brown and white, hard, Residuum				7-18-39 N=57	20	40-31-9	57
30.0	665		30						
		Boring Terminated at 30 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with soil cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-09-2019 | Boring Completed: 10-09-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-196

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2007° Longitude: -80.9392°

Surface Elev.: 702 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.1	702	**TOPSOIL**, 1-inch							
		FILL - SANDY ELASTIC SILT (MH), trace roots, brown and yellow, medium stiff				3-4-3 N=7	17	50-38-12	62
		stiff				4-4-7 N=11	18	52-33-19	69
5.5	696.5		5						
		FILL - ELASTIC SILT WITH SAND (MH), trace gravel, brown and red, medium stiff to stiff				3-4-4 N=8	31	59-37-22	71
8.0	694								
		FILL - SANDY SILT (ML), trace gravel, brown and red, medium stiff				3-3-4 N=7	27	47-37-10	63
12.0	690		10						
		FILL - SANDY ELASTIC SILT (MH), trace gravel, brown and red, medium stiff to stiff				2-3-5 N=8	33	52-43-9	55
17.0	685		15						
		SANDY SILT (ML), black, brown, and white, stiff, Residuum				3-5-6 N=11	33	46-40-6	52
			20	▽					
		black, brown, and white, stiff, Residuum				3-5-7 N=12	41	45-39-6	56
			25						
		black, brown, and white, stiff, Residuum				3-6-8 N=14	31	41-35-6	54
32.0	670		30						
		SILTY SAND (SM), fine to coarse grained, black, brown, and white, medium dense, Residuum				5-6-11 N=17	22	34-30-4	44
			35						
		black, brown, and white, dense, Residuum				9-17-17 N=34	26	30-28-2	40
			40						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-16-2019 | Boring Completed: 10-16-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

BORING LOG NO. B-196

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2007° Longitude: -80.9392°

Surface Elev.: 702 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SILTY SAND (SM), fine to coarse grained, black, brown, and white, medium dense, Residuum *(continued)*							
		black, brown, and white, medium dense, Residuum	45		X	5-6-8 N=14	31	35-33-2	45
		black, brown, and white, medium dense, Residuum	50		X	9-10-16 N=26	24	30-29-1	39
	52.0								
		SANDY SILT (ML), black, brown, and white, hard, Residuum	55		X	20-21-22 N=43	25	34-29-5	59
	57.3	644.5							
		Auger Refusal at 57.3 Feet				60/0"			

650

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings and/or bentonite upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-16-2019 | Boring Completed: 10-16-2019

Drill Rig: D-50 | Driller: Raleigh, NC

Project No.: 71195007

BORING LOG NO. B-197

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2011° Longitude: -80.939°
Surface Elev.: 704 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
SANDY LEAN CLAY (CL), brown, red, and white, stiff, Residuum								
3.0	701				4-4-6 N=10	12	44-24-20	61
SANDY ELASTIC SILT (MH), brown, red, and white, stiff, Residuum					4-4-6 N=10	21	59-46-13	65
red, yellow, black, and white, stiff, Residuum		5			4-4-6 N=10	26	55-44-11	65
red, yellow, black, and white, stiff, Residuum					4-4-6 N=10	29	61-43-18	67
10.0	694	10						
Boring Terminated at 10 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 10-10-2019 | Boring Completed: 10-10-2019
Drill Rig: D-50 | Driller: Raleigh, NC
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-198

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2014° Longitude: -80.9406°

Surface Elev.: 689 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION
0.7	688.5	**TOPSOIL**, 8.5-inches
5.5	683.5	**SANDY ELASTIC SILT (MH)**, trace manganese, micaceous, orange, brown, and black, medium stiff, residuum
8.0	681	**SANDY SILT (ML)**, trace manganese, micaceous, brown, black, white, and orange, medium stiff, residuum
12.0	677	**SILTY SAND (SM)**, trace manganese, micaceous, fine to medium grained, brown, black, white, and orange, loose, residuum
17.0	672	**SANDY SILT (ML)**, trace manganese, micaceous, brown, black, white, and orange, medium stiff to stiff, residuum
22.0	667	**ELASTIC SILT WITH SAND (MH)**, trace mica, green, yellow, white, and orange, medium stiff to stiff, residuum
27.0	662	**SILT (ML)**, trace mica, green, yellow, white, and orange, stiff, residuum
42.0	647	**SILTY SAND (SM)**, trace mica, fine to medium grained, brown, white, and orange, medium dense, residuum

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		2-2-3 N=5	31	51-41-10	55
		2-2-4 N=6	28	50-42-8	53
		2-2-3 N=5	32	47-38-9	62
10		2-3-4 N=7	26	NP	48
15		3-3-5 N=8	32	39-33-6	55
20		3-3-5 N=8	48	58-39-19	71
25		3-4-7 N=11	49	32-29-3	87
30		5-10-15 N=25	19	54-37-17	35
35		10-12-16 N=28	17	31-28-3	31
40		11-12-14 N=26	18	29-25-4	31

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-15-2020 | Boring Completed: 01-15-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

BORING LOG NO. B-198

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2014° Longitude: -80.9406°
Surface Elev.: 689 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SILT (ML), green, yellow, and white, very stiff, residuum				
			11-12-16 N=28	34	43-32-11	85
47.0	642					
		SILTY SAND (SM), trace mica, fine to medium grained, brown, green, and yellow, dense, residuum				
			10-14-18 N=32	20	30-28-2	40
52.0	637					
		SANDY SILT (ML), trace mica, hard, residuum				
			12-21-32 N=53	20	36-30-6	56
57.0	632					
		PARTIALLY WEATHERED ROCK (PWR), sampled as brown and orange sandy SILT				
			26-60-40/2"			
		sampled as brown and green silty SAND				
			65-35/2"			
		sampled as brown elastic SILT with sand				
			100/3"			
		sampled as brown silty SAND				
			100/4"			
		sampled as brown silty SAND				
78.7	610.5					
			100/2"			
		Boring Terminated at 78.7 Feet				

DEPTH (Ft.): 45, 50, 55, 60, 65, 70, 75

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-15-2020 | Boring Completed: 01-15-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-199

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2015° Longitude: -80.9406°

Surface Elev.: 689 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.4	688.5	**TOPSOIL**, 5-inches
3.0	686	**ELASTIC SILT WITH SAND (MH)**, trace manganese and roots, brown, orange, black, and white, soft to medium stiff, residuum
8.0	681	**SILT WITH SAND (ML)**, trace manganese and roots, brown, orange, black, and white, medium stiff, residuum
17.0	672	**SANDY SILT (ML)**, trace mica, brown to brown, orange, black, and white, medium stiff to stiff, residuum
37.0	652	**SILTY SAND (SM)**, fine to medium grained, brown, orange, black, and white, to green, orange, and yellow, medium dense, residuum
42.0	647	**SANDY SILT (ML)**, green, orange, and yellow, hard, residuum

DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0	2-1-3 N=4	48	51-44-7	82
5	3-3-3 N=6	47	49-41-8	82
	2-2-4 N=6	45	49-39-10	77
	1-3-3 N=6	34	43-38-5	59
10	2-4-7 N=11	34	41-34-7	53
15	9-13-15 N=28	25	32-27-5	48
20	7-11-13 N=24	20	33-28-5	36
25	6-10-14 N=24	20	33-28-5	34
30	7-11-18 N=29	23	38-31-7	43
35	13-22-23 N=45	16	32-27-5	55
40				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-16-2020 | Boring Completed: 01-16-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-199

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2015° Longitude: -80.9406°
Surface Elev.: 689 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SILTY SAND (SM), fine to medium grained, green, orange, and yellow, dense, residuum							
						8-14-25 N=39	21	29-25-4	42
47.0	642		45						
		SANDY SILT (ML), green, orange, and yellow, hard, residuum		▽					
			50			14-35-62 N=97	23	35-29-6	62
						10-51-37 N=88	20	29-27-2	56
57.0	632		55						
		PARTIALLY WEATHERED ROCK (PWR), sampled as brown, white, and orange silty SAND				60-40/5"			
			60						
		sampled as brown, black, and orange silty SAND				100/5"			
			65						
		sampled brown and orange sandy elastic SILT				73-27/2"			
71.5	617.5		70						
		Auger Refusal at 71.5 Feet				60/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *While drilling*

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-16-2020 | Boring Completed: 01-16-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

BORING LOG NO. B-200

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2017° Longitude: -80.9406°

Surface Elev.: 693 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.5	692.5	**TOPSOIL**, 6-inches
		ELASTIC SILT (MH), trace manganese and sand, brown, black, white, and gray, medium stiff to stiff, residuum
12.0	681	
		SANDY SILT (ML), trace manganese, brown, green, orange, and black, stiff to very stiff, residuum
27.0	666	
		SILTY SAND (SM), trace manganese, fine to medium grained, brown, white, black, and orange, to brown and gray, medium dense to dense, residuum
		trace manganese, black and white to brown and gray, dense, residuum
42.0	651	

DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0	2-2-4 N=6	53	74-50-24	96
5	4-4-5 N=9	44	73-48-25	93
	2-3-4 N=7	48	75-51-24	95
10	3-3-5 N=8	50	70-46-24	93
15	12-13-17 N=30	20	40-33-7	68
20	4-5-8 N=13	33	46-38-8	52
25	8-11-14 N=25	33	43-37-6	57
30	4-7-12 N=19	25	39-31-8	40
35	4-8-12 N=20	21	41-32-9	47
40	14-15-19 N=34	17	NP	34

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

- *While drilling*
- *At completion of drilling*
- *Measured on 1/17/2020*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-16-2020 | Boring Completed: 01-16-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-200

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2017° Longitude: -80.9406°

Surface Elev.: 693 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SANDY SILT (ML), trace manganese, black and white to brown and gray, very stiff to hard, residuum								
	47.0	646	45			7-14-16 N=30	27	37-30-7	59
	PARTIALLY WEATHERED ROCK (PWR), sampled as black and white silty SAND					40-60/5"			
	sampled as brown and black silty SAND		50	▽		63-37/2"			
	sampled as brown sandy SILT		55			100			
			60			28-72/5"			
	no recovery		65						
	68.9	624				100/5"			
	Boring Terminated at 68.9 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

- ▽ *While drilling*
- ▽ *At completion of drilling*
- ▼ *Measured on 1/17/2020*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-16-2020 | Boring Completed: 01-16-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-201

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2018° Longitude: -80.9406°

Surface Elev.: 696 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.5	695.5	**TOPSOIL**, 6-inches							
3.0	693	**GRAVELLY ELASTIC SILT (MH)**, trace manganese, sand, and roots, brown, orange, and black, soft to medium stiff, residuum				1-2-2 N=4	37	53-39-14	65
5.5	690.5	**ELASTIC SILT WITH SAND (MH)**, trace manganese and roots, brown, orange, and black, soft to medium stiff, residuum	5			1-2-2 N=4	42	56-43-13	73
8.0	688	**ELASTIC SILT (MH)**, trace manganese, sand, and roots, brown, orange, and black, stiff, residuum				3-4-5 N=9	39	61-42-19	86
12.0	684	**SANDY SILT (ML)**, trace mica, brown, white, and orange, medium stiff to stiff, residuum	10			2-3-5 N=8	25	NP	52
17.0	679	**ELASTIC SILT WITH SAND (MH)**, trace mica, brown and orange, stiff, residuum	15			4-4-6 N=10	36	57-37-20	70
22.0	674	**SANDY SILT (ML)**, trace mica, brown and orange, medium stiff to stiff, residuum	20			2-4-4 N=8	32	NP	55
27.0	669	**SILTY SAND (SM)**, trace mica, fine to medium grained, brown and orange, medium dense, residuum	25			3-5-6 N=11	26	46-37-9	44
37.0	659	**SANDY SILT (ML)**, trace mica, black, brown, white, orange, and green, stiff, residuum	30	▽		4-5-7 N=12	32	NP	55
42.0	654	**SILTY SAND (SM)**, trace roots, fine to medium grained, black, brown, white, orange, and green, medium dense, residuum	35			2-4-8 N=12	32	43-35-8	65
			40			6-11-15 N=26	22	41-33-8	39

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *While drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-20-2020 | Boring Completed: 01-20-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-201

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2018° Longitude: -80.9406°

Surface Elev.: 696 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SILT WITH SAND (ML), trace manganese, green, yellow, and black, very stiff to hard, residuum							
			45			7-9-13 N=22	29	44-32-12	77
			50			8-12-24 N=36	29	39-30-9	71
	52.0	644							
		PARTIALLY WEATHERED ROCK (PWR), sampled as brown, black, white, and orange silty SAND							
			55			36-63-37/2"	15	25-23-2	24
	57.0	639							
		SILT WITH SAND (ML), green and yellow, hard, residuum							
			60			20-22-33 N=55	24	34-27-7	77
	62.0	634							
		PARTIALLY WEATHERED ROCK (PWR), sampled as brown and yellow sandy SILT							
	64.3	631.5				100/4" 60/0"			
		Auger Refusal at 64.3 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *While drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-20-2020 | Boring Completed: 01-20-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

BORING LOG NO. B-202

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.202° Longitude: -80.9406°

Surface Elev.: 697 (Ft.)

DEPTH	ELEVATION (Ft.)
0.5	696.5
5.5	691.5
17.0	680

TOPSOIL, 6-inches

SANDY ELASTIC SILT (MH), trace mica, brown, orange, black, and red, medium stiff to stiff, residuum

SANDY SILT (ML), trace mica, brown, orange, black, and red, medium stiff, residuum

SILTY SAND (SM), trace mica, fine to medium grained, brown, orange, black, red, and white, loose, residuum

trace mica, fine to medium grained, brown, orange, black, red, and white, medium dense to dense, residuum

DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0	1-2-3 N=5	39	55-41-14	67
5	3-3-5 N=8	29	52-43-9	59
	3-3-4 N=7	27	49-44-5	56
10	3-3-4 N=7	25	46-43-3	55
	3-2-4 N=6	27	42-40-2	52
15				
	3-3-6 N=9	28	33-29-4	45
20				
	5-7-8 N=15	26	NP	38
25				
	5-7-12 N=19	21	35-32-3	50
30				
	8-15-17 N=32	17	NP	40
35				
	8-12-16 N=28	17	NP	34
40				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

- While drilling
- At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-20-2020 | Boring Completed: 01-20-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-202

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.202° Longitude: -80.9406°

Surface Elev.: 697 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
SILTY SAND (SM), trace mica, fine to medium grained, brown, orange, black, red, and white, loose, residuum *(continued)*								
		45			10-13-26 N=39	18	NP	32
47.0	650							
PARTIALLY WEATHERED ROCK (PWR), sampled as brown, black, and white sandy SILT					90-10/1"			
		50						
sampled as brown and white sandy SILT					100/5"			
		55						
					100/5"			
		60						
					100			
		65						
sampled as brown sandy SILT								
68.8	628				100/3"			
Boring Terminated at 68.8 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-20-2020 | Boring Completed: 01-20-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-203

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2014° Longitude: -80.9404°

Surface Elev.: 691 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.1	691	**TOPSOIL**, 1.5-inches							
		ELASTIC SILT WITH SAND (MH), with manganese, olive brown, black, and light brown, medium stiff to stiff, residuum				2-2-5 N=7	44	51-42-9	82
			5			2-3-6 N=9	42	55-44-11	75
5.5	685.5					3-4-6 N=10	37	34-31-3	80
		SILT WITH SAND (ML), olive brown, stiff, residuum				0-4-7 N=11	45	53-35-18	70
8.0	683		10						
		ELASTIC SILT WITH SAND (MH), olive brown, stiff, residuum							
12.0	679					5-6-8 N=14	45	54-40-14	86
		ELASTIC SILT (MH), olive brown, stiff, residuum	15						
17.0	674					2-3-6 N=9	44	42-37-5	72
		SILT WITH SAND (ML), olive brown, stiff, residuum	20						
22.0	669					3-3-5 N=8	36	45-30-15	66
		SANDY SILT (ML), gray and olive brown, medium stiff to stiff, residuum	25						
27.0	664					5-8-10 N=18	40	44-31-13	76
		SILT WITH SAND (ML), gray and olive brown, very stiff, residuum	30	▽					
32.0	659					7-12-15 N=27	24	34-29-5	48
		SILTY SAND (SM), fine to coarse grained, white and olive brown, medium dense, residuum	35						
37.0	654					5-11-18 N=29	26	36-29-7	56
		SANDY SILT (ML), light brown, very stiff, residuum	40						
42.0	649								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *While drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-20-2020 | Boring Completed: 01-20-2020

Drill Rig: D-50 | Driller: C. Odom

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-203

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2014° Longitude: -80.9404°
Surface Elev.: 691 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SILTY SAND (SM), fine to medium grained, light brown, very dense, residuum	14-13-44 N=57	16	26-24-2	37
47.0	644					
		SANDY SILT (ML), olive brown, hard, residuum	15-28-54 N=82	18	35-28-7	50
52.0	639					
		SILTY SAND (SM), white and gray, very dense, residuum	15-32-46 N=78	19	25-24-1	28
57.0	634					
		PARTIALLY WEATHERED ROCK (PWR), sampled as gray and light brown silty SAND	25-36-64/5"			
		sampled as gray and light brown sandy SILT	28-86-14/1"			
		no recovery	100/4"			
75.0	616	Auger refusal at 75.0 feet.	60/1"			
		GRANITE, gray and white, strong to weak, slightly to highly weathered, slightly to highly fractured	60/0" REC= 54.2% RQD= 0%			
			REC= 43.3% RQD= 0%			
			REC= 11.7% RQD= 0%			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-20-2020 | Boring Completed: 01-20-2020

Drill Rig: D-50 | Driller: C. Odom

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-203

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2014° Longitude: -80.9404°

Surface Elev.: 691 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	GRANITE, gray and white, strong to weak, slightly to highly weathered, slightly to highly fractured *(continued)*		85			REC= 43.3% RQD= 0%			
			90			REC= 16.7% RQD= 0%			
			95			REC= 73.0% RQD= 62.0%			
	100.2	591	100						
	Boring Terminated at 100.2 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-20-2020 | Boring Completed: 01-20-2020

Drill Rig: D-50 | Driller: C. Odom

Project No.: 71195007

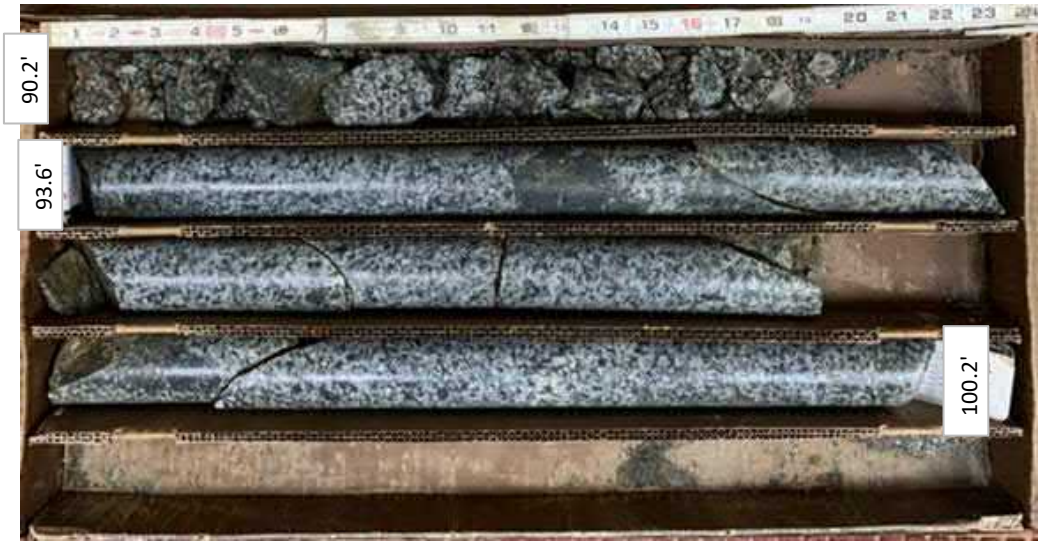
THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

ROCK CORE PHOTOGRAPHS
CLT Airport Bridge ■ Charlotte, North Carolina
April 6, 2020 ■ Terracon Project No. 71195007

Site Description: CLT Airport Bridge	*County*: Mecklenburg	*Boring Location:* B-203
Driller: C. Odom	*Core Size*: NQ	*Drill Machine:* D-50
Geologist / Engineer: S. Dhital and G. Thill	*Total Core Length:* 25.2 feet	*Date:* 1/27/2020

R-1, R-2, R-3, and R-4:
Run 1: 75' to 75.2', Run 2: 75.2’ to 80.2', Run 3: 80.2’ to 85.2’, and Run 4: 85.2’ to 90.2’

R-5 and Run-6: Run 5: 90.2' to 93.6' and Run 6: 93.6’ to 100.2’



Notes:
2) Used NQ wireline core barrel

Terracon
2701 Westport Road
Charlotte, North Carolina

Abandonment Method:
Boring backfilled with auger cutting upon completion

BORING LOG NO. B-204

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2015° Longitude: -80.9404°

Surface Elev.: 692 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION
0.6	691.5	**TOPSOIL**, 7-inches
3.0	689	**SANDY ELASTIC SILT (MH)**, trace manganese and roots, brown and black, very stiff, residuum
17.0	675	**SANDY SILT (ML)**, trace manganese, brown and black, soft to medium stiff, residuum
22.0	670	**ELASTIC SILT WITH SAND (MH)**, brown, green, white, and black, very stiff, residuum
37.0	655	**SANDY SILT (ML)**, brown, green, white, and black, to brown, green, and black, stiff to very stiff, residuum
42.0	650	**SILTY SAND (SM)**, fine to medium grained, brown and green, dense, residuum

DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0	5-7-12 N=19	37	50-39-11	62
5	3-3-4 N=7	28	49-39-10	64
	2-2-4 N=6	30	48-38-10	65
10	2-2-2 N=4	31	49-39-10	61
15	1-2-3 N=5	37	47-34-13	64
20	3-6-10 N=16	37	56-34-22	77
25	4-7-12 N=19	33	48-29-19	50
30	4-5-9 N=14	34	43-32-11	54
35	4-6-9 N=15	36	47-34-13	56
40	11-20-30 N=50	19	32-27-5	38

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-30-2020 | Boring Completed: 01-31-2020

Drill Rig: D-50 | Driller: C. Odom

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-204

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2015° Longitude: -80.9404°

Surface Elev.: 692 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SANDY SILT (ML), brown, black, white, and green, to brown, green, and orange, hard, residuum	45	▽					
						12-22-33 N=55	22	NP	51
			50			22-30-24 N=54	18	30-23-7	62
52.0	640								
		SILTY SAND (SM), fine to medium grained, brown, green, and orange, dense, residuum	55			22-27-41 N=68	21	32-25-7	45
58.5	633.5								
		PARTIALLY WEATHERED ROCK (PWR), sampled as brown, black, and white sandy SILT	60			100/4"			
			65			100/4"			
			70			100/5"			
			75			100/4"			
			80			100/2"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *While drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-30-2020 | Boring Completed: 01-31-2020

Drill Rig: D-50 | Driller: C. Odom

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-204

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2015° Longitude: -80.9404°

Surface Elev.: 692 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
			85			60/1"			
	no recovery **PARTIALLY WEATHERED ROCK (PWR)**, sampled as brown, black, and white sandy SILT *(continued)*								
			90			60/0"			
						60/6"			
			95						
	99.0	593				60/6"			
	Boring Terminated at 99 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-30-2020 | Boring Completed: 01-31-2020

Drill Rig: D-50 | Driller: C. Odom

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-205

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2017° Longitude: -80.9404°

Surface Elev.: 694 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.8	693	**TOPSOIL**, 10-inches
		ELASTIC SILT WITH SAND (MH), trace manganese, brown and black, medium stiff to stiff, residuum
17.0	677	
		SANDY SILT (ML), trace manganese, brown and black to brown, green, and orange, stiff to very stiff, residuum
32.0	662	
		SANDY SILT (ML), brown, green, and orange, hard, residuum
42.0	652	

DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5	3-5-7 N=12	34	54-44-10	74
	3-4-5 N=9	39	52-46-6	78
	4-5-8 N=13	36	50-46-4	72
10	3-3-4 N=7	38	51-47-4	73
	2-3-4 N=7	45	54-44-10	76
15				
20	2-4-6 N=10	43	49-41-8	60
	5-7-11 N=18	38	48-38-10	64
25				
30	6-8-11 N=19	37	43-35-8	56
	8-15-17 N=32		35-30-5	57
35				
	25-19-26 N=45	19	32-28-4	56
40				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

- *While drilling*
- *At completion of drilling*
- *Measured on 03/11/2020*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-30-2020 | Boring Completed: 01-30-2020

Drill Rig: D-50 | Driller: M. Morgan

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-205

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2017° Longitude: -80.9404°
Surface Elev.: 694 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		PARTIALLY WEATHERED ROCK (PWR), sampled as brown and green sandy SILT	45	100/6"			
		sampled as brown, green, and white silty SAND	50	22-78/5"			
52.0	642						
		SILTY SAND (SM), fine to medium grained, brown, white, and black, very dense, residuum	55	21-30-42 N=72	19	26-25-1	37
57.0	637						
		PARTIALLY WEATHERED ROCK (PWR), sampled as brown, white, and black silty SAND	60	100/6"			
			65	100/2"			
			70	100/5"			
			75	100/2"			
			80	100/2"			
83.8	610						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

- While drilling
- At completion of drilling
- Measured on 03/11/2020

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-30-2020 | Boring Completed: 01-30-2020
Drill Rig: D-50 | Driller: M. Morgan
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-205

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2017° Longitude: -80.9404°

Surface Elev.: 694 (Ft.)

DEPTH | ELEVATION (Ft.)

GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
				100/4"			

Boring Terminated at 83.8 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

- *While drilling*
- *At completion of drilling*
- *Measured on 03/11/2020*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-30-2020 | Boring Completed: 01-30-2020

Drill Rig: D-50 | Driller: M. Morgan

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-206

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2018° Longitude: -80.9404°

Surface Elev.: 700 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.5	699.5	**TOPSOIL**, 6-inches
3.0	697	**SILTY CLAYEY SAND (SC-SM)**, fine to medium grained, brown and black, loose, residuum
5.5	694.5	**ELASTIC SILT WITH SAND (MH)**, trace roots, red and brown, medium stiff, residuum
8.0	692	**SANDY ELASTIC SILT (MH)**, trace manganese, brown and black, stiff to very stiff, residuum
17.0	683	**SANDY SILT (ML)**, trace manganese, brown and black, stiff to very stiff, residuum
22.0	678	**ELASTIC SILT (MH)**, trace sand, brown and green, stiff, residuum
27.0	673	**SILTY SAND (SM)**, fine to medium grained, brown, black, and white, loose, residuum
32.0	668	**SANDY SILT (ML)**, brown, black, and white, stiff, residuum
		SILTY SAND (SM), fine to medium grained, brown, black, and white, medium dense to dense, residuum

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		2-2-3 N=5	23	26-20-6	35
		2-2-3 N=5	35	66-45-21	82
		5-6-9 N=15	26	51-47-4	66
10		5-7-11 N=18	19	38-34-4	55
15		3-6-6 N=12	30	47-43-4	61
20		3-3-7 N=10	48	57-52-5	86
25		2-2-4 N=6	34	40-37-3	16
30		2-3-6 N=9	31	41-35-6	55
35		4-5-7 N=12	30	38-33-5	50
40		4-5-9 N=14	26	37-33-4	37

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-29-2020 | Boring Completed: 01-29-2020

Drill Rig: D-50 | Driller: M. Morgan

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-206

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2018° Longitude: -80.9404°
Surface Elev.: 700 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SILTY SAND (SM), fine to medium grained, brown, black, and white, medium dense to dense, residuum *(continued)*	9-12-20 N=32	22	NP	30
47.0	653	**PARTIALLY WEATHERED ROCK (PWR)**, sampled as brown and white silty SAND	19-42-58/4"			
		sampled as brown silty SAND with clay	74-26/2"			
		sampled as brown, green, and orange silty SAND	80-20/2"			
		sampled as brown and white sandy SILT	100/4"			
		sampled as brown, green, and orange silty SAND	54-46/3"			
71.1	629	Auger refusal at 71.1 feet.				
		GRANITE, gray and white, strong to weak, slightly to highly weathered, slightly to moderately fractured	60/0" RED= 91.2% RQD= 91.2%			
			RED= 86.7% RQD= 30.0%			
			RED= 89.2% RQD= 54.2%			

DEPTH (Ft.): 45, 50, 55, 60, 65, 70, 75, 80

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *While drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-29-2020 | Boring Completed: 01-29-2020

Drill Rig: D-50 | Driller: M. Morgan

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-206

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2018° Longitude: -80.9404°

Surface Elev.: 700 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		GRANITE, gray and white, strong to weak, slightly to highly weathered, slightly to moderately fractured *(continued)*	85			RED= 95.8% RQD= 94.2%			
	89.8	610							
		Boring Terminated at 89.8 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-29-2020 | Boring Completed: 01-29-2020

Drill Rig: D-50 | Driller: M. Morgan

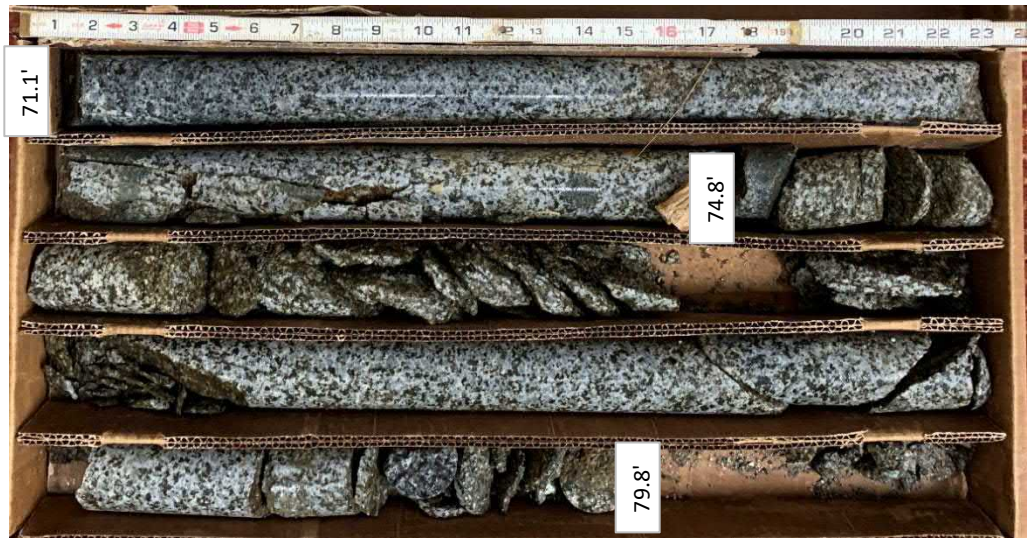
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

ROCK CORE PHOTOGRAPHS
CLT Airport Bridge ■ Charlotte, North Carolina
April 6, 2020 ■ Terracon Project No. 71195007

Site Description: CLT Airport Bridge	*County*: Mecklenburg	*Boring Location:* B-206
Driller: M. Morgan	*Core Size*: NQ	*Drill Machine:* D-50
Geologist / Engineer: Y. Li	*Total Core Length:* 18.7 feet	*Date:* 1/29/2020

R-1 and R-2: Run 1: 71.1' to 74.8' and Run 2: 74.8 to 79.8'



R-3 and Run 4: Run 3: 79.8' to 84.8' and Run 2: 84.8' to 89.8'

Notes:
1) Used NQ wireline core barrel

2701 Westport Road
Charlotte, North Carolina

Abandonment Method:
Boring backfilled with auger cutting upon completion

BORING LOG NO. B-207

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.202° Longitude: -80.9404°

Surface Elev.: 693 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION
0.4	692.5	**TOPSOIL**, 5-inches
2.0	691	**FILL - SILTY SAND (SM)**, trace organics and roots, fine to medium grained, brown, black, and green, medium dense
5.5	687.5	**POORLY GRADED SAND WITH SILT AND GRAVEL (SP-SM)**, fine to coarse grained, black and brown, loose, residuum
22.0	671	**ELASTIC SILT (MH)**, black and brown, medium stiff to stiff, residuum
32.0	661	**SILTY SAND (SM)**, fine to medium grained, black to brown, to brown, white, and black, loose to medium dense, residuum
42.0	651	**SILTY SAND (SM)**, fine to medium grained, brown, white, and black, medium dense to dense, residuum

DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0	11-9-4 N=13	9	22-19-3	23
5	2-2-2 N=4	15	NP	3
	2-3-3 N=6	66	77-47-30	94
10	2-3-3 N=6	66	79-45-34	96
15	3-4-5 N=9	59	71-44-27	88
20	3-4-6 N=10	59	70-41-29	86
25	2-2-4 N=6	52	46-40-6	31
30	3-4-7 N=11	29	36-31-5	49
35	16-15-17 N=32	20	36-29-7	47
40	6-11-15 N=26	21	31-26-5	42

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Casing Advancer

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-23-2020 | Boring Completed: 01-23-2020
Drill Rig: D-50 | Driller: C. Odom
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-207

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.202° Longitude: -80.9404°
Surface Elev.: 693 (Ft.)

DEPTH	ELEVATION (Ft.)		FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SILTY SAND (SM), fine to medium grained, brown, white, and black, very dense, residuum	14-20-44 N=64	14	27-25-2	31
47.0	646					
		PARTIALLY WEATHERED ROCK (PWR), sampled as black, brown, and white sandy SILT	12-32-68/5"			
			26-64-36/1"			
		sampled as black and white sandy SILT	100/5"			
			100/2"			
67.2	626	Auger refusal at 67.2 feet.				
		GRANITE, green and gray, strong to medium strong, slightly to moderately weathered, slightly to moderately fractured	60/0" REC= 97.2% RQD= 69.4%			
			REC= 76.5% RQD= 59.8%			
			REC= 99.2% RQD= 82.5%			
82.2	611					
		Boring Terminated at 82.2 Feet				

DEPTH (Ft.): 45, 50, 55, 60, 65, 70, 75, 80

WATER LEVEL OBSERVATIONS

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Casing Advancer

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-23-2020 | Boring Completed: 01-23-2020
Drill Rig: D-50 | Driller: C. Odom
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

ROCK CORE PHOTOGRAPHS
CLT Airport Bridge ■ Charlotte, North Carolina
April 6, 2020 ■ Terracon Project No. 71195007

Site Description: CLT Airport Bridge	*County*: Mecklenburg	*Boring Location:* B-207
Driller: C. Odom	*Core Size*: NQ	*Drill Machine:* D-50
Geologist / Engineer: Y. Li	*Total Core Length:* 18 feet	*Date:* 1/23/2020

R-1 and R-2: Run 1: 67.2' to 71.7' and Run 2: 71.7’ to 77.2'

R-3: Run 3: 77.2’ to 85.2'

Notes:
2) Used NQ wireline core barrel

2701 Westport Road
Charlotte, North Carolina

Abandonment Method:
Boring backfilled with auger cutting upon completion

BORING LOG NO. B-208

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2014° Longitude: -80.9403°

Surface Elev.: 692 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION
0.4	691.5	**TOPSOIL**, 5-inches
		SANDY ELASTIC SILT (MH), trace manganese and micaceous, brown, red, yellow, pink, and black, medium stiff to stiff, residuum
5.0	687	
		SANDY SILT (ML), trace mangenese and mics, brown, red, yellow, pink, and black, to brown and white, stiff, residuum
27.0	665	
		SILTY SAND (SM), fine to medium grained, brown and white, medium dense, residuum
32.0	660	
		ELASTIC SILT WITH SAND (MH), green, orange, and black, very stiff, residuum
37.0	655	
		SILT WITH SAND (ML), green, orange, and black, very stiff, residuum
42.0	650	

DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5	2-2-5 N=7	32	50-39-11	64
	2-3-6 N=9	31	51-38-13	70
	3-4-6 N=10	25	45-38-7	55
10	3-5-6 N=11	25	45-39-6	51
15	3-5-6 N=11	32	43-38-5	66
20	3-4-5 N=9	31	39-34-5	52
	3-4-9 N=13	30	36-31-5	53
25	4-4-8 N=12	28	33-29-4	45
30	5-7-10 N=17	38	50-35-15	83
35	10-11-17 N=28	31	41-34-7	74
40				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-14-2020 | Boring Completed: 01-14-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-208

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2014° Longitude: -80.9403°

Surface Elev.: 692 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SILTY SAND (SM), trace manganese, fine to medium grained, brown, white, and black, very dense, residuum	45	15-29-39 N=68	19	26-24-2	33
			50	18-18-38 N=56	19	27-24-3	29
			55	18-23-35 N=58	17	26-25-1	32
			60	15-21-30 N=51	16	27-25-2	26
62.0	630						
		SILTY CLAYEY SAND (SC-SM), fine to medium grained, brown and white, very dense, residuum	65	22-51-49 N=100	14	26-21-5	22
67.0	625						
		SILTY SAND (SM), trace manganese, fine to medium grained, brown, white, and orange, very dense, residuum	70	25-25-63 N=88	15	31-27-4	38
72.0	620						
		PARTIALLY WEATHERED ROCK (PWR), sampled as brown, green, and orange silty SAND	75	66-34/1"			
		sampled as brown and green sandy SILT					
79.2	613			65-35/4"			
		Boring Terminated at 79.2 Feet					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-14-2020 | Boring Completed: 01-14-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-209

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2016° Longitude: -80.9402°

Surface Elev.: 694 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.4	693.5	**TOPSOIL**, 5-inches					
		SANDY ELASTIC SILT (MH), trace roots and manganese, brown, pink, and black, medium stiff to stiff, residuum		2-3-3 N=6	31	51-41-10	56
5.5	688.5		5	3-4-5 N=9	33	53-36-17	61
		SANDY SILT (ML), trace manganese and roots, brown, black, orange, and white, medium stiff to stiff, residuum		2-3-5 N=8	28	49-40-9	55
8.0	686			3-3-5 N=8	28	50-40-10	54
		SANDY ELASTIC SILT (MH), trace manganese, brown, black, orange, and white, medium stiff to stiff, residuum	10				
12.0	682			3-3-4 N=7	31	49-37-12	54
		SANDY SILT (ML), trace manganese, brown, black, orange, and white, to green, yellow, and black, medium stiff to stiff, residuum	15				
				3-3-6 N=9	32	44-37-7	56
			20				
				3-5-9 N=14	43	47-39-8	69
27.0	667		25				
		SANDY SILT (ML), brown, white, green, and orange, hard, residuum		7-12-20 N=32	36	35-29-6	62
32.0	662		30				
		SILTY SAND (SM), fine to medium grained, brown, white, green, and orange, dense to very dense, residuum		10-14-20 N=34	18	32-25-7	37
			35				
				12-18-24 N=42	19	NP	28
			40				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

- *While drilling*
- *At completion of drilling*
- *Measured on 1/15/2020*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-14-2019 | Boring Completed: 01-14-2019

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-209

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2016° Longitude: -80.9402°

Surface Elev.: 694 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
			45						
						10-15-19 N=34	19	32-25-7	29
			50			16-22-28 N=50	16	NP	23
			55			14-20-29 N=49	21	34-28-6	36
			60			16-47-52 N=99	13	27-25-2	45
			65			100/4"			
			70			86-14/1"			
						100/4"			
						20-80/1" 60/0"			

SILTY SAND (SM), fine to medium grained, brown, white, green, and orange, dense to very dense, residuum *(continued)*

62.0 632

PARTIALLY WEATHERED ROCK (PWR), sampled as green silty SAND

sampled as brown and orange silty SAND

no recovery

74.4 619.5

Auger Refusal at 74.4 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

- *While drilling*
- *At completion of drilling*
- *Measured on 1/15/2020*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-14-2019 | Boring Completed: 01-14-2019

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-210

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2017° Longitude: -80.9402°

Surface Elev.: 694 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.9	693	**AGGREGATE BASE COURSE**, 11-inches							
		FILL - SANDY SILT (ML), trace manganese, brown, orange, black, white, green, medium stiff to stiff				3-2-4 N=6	29	46-38-8	66
						1-2-3 N=5	25	42-36-6	54
5.5	688.5		5						
		SANDY SILT (ML), trace manganese, brown, orange, black, white, green, medium stiff to stiff, residuum				3-4-7 N=11	29	46-36-10	59
						5-6-8 N=14	26	43-35-8	57
			10						
						5-5-7 N=12	29	46-36-10	65
			15						
						5-6-8 N=14	22	37-31-6	42
			20	▽					
						7-9-13 N=22	18	31-27-4	31
			25						
						7-8-10 N=18	18	32-27-5	25
			30						
						7-8-14 N=22	26	31-27-4	49
			35						
37.0	657								
		SANDY SILT (ML), brown, orange, and green, very stiff to hard, residuum		▽		5-9-16 N=25	26	39-29-10	65
			40						

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *While drilling*

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-13-2020 | Boring Completed: 01-13-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-210

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2017° Longitude: -80.9402°
Surface Elev.: 694 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SANDY SILT (ML), brown, orange, and green, very stiff to hard, residuum *(continued)*							
47.0	647		45			15-22-23 N=45	23	41-32-9	54
		PARTIALLY WEATHERED ROCK (PWR), sampled as green SILT	50			100/2"			
52.0	642								
		SILTY SAND (SM), fine to medium grained, brown, white, and black, very dense, residuum	55			27-29-57 N=86	16	NP	24
57.0	637								
		PARTIALLY WEATHERED ROCK (PWR), sampled as brown and white sandy SILT	60			34-66/5"			
64.1	630	sampled as brown, white, and orange silty SAND				89-11/1"			
		Boring Terminated at 64.1 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-13-2020 | Boring Completed: 01-13-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-211

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2019° Longitude: -80.9402°

Surface Elev.: 693 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.4	692.5	**TOPSOIL**, 5-inches
3.0	690	**FILL - SANDY SILT (ML)**, trace manganese and roots, brown, red, and yellow, medium stiff
8.0	685	**FILL - SANDY ELASTIC SILT (MH)**, trace manganese and roots, brown, red, and yellow, to green and black, medium stiff to stiff
12.0	681	**SILTY SAND (SM)**, fine to medium grained, brown, green, and orange, medium dense, residuum
22.0	671	**SANDY SILT (ML)**, trace manganese, brown, green, and orange, stiff to very stiff, residuum
32.0	661	**SILTY SAND (SM)**, fine to medium grained, brown, white, and black, medium dense, residuum
		SILTY SAND (SM), fine to medium grained, brown, white, and black, dense, residuum

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		2-2-4 N=6	33	44-37-7	57
		3-3-4 N=7	40	50-41-9	69
		4-5-5 N=10	34	51-41-10	63
10		5-8-8 N=16	19	38-31-7	47
		10-12-16 N=28	22	41-36-5	54
15					
		4-5-8 N=13	43	46-40-6	60
20					
		4-8-9 N=17	26	35-31-4	38
25					
		6-8-11 N=19	22	33-28-5	44
30					
		8-14-18 N=32	23	30-26-4	36
35					
		10-18-22 N=40	20	29-27-2	34
40					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

- While drilling
- At completion of drilling
- Measured on 1/22/2020

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-21-2020 | Boring Completed: 01-21-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-211

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2019° Longitude: -80.9402°

Surface Elev.: 693 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SILTY SAND (SM), fine to medium grained, brown, white, and black, dense, residuum *(continued)*								
	fine to medium grained, brown, white, and black, very dense, residuum		45			21-28-38 N=66	17	27-23-4	32
	47.0	646							
	PARTIALLY WEATHERED ROCK (PWR), sampled as black and white sandy SILT					24-50-50/5"			
			50						
						100/6"			
			55						
	sampled as green and black SILT					35-65/5"			
			60						
	63.5	629.5							
	Auger Refusal at 63.5 Feet					60/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

- *While drilling*
- *At completion of drilling*
- *Measured on 1/22/2020*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-21-2020 | Boring Completed: 01-21-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

BORING LOG NO. B-212

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.202° Longitude: -80.9403°
Surface Elev.: 694 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.5	693.5	**TOPSOIL**, 6-inches
3.0	691	**FILL - ELASTIC SILT (MH)**, trace sand and manganese, brown, red, yellow, and black, medium stiff
5.5	688.5	**FILL - SANDY SILT (ML)**, trace mica and manganese, brown, red, yellow, and black, medium stiff
8.0	686	**SANDY SILT (ML)**, trace mica and manganese, brown, red, yellow, and black, medium stiff, residuum
12.0	682	**SANDY ELASTIC SILT (MH)**, trace mica and manganese, brown, red, yellow, and black, medium stiff, residuum
22.0	672	**SANDY SILT (ML)**, trace mica and manganese, brown, red, yellow, and black, medium stiff, residuum
27.0	667	**SILT WITH SAND (ML)**, trace mica and manganese, brown, black, and white, stiff, residuum
32.0	662	**SANDY SILT (ML)**, trace mica and manganese, brown, black, and white, medium stiff to stiff, residuum
		SILTY SAND (SM), trace mica and manganese, fine to medium grained, brown, black, and white, medium dense, residuum

DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5	2-3-3 N=6	58	63-45-18	94
	3-3-4 N=7	35	48-42-6	59
	3-2-4 N=6	37	49-42-7	60
10	3-3-4 N=7	40	50-44-6	63
	3-2-3 N=5	41	46-39-7	65
15	2-3-4 N=7	43	48-41-7	64
	3-4-6 N=10	37	42-37-5	71
20	2-2-6 N=8	33	37-33-4	50
	5-9-11 N=20	27	35-31-4	44
25	5-5-12 N=17	28	38-34-4	45
30				
35				
40				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-21-2020 | Boring Completed: 01-21-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

BORING LOG NO. B-212

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.202° Longitude: -80.9403°
Surface Elev.: 694 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SILTY SAND (SM), trace mica and manganese, fine to medium grained, brown, black, and white, medium dense, residuum *(continued)*	45	4-5-8 N=13	27	NP	47
47.0	647					
	PARTIALLY WEATHERED ROCK (PWR), sampled as brown and white sandy SILT	50	64-36/2"			
	sampled as brown and white silty SAND	55	100/5"			
		60	100/5"			
	sampled as brown and white sandy SILT	65	100			
66.3	627.5					
	Auger Refusal at 66.3 Feet		60/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-21-2020 | Boring Completed: 01-21-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

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BORING LOG NO. B-213

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2022° Longitude: -80.9405°

Surface Elev.: 701 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.5	700.5	**TOPSOIL**, 6-inches
3.0	698	**ELASTIC SILT WITH SAND (MH)**, trace roots, quartz, and mica, brown, black, and white, soft, residuum
5.5	695.5	**SANDY ELASTIC SILT (MH)**, trace roots, quartz, and mica, brown, black, and white, soft, residuum
12.0	689	**SANDY SILT (ML)**, trace manganese and mica, brown, black, and white, medium stiff to stiff, residuum
17.0	684	**SILTY SAND (SM)**, trace manganese and mica, fine to medium grained, brown, black, and white, loose, residuum
27.0	674	**SANDY SILT (ML)**, trace manganese and mica, brown and black, medium stiff to stiff, residuum
42.0	659	**SILTY SAND (SM)**, trace manganese and mica, fine to medium grained, brown and black, medium dense to dense, residuum

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		2-1-2 N=3	34	59-40-19	72
		0-1-2 N=3	38	55-44-11	64
		3-4-6 N=10	27	49-40-9	62
10		3-3-5 N=8	22	45-38-7	55
		2-2-3 N=5	26	44-36-8	48
15		2-3-3 N=6	38	42-36-6	70
		4-5-5 N=10	29	39-34-5	63
20		4-6-9 N=15	23	35-30-5	35
25		6-9-15 N=24	19	34-30-4	37
30		11-18-27 N=45	13	30-27-3	27
35					
40					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-17-2020 | Boring Completed: 01-17-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-213

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2022° Longitude: -80.9405°
Surface Elev.: 701 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SILTY SAND (SM), trace manganese and mica, fine to medium grained, brown, black, and white, very dense, residuum	14-29-36 N=65	10	26-23-3	27
47.0	654	**PARTIALLY WEATHERED ROCK**, sampled as brown, white, and orange sandy SILT	41-59/4"			
		sampled as brown, black, and white sandy SILT	50-50/5"			
		sampled as brown, gren, and white sandy elastic SILT	25-52-48/3"			
		sampled as brown, black, and orange SILT with sand	43-57/3"			
		sampled as brown, black, and white sandy SILT	67-33/2"			
69.2	632	***Boring Terminated at 69.2 Feet***				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
While drilling
At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-17-2020 | Boring Completed: 01-17-2020
Drill Rig: D-50 | Driller: Z. Kiker
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-214

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2022° Longitude: -80.9405°

Surface Elev.: 700 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.7	699.5	**TOPSOIL**, 8-inches
		SANDY ELASTIC SILT (MH), trace mica and manganese, brown, red, orange, black, soft to medium stiff, residuum
12.0	688	**SANDY SILT (ML)**, trace manganese and mica, brown and black, to brown and white, medium stiff, residuum
27.0	673	**ELASTIC SILT WITH SAND (MH)**, trace mica, brown and white, stiff to very stiff, residuum
37.0	663	**SILTY SAND (SM)**, trace mica, fine to medium grained, brown and white, medium dense to dense, residuum

DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0	1-2-2 N=4	35	55-46-9	61
5	2-2-98/4"	40	61-44-17	67
	4-4-4 N=8			
10	2-4-3 N=7	32	50-46-4	59
15	2-2-4 N=6	29	48-42-6	54
20	2-2-3 N=5	37	47-44-3	57
25	2-2-3 N=5	31	39-35-4	51
30	3-4-6 N=10	44	54-40-14	76
35	5-9-13 N=22	41	55-39-16	77
40	7-11-16 N=27	28	36-33-3	48

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-17-2020 | Boring Completed: 01-17-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-214

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2022° Longitude: -80.9405°
Surface Elev.: 700 (Ft.)

DEPTH	Description	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SILTY SAND (SM), trace mica, fine to medium grained, brown and white, medium dense to dense, residuum *(continued)*		45			10-19-29 N=48	18	31-30-1	27
47.0	**SANDY SILT (ML)**, brown and orange, hard, residuum	653	50	▽		18-37-55 N=92	22	32-30-2	66
52.0	**PARTIALLY WEATHERED ROCK (PWR)**, sampled as brown and white sandy SILT	648	55			35-40-60/5"			
	sampled as brown and white silty SAND		60			62-38/1"			
	sampled as brown sandy SILT		65			35-65/4"			
			70			70-30/1"			
	sampled as brown and white silty SAND					100/4"			
73.8	***Boring Terminated at 73.8 Feet***	626							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS
▽ *While drilling*
▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-17-2020	Boring Completed: 01-17-2020
Drill Rig: D-50	Driller: Z. Kiker
Project No.: 71195007	

BORING LOG NO. B-215

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2022° Longitude: -80.9404°

Surface Elev.: 692 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.3	691.5	**ASPHALT**, 3.6-inches
1.3	690.5	**AGGREGATE BASE COURSE**, 12-inches
3.0	689	**SANDY SILT (ML)**, red and brown, medium stiff to stiff, residuum
5.5	686.5	**SANDY ELASTIC SILT (MH)**, red and brown, medium stiff, residuum
8.0	684	**SANDY SILT (ML)**, brown, medium stiff, residuum
17.0	675	**ELASTIC SILT (MH)**, brown, medium stiff to stiff, residuum
22.0	670	**ELASTIC SILT WITH SAND (MH)**, brown, medium stiff to stiff, residuum
37.0	655	**SILTY SAND (SM)**, coarse to medium grained, light gray and brown, medium dense to dense, residuum
42.0	650	**SILT WITH SAND (ML)**, dark gray, very stiff, residuum

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		2-3-5 N=8	29	48-41-7	57
		5-3-2 N=5	27	50-41-9	52
		3-2-5 N=7	31	46-37-9	69
10		2-3-4 N=7	59	67-47-20	94
15		1-3-7 N=10	54	65-40-25	90
20		3-4-4 N=8	47	65-40-25	81
25		4-5-9 N=14	23	42-35-7	41
30		6-8-13 N=21	18	34-26-8	33
35		8-14-19 N=33	15	32-30-2	33
40		6-8-13 N=21	28	39-30-9	71

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▼ *Measured on 03/11/2020*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-22-2020 | Boring Completed: 01-22-2020

Drill Rig: D-50 | Driller: C. Odom

Project No.: 71195007

BORING LOG NO. B-215

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2022° Longitude: -80.9404°
Surface Elev.: 692 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SANDY SILT (ML), dark gray, hard, residuum					
		45	17-24-72 N=96	19	28-24-4	66
		50	17-22-42 N=64	22	32-27-5	66
52.0	640					
	PARTIALLY WEATHERED ROCK (PWR), sampled as dark gary SILT with sand		20-49-51/2"	20	29-27-2	78
	sampled as light gray and brown sandy SILT	55	100/5"			
	sampled as dark gray silty SAND	60	100/4"			
	no recovery	65	60/0"			
70.0	622					
	GRANITE, gray, green, and white, weak to very weak, highly weathered, intensely fractured	70	60/0" REC= 14.3% RQD= 0%			
73.5	618.5					
	PARTIALLY WEATHERED ROCK (PWR), no recovery	75	100/2"			
78.5	613.5					
	Auger Refusal at 78.5 Feet		60/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Measured on 03/11/2020

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-22-2020 | Boring Completed: 01-22-2020
Drill Rig: D-50 | Driller: C. Odom
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

ROCK CORE PHOTOGRAPHS
CLT Airport Bridge ■ Charlotte, North Carolina
April 6, 2020 ■ Terracon Project No. 71195007

Site Description: CLT Airport Bridge	*County*: Mecklenburg	*Boring Location:* B-215
Driller: C. Odom	*Core Size*: NQ	*Drill Machine:* D-50
Geologist / Engineer: G. Thill	*Total Core Length:* 3.5 feet	*Date:* 1/22/2020

R-1: Run 1: 70.0' to 73.5'

Notes:
1) Used NQ wireline core barrel

2701 Westport Road
Charlotte, North Carolina

Abandonment Method:
Boring backfilled with auger cutting upon completion

BORING LOG NO. B-216

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2022° Longitude: -80.9404°
Surface Elev.: 692 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
1.5	690.5	**AGGREGATE BASE COURSE**, 18-inches
		SANDY SILT (ML), trace mica, light brown, medium stiff, residuum
8.0	684	
		SILTY SAND (SM), trace mica, fine to medium grained, light brown, loose, residuum
17.0	675	
		SANDY SILT (ML), trace mica, light brown, medium stiff to stiff, residuum
22.0	670	
		SILTY SAND (SM), trace mica, fine to medium grained, white and light brown, loose to medium dense, residuum
37.0	655	
		SILTY SAND (SM), trace mica, fine to medium grained, white and light brown, very dense, residuum
42.0	650	

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		2-3-4 N=7	29	46-40-6	54
		2-2-4 N=6	28	47-38-9	57
		1-2-3 N=5	34	42-37-5	53
10		2-3-4 N=7	35	43-41-2	50
		1-2-3 N=5	34	41-37-4	46
15		2-3-5 N=8	36	37-33-4	53
		1-3-4 N=7	30	37-33-4	32
20		3-3-7 N=10	28	37-31-6	44
		5-10-15 N=25	21	33-28-5	32
25		11-33-34 N=67	15	28-24-4	33
30					
35					
40					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-21-2020 | Boring Completed: 01-21-2020
Drill Rig: D-50 | Driller: C. Odom
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

BORING LOG NO. B-216

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2022° Longitude: -80.9404°

Surface Elev.: 692 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		PARTIALLY WEATHERED ROCK (PWR), sampled as white and light brown, silty SAND							
			45			42-58/4"			
			50			42-47/4"			
			55			34-54-46/5"	20	25-24-1	40
	57.0	635							
		SILTY SAND (SM), trace mica, fine to medium grained, white and light brown, dense, residuum							
			60			15-22-20 N=42	22	29-24-5	31
	62.0	630							
		PARTIALLY WEATHERED ROCK (PWR), sampled as white and light brown, silty SAND							
			65			55-45/2"			
						60/1"			
			70						
	73.5	618.5							
		Auger Refusal at 73.5 Feet				60/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Mud Rotary- 2 15/16" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-21-2020 | Boring Completed: 01-21-2020

Drill Rig: D-50 | Driller: C. Odom

Project No.: 71195007

BORING LOG NO. B-217

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2022° Longitude: -80.9402°

Surface Elev.: 692 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.4	691.5	**TOPSOIL**, 5-inches
3.0	689	**FILL - ELASTIC SILT WITH SAND (MH)**, trace clay, brown and red, medium stiff
5.5	686.5	**FILL - SANDY SILT (ML)**, trace manganese and roots, brown and red, medium stiff
8.0	684	**SILT WITH SAND (ML)**, trace manganese, brown and black, medium stiff, residuum
12.0	680	**ELASTIC SILT WITH SAND (MH)**, trace manganese, brown and black, medium stiff, residuum
22.0	670	**SILT (ML)**, trace manganese and sand, brown and black, medium stiff, residuum
42.0	650	**SILTY SAND (SM)**, fine to medium grained, brown, white, and yellow, medium dense to dense, residuum

DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0	2-3-4 N=7	35	52-36-16	70
5	2-2-3 N=5	38	49-40-9	60
	2-2-4 N=6	40	49-38-11	82
	2-2-3 N=5	44	53-41-12	83
10	1-2-3 N=5	45	49-37-12	89
15	2-2-5 N=7	37	45-35-10	88
20	3-4-6 N=10	27	42-32-10	44
25	18-20-16 N=36	24	38-28-10	30
30	9-11-12 N=23	24	NP	43
35	6-12-15 N=27	21	NP	39
40				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

- While drilling
- At completion of drilling
- Measured on 1/23/2020

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-22-2020 | Boring Completed: 01-22-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

BORING LOG NO. B-217

PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2022° Longitude: -80.9402°

Surface Elev.: 692 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		PARTIALLY WEATHERED ROCK (PWR), sampled as brown and gray silty SAND	45			100/2"			
			50			100/4"			
		sampled as brown and black silty SAND							
	54.5	637.5				50-50/1"			
		Auger Refusal at 54.5 Feet				60/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

- *While drilling*
- *At completion of drilling*
- *Measured on 1/23/2020*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 01-22-2020 | Boring Completed: 01-22-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

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B.2 GENERAL NOTES AND CPT SOUNDING LOGS

CPT GENERAL NOTES

DESCRIPTION OF MEASUREMENTS AND CALIBRATIONS

To be reported per ASTM D5778:

Uncorrected Tip Resistance, q_c
Measured force acting on the cone divided by the cone's projected area

Corrected Tip Resistance, q_t
Cone resistance corrected for porewater and net area ratio effects
$q_t = q_c + u_2(1 - a)$
Where a is the net area ratio, a lab calibration of the cone typically between 0.70 and 0.85

Pore Pressure, u
Pore pressure measured during penetration
u_1 - sensor on the face of the cone
u_2 - sensor on the shoulder (more common)

Sleeve Friction, f_s
Frictional force acting on the sleeve divided by its surface area

Normalized Friction Ratio, F_r
The ratio as a percentage of f_s to q_t, accounting for overburden pressure

To be reported per ASTM D7400, if collected:

Shear Wave Velocity, V_s
Measured in a Seismic CPT and provides direct measure of soil stiffness

DESCRIPTION OF GEOTECHNICAL CORRELATIONS

Normalized Tip Resistance, Q_{tn}
$Q_{tn} = ((q_t - \sigma_{v0})/P_a)(P_a/\sigma'_{v0})^n$
$n = 0.381(I_c) + 0.05(\sigma'_{v0}/P_a) - 0.15$

Over Consolidation Ratio, OCR
$OCR\ (1) = 0.25(Q_{tn})^{1.25}$
$OCR\ (2) = 0.33(Q_{tn})$

Undrained Shear Strength, S_u
$S_u = Q_{tn} \times \sigma'_{v0}/N_{kt}$
N_{kt} is a soil-specific factor (shown on S_u plot)

Sensitivity, S_t
$S_t = (q_t - \sigma_{v0}/N_{kt}) \times (1/f_s)$

Effective Friction Angle, ϕ'
$\phi'\ (1) = \tan^{-1}(0.373[\log(q_t/\sigma'_{v0}) + 0.29])$
$\phi'\ (2) = 17.6 + 11[\log(Q_{tn})]$

Unit Weight, γ
$\gamma = (0.27[\log(F_r)]+0.36[\log(q_t/atm)]+1.236) \times \gamma_{water}$
σ_{v0} is taken as the incremental sum of the unit weights

Small Strain Shear Modulus, G_0
$G_0\ (1) = \rho V_s^2$
$G_0\ (2) = 0.015 \times 10^{(0.55Ic + 1.68)}(q_t - \sigma_{v0})$

Soil Behavior Type Index, I_c
$I_c = [(3.47 - \log(Q_{tn}))^2 + (\log(F_r) + 1.22)^2]^{0.5}$

SPT N_{60}
$N_{60} = (q_t/atm) / 10^{(1.1268 - 0.2817Ic)}$

Elastic Modulus, E_s (assumes $q/q_{ultimate} \sim 0.3$, i.e. FS = 3)
$E_s\ (1) = 2.6\psi G_0$ where $\psi = 0.56 - 0.33\log Q_{tn,clean\ sand}$
$E_s\ (2) = G_0$
$E_s\ (3) = 0.015 \times 10^{(0.55Ic + 1.68)}(q_t - \sigma_{v0})$
$E_s\ (4) = 2.5q_t$

Constrained Modulus, M
$M = \alpha_M(q_t - \sigma_{v0})$
For $I_c > 2.2$ (fine-grained soils)
$\alpha_M = Q_{tn}$ with maximum of 14
For $I_c < 2.2$ (coarse-grained soils)
$\alpha_M = 0.0188 \times 10^{(0.55Ic + 1.68)}$

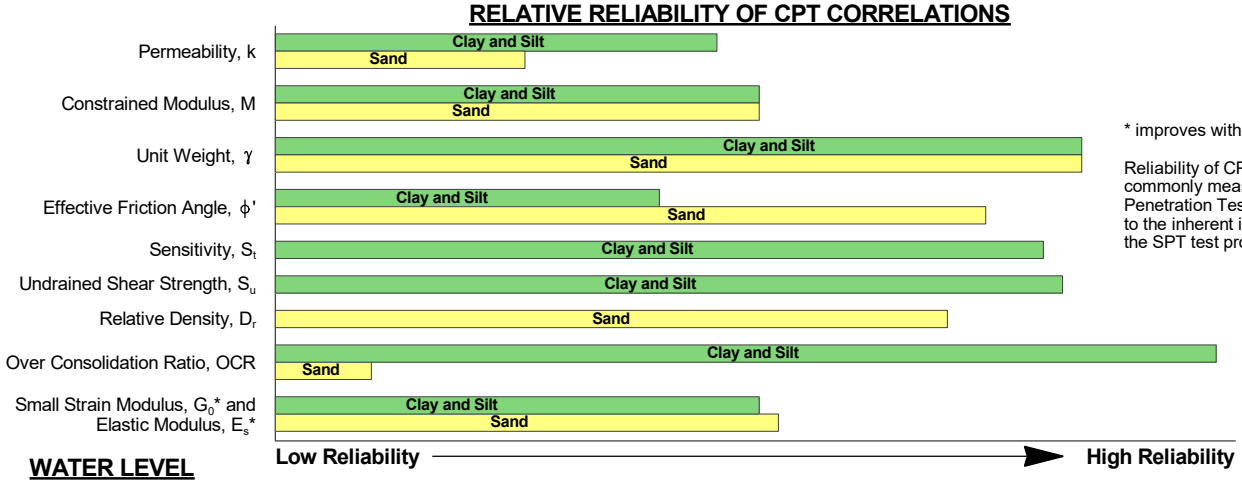
Hydraulic Conductivity, k
For $1.0 < I_c < 3.27$ $k = 10^{(0.952 - 3.04Ic)}$
For $3.27 < I_c < 4.0$ $k = 10^{(-4.52 - 1.37Ic)}$

Relative Density, D_r
$D_r = (Q_{tn} / 350)^{0.5} \times 100$

REPORTED PARAMETERS

CPT logs as provided, at a minimum, report the data as required by ASTM D5778 and ASTM D7400 (if applicable). This minimum data include q_t, f_s, and u. Other correlated parameters may also be provided. These other correlated parameters are interpretations of the measured data based upon published and reliable references, but they do not necessarily represent the actual values that would be derived from direct testing to determine the various parameters. To this end, more than one correlation to a given parameter may be provided. The following chart illustrates estimates of reliability associated with correlated parameters based upon the literature referenced below.

RELATIVE RELIABILITY OF CPT CORRELATIONS



* improves with seismic V_s measurements

Reliability of CPT-predicted N_{60} values as commonly measured by the Standard Penetration Test (SPT) is not provided due to the inherent inaccuracy associated with the SPT test procedure.

WATER LEVEL

The groundwater level at the CPT location is used to normalize the measurements for vertical overburden pressures and as a result influences the normalized soil behavior type classification and correlated soil parameters. The water level may either be "measured" or "estimated:"

Measured - Depth to water directly measured in the field

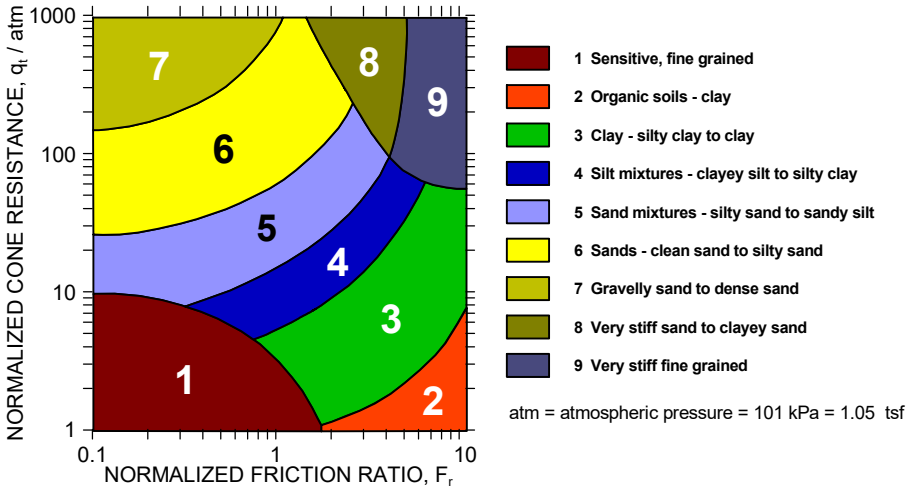
Estimated - Depth to water interpolated by the practitioner using pore pressure measurements in coarse grained soils and known site conditions

While groundwater levels displayed as "measured" more accurately represent site conditions at the time of testing than those "estimated," in either case the groundwater should be further defined prior to construction as groundwater level variations will occur over time.

CONE PENETRATION SOIL BEHAVIOR TYPE

The estimated stratigraphic profiles included in the CPT logs are based on relationships between corrected tip resistance (q_t), friction resistance (f_s), and porewater pressure (u_2). The normalized friction ratio (F_r) is used to classify the soil behavior type.

Typically, silts and clays have high F_r values and generate large excess penetration porewater pressures; sands have lower F_r's and do not generate excess penetration porewater pressures. The adjacent graph (Robertson *et al.*) presents the soil behavior type correlation used for the logs. This normalized SBT chart, generally considered the most reliable, does not use pore pressure to determine SBT due to its lack of repeatability in onshore CPTs.



atm = atmospheric pressure = 101 kPa = 1.05 tsf

REFERENCES

Kulhawy, F.H., Mayne, P.W., (1997). "Manual on Estimating Soil Properties for Foundation Design," Electric Power Research Institute, Palo Alto, CA.

Mayne, P.W., (2013). "Geotechnical Site Exploration in the Year 2013," Georgia Institue of Technology, Atlanta, GA.

Robertson, P.K., Cabal, K.L. (2012). "Guide to Cone Penetration Testing for Geotechnical Engineering," Signal Hill, CA.

Schmertmann, J.H., (1970). "Static Cone to Compute Static Settlement over Sand," *Journal of the Soil Mechanics and Foundations Division*, 96(SM3), 1011-1043.

Terracon

Exhibit: B.2.A

CPT LOG NO. C-001

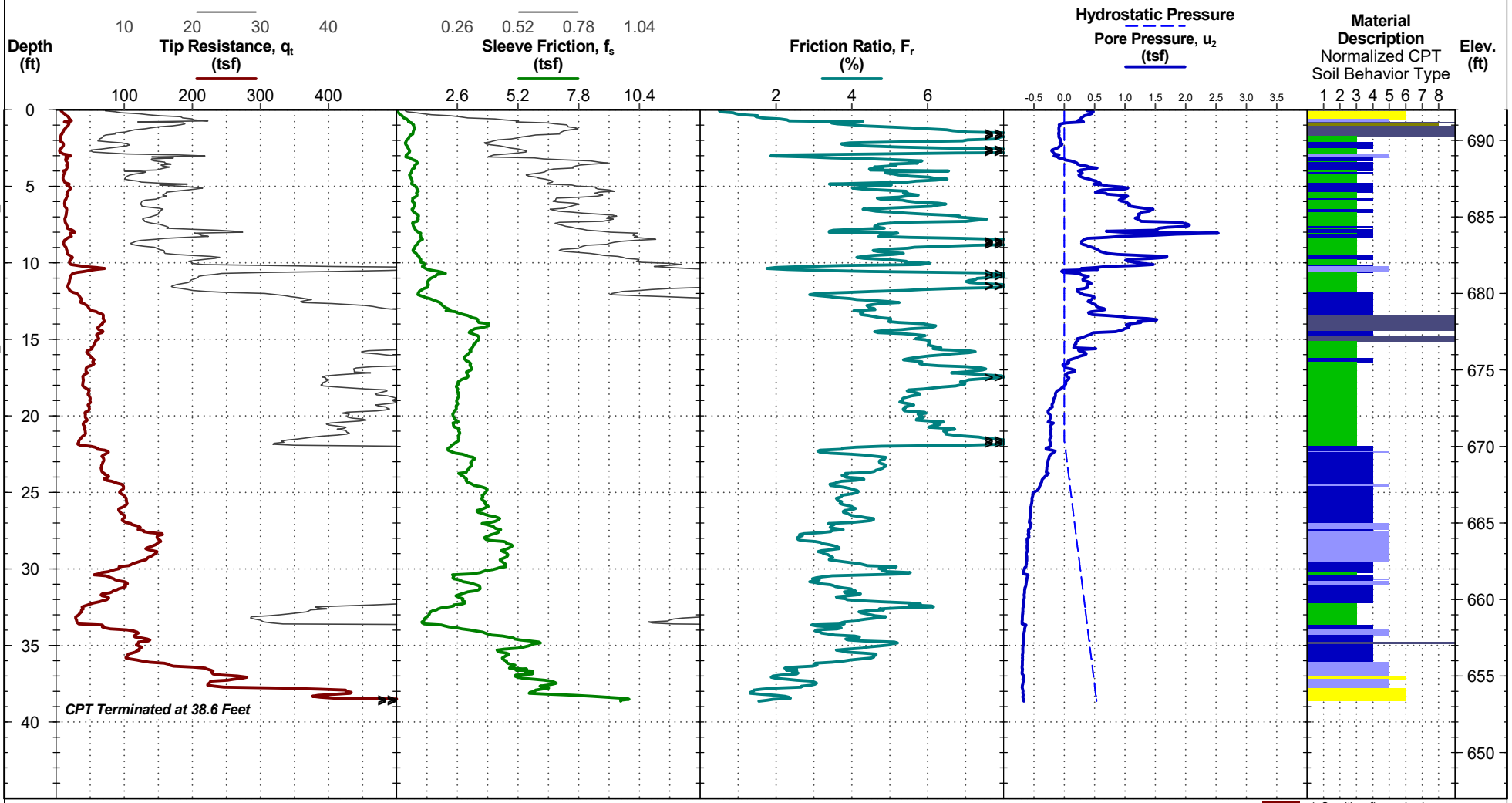
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 692 ft
Latitude: 35.208241°
Longitude: -80.948269°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/20/2019	CPT Completed: 3/20/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-005

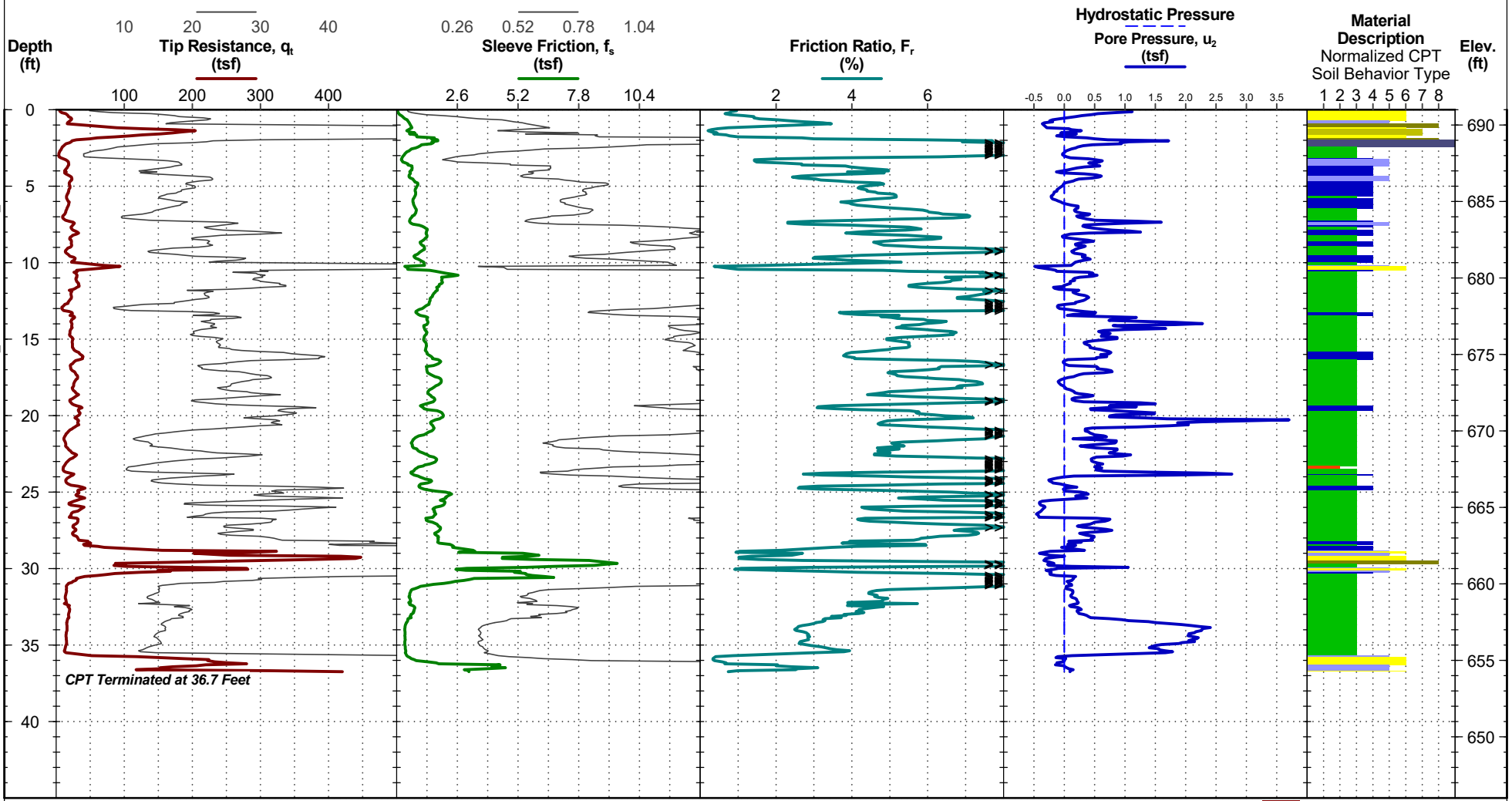
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 691 ft
Latitude: 35.205921°
Longitude: -80.948275°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
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Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/20/2019	CPT Completed: 3/20/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CPT REPORT 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

CPT LOG NO. C-013

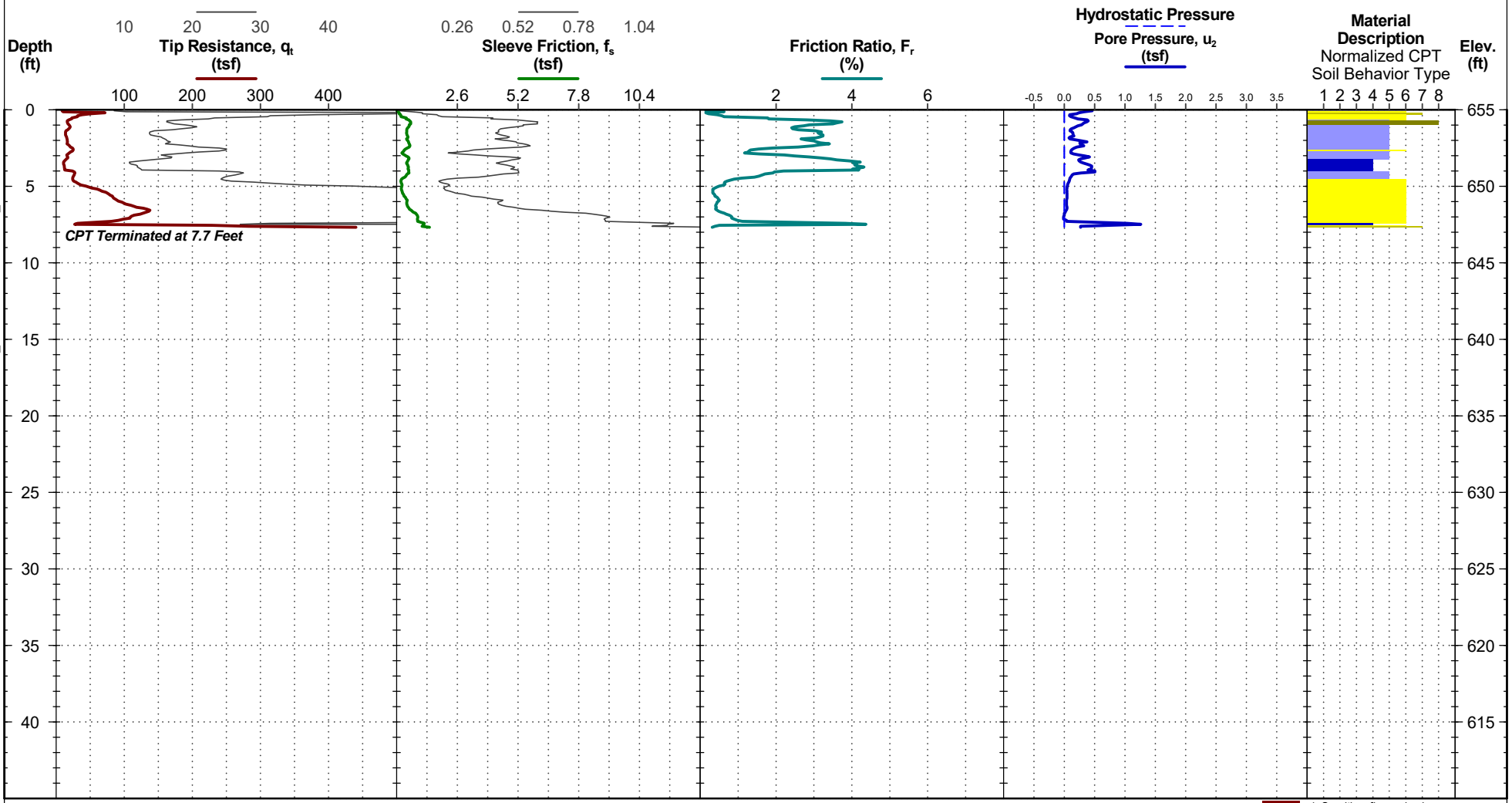
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 655 ft
Latitude: 35.201674°
Longitude: -80.948014°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/22/2019	CPT Completed: 3/22/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-015

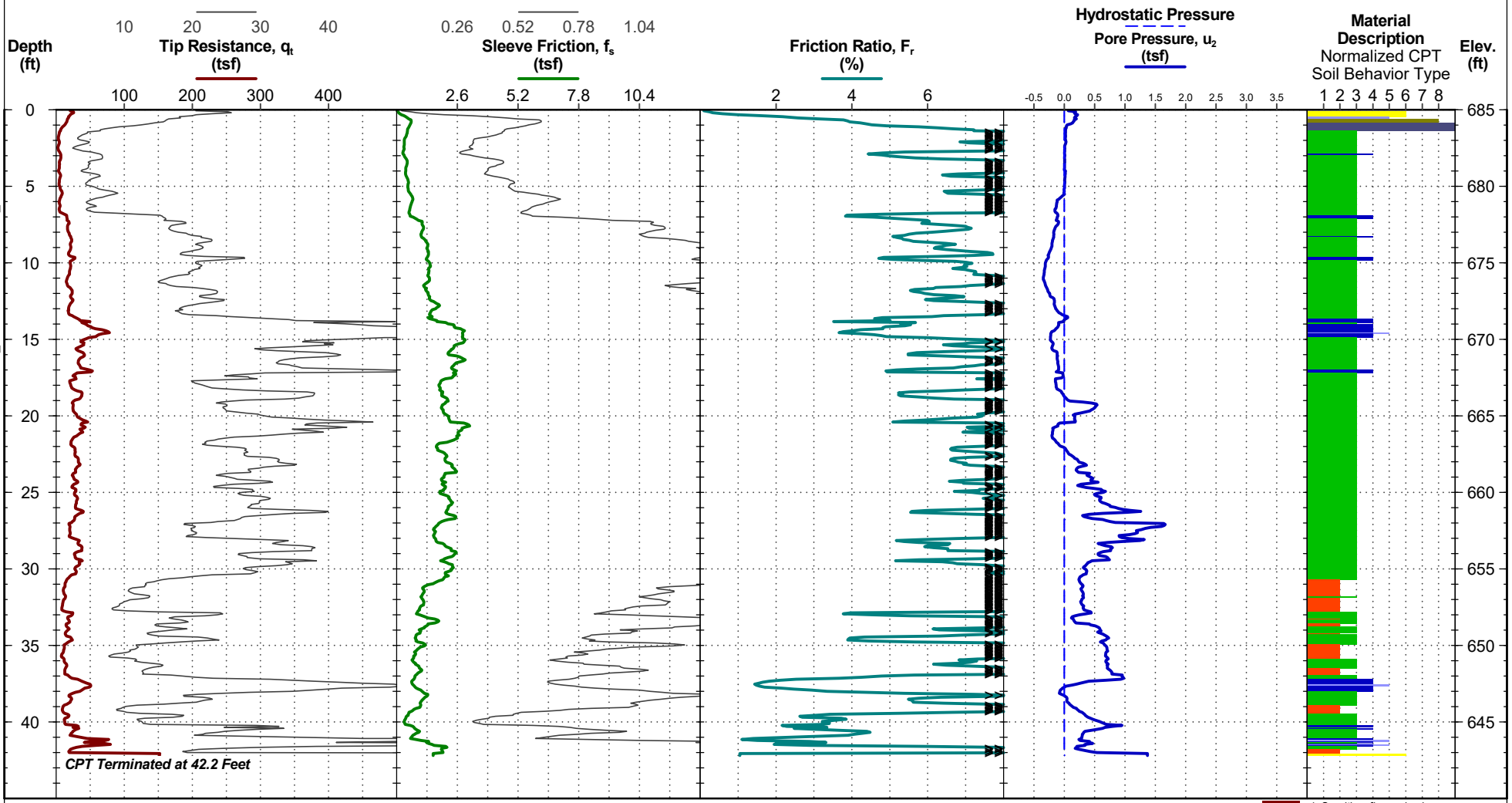
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 685 ft
Latitude: 35.200808°
Longitude: -80.948492°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/20/2019	CPT Completed: 3/20/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CPT REPORT 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

CPT LOG NO. C-017

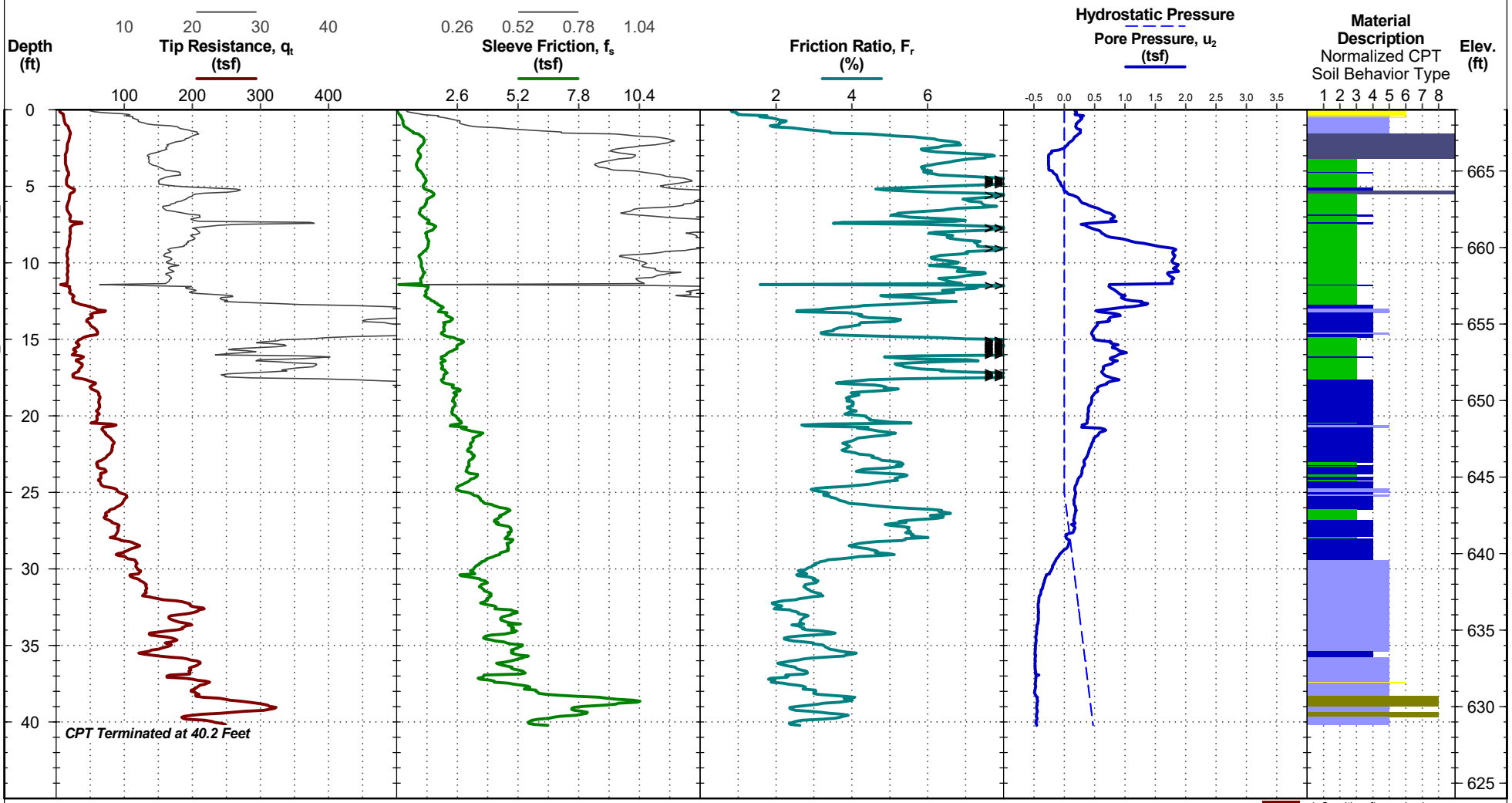
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 669 ft
Latitude: 35.200809433°
Longitude: -80.947379536°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/11/2019	CPT Completed: 2/11/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-047

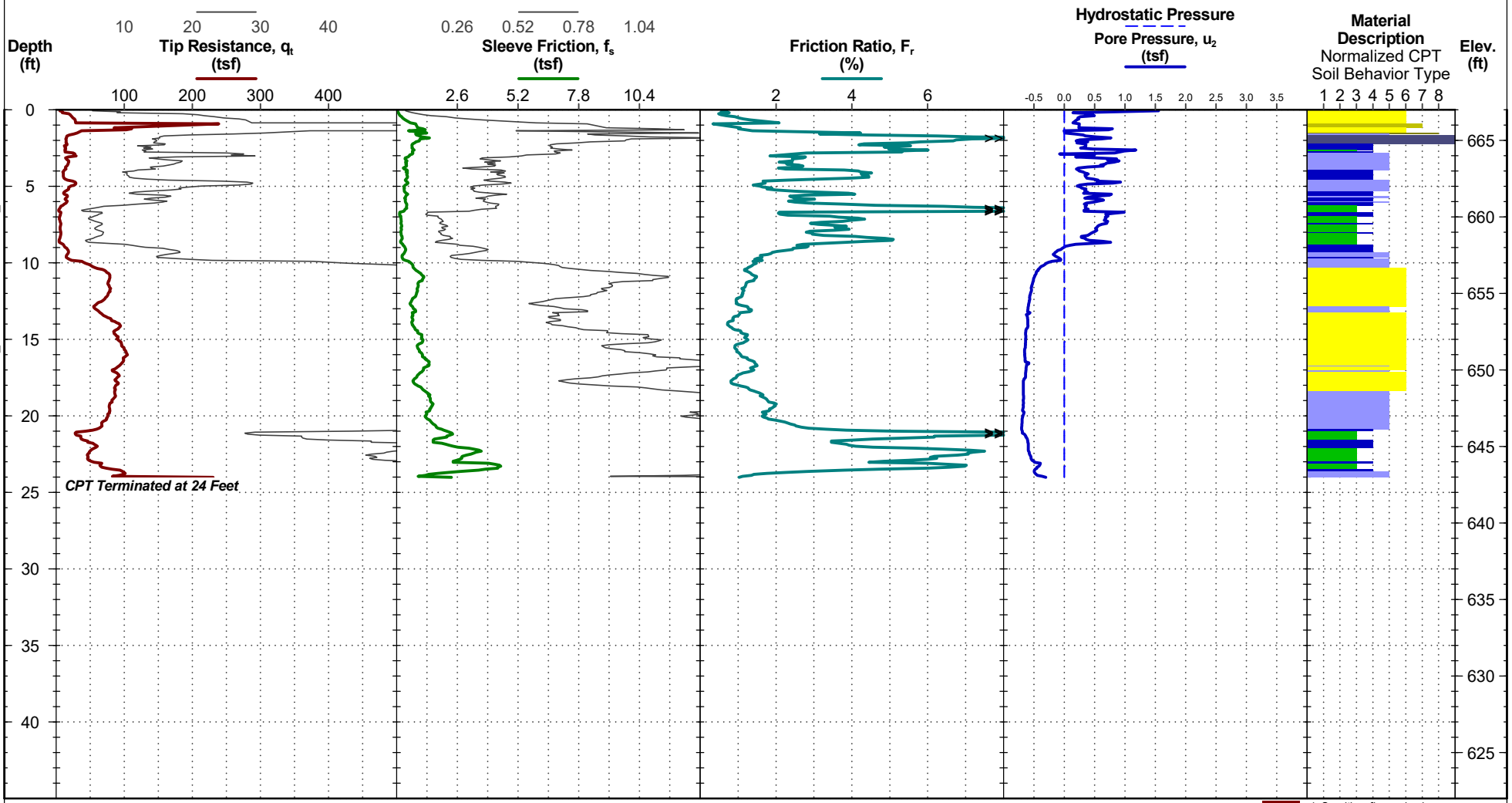
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 667 ft
Latitude: 35.207338°
Longitude: -80.948556°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/23/2019	CPT Completed: 3/23/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CPT REPORT 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

CPT LOG NO. C-048

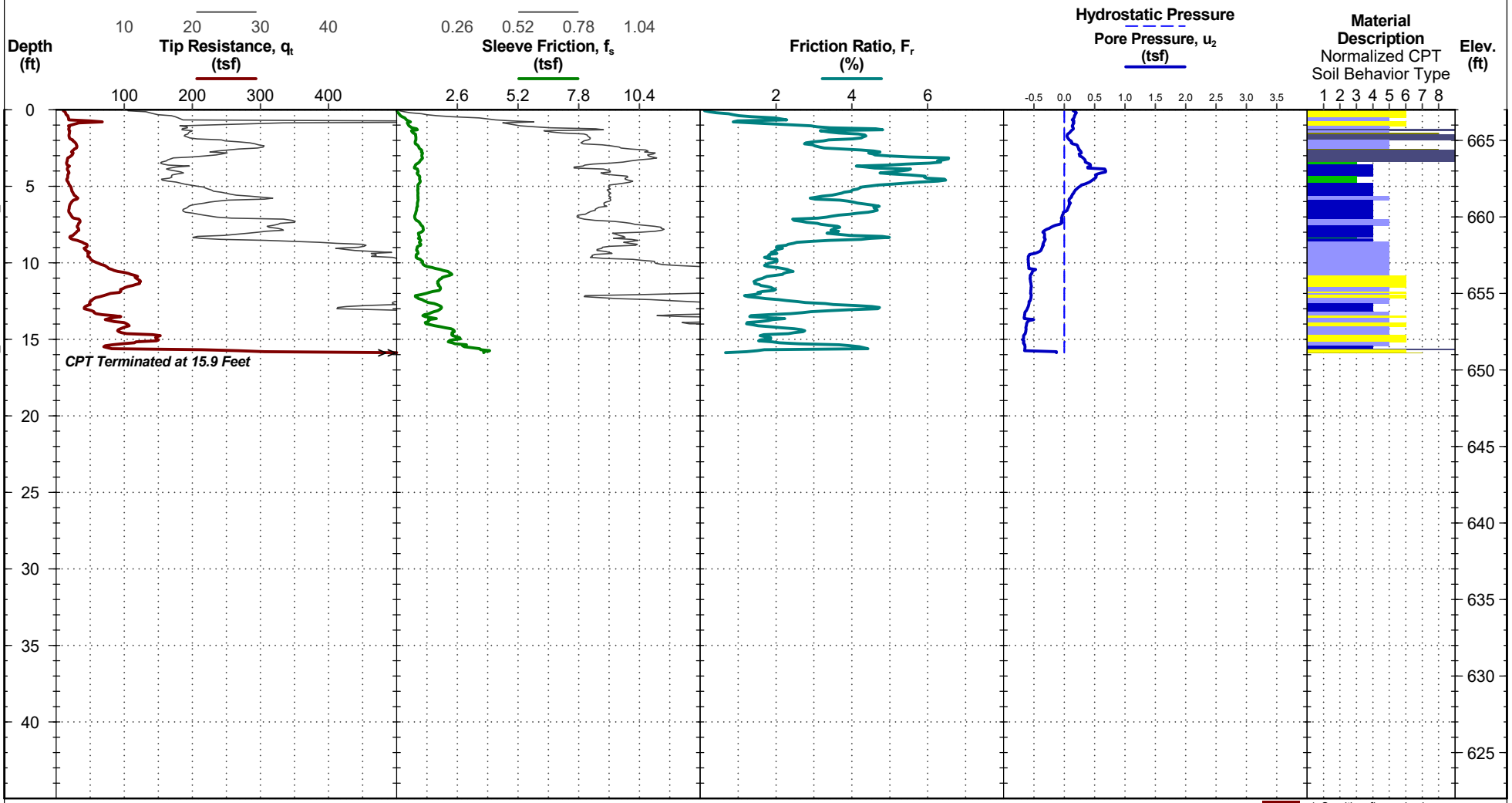
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 667 ft
Latitude: 35.206789°
Longitude: -80.94856°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
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6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/23/2019	CPT Completed: 3/23/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-078

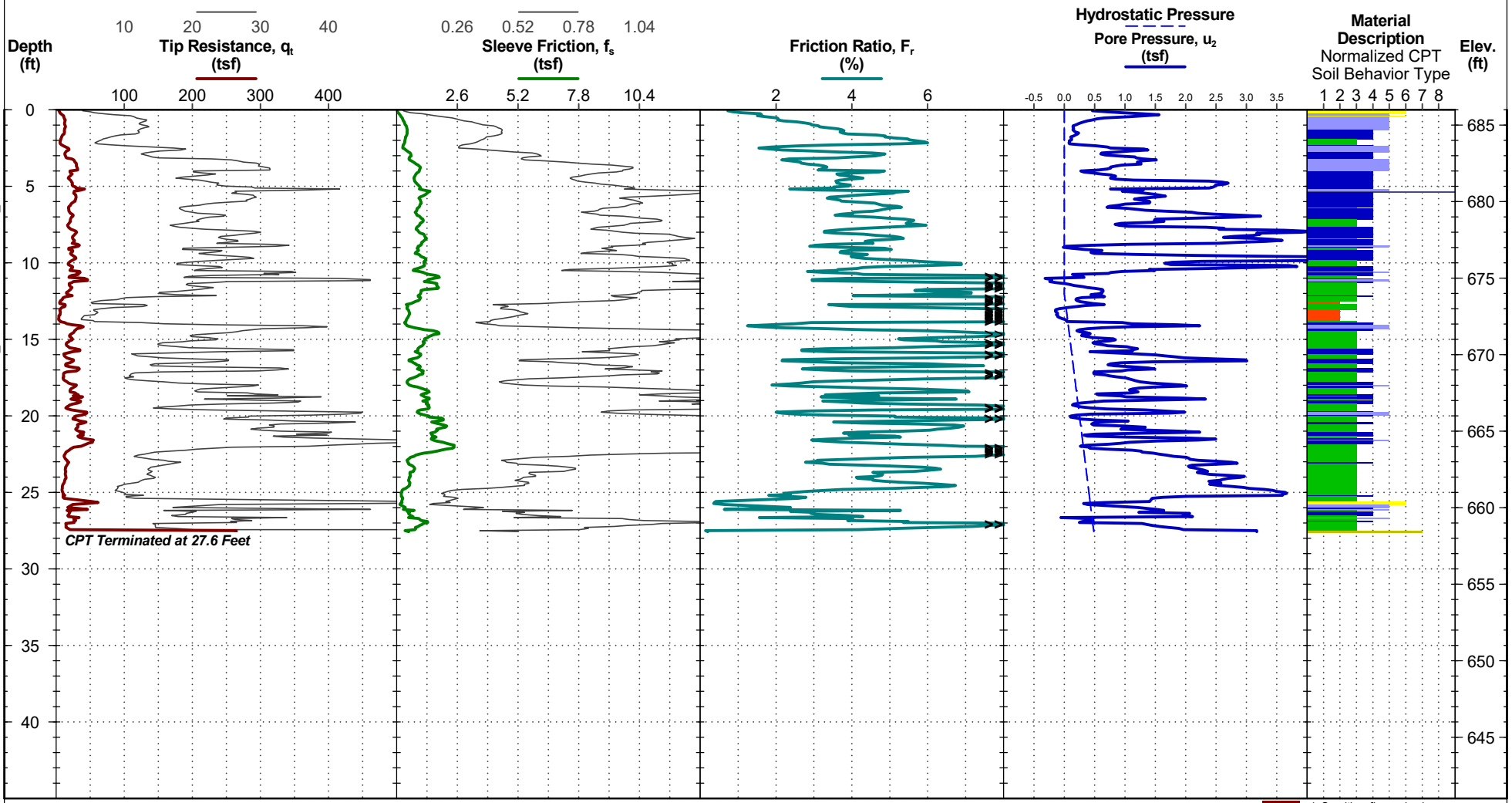
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 686 ft
Latitude: 35.206474°
Longitude: -80.947199°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
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8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/22/2019	CPT Completed: 3/22/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-081

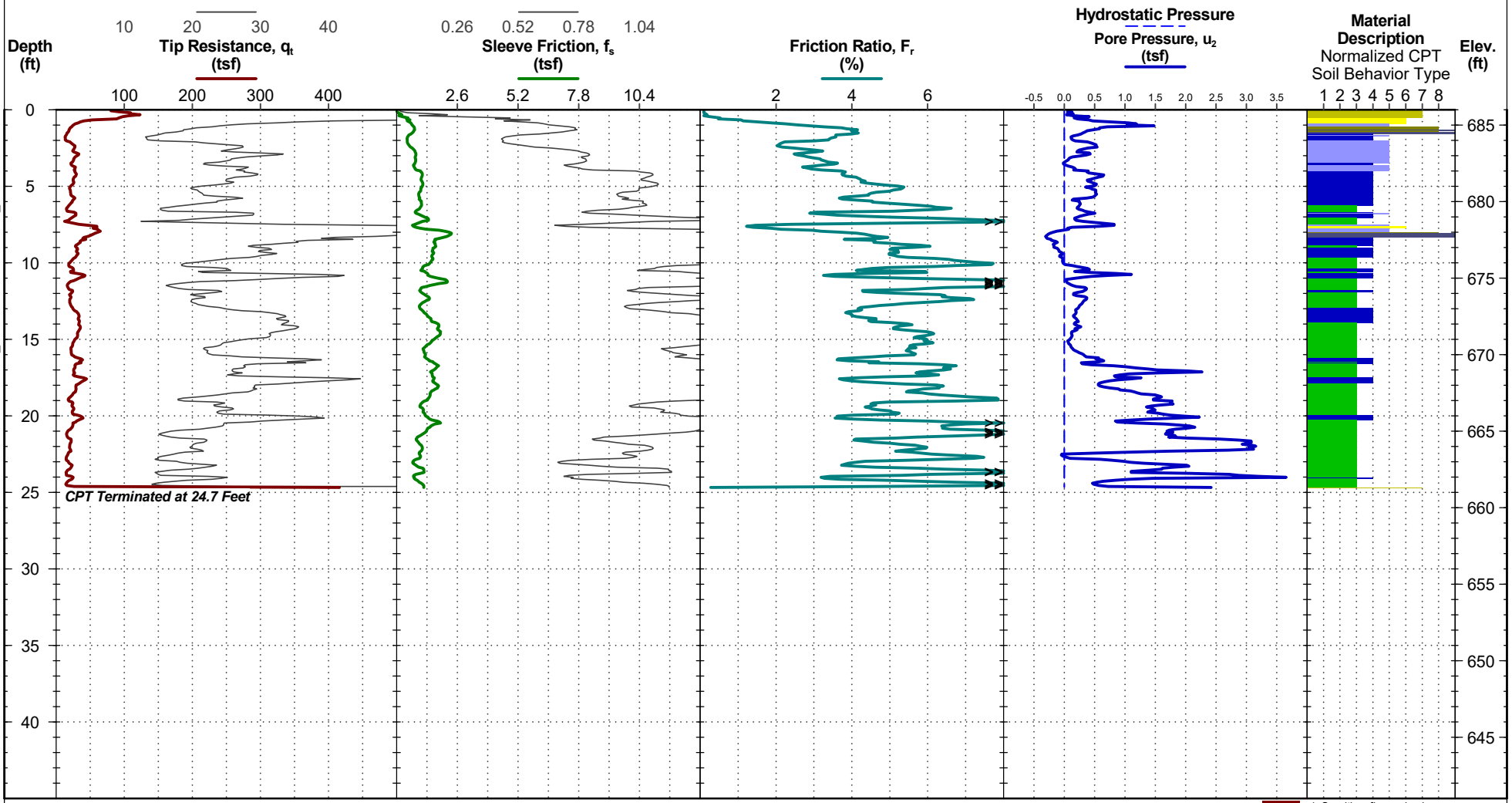
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 686 ft
Latitude: 35.206067°
Longitude: -80.947736°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
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6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/22/2019	CPT Completed: 3/22/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-083

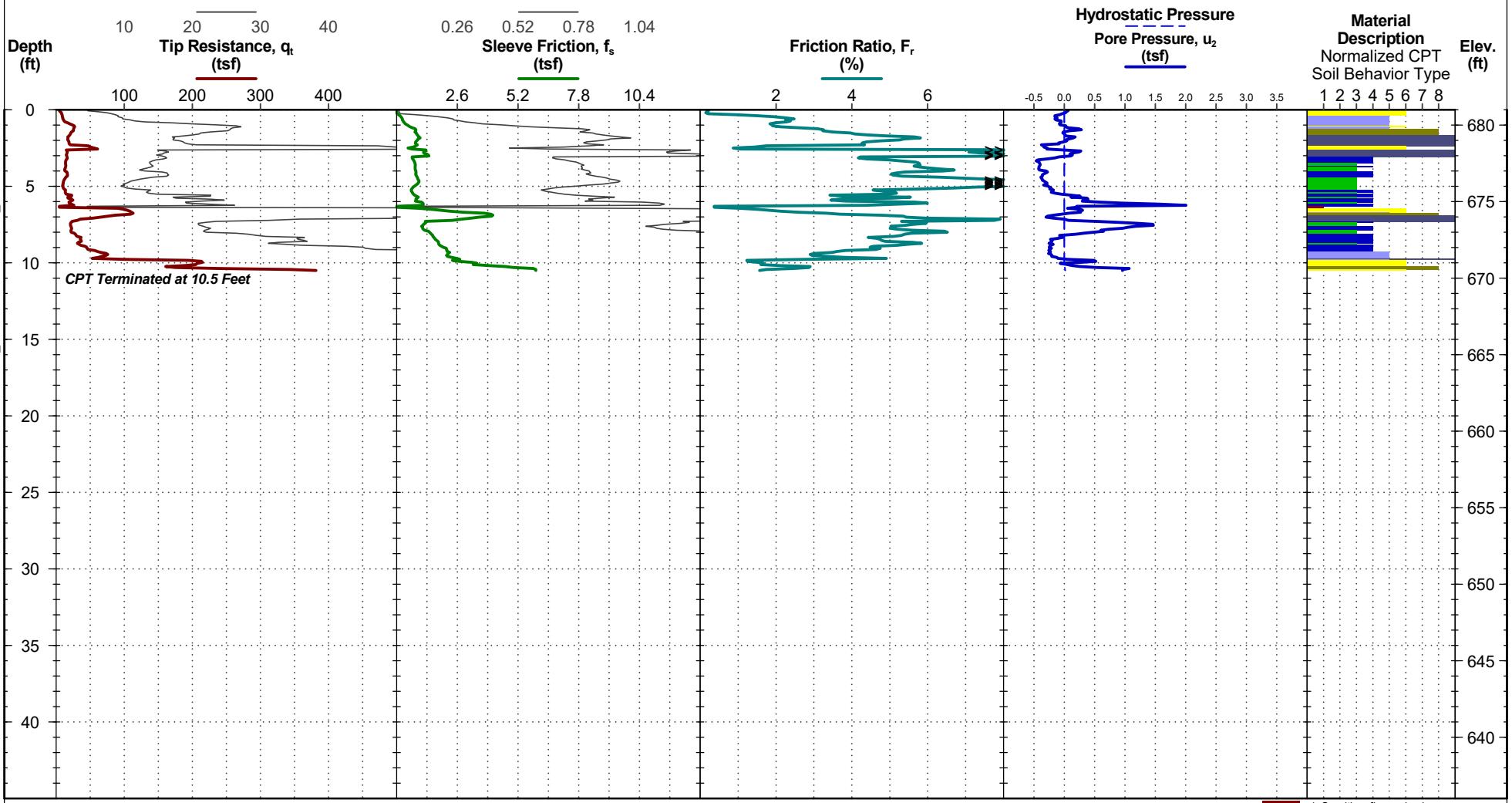
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 681 ft
Latitude: 35.206114°
Longitude: -80.947011°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
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5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/14/2019	CPT Completed: 2/14/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-085

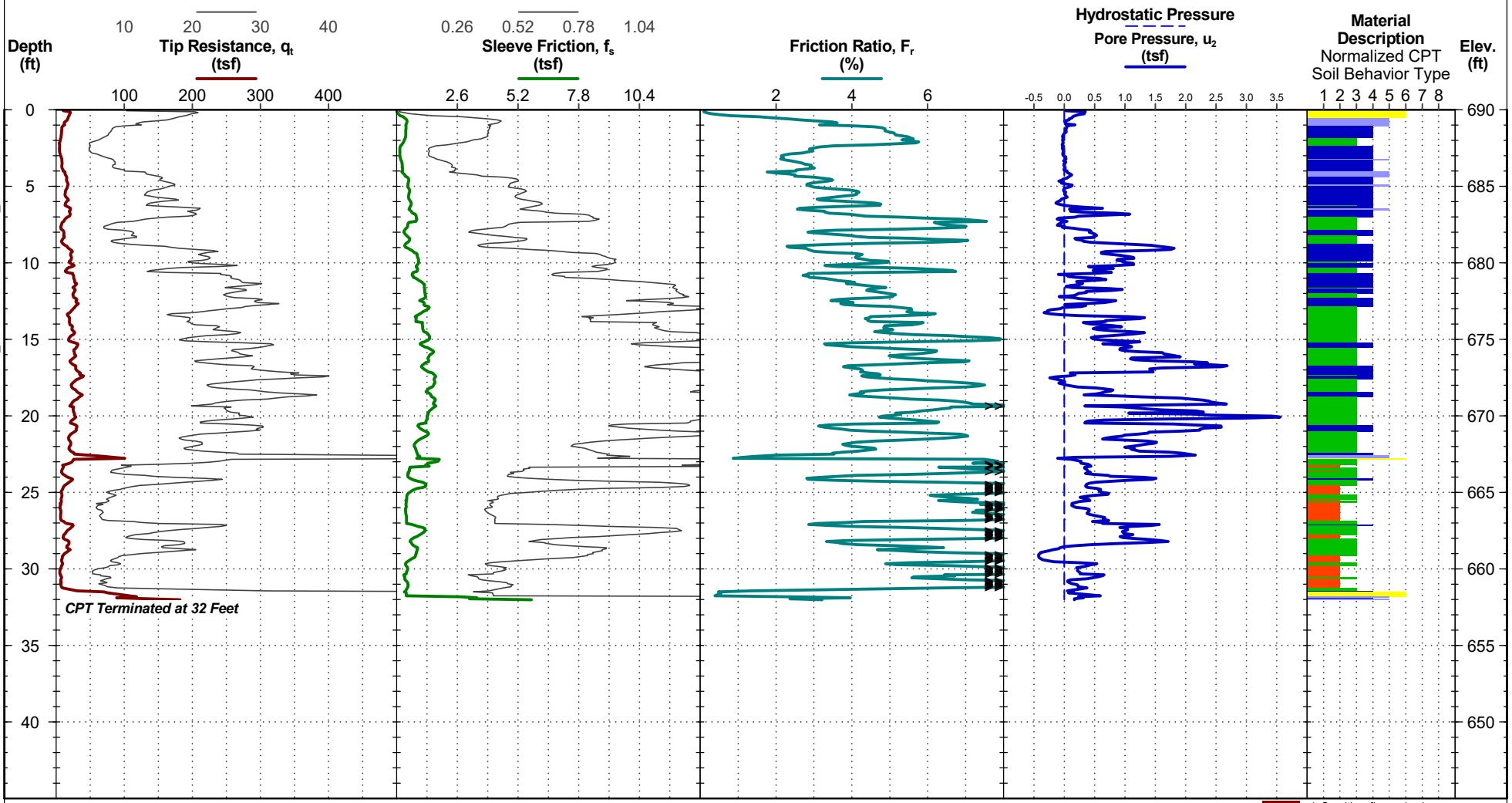
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 690 ft
Latitude: 35.20587°
Longitude: -80.948092°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
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9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/22/2019	CPT Completed: 3/22/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-086

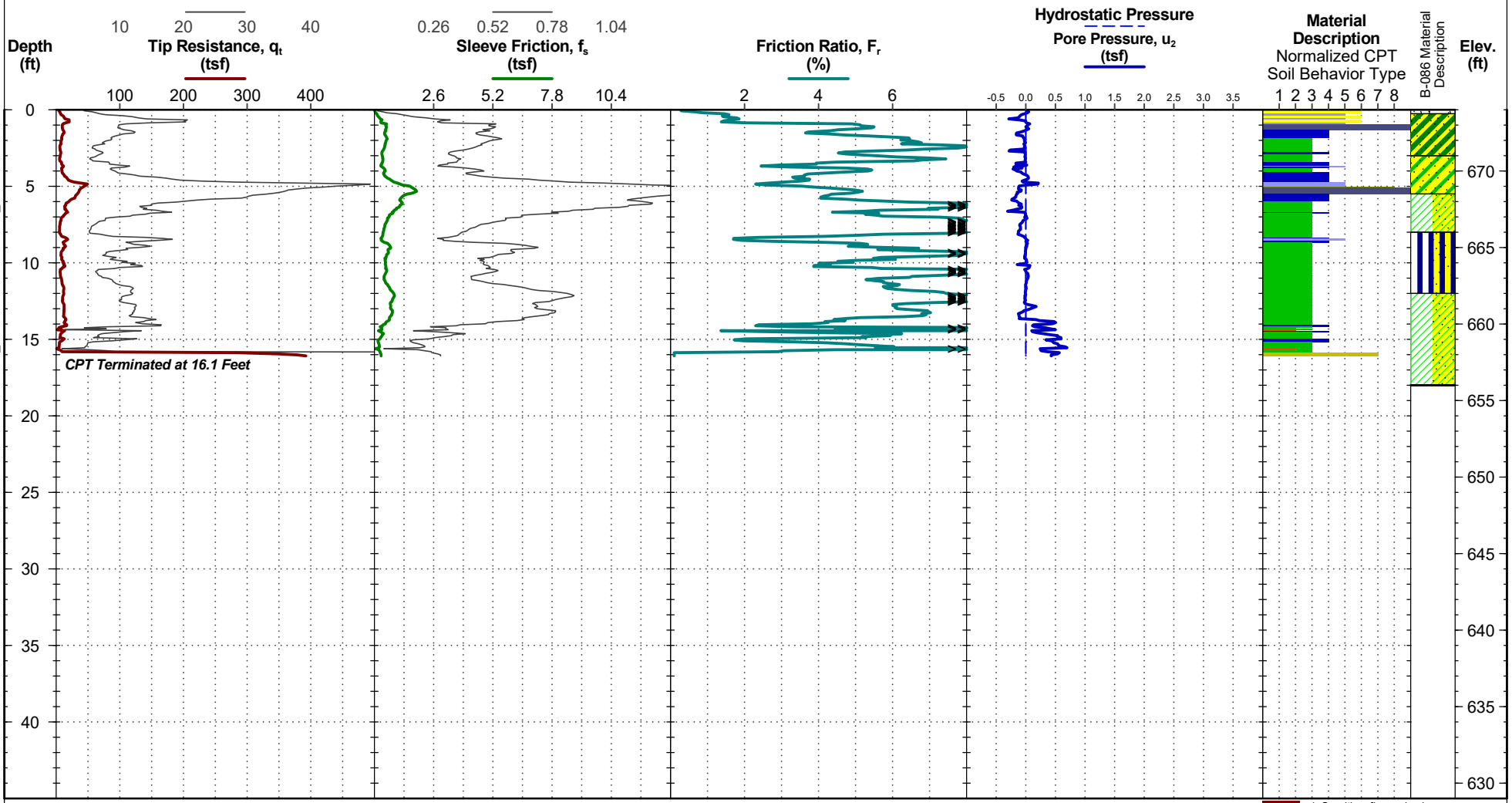
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 674 ft
Adjacent Test: B-086
Latitude: 35.205827°
Longitude: -80.947593°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

See B-086 for the adjacent test's full details.
Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/15/2019	CPT Completed: 2/15/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-087

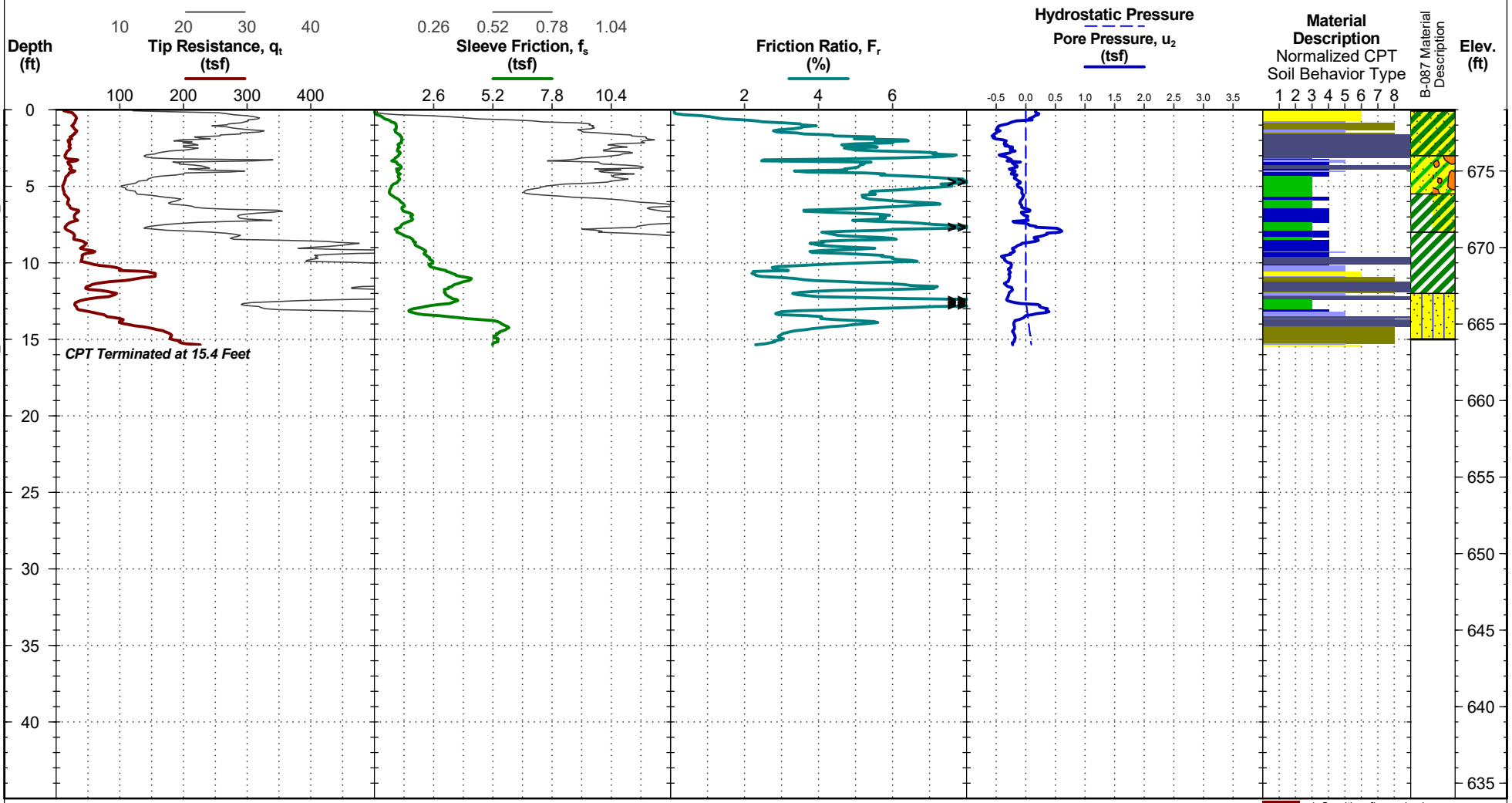
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 679 ft
Adjacent Test: B-087
Latitude: 35.205815°
Longitude: -80.947309°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

See B-087 for the adjacent test's full details.
Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/14/2019	CPT Completed: 2/14/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-091

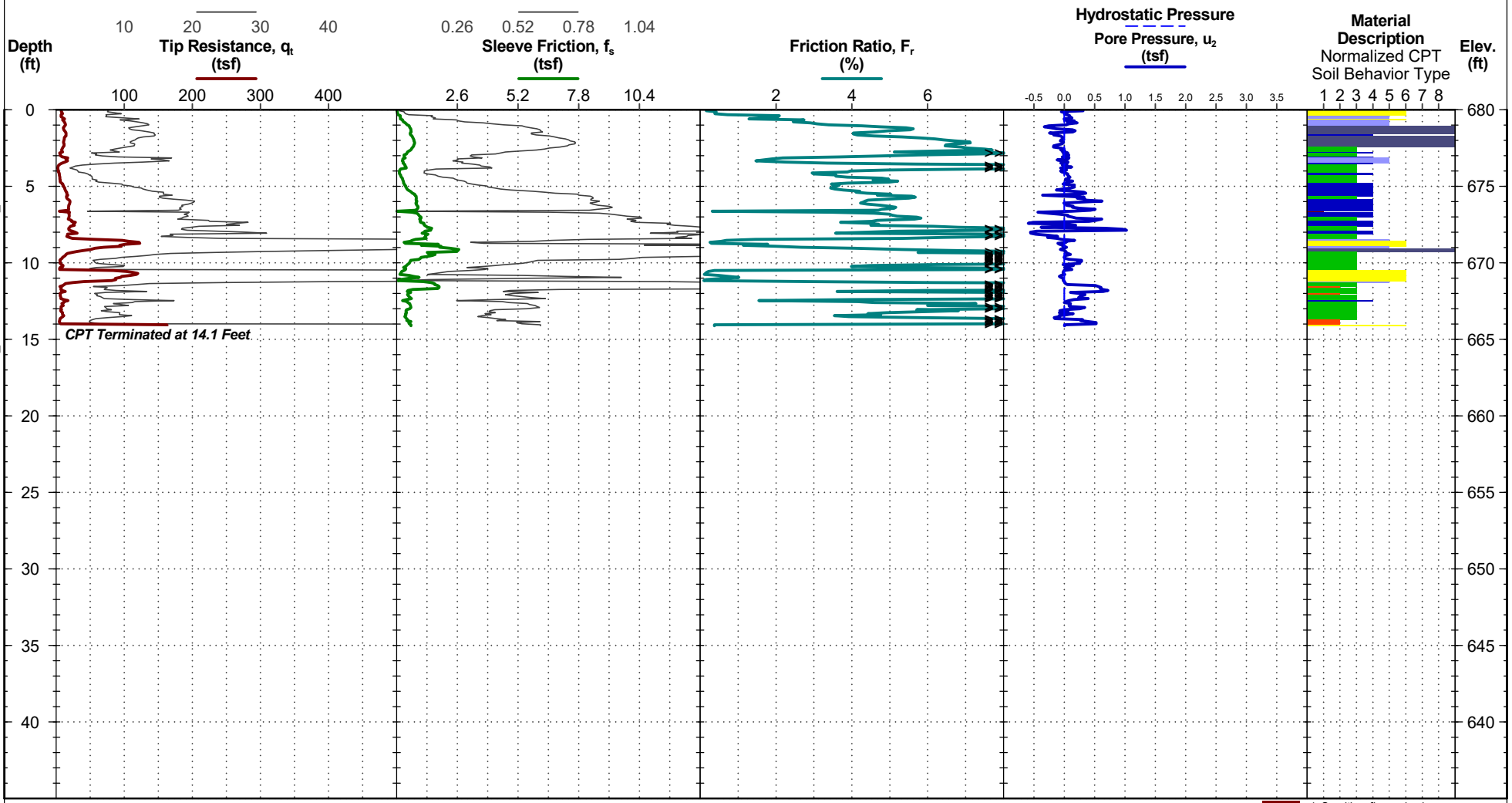
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 680 ft
Latitude: 35.205533°
Longitude: -80.947706°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
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5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/14/2019	CPT Completed: 2/14/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-095

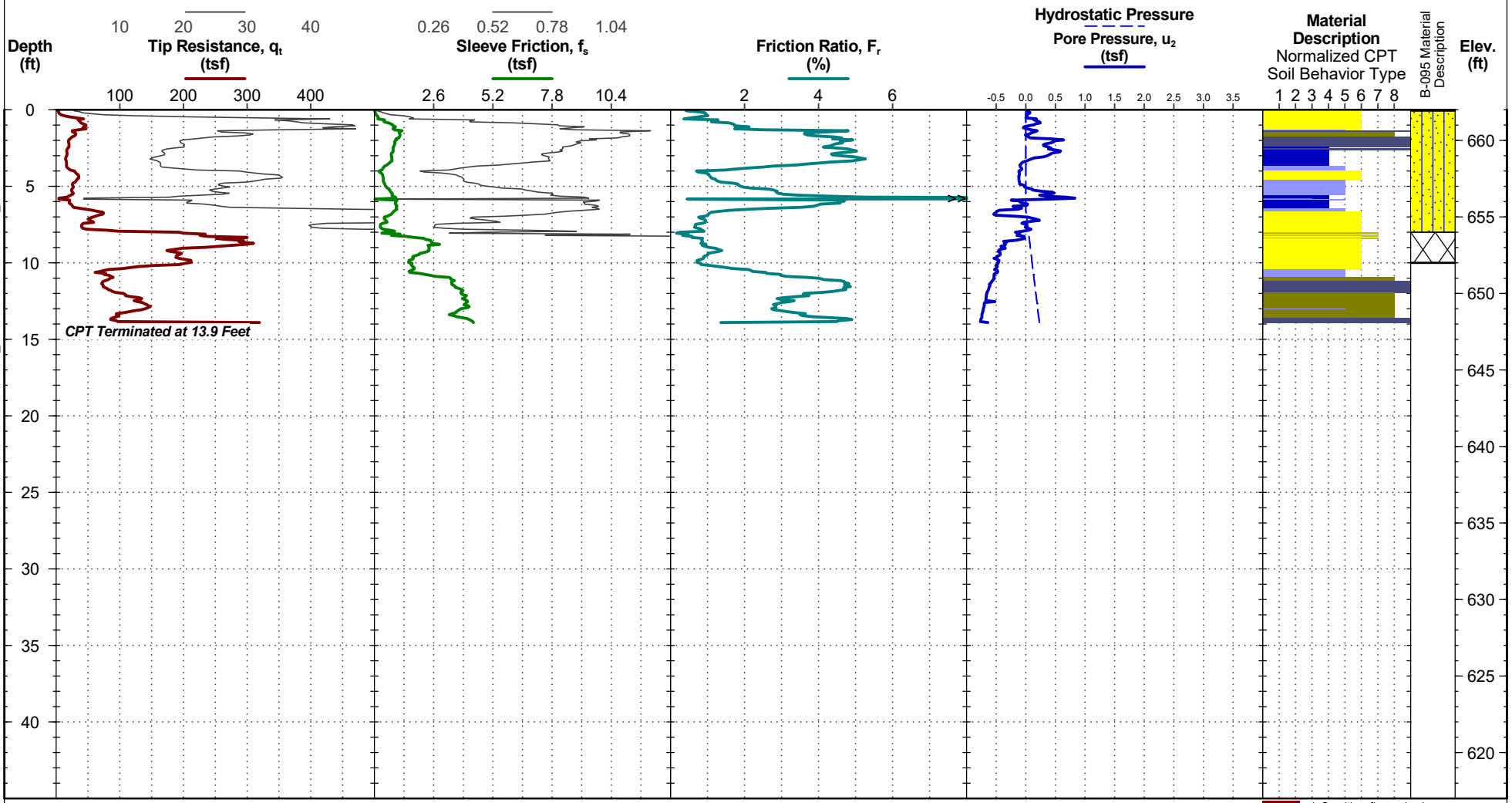
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 662 ft
Adjacent Test: B-095
Latitude: 35.205214°
Longitude: -80.948007°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

See B-095 for the adjacent test's full details.
Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/15/2019	CPT Completed: 2/15/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-096

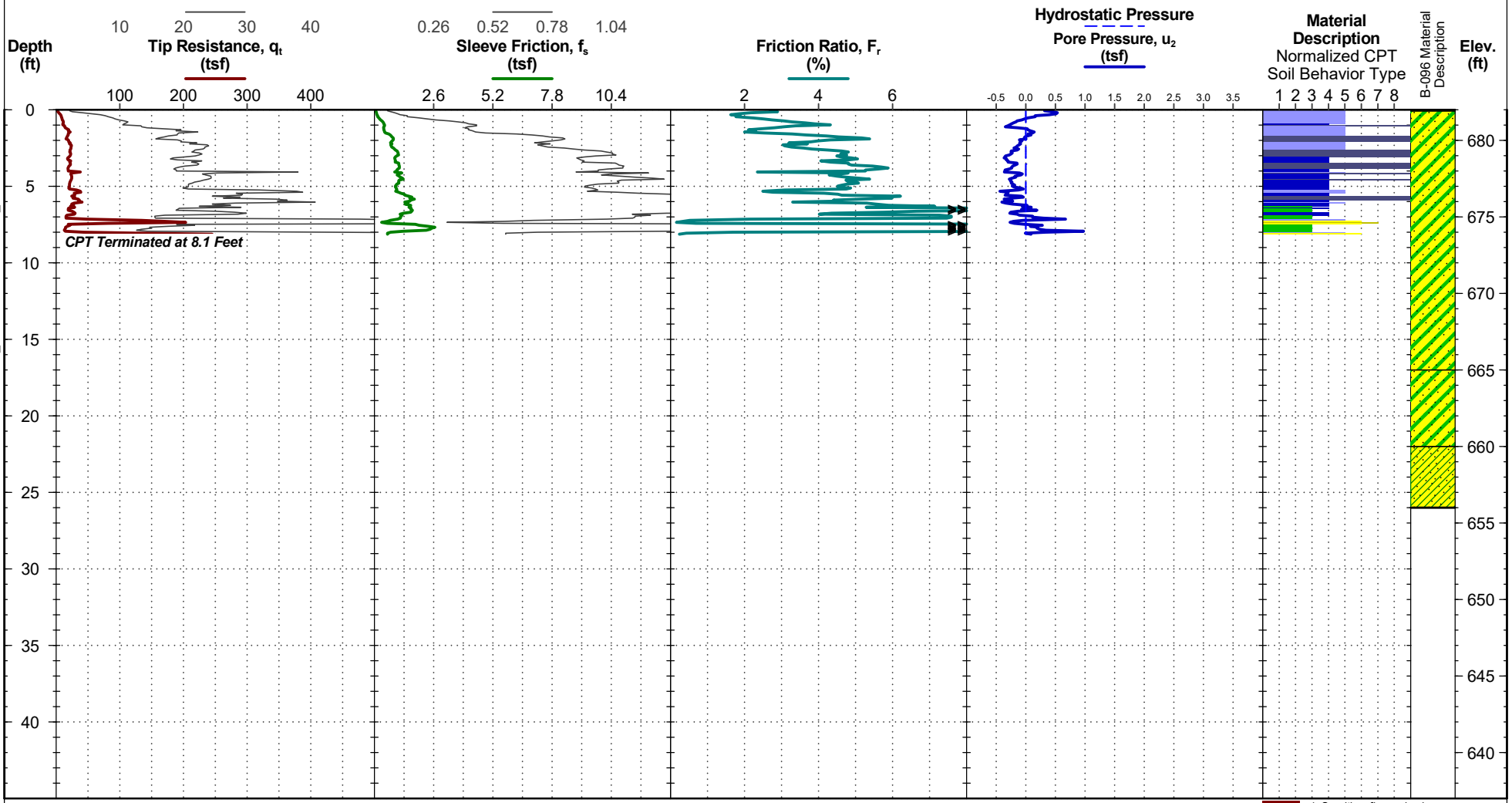
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 682 ft
Adjacent Test: B-096
Latitude: 35.205214°
Longitude: -80.94779°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

See B-096 for the adjacent test's full details.
Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/14/2019	CPT Completed: 2/14/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-097

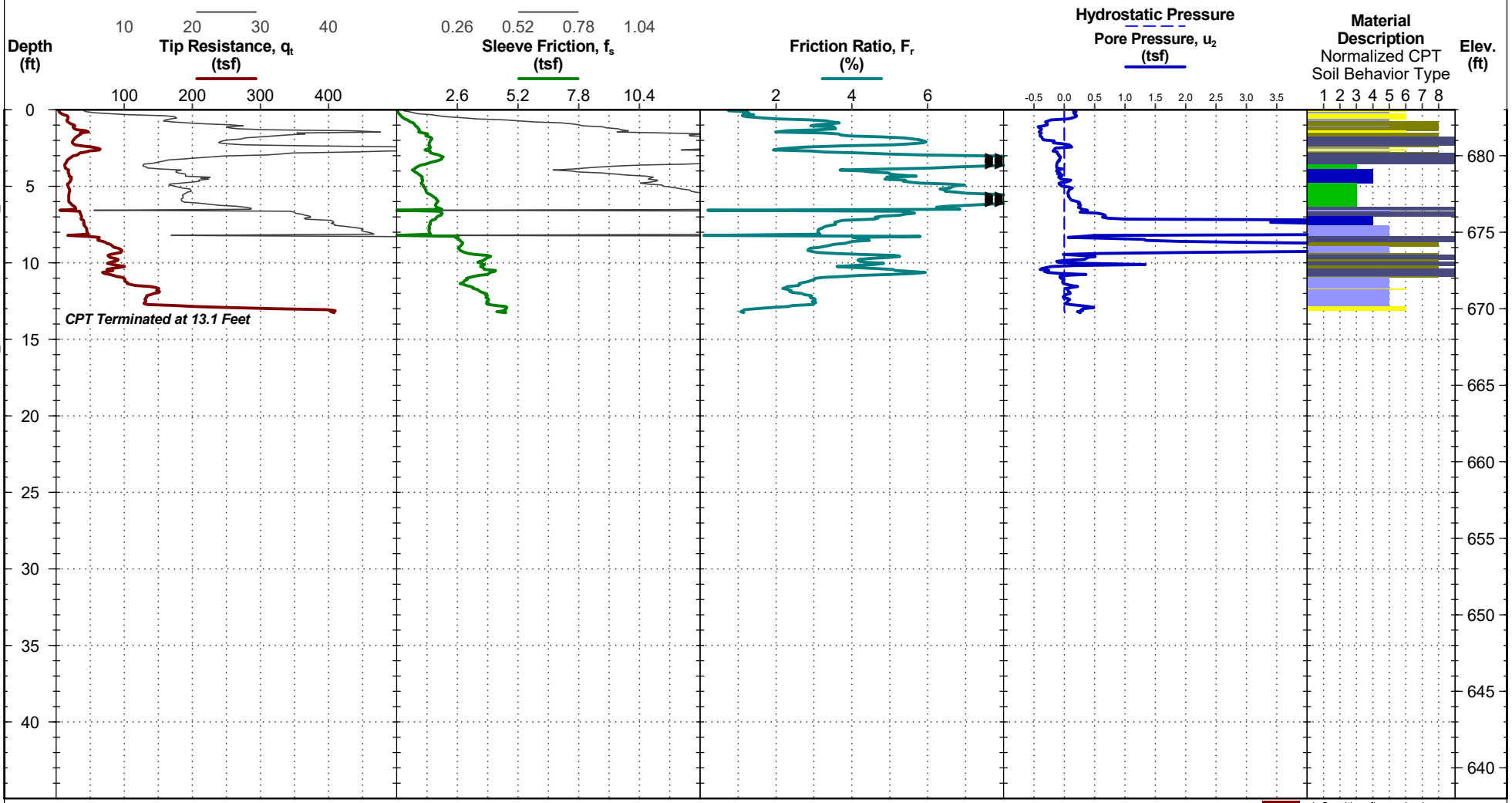
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 683 ft
Latitude: 35.205298°
Longitude: -80.947421°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/14/2019	CPT Completed: 2/14/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-101

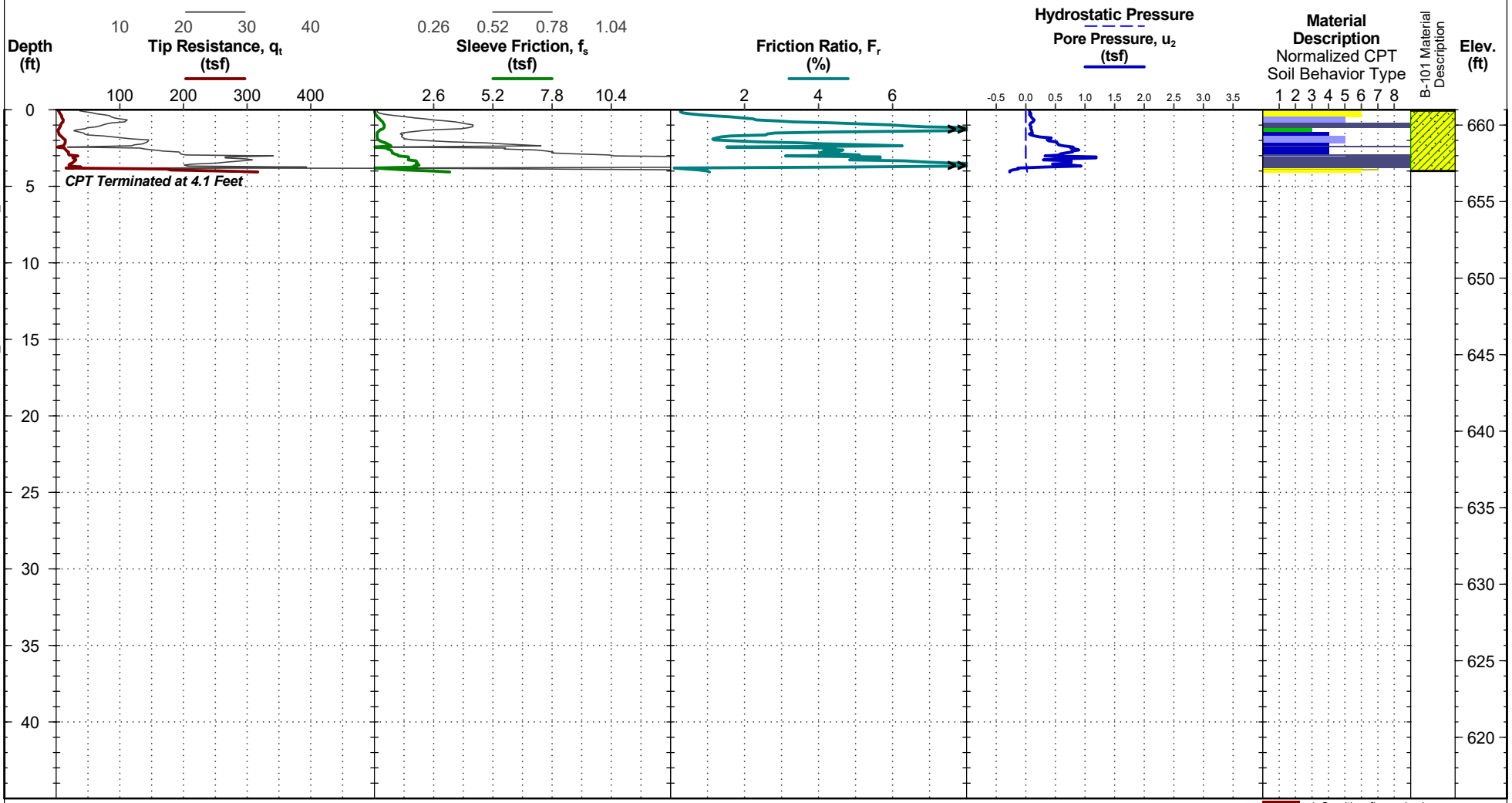
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 661 ft
Adjacent Test: B-101
Latitude: 35.20495478°
Longitude: -80.947773058°



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

See B-101 for the adjacent test's full details.
Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5207 with net area ratio of .88
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 3/4/202
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/19/2019	CPT Completed: 2/19/2019
Rig: Pagani TG73-200	Operator: JB
Project No.: 71195007	

CPT LOG NO. C-101A

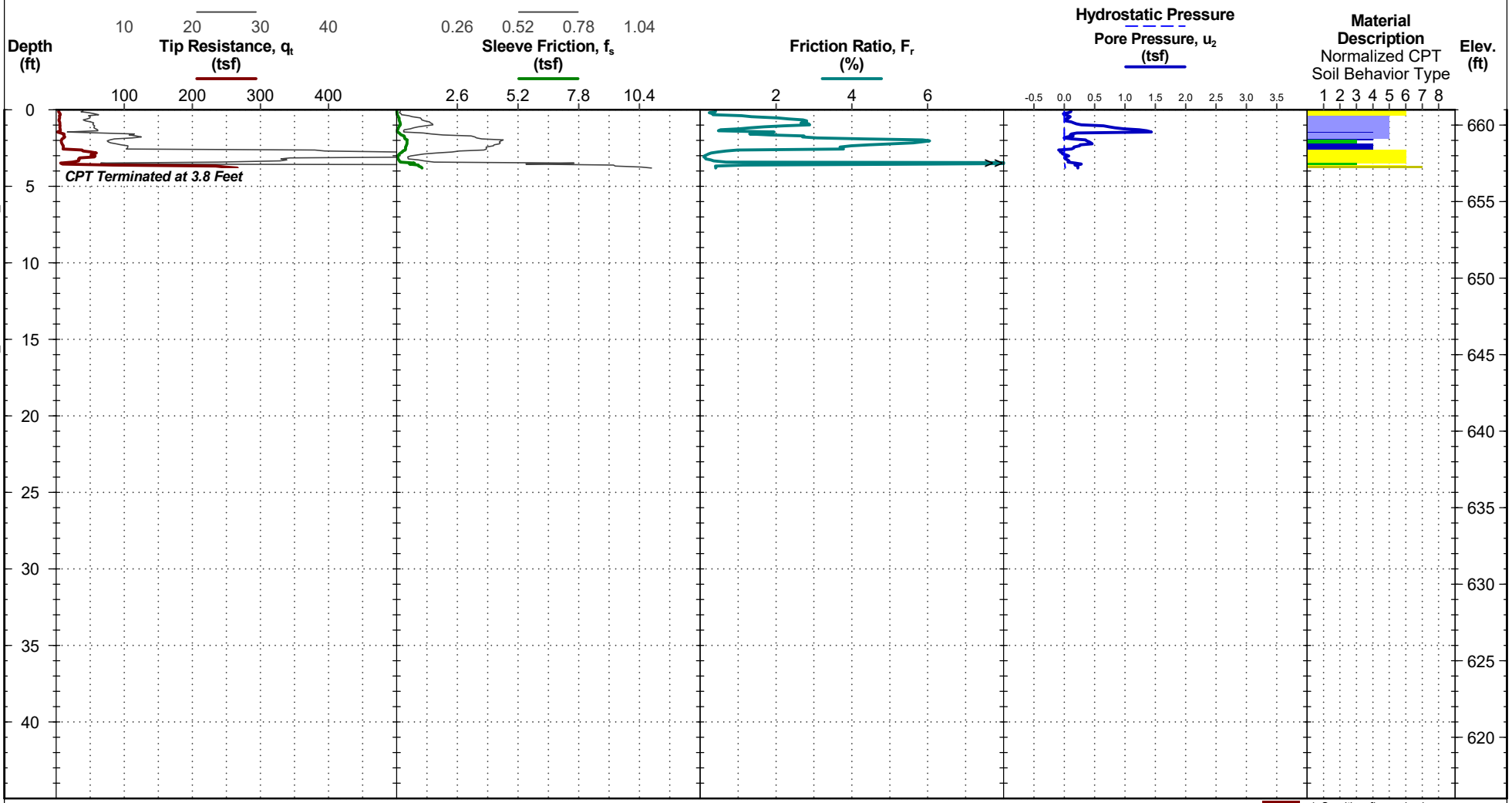
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 661 ft
Latitude: 35.204947°
Longitude: -80.947767°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5207 with net area ratio of .88
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 3/4/202
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/19/2019	CPT Completed: 2/19/2019
Rig: Pagani TG73-200	Operator: JB
Project No.: 71195007	

CPT LOG NO. C-102

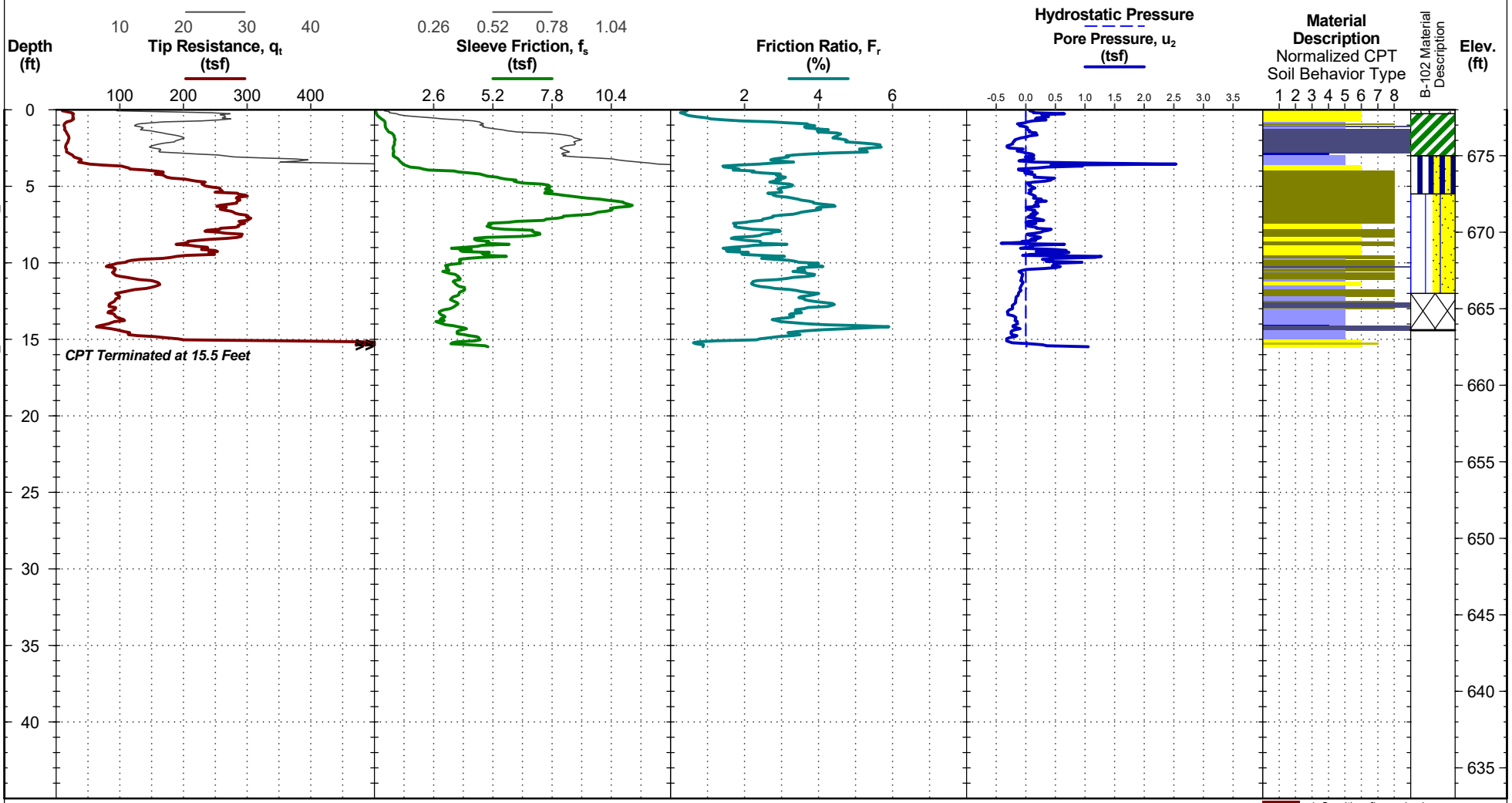
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 678 ft
Adjacent Test: B-102
Latitude: 35.204983691°
Longitude: -80.947297575°



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

See B-102 for the adjacent test's full details.
Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/14/2019	CPT Completed: 2/14/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-105

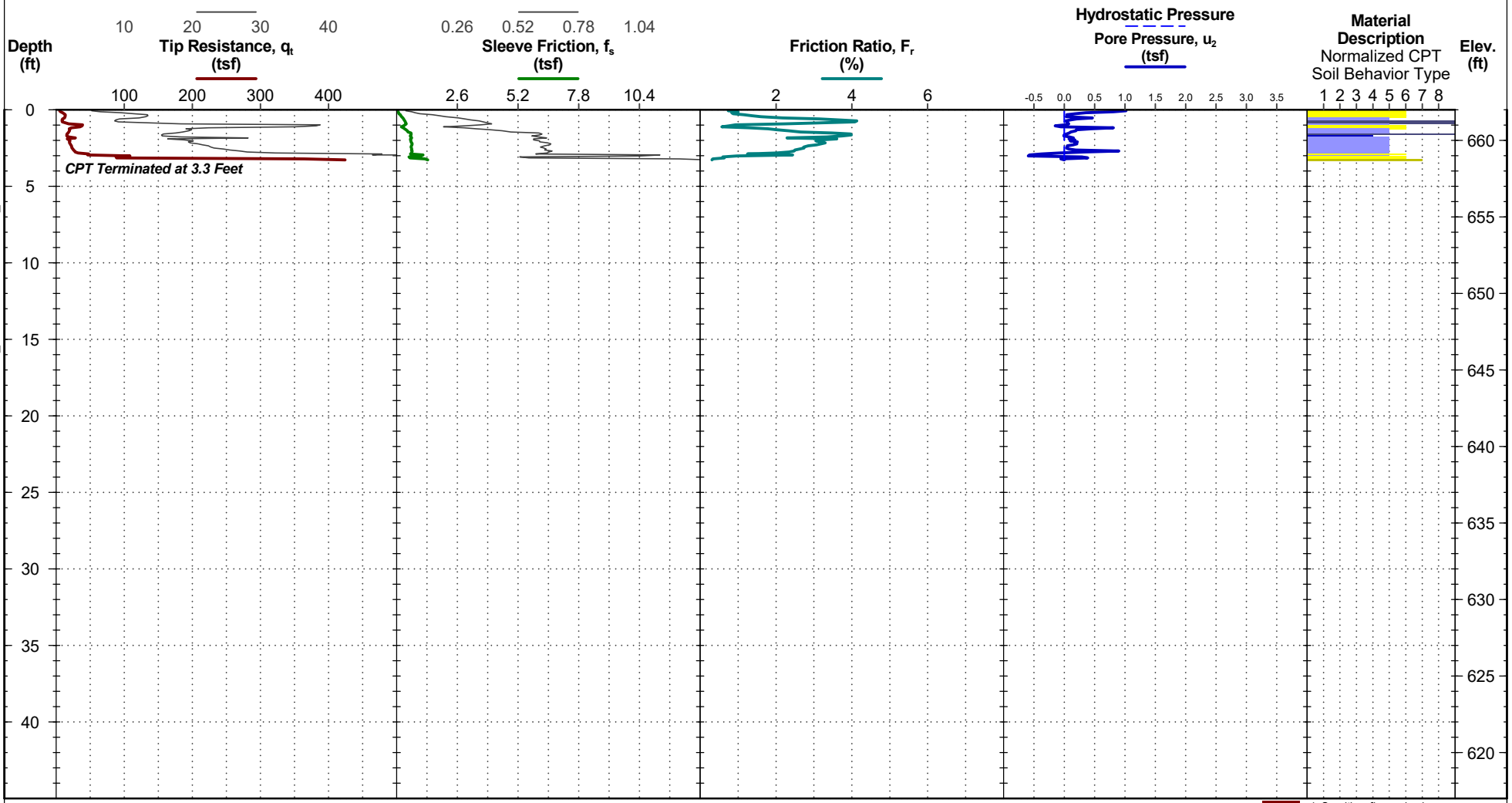
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 662 ft
Latitude: 35.204664°
Longitude: -80.948°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/21/2019	CPT Completed: 3/21/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-105A

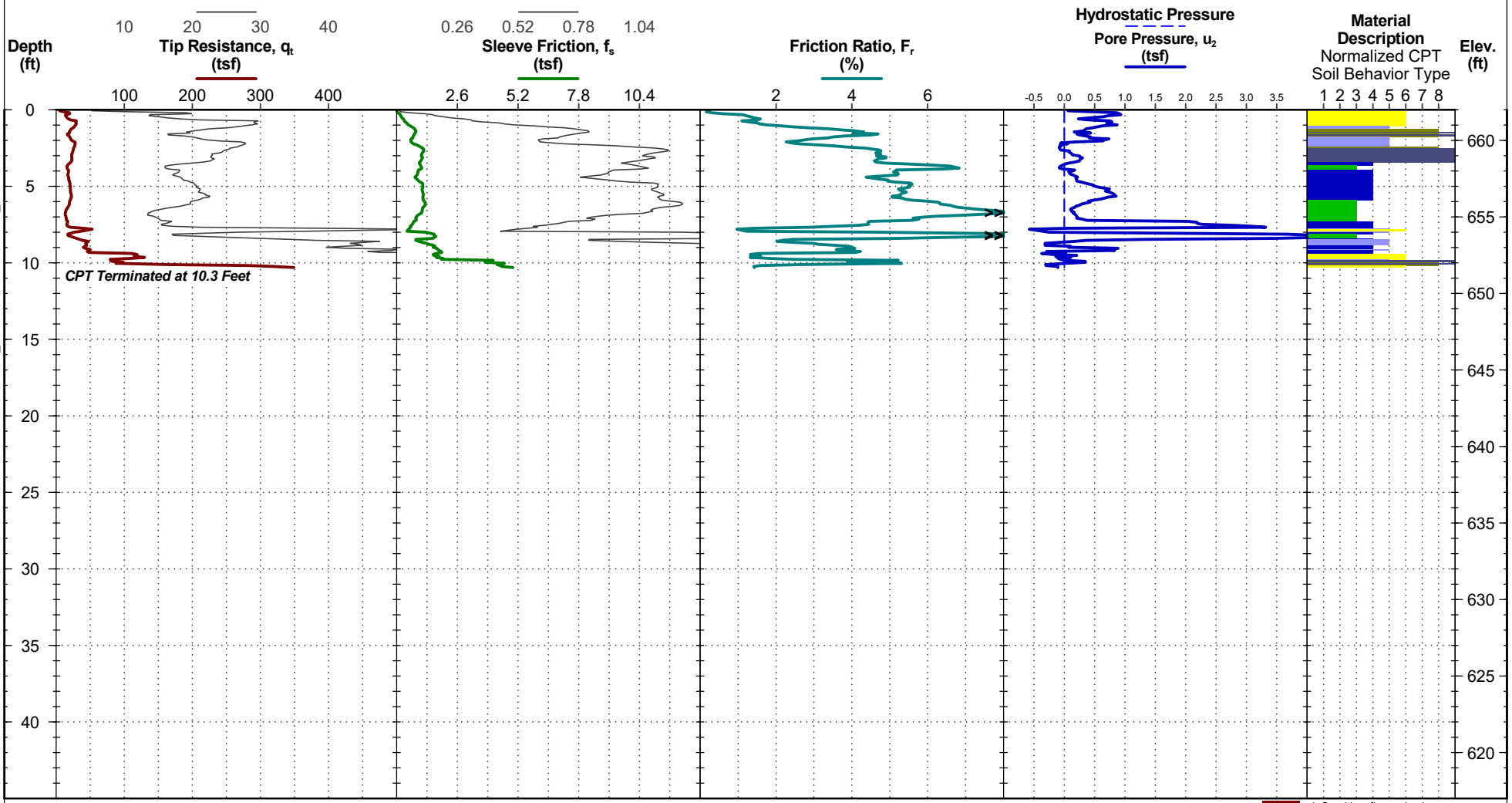
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 662 ft
Latitude: 35.20466°
Longitude: -80.948018°



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/21/2019	CPT Completed: 3/21/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-108

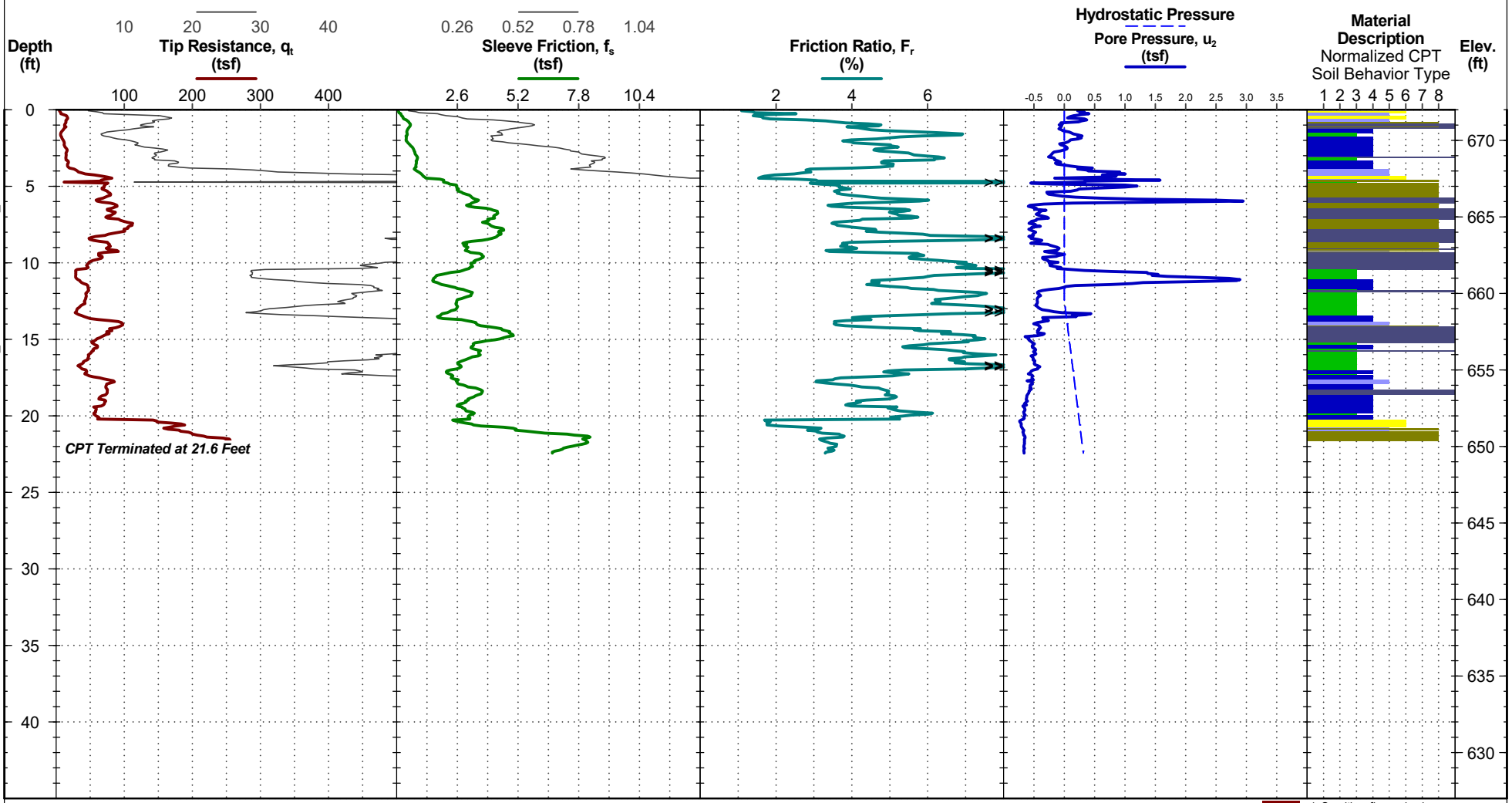
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 672 ft
Latitude: 35.204767°
Longitude: -80.947297°

SITE: Old Piney Top and West Blvd
Charlotte, NC



Smelled of petroleum

See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/14/2019	CPT Completed: 2/14/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-111

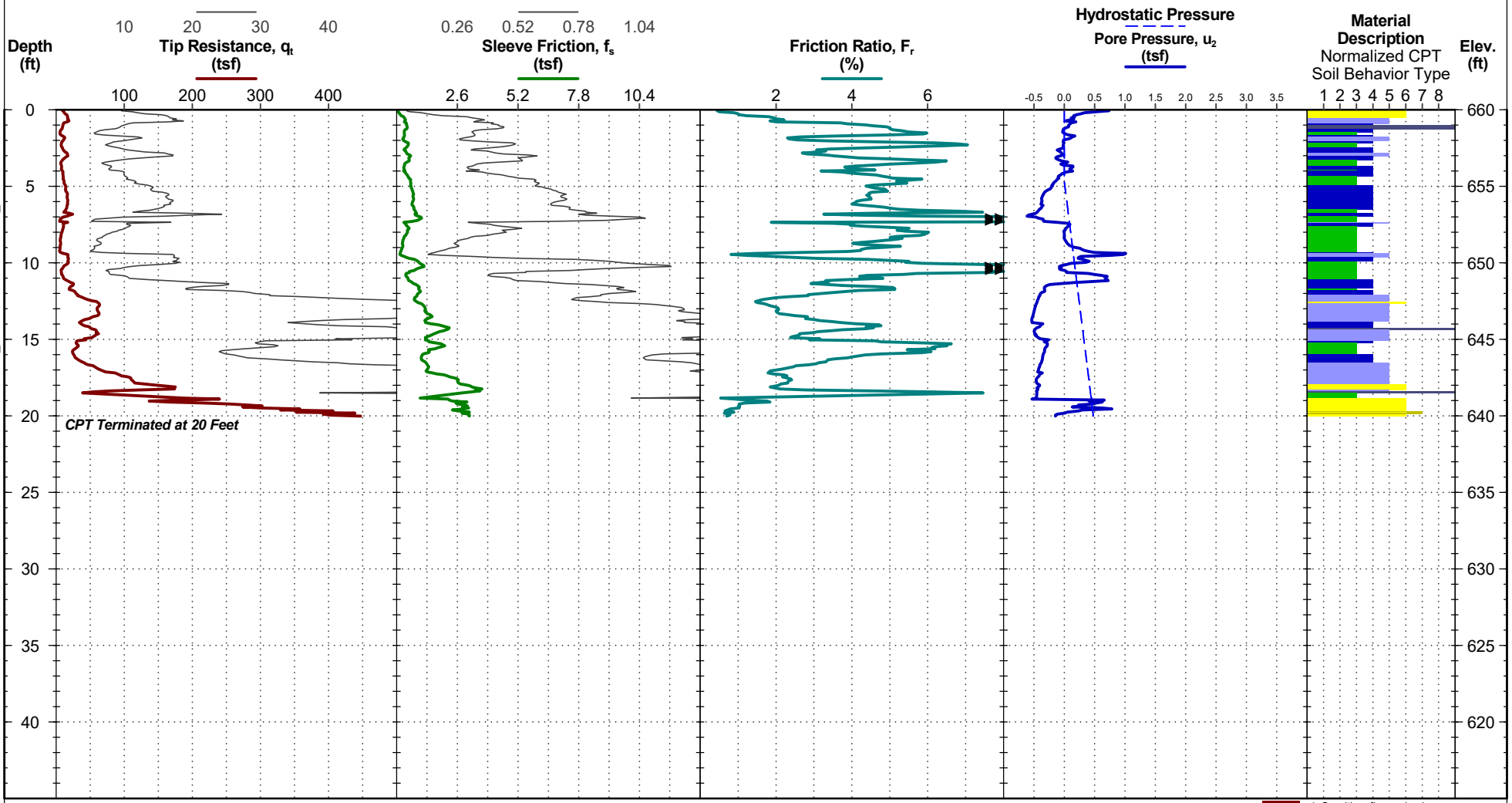
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 660 ft
Latitude: 35.204414°
Longitude: -80.947622°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/21/2019	CPT Completed: 3/21/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-115

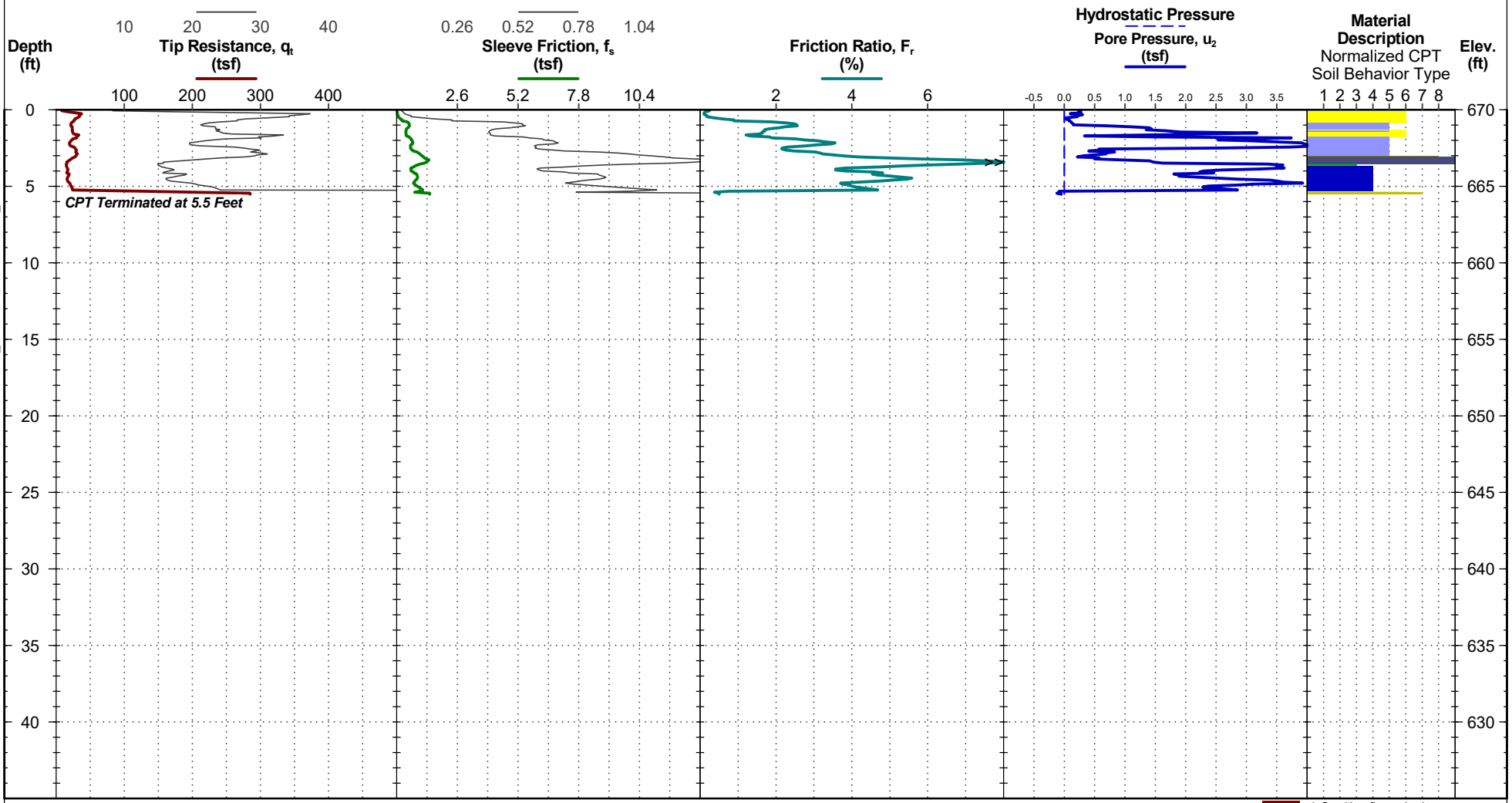
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 670 ft
Latitude: 35.204119°
Longitude: -80.947972°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/21/2019	CPT Completed: 3/21/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-115A

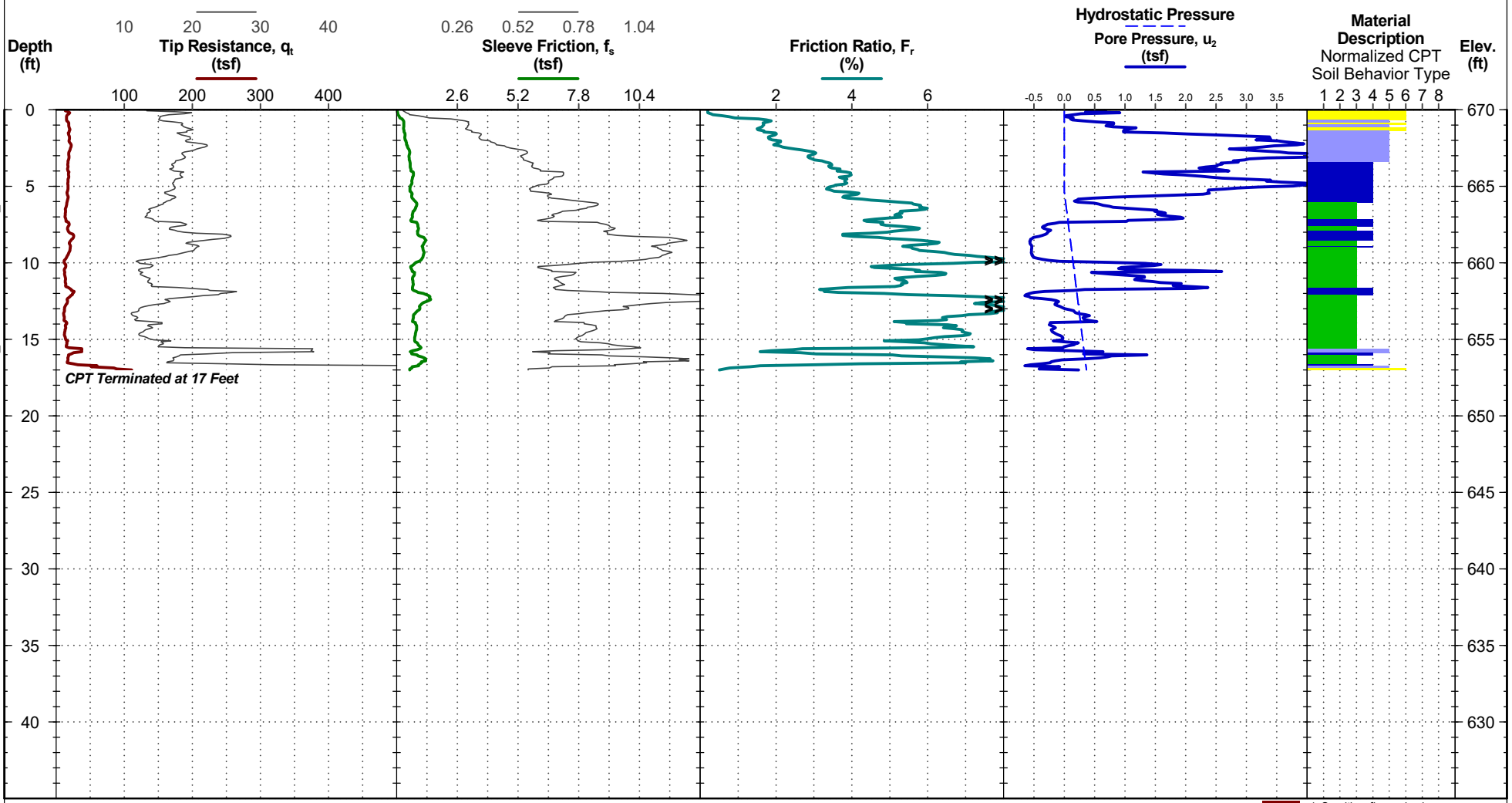
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 670 ft
Latitude: 35.204147°
Longitude: -80.947975°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/21/2019	CPT Completed: 3/21/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-117

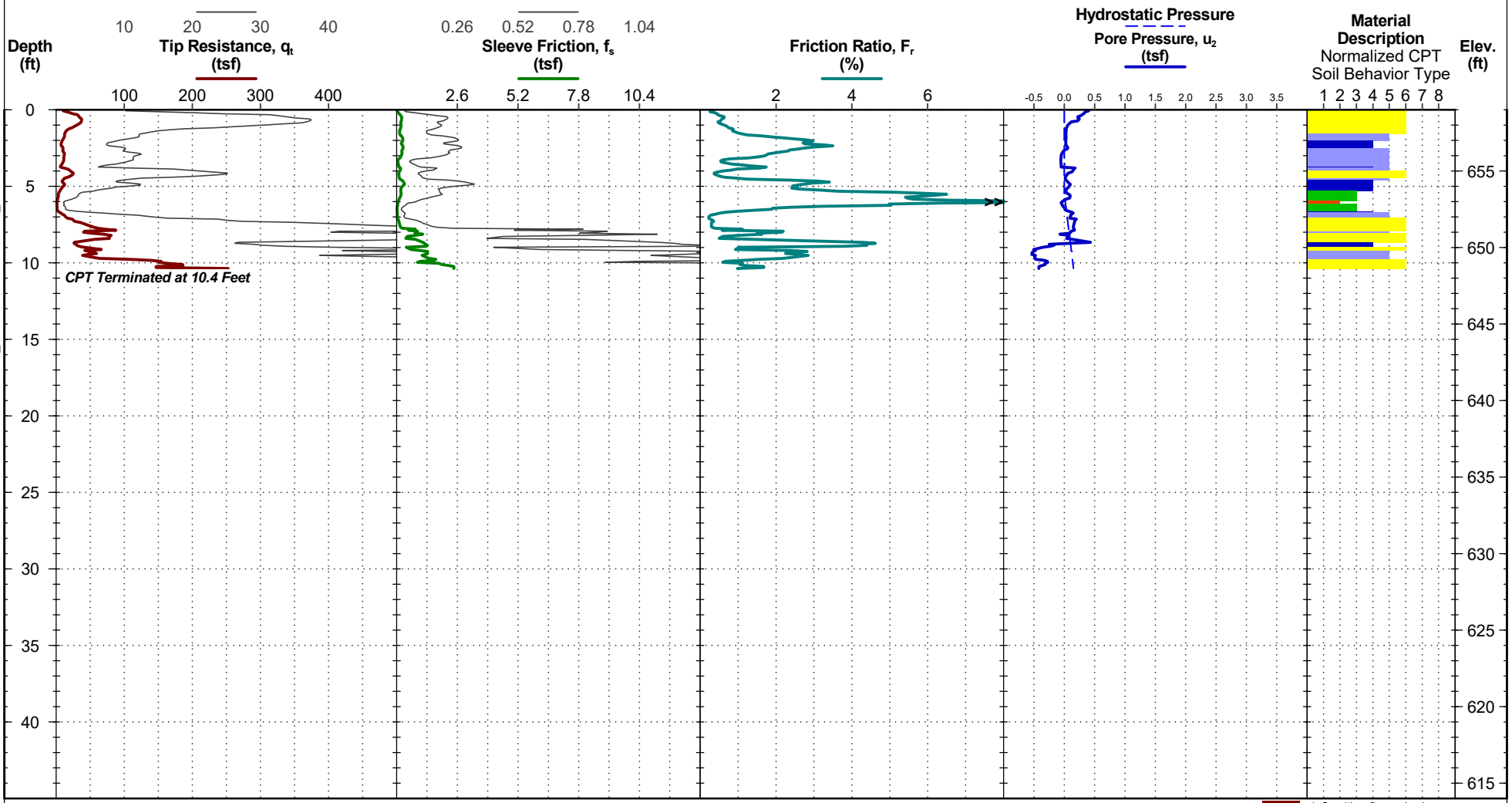
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 659 ft
Latitude: 35.204161°
Longitude: -80.947275°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/21/2019	CPT Completed: 3/21/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-119

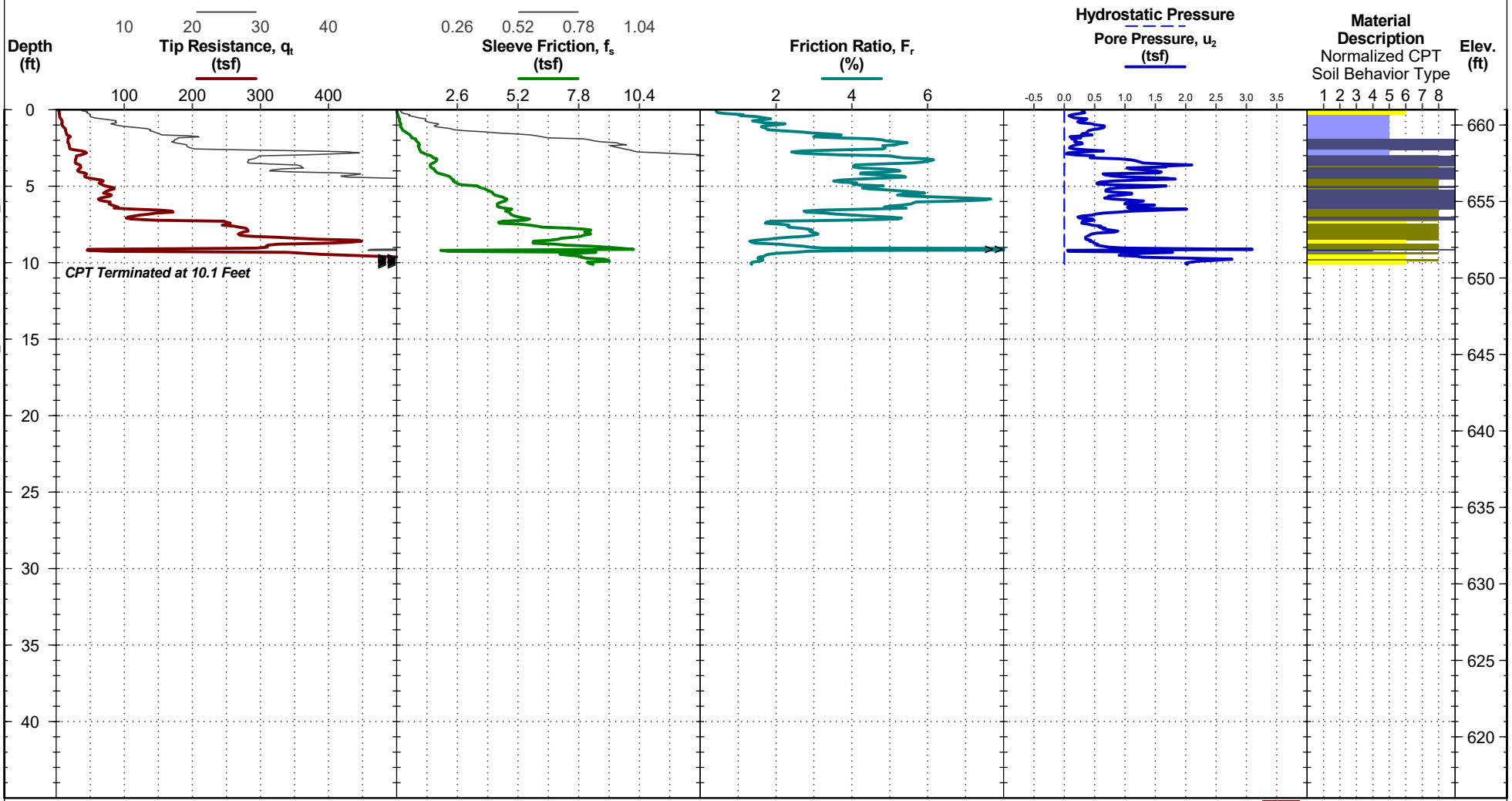
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 661 ft
Latitude: 35.204178001°
Longitude: -80.94654848°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5207 with net area ratio of .88
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 3/4/202
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/19/2019	CPT Completed: 2/19/2019
Rig: Pagani TG73-200	Operator: JB
Project No.: 71195007	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CPT REPORT 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

CPT LOG NO. C-121

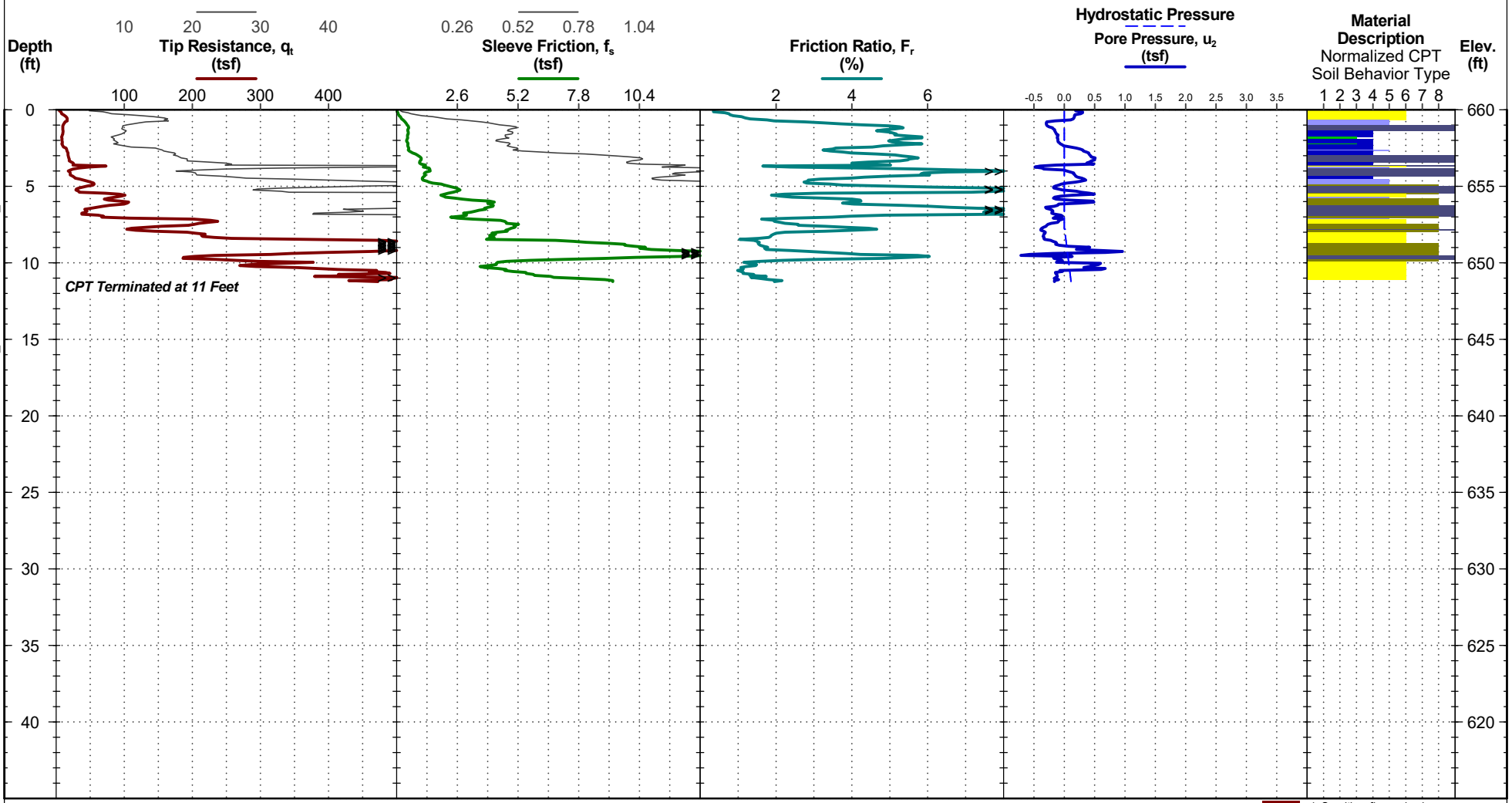
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 660 ft
Latitude: 35.203869°
Longitude: -80.947583°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/21/2019	CPT Completed: 3/21/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CPT REPORT 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

CPT LOG NO. C-123

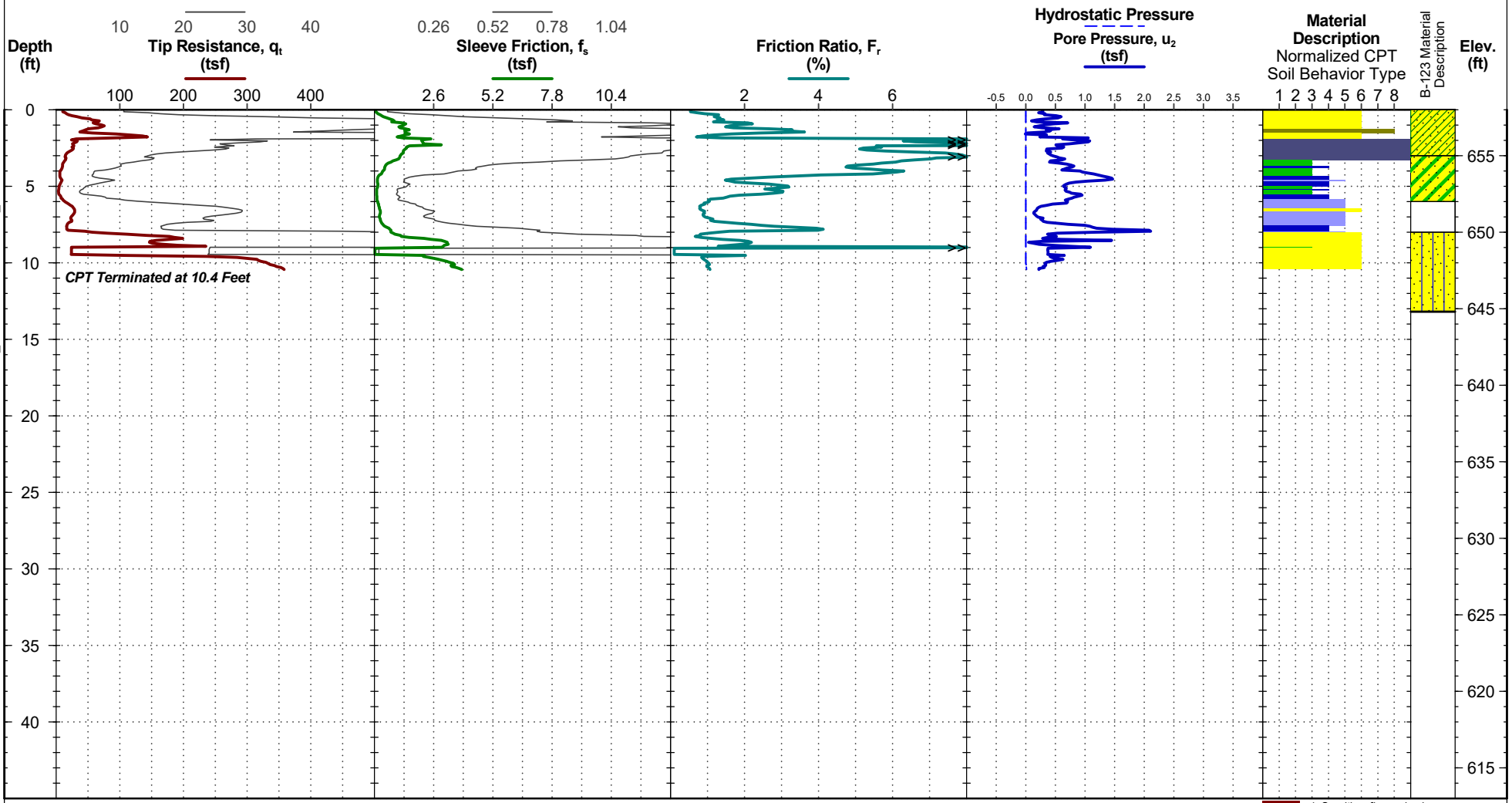
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 658 ft
Latitude: 35.203876°
Longitude: -80.946699°
Adjacent Test: B-123



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

See B-123 for the adjacent test's full details.
Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5207 with net area ratio of .88
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 3/4/202
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/19/2019	CPT Completed: 2/19/2019
Rig: Pagani TG73-200	Operator: JB
Project No.: 71195007	

CPT LOG NO. C-125

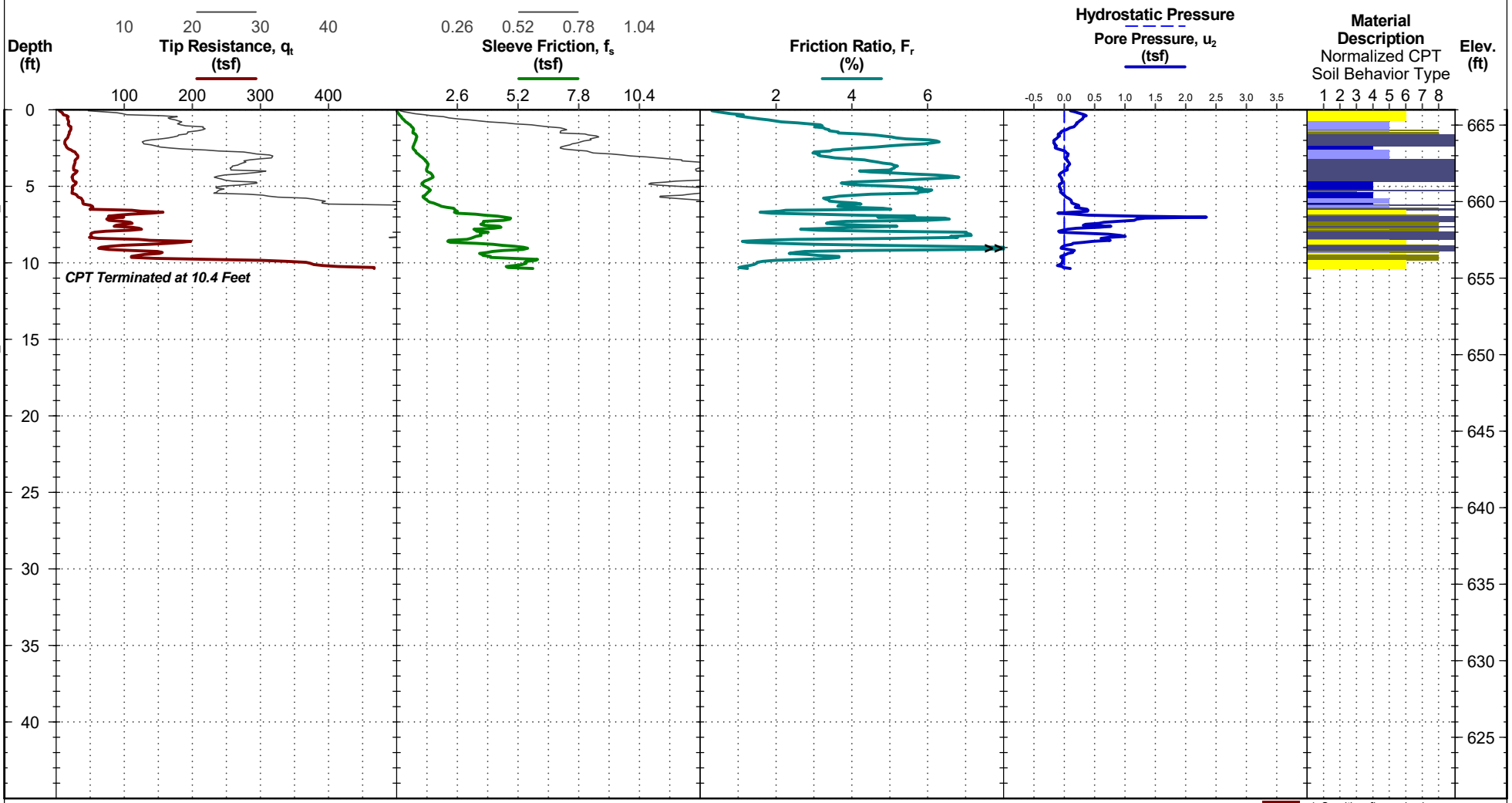
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 666 ft
Latitude: 35.203558°
Longitude: -80.947903°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/21/2019	CPT Completed: 3/21/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CPT REPORT 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

CPT LOG NO. C-127

PROJECT: CLT Airport-Deicing Pad and SCT

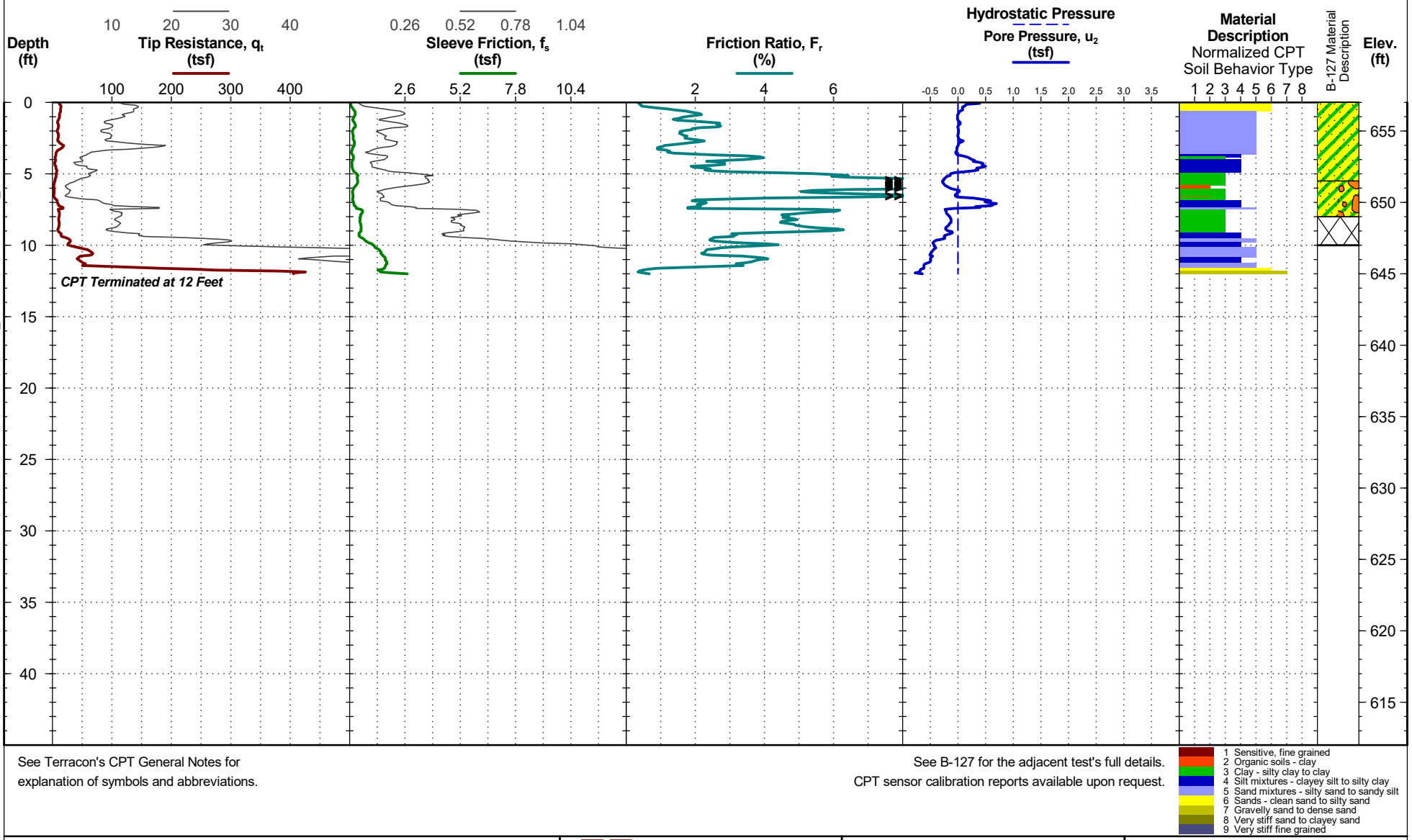
CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 657 ft
Latitude: 35.203592°
Longitude: -80.947228°

Adjacent Test: B-127



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

See B-127 for the adjacent test's full details.
CPT sensor calibration reports available upon request.

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/21/2019	CPT Completed: 3/21/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CPT REPORT 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

CPT LOG NO. C-131

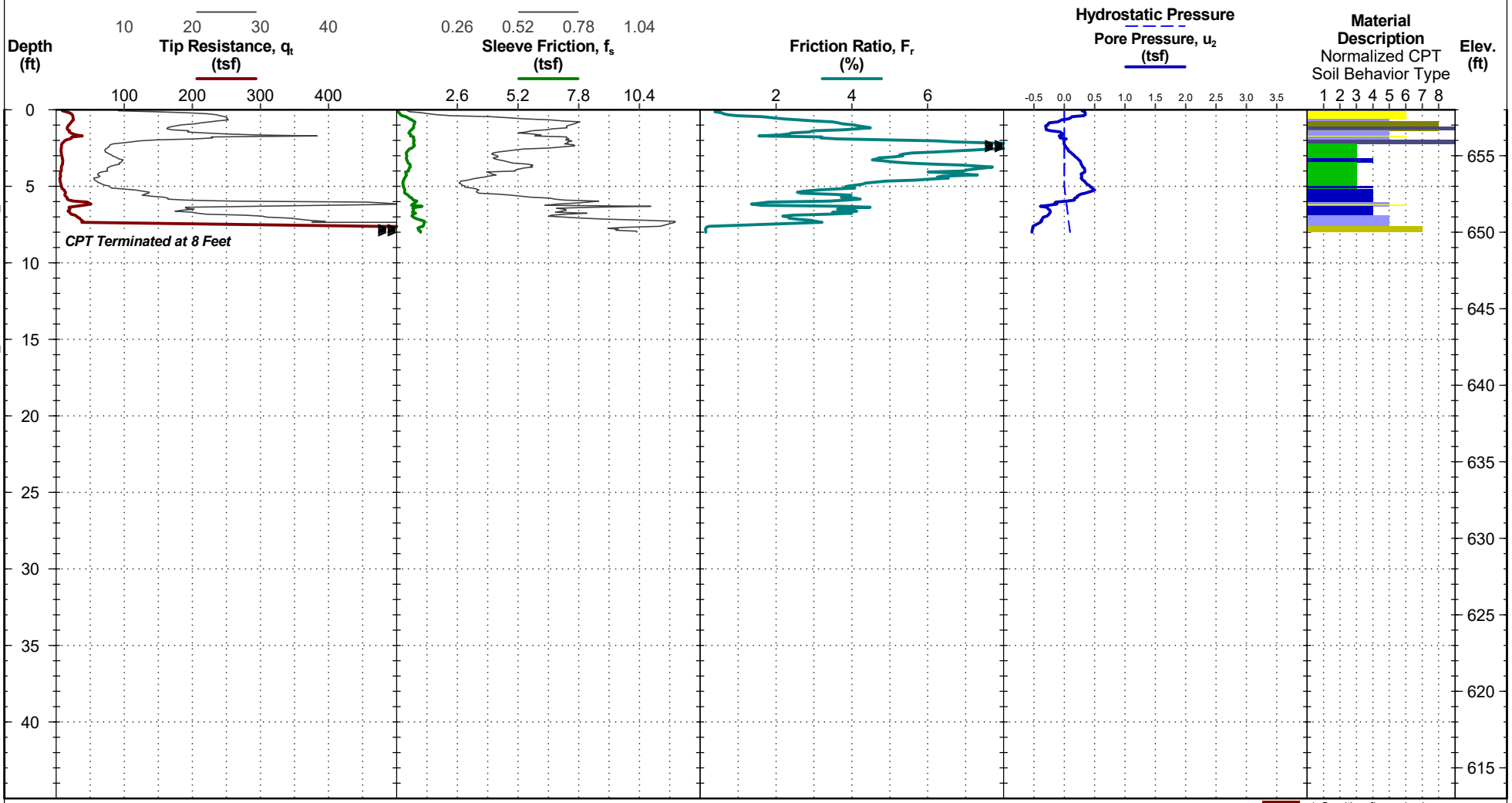
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 658 ft
Latitude: 35.203325°
Longitude: -80.947531°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/21/2019	CPT Completed: 3/21/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-131A

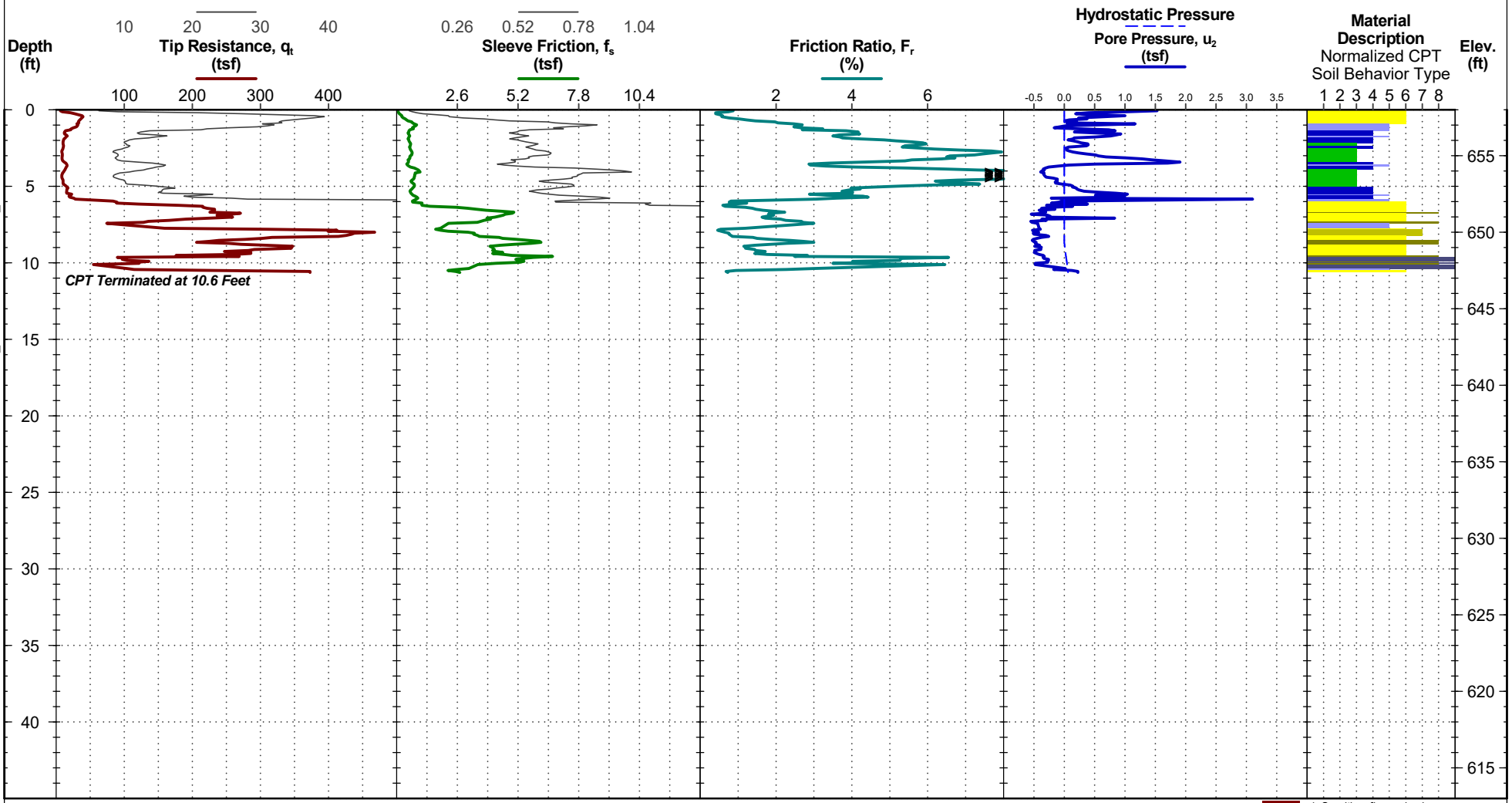
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 658 ft
Latitude: 35.203321°
Longitude: -80.947534°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/21/2019	CPT Completed: 3/21/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-133

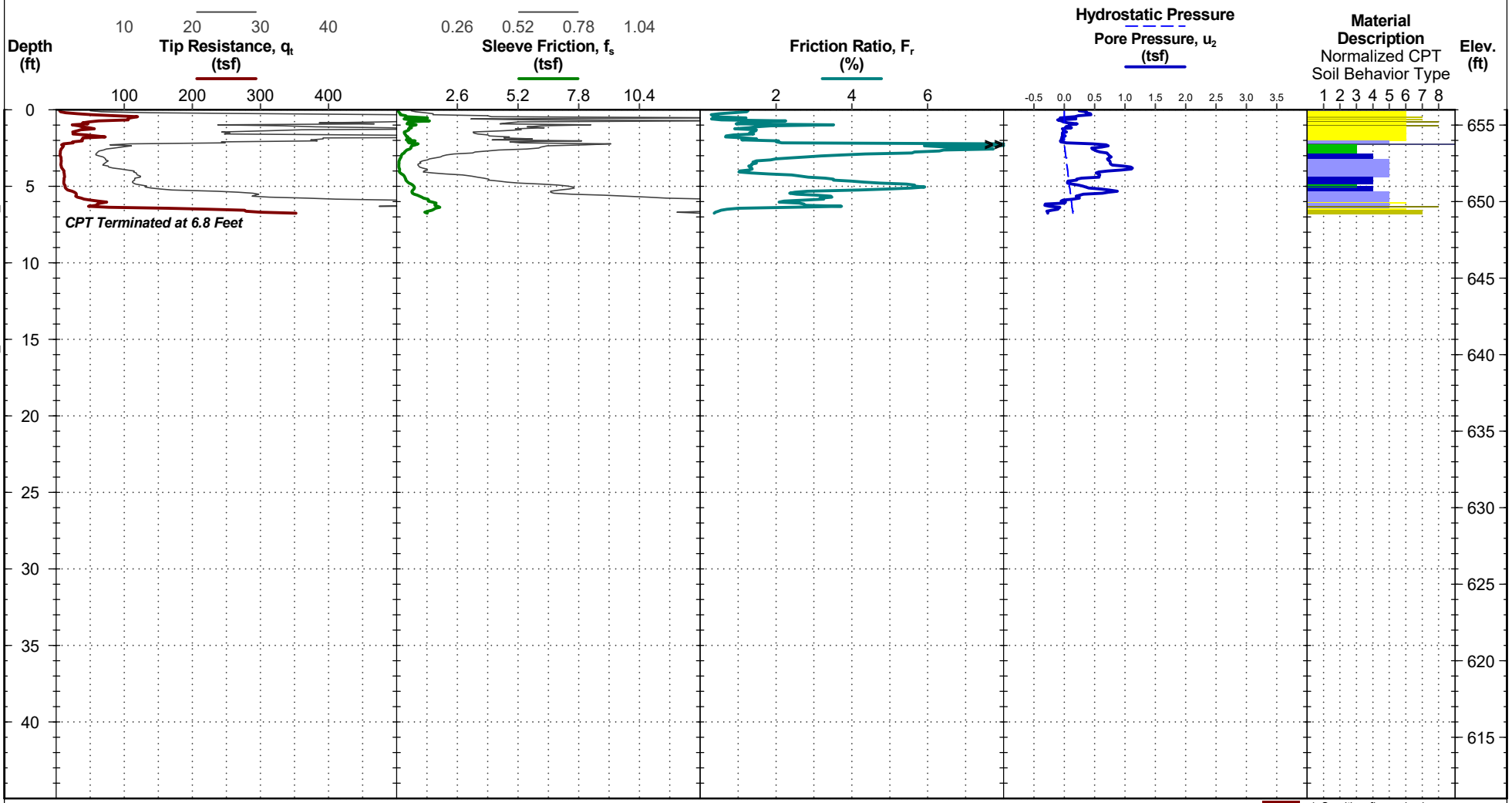
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 656 ft
Latitude: 35.203277181°
Longitude: -80.946847404°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/13/2019	CPT Completed: 2/13/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-135

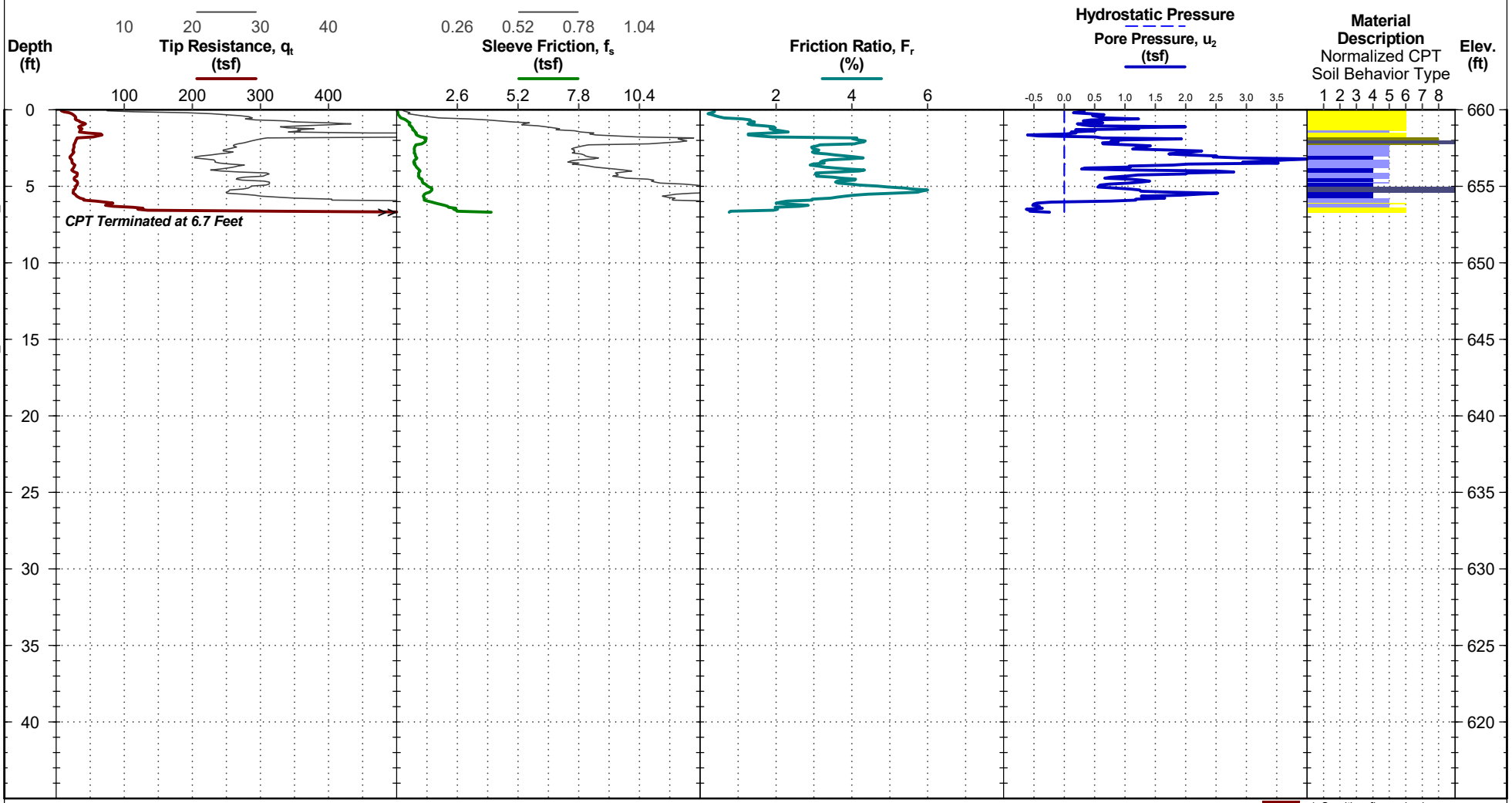
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 660 ft
Latitude: 35.203033°
Longitude: -80.947853°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/21/2019	CPT Completed: 3/21/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-135A

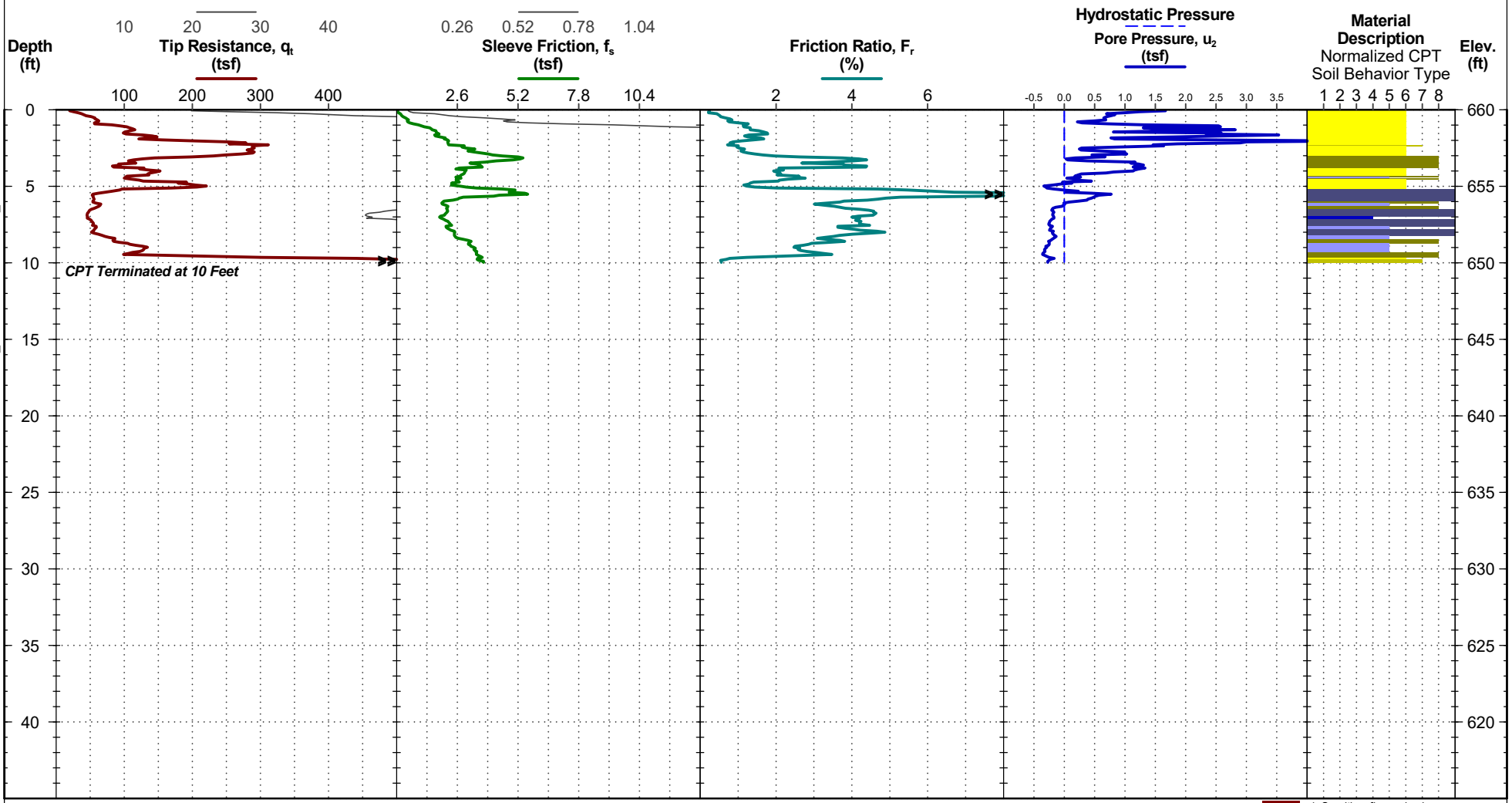
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 660 ft
Latitude: 35.203027°
Longitude: -80.947857°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/21/2019	CPT Completed: 3/21/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-137

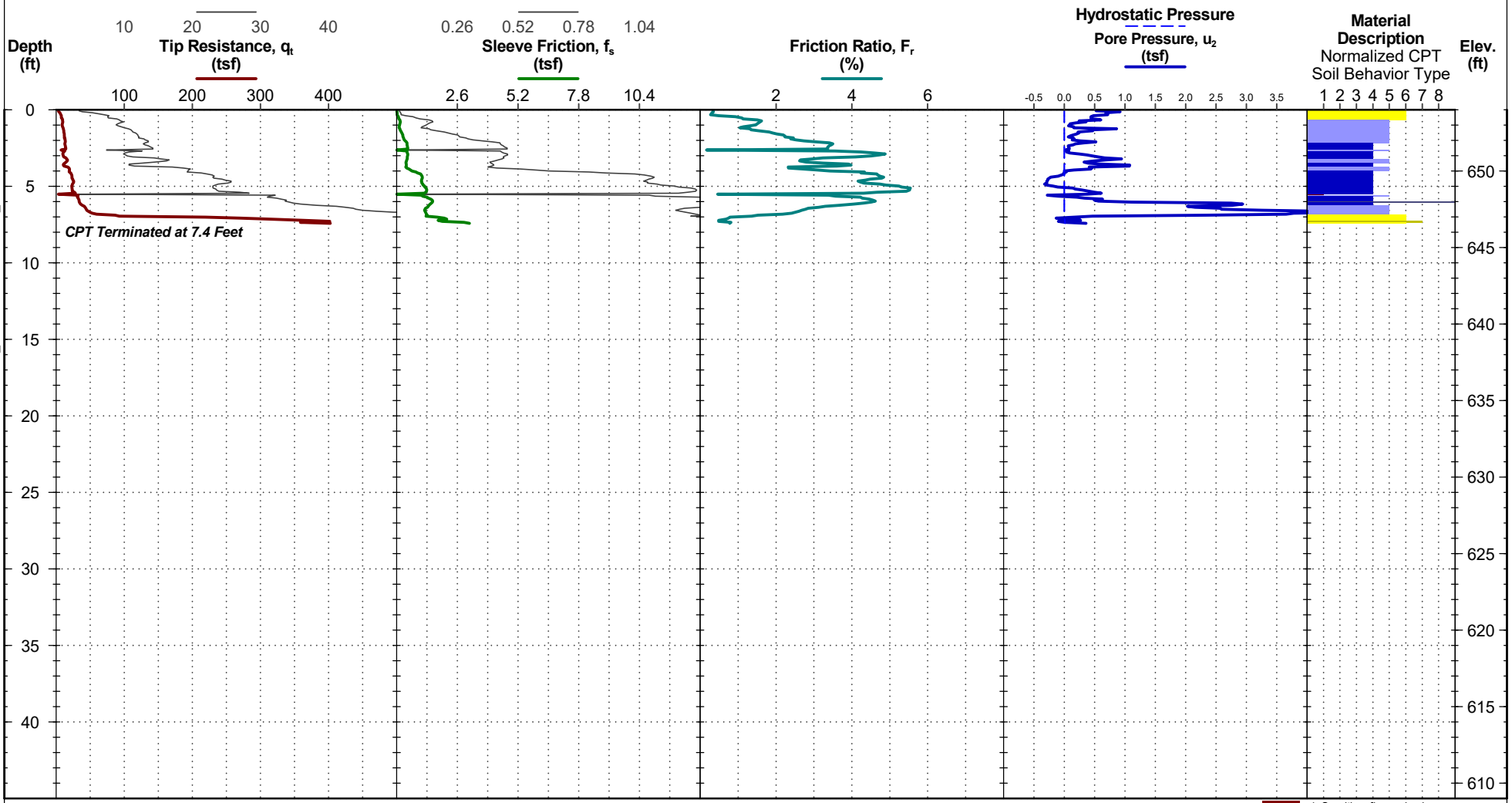
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 654 ft
Latitude: 35.203018008°
Longitude: -80.947118071°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/13/2019	CPT Completed: 2/13/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-139

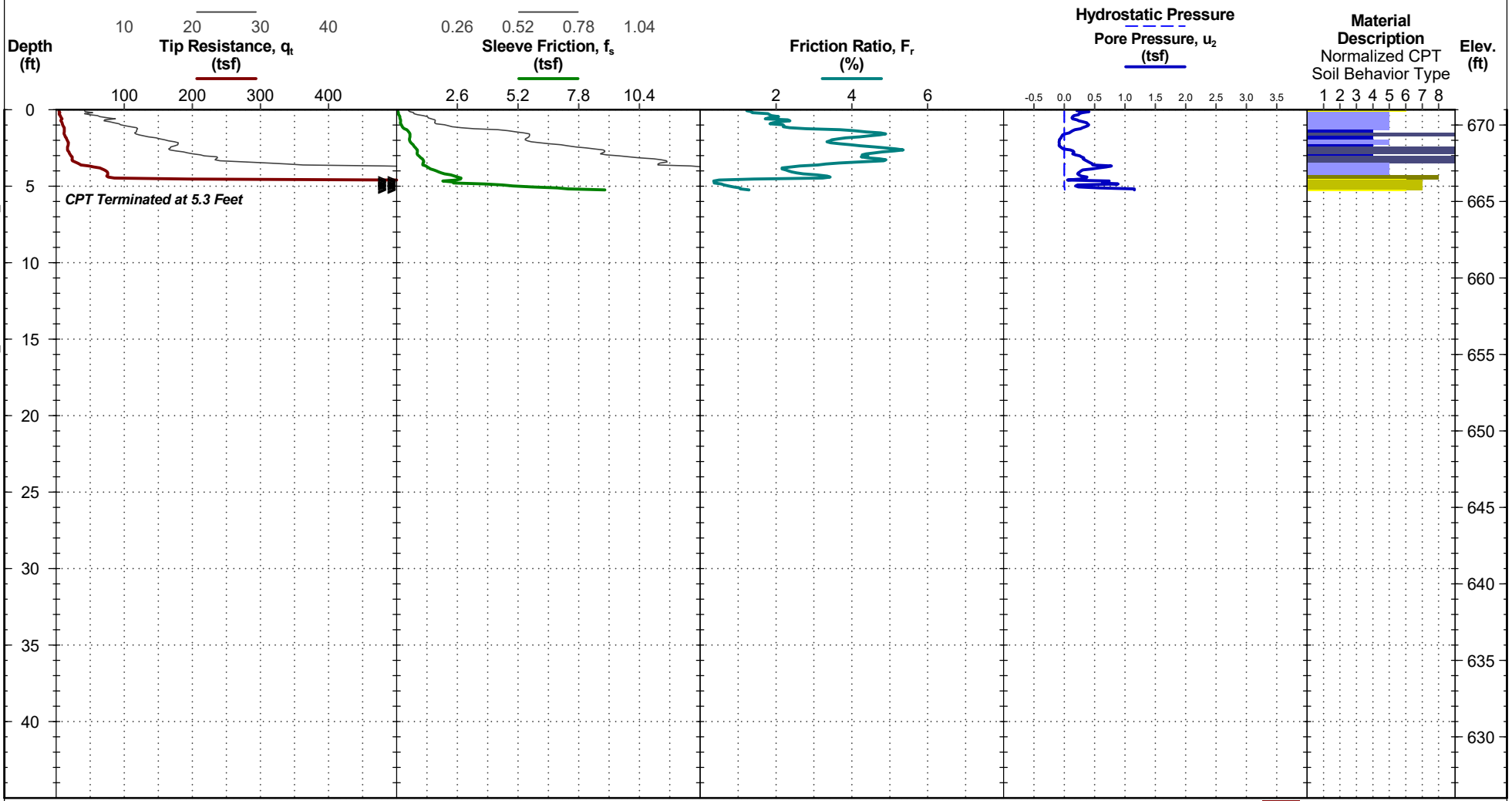
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 671 ft
Latitude: 35.203161385°
Longitude: -80.946431472°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/13/2019	CPT Completed: 2/13/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-141

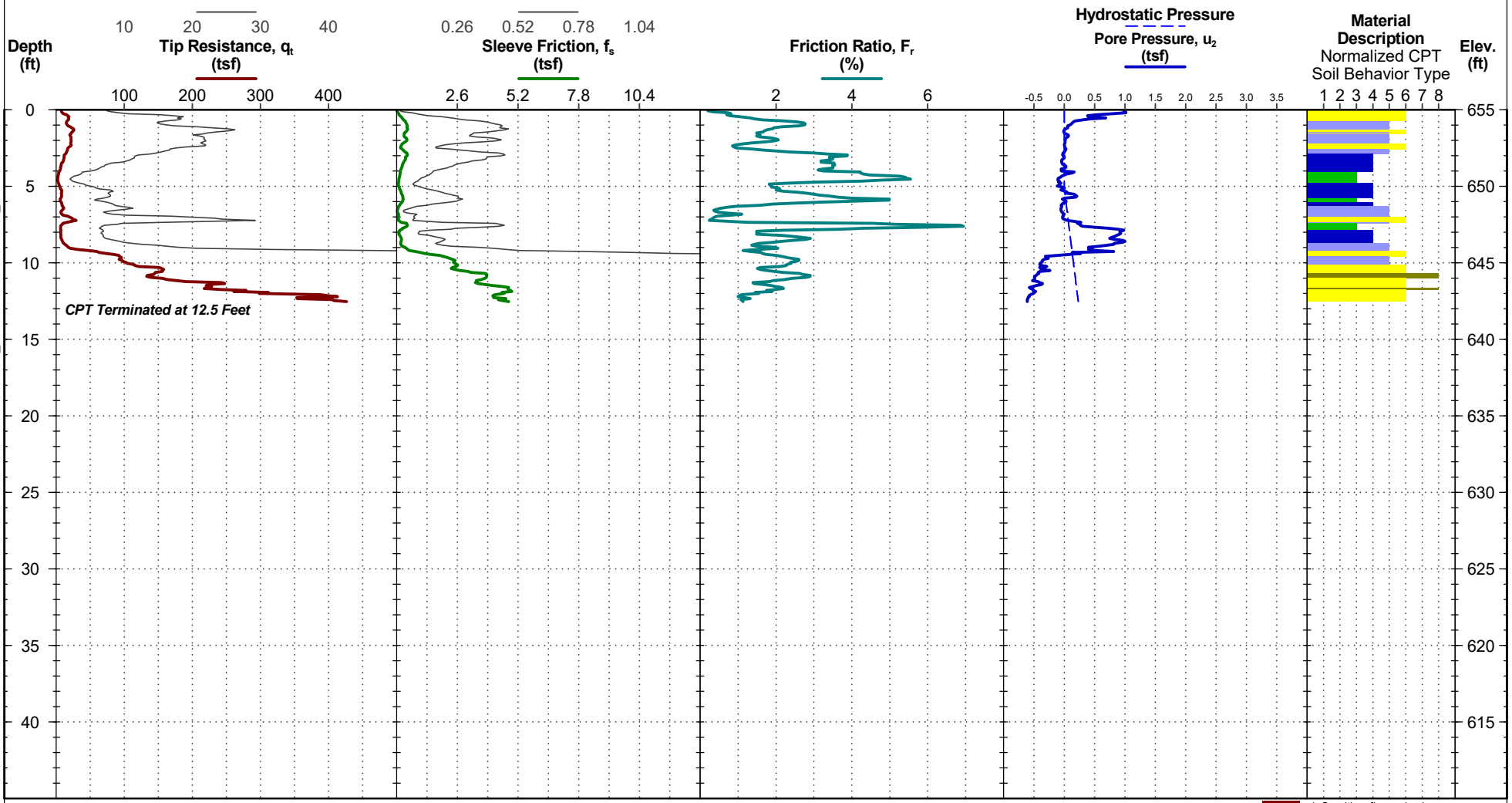
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 655 ft
Latitude: 35.202794°
Longitude: -80.947464°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/21/2019	CPT Completed: 3/21/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CPT REPORT 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

CPT LOG NO. C-143

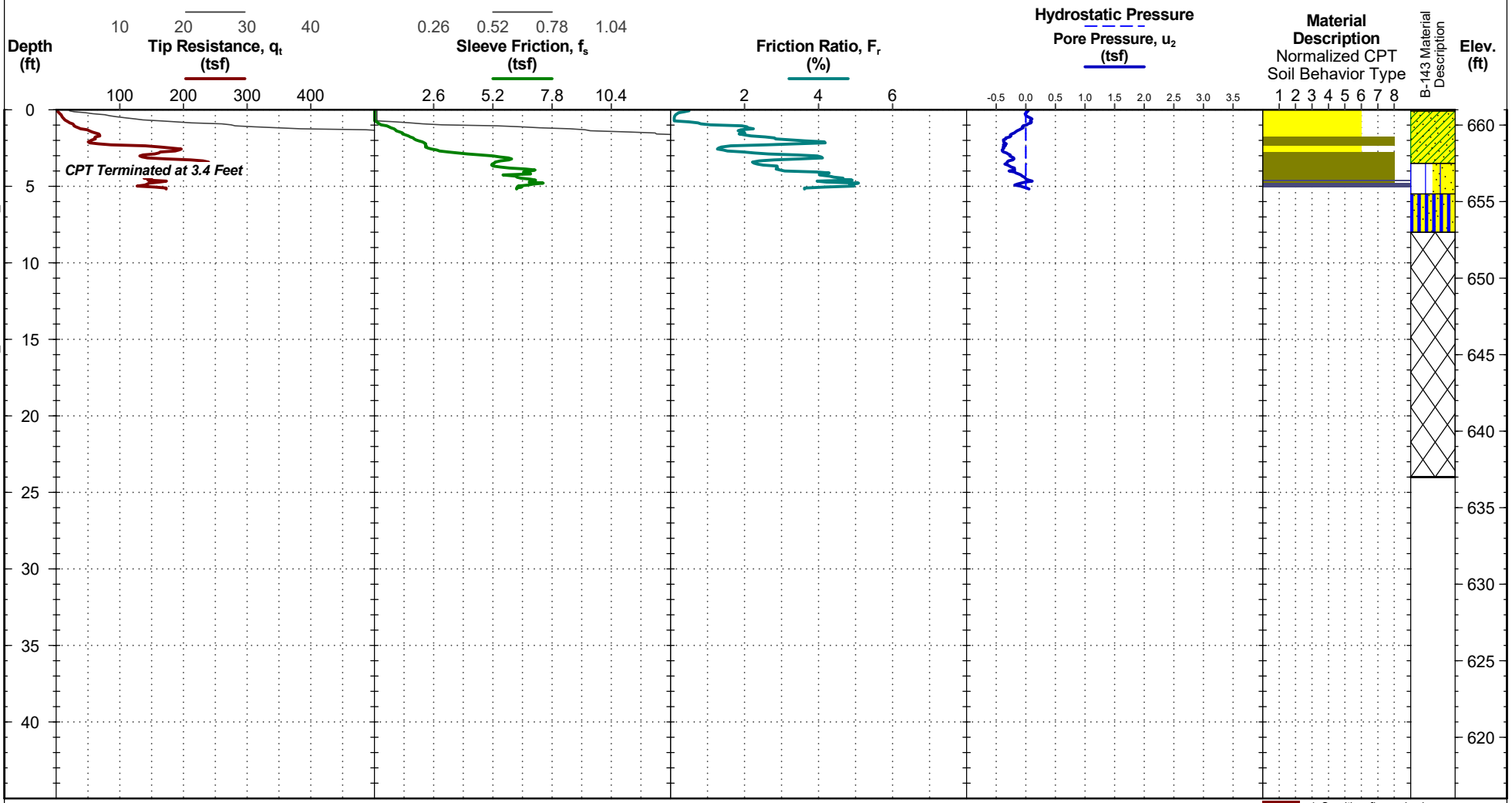
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 661 ft Adjacent Test: B-143
Latitude: 35.202779164°
Longitude: -80.946734168°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

See B-143 for the adjacent test's full details.
Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/13/2019	CPT Completed: 2/13/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-145

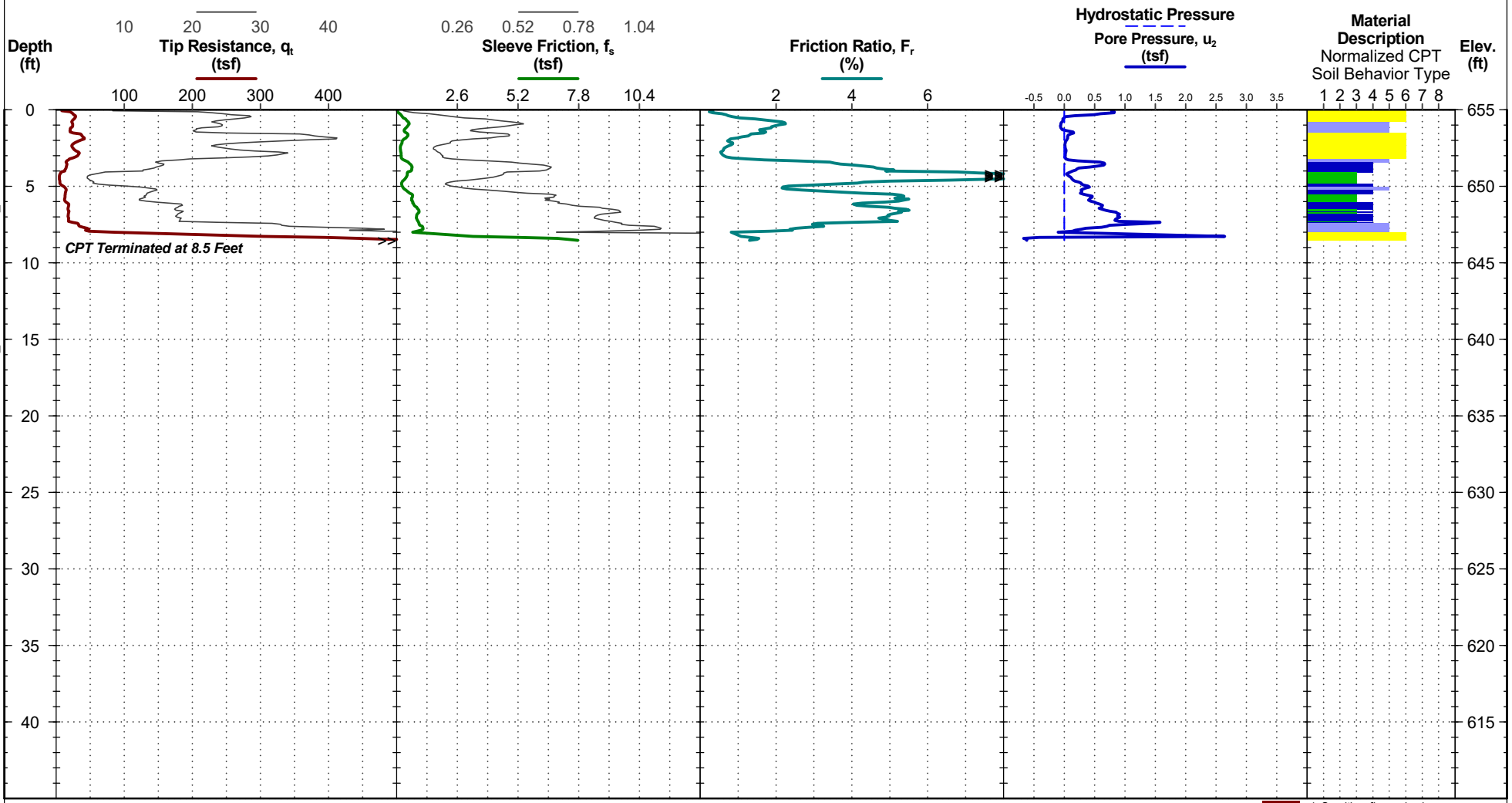
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 655 ft
Latitude: 35.202444°
Longitude: -80.947792°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/21/2019	CPT Completed: 3/21/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-145A

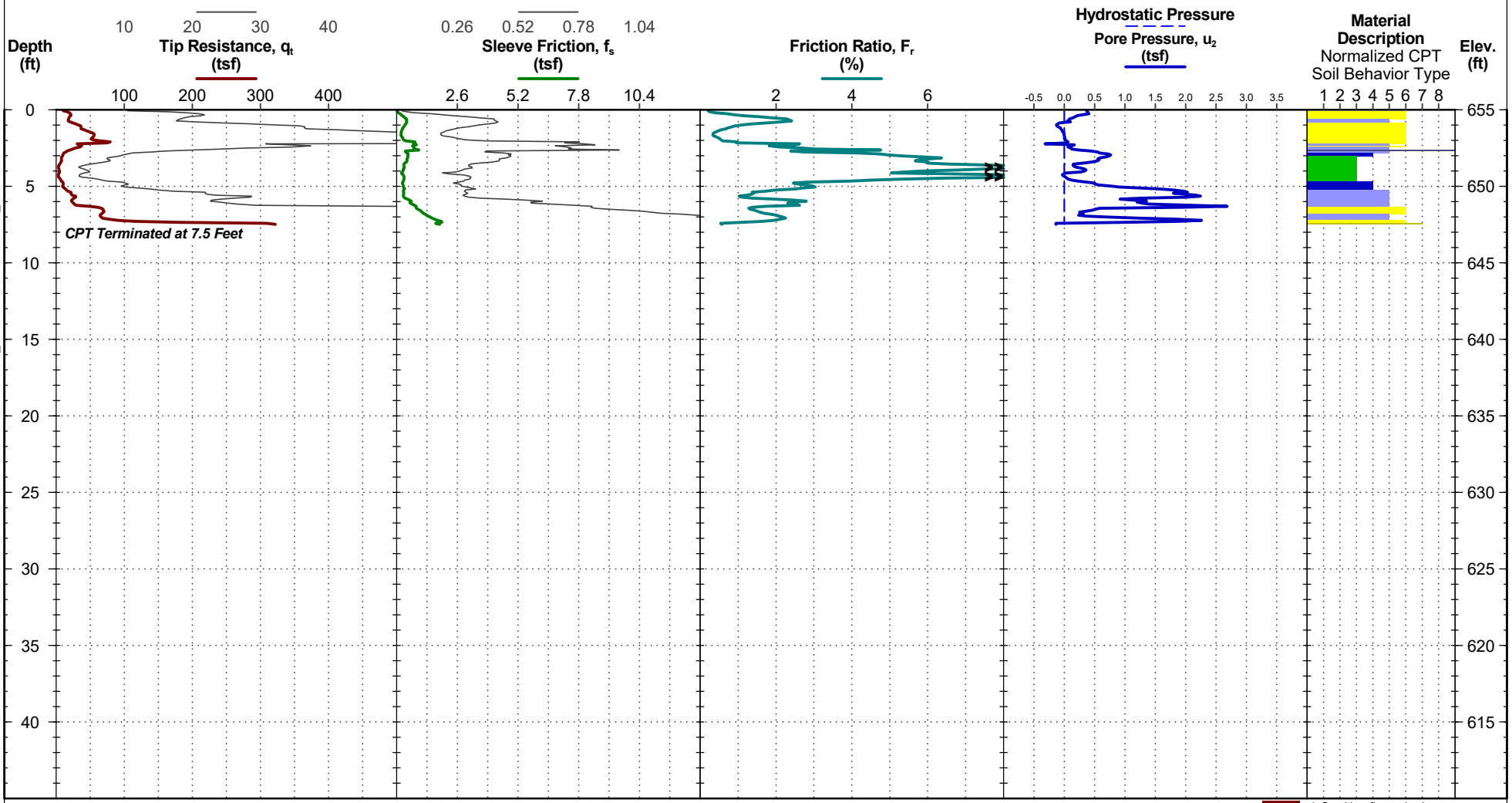
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 655 ft
Latitude: 35.202442°
Longitude: -80.947818°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/21/2019	CPT Completed: 3/21/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-147

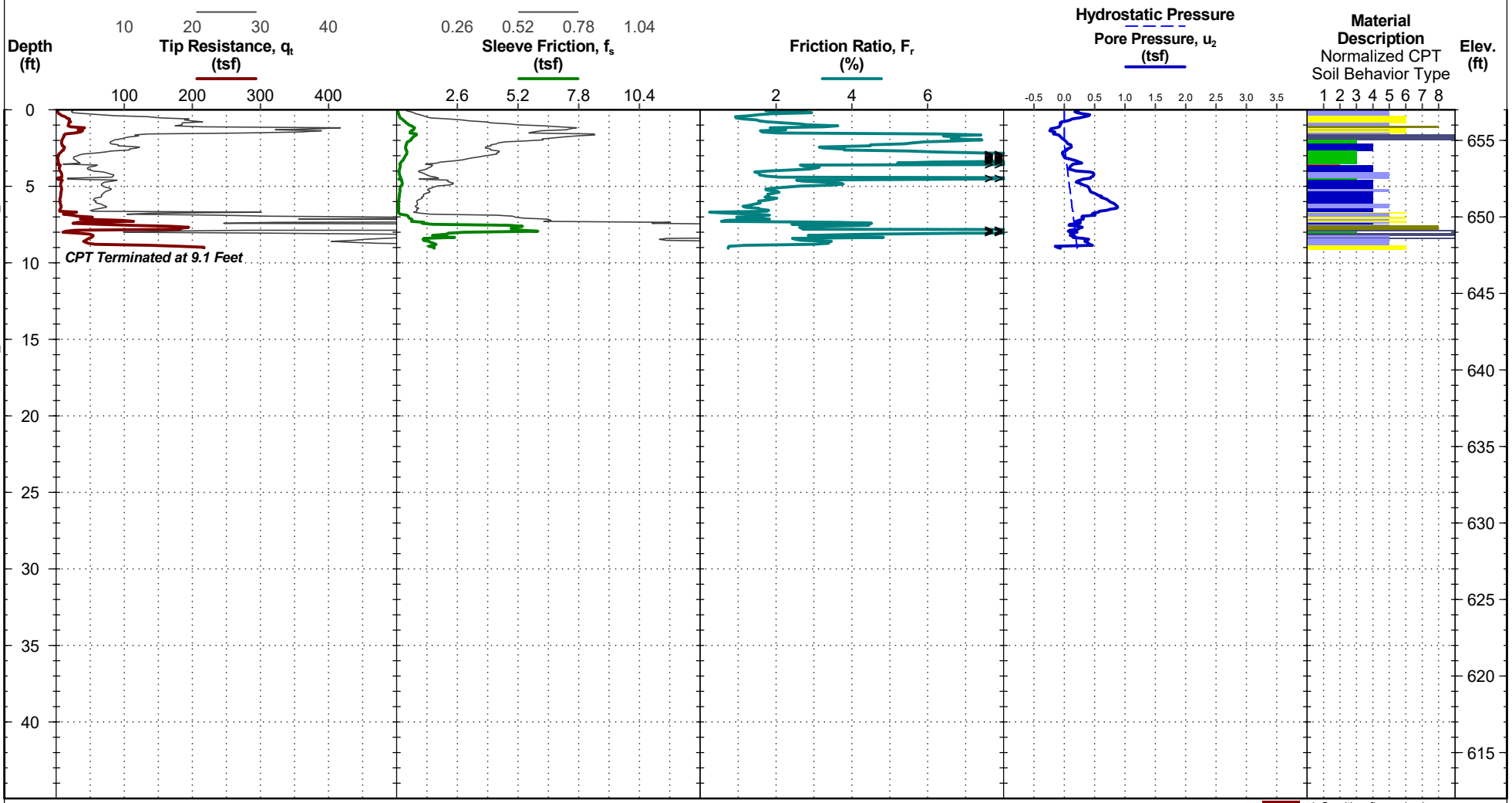
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 657 ft
Latitude: 35.202425°
Longitude: -80.947089°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/13/2019	CPT Completed: 2/13/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-149

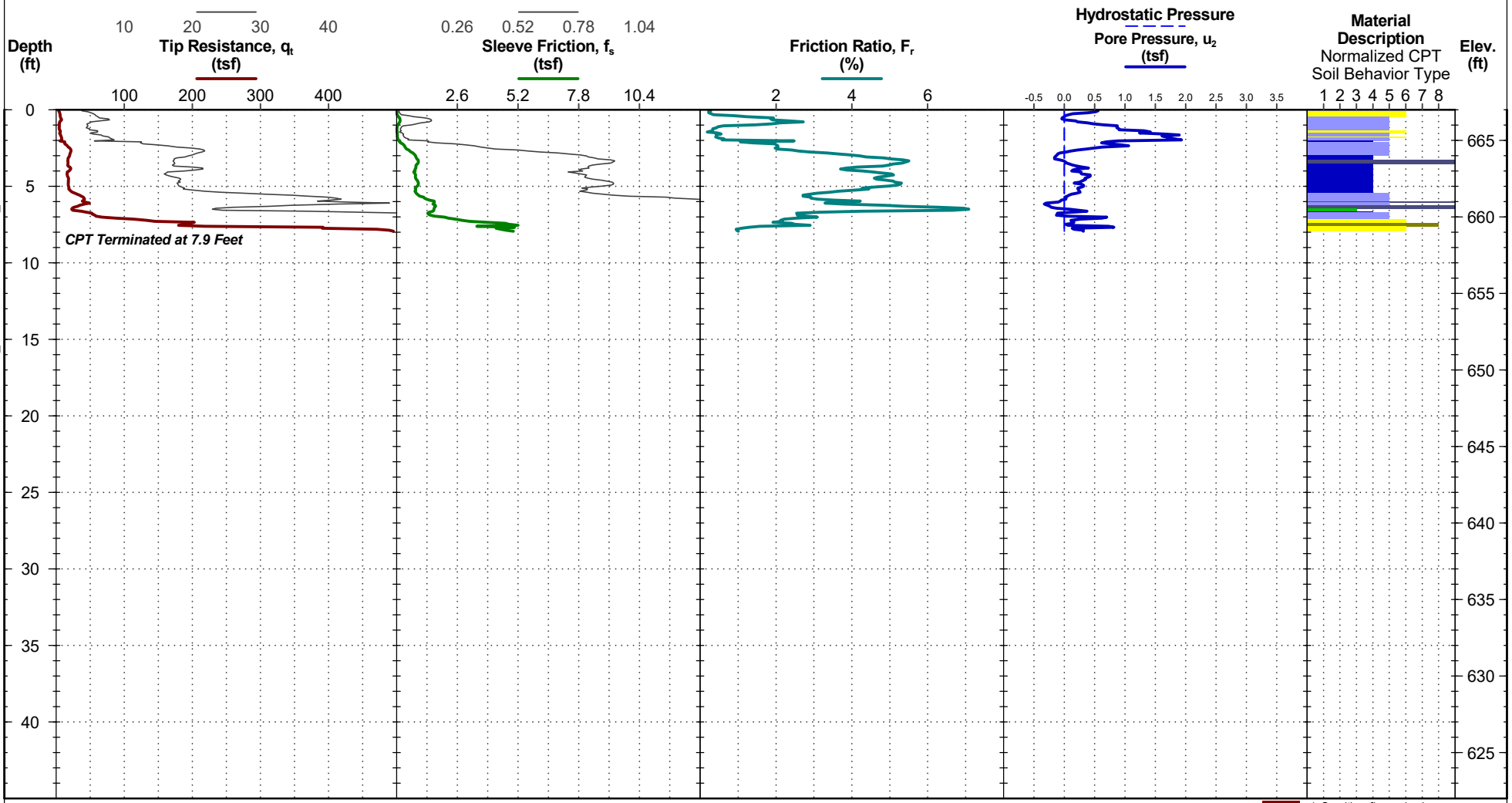
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 667 ft
Latitude: 35.202542534°
Longitude: -80.946302977°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/13/2019	CPT Completed: 2/13/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

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CPT LOG NO. C-151

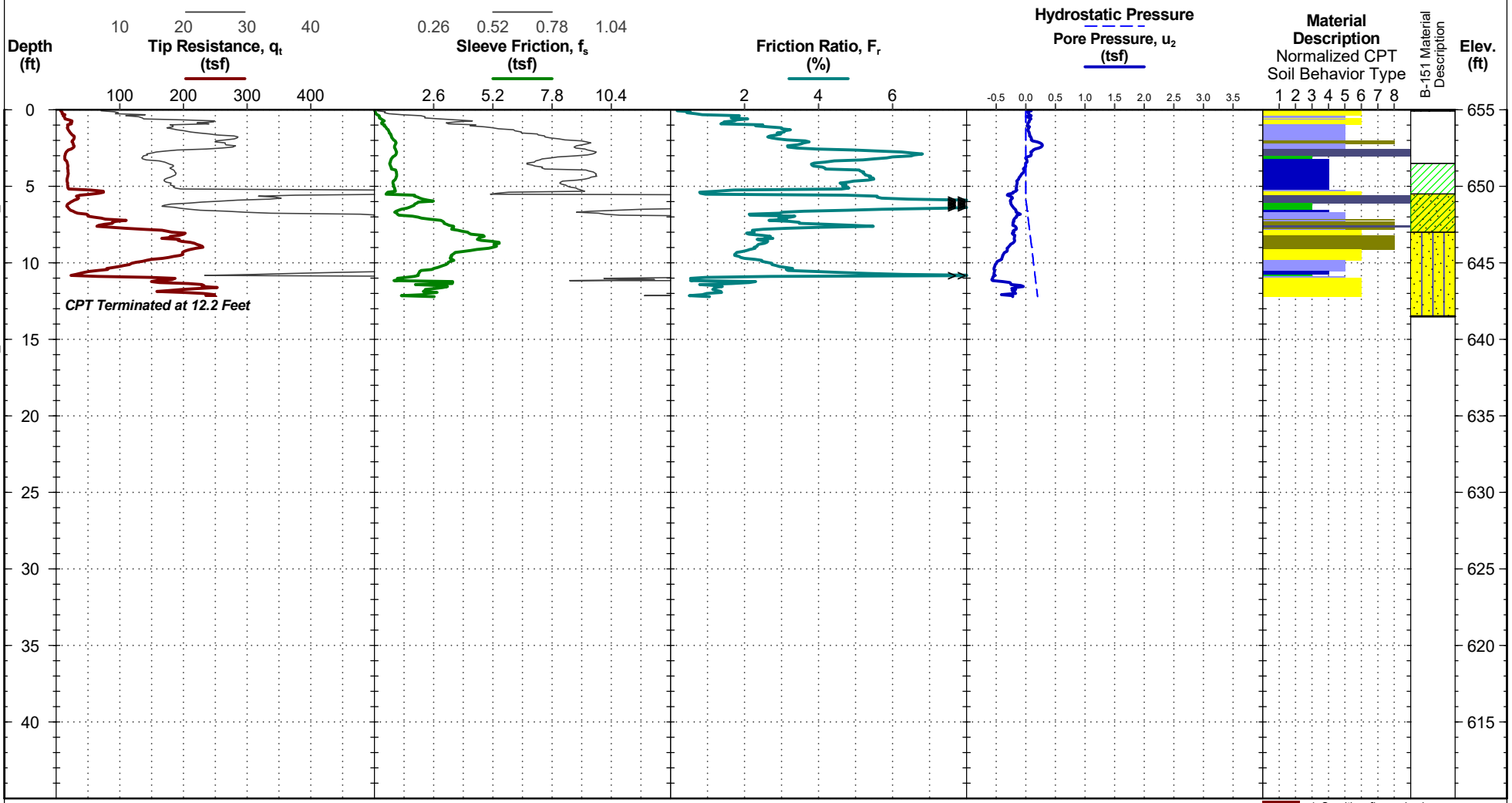
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 655 ft
Adjacent Test: B-151
Latitude: 35.202196°
Longitude: -80.947393°



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

See B-151 for the adjacent test's full details.
Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/13/2019	CPT Completed: 2/13/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-153

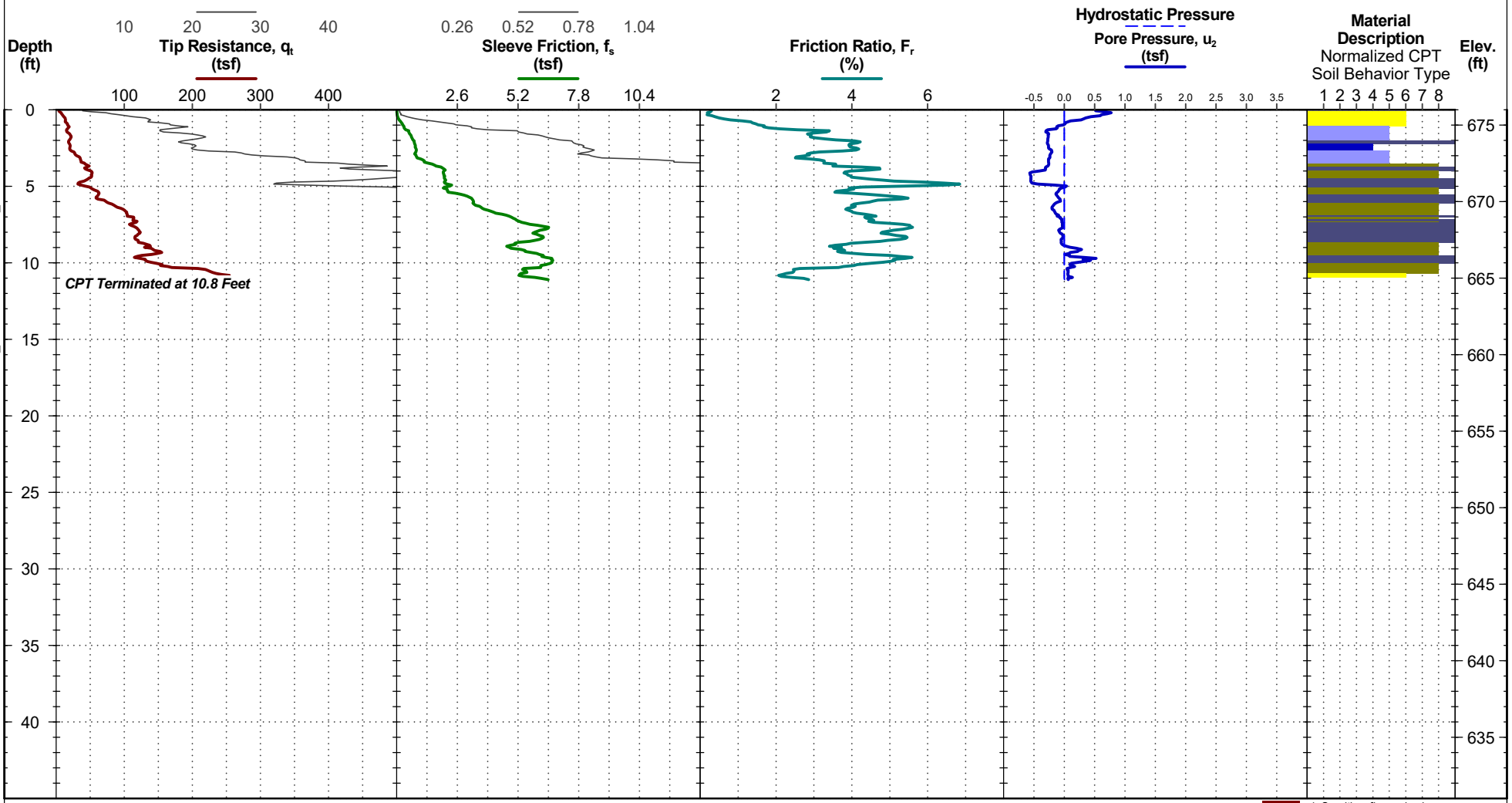
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 676 ft
Latitude: 35.202218231°
Longitude: -80.946693712°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/13/2019	CPT Completed: 2/13/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-155

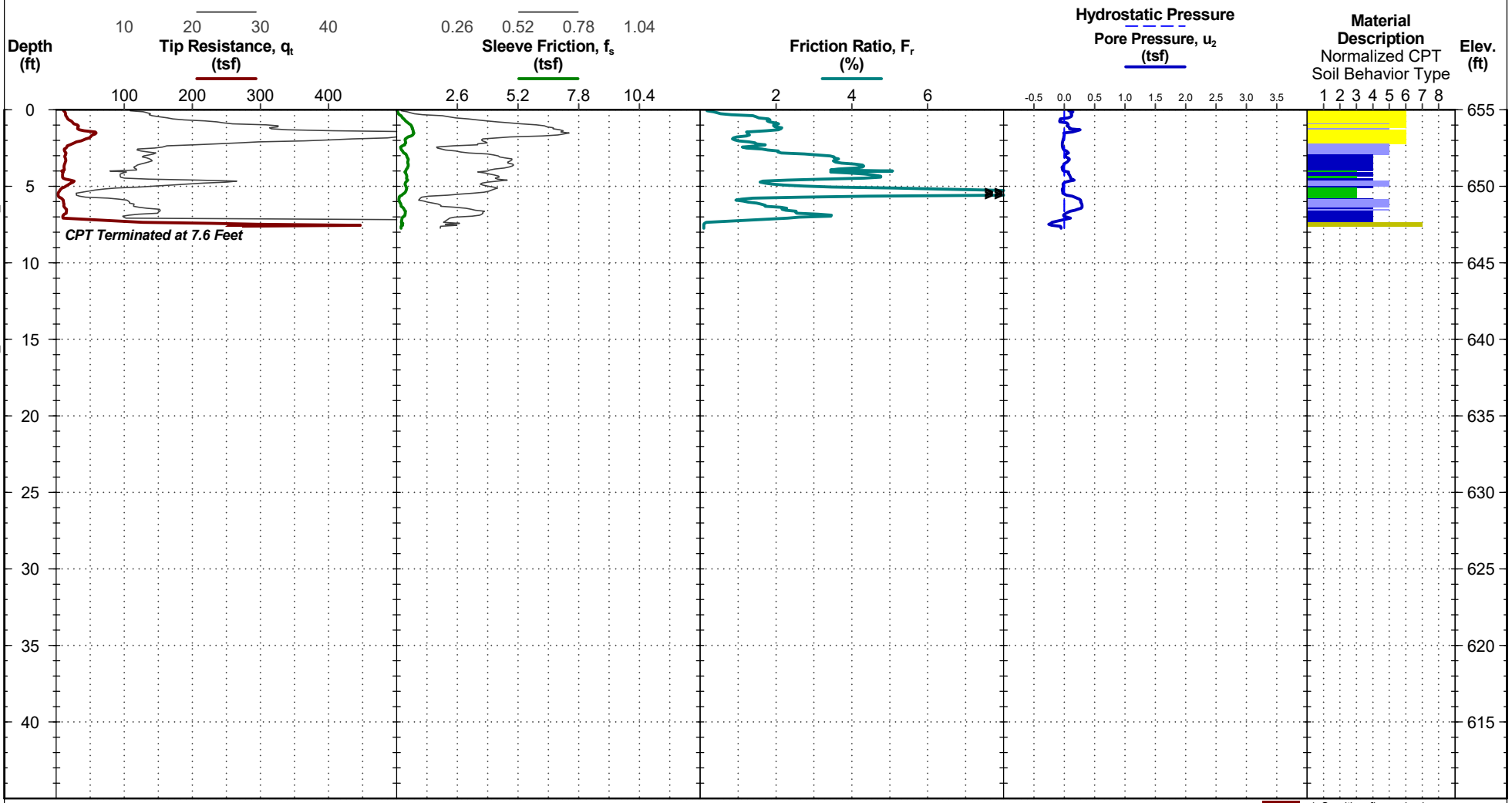
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 655 ft
Latitude: 35.20197°
Longitude: -80.947886°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/22/2019	CPT Completed: 3/22/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CPT REPORT 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

CPT LOG NO. C-155A

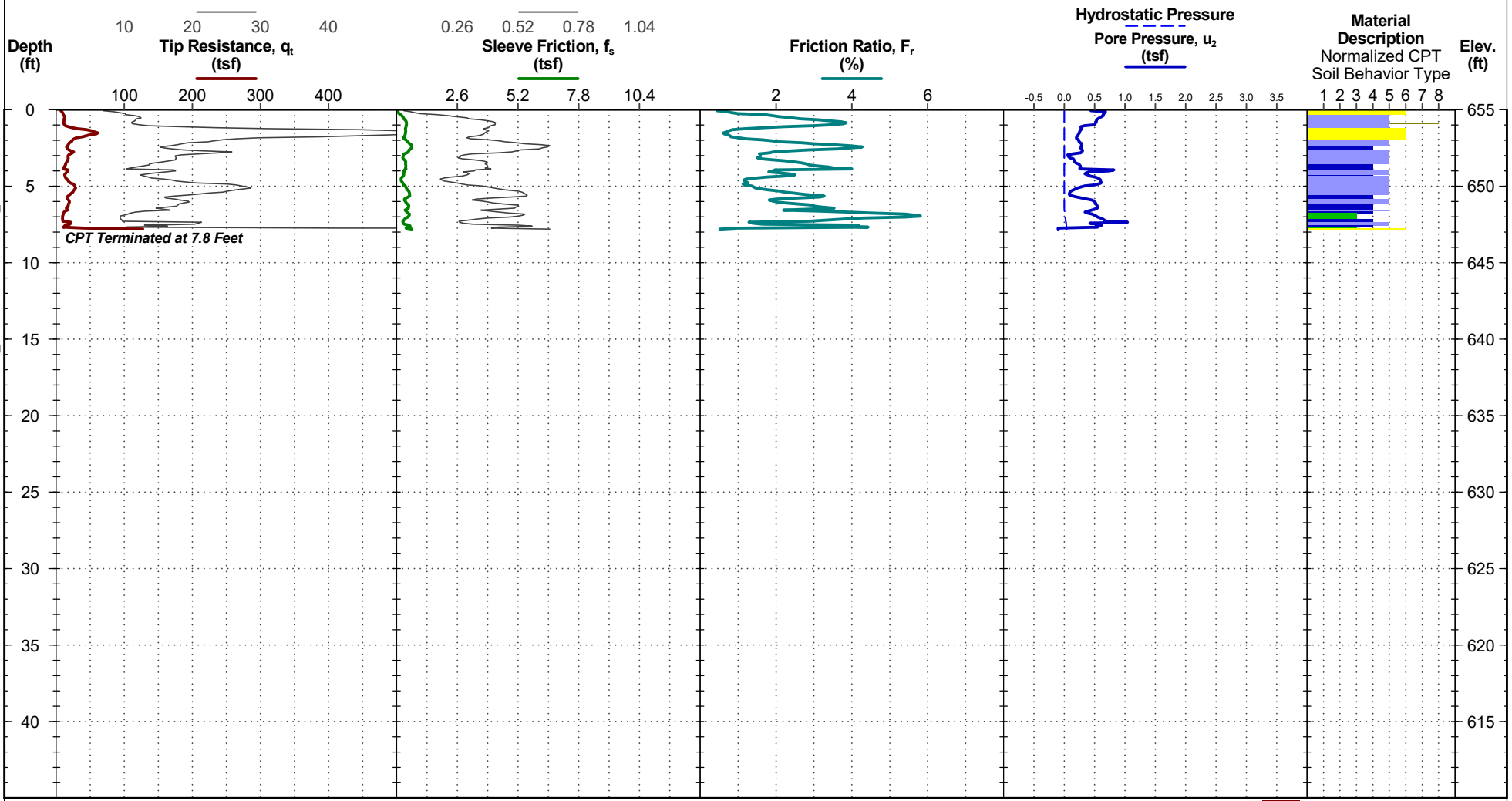
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 655 ft
Latitude: 35.20197°
Longitude: -80.947886°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 4815 with net area ratio of .87
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 2/13/2020
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 3/22/2019	CPT Completed: 3/22/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-157

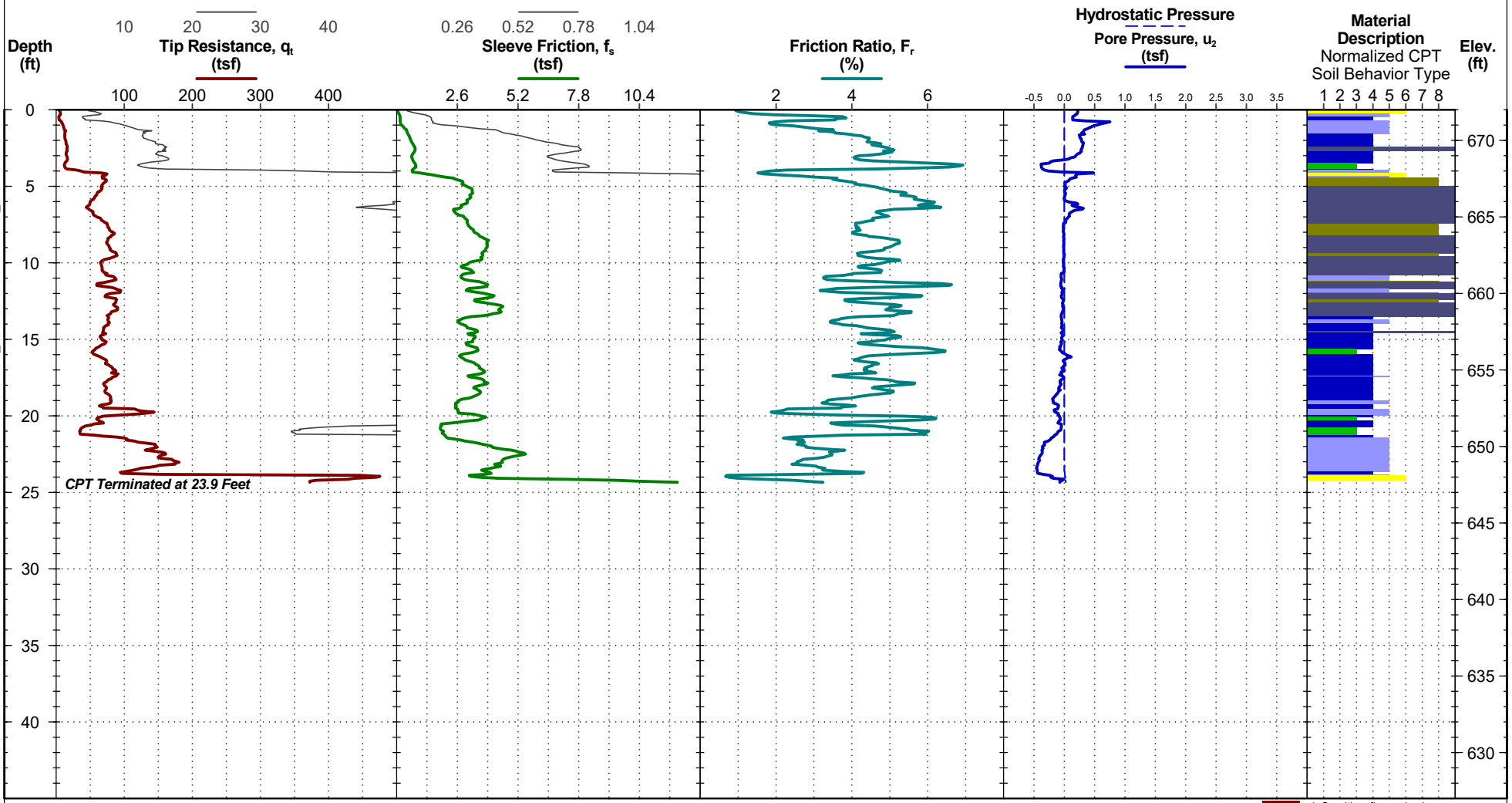
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 672 ft
Latitude: 35.20200239°
Longitude: -80.947007004°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/13/2019
CPT Completed: 2/13/2019
Rig: Pagani TG73-200
Operator: BR
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CPT REPORT 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

CPT LOG NO. C-159

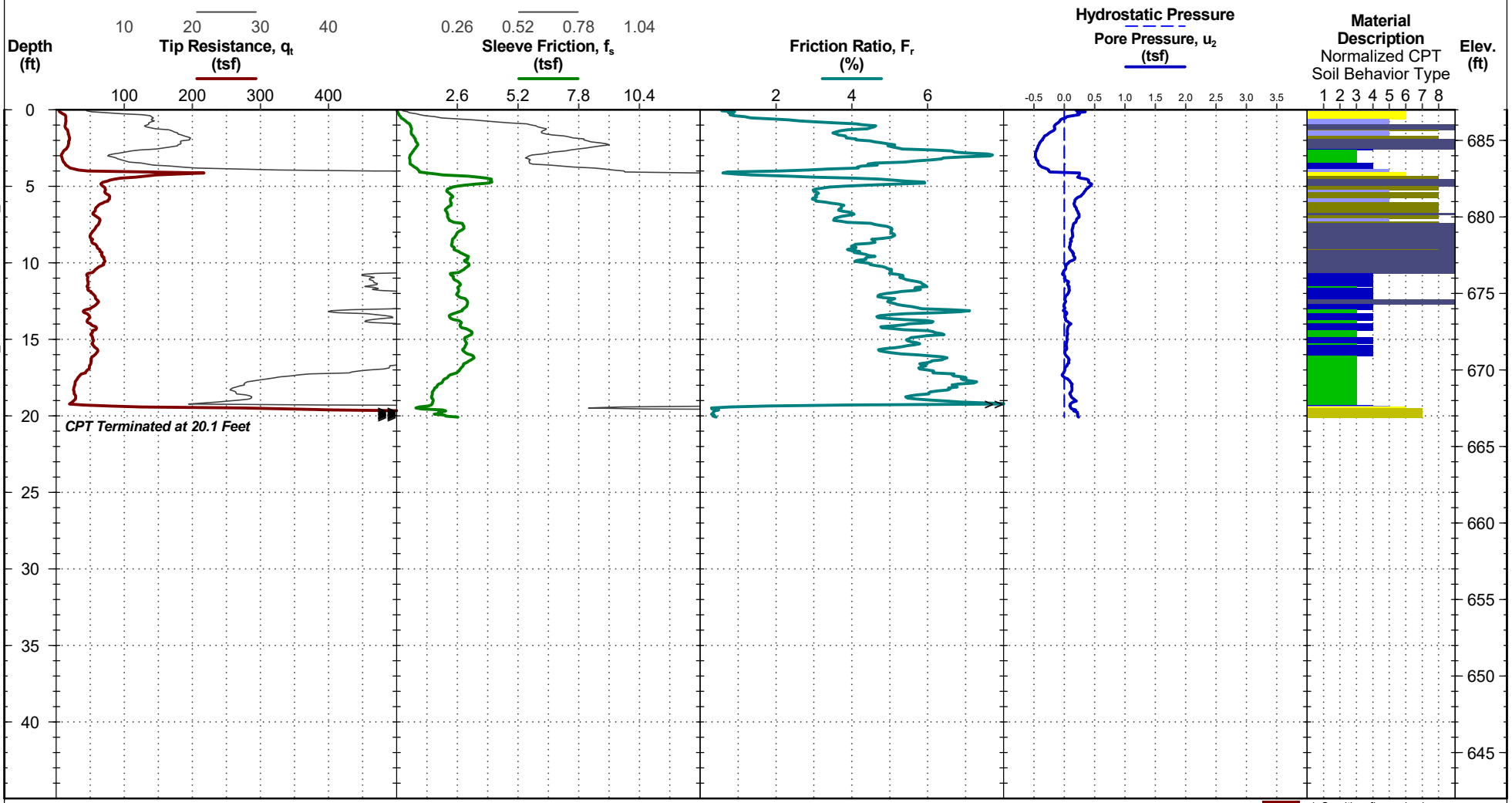
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 687 ft
Latitude: 35.201987605°
Longitude: -80.946358605°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/13/2019	CPT Completed: 2/13/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-161

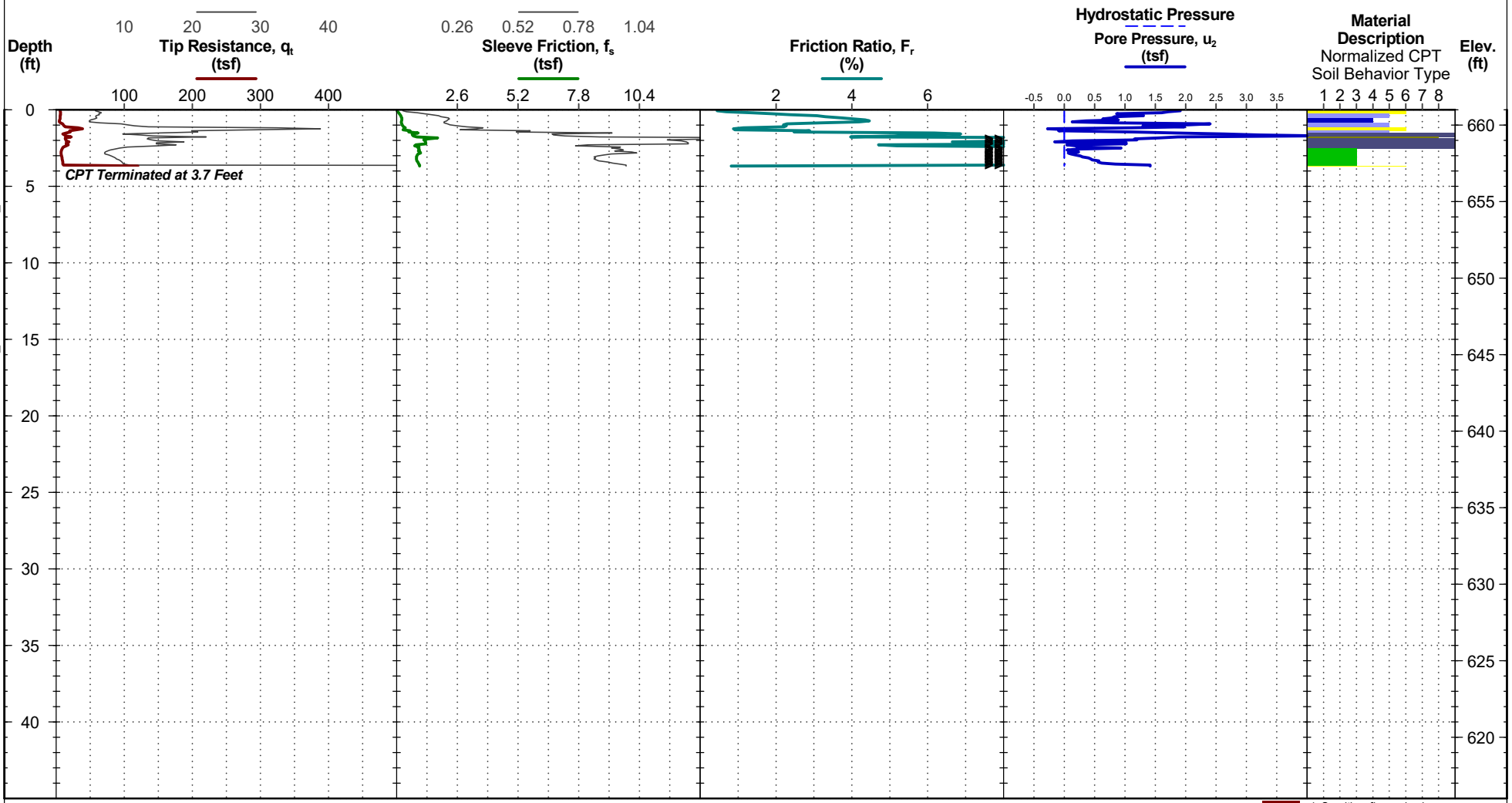
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 661 ft
Latitude: 35.201656957°
Longitude: -80.947409304°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/12/2019	CPT Completed: 2/12/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-163

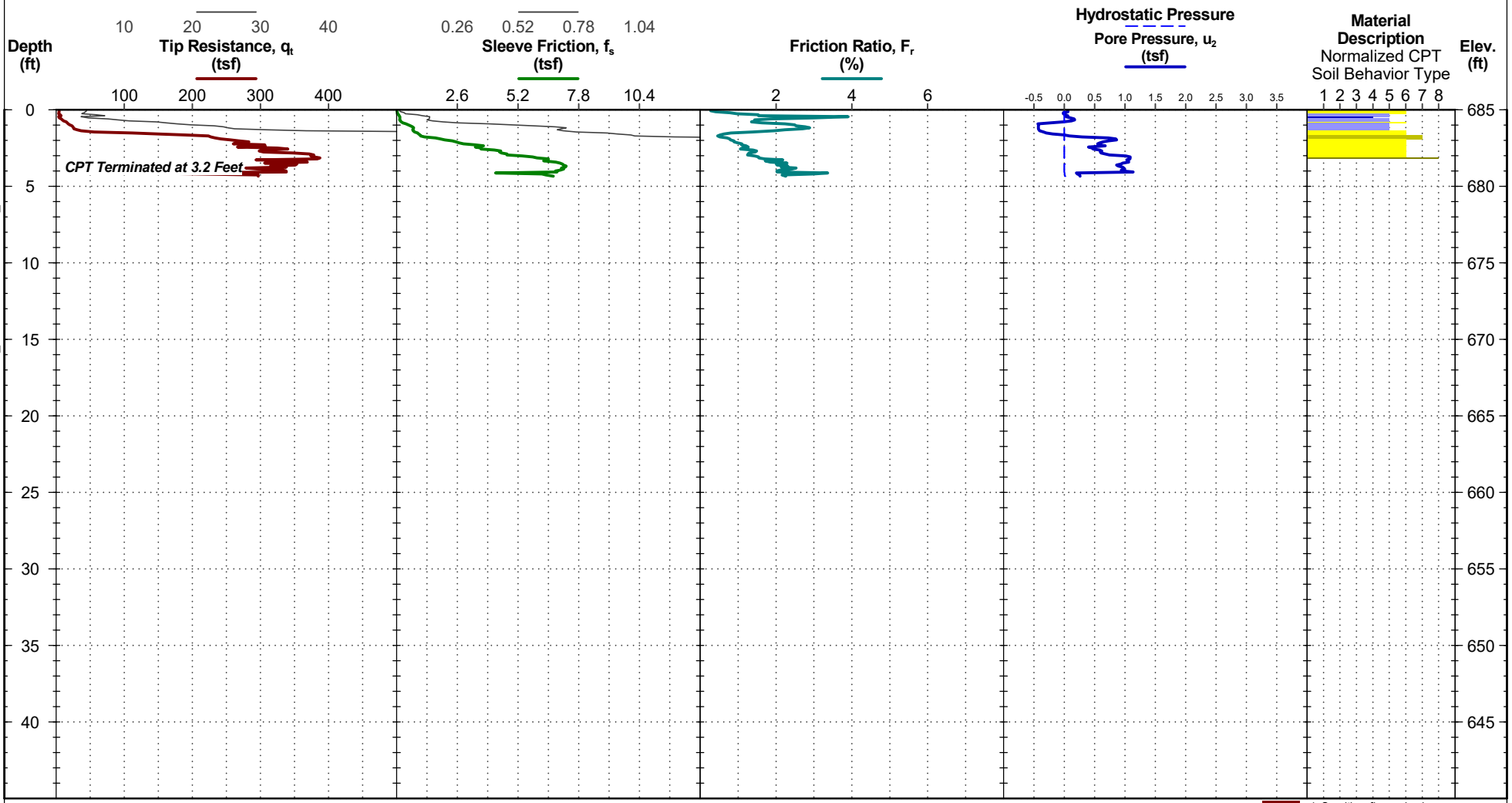
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 685 ft
Latitude: 35.20164658°
Longitude: -80.946641555°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/12/2019	CPT Completed: 2/12/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-165

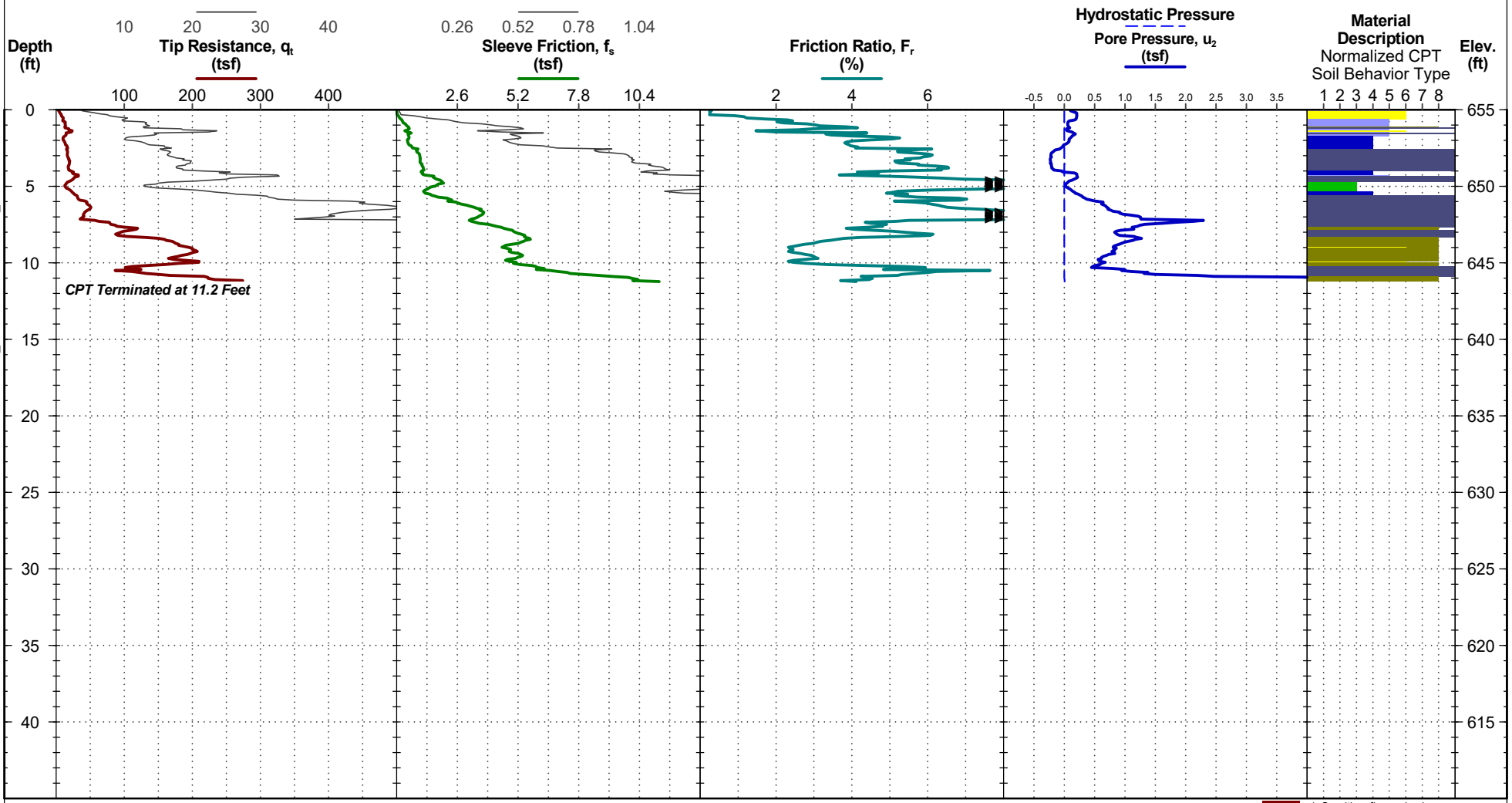
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 655 ft
Latitude: 35.201422906°
Longitude: -80.947642242°



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/12/2019	CPT Completed: 2/12/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-167

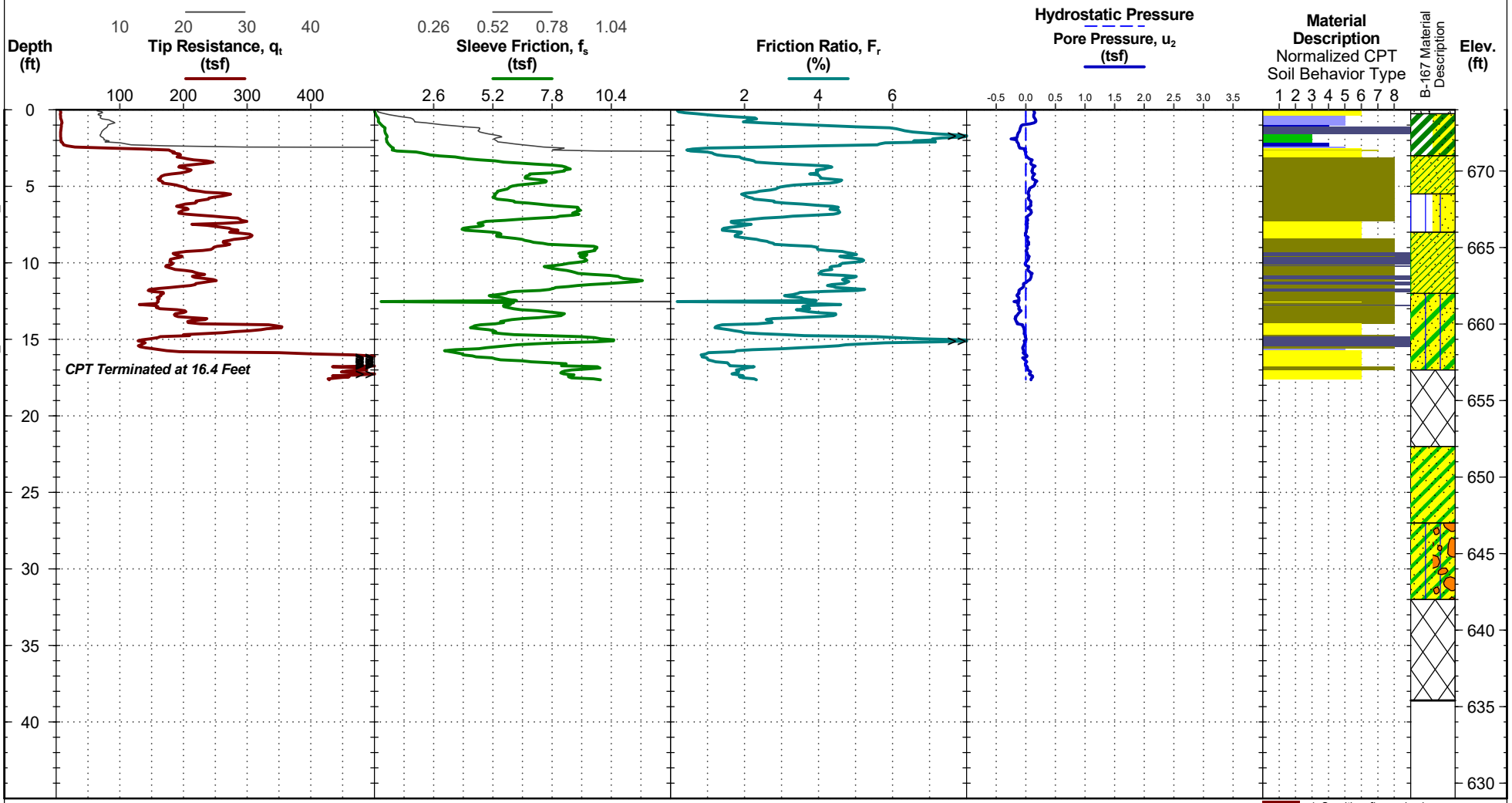
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 674 ft Adjacent Test: B-167
Latitude: 35.201451301°
Longitude: -80.947020737°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

See B-167 for the adjacent test's full details.
Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/13/2019	CPT Completed: 2/13/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CPT REPORT 71195007 FINAL_GINT.GPJ TERRACON_DATATEMPLATE.GDT 4/6/20

CPT LOG NO. C-169

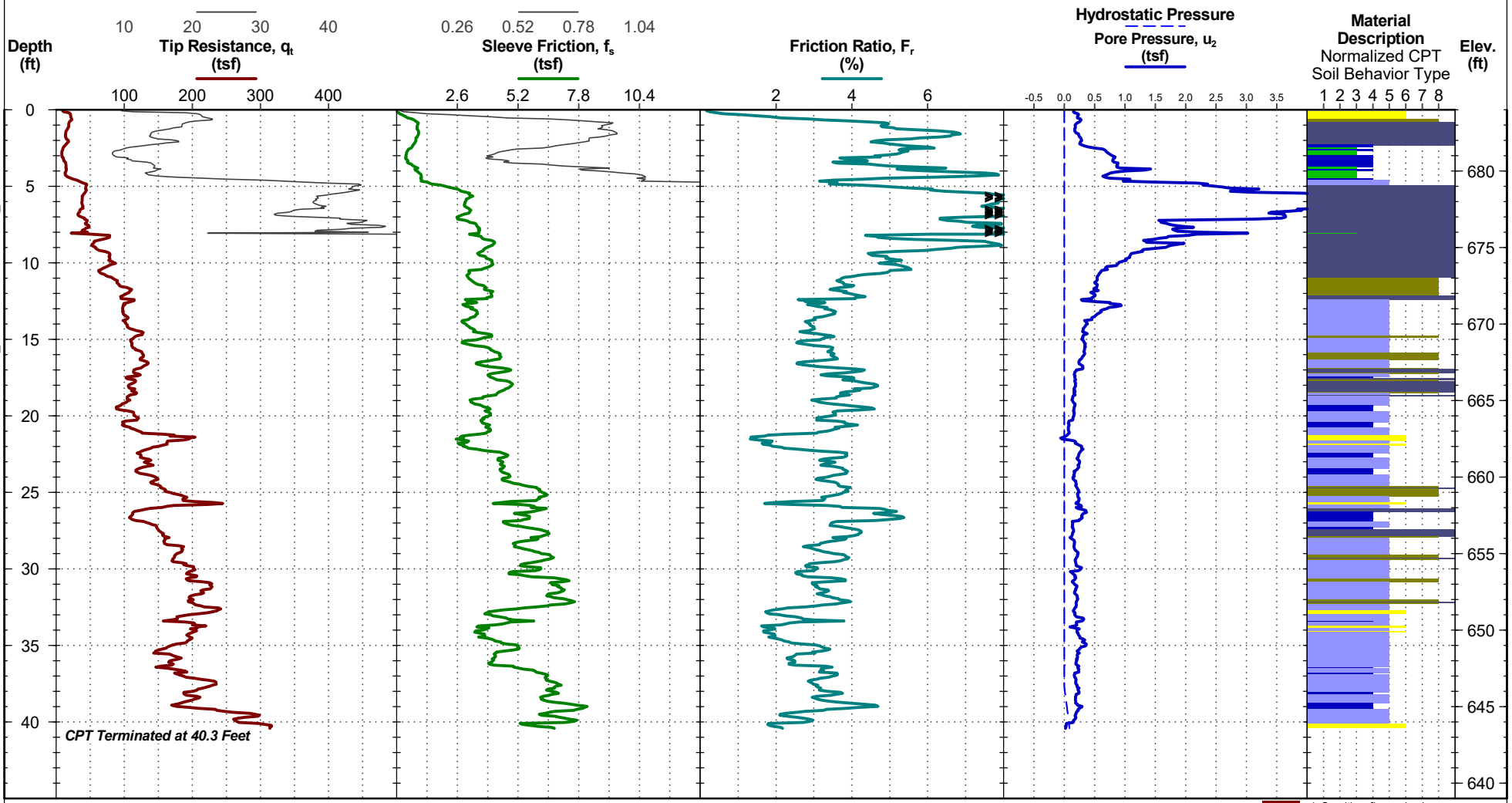
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 684 ft
Latitude: 35.201495917°
Longitude: -80.946241925°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/11/2019	CPT Completed: 2/11/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-171

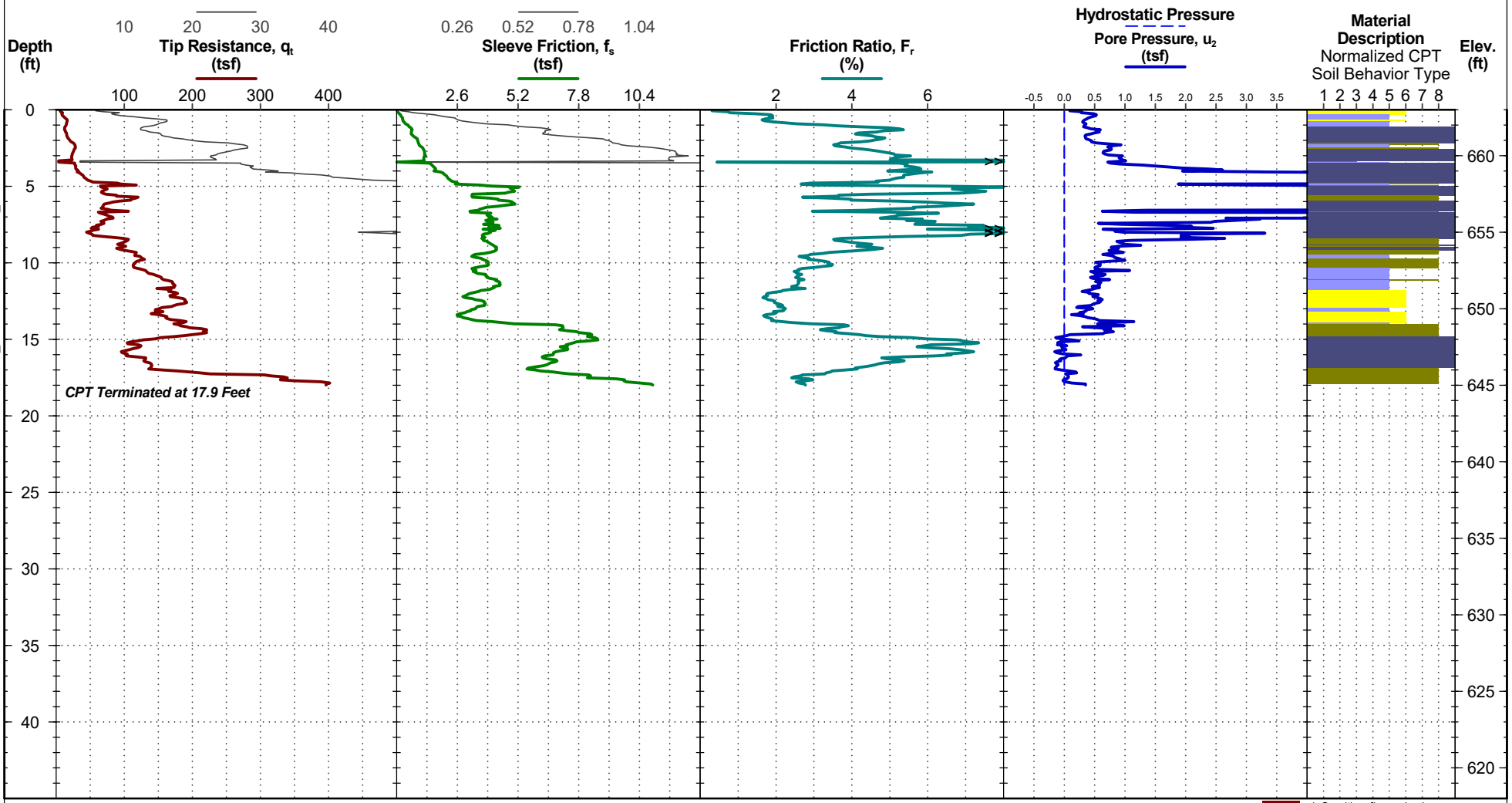
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 663 ft
Latitude: 35.201197504°
Longitude: -80.947367366°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/11/2019	CPT Completed: 2/11/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-173

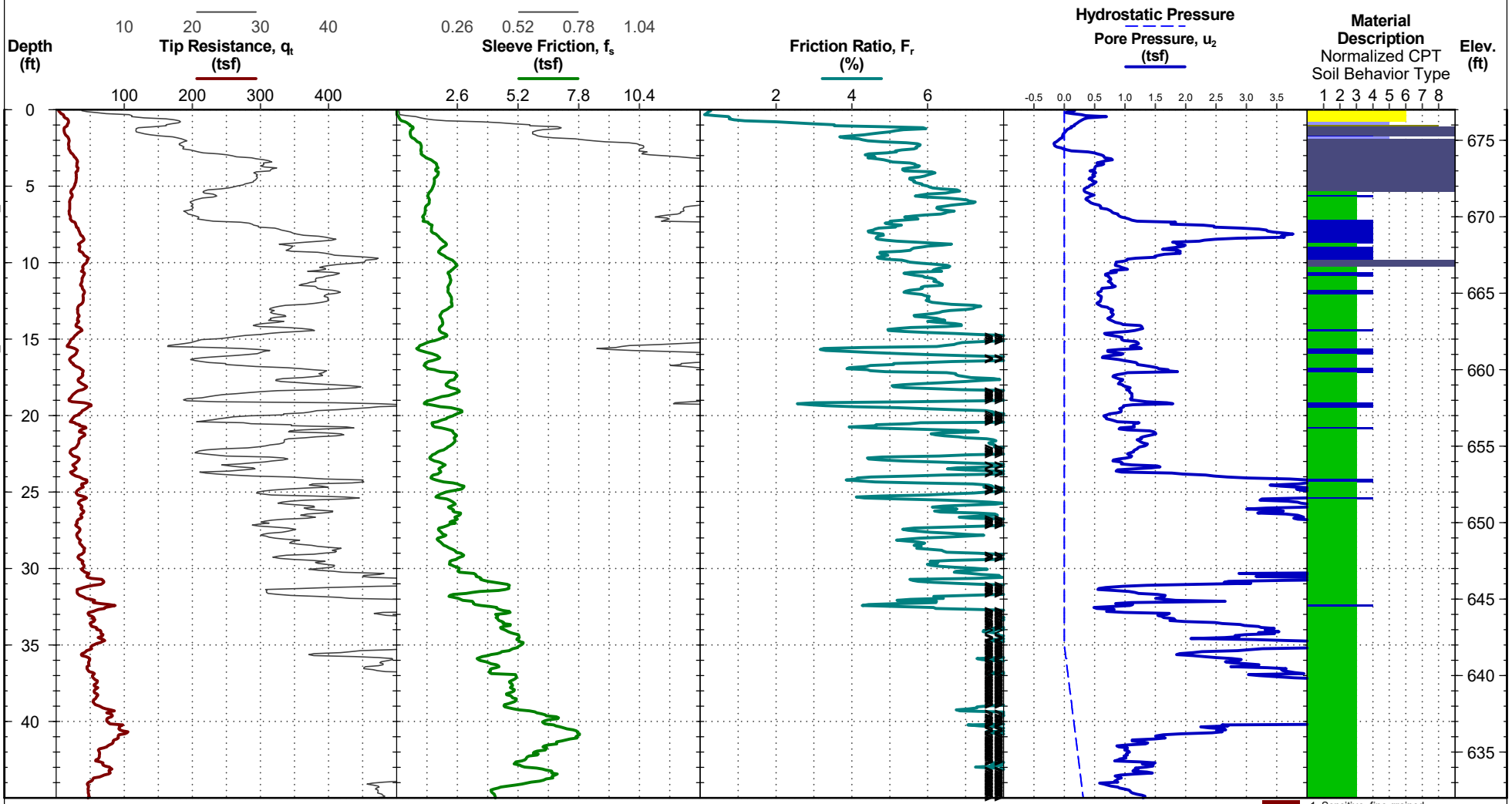
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 677 ft
Latitude: 35.201213536°
Longitude: -80.946566712°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/11/2019	CPT Completed: 2/11/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-173

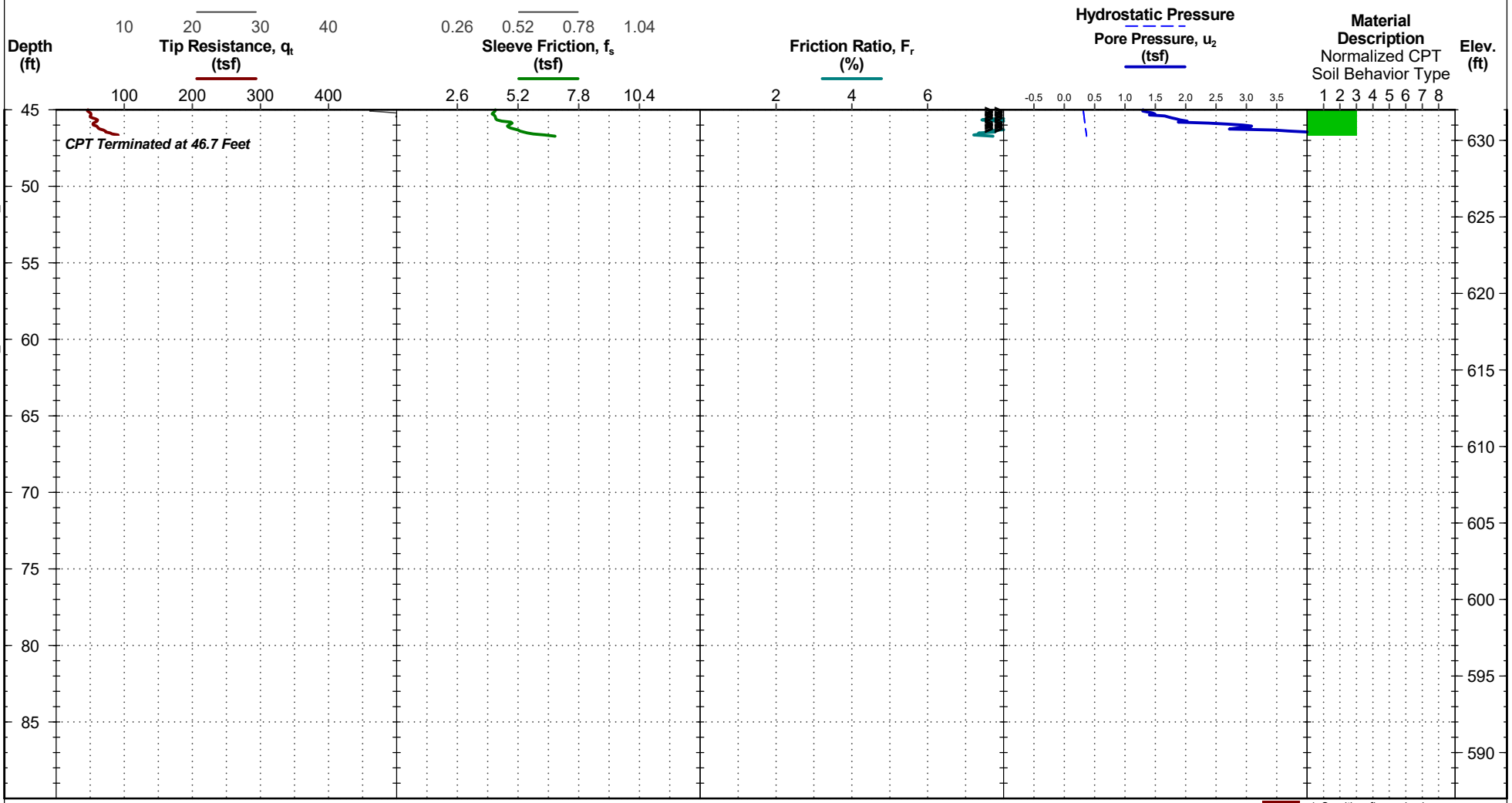
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 677 ft
Latitude: 35.201213536°
Longitude: -80.946566712°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/11/2019	CPT Completed: 2/11/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-175

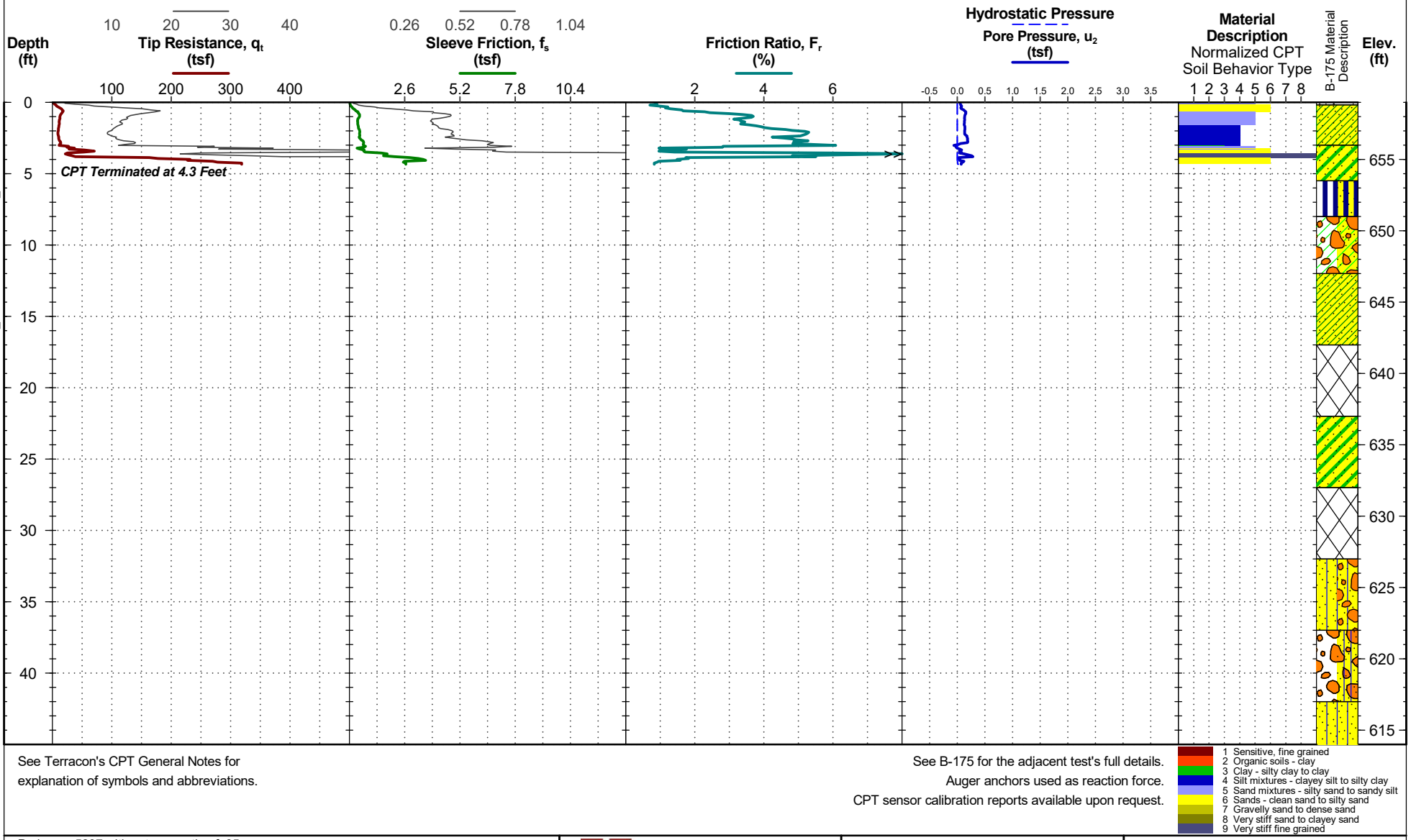
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 659 ft
Adjacent Test: B-175
Latitude: 35.20095542°
Longitude: -80.947678777°



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

See B-175 for the adjacent test's full details.
Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/11/2019	CPT Completed: 2/11/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-175

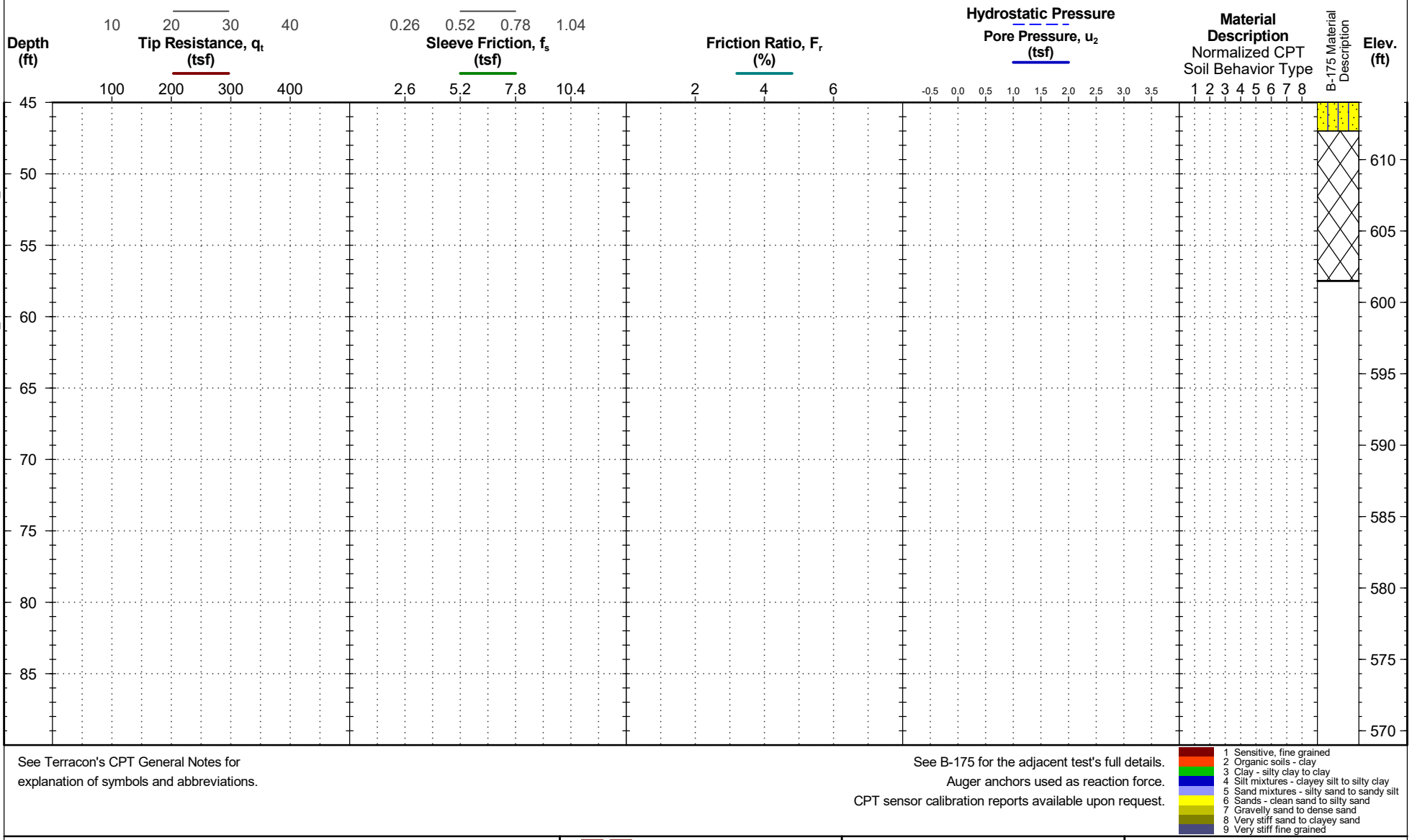
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 659 ft
Adjacent Test: B-175
Latitude: 35.20095542°
Longitude: -80.947678777°



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

See B-175 for the adjacent test's full details.
Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/11/2019	CPT Completed: 2/11/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-177

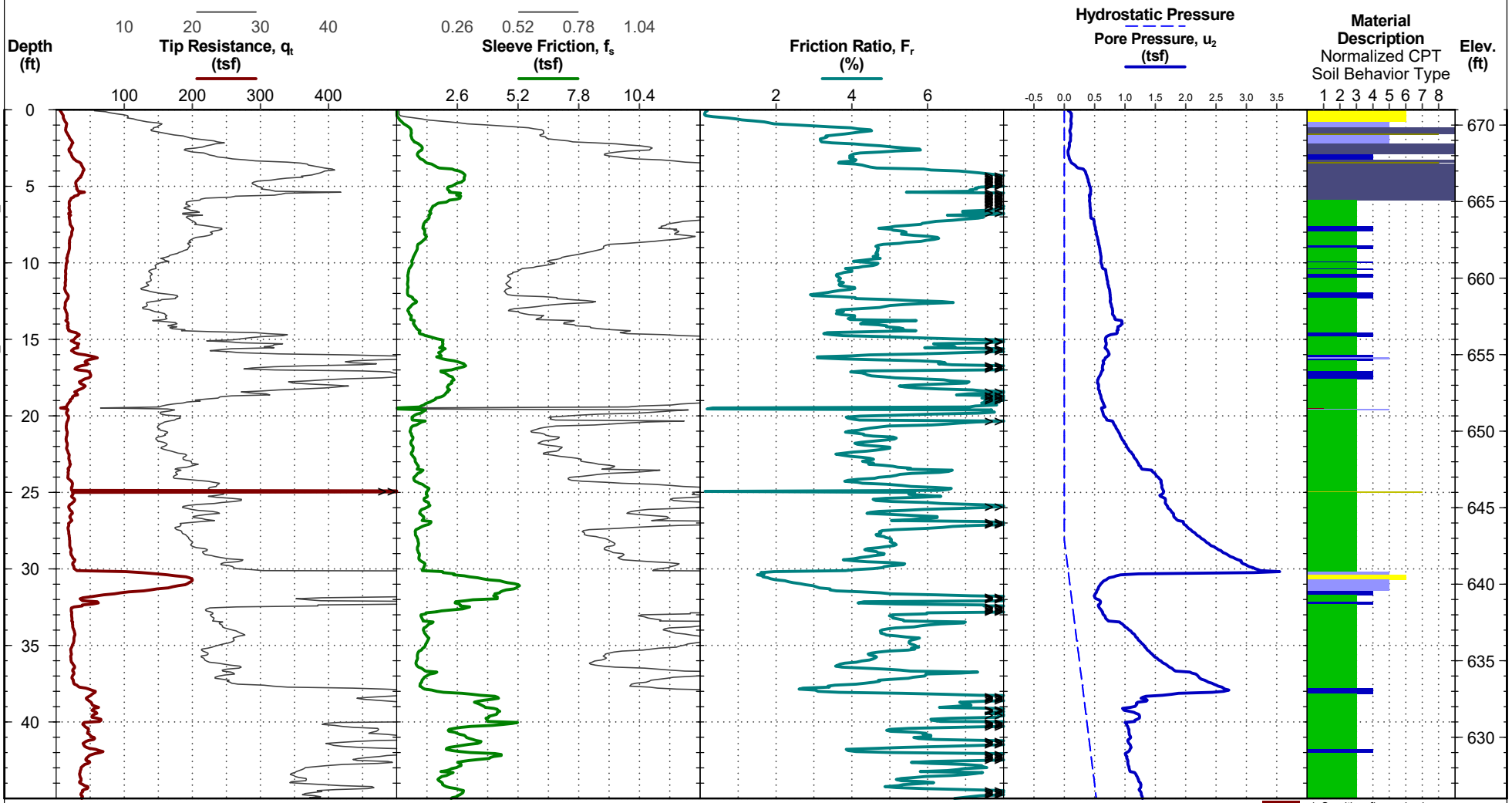
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 671 ft
Latitude: 35.200976338°
Longitude: -80.946913295°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/11/2019	CPT Completed: 2/11/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-177

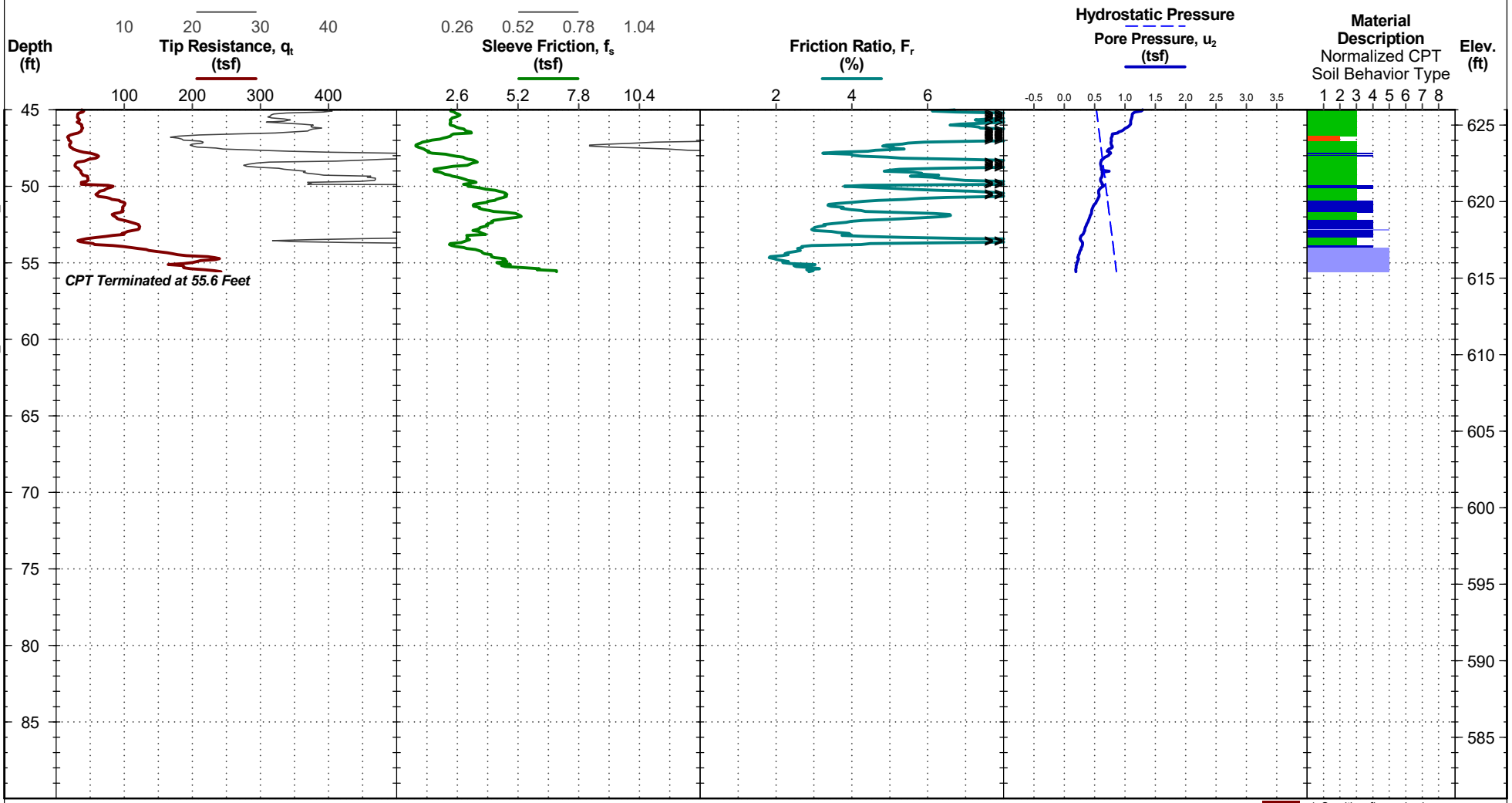
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 671 ft
Latitude: 35.200976338°
Longitude: -80.946913295°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

Terracon
2701 Westport Rd
Charlotte, NC

CPT Started: 2/11/2019	CPT Completed: 2/11/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-179

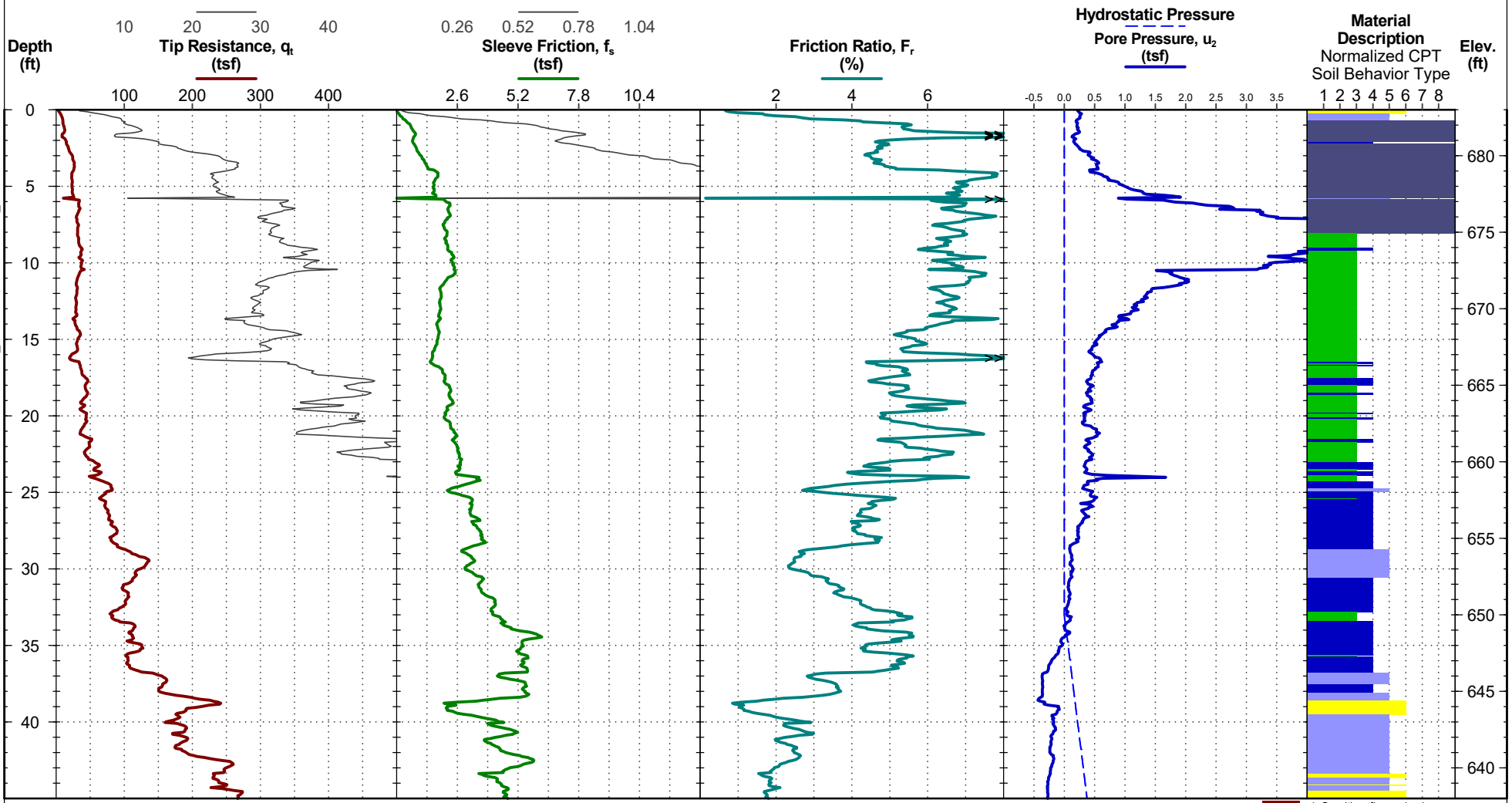
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 683 ft
Latitude: 35.201019023°
Longitude: -80.94625924°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
CPT sensor calibration reports available upon request.

Probe no. 5237 with net area ratio of .85
U2 pore pressure transducer location
Manufactured by Geotech A.B.; calibrated 10/9/2019
Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

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CPT Started: 2/11/2019	CPT Completed: 2/11/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

CPT LOG NO. C-179

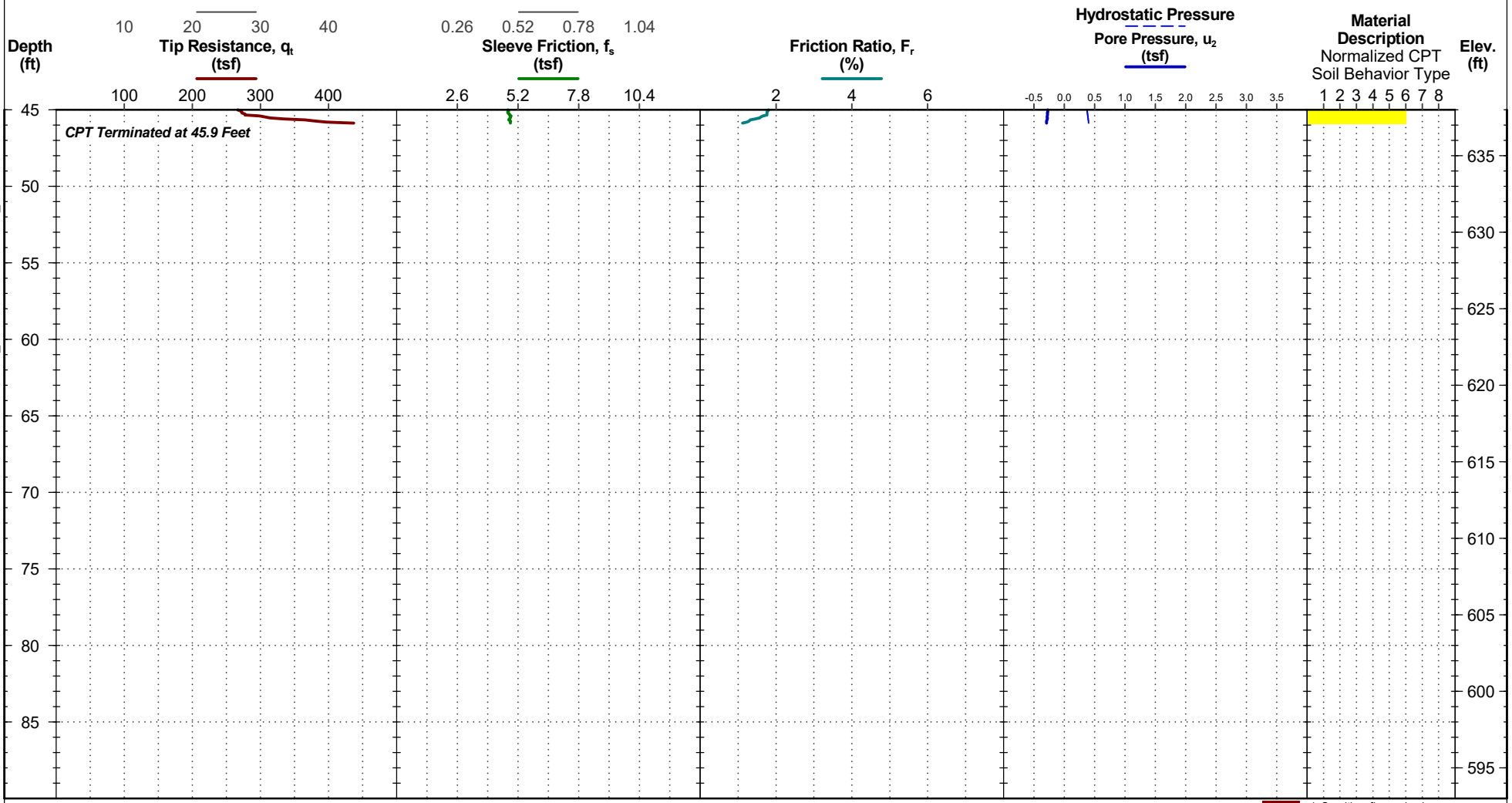
PROJECT: CLT Airport-Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

TEST LOCATION: Appendix A.2.1

Surface Elev.: 683 ft
Latitude: 35.201019023°
Longitude: -80.94625924°

SITE: Old Piney Top and West Blvd
Charlotte, NC



See Terracon's CPT General Notes for explanation of symbols and abbreviations.

Auger anchors used as reaction force.
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5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Probe no. 5237 with net area ratio of .85
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Tip and sleeve areas of 10 cm^2 and 150 cm^2
Ring friction reducer with O.D. of 1.875 in

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CPT Started: 2/11/2019	CPT Completed: 2/11/2019
Rig: Pagani TG73-200	Operator: BR
Project No.: 71195007	

C. LABORATORY TESTING

C.1 LABORATORY TEST SUMMARY

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
ARC-13	1 - 2.5	SANDY LEAN CLAY(CL)	22	34	20	14	64.4
ARC-13	3.5 - 5	SANDY LEAN CLAY(CL)	25	38	22	16	57.3
ARC-13	6 - 7.5	SILTY SAND(SM)	17	NP	NP	NP	15.7
ARC-23	1 - 2.5	SANDY LEAN CLAY(CL)	24	33	21	12	53.3
ARC-23	3.5 - 5	SILTY, CLAYEY SAND(SC-SM)	25	25	19	6	42.4
ARC-32	1 - 2.5	SILTY SAND(SM)	20	19	16	3	38.5
ARC-32	3.5 - 5	SANDY LEAN CLAY(CL)	16	31	22	9	51.0
ARC-32	6 - 7.25	SILTY SAND(SM)	8	19	19	NP	24.7
B-002	1 - 2.5	SANDY LEAN CLAY(CL)	21	43	23	20	61.5
B-002	3.5 - 5	CLAYEY SAND(SC)	20	38	15	23	49.3
B-002	6 - 7.5	CLAYEY SAND(SC)	23	38	13	25	49.3
B-002	8.5 - 10	SANDY LEAN CLAY(CL)	25	40	25	15	56.3
B-002	10 - 12	SANDY SILT(ML)	15	32	27	5	52.7
B-002	13.5 - 15	SILTY, CLAYEY SAND(SC-SM)	12	27	21	6	32.9
B-003	1 - 2.5	SANDY FAT CLAY(CH)	19	67	32	35	56.8
B-003	3.5 - 5	SANDY FAT CLAY(CH)	35	56	22	34	58.0
B-003	6 - 7.5	SANDY ELASTIC SILT(MH)	35	54	31	23	64.9
B-003	8.5 - 10	SANDY LEAN CLAY(CL)	27	38	23	15	53.7
B-003	13.5 - 15	SANDY LEAN CLAY(CL)	20	39	25	14	55.0
B-003	18.5 - 20	SILTY, CLAYEY SAND(SC-SM)	10	29	22	7	18.4
B-004	1 - 2.5	SANDY ELASTIC SILT(MH)	35	61	32	29	52.9
B-004	3.5 - 5	SANDY FAT CLAY(CH)	30	53	26	27	65.1
B-004	6 - 7.5	CLAYEY SAND(SC)	22	34	12	22	34.6
B-004	8.5 - 10	CLAYEY SAND(SC)	35	38	22	16	36.4
B-004	13.5 - 15	CLAYEY SAND(SC)	22	29	12	17	39.6
B-004	18.5 - 20	SANDY LEAN CLAY(CL)	13	27	12	15	52.9
B-006	1 - 2.5	SANDY FAT CLAY(CH)	30	51	27	24	63.3
B-006	3.5 - 5	CLAYEY SAND(SC)	19	26	17	9	46.2

PROJECT: CLT Airport-Deicing Pad and SCT

SITE: Old Piney Top and West Blvd
Charlotte, NC

Terracon
2701 Westport Rd
Charlotte, NC
PH. 704-509-1777 FAX. 704-509-1888

PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-006	6 - 7.5	SANDY LEAN CLAY(CL)	20	31	16	15	55.3
B-006	8.5 - 10	SILTY SAND(SM)	28	NP	NP	NP	28.5
B-006	13.5 - 15	SILTY SAND(SM)	24	NP	NP	NP	18.9
B-006	18.5 - 20	SILTY SAND(SM)	20	NP	NP	NP	41.8
B-006	23.5 - 25	SILTY SAND(SM)	21	NP	NP	NP	30.0
B-006	28.5 - 30	SILTY SAND(SM)	18	26	25	1	29.3
B-007	1 - 2.5	ELASTIC SILT with SAND(MH)	35	55	38	17	83.6
B-007	2.5 - 4.5	SILTY, CLAYEY SAND(SC-SM)	21	26	21	5	40.9
B-007	4.5 - 6	SANDY LEAN CLAY(CL)	20	45	24	21	51.9
B-007	6 - 7.5		13				30.9
B-007	8.5 - 10		6				13.0
B-007	13.5 - 15	SILTY SAND(SM)	10	NP	NP	NP	36.7
B-008	1 - 2.5	ELASTIC SILT(MH)	46	71	38	33	86.6
B-008	3.5 - 5	ELASTIC SILT(MH)	53	60	37	23	92.3
B-008	6 - 7.5	SILT(ML)	54	45	38	7	85.8
B-008	8.5 - 10	SANDY SILT(ML)	41	47	40	7	63.9
B-008	13 - 15	SILT with SAND(ML)	36	42	35	7	72.7
B-009	1 - 2.5	ELASTIC SILT(MH)	33	82	41	41	97.7
B-009	3.5 - 5	ELASTIC SILT(MH)	33	61	33	28	89.8
B-009	6 - 7.5	FAT CLAY(CH)	30	60	28	32	98.3
B-009	8.5 - 10	ELASTIC SILT(MH)	48	56	40	16	90.3
B-009	13.5 - 15	ELASTIC SILT(MH)	42	53	39	14	97.1
B-009	18.5 - 20	ELASTIC SILT(MH)	41	51	37	14	97.5
B-009	23.5 - 25	SILT(ML)	37	41	34	7	95.5
B-009	28.5 - 30	SANDY SILT(ML)	26	37	33	4	57.3
B-010	1 - 2.5	SANDY SILT(ML)	29	47	28	19	65.6
B-010	3.5 - 5	SANDY SILT(ML)	32	45	30	15	58.6
B-010	6 - 7.5		74				58.7

PROJECT: CLT Airport-Deicing Pad and SCT

SITE: Old Piney Top and West Blvd
Charlotte, NC

Terracon
2701 Westport Rd
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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-010	8.5 - 10	ELASTIC SILT(MH)	47	54	31	23	92.2
B-010	13.5 - 15	SILT(ML)	40	44	28	16	85.7
B-010	18.5 - 20	LEAN CLAY with SAND(CL)	34	37	24	13	77.4
B-010	23.5 - 25	SILT with SAND(ML)	33	40	30	10	79.0
B-010	28.5 - 30	SILT with SAND(ML)	41	39	28	11	75.9
B-011	1 - 2.5	SANDY SILT(ML)	27	45	29	16	51.5
B-011	3.5 - 5	CLAYEY SAND(SC)	20	32	22	10	48.1
B-011	6 - 7.5	SILTY SAND(SM)	15	25	23	2	37.6
B-012	1 - 2.5	SANDY LEAN CLAY(CL)	27	32	18	14	60.0
B-012	2.5 - 3.5	SANDY LEAN CLAY(CL)	24	28	18	10	50.0
B-012	3.5 - 5	SANDY LEAN CLAY(CL)	24	30	15	15	63.6
B-012	6 - 7.5	SANDY LEAN CLAY(CL)	20	33	14	19	64.8
B-012	8.5 - 10	SANDY LEAN CLAY(CL)	16	28	19	9	53.3
B-014	1 - 2.5	SANDY LEAN CLAY(CL)	17	25	16	9	52.8
B-014	3 - 4.5	SANDY LEAN CLAY(CL)	21	26	16	10	54.1
B-014	6 - 7.5	SANDY LEAN CLAY(CL)	20	23	13	10	52.3
B-014	11 - 13	SILTY, CLAYEY SAND(SC-SM)	16	22	18	4	36.8
B-014	13.5 - 15	SILTY SAND(SM)	10	NP	NP	NP	13.7
B-014	18.5 - 20	SILTY SAND(SM)	8	NP	NP	NP	18.1
B-016	1 - 2.5	SANDY LEAN CLAY(CL)	16	36	23	13	58.9
B-016	3.5 - 5	LEAN CLAY with SAND(CL)	16	30	22	8	77.9
B-016	6 - 7.5	SANDY LEAN CLAY(CL)	21	31	18	13	67.5
B-016	8.5 - 10	CLAYEY SAND(SC)	21	33	19	14	38.2
B-016	13.5 - 15	SANDY SILT(ML)	33	42	34	8	61.3
B-016	18.5 - 20	SILTY SAND(SM)	22	28	25	3	41.0
B-016	23.5 - 25	SILTY SAND(SM)	20	29	27	2	38.0
B-016	28.5 - 30	SILTY SAND(SM)	21	29	24	5	33.6
B-018	1 - 2.5	SANDY LEAN CLAY(CL)	22	33	21	12	56.3

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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-018	3.5 - 5	SANDY FAT CLAY(CH)	25	59	26	33	64.1
B-018	6 - 7.5	CLAYEY SAND(SC)	39	71	33	38	47.5
B-018	8.5 - 10	ELASTIC SILT(MH)	46	70	35	35	90.9
B-018	13.5 - 15	LEAN CLAY with SAND(CL)	32	48	27	21	78.2
B-018	18.5 - 20	SANDY SILT(ML)	30	38	25	13	66.2
B-018	23.5 - 25	SANDY LEAN CLAY(CL)	31	42	25	17	63.5
B-018	28.5 - 30	LEAN CLAY with SAND(CL)	36	39	25	14	76.5
B-018	33.5 - 35	LEAN CLAY with SAND(CL)	35	36	23	13	80.8
B-018	38.5 - 40	SILT with SAND(ML)	30	34	24	10	70.2
B-018	43.5 - 45	GRAVELLY SILT with SAND(ML)	21	30	26	4	57.0
B-018	48.5 - 50	SILT with SAND(ML)	27	34	24	10	73.4
B-018	53.5 - 55	SANDY SILT(ML)	20	30	23	7	67.9
B-018	58.5 - 60	SILTY SAND with GRAVEL(SM)	17	35	28	7	46.7
B-019	1 - 2.5	ELASTIC SILT(MH)	34	88	49	39	86.3
B-019	3.5 - 5	ELASTIC SILT with SAND(MH)	34	76	50	26	79.1
B-019	6 - 7.5	ELASTIC SILT with SAND(MH)	33	77	49	28	78.5
B-019	8.5 - 10	ELASTIC SILT with SAND(MH)	30	68	43	25	78.7
B-019	13.5 - 15	ELASTIC SILT with SAND(MH)	22	50	37	13	76.5
B-019	18.5 - 20	SANDY SILT(ML)	16	37	34	3	62.1
B-019	23.5 - 25	SANDY SILT(ML)	22	34	32	2	61.4
B-019	33.5 - 35		20				68.1
B-019	38.5 - 40	SILTY SAND(SM)	18	NP	NP	NP	47.4
B-019	43.5 - 45	SANDY SILT(ML)	21	41	26	15	60.1
B-019	53.5 - 55		19				83.7
B-020	1 - 2.5	SANDY FAT CLAY(CH)	23	62	29	33	68.3
B-020	3.5 - 5	ELASTIC SILT with SAND(MH)	43	78	42	36	82.7
B-020	6 - 7.5	ELASTIC SILT(MH)	50	76	41	35	90.9
B-020	8.5 - 10	ELASTIC SILT with SAND(MH)	49	54	45	9	77.9

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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-020	13.5 - 15	SANDY SILT(ML)	30	37	37	NP	66.4
B-020	18.5 - 20	SILT(ML)	31	49	35	14	89.0
B-020	23.5 - 25	SILT(ML)	34	44	33	11	85.9
B-020	28.5 - 30	SILT(ML)	41	45	29	16	92.4
B-020	33.5 - 35	SILT(ML)	43	46	32	14	89.8
B-020	38.5 - 40	SILT(ML)	36	49	29	20	90.9
B-020	43.5 - 45	SILT(ML)	42	47	30	17	88.7
B-020	48.5 - 50		14				38.6
B-020	58.5 - 60	SILT with SAND(ML)	21	32	27	5	76.5
B-021	1 - 2.5	ELASTIC SILT(MH)	44	89	48	41	97.1
B-021	3.5 - 5	ELASTIC SILT(MH)	42	76	43	33	91.3
B-021	6 - 7.5	ELASTIC SILT(MH)	43	77	52	25	97.3
B-021	8.5 - 10	ELASTIC SILT(MH)	43	83	48	35	98.6
B-021	13.5 - 15	SANDY SILT(ML)	35	49	41	8	69.3
B-021	18.5 - 20	ELASTIC SILT(MH)	31	54	40	14	89.2
B-021	23.5 - 25	ELASTIC SILT with SAND(MH)	30	52	42	10	78.5
B-021	28.5 - 30	SANDY SILT(ML)	36	49	39	10	63.4
B-021	33.5 - 35	SANDY SILT(ML)	34	43	40	3	54.8
B-021	38.5 - 40	SILTY SAND(SM)	26	38	32	6	48.2
B-021	43.5 - 45	SILTY SAND(SM)	25	37	31	6	49.4
B-021	48.5 - 50	SILTY SAND(SM)	20	35	35	NP	40.0
B-021	53.5 - 55	SILT(ML)	13	27	26	1	89.0
B-022	1 - 2.5	ELASTIC SILT with SAND(MH)	36	63	39	24	83.0
B-022	3.5 - 5	ELASTIC SILT(MH)	24	53	36	17	87.4
B-022	6 - 7.5	LEAN CLAY with SAND(CL)	15	45	23	22	72.8
B-022	8.5 - 10	LEAN CLAY with SAND(CL)	18	47	23	24	79.8
B-022	13.5 - 15	SANDY SILT(ML)	21	40	27	13	67.8
B-022	18.5 - 20	SANDY SILT(ML)	15	32	24	8	55.8

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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-022	23.5 - 25	SANDY SILT(ML)	21	37	25	12	58.4
B-022	28.5 - 30	SANDY SILT(ML)	19	38	28	10	53.7
B-022	33.5 - 35	SILTY SAND(SM)	17	31	24	7	49.5
B-022	38.5 - 40	SANDY SILT(ML)	13	37	27	10	57.1
B-022	43.5 - 45	SILT with SAND(ML)	21	32	26	6	77.1
B-023	1 - 2.5	LEAN CLAY with SAND(CL)	20	34	17	17	75.7
B-023	3.5 - 5	SANDY LEAN CLAY(CL)	15	31	14	17	65.4
B-023	6 - 7.5	SANDY LEAN CLAY(CL)	21	36	14	22	56.2
B-023	8.5 - 10	CLAYEY SAND(SC)	19	48	21	27	27.6
B-023	13.5 - 15	SILTY SAND(SM)	23	31	25	6	39.0
B-023	18.5 - 20	SILTY SAND(SM)	29	38	30	8	29.2
B-023	58.5 - 60	SILTY, CLAYEY SAND(SC-SM)	14	26	21	5	23.4
B-024	1 - 2.5	LEAN CLAY with SAND(CL)	30	41	20	21	83.2
B-024	3.5 - 5	FAT CLAY(CH)	27	70	27	43	90.8
B-024	8.5 - 10	SILT with SAND(ML)	39	36	26	10	77.9
B-024	13.5 - 15	SILT with SAND(ML)	29	40	32	8	78.6
B-024	23.5 - 25	SANDY SILT(ML)	27	27	23	4	51.2
B-024	28.5 - 30	SILT(ML)	31	31	26	5	85.5
B-024	38.5 - 40	SANDY SILT(ML)	30	25	22	3	62.5
B-024	43.5 - 45	SANDY SILT(ML)	23	28	23	5	52.6
B-025	1 - 2.5	ELASTIC SILT(MH)	42	89	45	44	95.9
B-025	3.5 - 5	ELASTIC SILT(MH)	27	62	43	19	94.4
B-025	6 - 7.5	ELASTIC SILT(MH)	32	52	35	17	92.8
B-025	8.5 - 10	SILT(ML)	39	44	34	10	92.4
B-025	13.5 - 15	SILT with SAND(ML)	25	38	32	6	72.2
B-025	18.5 - 20	SANDY SILT(ML)	24	34	26	8	58.0
B-025	23.5 - 25	SILTY SAND(SM)	22	33	30	3	45.6
B-025	28.5 - 30	SILTY SAND(SM)	20	30	29	1	42.7

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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-025	33.5 - 35	SILTY SAND(SM)	18	NP	NP	NP	33.7
B-025	38.5 - 40	SILTY SAND(SM)	15	NP	NP	NP	35.1
B-025	43.5 - 45	SILTY SAND(SM)	15	NP	NP	NP	27.2
B-025	53.5 - 55	SILTY SAND(SM)	17	NP	NP	NP	31.7
B-025	58.5 - 60	SILT(ML)	34	38	30	8	93.2
B-026	1 - 2.5	FAT CLAY with SAND(CH)	24	76	30	46	74.0
B-026	3.5 - 5	ELASTIC SILT(MH)	36	81	45	36	97.2
B-026	6 - 7.5	ELASTIC SILT with SAND(MH)	35	71	44	27	82.0
B-026	8.5 - 10	ELASTIC SILT with SAND(MH)	40	66	41	25	80.3
B-026	13.5 - 15	ELASTIC SILT with SAND(MH)	44	59	48	11	73.5
B-026	18.5 - 20	SANDY SILT(ML)	38	49	44	5	62.3
B-026	23.5 - 25	SANDY SILT(ML)	38	49	41	8	62.8
B-026	28.5 - 30	SANDY SILT(ML)	41	41	37	4	63.4
B-026	33.5 - 35	SILTY SAND(SM)	28	33	30	3	42.2
B-026	38.5 - 40	SILTY SAND(SM)	16	NP	NP	NP	34.8
B-026	48.5 - 50	SILT with SAND(ML)	27	30	28	2	70.5
B-027	1 - 2.5	ELASTIC SILT with SAND(MH)	30	68	36	32	78.3
B-027	3.5 - 5	SANDY ELASTIC SILT(MH)	23	52	34	18	55.5
B-027	6 - 7.5	SANDY SILT(ML)	25	48	29	19	59.7
B-027	8.5 - 10	SANDY SILT(ML)	28	34	32	2	51.5
B-027	13.5 - 15	SILTY SAND(SM)	26	35	28	7	37.1
B-027	18.5 - 20	SILTY SAND(SM)	31	33	26	7	35.3
B-027	23.5 - 25	SILTY SAND(SM)	20	28	23	5	33.5
B-027	28.5 - 30	SILTY SAND(SM)	18	32	26	6	26.7
B-027	33.5 - 35	SANDY SILT(ML)	19	32	25	7	54.1
B-027	38.5 - 40	SILTY SAND(SM)	71	25	22	3	16.8
B-027	43.5 - 45	SILT with SAND(ML)	29	31	28	3	76.3
B-028	1 - 2.5	SANDY LEAN CLAY(CL)	17	34	18	16	57.0

PROJECT: CLT Airport-Deicing Pad and SCT

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Charlotte, NC

Terracon
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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-028	3.5 - 5	ELASTIC SILT with SAND(MH)	30	82	39	43	80.8
B-028	6 - 7.5	ELASTIC SILT with SAND(MH)	38	72	40	32	81.1
B-028	8.5 - 10	ELASTIC SILT with SAND(MH)	32	64	37	27	77.0
B-028	13.5 - 15	ELASTIC SILT with SAND(MH)	35	55	36	19	70.7
B-028	18.5 - 20	SANDY SILT(ML)	49	49	39	10	64.6
B-028	23.5 - 25	SILTY SAND(SM)	32	40	36	4	48.4
B-028	28.5 - 30	SILTY SAND(SM)	44	40	34	6	47.4
B-028	33.5 - 35	SILTY SAND(SM)	28	36	32	4	38.2
B-028	38.5 - 40	SILTY SAND(SM)	23	29	26	3	38.1
B-029	1 - 2.5	ELASTIC SILT with SAND(MH)	25	66	33	33	77.4
B-029	3.5 - 5	FAT CLAY(CH)	33	82	35	47	98.6
B-029	6 - 7.5	ELASTIC SILT(MH)	43	69	38	31	95.5
B-029	8.5 - 10	ELASTIC SILT(MH)	48	71	39	32	94.0
B-029	13.5 - 15	ELASTIC SILT(MH)	62	75	35	40	98.5
B-029	18.5 - 20	ELASTIC SILT(MH)	74	72	36	36	98.4
B-029	23.5 - 25	SANDY SILT(ML)	48	45	38	7	56.9
B-029	28.5 - 30	ELASTIC SILT(MH)	64	56	42	14	91.7
B-029	33.5 - 35	SILTY SAND(SM)	28	40	34	6	31.1
B-029	38.5 - 40	SILT(ML)	50	48	35	13	91.1
B-029	43.5 - 45	SANDY SILT(ML)	34	45	34	11	66.0
B-029	48.5 - 50	SILTY SAND(SM)	26	32	26	6	45.6
B-029	53.5 - 55	SANDY SILT(ML)	26	29	25	4	56.2
B-029	58.5 - 60	SANDY SILT(ML)	23	29	26	3	59.2
B-030	1 - 2.5	SANDY SILT(ML)	19	47	30	17	58.1
B-030	3.5 - 5	ELASTIC SILT with SAND(MH)	37	54	40	14	76.8
B-030	6 - 7.5	SANDY SILT(ML)	38	48	40	8	68.3
B-030	8.5 - 10	SANDY SILT(ML)	38	49	39	10	63.0
B-030	13.5 - 15	SANDY SILT(ML)	47	48	37	11	66.3

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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-030	18.5 - 20	SANDY SILT(ML)	44	48	38	10	61.2
B-030	23.5 - 25	SANDY SILT(ML)	40	38	33	5	58.0
B-030	28.5 - 30	SILTY SAND(SM)	34	NP	NP	NP	44.1
B-030	33.5 - 35	SILTY SAND(SM)	27	35	29	6	34.7
B-030	38.5 - 40	SILTY SAND(SM)	23	NP	NP	NP	33.4
B-030	43.5 - 45	SILTY SAND(SM)	21	NP	NP	NP	30.3
B-030	48.5 - 50	SILTY SAND(SM)	20	NP	NP	NP	29.7
B-030	53.5 - 55	SANDY SILT(ML)	24	32	25	7	59.9
B-030	58.5 - 60	SILTY, CLAYEY SAND(SC-SM)	18	26	21	5	22.5
B-031	1 - 2.5	SANDY LEAN CLAY(CL)	17	33	20	13	59.4
B-031	3.5 - 5	CLAYEY SAND(SC)	12	31	16	15	49.5
B-031	6 - 7.5	SANDY LEAN CLAY(CL)	22	30	12	18	59.4
B-031	8.5 - 10	CLAYEY SAND(SC)	17	31	14	17	49.2
B-031	13.5 - 15	SANDY SILT(ML)	42	45	32	13	68.7
B-031	18.5 - 20	SILTY SAND(SM)	25	34	27	7	38.1
B-031	23.5 - 25	SILT with SAND(ML)	40	44	34	10	79.6
B-031	28.5 - 30	SANDY SILT(ML)	33	38	31	7	61.9
B-031	33.5 - 35	SILT with SAND(ML)	37	44	33	11	83.5
B-031	38.5 - 40	SILT(ML)	41	47	35	12	86.6
B-031	43.5 - 45	SILT with SAND(ML)	31	44	32	12	77.1
B-031	48.5 - 50	SILT with SAND(ML)	32	43	31	12	81.9
B-031	53.5 - 55	SILT(ML)	37	45	34	11	86.8
B-031	58.5 - 60	SILTY SAND(SM)	18	29	25	4	29.6
B-032	1 - 2.5	ELASTIC SILT with SAND(MH)	32	58	40	18	79.1
B-032	3.5 - 5	ELASTIC SILT with SAND(MH)	32	71	42	29	79.1
B-032	6 - 7.5	SANDY ELASTIC SILT(MH)	27	54	45	9	58.8
B-032	8.5 - 10	SANDY ELASTIC SILT(MH)	25	54	48	6	67.3
B-032	13.5 - 15	SILT with SAND(ML)	22	48	38	10	71.4

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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-032	18.5 - 20	SANDY SILT(ML)	27	48	41	7	56.2
B-032	23.5 - 25	SILT with SAND(ML)	27	46	36	10	73.8
B-032	28.5 - 30	SILT with SAND(ML)	30	NP	NP	NP	74.3
B-032	33.5 - 35	SANDY SILT(ML)	31	42	36	6	68.8
B-032	38.5 - 40	SILT(ML)	33	45	36	9	89.1
B-032	43.5 - 45	SILT with SAND(ML)	33	44	38	6	81.4
B-032	48.5 - 50	LEAN CLAY with SAND(CL)	78	42	15	27	72.5
B-032	53.5 - 55	SANDY SILT(ML)	22	34	29	5	64.1
B-033	1 - 2.5	ELASTIC SILT with SAND(MH)	37	86	39	47	82.3
B-033	3.5 - 5	ELASTIC SILT(MH)	38	92	48	44	88.0
B-033	6 - 7.5	ELASTIC SILT(MH)	46	96	51	45	95.7
B-033	8.5 - 10	ELASTIC SILT(MH)	63	80	44	36	88.5
B-033	13.5 - 15	SANDY SILT(ML)	34	NP	NP	NP	60.8
B-033	18.5 - 20	SANDY SILT(ML)	23	NP	NP	NP	52.4
B-033	23.5 - 25	SANDY SILT(ML)	20	NP	NP	NP	53.2
B-033	28.5 - 30	SANDY SILT(ML)	21	NP	NP	NP	51.4
B-033	33.5 - 35	SILT with SAND(ML)	32	45	34	11	75.1
B-033	38.5 - 40	SANDY SILT(ML)	24	NP	NP	NP	53.0
B-033	43.5 - 45	SANDY SILT(ML)	24	NP	NP	NP	58.2
B-033	48.5 - 50	SANDY SILT(ML)	21	NP	NP	NP	57.5
B-033	53.5 - 55	SANDY SILT(ML)	21	NP	NP	NP	54.2
B-033	58.5 - 60	SANDY SILT(ML)	19	NP	NP	NP	55.2
B-034	1 - 2.5	FAT CLAY with SAND(CH)	33	68	32	36	73.7
B-034	3.5 - 5	ELASTIC SILT with SAND(MH)	32	83	49	34	75.8
B-034	6 - 7.5	ELASTIC SILT with SAND(MH)	35	75	47	28	70.4
B-034	8.5 - 10	ELASTIC SILT with SAND(MH)	34	78	47	31	73.1
B-034	13.5 - 15	SANDY SILT(ML)	32	NP	NP	NP	54.1
B-034	18.5 - 20	SILTY SAND(SM)	28	NP	NP	NP	47.8

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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-034	23.5 - 25	SILTY SAND(SM)	31	NP	NP	NP	49.3
B-034	28.5 - 30	SILTY SAND(SM)	26	NP	NP	NP	47.8
B-034	33.5 - 35	SILTY SAND(SM)	18	NP	NP	NP	34.6
B-034	38.5 - 40	SILTY SAND(SM)	18	32	28	4	45.3
B-034	43.5 - 45	SILTY SAND(SM)	17	NP	NP	NP	35.9
B-034	48.5 - 50	SILT(ML)	22	NP	NP	NP	95.9
B-034	53.5 - 55	SANDY SILT(ML)	19	NP	NP	NP	61.0
B-034	58.5 - 60	SILTY SAND(SM)	11	NP	NP	NP	33.0
B-035	1 - 2.5	SILTY CLAY with SAND(CL-ML)	25	26	20	6	73.7
B-035	3.5 - 5	LEAN CLAY(CL)	37	49	24	25	90.7
B-035	6 - 7.5	SILT(ML)	39	44	35	9	92.0
B-035	8.5 - 10	SILT with SAND(ML)	33	42	32	10	75.4
B-035	13.5 - 15	SILT with SAND(ML)	34	40	33	7	78.9
B-035	18.5 - 20	SILT with SAND(ML)	32	35	29	6	77.6
B-035	23.5 - 25	SILTY SAND(SM)	21	30	26	4	25.0
B-035	28.5 - 30	SILT with SAND(ML)	33	34	29	5	77.7
B-035	33.5 - 35	SILT with SAND(ML)	35	37	31	6	76.0
B-035	38.5 - 40	SANDY SILT(ML)	26	28	26	2	63.7
B-035	43.5 - 45	SANDY SILT(ML)	26	34	25	9	66.1
B-035	48.5 - 50	SANDY SILTY CLAY(CL-ML)	23	24	20	4	53.8
B-035	53.5 - 55	SILTY SAND(SM)	15	27	23	4	23.9
B-035	58.5 - 60	SILTY SAND(SM)	16	24	22	2	24.3
B-036	1 - 2.5		16				41.4
B-036	3.5 - 5	SILTY GRAVEL with SAND(GM)	14	44	30	14	43.5
B-036	6 - 7.5	SANDY FAT CLAY(CH)	20	51	27	24	57.4
B-036	8.5 - 10	ELASTIC SILT with SAND(MH)	34	57	30	27	80.4
B-036	13.5 - 15	SILTY, CLAYEY SAND(SC-SM)	15	27	21	6	37.2
B-036	18.5 - 20	SILTY SAND(SM)	22	NP	NP	NP	28.2

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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-036	23.5 - 25	SILTY SAND(SM)	19	33	26	7	25.8
B-036	28.5 - 30	SILTY SAND(SM)	21	30	27	3	24.6
B-036	33.5 - 35	SILTY SAND(SM)	24	32	25	7	27.2
B-036	38.5 - 40	SANDY SILT(ML)	28	NP	NP	NP	53.0
B-036	43.5 - 45	SILTY SAND(SM)	38	40	32	8	48.3
B-036	48.5 - 50	SANDY SILT(ML)	39	36	26	10	64.7
B-036	53.5 - 55	SANDY SILT(ML)	29	37	29	8	54.0
B-036	58.5 - 60	SILTY SAND(SM)	13	32	26	6	23.6
B-037	1 - 2.5	ELASTIC SILT(MH)	45	63	47	16	92.9
B-037	3.5 - 5	SILT with SAND(ML)	32	49	39	10	71.9
B-037	6 - 7.5	SANDY SILT(ML)	25	38	34	4	53.6
B-037	8.5 - 10	SILTY SAND(SM)	26	41	35	6	48.2
B-037	13.5 - 15	SANDY SILT(ML)	29	40	33	7	51.0
B-037	18.5 - 20	SILTY SAND(SM)	27	40	31	9	41.2
B-037	23.5 - 25	SILTY SAND(SM)	26	35	30	5	31.1
B-037	28.5 - 30	SILTY SAND(SM)	25	31	27	4	32.8
B-037	33.5 - 35	SILTY SAND(SM)	21	28	27	1	29.7
B-037	38.5 - 40	SILTY SAND(SM)	22	33	28	5	31.5
B-037	43.5 - 45	SILTY SAND(SM)	21	30	26	4	30.3
B-037	48.5 - 50	SILTY SAND(SM)	18	NP	NP	NP	26.5
B-037	53.5 - 55	SANDY SILT(ML)	23	29	27	2	52.1
B-038	1 - 2.5	ELASTIC SILT with SAND(MH)	24	53	40	13	76.2
B-038	3.5 - 5	ELASTIC SILT with SAND(MH)	27	58	39	19	81.1
B-038	6 - 7.5	ELASTIC SILT(MH)	43	56	45	11	96.2
B-038	8.5 - 10	ELASTIC SILT with SAND(MH)	46	55	45	10	80.3
B-038	13.5 - 15	SANDY SILT(ML)	34	43	39	4	58.1
B-038	18.5 - 20	ELASTIC SILT(MH)	54	52	40	12	89.3
B-038	23.5 - 25	SANDY SILT(ML)	21	34	25	9	51.2

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-038	28.5 - 30	SANDY SILT(ML)	30	41	29	12	60.2
B-038	33.5 - 35	SILTY SAND(SM)	31	40	32	8	47.2
B-038	38.5 - 40	SILTY SAND(SM)	31	37	29	8	42.7
B-038	43.5 - 45	SILTY SAND(SM)	30	37	30	7	42.2
B-038	48.5 - 50	SILTY SAND(SM)	29	34	26	8	37.3
B-038	53.5 - 55	SILTY SAND(SM)	19	30	24	6	32.6
B-039	1 - 2.5		11				60.7
B-039	3.5 - 5	SANDY ELASTIC SILT(MH)	25	53	37	16	68.3
B-039	6 - 7.5	SANDY ELASTIC SILT(MH)	33	50	39	11	61.5
B-039	8.5 - 10	SANDY ELASTIC SILT(MH)	37	51	39	12	62.3
B-039	13.5 - 15	SANDY SILT(ML)	36	46	36	10	57.3
B-039	18.5 - 20	SILT with SAND(ML)	46	48	36	12	71.0
B-039	23.5 - 25	SANDY SILT(ML)	40	40	33	7	61.1
B-039	28.5 - 30	SANDY SILT(ML)	36	40	36	4	58.2
B-039	33.5 - 35	SANDY SILT(ML)	33	33	27	6	57.1
B-039	38.5 - 40	SILTY SAND(SM)	23	39	31	8	43.6
B-039	43.5 - 45	SANDY SILT(ML)	30	46	34	12	65.0
B-039	48.5 - 50	SILT with SAND(ML)	35	49	32	17	70.9
B-039	53.5 - 55	SANDY SILT(ML)	31	39	33	6	58.2
B-040	1 - 2.5	ELASTIC SILT(MH)	25	62	36	26	88.5
B-040	3.5 - 5	SANDY ELASTIC SILT(MH)	22	53	35	18	69.9
B-040	6 - 7.5	ELASTIC SILT with SAND(MH)	31	53	39	14	81.3
B-040	8.5 - 10	ELASTIC SILT(MH)	45	91	49	42	85.7
B-040	13.5 - 15	ELASTIC SILT(MH)	56	69	48	21	89.6
B-040	18.5 - 20	SILT with SAND(ML)	35	46	35	11	76.1
B-040	23.5 - 25	SANDY SILT(ML)	29	40	33	7	68.0
B-040	28.5 - 30	SILT with SAND(ML)	38	42	33	9	82.4
B-041	1 - 2.5	SILT with SAND(ML)	31	41	34	7	81.9

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-041	3.5 - 5	SILT with SAND(ML)	25	46	39	7	70.8
B-041	6 - 7.5	SANDY SILT(ML)	26	49	46	3	65.1
B-041	8.5 - 10	SANDY SILT(ML)	27	49	44	5	60.7
B-041	13.5 - 15	SANDY SILT(ML)	28	47	40	7	64.1
B-041	18.5 - 20	SANDY SILT(ML)	33	47	42	5	63.7
B-042	1 - 2.5	SANDY LEAN CLAY(CL)	9	28	18	10	50.6
B-042	3.5 - 5	CLAYEY SAND(SC)	13	36	22	14	48.2
B-042	6 - 7.5	CLAYEY SAND(SC)	22	39	23	16	44.8
B-042	8.5 - 10	CLAYEY SAND(SC)	20	44	21	23	45.9
B-042	13.5 - 15	SILTY SAND(SM)	21	35	29	6	35.5
B-042	18.5 - 20	SILTY SAND(SM)	17	30	25	5	24.0
B-042	23.5 - 25	SILTY SAND(SM)	21	30	25	5	23.7
B-042	28.5 - 30	SILTY SAND(SM)	21	27	24	3	26.7
B-042	33.5 - 35	SILTY SAND(SM)	16	25	23	2	26.7
B-042	38.5 - 40	SILTY SAND with GRAVEL(SM)	14	NP	NP	NP	13.5
B-042	43.5 - 45	SILTY SAND(SM)	28	36	31	5	45.9
B-042	48.5 - 50	SILTY SAND(SM)	23	32	28	4	39.5
B-042	53.5 - 55	SILTY SAND with GRAVEL(SM)	14	NP	NP	NP	12.2
B-042	58.5 - 60	SILTY SAND(SM)	26	34	28	6	48.0
B-043	1 - 2.5	SANDY LEAN CLAY(CL)	24	45	22	23	67.4
B-043	3.5 - 5	SANDY LEAN CLAY(CL)	16	36	20	16	63.9
B-043	6 - 7.5	LEAN CLAY with SAND(CL)	26	43	21	22	73.3
B-043	8.5 - 10	SANDY LEAN CLAY(CL)	28	42	23	19	69.5
B-043	13.5 - 15	SILT(ML)	41	49	36	13	93.2
B-043	18.5 - 20	CLAYEY SAND(SC)	17	37	24	13	27.9
B-043	23.5 - 25	SILTY SAND(SM)	34	36	29	7	37.8
B-043	28.5 - 30	SILTY SAND(SM)	31	37	30	7	47.3
B-043	38.5 - 40	SANDY SILT(ML)	26	34	30	4	57.0

PROJECT: CLT Airport-Deicing Pad and SCT

SITE: Old Piney Top and West Blvd
Charlotte, NC

Terracon
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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-043	43.5 - 45	SILTY SAND(SM)	32	37	32	5	45.7
B-043	48.5 - 50	SILT with SAND(ML)	22	49	34	15	74.6
B-043	53.5 - 55	SANDY SILT(ML)	27	41	37	4	64.6
B-043	58.5 - 60	SANDY SILT(ML)	28	45	38	7	58.4
B-044	1 - 2.5						61.5
B-044	3.5 - 5	SANDY LEAN CLAY(CL)	23	47	21	26	55.9
B-044	6 - 7.5	CLAYEY SAND with GRAVEL(SC)	18	45	24	21	39.5
B-044	8.5 - 10	SANDY LEAN CLAY(CL)	35	47	26	21	60.5
B-044	13.5 - 15	SILT with SAND(ML)	44	48	30	18	77.4
B-044	18.5 - 20	SANDY LEAN CLAY(CL)	40	46	25	21	67.8
B-045	1 - 2.5	SANDY LEAN CLAY(CL)	19	39	20	19	53.1
B-045	3.5 - 5	SANDY LEAN CLAY(CL)	18	39	20	19	59.1
B-045	6 - 7.5	SANDY LEAN CLAY(CL)	19	39	23	16	54.7
B-045	8.5 - 10	CLAYEY SAND(SC)	21	36	23	13	49.1
B-045	10 - 11.5	CLAYEY SAND(SC)	20	33	22	11	48.2
B-046	1 - 2.5	SANDY LEAN CLAY(CL)	20	37	24	13	54.4
B-046	3.5 - 5	SANDY LEAN CLAY(CL)	23	40	25	15	57.9
B-046	6 - 7.5	SILTY SAND(SM)	21	36	26	10	35.4
B-046	13.5 - 15	CLAYEY SAND(SC)	19	32	22	10	38.0
B-046	18.5 - 20	CLAYEY SAND(SC)	16	32	23	9	34.7
B-046	23.5 - 25	CLAYEY SAND(SC)	13	36	23	13	49.3
B-046	28.5 - 30	CLAYEY SAND(SC)	18	41	25	16	47.1
B-046	33.5 - 35	SANDY SILT(ML)	13	36	26	10	69.2
B-049	1 - 2.5	SILT with SAND(ML)	31	48	30	18	77.3
B-049	3.5 - 5	ELASTIC SILT with SAND(MH)	29	55	31	24	76.9
B-049	6 - 7.5	SANDY SILT(ML)	30	47	35	12	66.0
B-049	8.5 - 10	SILT with SAND(ML)	30	46	31	15	72.6
B-049	13.5 - 15	ELASTIC SILT with SAND(MH)	32	52	35	17	77.8

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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-049	18.5 - 20	FAT CLAY with SAND(CH)	24	57	27	30	73.1
B-049	23.5 - 25	ELASTIC SILT with SAND(MH)	31	66	34	32	83.6
B-049	28.5 - 30	SANDY LEAN CLAY(CL)	25	38	17	21	64.0
B-049	33.5 - 35	SANDY SILT(ML)	35	44	34	10	55.5
B-049	38.5 - 40	SANDY SILT(ML)	31	31	25	6	58.9
B-050	1 - 2.5	ELASTIC SILT with SAND(MH)	27	53	29	24	75.9
B-050	3.5 - 5	ELASTIC SILT with SAND(MH)	29	50	29	21	80.5
B-050	6 - 7.5	ELASTIC SILT with SAND(MH)	32	56	36	20	73.3
B-050	8.5 - 10	SANDY SILT(ML)	23	47	28	19	65.3
B-050	13.5 - 15	SANDY SILT(ML)	32	45	30	15	66.5
B-050	23.5 - 25	SANDY FAT CLAY(CH)	36	50	28	22	55.8
B-050	28.5 - 30	FAT CLAY with SAND(CH)	27	50	28	22	76.4
B-051	1 - 2.5	SANDY LEAN CLAY(CL)	16	43	19	24	57.3
B-051	3.5 - 5	SANDY LEAN CLAY(CL)	23	43	22	21	63.8
B-051	6 - 7.5	FAT CLAY with SAND(CH)	27	53	24	29	71.1
B-051	8.5 - 10	SANDY LEAN CLAY(CL)	22	48	27	21	60.9
B-051	13.5 - 15	CLAYEY SAND(SC)	23	40	23	17	49.2
B-051	18.5 - 20	SANDY LEAN CLAY(CL)	28	31	16	15	61.3
B-051	23.5 - 25	SILTY, CLAYEY SAND(SC-SM)	17	26	21	5	17.4
B-051	28.5 - 30	SILTY, CLAYEY SAND(SC-SM)	15	26	20	6	22.6
B-051	33.5 - 35	LEAN CLAY with SAND(CL)	29	35	24	11	76.2
B-051	38.5 - 40	SILT with SAND(ML)	27	32	24	8	79.7
B-051	43.5 - 45	SANDY SILT(ML)	25	31	24	7	65.9
B-051	48.5 - 50	SANDY LEAN CLAY(CL)	23	30	21	9	57.9
B-051	53.5 - 55	SANDY SILT(ML)	25	31	23	8	57.5
B-052	1 - 2.5	SANDY LEAN CLAY(CL)	18	42	19	23	56.0
B-052	3.5 - 5	SANDY LEAN CLAY(CL)	27	45	24	21	68.3
B-052	6 - 7.5	SILT with SAND(ML)	28	42	30	12	70.9

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CLIENT: WSP USA Inc.
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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-052	8.5 - 10	CLAYEY SAND(SC)	15	33	23	10	37.9
B-052	13.5 - 15	SILTY SAND(SM)	13	NP	NP	NP	25.2
B-052	18.5 - 20	CLAYEY SAND(SC)	16	35	23	12	25.0
B-052	23.5 - 25	SILTY SAND(SM)	15	30	23	7	33.5
B-053	1 - 2.5	SANDY LEAN CLAY(CL)	25	42	25	17	66.7
B-053	3.5 - 5	LEAN CLAY with SAND(CL)	26	45	23	22	74.6
B-053	6 - 7.5	ELASTIC SILT(MH)	30	54	32	22	94.9
B-053	8.5 - 10	ELASTIC SILT with SAND(MH)	47	58	48	10	71.8
B-053	13.5 - 15	SANDY ELASTIC SILT(MH)	41	54	44	10	64.4
B-053	18.5 - 20	SANDY SILT(ML)	40	45	37	8	65.1
B-053	23.5 - 25	SANDY SILT(ML)	28	47	35	12	64.9
B-054	1 - 2.5	SANDY LEAN CLAY(CL)	18	48	26	22	63.4
B-054	3.5 - 5	SANDY LEAN CLAY(CL)	24	37	23	14	61.5
B-054	6 - 7.5	SANDY SILT(ML)	23	40	28	12	59.1
B-054	8.5 - 10	LEAN CLAY(CL)	19	36	18	18	85.4
B-054	13.5 - 15	ELASTIC SILT(MH)	42	65	44	21	99.4
B-054	18.5 - 20	SANDY ELASTIC SILT(MH)	36	54	43	11	55.4
B-054	23.5 - 25	SANDY SILT(ML)	40	46	39	7	69.0
B-055	1 - 2.5	SANDY LEAN CLAY(CL)	18	43	23	20	58.4
B-055	3.5 - 5	CLAYEY SAND(SC)	22	41	25	16	48.7
B-055	6 - 7.5	SANDY LEAN CLAY(CL)	23	44	22	22	52.9
B-055	8.5 - 10	FAT CLAY with SAND(CH)	29	50	24	26	84.3
B-055	13.5 - 15	ELASTIC SILT with SAND(MH)	38	52	35	17	79.6
B-055	18.5 - 20	SILT with SAND(ML)	36	46	33	13	71.6
B-055	23.5 - 25	SANDY SILT(ML)	38	45	28	17	58.5
B-055	28.5 - 30	ELASTIC SILT with SAND(MH)	38	51	30	21	79.8
B-055	33.5 - 35	FAT CLAY with SAND(CH)	40	52	28	24	78.9
B-055	38.5 - 40	SILT with SAND(ML)	39	48	29	19	79.2

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PROJECT NUMBER: 71195007

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-055	43.5 - 45	SANDY ELASTIC SILT(MH)	35	52	30	22	68.8
B-055	48.5 - 50	LEAN CLAY with SAND(CL)	32	46	27	19	71.1
B-055	53.5 - 55	SANDY SILT(ML)	30	48	31	17	58.4
B-055	58.5 - 60	SILTY SAND(SM)	29	41	29	12	40.3
B-055	63.5 - 65	SANDY SILT(ML)	26	41	27	14	51.6
B-056	1 - 2.5	SANDY LEAN CLAY(CL)	19	42	23	19	57.6
B-056	3.5 - 5	SANDY LEAN CLAY(CL)	22	45	25	20	56.5
B-056	6 - 7.5	SANDY LEAN CLAY(CL)	28	47	25	22	58.1
B-056	8.5 - 10	SANDY SILT(ML)	30	45	27	18	52.0
B-056	13.5 - 15	SANDY LEAN CLAY(CL)	31	44	24	20	50.5
B-056	18.5 - 20	SANDY LEAN CLAY(CL)	36	47	25	22	57.2
B-056	23.5 - 25		29				83.7
B-057	1 - 2.5	POORLY GRADED GRAVEL with SAND(GP)	11				0.3
B-057	3.5 - 5	SANDY ELASTIC SILT(MH)	40	56	34	22	62.2
B-057	6 - 7.5	SANDY LEAN CLAY(CL)	27	42	24	18	58.6
B-057	8.5 - 10	SANDY LEAN CLAY(CL)	25	44	25	19	54.7
B-057	13.5 - 15	SANDY LEAN CLAY(CL)	27	44	24	20	52.8
B-057	18.5 - 20	SANDY FAT CLAY(CH)	34	53	26	27	60.8
B-057	23.5 - 25	SANDY ELASTIC SILT(MH)	29	59	33	26	68.4
B-057	28.5 - 30	SANDY LEAN CLAY(CL)	17	23	15	8	57.0
B-057	33.5 - 35	SANDY LEAN CLAY(CL)	22	25	14	11	63.9
B-058	1 - 2.5	SANDY SILT(ML)	20	35	25	10	53.6
B-058	3.5 - 5	SANDY ELASTIC SILT(MH)	27	52	33	19	65.4
B-058	5 - 7	SANDY SILTY CLAY(CL-ML)	21	22	16	6	50.0
B-058	8.5 - 10	SILTY SAND(SM)	20	17	14	3	38.3
B-058	13.5 - 15	SILTY, CLAYEY SAND(SC-SM)	11	28	21	7	19.4
B-059	1 - 2.5	SILTY SAND(SM)	22	38	25	13	46.4
B-059	3.5 - 5	CLAYEY SAND(SC)	19	23	15	8	24.5

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-059	6 - 7.5	SANDY SILT(ML)	30	48	31	17	59.6
B-059	13.5 - 15	SANDY LEAN CLAY(CL)	22	35	17	18	64.2
B-059	18.5 - 20	SILTY SAND(SM)	12	NP	NP	NP	15.8
B-060	1 - 2.5	SILTY SAND(SM)	24	35	25	10	46.2
B-060	3.5 - 5	CLAYEY SAND(SC)	14	35	21	14	40.2
B-060	6 - 7.5	SANDY LEAN CLAY(CL)	27	49	22	27	66.1
B-060	8.5 - 10	LEAN CLAY with SAND(CL)	27	48	17	31	71.6
B-060	10 - 12	LEAN CLAY(CL)	25	34	21	13	94.0
B-060	13.5 - 15	CLAYEY SAND(SC)	21	27	17	10	43.1
B-060	18.5 - 20	SANDY SILT(ML)	39	42	35	7	59.9
B-060	23.5 - 25	SANDY SILT(ML)	27	36	32	4	53.9
B-060	28.5 - 30	SILTY SAND(SM)	21	29	23	6	47.4
B-060	33.5 - 35	SILTY SAND(SM)	18	30	23	7	46.4
B-060	38.5 - 40	SILTY, CLAYEY SAND(SC-SM)	9	24	18	6	34.3
B-060	43.5 - 45	SANDY SILT(ML)	14	28	23	5	54.6
B-060	48.5 - 50	SILT with SAND(ML)	20	34	27	7	72.4
B-060	53.5 - 55	CLAYEY SAND(SC)	14	64	26	38	48.3
B-061	1 - 2.5	CLAYEY SAND(SC)	16	44	16	28	48.7
B-061	3.5 - 5	SANDY LEAN CLAY(CL)	18	42	16	26	52.6
B-061	6 - 7.5	CLAYEY SAND(SC)	36	29	11	18	40.5
B-061	8 - 10	SILTY SAND(SM)	18	NP	NP	NP	36.0
B-061	13.5 - 15		11				17.6
B-061	18.5 - 20		7				17.8
B-062	1 - 2.5	LEAN CLAY(CL)	17	31	18	13	87.2
B-062	3.5 - 5	SANDY LEAN CLAY(CL)	21	42	15	27	63.6
B-062	6 - 7.5	SILTY SAND(SM)	10	31	24	7	17.8
B-062	8.5 - 10	SANDY LEAN CLAY(CL)	49	42	25	17	59.1
B-062	13.5 - 15	CLAYEY SAND(SC)	20	31	22	9	49.0

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-062	18.5 - 20	WELL-GRADED SAND with GRAVEL(SW)	7	NP	NP	NP	1.3
B-063	1 - 2.5	SANDY LEAN CLAY(CL)	21	43	19	24	51.0
B-063	3.5 - 5	SANDY LEAN CLAY(CL)	25	47	21	26	61.2
B-063	6 - 7.5	CLAYEY SAND(SC)	19	33	21	12	46.9
B-063	8.5 - 10	CLAYEY SAND(SC)	11	30	21	9	29.8
B-063	13.5 - 15	CLAYEY SAND(SC)	9	32	19	13	35.1
B-064	1 - 2.5	SANDY LEAN CLAY(CL)	16	34	18	16	50.7
B-064	3.5 - 5	CLAYEY SAND(SC)	10	34	18	16	18.7
B-064	6 - 7.5		21				8.1
B-064	8.5 - 10		9				18.2
B-064	13.5 - 15		9				16.5
B-064	18.5 - 20	SILTY SAND(SM)	8	31	23	8	14.5
B-064	23.5 - 25		12				17.0
B-064	28.5 - 30	SANDY SILT(ML)	16	31	23	8	53.3
B-064	33.5 - 35	CLAYEY SAND(SC)	15	33	20	13	32.2
B-065	1 - 2.5		29				60.5
B-065	3.5 - 5	SANDY LEAN CLAY(CL)	27	33	19	14	66.2
B-065	6 - 7.5	SANDY LEAN CLAY with GRAVEL(CL)	25	33	22	11	55.0
B-065	8.5 - 10	LEAN CLAY with SAND(CL)	20	37	24	13	74.5
B-065	18.5 - 20	SILTY SAND with GRAVEL(SM)	14	27	22	5	28.5
B-066	1 - 2.5	SANDY SILT(ML)	20	47	29	18	69.0
B-066	3.5 - 5	SILT with SAND(ML)	27	41	27	14	70.2
B-066	6 - 7.5	SANDY SILT(ML)	25	38	25	13	65.4
B-066	8.5 - 10	SANDY LEAN CLAY(CL)	27	48	22	26	66.8
B-066	13.5 - 15	SANDY ELASTIC SILT(MH)	36	72	38	34	61.8
B-066	18.5 - 20	ELASTIC SILT(MH)	58	66	38	28	96.8
B-066	23.5 - 25	ELASTIC SILT(MH)	49	53	35	18	87.2
B-066	28.5 - 30	SILTY SAND(SM)	22	37	31	6	30.0

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-066	33.5 - 35	SILTY SAND(SM)	23	37	30	7	27.7
B-066	38.5 - 40	SILTY SAND(SM)	23	34	27	7	30.8
B-066	43.5 - 45	SILTY SAND(SM)	22	34	27	7	28.6
B-066	48.5 - 50	SILTY SAND(SM)	22	32	26	6	25.9
B-066	53.5 - 55	SILTY SAND(SM)	18	32	26	6	22.1
B-066	58.5 - 60	SILTY SAND(SM)	23	35	28	7	32.6
B-067	1 - 2.5		11	NP	NP	NP	
B-067	6 - 7.5	SILTY SAND with GRAVEL(SM)	36	36	25	11	49.9
B-067	8.5 - 10	SILT with SAND(ML)	33	45	28	17	72.4
B-067	13.5 - 15	SILT with SAND(ML)	45	48	33	15	74.7
B-067	18.5 - 20	SANDY FAT CLAY(CH)	26	52	25	27	69.3
B-067	23.5 - 25	ELASTIC SILT(MH)	48	55	32	23	86.1
B-067	28.5 - 30	ELASTIC SILT(MH)	48	53	34	19	85.7
B-067	33.5 - 35	SILT with SAND(ML)	44	47	31	16	77.9
B-067	38.5 - 40	ELASTIC SILT(MH)	50	53	38	15	86.4
B-067	43.5 - 45	ELASTIC SILT with SAND(MH)	51	52	35	17	77.3
B-067	48.5 - 50	SANDY SILT(ML)	36	43	30	13	66.1
B-067	53.5 - 55	SANDY SILT(ML)	32	42	30	12	53.9
B-067	58.5 - 60	SANDY SILT(ML)	24	41	26	15	54.0
B-068	1 - 2.5	SANDY SILT(ML)	11	42	28	14	54.8
B-068	3.5 - 5	SILT with SAND(ML)	27	46	33	13	78.4
B-068	6 - 7.5	SANDY SILT(ML)	20	33	24	9	53.4
B-068	8.5 - 10	SANDY SILT(ML)	25	45	29	16	53.0
B-068	18.5 - 20	ELASTIC SILT with SAND(MH)	40	53	35	18	73.6
B-068	23.5 - 25	SILT with SAND(ML)	37	46	36	10	82.9
B-068	28.5 - 30	SILT with SAND(ML)	38	42	37	5	72.2
B-068	33.5 - 35	SANDY SILT(ML)	37	40	29	11	58.6
B-068	38.5 - 40	SILT with SAND(ML)	41	38	32	6	76.3

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-068	43.5 - 45	SILT with SAND(ML)	28	39	30	9	75.5
B-068	48.5 - 50	SANDY SILT(ML)	26	35	27	8	52.2
B-068	53.5 - 55	SANDY SILT(ML)	27	32	27	5	53.8
B-068	58.5 - 60	SANDY SILT(ML)	22	25	23	2	53.8
B-069	1 - 2.5	SANDY ELASTIC SILT(MH)	24	53	41	12	63.3
B-069	3.5 - 5	SANDY SILT(ML)	26	48	37	11	56.6
B-069	6 - 7.5	SANDY SILT(ML)	27	44	34	10	63.3
B-069	8.5 - 10	SILT with SAND(ML)	30	41	33	8	72.1
B-069	13.5 - 15	SANDY SILT(ML)	27	41	32	9	60.0
B-069	18.5 - 20	SANDY SILT(ML)	27	35	31	4	59.8
B-069	23.5 - 25	SILTY SAND(SM)	28	36	32	4	47.1
B-069	28.5 - 30	SANDY SILT(ML)	28	35	31	4	64.5
B-069	33.5 - 35	SILTY SAND(SM)	26	33	28	5	48.3
B-069	38.5 - 40	SILTY SAND(SM)	38	34	29	5	47.8
B-069	43.5 - 45	SANDY SILT(ML)	16	27	23	4	56.1
B-070	1 - 2.5	ELASTIC SILT with SAND(MH)	27	67	34	33	77.7
B-070	3.5 - 5	ELASTIC SILT with SAND(MH)	29	54	41	13	72.4
B-070	6 - 7.5	SANDY ELASTIC SILT(MH)	40	53	44	9	69.0
B-070	8.5 - 10	SANDY ELASTIC SILT(MH)	42	57	44	13	68.8
B-070	13.5 - 15	SANDY ELASTIC SILT(MH)	41	51	41	10	58.9
B-070	18.5 - 20	ELASTIC SILT(MH)	62	68	46	22	86.6
B-070	23.5 - 25	ELASTIC SILT with SAND(MH)	59	56	41	15	79.6
B-070	28.5 - 30	SILT(ML)	54	48	39	9	88.5
B-070	33.5 - 35	SANDY SILT(ML)	39	36	32	4	67.3
B-070	38.5 - 40	SANDY SILT(ML)	31	32	29	3	67.6
B-070	48.5 - 50	SILT with SAND(ML)	30	36	33	3	72.9
B-071	1 - 2.5	SANDY SILT with GRAVEL(ML)	12	44	29	15	54.5
B-071	3.5 - 5	ELASTIC SILT with SAND(MH)	16	57	46	11	72.2

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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-071	6 - 7.5	SILT with SAND(ML)	30	45	38	7	75.0
B-071	8.5 - 10	SILT with SAND(ML)	33	49	40	9	78.2
B-071	13.5 - 15	SANDY ELASTIC SILT(MH)	32	52	45	7	65.9
B-071	18.5 - 20	SANDY SILT(ML)	36	43	39	4	64.9
B-072	1 - 2.5	SANDY ELASTIC SILT(MH)	32	62	32	30	63.7
B-072	3.5 - 5	CLAYEY SAND with GRAVEL(SC)	36	51	27	24	48.9
B-072	6 - 7.5	SANDY FAT CLAY(CH)	30	55	28	27	56.5
B-072	8.5 - 10	ELASTIC SILT with SAND(MH)	28	65	39	26	70.4
B-074	1 - 2.5	FAT CLAY with SAND(CH)	24	72	34	38	73.4
B-074	3.5 - 5	SANDY ELASTIC SILT(MH)	28	65	37	28	68.1
B-074	6 - 7.5	SANDY FAT CLAY(CH)	27	73	20	53	66.2
B-074	8.5 - 10	ELASTIC SILT with SAND(MH)	30	60	34	26	74.2
B-075	1 - 2.5	ELASTIC SILT with SAND(MH)	28	62	36	26	75.7
B-075	3.5 - 5	FAT CLAY with SAND(CH)	33	58	18	40	70.5
B-075	6 - 7.5	SANDY LEAN CLAY(CL)	31	46	16	30	68.2
B-075	8.5 - 10	FAT CLAY with SAND(CH)	33	57	17	40	70.9
B-076	1 - 2.5	SANDY ELASTIC SILT(MH)	28	68	34	34	69.5
B-076	3.5 - 5	FAT CLAY with SAND(CH)	36	65	22	43	79.1
B-076	6 - 7.5	SANDY ELASTIC SILT(MH)	23	52	32	20	64.1
B-076	8.5 - 10	ELASTIC SILT with SAND(MH)	28	71	36	35	74.2
B-077	1 - 2.5	SANDY ELASTIC SILT(MH)	30	51	31	20	67.2
B-077	3.5 - 5	SANDY ELASTIC SILT(MH)	32	55	37	18	67.2
B-077	6 - 7.5	SANDY FAT CLAY(CH)	25	76	33	43	70.0
B-079	1 - 2.5	SANDY LEAN CLAY(CL)	18	40	22	18	53.7
B-079	3.5 - 5	CLAYEY SAND with GRAVEL(SC)	16	46	24	22	48.6
B-079	6 - 7.5	SILTY SAND(SM)	12	NP	NP	NP	27.0
B-079	8.5 - 10	SILTY SAND(SM)	13	NP	NP	NP	30.2
B-080	1 - 2.5	WELL-GRADED GRAVEL with SILT and SAND(GW-GM)	5	NP	NP	NP	7.0

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-080	3.5 - 5	SANDY SILT(ML)	33	46	30	16	69.6
B-080	6 - 7.5	SILT with SAND(ML)	58	48	37	11	72.8
B-082	1 - 2.5	SANDY LEAN CLAY(CL)	25	35	21	14	68.3
B-082	3.5 - 5	LEAN CLAY with SAND(CL)	30	49	26	23	81.1
B-082	6 - 7.5	LEAN CLAY with SAND(CL)	25	42	25	17	83.1
B-082	8.5 - 10	ELASTIC SILT(MH)	29	55	38	17	92.8
B-082	13.5 - 14.49		6				26.2
B-084	1 - 2.5	FAT CLAY with SAND(CH)	28	56	28	28	73.5
B-084	3.5 - 5	SANDY FAT CLAY(CH)	25	51	25	26	59.3
B-084	6 - 7.5	SANDY FAT CLAY(CH)	25	59	26	33	64.3
B-084	8.5 - 10	SANDY FAT CLAY(CH)	26	50	27	23	66.8
B-084	13.5 - 15	SANDY SILT(ML)	11	NP	NP	NP	51.1
B-084	18.5 - 20	SANDY SILT with GRAVEL(ML)	18	NP	NP	NP	58.2
B-084	23.5 - 25	SILTY SAND(SM)	14	NP	NP	NP	37.1
B-084	28.5 - 30	SANDY LEAN CLAY(CL)	17	32	22	10	50.4
B-084	33.5 - 35	SILTY SAND(SM)	15	NP	NP	NP	39.6
B-084	38.5 - 40	SANDY SILT(ML)	26	40	28	12	65.8
B-086	1 - 2.5	SANDY FAT CLAY(CH)	26	52	28	24	70.0
B-086	3.5 - 5		30				40.5
B-086	6 - 7.5		21				71.1
B-086	8.5 - 10	ELASTIC SILT with SAND(MH)	37	52	31	21	72.4
B-086	13.5 - 15	LEAN CLAY with SAND(CL)	20	28	17	11	73.4
B-087	1 - 2.5	SANDY FAT CLAY(CH)	19	50	26	24	56.4
B-087	3.5 - 5	CLAYEY SAND with GRAVEL(SC)	17	30	19	11	29.9
B-087	6 - 7.5	FAT CLAY with SAND(CH)	21	51	24	27	74.3
B-087	8.5 - 10	FAT CLAY(CH)	38	62	30	32	91.6
B-088	3.5 - 5	CLAYEY SAND with GRAVEL(SC)	22	49	26	23	40.6
B-088	6 - 7.5	SANDY FAT CLAY(CH)	22	58	23	35	64.8

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-088	8.5 - 10	SILT with SAND(ML)	30	44	34	10	81.7
B-088	13.5 - 15	SANDY SILT with GRAVEL(ML)	26	45	29	16	59.4
B-088	18.5 - 20	SILTY SAND(SM)	9	NP	NP	NP	35.3
B-088	23.5 - 24.49	SANDY SILT(ML)	12	NP	NP	NP	52.8
B-089	1 - 2.5	SANDY FAT CLAY(CH)	26	51	28	23	60.6
B-089	3.5 - 5	FAT CLAY with SAND(CH)	25	55	26	29	70.2
B-089	6 - 7.5	FAT CLAY with SAND(CH)	26	54	28	26	72.1
B-089	8.5 - 10	ELASTIC SILT with SAND(MH)	35	75	35	40	84.6
B-089	13.5 - 15	SILT with SAND(ML)	32	46	31	15	73.1
B-089	18.5 - 20	SANDY SILT(ML)	25	NP	NP	NP	63.2
B-089	23.5 - 25	SANDY SILT(ML)	19	36	26	10	51.2
B-089	28.5 - 30	SANDY SILT(ML)	21	44	32	12	61.6
B-089	33.5 - 35	SILT with SAND(ML)	18	41	30	11	71.2
B-089	38.5 - 40	CLAYEY SAND(SC)	14	39	25	14	47.9
B-090	1 - 2.5	SILT with SAND(ML)	25	44	31	13	72.5
B-090	3.5 - 5	SANDY FAT CLAY(CH)	22	50	26	24	61.5
B-090	6 - 7.5	SANDY FAT CLAY(CH)	30	50	26	24	64.6
B-090	8.5 - 10	SANDY LEAN CLAY(CL)	30	28	18	10	59.9
B-092	1 - 2.5	CLAYEY SAND with GRAVEL(SC)	14	44	23	21	37.5
B-092	3.5 - 5	CLAYEY SAND with GRAVEL(SC)	18	43	22	21	35.7
B-092	6 - 7.5	CLAYEY SAND(SC)	18	32	19	13	46.2
B-092	8.5 - 10	SILTY SAND(SM)	19	41	27	14	48.3
B-092	13.5 - 15	CLAYEY SAND(SC)	13	34	23	11	47.5
B-092	18.5 - 20	SILTY SAND(SM)	11	33	24	9	40.3
B-092	23.5 - 25	SILTY SAND(SM)	10	NP	NP	NP	41.5
B-092	28.5 - 30	SILTY SAND(SM)	13	NP	NP	NP	43.8
B-093	1 - 2.5	SANDY LEAN CLAY(CL)	22	41	19	22	67.1
B-093	3.5 - 5	SANDY LEAN CLAY(CL)	23	41	16	25	65.6

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PROJECT NUMBER: 71195007

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-093	6 - 7.5	SANDY SILT(ML)	30	47	29	18	69.8
B-093	8.5 - 10	SILT with SAND(ML)	33	45	34	11	74.8
B-093	13.5 - 15	SILT with SAND(ML)	32	43	27	16	70.2
B-093	18.5 - 20	ELASTIC SILT with SAND(MH)	38	51	33	18	73.6
B-093	23.5 - 25	SANDY LEAN CLAY(CL)	25	39	25	14	64.0
B-093	28.5 - 30	SILT with SAND(ML)	26	41	26	15	77.8
B-093	33.5 - 34.49	CLAYEY SAND(SC)	11	26	18	8	39.9
B-093	38.5 - 40	SANDY LEAN CLAY(CL)	15	32	22	10	64.1
B-093	43.5 - 45	SANDY LEAN CLAY(CL)	19	31	19	12	69.6
B-094	1 - 2.5	SANDY LEAN CLAY(CL)	19	42	22	20	62.0
B-094	3.5 - 5	ELASTIC SILT with SAND(MH)	22	55	31	24	70.9
B-094	6 - 7.5	ELASTIC SILT(MH)	36	53	29	24	85.9
B-094	8.5 - 10	SANDY SILT(ML)	27	43	30	13	58.0
B-094	13.5 - 15	SILTY SAND(SM)	20	35	30	5	43.4
B-094	18.5 - 20	SILTY SAND(SM)	15	32	24	8	37.8
B-094	23.5 - 25	SILTY SAND(SM)	12	27	22	5	31.6
B-094	28.5 - 30	SILTY SAND(SM)	16	29	23	6	27.5
B-094	33.5 - 34.92	CLAYEY SAND(SC)	17	28	19	9	37.9
B-095	1 - 2.5	SILTY SAND(SM)	28	45	29	16	48.1
B-095	3.5 - 5	SILTY SAND(SM)	18	NP	NP	NP	34.1
B-095	6 - 7.5	SILTY SAND(SM)	18	NP	NP	NP	19.1
B-096	1 - 2.5		17	43	19	24	
B-096	3.5 - 5	CLAYEY SAND(SC)		56	26	30	42.6
B-096	6 - 7.5	CLAYEY SAND(SC)		44	18	26	39.3
B-096	8.5 - 10	CLAYEY SAND(SC)		42	22	20	44.8
B-096	13.5 - 15	CLAYEY SAND(SC)		44	22	22	28.0
B-096	18.5 - 20						13.5
B-096	23.5 - 25		23	29	16	13	

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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-098	1 - 2.5	SANDY FAT CLAY(CH)		53	21	32	59.8
B-098	3.5 - 5	CLAYEY SAND(SC)		26	17	9	22.1
B-098	6 - 7.5	SILTY, CLAYEY SAND(SC-SM)		21	17	4	46.9
B-098	8.5 - 10						23.3
B-098	13.5 - 15						37.2
B-098	18.5 - 20						21.1
B-098	23.5 - 24.83	SILTY, CLAYEY SAND(SC-SM)		22	17	5	28.0
B-099	1 - 2.5	SANDY LEAN CLAY(CL)	22	46	22	24	69.4
B-099	3.5 - 5	SILTY SAND(SM)	7	16	21	NP	47.1
B-099	6 - 6.92	SILTY SAND(SM)	4	23	20	3	28.9
B-099	8.5 - 10	SANDY SILT(ML)	7	27	22	5	53.8
B-099	23.5 - 25	CLAYEY SAND(SC)	12	26	15	11	47.1
B-099	28.5 - 30	SANDY SILT(ML)	19	34	28	6	63.0
B-099	33.5 - 34.49	SILT with SAND(ML)	21	33	26	7	78.3
B-099	38.5 - 40	SILT(ML)	23	42	26	16	85.4
B-100	1 - 2.5	SANDY LEAN CLAY(CL)	23	32	21	11	56.1
B-100	3.5 - 5	CLAYEY SAND(SC)	19	29	18	11	43.9
B-101	1 - 2.5	SANDY LEAN CLAY(CL)		28	17	11	60.1
B-102	1 - 2.5	FAT CLAY(CH)	28	55	24	31	85.9
B-102	3.5 - 5	ELASTIC SILT with SAND(MH)	32	50	34	16	72.6
B-102	6 - 7.5	SILT with SAND(ML)	26	49	30	19	79.3
B-102	8.5 - 10	SILT with SAND(ML)	30	40	27	13	76.6
B-103	1 - 2.5	SILTY SAND(SM)		NP	NP	NP	45.7
B-103	3.5 - 5	SANDY LEAN CLAY(CL)		32	22	10	53.9
B-103	6 - 7.5	SANDY SILT(ML)		NP	NP	NP	50.9
B-103	8.5 - 10	SILTY SAND(SM)		32	24	8	46.8
B-103	13.5 - 15						6.1
B-103	18.5 - 20	SANDY SILT(ML)		35	28	7	54.6

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-103	23.5 - 25	SILTY SAND(SM)		NP	NP	NP	43.9
B-104	1 - 2.5	SILTY SAND(SM)	27	51	31	20	47.2
B-104	3.5 - 5		11				32.1
B-104	6 - 7.5	SILTY SAND(SM)	7	NP	NP	NP	20.0
B-104	8.5 - 10	SILT with SAND(ML)	19	NP	NP	NP	80.5
B-104	13.5 - 15	SILTY SAND(SM)	8	NP	NP	NP	19.5
B-106	1 - 2.5	LEAN CLAY with SAND(CL)		40	21	19	78.5
B-106	3.5 - 5						22.5
B-107	1 - 2.5	SILTY, CLAYEY SAND(SC-SM)	11	23	17	6	31.2
B-107	2 -	SILT with SAND(ML)	26	44	30	14	82.6
B-107	3.5 - 5	SANDY SILT(ML)	25	32	25	7	69.9
B-107	6 - 6.83	SANDY SILTY CLAY(CL-ML)	10	29	22	7	68.0
B-107	8.5 - 10	SANDY LEAN CLAY(CL)	11	30	22	8	54.6
B-107	13.5 - 15	SILTY, CLAYEY SAND(SC-SM)	7	24	20	4	44.2
B-109	1 - 2.5	SANDY LEAN CLAY(CL)	19	42	24	18	59.4
B-109	3.5 - 5	LEAN CLAY with SAND(CL)	37	45	18	27	84.7
B-109	6 - 7.5	SILTY SAND(SM)	14	33	25	8	31.1
B-109	8.5 - 10	SILTY SAND(SM)	15	32	33	NP	24.0
B-109	13.5 - 15	SILTY SAND(SM)	7	26	22	4	25.5
B-109	18.5 - 20	SILTY SAND(SM)	13	27	23	4	28.9
B-110	1 - 2.5	ELASTIC SILT with SAND(MH)	26	56	30	26	72.3
B-110	3.5 - 5	ELASTIC SILT with SAND(MH)	35	71	34	37	81.6
B-110	6 - 7.5	SILT with SAND(ML)	31	48	29	19	71.3
B-110	8.5 - 10	SILTY SAND(SM)	28	37	32	5	41.7
B-112	1 - 2.5	CLAYEY SAND(SC)		45	25	20	37.2
B-112	3.5 - 5	CLAYEY SAND(SC)		35	19	16	30.0
B-112	6 - 7.5						17.0
B-113	1 - 2.5	SANDY LEAN CLAY(CL)	28	35	20	15	63.1

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-113	3.5 - 5	CLAYEY SAND(SC)	21	41	24	17	42.6
B-113	6 - 7.5	CLAYEY SAND(SC)	17	36	23	13	32.3
B-114	1 - 2.5	SANDY LEAN CLAY(CL)	23	45	22	23	65.0
B-114	3.5 - 5	SANDY LEAN CLAY(CL)	26	39	21	18	59.7
B-114	6 - 7.5	LEAN CLAY with SAND(CL)	30	45	26	19	75.1
B-114	8.5 - 10	SANDY SILT(ML)	24	32	29	3	52.8
B-114	13.5 - 15	SILTY SAND(SM)	25	34	33	1	45.8
B-114	18.5 - 20	SANDY SILT(ML)	20	35	32	3	50.2
B-116	1 - 2.5	SANDY LEAN CLAY(CL)	24	26	17	9	59.7
B-116	3.5 - 5	SILT(ML)	27	35	25	10	93.3
B-116	6 - 7.5	SANDY FAT CLAY(CH)	33	54	22	32	66.3
B-116	8.5 - 9.42	SANDY SILT with GRAVEL(ML)	30	42	30	12	57.6
B-118	1 - 2.5	SILTY SAND(SM)	28	32	25	7	40.3
B-118	3.5 - 5	LEAN CLAY with SAND(CL)	33	31	19	12	74.2
B-118	6 - 7.5	SANDY LEAN CLAY(CL)	24	25	15	10	66.4
B-118	8.5 - 10	SILTY SAND(SM)	16	NP	NP	NP	26.8
B-118	13.5 - 15	SILTY SAND(SM)	14	NP	NP	NP	20.9
B-118	18.5 - 20	SILTY SAND(SM)	7	NP	NP	NP	18.8
B-120	1 - 2.5	SILT(ML)	27	36	31	5	92.1
B-120	3.5 - 5	SILT(ML)	27	43	33	10	92.5
B-120	6 - 7.5	SILT(ML)	30	38	33	5	90.3
B-120	8.5 - 10	SILT(ML)	29	37	31	6	92.5
B-120	13.5 - 15	SILT(ML)	28	36	30	6	92.6
B-120	18.5 - 20	SILT(ML)	30	39	31	8	94.8
B-120	23.5 - 25	LEAN CLAY(CL)	27	37	21	16	94.6
B-120	28.5 - 30	SILT(ML)	22	40	28	12	88.2
B-120	33.5 - 35	SILT(ML)	24	38	32	6	93.0
B-122	1 - 2.5	SANDY LEAN CLAY(CL)	32	29	18	11	65.8

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-122	3.5 - 5	SANDY LEAN CLAY(CL)	27	38	22	16	64.9
B-122	6 - 7.5	SILTY SAND(SM)	18	NP	NP	NP	20.6
B-122	8.5 - 10	SILT with SAND(ML)	32	36	26	10	75.0
B-122	13.5 - 15	SILT with SAND(ML)	27	34	24	10	73.7
B-122	18.5 - 20	SILT with SAND(ML)	27	34	24	10	73.2
B-122	23.5 - 25	SILT with SAND(ML)	33	39	28	11	73.9
B-123	1 - 2.5	SANDY LEAN CLAY(CL)	16	34	20	14	69.8
B-123	3.5 - 5	CLAYEY SAND(SC)	26	29	18	11	45.6
B-123	8.5 - 10	SILTY SAND(SM)	8	NP	NP	NP	35.9
B-123OS	1 - 3	LEAN CLAY with SAND(CL)	24	34	21	13	82.1
B-124	1 - 2.5	LEAN CLAY with SAND(CL)	24	28	19	9	71.0
B-124	3.5 - 5	SANDY LEAN CLAY(CL)	22	33	16	17	58.2
B-124	6 - 7.5	SANDY LEAN CLAY(CL)	29	37	16	21	68.7
B-124	8.5 - 10	CLAYEY SAND(SC)	19	29	20	9	41.9
B-124	13.5 - 15	SILTY, CLAYEY SAND(SC-SM)	17	29	22	7	39.9
B-124	18.5 - 20	CLAYEY SAND(SC)	14	28	18	10	32.5
B-124	23.5 - 25	CLAYEY SAND(SC)	11	26	18	8	37.2
B-124	28.5 - 30	SILTY, CLAYEY SAND(SC-SM)	12	26	19	7	39.6
B-124	33.5 - 34.92	SILTY, CLAYEY SAND(SC-SM)	10	25	18	7	40.1
B-126	1 - 2.5	CLAYEY SAND(SC)	19	27	19	8	44.0
B-126	3.5 - 5	CLAYEY SAND(SC)	19	42	22	20	36.0
B-126	6 - 7.5	SILT with SAND(ML)	34	49	37	12	74.8
B-126	8.5 - 10	SANDY SILT(ML)	25	NP	NP	NP	56.6
B-126	13.5 - 15	SANDY SILT(ML)	25	39	33	6	65.2
B-126	18.5 - 20	SANDY SILT(ML)	33	45	36	9	65.7
B-126	23.5 - 25	SILT with SAND(ML)	31	44	34	10	76.0
B-127	1 - 2.5	CLAYEY SAND(SC)	34	32	19	13	39.5
B-127	3.5 - 5	CLAYEY SAND(SC)	18	26	18	8	41.4

PROJECT: CLT Airport-Deicing Pad and SCT

SITE: Old Piney Top and West Blvd
Charlotte, NC

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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-127	6 - 7.5	CLAYEY SAND with GRAVEL(SC)	14	28	13	15	28.6
B-128	1 - 2.5	SANDY LEAN CLAY(CL)		34	16	18	53.0
B-128	3.5 - 5	CLAYEY SAND(SC)		31	18	13	47.2
B-128	6 - 7.5	CLAYEY SAND(SC)		24	15	9	24.4
B-128	8.5 - 10						19.5
B-128	13.5 - 15	CLAYEY SAND(SC)		32	23	9	19.4
B-129	1 - 2.5	SANDY LEAN CLAY(CL)	27	26	18	8	53.6
B-129	3.5 - 5	SILTY SAND(SM)	20	31	25	6	49.1
B-129	6 - 7.5	SILTY SAND(SM)	15	26	22	4	34.5
B-129	8.5 - 9.67	SILTY SAND(SM)	7	24	NP	24	48.0
B-130	1 - 2.5	ELASTIC SILT with SAND(MH)	38	50	31	19	70.8
B-130	3.5 - 5	SANDY FAT CLAY(CH)	35	52	26	26	60.5
B-130	8.5 - 10	SANDY SILT(ML)	38	37	26	11	65.5
B-130	13.5 - 15	SILT with SAND(ML)	36	39	27	12	76.8
B-130	18.5 - 20	LEAN CLAY with SAND(CL)	25	38	24	14	73.4
B-130	23.5 - 25	SILT with SAND(ML)	22	44	33	11	72.8
B-130	28.5 - 30	SILT with SAND(ML)	35	47	34	13	78.1
B-130	33.5 - 35	SANDY SILT(ML)	24	36	29	7	64.3
B-132	1 - 2.5	SANDY LEAN CLAY(CL)	30	27	19	8	67.1
B-132	3.5 - 5	SANDY SILT(ML)	34	40	32	8	66.0
B-132	6 - 7.5	SILTY SAND(SM)	25	NP	NP	NP	32.1
B-134	1 - 2	SANDY LEAN CLAY(CL)	23	40	17	23	55.4
B-136	1 - 2.5	CLAYEY SAND(SC)	19	25	17	8	17.6
B-136	3.5 - 5	CLAYEY SAND(SC)	37	29	21	8	48.1
B-136	6 - 7.5	SILTY SAND(SM)	8	NP	NP	NP	19.5
B-138	1 - 2.5	SANDY LEAN CLAY(CL)	19	23	15	8	60.1
B-138	3.5 - 5	LEAN CLAY with SAND(CL)	31	44	26	18	72.3
B-138	6 - 7.5	SANDY LEAN CLAY(CL)	24	37	21	16	67.3

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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-138	8.5 - 10	CLAYEY SAND(SC)	12	25	17	8	40.9
B-140	1 - 2.5	SANDY LEAN CLAY(CL)	25	27	17	10	55.2
B-140	3.5 - 5	SANDY LEAN CLAY(CL)	21	25	16	9	68.0
B-140	6 - 7.5	CLAYEY SAND(SC)	17	27	17	10	45.9
B-142	1 - 2.5	SANDY LEAN CLAY with GRAVEL(CL)	20	36	21	15	54.3
B-142	3.5 - 5	CLAYEY SAND with GRAVEL(SC)	24	28	17	11	48.2
B-143	1 - 2.5	SANDY LEAN CLAY(CL)	23	35	19	16	64.8
B-143	3.5 - 5	SILT with SAND(ML)	18	NP	NP	NP	80.4
B-143	6 - 7.5	SANDY SILT(ML)	19	38	27	11	66.7
B-144	1 - 2.5	FAT CLAY(CH)	40	69	25	44	87.1
B-144	3.5 - 4.33	SANDY SILT(ML)	6	NP	NP	NP	52.3
B-144	6 - 7.5	SANDY SILT(ML)	10	NP	NP	NP	58.9
B-146	1 - 2.5	SANDY LEAN CLAY(CL)	18	38	20	18	54.2
B-146	3.5 - 5	SANDY LEAN CLAY(CL)	25	37	19	18	53.4
B-146	6 - 7.5	CLAYEY SAND(SC)	15	32	13	19	41.9
B-148	1 - 2.5	SANDY LEAN CLAY(CL)	23	26	18	8	61.8
B-148	3.5 - 5	SILTY SAND(SM)	11	NP	NP	NP	47.1
B-150	1 - 2.5	POORLY GRADED SAND with SILT(SP-SM)	12	NP	NP	NP	8.4
B-150	3.5 - 5	SILTY SAND(SM)	25	NP	NP	NP	32.1
B-150	6 - 7.5	SILTY SAND(SM)	25	NP	NP	NP	16.1
B-151	3.5 - 5		29	39	18	21	
B-151	6 - 7.5		22	39	15	24	
B-151	8.5 - 10	SILTY SAND(SM)	16	NP	NP	NP	28.7
B-152	1 - 2.5	SANDY LEAN CLAY(CL)	22	31	19	12	66.4
B-152	3.5 - 5		26				39.2
B-152	6 - 7.5	SANDY SILT(ML)	17	28	26	2	64.9
B-152	8.5 - 10	SILTY SAND(SM)	13	26	22	4	46.4
B-152	13.5 - 15	SILTY SAND(SM)	10	21	19	2	40.8

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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-154	1 - 2.5	FAT CLAY with SAND(CH)	31	56	23	33	79.0
B-154	3.5 - 5	LEAN CLAY with SAND(CL)	27	43	26	17	84.1
B-154	6 - 7.5	SILT with SAND(ML)	26	37	31	6	79.3
B-154	8.5 - 10	SANDY SILT(ML)	15	34	26	8	61.6
B-154	13.5 - 15	SANDY SILT(ML)	9	29	24	5	60.1
B-154	18.5 - 20	SILT with SAND(ML)	21	36	27	9	81.1
B-154	23.5 - 25	SILT with SAND(ML)	18	35	29	6	71.4
B-154	30 - 32	SILT with SAND(ML)	25	33	30	3	79.8
B-154	33.5 - 35	SILTY SAND(SM)	18	33	28	5	38.9
B-154	38.5 - 40	SILTY SAND(SM)	13	26	23	3	44.5
B-154	43.5 - 45	SANDY SILT(ML)	17	33	26	7	51.0
B-154	48.5 - 49.83	SANDY SILT(ML)	20	35	27	8	62.0
B-156	1 - 2.5		29	65	19	46	
B-156	3.5 - 5	SILT(ML)	20	30	27	3	94.2
B-156	6 - 7.5	SILTY SAND(SM)		NP	NP	NP	47.5
B-158	1 - 2.5	SANDY FAT CLAY(CH)	24	50	26	24	65.2
B-158	3.5 - 5	SANDY SILT(ML)	14	NP	NP	NP	52.9
B-158	6 - 7.5	SILT(ML)	15	34	29	5	86.7
B-158	8.5 - 10	SILTY GRAVEL with SAND(GM)	5	NP	NP	NP	18.4
B-158	13.5 - 15	SILT(ML)	12	33	28	5	89.9
B-158	18.5 - 20	SILT(ML)	15	33	28	5	88.7
B-158	23.5 - 25	SILT with SAND(ML)	13	32	28	4	71.7
B-158	28.5 - 30	SILTY SAND(SM)	4	NP	NP	NP	18.7
B-158	33.5 - 35	SILTY SAND(SM)	8	NP	NP	NP	29.9
B-158	38.5 - 40	SILTY SAND(SM)	10	NP	NP	NP	39.9
B-158	43.5 - 45	SILTY SAND(SM)	10	NP	NP	NP	35.8
B-160	1 - 2.5	SANDY LEAN CLAY(CL)		31	18	13	61.2
B-160	3.5 - 5		24	45	24	21	

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-160	6 - 7.5	CLAYEY SAND(SC)	21	50	19	31	47.5
B-160	8.5 - 9.58		14	34	26	8	
B-162	1 - 2.5	SANDY LEAN CLAY(CL)		32	23	9	59.8
B-162	3.5 - 3.83						27.0
B-162	6 - 6.25						23.7
B-162	8.5 - 10	CLAYEY SAND(SC)		35	24	11	40.9
B-162	18.5 - 20						13.8
B-162	23.5 - 25	SILTY SAND(SM)		27	25	2	39.3
B-162	28.5 - 29.92	SILTY SAND(SM)		25	22	3	28.1
B-164	1 - 2.5	SANDY LEAN CLAY(CL)	25	41	20	21	61.3
B-164	3.5 - 5	SANDY LEAN CLAY(CL)	20	41	25	16	65.2
B-164	8.5 - 10	SILTY SAND(SM)	10	NP	NP	NP	40.9
B-164	13.5 - 15	ELASTIC SILT with SAND(MH)	31	51	31	20	83.7
B-164	18.5 - 20	SILTY SAND(SM)	10	NP	NP	NP	48.4
B-164	23.5 - 25	ELASTIC SILT(MH)	45	53	33	20	85.1
B-164	28.5 - 30	SANDY SILT(ML)	29	NP	NP	NP	57.8
B-164	33.5 - 35	SILT with SAND(ML)	37	49	31	18	71.7
B-164	38.5 - 40	SILT(ML)	25	36	29	7	92.7
B-164	43.5 - 45	SILT with SAND(ML)	27	37	29	8	83.7
B-164	48.5 - 50	SILT(ML)	22	38	30	8	92.6
B-166	1 - 2.5	CLAYEY SAND(SC)	23	37	16	21	49.3
B-166	3.5 - 5	CLAYEY SAND(SC)	12	31	18	13	36.3
B-166	6 - 7.5	CLAYEY SAND(SC)	19	34	18	16	33.1
B-166	8.5 - 10	SILTY, CLAYEY SAND(SC-SM)	11	26	20	6	48.6
B-166	13.5 - 15	SANDY SILT(ML)	11	30	24	6	53.3
B-166	18.5 - 20	SILTY, CLAYEY SAND(SC-SM)	11	25	19	6	47.6
B-166	23.5 - 25	SILTY, CLAYEY SAND(SC-SM)	10	27	20	7	48.1
B-166	28.5 - 30	SILTY SAND(SM)	11	31	24	7	31.4

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-167	1 - 2.5	FAT CLAY with SAND(CH)	32	60	23	37	83.4
B-167	3.5 - 5	SANDY LEAN CLAY(CL)	12	27	19	8	50.1
B-167	6 - 7.5	SILT with SAND(ML)	22	40	27	13	74.6
B-167	8.5 - 10	SANDY LEAN CLAY(CL)	10	31	20	11	53.8
B-167	13.5 - 15	SILTY, CLAYEY SAND(SC-SM)	4	24	20	4	40.4
B-167	23.5 - 25	CLAYEY SAND(SC)	8	28	20	8	29.5
B-167	28.5 - 30	SILTY, CLAYEY SAND with GRAVEL(SC-SM)	6	27	20	7	23.0
B-168	1 - 2.5	SANDY LEAN CLAY(CL)	23	42	21	21	53.4
B-168	3.5 - 5	SANDY LEAN CLAY(CL)	21	46	22	24	55.6
B-168	6 - 7.5	SILT(ML)	15	36	27	9	94.2
B-168	8.5 - 10	SILT(ML)	14	37	29	8	87.6
B-168	13.5 - 15	SILT with SAND(ML)	18	35	28	7	77.3
B-168	18.5 - 20	SANDY SILT(ML)	29	43	28	15	67.3
B-168	23.5 - 25	SILT(ML)	30	38	29	9	93.1
B-168	27 - 28.5	SILT with SAND(ML)	27	34	30	4	73.6
B-168	28.5 - 30	SANDY SILT(ML)	25	NP	NP	NP	57.4
B-168	33.5 - 35	SANDY SILT(ML)	22	37	26	11	59.9
B-168	38.5 - 40	SANDY SILT(ML)	18	NP	NP	NP	54.1
B-168	43.5 - 45	SANDY SILT(ML)	21	NP	NP	NP	52.1
B-168	48.5 - 50	SILTY SAND(SM)	21	NP	NP	NP	44.1
B-170	1 - 2.5	CLAYEY SAND(SC)	18	28	16	12	46.2
B-170	3.5 - 5	SANDY LEAN CLAY(CL)	30	42	24	18	69.2
B-170	6 - 7.5	SANDY LEAN CLAY(CL)	24	40	22	18	67.8
B-170	8.5 - 10	SANDY LEAN CLAY(CL)	14	47	26	21	52.0
B-170	12 - 13.5		11				14.5
B-170	13.5 - 15	CLAYEY SAND(SC)	27	31	21	10	15.2
B-170	18.5 - 20	SILTY, CLAYEY SAND(SC-SM)	9	26	21	5	38.8
B-170	23.5 - 25	CLAYEY SAND(SC)	14	30	21	9	39.7

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-170	28.5 - 30	CLAYEY SAND(SC)	13	33	23	10	40.1
B-172	1 - 2.5	FAT CLAY with SAND(CH)	22	51	26	25	71.1
B-172	3.5 - 5	FAT CLAY with SAND(CH)	23	54	26	28	71.1
B-172	6 - 7.5	SANDY FAT CLAY(CH)	26	59	25	34	64.2
B-172	8.5 - 10	SANDY LEAN CLAY(CL)	19	42	21	21	53.9
B-172	13.5 - 15	CLAYEY SAND(SC)	10	34	20	14	39.1
B-172	18.5 - 20	SILTY SAND(SM)	16	40	26	14	28.8
B-172	23.5 - 25	CLAYEY SAND(SC)	8	31	17	14	17.8
B-172	28.5 - 30	CLAYEY SAND(SC)	11	31	20	11	44.2
B-172	33.5 - 35	SILTY, CLAYEY SAND(SC-SM)	11	28	22	6	39.7
B-172	38.5 - 40	SILTY, CLAYEY SAND(SC-SM)	12	29	22	7	48.1
B-172	43.5 - 45	SANDY LEAN CLAY(CL)	10	31	21	10	53.2
B-172	48.5 - 50	SANDY LEAN CLAY(CL)	12	32	21	11	52.4
B-174	1 - 2.5	ELASTIC SILT with SAND(MH)	27	75	39	36	78.4
B-174	3.5 - 5	SANDY ELASTIC SILT(MH)	27	59	37	22	69.2
B-174	6 - 7.5	ELASTIC SILT with SAND(MH)	20	55	35	20	82.0
B-174	8.5 - 10	SILT with SAND(ML)	18	44	35	9	71.8
B-174	13.5 - 15	SILT with SAND(ML)	19	44	34	10	74.7
B-174	18 - 20	SILTY SAND(SM)	16	39	33	6	48.5
B-174	23.5 - 25	SILTY SAND(SM)	9	NP	NP	NP	24.3
B-174	28.5 - 30	SILTY SAND(SM)	15	NP	NP	NP	35.8
B-174	33.5 - 35	SILTY SAND(SM)	17	NP	NP	NP	36.3
B-174	38.5 - 40	SILTY SAND(SM)	21	NP	NP	NP	47.4
B-174	43.5 - 45	SILTY SAND(SM)	18	NP	NP	NP	38.0
B-174	48.5 - 50	SILTY SAND(SM)	14	NP	NP	NP	31.7
B-174	53.5 - 55	SILTY SAND(SM)	12	NP	NP	NP	33.0
B-174	58.5 - 60	SILTY SAND(SM)	11	NP	NP	NP	28.1
B-175	1 - 2.5	SANDY LEAN CLAY(CL)	19	35	20	15	58.8

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-175	3.5 - 5	CLAYEY SAND(SC)	30	28	20	8	46.6
B-175	6 - 7.5	ELASTIC SILT with SAND(MH)	31	53	37	16	82.2
B-175	8.5 - 10	CLAYEY GRAVEL with SAND(GC)	16	32	22	10	14.1
B-175	13.5 - 15	SANDY LEAN CLAY(CL)	22	37	22	15	59.1
B-175	23.5 - 25	CLAYEY SAND(SC)	12	42	24	18	44.9
B-175	33.5 - 35	SILTY SAND with GRAVEL(SM)	11	24	21	3	28.9
B-175	38.5 - 40	POORLY GRADED GRAVEL with SILT and SAND(GP-GM)	11	NP	NP	NP	9.1
B-175	43.5 - 45	SILTY SAND(SM)	15	27	24	3	35.8
B-176	3.5 - 5	SANDY SILT(ML)	21	42	31	11	55.9
B-176	6 - 7.5	SILTY SAND(SM)	15	39	30	9	38.0
B-176	8.5 - 10	SILTY SAND(SM)	10	40	32	8	27.6
B-176	13.5 - 15	SILTY SAND(SM)	13	35	27	8	29.9
B-176	18.5 - 20	SILTY SAND(SM)	20	34	29	5	41.6
B-176	23.5 - 25	SILT with SAND(ML)	35	38	36	2	75.7
B-176	28.5 - 30	SILTY SAND(SM)	14	35	29	6	34.9
B-176	33.5 - 35	SILTY SAND(SM)	9	29	24	5	19.4
B-178	1 - 2.5	SANDY LEAN CLAY(CL)	21	35	20	15	55.3
B-178	3.5 - 5	FAT CLAY with SAND(CH)	32	62	29	33	81.1
B-178	6 - 7.5	FAT CLAY with SAND(CH)	26	77	35	42	75.0
B-178	8.5 - 10	SANDY ELASTIC SILT(MH)	34	79	45	34	68.8
B-178	13.5 - 15	SANDY ELASTIC SILT(MH)	6	54	37	17	69.5
B-178	18.5 - 20	SILTY SAND(SM)	21	NP	NP	NP	42.3
B-178	23.5 - 25	SILTY SAND(SM)	16	NP	NP	NP	34.7
B-178	28.5 - 30	SILTY SAND(SM)	17	NP	NP	NP	33.0
B-178	33.5 - 35	SILTY SAND(SM)	15	NP	NP	NP	31.2
B-178	38.5 - 40	SILTY SAND(SM)	13	NP	NP	NP	27.5
B-178	43.5 - 45	SILTY SAND(SM)	12	NP	NP	NP	24.8
B-178	48.5 - 50	SILTY SAND(SM)	11	NP	NP	NP	29.6

PROJECT: CLT Airport-Deicing Pad and SCT

SITE: Old Piney Top and West Blvd
Charlotte, NC

Terracon
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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-178	53.5 - 55	SILTY SAND(SM)	11	NP	NP	NP	26.1
B-178	58.5 - 60	SILTY SAND(SM)	9	NP	NP	NP	24.3
B-180	3.5 - 5	CLAYEY SAND with GRAVEL(SC)	16	51	26	25	37.1
B-180	8.5 - 10	SANDY FAT CLAY(CH)	24	56	27	29	55.8
B-180	13.5 - 15	CLAYEY SAND(SC)	12	39	18	21	42.9
B-181	3.5 - 5	SANDY LEAN CLAY(CL)	29	46	22	24	51.5
B-181	8.5 - 10	SANDY FAT CLAY(CH)	27	50	24	26	58.7
B-181	13.5 - 13.99	SANDY FAT CLAY(CH)	20	53	24	29	52.3
B-182	3.5 - 5	CLAYEY GRAVEL with SAND(GC)	15	48	21	27	38.8
B-182	8.5 - 10	CLAYEY GRAVEL with SAND(GC)	13	52	25	27	31.8
B-182	13.5 - 14.49	CLAYEY GRAVEL with SAND(GC)	33	48	26	22	21.0
B-182	18.5 - 20	CLAYEY SAND with GRAVEL(SC)	15	78	35	43	35.5
B-182	23.5 - 25	SANDY LEAN CLAY(CL)	21	46	22	24	61.9
B-182	28.5 - 30	SANDY LEAN CLAY(CL)	21	45	17	28	69.9
B-183	3.5 - 5	CLAYEY SAND with GRAVEL(SC)	21	54	24	30	44.7
B-183	8.5 - 10	CLAYEY SAND with GRAVEL(SC)	33	51	23	28	26.9
B-183	13.5 - 15	SANDY FAT CLAY(CH)	19	50	24	26	59.3
B-183	18.5 - 20	SANDY FAT CLAY(CH)	22	72	34	38	63.5
B-183	23.5 - 25	ELASTIC SILT with SAND(MH)	36	56	32	24	83.7
B-183	28.5 - 30	SANDY SILT(ML)	33	49	31	18	70.0
B-184	1 - 2.5	SANDY SILT with GRAVEL(ML)	19	49	31	18	58.8
B-184	3.5 - 5	SANDY SILT(ML)	24	47	39	8	64.0
B-184	6 - 7.5	SILT(ML)	24	47	38	9	92.7
B-184	8.5 - 10	SILT with SAND(ML)	26	45	41	4	81.9
B-184	13.5 - 15	SANDY SILT(ML)	23	41	36	5	67.1
B-184	18.5 - 20	SANDY SILT(ML)	26	NP	NP	NP	66.5
B-184	23.5 - 25	SILT(ML)	38	39	35	4	88.7
B-185	1 - 2.5	ELASTIC SILT with SAND(MH)	28	73	36	37	79.3

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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-185	3.5 - 5	SILT with SAND(ML)	23	42	29	13	78.5
B-185	6 - 7.5	SANDY LEAN CLAY(CL)	29	49	22	27	58.9
B-185	8.5 - 10	SANDY FAT CLAY(CH)	25	53	23	30	54.9
B-185	13.5 - 15	SILTY SAND(SM)	22	32	26	6	37.8
B-185	18.5 - 20	SILTY SAND(SM)	18	30	26	4	36.4
B-185	23.5 - 25	SILT with SAND(ML)	40	42	34	8	76.1
B-185	28.5 - 30	SILT with SAND(ML)	35	40	34	6	73.2
B-185	33.5 - 35	SANDY SILT(ML)	30	39	32	7	62.6
B-185	38.5 - 40	SILT with SAND(ML)	29	35	29	6	73.0
B-185	43.5 - 45	SILTY SAND(SM)	29	29	25	4	43.9
B-185	53.5 - 55	SANDY SILT(ML)	19	28	24	4	58.9
B-185	58.5 - 60	SANDY SILT(ML)	19	29	24	5	51.6
B-186	1 - 2.5	LEAN CLAY with SAND(CL)	21	49	27	22	72.1
B-186	3.5 - 5	FAT CLAY with SAND(CH)	28	59	28	31	79.0
B-186	6 - 7.5	SANDY FAT CLAY(CH)	23	51	25	26	62.2
B-186	8.5 - 10	SANDY ELASTIC SILT(MH)	48	67	33	34	68.5
B-186	13.5 - 15	SANDY SILT(ML)	28	41	33	8	50.2
B-186	18.5 - 20	SILTY SAND(SM)	28	43	37	6	47.3
B-186	23.5 - 25	SILTY SAND(SM)	31	39	33	6	42.7
B-186	28.5 - 30	SILTY SAND(SM)	28	34	26	8	38.1
B-186	33.5 - 35	SILTY SAND(SM)	44	31	29	2	38.7
B-186	38.5 - 40	SILT with SAND(ML)	40	36	31	5	70.5
B-186	43.5 - 45	SILT with SAND(ML)	38	38	32	6	74.2
B-186	48.5 - 50	SANDY SILT(ML)	30	32	26	6	68.6
B-186	53.5 - 55	SILT with SAND(ML)	25	31	27	4	72.9
B-186	58.5 - 60	SANDY SILT(ML)	30	29	26	3	61.9
B-187	1 - 2.5	SILTY SAND(SM)	11	32	30	2	42.9
B-187	3.5 - 5	SILTY SAND(SM)	10	NP	NP	NP	39.0

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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-187	6 - 7.5	SANDY ELASTIC SILT(MH)	30	52	37	15	69.7
B-187	8.5 - 10	SILTY SAND(SM)	18	31	28	3	48.2
B-187	13.5 - 15	SANDY SILT(ML)	13	33	27	6	53.5
B-187	18.5 - 20	SILTY SAND(SM)	11	NP	NP	NP	37.1
B-188	1 - 2.5	ELASTIC SILT(MH)	52	67	52	15	93.4
B-188	3.5 - 5	ELASTIC SILT(MH)	54	71	53	18	92.3
B-188	6 - 7.5	ELASTIC SILT(MH)	65	74	56	18	93.0
B-188	8.5 - 10	ELASTIC SILT(MH)	45	66	46	20	92.2
B-188	13.5 - 15	ELASTIC SILT(MH)	43	53	47	6	88.5
B-188	18.5 - 20	SANDY SILT(ML)	32	44	41	3	59.8
B-188	23.5 - 25	SANDY ELASTIC SILT(MH)	39	50	47	3	53.9
B-188	28.5 - 30	SILTY SAND(SM)	29	39	36	3	48.2
B-189	1 - 2.5	SANDY SILT(ML)	12	49	45	4	53.0
B-189	3.5 - 5	SANDY SILT(ML)	15	49	45	4	55.7
B-189	6 - 7.5	SANDY ELASTIC SILT(MH)	16	52	47	5	51.5
B-189	8.5 - 10	SANDY SILT(ML)	14	45	41	4	58.0
B-190	1 - 2.5	SANDY SILT(ML)	16	40	36	4	59.4
B-190	3.5 - 5	SANDY SILT(ML)	21	37	34	3	59.0
B-190	6 - 7.5	SANDY SILT(ML)	31	39	34	5	57.0
B-190	8.5 - 10	SANDY SILT(ML)	32	39	33	6	57.4
B-190	13.5 - 15	SANDY SILT(ML)	37	37	34	3	57.3
B-190	18.5 - 20	SANDY SILT(ML)	39	37	34	3	53.2
B-190	23.5 - 25	SANDY SILT(ML)	40	37	35	2	57.4
B-190	28.5 - 30	SANDY SILT(ML)	35	36	33	3	50.7
B-191	1 - 2.5	SANDY SILT(ML)	25	46	43	3	67.0
B-191	3.5 - 5	SANDY ELASTIC SILT(MH)	23	52	42	10	61.6
B-191	6 - 7.5	SANDY ELASTIC SILT(MH)	25	50	41	9	68.3
B-191	8.5 - 10	SANDY SILT(ML)	33	49	38	11	66.4

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CLIENT: WSP USA Inc.
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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-191	13.5 - 15	SANDY SILT(ML)	27	46	36	10	57.2
B-191	18.5 - 20	SANDY SILT(ML)	27	41	34	7	63.6
B-191	23.5 - 25	SILT with SAND(ML)	38	48	36	12	76.7
B-191	28.5 - 30	SANDY SILT(ML)	37	38	29	9	64.6
B-192	1 - 2.5	WELL-GRADED GRAVEL with SAND(GW)	11	NP	NP	NP	4.9
B-192	3.5 - 5	SILTY GRAVEL with SAND(GM)	20	48	40	8	26.5
B-192	6 - 7.5	SILTY GRAVEL with SAND(GM)	36	52	44	8	25.2
B-192	8.5 - 10	SANDY ELASTIC SILT(MH)	40	51	45	6	60.9
B-192	13.5 - 15	SANDY SILT(ML)	47	44	42	2	52.5
B-192	18.5 - 20	SILTY SAND(SM)	37	36	33	3	37.2
B-192	23.5 - 25	SILTY SAND(SM)	33	33	30	3	30.2
B-192	28.5 - 30	SILTY SAND(SM)	33	35	32	3	43.3
B-192	33.5 - 35	SILT with SAND(ML)	36	41	34	7	71.6
B-192	38.5 - 40	SANDY SILT(ML)	33	33	28	5	57.9
B-192	43.5 - 45	SILT with SAND(ML)	32	36	28	8	76.0
B-192	48.5 - 50	SILTY SAND(SM)	21	27	23	4	32.3
B-192	53.5 - 55	SILT with SAND(ML)	32	34	28	6	71.9
B-193	1 - 2.5	SANDY LEAN CLAY(CL)	11	38	21	17	61.7
B-193	3.5 - 5	ELASTIC SILT with SAND(MH)	26	77	43	34	82.6
B-193	6 - 7.5	ELASTIC SILT with SAND(MH)	24	61	42	19	70.7
B-193	8.5 - 10	SANDY ELASTIC SILT(MH)	24	58	41	17	68.7
B-193	13.5 - 15	SANDY ELASTIC SILT(MH)	25	56	42	14	61.2
B-193	18.5 - 20	SANDY ELASTIC SILT(MH)	27	55	44	11	62.1
B-193	23.5 - 25	SANDY ELASTIC SILT(MH)	29	53	40	13	63.2
B-193	28.5 - 30	SANDY ELASTIC SILT(MH)	31	50	39	11	63.2
B-194	1.5 - 3	SANDY LEAN CLAY(CL)	19	35	22	13	50.9
B-194	4 - 5.5	SANDY LEAN CLAY(CL)	22	39	20	19	69.9
B-194	6.5 - 8	ELASTIC SILT(MH)	40	76	45	31	97.2

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-194	9 - 10.5	ELASTIC SILT(MH)	42	75	43	32	86.5
B-194	13.5 - 15	ELASTIC SILT(MH)	60	71	42	29	87.5
B-194	18.5 - 20	SILT(ML)	56	48	35	13	89.6
B-194	23.5 - 25	SILT with SAND(ML)	47	41	33	8	81.6
B-194	28.5 - 30	ELASTIC SILT(MH)	54	52	32	20	97.7
B-195	1 - 2.5	SANDY SILT(ML)	20	47	44	3	57.6
B-195	3.5 - 5	SANDY SILT(ML)	20	43	39	4	54.4
B-195	6 - 7.5	SANDY SILT(ML)	23	47	45	2	60.4
B-195	8.5 - 10	SANDY SILT(ML)	27	45	39	6	57.7
B-195	13.5 - 15	SANDY SILT(ML)	22	39	37	2	54.0
B-195	18.5 - 20	SILT with SAND(ML)	35	44	38	6	77.5
B-195	23.5 - 25	SILTY SAND(SM)	24	NP	NP	NP	45.9
B-195	28.5 - 30	SANDY SILT(ML)	20	40	31	9	57.0
B-196	1 - 2.5	SANDY ELASTIC SILT(MH)	17	50	38	12	61.6
B-196	3.5 - 5	SANDY ELASTIC SILT(MH)	18	52	33	19	69.2
B-196	6 - 7.5	ELASTIC SILT with SAND(MH)	31	59	37	22	70.5
B-196	8.5 - 10	SANDY SILT(ML)	27	47	37	10	63.2
B-196	13.5 - 15	SANDY ELASTIC SILT(MH)	33	52	43	9	54.9
B-196	18.5 - 20	SANDY SILT(ML)	33	46	40	6	51.9
B-196	23.5 - 25	SANDY SILT(ML)	41	45	39	6	55.8
B-196	28.5 - 30	SANDY SILT(ML)	31	41	35	6	54.0
B-196	33.5 - 35	SILTY SAND(SM)	22	34	30	4	44.1
B-196	38.5 - 40	SILTY SAND(SM)	26	30	28	2	40.2
B-196	43.5 - 45	SILTY SAND(SM)	31	35	33	2	44.6
B-196	48.5 - 50	SILTY SAND(SM)	24	30	29	1	38.5
B-196	53.5 - 55	SANDY SILT(ML)	25	34	29	5	58.9
B-197	1 - 2.5	SANDY LEAN CLAY(CL)	12	44	24	20	61.4
B-197	3.5 - 5	SANDY ELASTIC SILT(MH)	21	59	46	13	64.9

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-197	6 - 7.5	SANDY ELASTIC SILT(MH)	26	55	44	11	65.0
B-197	8.5 - 10	SANDY ELASTIC SILT(MH)	29	61	43	18	66.8
B-198	1 - 2.5	SANDY ELASTIC SILT(MH)	31	51	41	10	55.4
B-198	3.5 - 5	SANDY ELASTIC SILT(MH)	28	50	42	8	53.3
B-198	6 - 7.5	SANDY SILT(ML)	32	47	38	9	62.0
B-198	8.5 - 10	SILTY SAND(SM)	26	NP	NP	NP	48.2
B-198	13.5 - 15	SANDY SILT(ML)	32	39	33	6	54.8
B-198	18.5 - 20	ELASTIC SILT with SAND(MH)	48	58	39	19	71.4
B-198	23.5 - 25	SILT(ML)	49	32	29	3	86.7
B-198	28.5 - 30	SILTY SAND(SM)	19	54	37	17	35.1
B-198	33.5 - 35	SILTY SAND(SM)	17	31	28	3	31.0
B-198	38.5 - 40	SILTY SAND(SM)	18	29	25	4	31.5
B-198	43.5 - 45	SILT(ML)	34	43	32	11	85.1
B-198	48.5 - 50	SILTY SAND(SM)	20	30	28	2	39.5
B-198	53.5 - 55	SANDY SILT(ML)	20	36	30	6	55.5
B-199	1 - 2.5	ELASTIC SILT with SAND(MH)	48	51	44	7	82.2
B-199	3.5 - 5	SILT with SAND(ML)	47	49	41	8	81.6
B-199	6 - 7.5	SILT with SAND(ML)	45	49	39	10	77.1
B-199	8.5 - 10	SANDY SILT(ML)	34	43	38	5	59.1
B-199	13.5 - 15	SANDY SILT(ML)	34	41	34	7	52.6
B-199	18.5 - 20	SILTY SAND(SM)	25	32	27	5	48.5
B-199	23.5 - 25	SILTY SAND(SM)	20	33	28	5	36.1
B-199	28.5 - 30	SILTY SAND(SM)	20	33	28	5	33.8
B-199	33.5 - 35	SILTY SAND(SM)	23	38	31	7	43.0
B-199	38.5 - 40	SANDY SILT(ML)	16	32	27	5	54.7
B-199	43.5 - 45	SILTY SAND(SM)	21	29	25	4	42.0
B-199	48.5 - 50	SANDY SILT(ML)	23	35	29	6	61.7
B-199	53.5 - 55	SANDY SILT(ML)	20	29	27	2	56.4

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-200	1 - 2.5	ELASTIC SILT(MH)	53	74	50	24	95.9
B-200	3.5 - 5	ELASTIC SILT(MH)	44	73	48	25	93.1
B-200	6 - 7.5	ELASTIC SILT(MH)	48	75	51	24	94.6
B-200	8.5 - 10	ELASTIC SILT(MH)	50	70	46	24	93.2
B-200	13.5 - 15	SANDY SILT(ML)	20	40	33	7	67.9
B-200	18.5 - 20	SANDY SILT(ML)	33	46	38	8	52.2
B-200	23.5 - 25	SANDY SILT(ML)	33	43	37	6	57.2
B-200	28.5 - 30	SILTY SAND(SM)	25	39	31	8	39.6
B-200	33.5 - 35	SILTY SAND(SM)	21	41	32	9	47.2
B-200	38.5 - 40	SILTY SAND(SM)	17	NP	NP	NP	33.5
B-200	43.5 - 45	SANDY SILT(ML)	27	37	30	7	59.2
B-201	1 - 2.5	GRAVELLY ELASTIC SILT(MH)	37	53	39	14	65.0
B-201	3.5 - 5	ELASTIC SILT with SAND(MH)	42	56	43	13	73.1
B-201	6 - 7.5	ELASTIC SILT(MH)	39	61	42	19	86.0
B-201	8.5 - 10	SANDY SILT(ML)	25	NP	NP	NP	51.8
B-201	13.5 - 15	ELASTIC SILT with SAND(MH)	36	57	37	20	70.1
B-201	18.5 - 20	SANDY SILT(ML)	32	NP	NP	NP	54.9
B-201	23.5 - 25	SILTY SAND(SM)	26	46	37	9	43.5
B-201	28.5 - 30	SANDY SILT(ML)	32	NP	NP	NP	55.4
B-201	33.5 - 35	SANDY SILT(ML)	32	43	35	8	65.0
B-201	38.5 - 40	SILTY SAND(SM)	22	41	33	8	39.1
B-201	43.5 - 45	SILT with SAND(ML)	29	44	32	12	76.8
B-201	48.5 - 50	SILT with SAND(ML)	29	39	30	9	71.3
B-201	53.5 - 54.7	SILTY SAND(SM)	15	25	23	2	23.5
B-201	58.5 - 60	SILT with SAND(ML)	24	34	27	7	76.9
B-202	1 - 2.5	SANDY ELASTIC SILT(MH)	39	55	41	14	67.3
B-202	3.5 - 5	SANDY ELASTIC SILT(MH)	29	52	43	9	59.3
B-202	6 - 7.5	SANDY SILT(ML)	27	49	44	5	56.0

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-202	8.5 - 10	SANDY SILT(ML)	25	46	43	3	55.0
B-202	13.5 - 15	SANDY SILT(ML)	27	42	40	2	52.0
B-202	18.5 - 20	SILTY SAND(SM)	28	33	29	4	44.7
B-202	23.5 - 25	SILTY SAND(SM)	26	NP	NP	NP	38.5
B-202	28.5 - 30	SILTY SAND(SM)	21	35	32	3	49.7
B-202	33.5 - 35	SILTY SAND(SM)	17	NP	NP	NP	40.1
B-202	38.5 - 40	SILTY SAND(SM)	17	NP	NP	NP	34.5
B-202	43.5 - 45	SILTY SAND(SM)	18	NP	NP	NP	31.7
B-203	1 - 2.5	ELASTIC SILT with SAND(MH)	44	51	42	9	82.0
B-203	3.5 - 5	ELASTIC SILT with SAND(MH)	42	55	44	11	75.2
B-203	6 - 7.5	SILT with SAND(ML)	37	34	31	3	79.5
B-203	8.5 - 10	ELASTIC SILT with SAND(MH)	45	53	35	18	70.0
B-203	13.5 - 15	ELASTIC SILT(MH)	45	54	40	14	86.4
B-203	18.5 - 20	SILT with SAND(ML)	44	42	37	5	72.2
B-203	23.5 - 25	SANDY SILT(ML)	36	45	30	15	66.3
B-203	28.5 - 30	SILT with SAND(ML)	40	44	31	13	76.0
B-203	33.5 - 35	SILTY SAND(SM)	24	34	29	5	48.2
B-203	38.5 - 40	SANDY SILT(ML)	26	36	29	7	55.9
B-203	43.5 - 45	SILTY SAND(SM)	16	26	24	2	36.9
B-203	48.5 - 50	SANDY SILT(ML)	18	35	28	7	50.4
B-203	53.5 - 55	SILTY SAND(SM)	19	25	24	1	28.4
B-204	1 - 2.5	SANDY ELASTIC SILT(MH)	37	50	39	11	61.6
B-204	3.5 - 5	SANDY SILT(ML)	28	49	39	10	63.9
B-204	6 - 7.5	SANDY SILT(ML)	30	48	38	10	64.9
B-204	8.5 - 10	SANDY SILT(ML)	31	49	39	10	60.9
B-204	13.5 - 15	SANDY SILT(ML)	37	47	34	13	63.6
B-204	18.5 - 20	ELASTIC SILT with SAND(MH)	37	56	34	22	77.4
B-204	23.5 - 25	SANDY SILT(ML)	33	48	29	19	50.3

PROJECT: CLT Airport-Deicing Pad and SCT

SITE: Old Piney Top and West Blvd
Charlotte, NC

Terracon
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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-204	28.5 - 30	SANDY SILT(ML)	34	43	32	11	53.5
B-204	33.5 - 35	SANDY SILT(ML)	36	47	34	13	55.8
B-204	38.5 - 40	SILTY SAND(SM)	19	32	27	5	38.1
B-204	43.5 - 45	SANDY SILT(ML)	22	NP	NP	NP	50.7
B-204	48.5 - 50	SANDY SILT(ML)	18	30	23	7	61.5
B-204	53.5 - 55	SILTY SAND(SM)	21	32	25	7	44.6
B-205	1 - 2.5	ELASTIC SILT with SAND(MH)	34	54	44	10	73.9
B-205	3.5 - 5	ELASTIC SILT with SAND(MH)	39	52	46	6	78.4
B-205	6 - 7.5	ELASTIC SILT with SAND(MH)	36	50	46	4	71.6
B-205	8.5 - 10	ELASTIC SILT with SAND(MH)	38	51	47	4	73.1
B-205	13.5 - 15	ELASTIC SILT with SAND(MH)	45	54	44	10	75.6
B-205	18.5 - 20	SANDY SILT(ML)	43	49	41	8	60.2
B-205	23.5 - 25	SANDY SILT(ML)	38	48	38	10	63.9
B-205	28.5 - 30	SANDY SILT(ML)	37	43	35	8	56.1
B-205	33.5 - 35	SANDY SILT(ML)		35	30	5	57.0
B-205	38.5 - 40	SANDY SILT(ML)	19	32	28	4	56.4
B-205	53.5 - 55	SILTY SAND(SM)	19	26	25	1	37.0
B-206	1 - 2.5	SILTY, CLAYEY SAND(SC-SM)	23	26	20	6	34.5
B-206	3.5 - 5	ELASTIC SILT with SAND(MH)	35	66	45	21	82.0
B-206	6 - 7.5	SANDY ELASTIC SILT(MH)	26	51	47	4	65.9
B-206	8.5 - 10	SANDY SILT(ML)	19	38	34	4	54.8
B-206	13.5 - 15	SANDY SILT(ML)	30	47	43	4	61.2
B-206	18.5 - 20	ELASTIC SILT(MH)	48	57	52	5	86.3
B-206	23.5 - 25	SILTY SAND(SM)	34	40	37	3	16.1
B-206	28.5 - 30	SANDY SILT(ML)	31	41	35	6	55.2
B-206	33.5 - 35	SILTY SAND(SM)	30	38	33	5	49.9
B-206	38.5 - 40	SILTY SAND(SM)	26	37	33	4	37.4
B-206	43.5 - 45	SILTY SAND(SM)	22	NP	NP	NP	30.4

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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-207	0 - 1.5	SILTY SAND(SM)	9	22	19	3	22.9
B-207	3.5 - 5		15	NP	NP	NP	3.4
B-207	6 - 7.5	ELASTIC SILT(MH)	66	77	47	30	93.7
B-207	8.5 - 10	ELASTIC SILT(MH)	66	79	45	34	95.5
B-207	13.5 - 15	ELASTIC SILT(MH)	59	71	44	27	87.7
B-207	18.5 - 20	ELASTIC SILT(MH)	59	70	41	29	85.8
B-207	23.5 - 25	SILTY SAND(SM)	52	46	40	6	31.3
B-207	28.5 - 30	SILTY SAND(SM)	29	36	31	5	48.8
B-207	33.5 - 35	SILTY SAND(SM)	20	36	29	7	47.3
B-207	38.5 - 40	SILTY SAND(SM)	21	31	26	5	41.7
B-207	43.5 - 45	SILTY SAND(SM)	14	27	25	2	31.4
B-208	1 - 2.5	SANDY ELASTIC SILT(MH)	32	50	39	11	63.9
B-208	3.5 - 5	SANDY ELASTIC SILT(MH)	31	51	38	13	69.6
B-208	6 - 7.5	SANDY SILT(ML)	25	45	38	7	54.7
B-208	8.5 - 10	SANDY SILT(ML)	25	45	39	6	51.2
B-208	13.5 - 15	SANDY SILT(ML)	32	43	38	5	65.8
B-208	18.5 - 20	SANDY SILT(ML)	31	39	34	5	51.9
B-208	23.5 - 25	SANDY SILT(ML)	30	36	31	5	52.9
B-208	28.5 - 30	SILTY SAND(SM)	28	33	29	4	45.4
B-208	33.5 - 35	ELASTIC SILT with SAND(MH)	38	50	35	15	82.9
B-208	38.5 - 40	SILT with SAND(ML)	31	41	34	7	74.2
B-208	43.5 - 45	SILTY SAND(SM)	19	26	24	2	32.6
B-208	48.5 - 50	SILTY SAND(SM)	19	27	24	3	28.8
B-208	53.5 - 55	SILTY SAND(SM)	17	26	25	1	32.1
B-208	58.5 - 60	SILTY SAND(SM)	16	27	25	2	26.2
B-208	63.5 - 65	SILTY, CLAYEY SAND(SC-SM)	14	26	21	5	22.0
B-208	68.5 - 70	SILTY SAND(SM)	15	31	27	4	38.0
B-209	1 - 2.5	SANDY ELASTIC SILT(MH)	31	51	41	10	55.5

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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-209	3.5 - 5	SANDY ELASTIC SILT(MH)	33	53	36	17	61.1
B-209	6 - 7.5	SANDY SILT(ML)	28	49	40	9	55.2
B-209	8.5 - 10	SANDY ELASTIC SILT(MH)	28	50	40	10	54.0
B-209	13.5 - 15	SANDY SILT(ML)	31	49	37	12	54.1
B-209	18.5 - 20	SANDY SILT(ML)	32	44	37	7	55.9
B-209	23.5 - 25	SANDY SILT(ML)	43	47	39	8	68.8
B-209	28.5 - 30	SANDY SILT(ML)	36	35	29	6	61.5
B-209	33.5 - 35	SILTY SAND(SM)	18	32	25	7	36.5
B-209	38.5 - 40	SILTY SAND(SM)	19	NP	NP	NP	28.2
B-209	43.5 - 45	SILTY SAND(SM)	19	32	25	7	29.2
B-209	48.5 - 50	SILTY SAND(SM)	16	NP	NP	NP	22.8
B-209	53.5 - 55	SILTY SAND(SM)	21	34	28	6	36.4
B-209	58.5 - 60	SILTY SAND(SM)	13	27	25	2	45.0
B-210	1 - 2.5	SANDY SILT(ML)	29	46	38	8	66.0
B-210	3.5 - 5	SANDY SILT(ML)	25	42	36	6	54.5
B-210	6 - 7.5	SANDY SILT(ML)	29	46	36	10	58.8
B-210	8.5 - 10	SANDY SILT(ML)	26	43	35	8	57.1
B-210	13.5 - 15	SANDY SILT(ML)	29	46	36	10	65.0
B-210	18.5 - 20	SILTY SAND(SM)	22	37	31	6	42.1
B-210	23.5 - 25	SILTY SAND(SM)	18	31	27	4	30.8
B-210	28.5 - 30	SILTY SAND(SM)	18	32	27	5	25.2
B-210	33.5 - 35	SILTY SAND(SM)	26	31	27	4	49.1
B-210	38.5 - 40	SANDY SILT(ML)	26	39	29	10	65.3
B-210	43.5 - 45	SANDY SILT(ML)	23	41	32	9	53.8
B-210	53.5 - 55	SILTY SAND(SM)	16	NP	NP	NP	23.8
B-211	1 - 2.5	SANDY SILT(ML)	33	44	37	7	56.6
B-211	3.5 - 5	SANDY ELASTIC SILT(MH)	40	50	41	9	69.5
B-211	6 - 7.5	SANDY ELASTIC SILT(MH)	34	51	41	10	62.8

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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-211	8.5 - 10	SILTY SAND(SM)	19	38	31	7	46.9
B-211	13.5 - 15	SANDY SILT(ML)	22	41	36	5	53.6
B-211	18.5 - 20	SANDY SILT(ML)	43	46	40	6	59.9
B-211	23.5 - 25	SILTY SAND(SM)	26	35	31	4	38.1
B-211	28.5 - 30	SILTY SAND(SM)	22	33	28	5	44.1
B-211	33.5 - 35	SILTY SAND(SM)	23	30	26	4	36.0
B-211	38.5 - 40	SILTY SAND(SM)	20	29	27	2	33.7
B-211	43.5 - 45	SILTY SAND(SM)	17	27	23	4	32.0
B-212	1 - 2.5	ELASTIC SILT(MH)	58	63	45	18	94.4
B-212	3.5 - 5	SANDY SILT(ML)	35	48	42	6	58.6
B-212	6 - 7.5	SANDY SILT(ML)	37	49	42	7	60.1
B-212	8.5 - 10	SANDY ELASTIC SILT(MH)	40	50	44	6	63.5
B-212	13.5 - 15	SANDY SILT(ML)	41	46	39	7	64.8
B-212	18.5 - 20	SANDY SILT(ML)	43	48	41	7	64.0
B-212	23.5 - 25	SILT with SAND(ML)	37	42	37	5	70.6
B-212	28.5 - 30	SANDY SILT(ML)	33	37	33	4	50.0
B-212	33.5 - 35	SILTY SAND(SM)	27	35	31	4	44.0
B-212	38.5 - 40	SILTY SAND(SM)	28	38	34	4	45.2
B-212	43.5 - 45	SILTY SAND(SM)	27	NP	NP	NP	46.8
B-213	1 - 2.5	ELASTIC SILT with SAND(MH)	34	59	40	19	71.5
B-213	3.5 - 5	SANDY ELASTIC SILT(MH)	38	55	44	11	64.0
B-213	6 - 7.5	SANDY SILT(ML)	27	49	40	9	61.8
B-213	8.5 - 10	SANDY SILT(ML)	22	45	38	7	55.3
B-213	13.5 - 15	SILTY SAND(SM)	26	44	36	8	47.8
B-213	18.5 - 20	SANDY SILT(ML)	38	42	36	6	69.9
B-213	23.5 - 25	SANDY SILT(ML)	29	39	34	5	63.1
B-213	28.5 - 30	SILTY SAND(SM)	23	35	30	5	35.1
B-213	33.5 - 35	SILTY SAND(SM)	19	34	30	4	36.8

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PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-213	38.5 - 40	SILTY SAND(SM)	13	30	27	3	27.0
B-213	43.5 - 45	SILTY SAND(SM)	10	26	23	3	26.8
B-214	1 - 2.5	SANDY ELASTIC SILT(MH)	35	55	46	9	60.9
B-214	3.5 - 4.85	SANDY ELASTIC SILT(MH)	40	61	44	17	67.1
B-214	8.5 - 10	SANDY ELASTIC SILT(MH)	32	50	46	4	58.9
B-214	13.5 - 15	SANDY SILT(ML)	29	48	42	6	53.6
B-214	18.5 - 20	SANDY SILT(ML)	37	47	44	3	56.5
B-214	23.5 - 25	SANDY SILT(ML)	31	39	35	4	51.3
B-214	28.5 - 30	ELASTIC SILT with SAND(MH)	44	54	40	14	75.8
B-214	33.5 - 35	ELASTIC SILT with SAND(MH)	41	55	39	16	77.2
B-214	38.5 - 40	SILTY SAND(SM)	28	36	33	3	47.8
B-214	43.5 - 45	SILTY SAND(SM)	18	31	30	1	27.3
B-214	48.5 - 50	SANDY SILT(ML)	22	32	30	2	66.3
B-215	1.3 - 2.8	SANDY SILT(ML)	29	48	41	7	57.1
B-215	3.5 - 5	SANDY ELASTIC SILT(MH)	27	50	41	9	52.4
B-215	6 - 7.5	SANDY SILT(ML)	31	46	37	9	68.6
B-215	8.5 - 10	ELASTIC SILT(MH)	59	67	47	20	94.3
B-215	13.5 - 15	ELASTIC SILT(MH)	54	65	40	25	90.4
B-215	18.5 - 20	ELASTIC SILT with SAND(MH)	47	65	40	25	81.3
B-215	23.5 - 25	SILTY SAND(SM)	23	42	35	7	41.1
B-215	28.5 - 30	SILTY SAND(SM)	18	34	26	8	32.6
B-215	33.5 - 35	SILTY SAND(SM)	15	32	30	2	32.9
B-215	38.5 - 40	SILT with SAND(ML)	28	39	30	9	70.8
B-215	43.5 - 45	SANDY SILT(ML)	19	28	24	4	66.1
B-215	48.5 - 50	SANDY SILT(ML)	22	32	27	5	65.9
B-215	53.5 - 54.7	SILT with SAND(ML)	20	29	27	2	78.3
B-216	1 - 2.5	SANDY SILT(ML)	29	46	40	6	53.8
B-216	3.5 - 5	SANDY SILT(ML)	28	47	38	9	57.2

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SUMMARY OF LABORATORY RESULTS

BORING ID	Depth (Ft.)	Soil Classification USCS	Water Content (%)	Liquid Limit	Plastic Limit	Plasticity Index	% Fines
B-216	6 - 7.5	SANDY SILT(ML)	34	42	37	5	52.5
B-216	8.5 - 10	SILTY SAND(SM)	35	43	41	2	49.6
B-216	13.5 - 15	SILTY SAND(SM)	34	41	37	4	46.2
B-216	18.5 - 20	SANDY SILT(ML)	36	37	33	4	52.5
B-216	23.5 - 25	SILTY SAND(SM)	30	37	33	4	32.4
B-216	28.5 - 30	SILTY SAND(SM)	28	37	31	6	44.3
B-216	33.5 - 35	SILTY SAND(SM)	21	33	28	5	31.6
B-216	38.5 - 40	SILTY SAND(SM)	15	28	24	4	32.6
B-216	53.5 - 54.9	SILTY SAND(SM)	20	25	24	1	39.8
B-216	58.5 - 60	SILTY SAND(SM)	22	29	24	5	30.8
B-217	1 - 2.5	ELASTIC SILT with SAND(MH)	35	52	36	16	70.1
B-217	3.5 - 5	SANDY SILT(ML)	38	49	40	9	60.2
B-217	6 - 7.5	SILT with SAND(ML)	40	49	38	11	81.7
B-217	8.5 - 10	ELASTIC SILT with SAND(MH)	44	53	41	12	83.3
B-217	13.5 - 15	SILT(ML)	45	49	37	12	88.6
B-217	18.5 - 20	SILT(ML)	37	45	35	10	88.1
B-217	23.5 - 25	SILTY SAND(SM)	27	42	32	10	43.9
B-217	28.5 - 30	SILTY SAND(SM)	24	38	28	10	30.4
B-217	33.5 - 35	SILTY SAND(SM)	24	NP	NP	NP	42.8
B-217	38.5 - 40	SILTY SAND(SM)	21	NP	NP	NP	38.9

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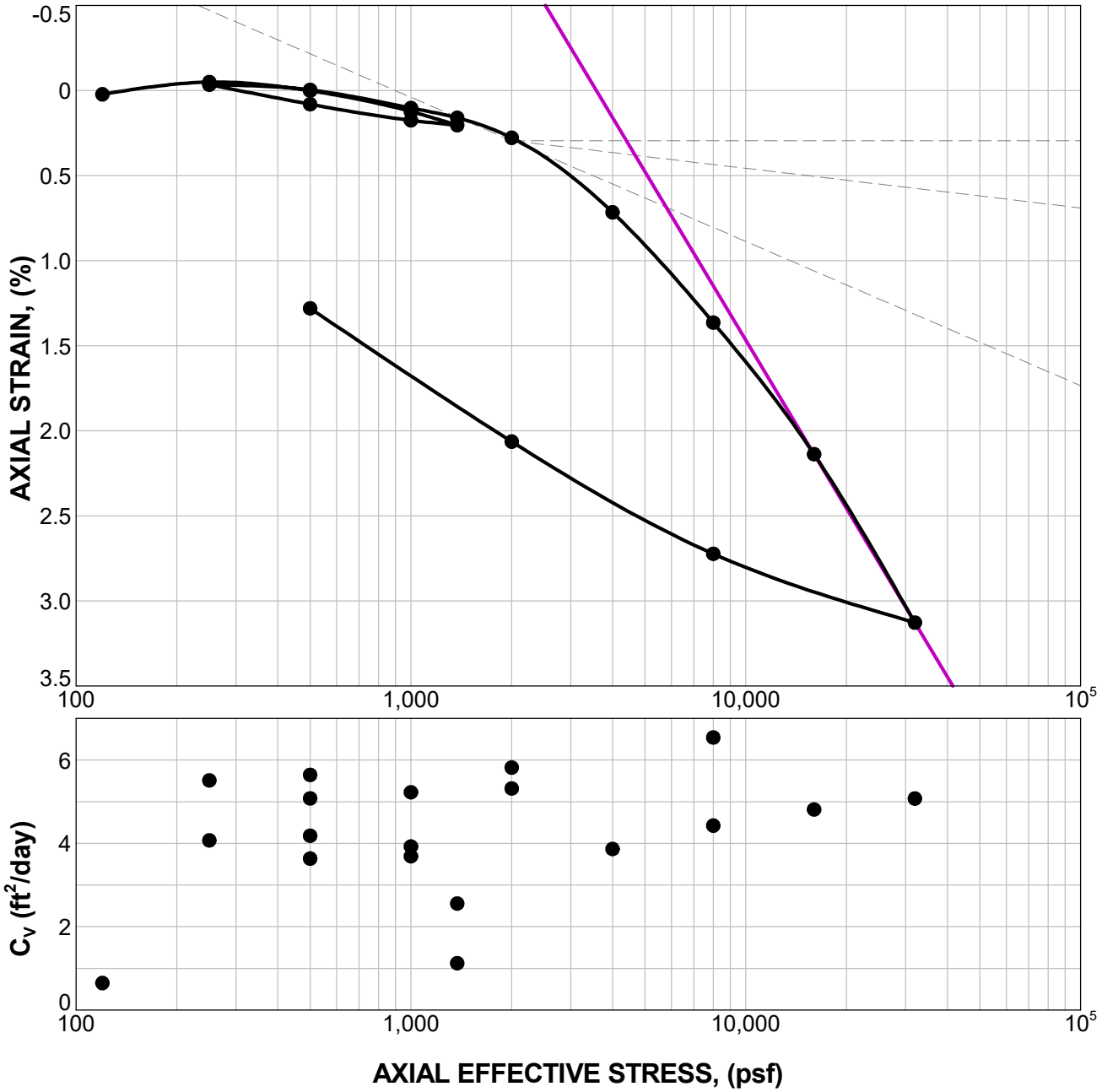
C.2 CONSOLIDATION TEST RESULTS

CONSOLIDATION TEST (D2435)



Natural		Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
Saturation	Moisture									
106.1 %	14.9 %	127.0	32	5	2.85	1200	4,671	3.287	0.324	0.400

MATERIAL DESCRIPTION	USCS	AASHTO
SANDY SILT	ML	A-4

NOTES: Percent Passing #200 Sieve= 52.7%

Borehole: B-002 Depth: 10 ft

PROJECT: CLT Airport-Deicing Pad and SCT

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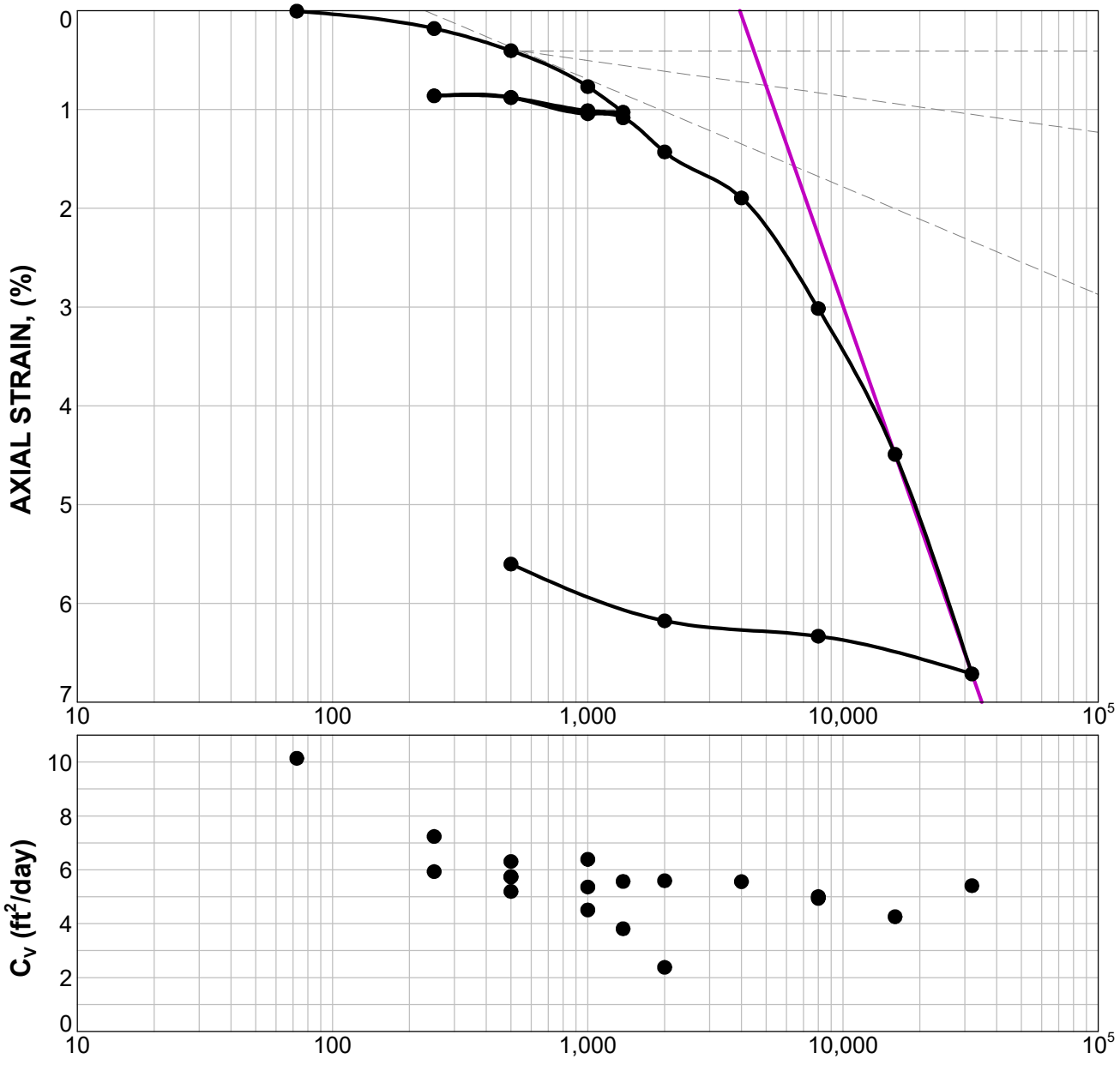
LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CONS_LOAD-DEF_PROP_STRESS-STRAIN_CV 71195007 CLT AIRPORT-DEICI_MASTER.GPJ TERRACON_DATATEMPLATE.GDT 12/27/19

CONSOLIDATION TEST (D2435)



Natural		Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
Saturation	Moisture									
84.8 %	21.3 %	101.6	26	5	2.76	312	4,992	7.383	0.250	0.693

MATERIAL DESCRIPTION	USCS	AASHTO
SILTY, CLAYEY SAND	SC-SM	A-4

NOTES: Percent Passing #200= 40.9%

Borehole: B-007 Depth: 2.5 ft

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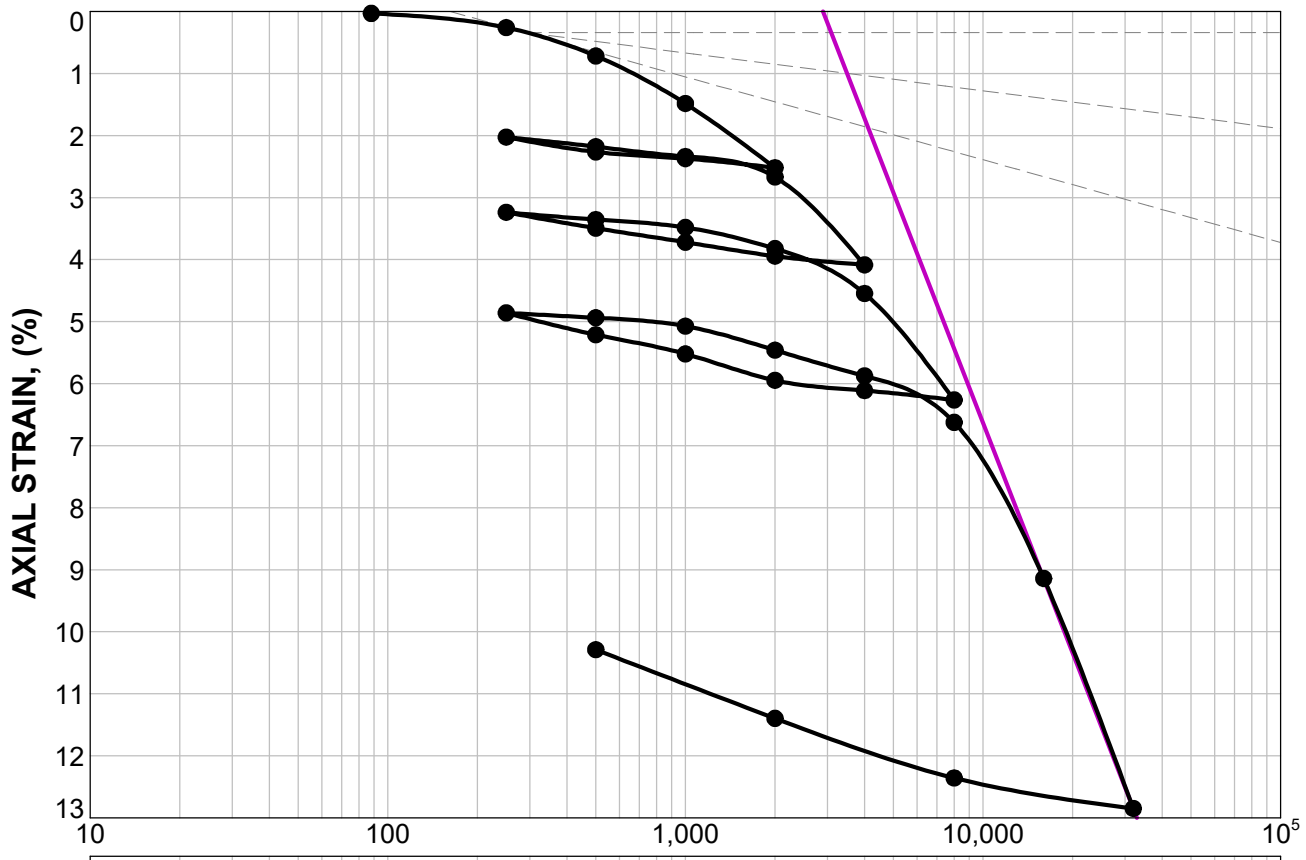
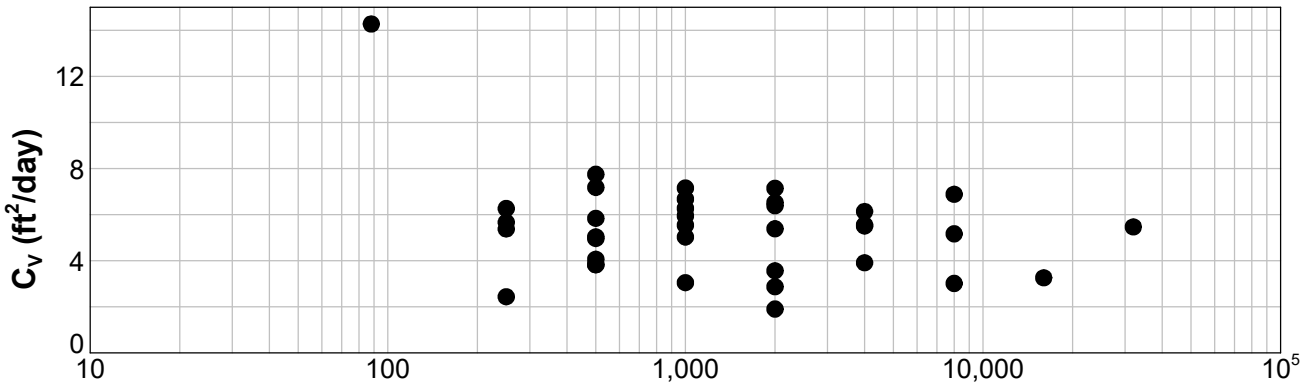
CONSOLIDATION TEST (D2435)





AXIAL EFFECTIVE STRESS, (psf)

Natural		Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
Saturation	Moisture									
95.9 %	36.2 %	86.1	42	7	2.87	1625	3,491	12.315	0.526	1.082

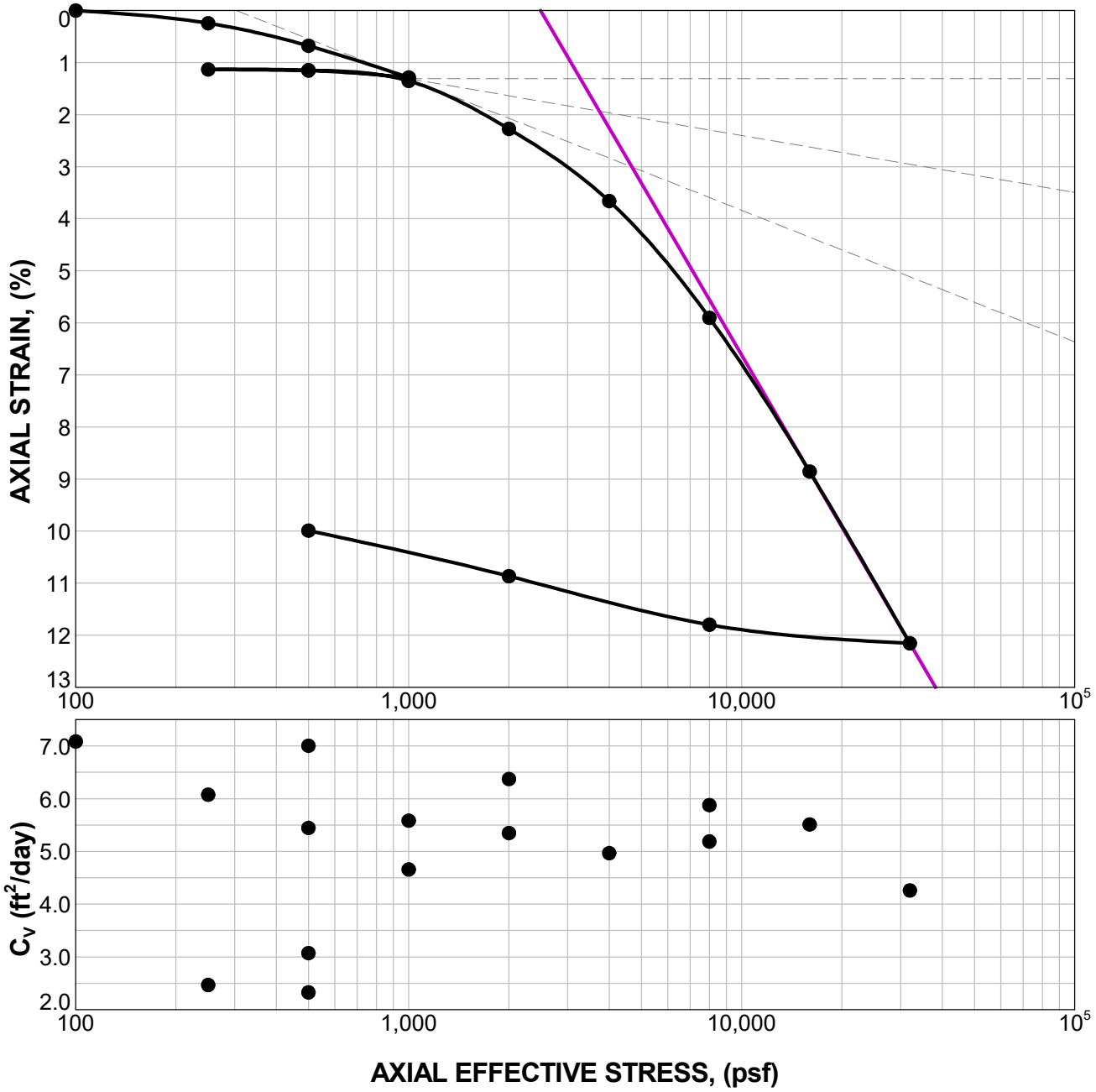
MATERIAL DESCRIPTION	USCS	AASHTO
SILT with SAND	ML	A-5

NOTES: Percent Passing #200 sieve= 72.7%

Borehole: B-008 Depth: 13 ft Specimen #: 5

PROJECT: CLT Airport-Deicing Pad and SCT	Terracon 2701 Westport Rd Charlotte, NC	PROJECT NUMBER: 71195007
SITE: Old Piney Top and West Blvd Charlotte, NC		CLIENT: WSP USA Inc. Charlotte, NC

CONSOLIDATION TEST (D2435)



Natural		Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
Saturation	Moisture									
82.2 %	23.5 %	95.6	28	10	2.73	312	3,736	10.958	0.255	0.781

MATERIAL DESCRIPTION	USCS	AASHTO
SANDY LEAN CLAY	CL	A-4

NOTES: Percent Passing #200 Sieve=50.0%

Borehole: B-012 Depth: 2.5 ft

PROJECT: CLT Airport-Deicing Pad and SCT

SITE: Old Piney Top and West Blvd
Charlotte, NC

Terracon
2701 Westport Rd
Charlotte, NC

PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

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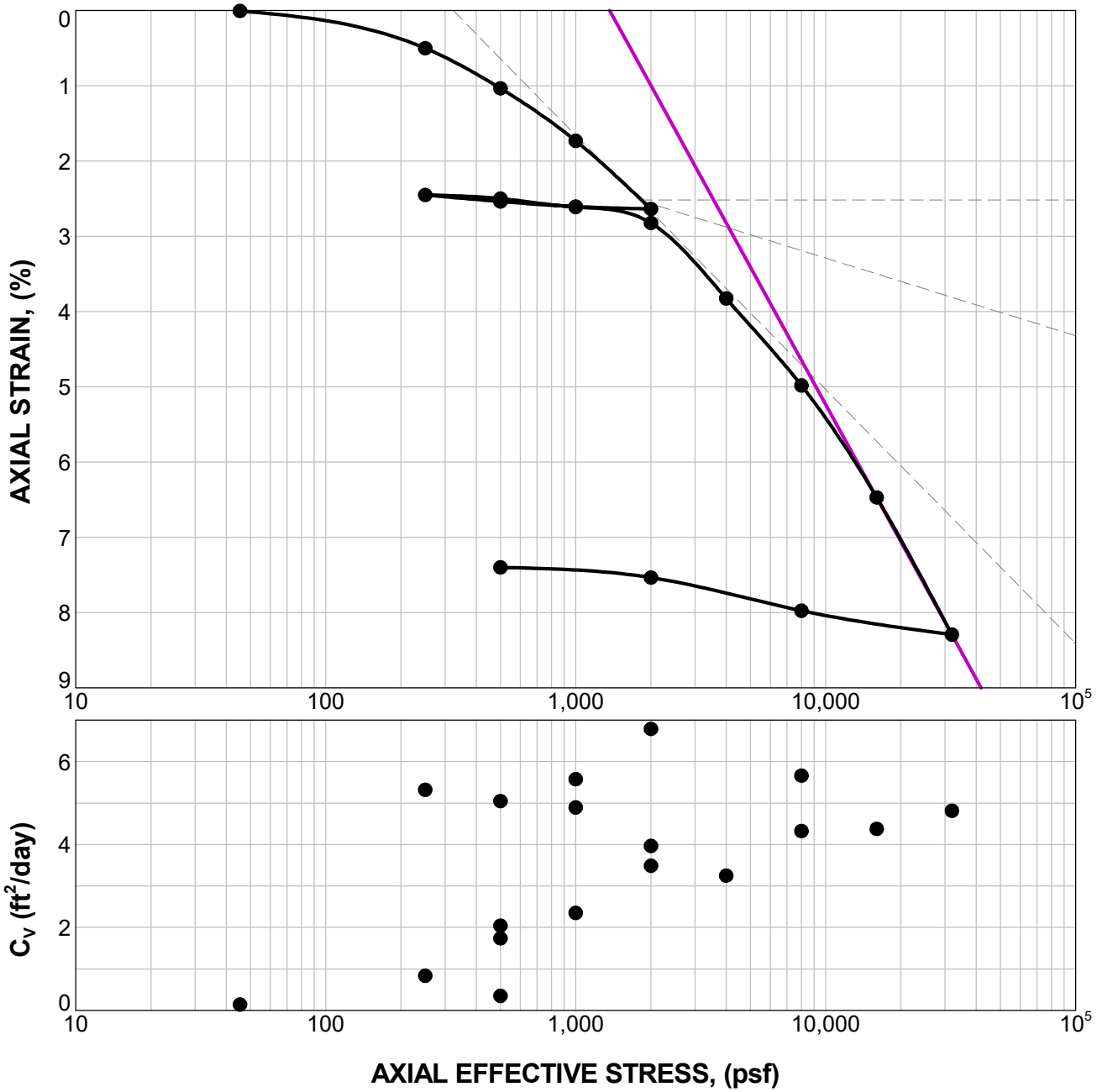
CONSOLIDATION TEST (D2435)



Natural		Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
Saturation	Moisture									
75.9 %	16.9 %	105.7	22	4	2.72	1375	4,102	6.057	0.208	0.603

MATERIAL DESCRIPTION	USCS	AASHTO
SILTY, CLAYEY SAND	SC-SM	A-4

NOTES: Percent Passing #200= 36.8%

Borehole: B-014 Depth: 11 ft Specimen #: 4

PROJECT: CLT Airport-Deicing Pad and SCT

SITE: Old Piney Top and West Blvd
Charlotte, NC

Terracon
2701 Westport Rd
Charlotte, NC

PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

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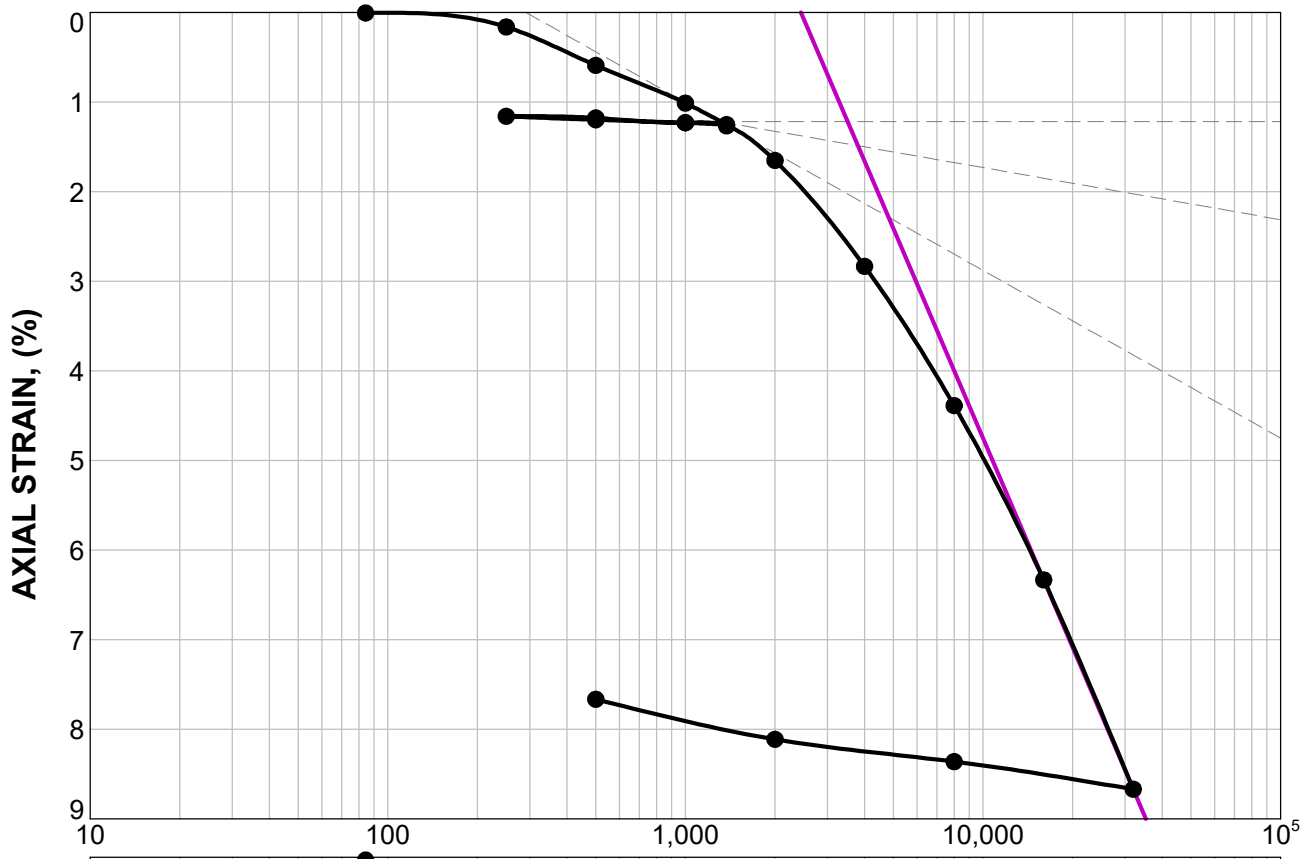
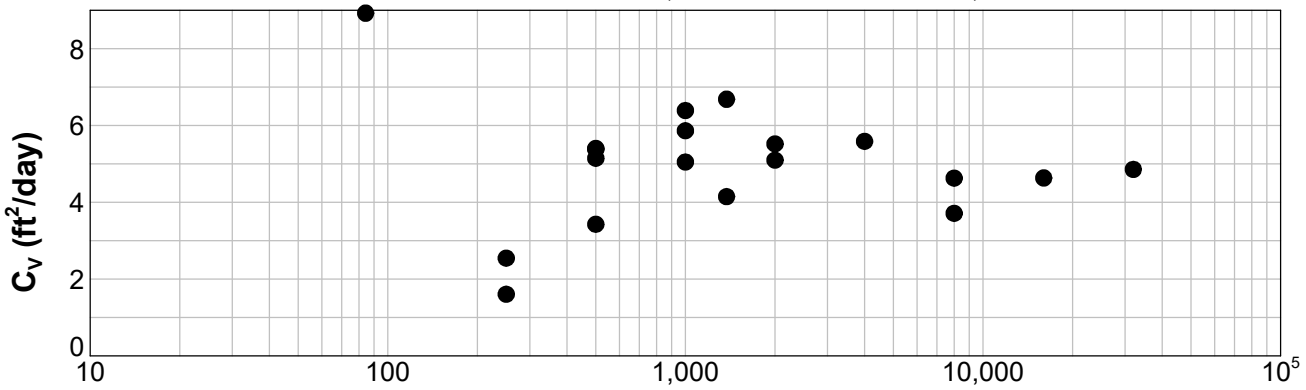
CONSOLIDATION TEST (D2435)





AXIAL EFFECTIVE STRESS, (psf)

Natural		Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
Saturation	Moisture									
68.4 %	21.4 %	89.8	22	6	2.62	625	3,801	7.762	0.123	0.820

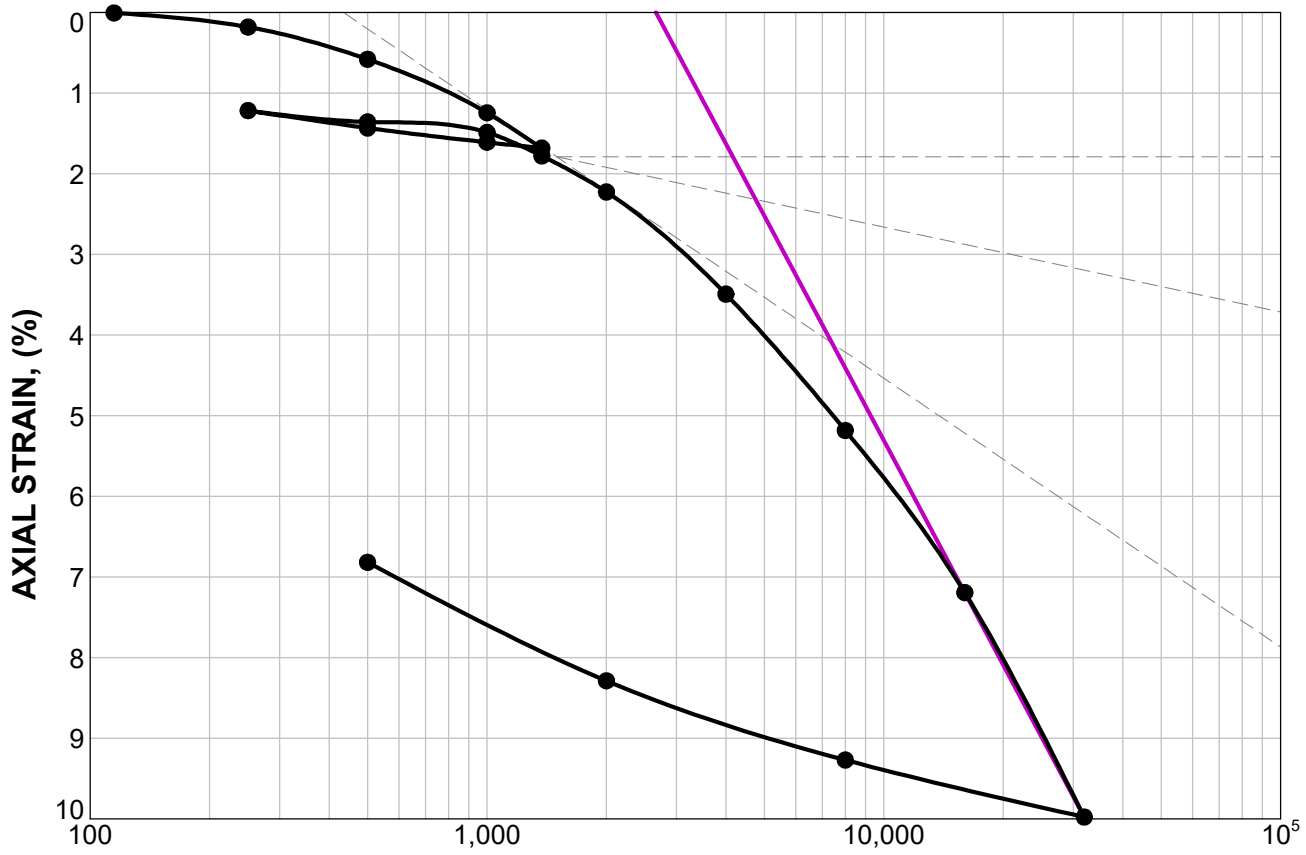
MATERIAL DESCRIPTION	USCS	AASHTO
SANDY SILTY CLAY	CL-ML	A-4

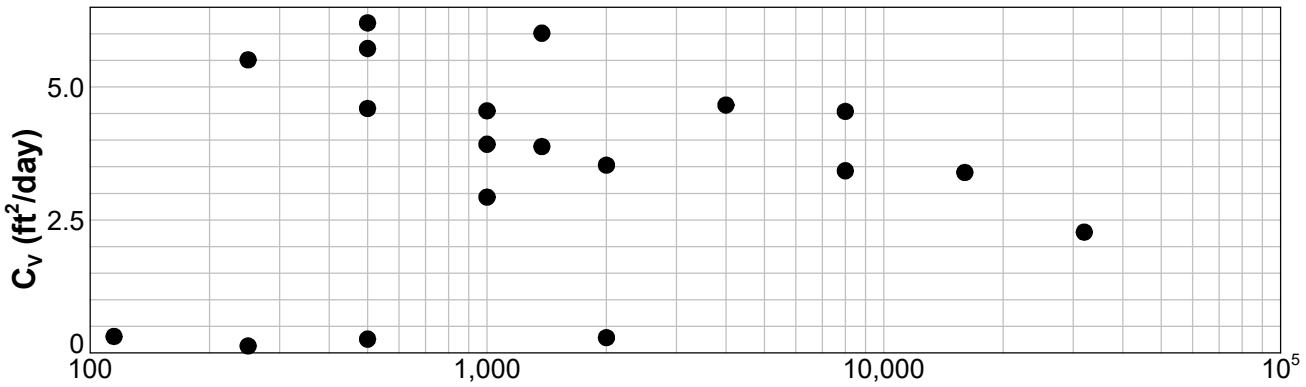
NOTES: Percent Passing #200 sieve=50.0%

Borehole: B-058 Depth: 5 ft

PROJECT: CLT Airport-Deicing Pad and SCT	Terracon 2701 Westport Rd Charlotte, NC	PROJECT NUMBER: 71195007
SITE: Old Piney Top and West Blvd Charlotte, NC		CLIENT: WSP USA Inc. Charlotte, NC

CONSOLIDATION TEST (D2435)





AXIAL EFFECTIVE STRESS, (psf)

Natural		Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
Saturation	Moisture									
97.1 %	24.9 %	98.9	34	13	2.67	1250	4,752	9.246	0.628	0.684

MATERIAL DESCRIPTION	USCS	AASHTO
LEAN CLAY	CL	A-6

NOTES: Percent Passing #200 sieve=94.0%

Borehole: B-060 Depth: 10 ft

PROJECT: CLT Airport-Deicing Pad and SCT

SITE: Old Piney Top and West Blvd
Charlotte, NC

Terracon
2701 Westport Rd
Charlotte, NC

PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

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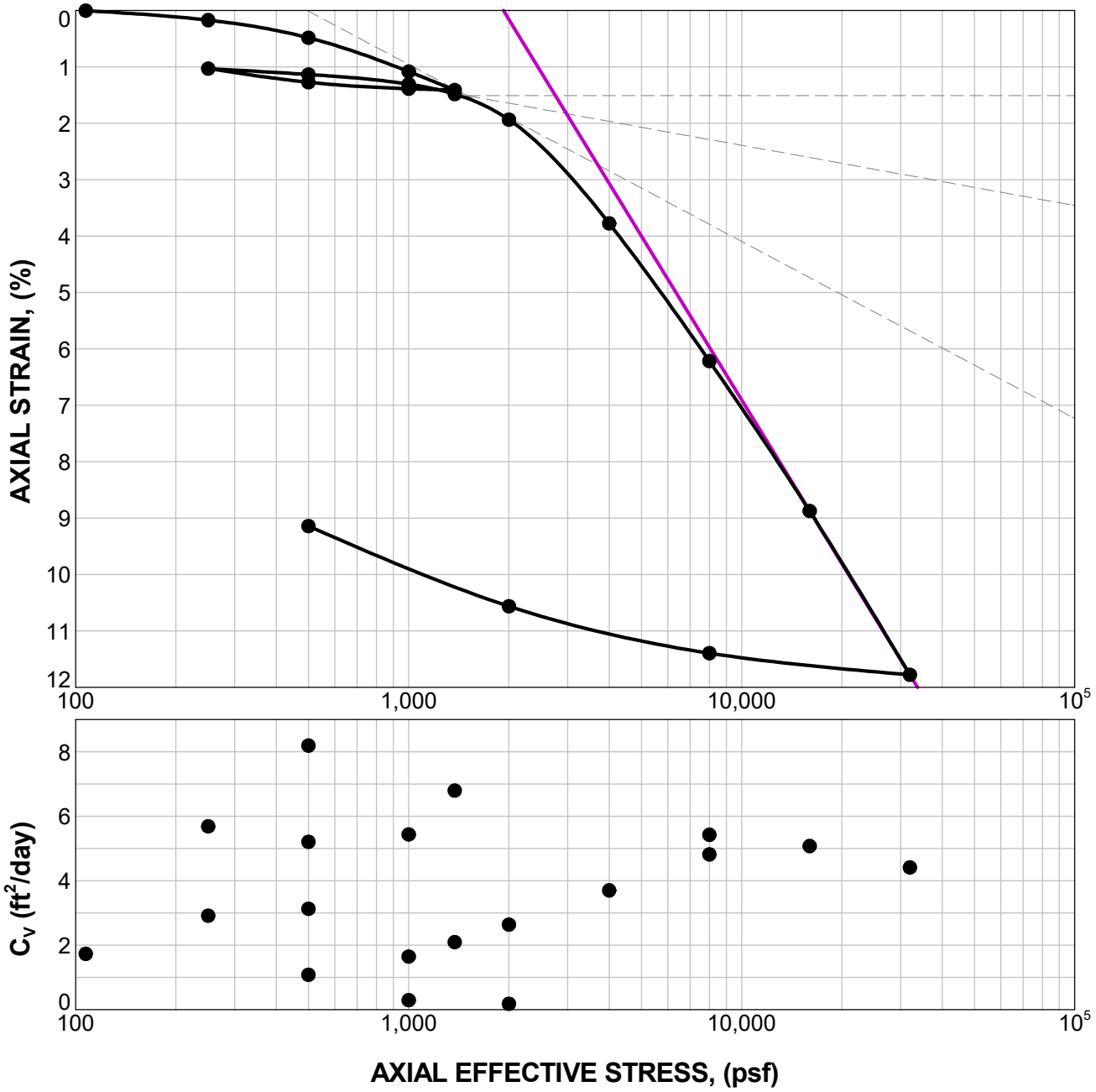
CONSOLIDATION TEST (D2435)



Natural		Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
Saturation	Moisture									
96.6 %	17.6 %	110.9	NP	NP	2.63	1000	2,978	9.647	0.512	0.479

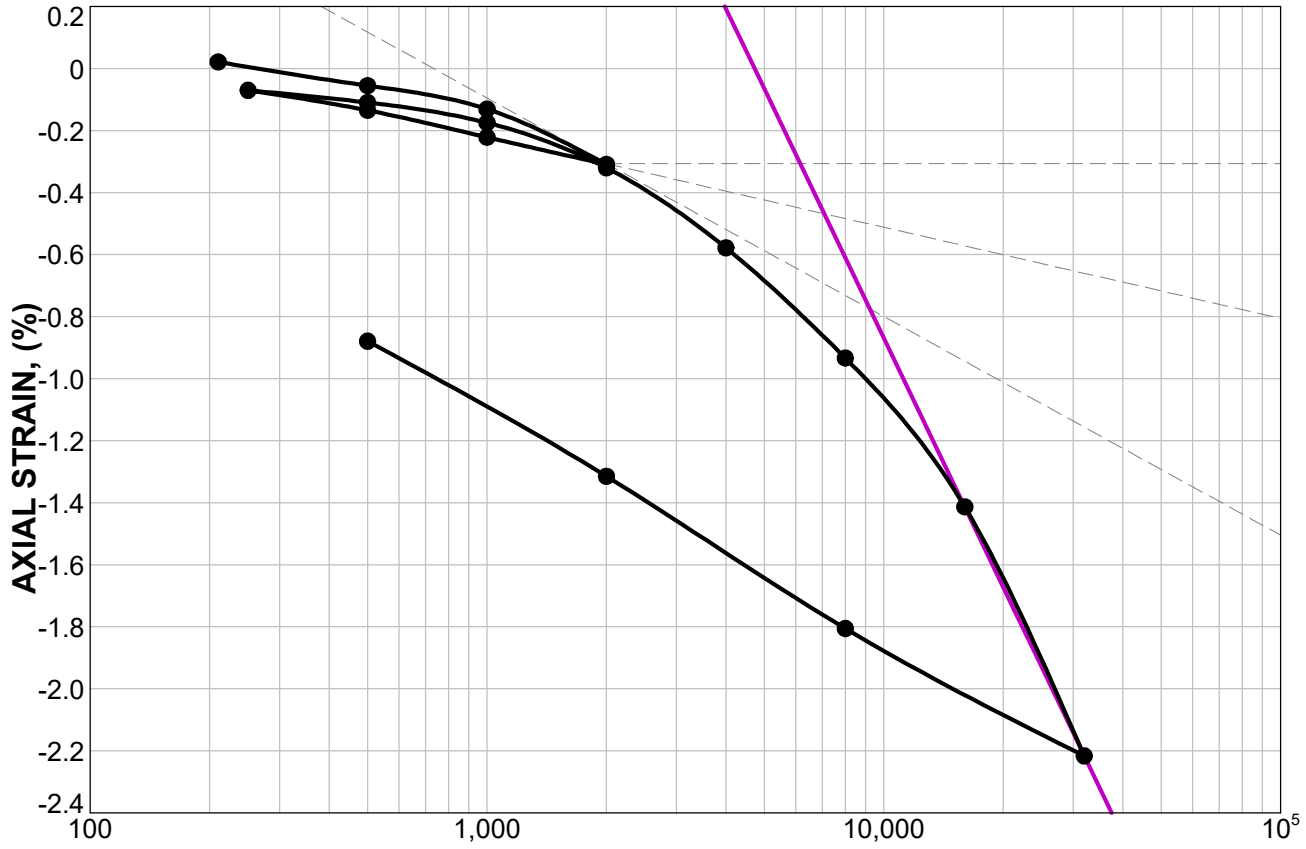
MATERIAL DESCRIPTION	USCS	AASHTO
SILTY SAND	SM	A-4

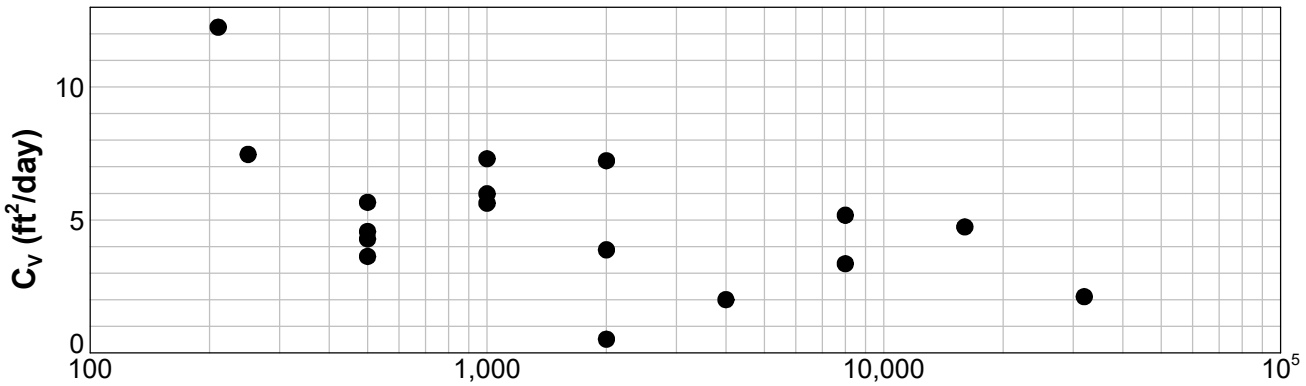
NOTES: Percent Passing #200 Sieve= 36.0%

Borehole: B-061 Depth: 8 ft

PROJECT: CLT Airport-Deicing Pad and SCT	Terracon 2701 Westport Rd Charlotte, NC	PROJECT NUMBER: 71195007
SITE: Old Piney Top and West Blvd Charlotte, NC		CLIENT: WSP USA Inc. Charlotte, NC

CONSOLIDATION TEST (D2435)





AXIAL EFFECTIVE STRESS, (psf)

Natural		Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
Saturation	Moisture									
94.0 %	26.2 %	99.0	44	14	2.84	375	7,078	-2.668	-0.267	0.793

MATERIAL DESCRIPTION	USCS	AASHTO
SILT with SAND	ML	A-7-5

NOTES: Percent Passing #200 Sieve=82.6%

Borehole: B-107 Depth: 2 ft

PROJECT: CLT Airport-Deicing Pad and SCT	Terracon 2701 Westport Rd Charlotte, NC	PROJECT NUMBER: 71195007
SITE: Old Piney Top and West Blvd Charlotte, NC		CLIENT: WSP USA Inc. Charlotte, NC

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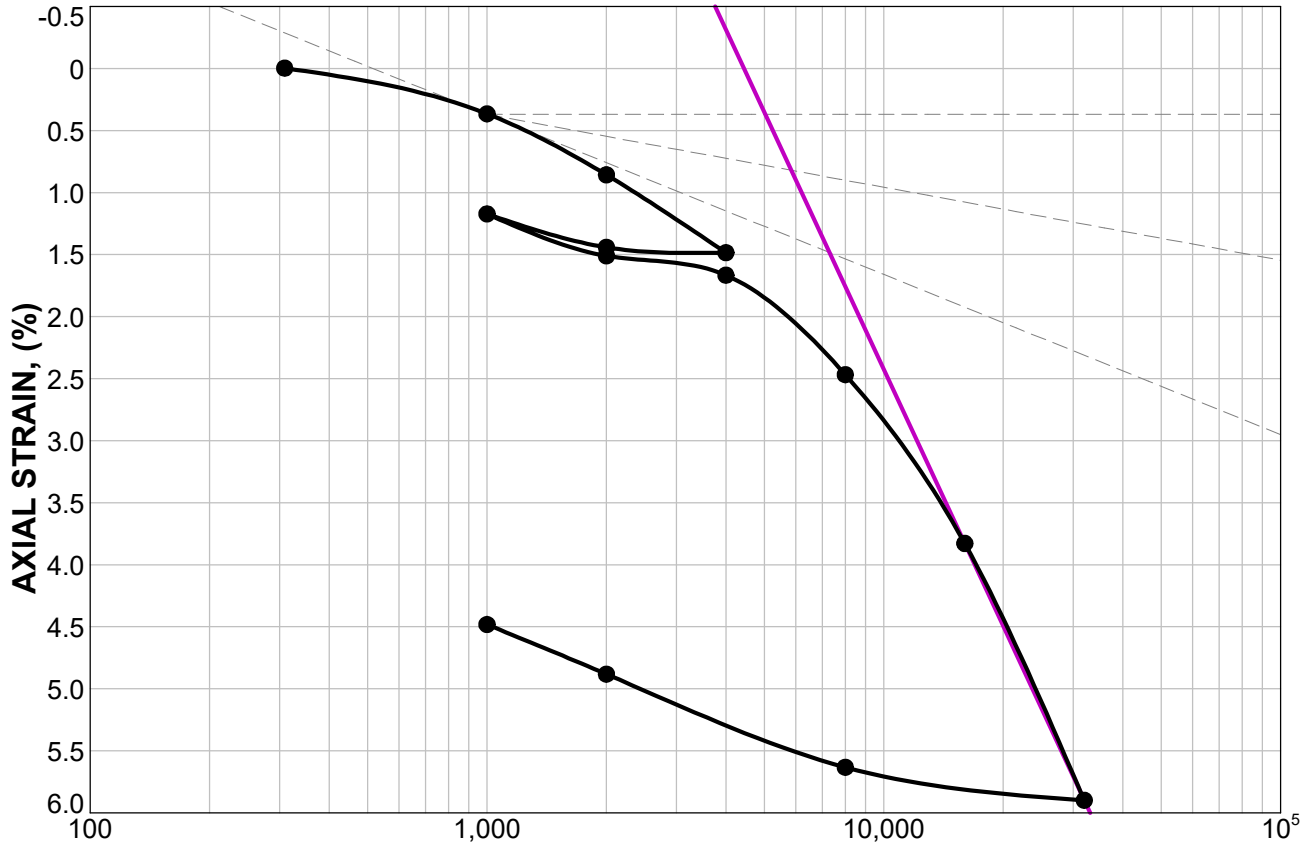
CONSOLIDATION TEST (D2435)



Natural		Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
Saturation	Moisture									
102.7 %	21.9 %	106.8	34	13	2.69	125	5,844	6.877	0.519	0.572

MATERIAL DESCRIPTION	USCS	AASHTO
LEAN CLAY with SAND	CL	A-6

NOTES:

Borehole: B-123OS Depth: 1 ft

PROJECT: CLT Airport-Deicing Pad and SCT

SITE: Old Piney Top and West Blvd
Charlotte, NC

Terracon
2701 Westport Rd
Charlotte, NC

PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

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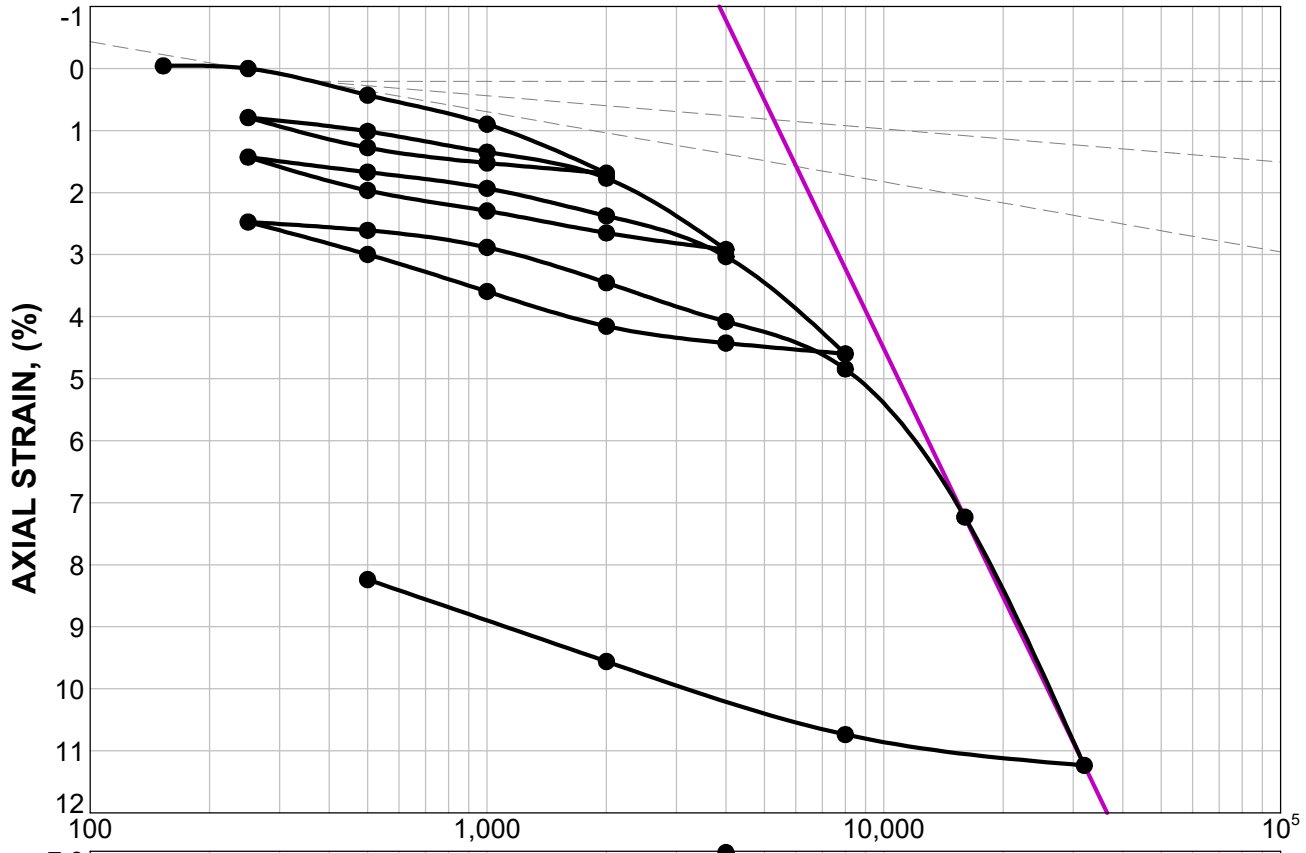

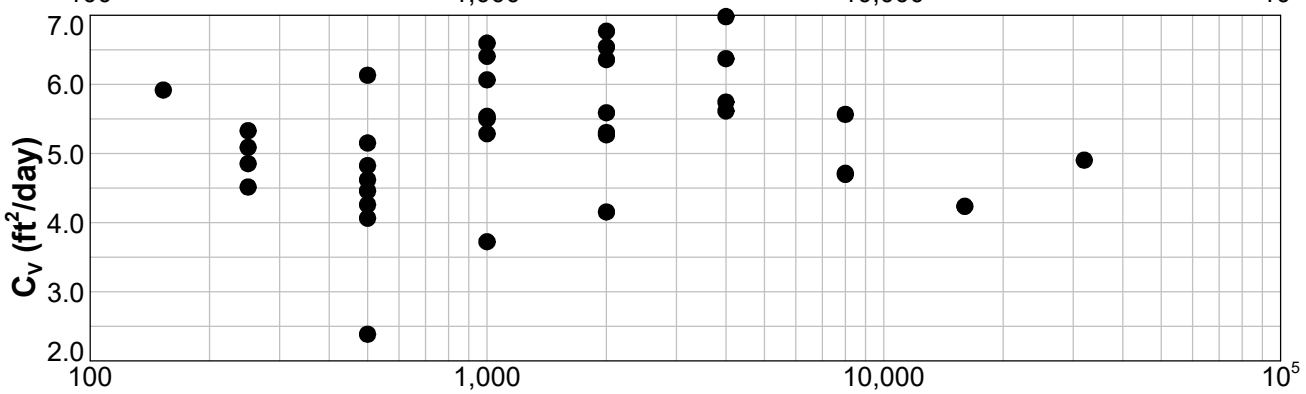

AXIAL EFFECTIVE STRESS, (psf)

Natural		Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
Saturation	Moisture									
95.4 %	25.2 %	102.1	33	3	2.88	3750	5,277	13.298	0.976	0.762

MATERIAL DESCRIPTION	USCS	AASHTO
SILT with SAND	ML	A-4

NOTES:

Borehole: B-154 Depth: 30 ft Date Started: 6-17-2019 Date Completed: 6-26-2019

PROJECT: CLT Airport-Deicing Pad and SCT

SITE: Old Piney Top and West Blvd
Charlotte, NC

Terracon
2701 Westport Rd
Charlotte, NC

PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

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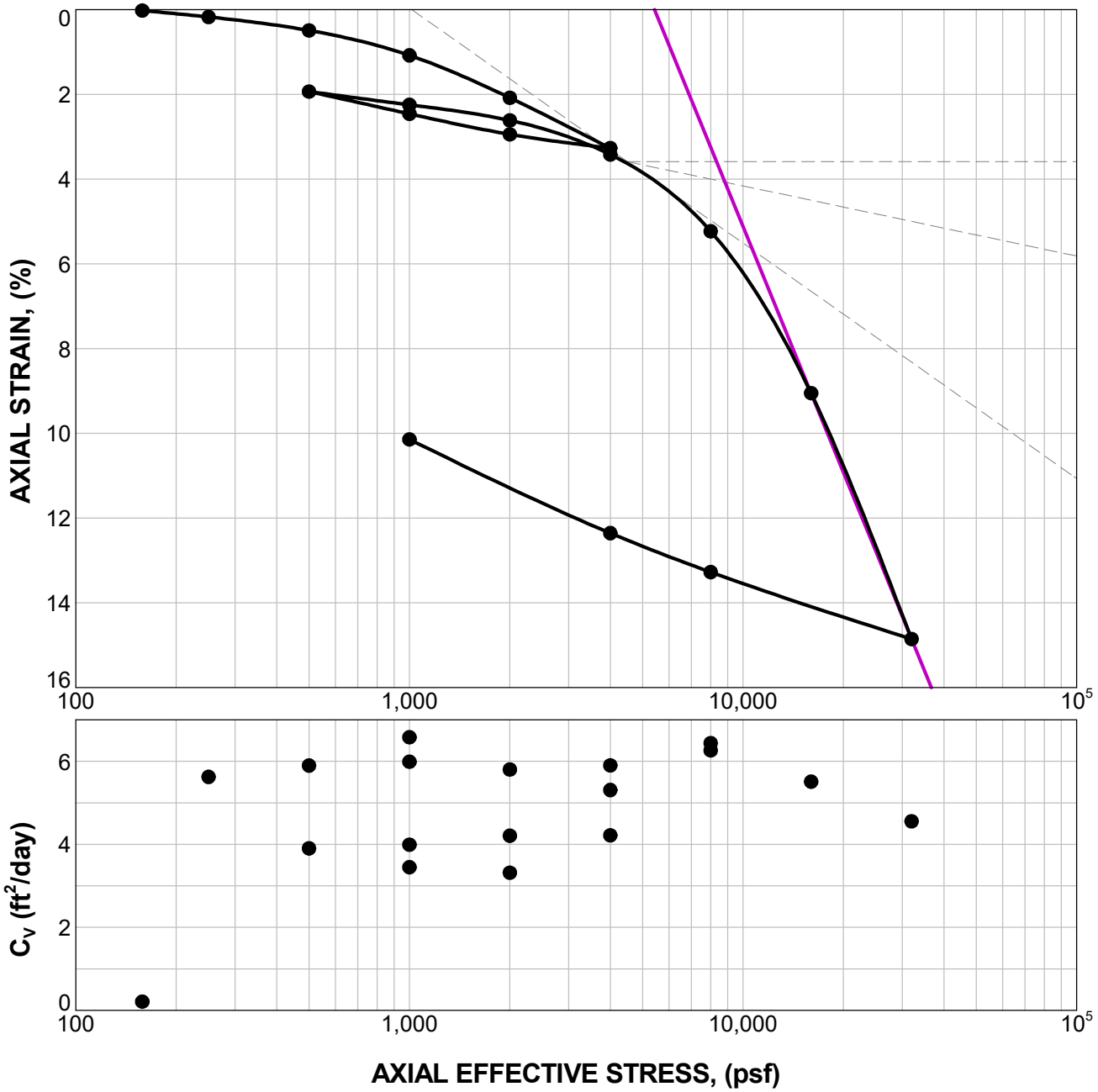
CONSOLIDATION TEST (D2435)



Natural		Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
Saturation	Moisture									
107.3 %	27.2 %	97.2	34	4	2.57	3375	8,827	19.278	1.490	0.650

MATERIAL DESCRIPTION	USCS	AASHTO
SILT with SAND	ML	A-4

NOTES: Percent Passing #200 Sieve= 73.6%

Borehole: B-168 Depth: 27 ft Specimen #: 8

PROJECT: CLT Airport-Deicing Pad and SCT

SITE: Old Piney Top and West Blvd
Charlotte, NC

Terracon
2701 Westport Rd
Charlotte, NC

PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

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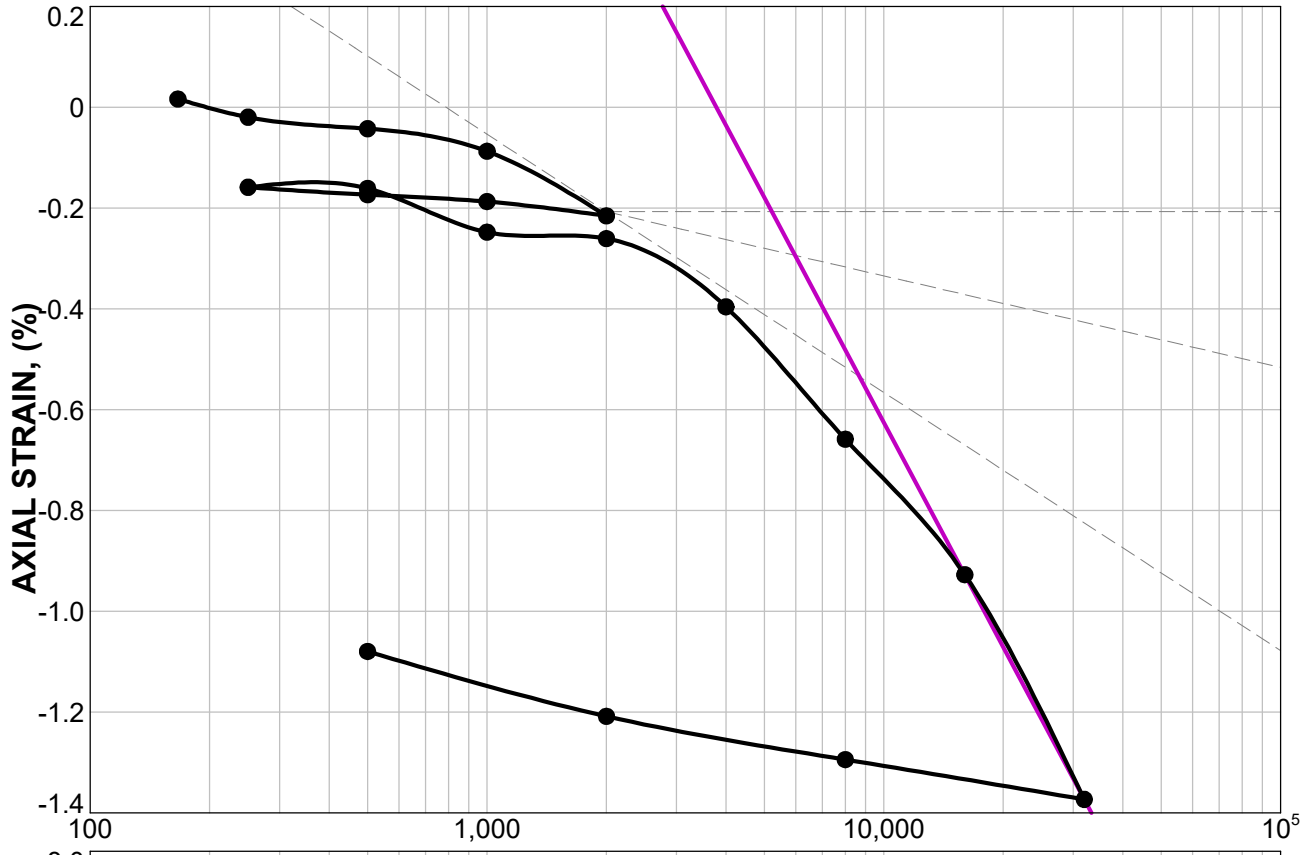
CONSOLIDATION TEST (D2435)



Natural		Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
Saturation	Moisture									
60.1 %	11.5 %	108.7			2.61	1500	5,972	-1.481	-0.061	0.497

MATERIAL DESCRIPTION	USCS	AASHTO
Brown Silty SAND	SM	

NOTES: Percent Passing #200= 14.5%

Borehole: B-170 Depth: 12 ft

PROJECT: CLT Airport-Deicing Pad and SCT

SITE: Old Piney Top and West Blvd
Charlotte, NC

Terracon
2701 Westport Rd
Charlotte, NC

PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

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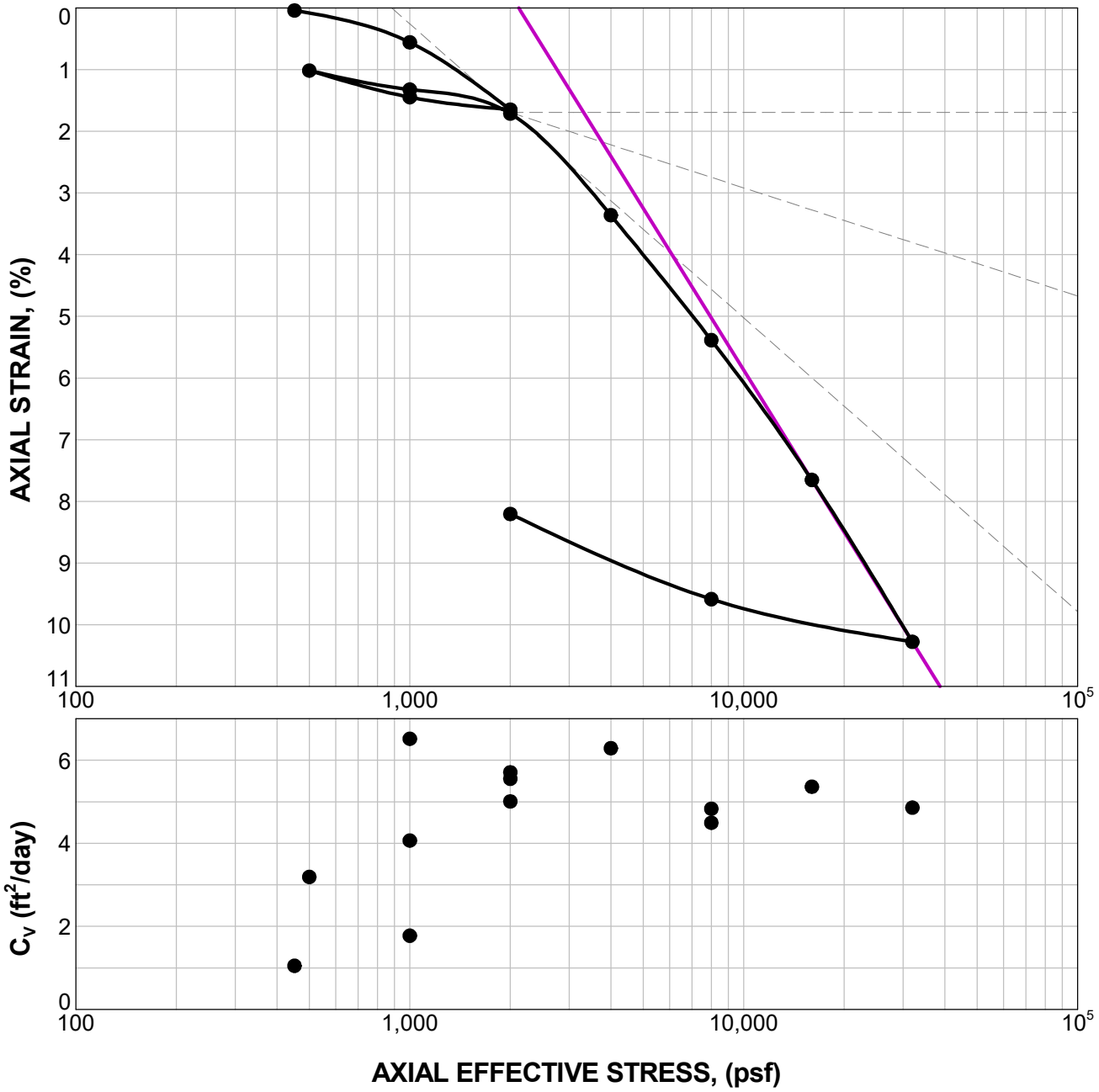
CONSOLIDATION TEST (D2435)



Natural		Initial Dry Density (pcf)	LL	PI	Sp. Gr.	Overburden (psf)	P_c (psf)	C_c (% / log stress)	C_r (% / log stress)	Initial Void Ratio
Saturation	Moisture									
57.4 %	15.7 %	99.2	39	6	2.81	2250	3,765	8.719	1.052	0.770

MATERIAL DESCRIPTION	USCS	AASHTO
SILTY SAND	SM	A-4

NOTES: Percent Passing #200 Sieve=48.5%

Borehole: B-174 Depth: 18 ft

PROJECT: CLT Airport-Deicing Pad and SCT

SITE: Old Piney Top and West Blvd
Charlotte, NC

Terracon
2701 Westport Rd
Charlotte, NC

PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

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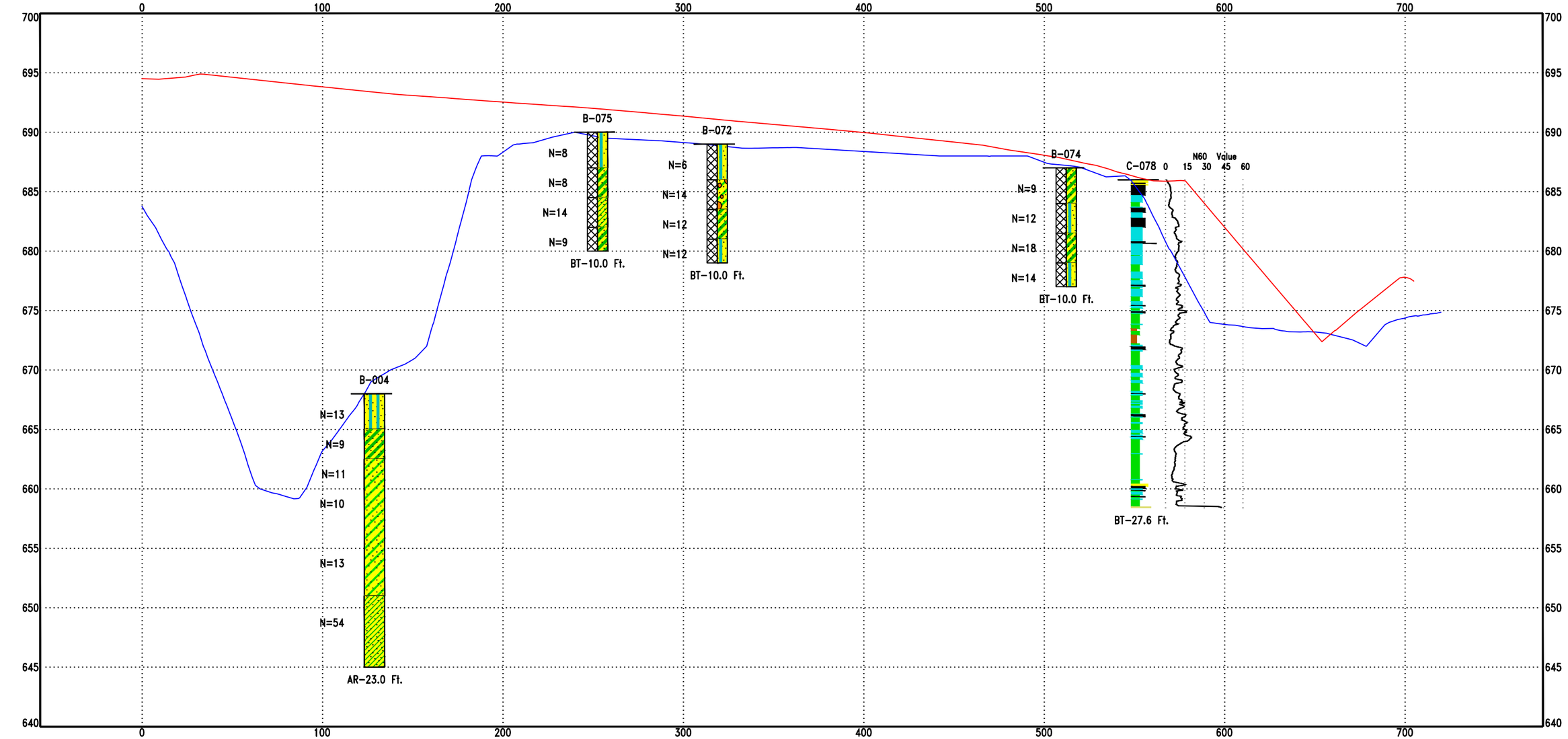
D. CROSS SECTIONS

D.1 DEICING PAD, TAXIWAY AND YORKMONT ROAD CROSS SECTIONS

A

A'



Distance Along Baseline - Feet

Explanation

- Existing Grade
- Proposed Grade

B-004 — Borehole Number
Sampling (See General Notes) — Borehole Lithology
AR / BT — Borehole Termination Type

- Water Level Reading at time of drilling.
- Water Level Reading after drilling.

- Sandy Elastic Silt
- Sandy Fat Clay
- Clayey Sand
- Sandy Lean Clay
- Clayey Sand with Gravel
- Elastic Silt with Sand
- Fat Clay with Sand

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

CPT Soil Classification Graphic Symbols

Soil Behavior Type (SBT)

1. Sensitive, fine grained
2. Organic soils - clay
3. Clay - silty clay to clay
4. Silt mixtures - clayey silt to silty clay
5. Sand mixtures - silty sand to sandy silt
6. Sands - clean sand to silty sand
7. Gravelly sand to dense sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

Project Manager: JPM	Project No.: 71195007
Drawn by: MRF	Scale: AS SHOWN
Approved by: JPM	File Name: 71915007
Date: APRIL 2020	

Terracon
2701 Westport Rd
Charlotte, NC
PH. 704-509-1777 FAX. 704-509-1888

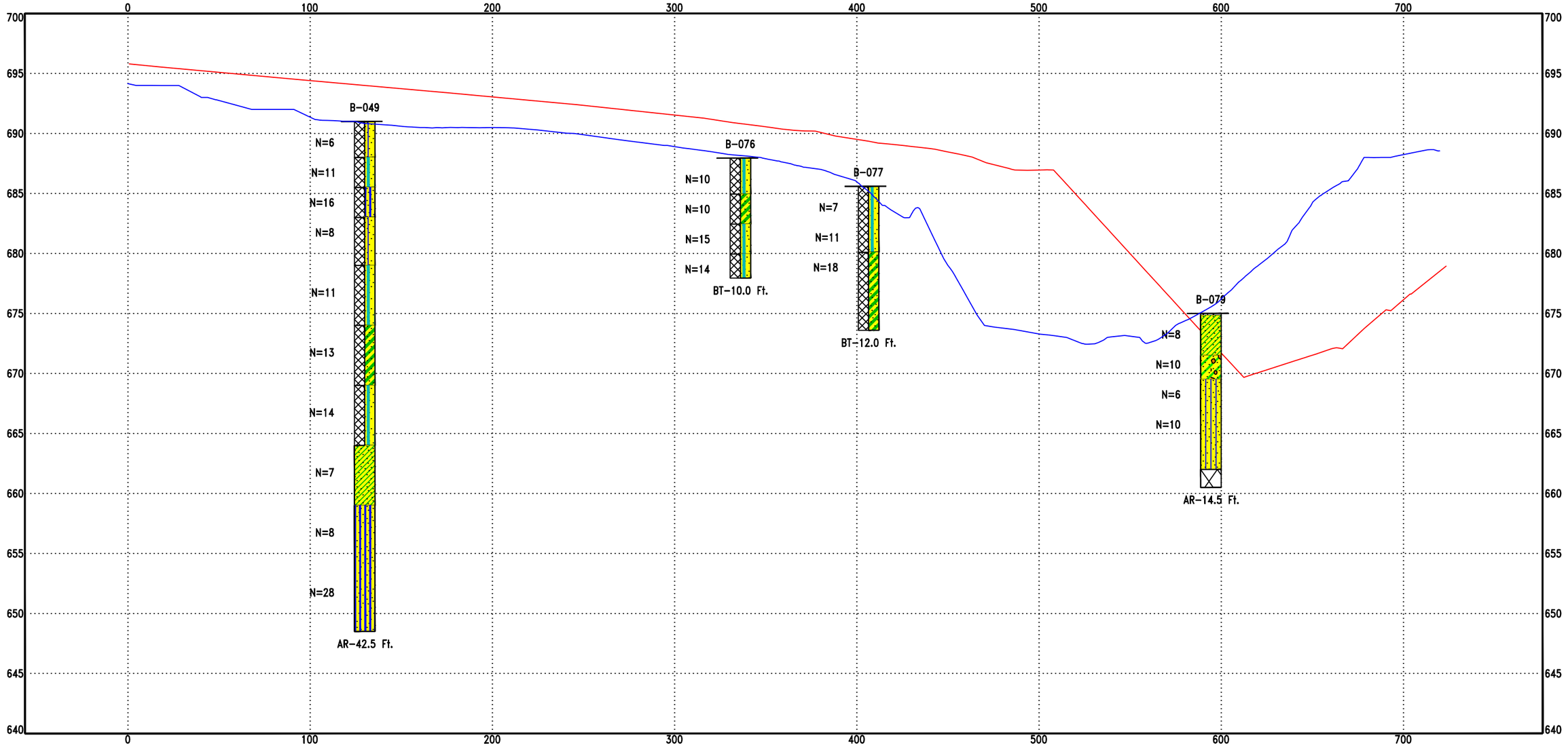
SUBSURFACE PROFILE A-A'

CLT AIRPORT-DEICING PAD AND SCT
CHARLOTTE, NC

EXHIBIT D.1.1

B

B'



Explanation

Exisiting Grade

Proposed Grade

B-004 — Borehole Number

Sampling (See General Notes) — Borehole Lithology

AR, BT — Borehole Termination Type

Water Level Reading at time of drilling.

Water Level Reading after drilling.

Silt with Sand | Elastic Silt with Sand | Sandy Silt | Fat Clay with Sand | Sandy Lean Clay

Sandy Elastic Silt | Sandy Fat Clay | Topsoil | Clayey Sand with Gravel | Silty Sand

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

Project Manager: JPM	Project No.: 71195007
Drawn by: MRF	Scale: AS SHOWN
Approved by: JPM	File Name: 71195007-13
Date: APRIL 2020	

Terracon
2701 Westport Rd
Charlotte, NC
PH. 704-509-1777 FAX. 704-509-1888

SUBSURFACE PROFILE B-B'

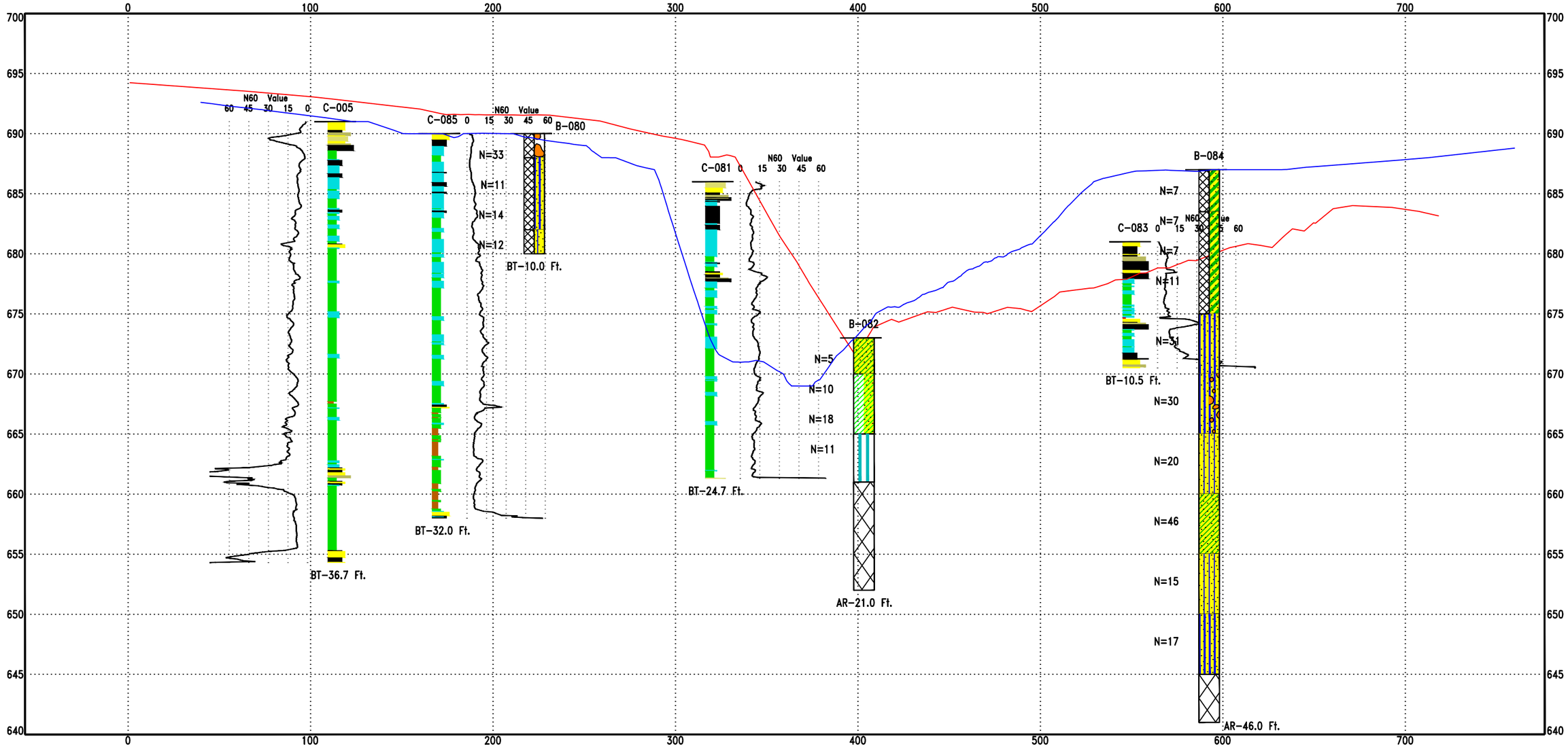
CLT AIRPORT-DEICING PAD AND SCT
CHARLOTTE, NC

EXHIBIT

D.1.2

◄ c

c' ►



Explanation

Exisiting Grade

Proposed Grade

B-004 — Borehole Number

Sampling (See General Notes) — Borehole Lithology

AR / BT — Borehole Termination Type

Water Level Reading at time of drilling.

Water Level Reading after drilling.

Poorly-graded Gravel | Sandy Silt | Silt with Sand | Topsoil | Sandy Lean Clay

Lean Clay with Sand | Elastic Silt | Weathered Rock | Fat Clay with Sand | Sandy Fat Clay

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

CPT Soil Classification Graphic Symbols

Soil Behavior Type (SBT)

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Project Manager: JPM	Project No.: 71195007	Terracon	SUBSURFACE PROFILE C-C'
Drawn by: MRF	Scale: AS SHOWN	2701 Westport Rd Charlotte, NC	CLT AIRPORT-DEICING PAD AND SCT CHARLOTTE, NC
Approved by: JPM	File Name: 71195007-13	PH. 704-509-1777 FAX. 704-509-1888	EXHIBIT D.1.3
Date: APRIL 2020			

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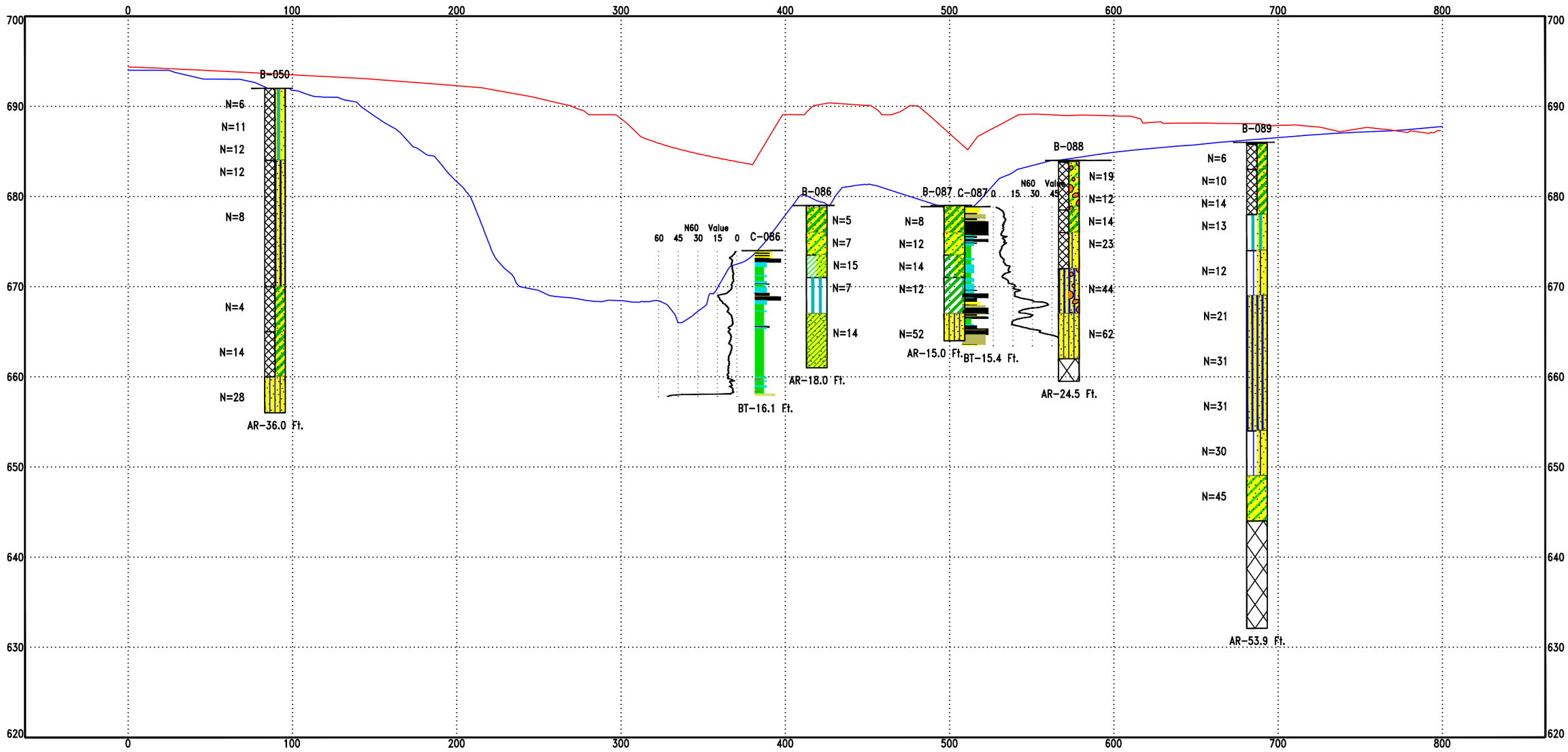
◄ D

D' ►



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Explanation

- Exisiting Grade
- Proposed Grade

B-004 — Borehole Number
Sampling (See General Notes) — Borehole Lithology
AR / BT — Borehole Termination Type

- Water Level Reading at time of drilling.
- Water Level Reading after drilling.

- Elastic Silt with Sand
- Sandy Silt
- Sandy Fat Clay
- Fat Clay with Sand
- Silty Sand
- Topsoil
- Clayey Sand
- Lean Clay with Sand
- Elastic Silt
- Sandy Lean Clay

NOTES:
See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

CPT Soil Classification Graphic Symbols

Soil Behavior Type (SBT)

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Project Manager: JPM	Project No.: 71195007	
Drawn by: MRF	Scale: AS SHOWN	
Approved by: JPM	File Name: 71195007-13	
Date: APRIL 2020		

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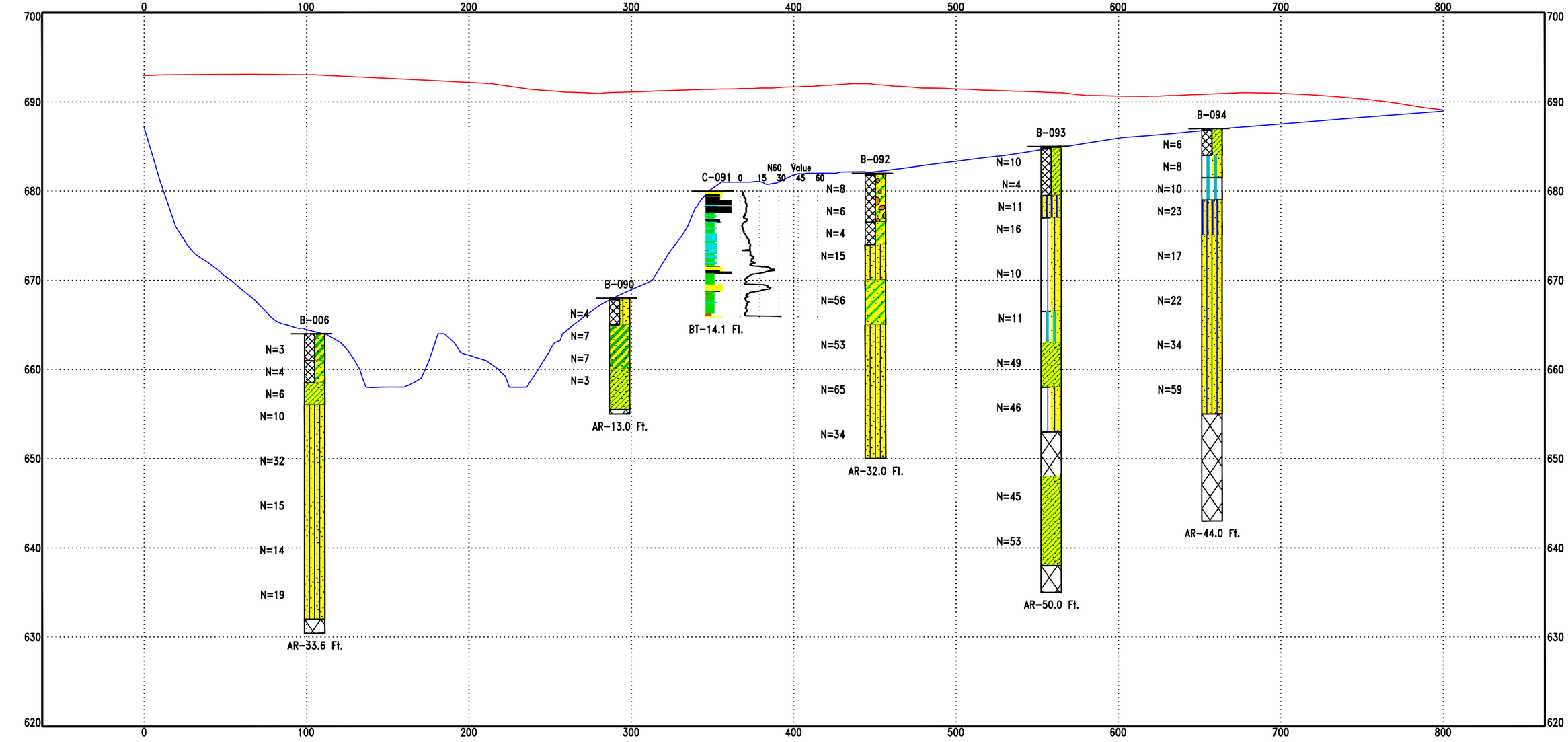
SUBSURFACE PROFILE D-D'

CLT AIRPORT-DEICING PAD AND SCT
CHARLOTTE, NC

EXHIBIT D.1.4

E

E'



Distance Along Baseline - Feet

Explanation

Exisiting Grade

Proposed Grade

B-004 — Borehole Number

Sampling (See General Notes) — Borehole Lithology

AR / BT — Borehole Termination Type

Water Level Reading at time of drilling.

Water Level Reading after drilling.

Sandy Fat Clay | Clayey Sand | Sandy Lean Clay | Silty Sand | Weathered Rock

Topsoil | Silt with Sand | Asphalt | Clayey Sand with Gravel | Sandy Silt

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

CPT Soil Classification Graphic Symbols

Soil Behavior Type (SBT)

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Project Manager: JPM	Project No.: 71195007	
Drawn by: MRF	Scale: AS SHOWN	
Approved by: JPM	File Name: 71195007-13	
Date: APRIL 2020		

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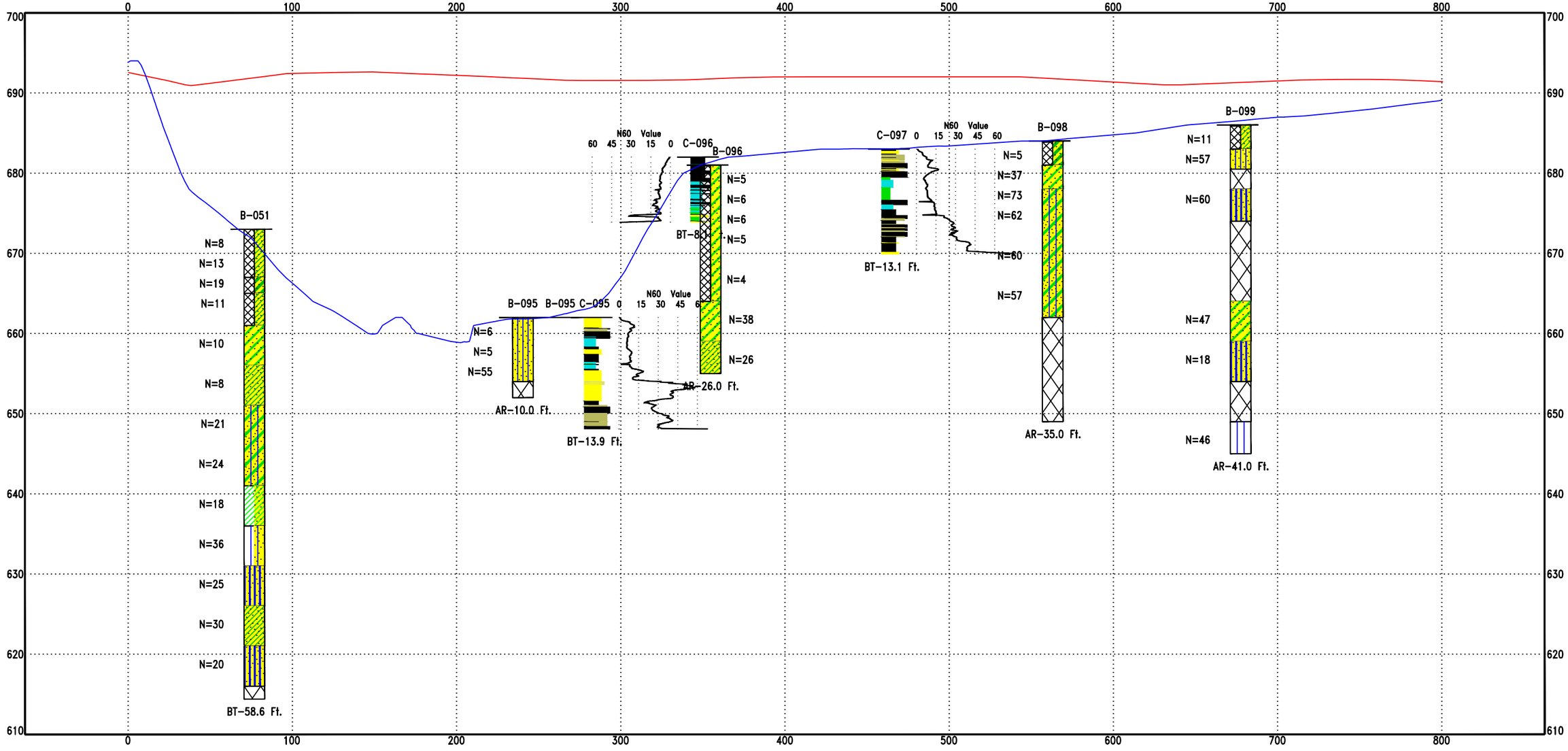
SUBSURFACE PROFILE E-E'

CLT AIRPORT-DEICING PAD AND SCT
CHARLOTTE, NC

EXHIBIT D.1.5

F

F'



Explanation

- Exisiting Grade
- Proposed Grade
- B-004 — Borehole Number
- Sampling (See General Notes) — Borehole Lithology
- AR / BT — Borehole Termination Type
- Water Level Reading at time of drilling.
- Water Level Reading after drilling.

- Sandy Lean Clay
- Fat Clay with Sand
- Clayey Sand
- Silty Clayey Sand
- Lean Clay with Sand
- Silt with Sand
- Sandy Silt
- Weathered Rock
- Topsoil
- Silty Sand

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

CPT Soil Classification Graphic Symbols

Soil Behavior Type (SBT)

1. Sensitive, fine grained
2. Organic soils - clay
3. Clay - silty clay to clay
4. Silt mixtures - clayey silt to silty clay
5. Sand mixtures - silty sand to sandy silt
6. Sands - clean sand to silty sand
7. Gravelly sand to dense sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

Project Manager: JPM	Project No.: 71195007	Terracon	SUBSURFACE PROFILE F-F'
Drawn by: MRF	Scale: AS SHOWN	2701 Westport Rd Charlotte, NC	CLT AIRPORT-DEICING PAD AND SCT CHARLOTTE, NC
Approved by: JPM	File Name: 71195007-13	PH. 704-509-1777 FAX. 704-509-1888	EXHIBIT D.1.6
Date: APRIL 2020			

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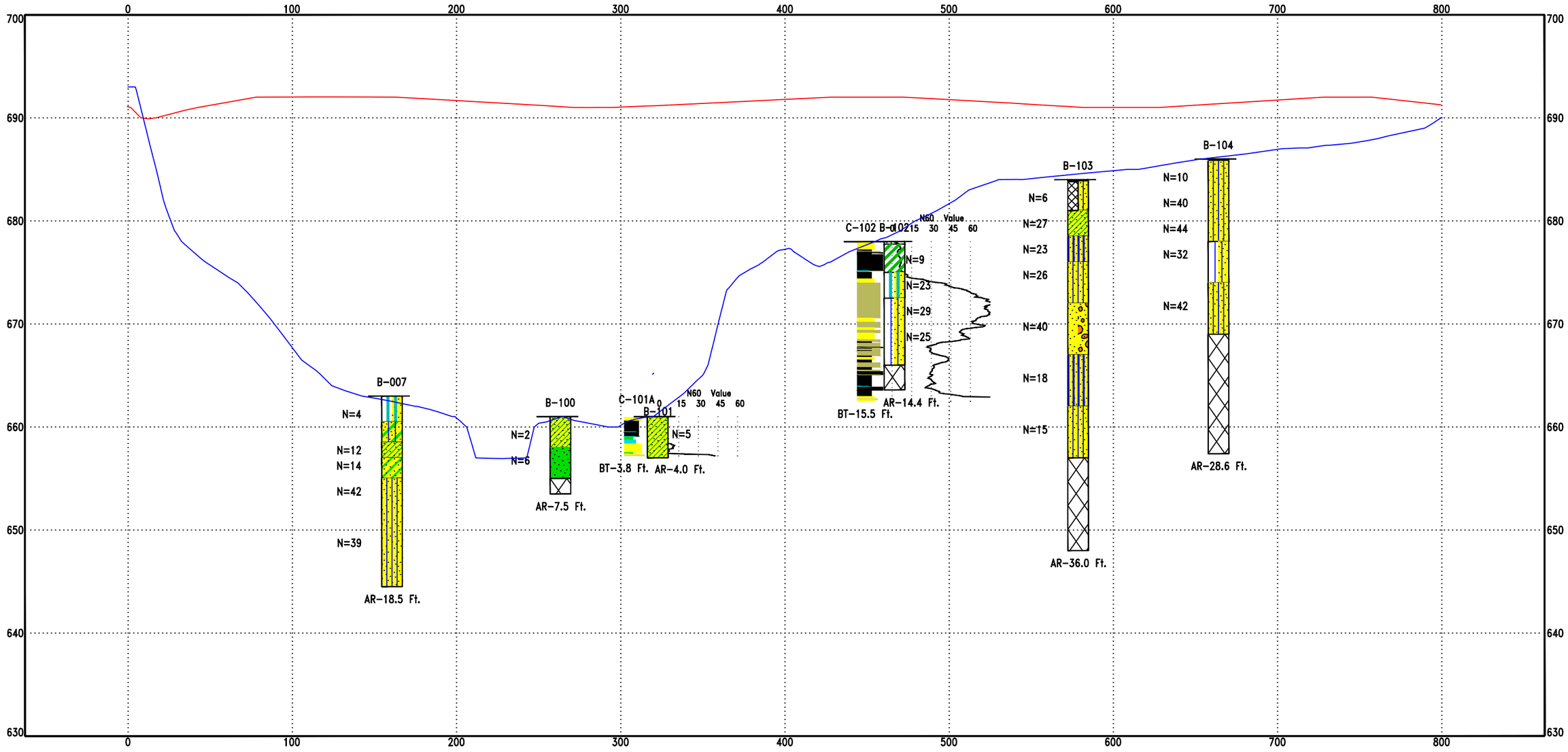

Explanation

- Exisiting Grade
- Proposed Grade
- B-004 — Borehole Number
- Sampling (See General Notes) — Borehole Lithology
- AR / BT — Borehole Termination Type
- Water Level Reading at time of drilling.
- Water Level Reading after drilling.

Elastic Silt with Sand | Silty Clayey Sand | Sandy Lean Clay | Clayey Sand | Silty Sand

Topsoil | Weathered Rock | Fat Clay | Silt with Sand | Asphalt

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

CPT Soil Classification Graphic Symbols

Soil Behavior Type (SBT)

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Project Manager: JPM	Project No.: 71195007
Drawn by: MRF	Scale: AS SHOWN
Approved by: JPM	File Name: 71195007-13
Date: APRIL 2020	

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SUBSURFACE PROFILE G-G'

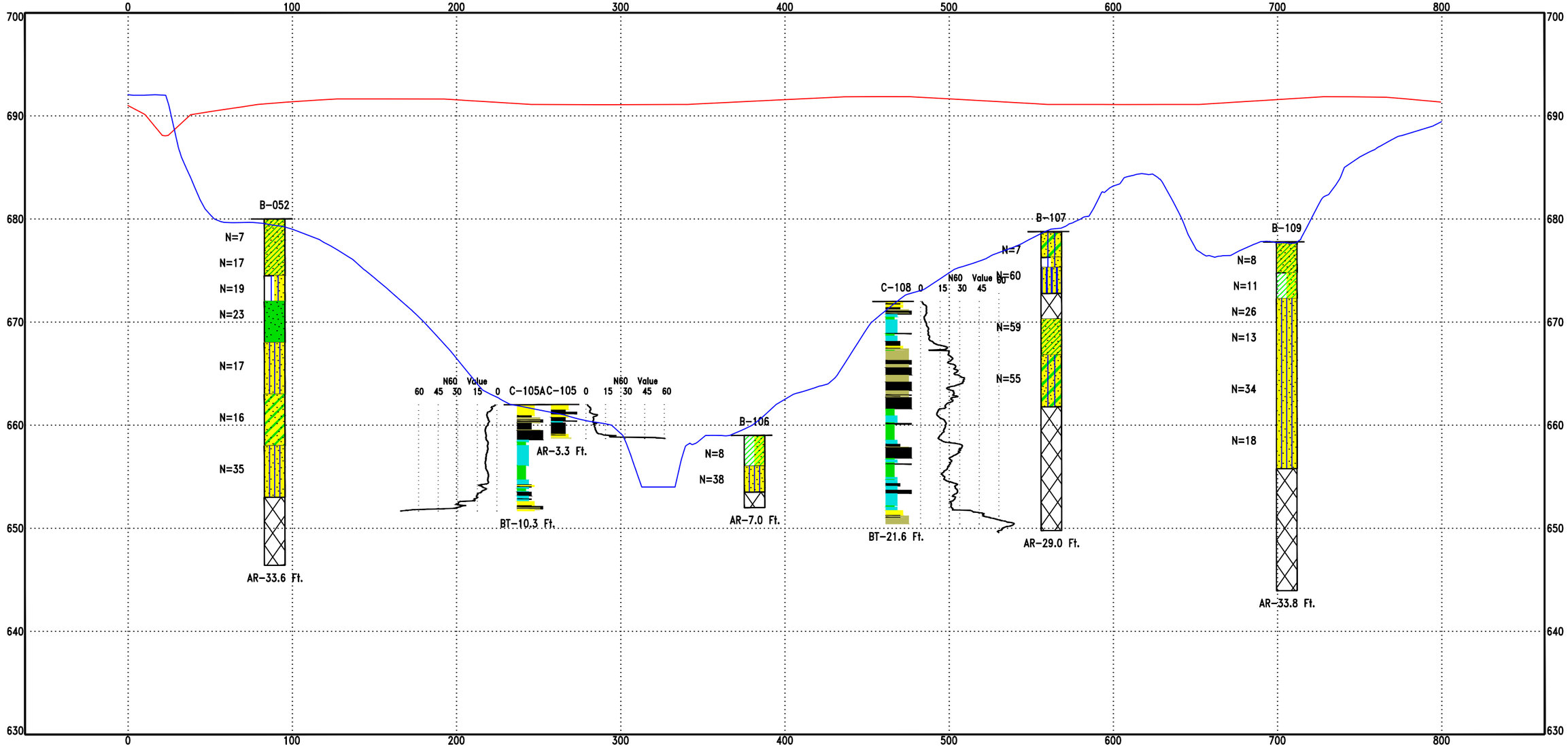
CLT AIRPORT-DEICING PAD AND SCT
CHARLOTTE, NC

EXHIBIT

D.1.7

H

H'



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Explanation

- Exisiting Grade
- Proposed Grade

B-004 — Borehole Number
Sampling (See General Notes) — Borehole Lithology
AR / BT — Borehole Termination Type

- Water Level Reading at time of drilling.
- Water Level Reading after drilling.

- Sandy Lean Clay
- Silt with Sand
- Clayey Sand
- Silty Sand
- Weathered Rock
- Lean Clay with Sand
- Topsoil
- Silty Clayey Sand
- Sandy Silt

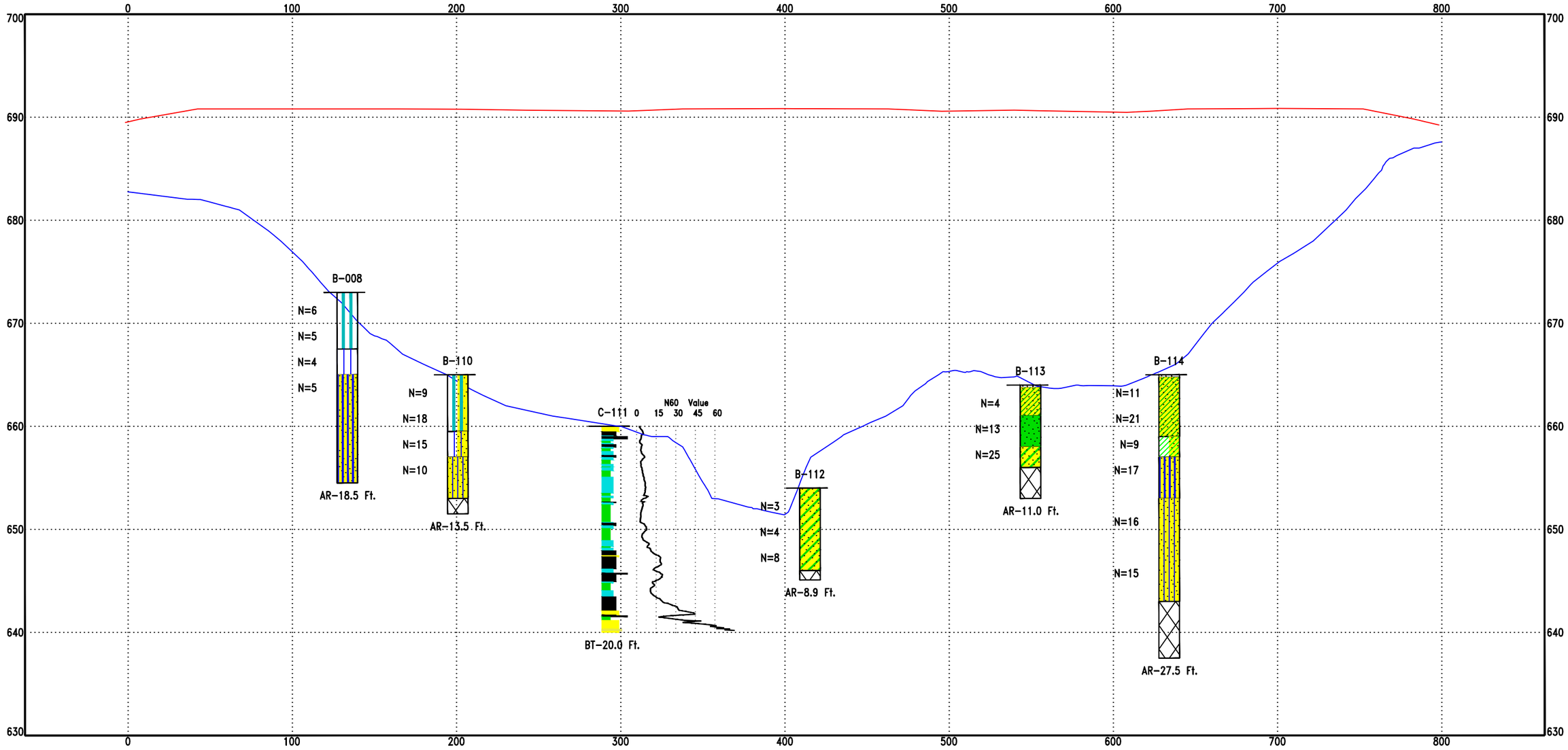
NOTES:
See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

CPT Soil Classification Graphic Symbols

Soil Behavior Type (SBT)

1. Sensitive, fine grained
2. Organic soils - clay
3. Clay - silty clay to clay
4. Silt mixtures - clayey silt to silty clay
5. Sand mixtures - silty sand to sandy silt
6. Sands - clean sand to silty sand
7. Gravelly sand to dense sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

Project Manager: JPM	Project No.: 71195007	Terracon	SUBSURFACE PROFILE H-H'
Drawn by: MRF	Scale: AS SHOWN	2701 Westport Rd Charlotte, NC	CLT AIRPORT-DEICING PAD AND SCT CHARLOTTE, NC
Approved by: JPM	File Name: 71195007-13	PH. 704-509-1777 FAX. 704-509-1888	EXHIBIT D.1.8
Date: APRIL 2020			



Distance Along Baseline - Feet

Explanation

Exisiting Grade

Proposed Grade

B-004 — Borehole Number

Sampling (See General Notes) — Borehole Lithology

AR / BT — Borehole Termination Type

Water Level Reading at time of drilling.

Water Level Reading after drilling.

Elastic Silt | Silt | Sandy Silt | Elastic Silt with Sand | Silt with Sand

Silty Sand | Weathered Rock | Clayey Sand | Topsoil | Sandy Lean Clay

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

CPT Soil Classification Graphic Symbols

Soil Behavior Type (SBT)

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Project Manager: JPM	Project No.: 71195007	Terracon	SUBSURFACE PROFILE I-I'
Drawn by: MRF	Scale: AS SHOWN	2701 Westport Rd Charlotte, NC	CLT AIRPORT-DEICING PAD AND SCT CHARLOTTE, NC
Approved by: JPM	File Name: 71195007-13	PH. 704-509-1777 FAX. 704-509-1888	EXHIBIT D.1.9
Date: APRIL 2020			

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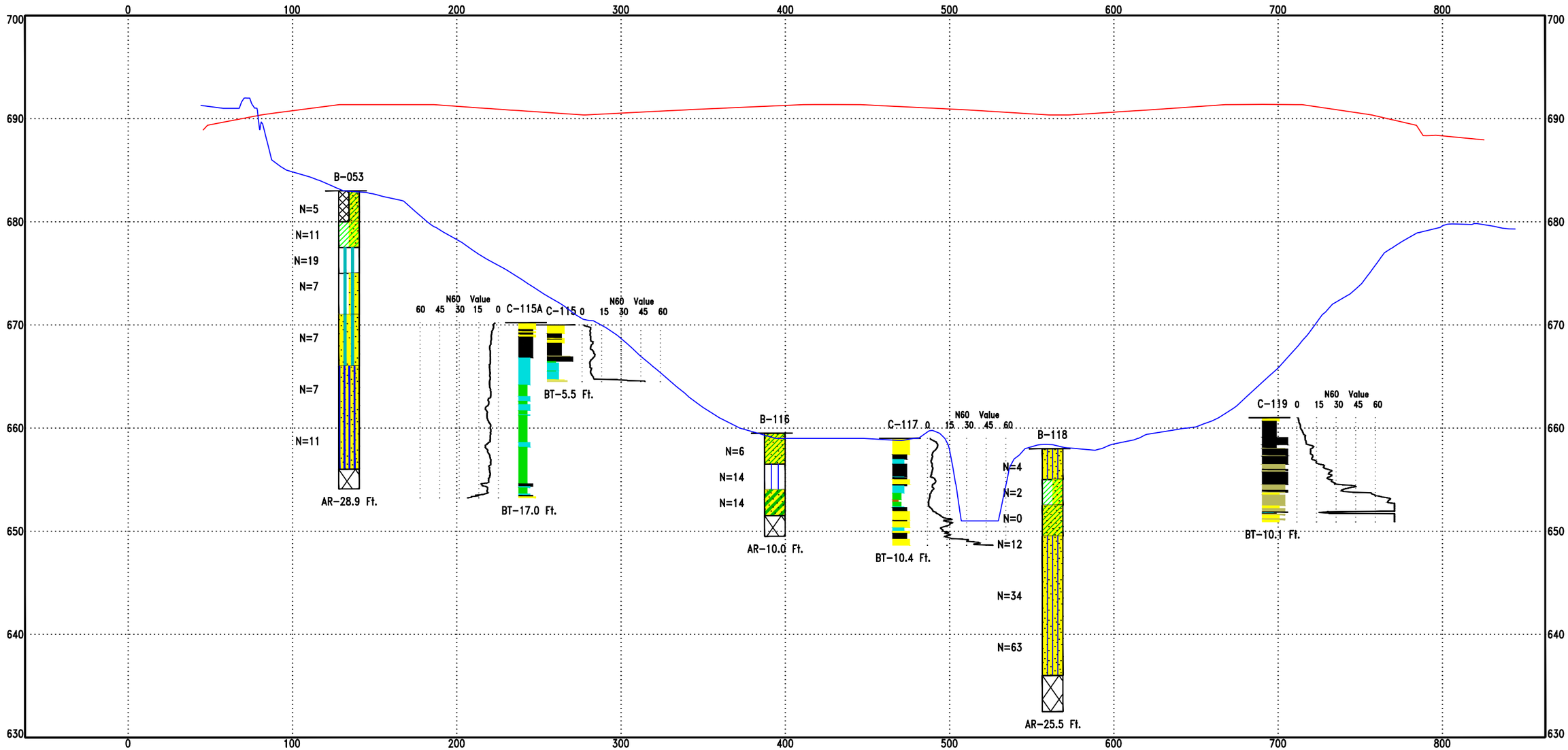
◄ J

J' ►



Explanation

Exisiting Grade

Proposed Grade

B-004 — Borehole Number

Sampling (See General Notes) — Borehole Lithology

AR / BT — Borehole Termination Type

Water Level Reading at time of drilling.

Water Level Reading after drilling.

Sandy Lean Clay | Lean Clay with Sand | Elastic Silt | Elastic Silt with Sand | Sandy Elastic Silt

Sandy Silt | Weathered Rock | Silt | Sandy Fat Clay | Silty Sand

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR – Auger Refusal
BT – Boring Termination

CPT Soil Classification Graphic Symbols

Soil Behavior Type (SBT)

1 Sensitive, fine grained
2 Organic soils – clay
3 Clay – silty clay to clay
4 Silt mixtures – clayey silt to silty clay
5 Sand mixtures – silty sand to sandy silt
6 Sands – clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Project Manager: JPM	Project No.: 71195007	Terracon	SUBSURFACE PROFILE J–J'
Drawn by: MRF	Scale: AS SHOWN	2701 Westport Rd Charlotte, NC	CLT AIRPORT–DEICING PAD AND SCT CHARLOTTE, NC
Approved by: JPM	File Name: 71195007-13	PH. 704-509-1777 FAX. 704-509-1888	EXHIBIT D.1.10
Date: APRIL 2020			

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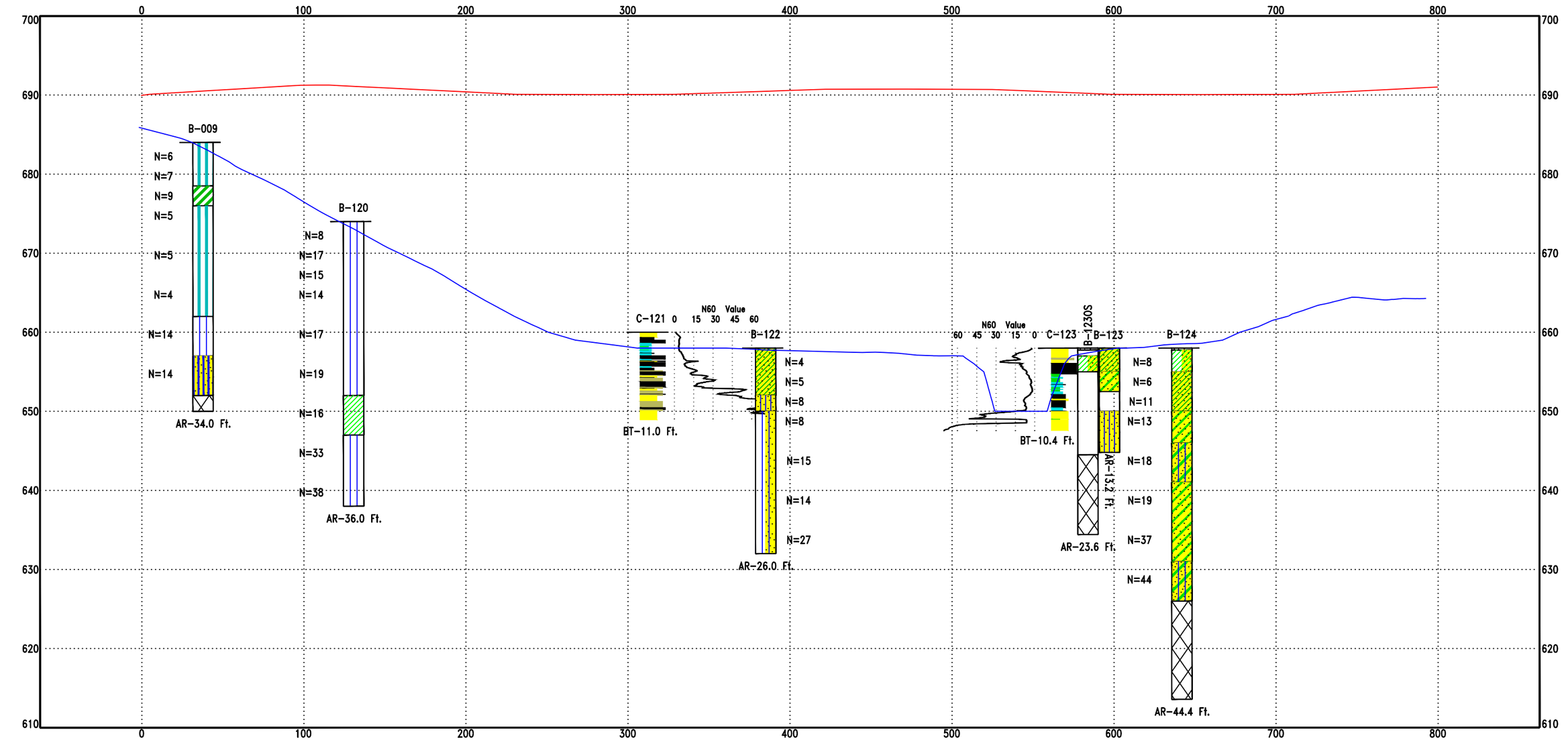
K

K'



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Explanation

- Exisiting Grade
- Proposed Grade
- B-004 — Borehole Number
- Sampling (See General Notes) — Borehole Lithology
- AR / BT — Borehole Termination Type
- Water Level Reading at time of drilling.
- Water Level Reading after drilling.

Elastic Silt | Fat Clay | Silt | Sandy Silt | Weathered Rock

Lean Clay | Sandy Lean Clay | Silty Sand | Silt with Sand | Clayey Sand

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

CPT Soil Classification Graphic Symbols

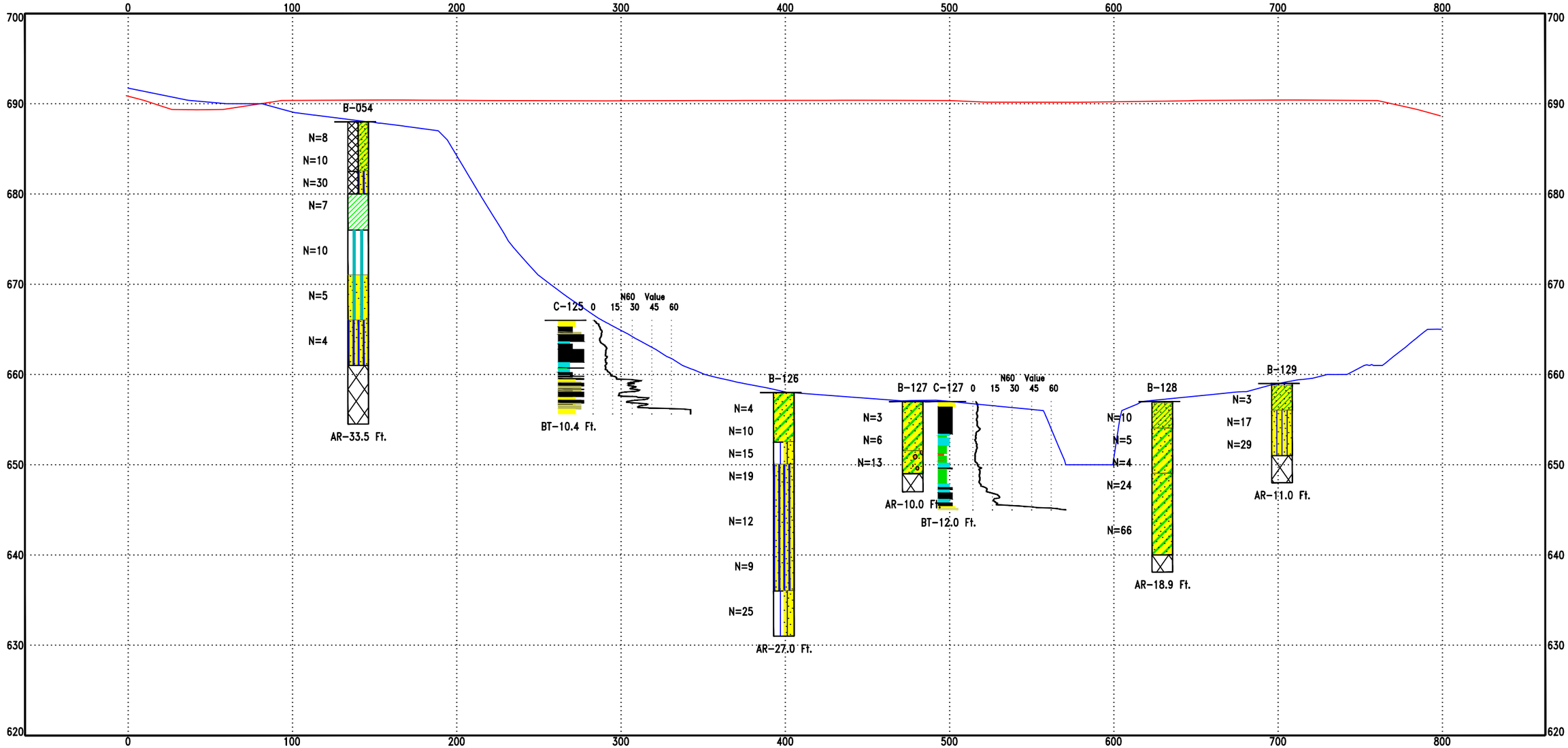
Soil Behavior Type (SBT)

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Project Manager: JPM	Project No.: 71195007	Terracon	SUBSURFACE PROFILE K-K'
Drawn by: MRF	Scale: AS SHOWN	2701 Westport Rd Charlotte, NC	CLT AIRPORT-DEICING PAD AND SCT CHARLOTTE, NC
Approved by: JPM	File Name: 71195007-13	PH. 704-509-1777 FAX. 704-509-1888	EXHIBIT D.1.11
Date: APRIL 2020			

◄ L

L' ►



Explanation

Exisiting Grade

Proposed Grade

B-004 — Borehole Number

Sampling (See General Notes) — Borehole Lithology

AR / BT — Borehole Termination Type

Water Level Reading at time of drilling.

Water Level Reading after drilling.

Sandy Lean Clay | Sandy Silt | Lean Clay | Elastic Silt | Sandy Elastic Silt

Weathered Rock | Clayey Sand | Silt with Sand | Clayey Sand with Gravel | Topsoil

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

CPT Soil Classification Graphic Symbols

Soil Behavior Type (SBT)

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Project Manager: JPM	Project No.: 71195007	Terracon	SUBSURFACE PROFILE L-L'
Drawn by: MRF	Scale: AS SHOWN	2701 Westport Rd Charlotte, NC	CLT AIRPORT-DEICING PAD AND SCT CHARLOTTE, NC
Approved by: JPM	File Name: 71195007-13	PH. 704-509-1777 FAX. 704-509-1888	EXHIBIT D.1.12
Date: APRIL 2020			

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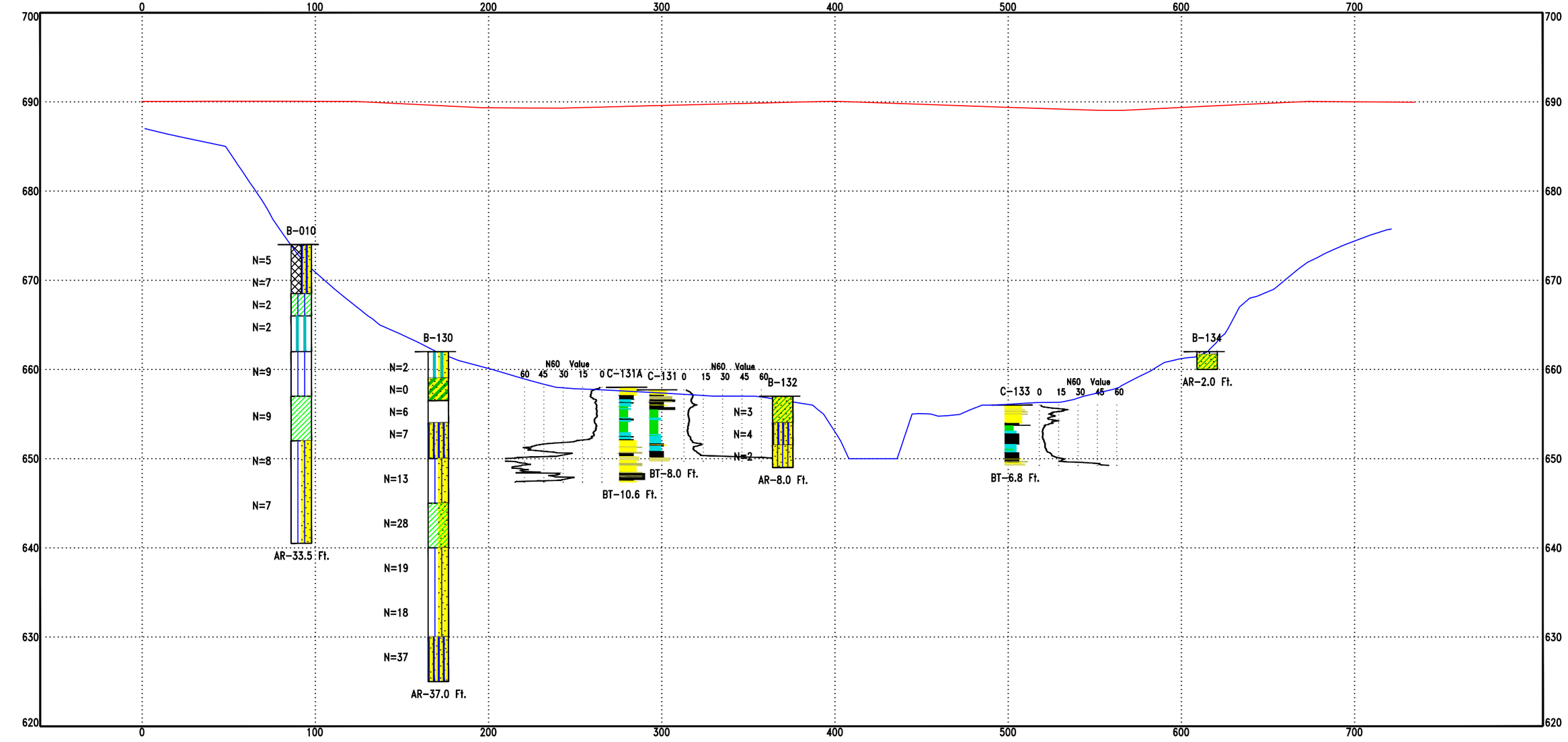
M

M'



Explanation

- Exisiting Grade
- Proposed Grade

B-004 — Borehole Number
Sampling (See General Notes) — Borehole Lithology
AR / BT — Borehole Termination Type

- Water Level Reading at time of drilling.
- Water Level Reading after drilling.

- Sandy Silt
- Silty Clay
- Elastic Silt
- Silt
- Lean Clay
- Silt with Sand
- Elastic Silt with Sand
- Sandy Fat Clay
- Lean Clay with Sand
- Sandy Lean Clay

NOTES:
See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

CPT Soil Classification Graphic Symbols

Soil Behavior Type (SBT)

1. Sensitive, fine grained
2. Organic soils - clay
3. Clay - silty clay to clay
4. Silt mixtures - clayey silt to silty clay
5. Sand mixtures - silty sand to sandy silt
6. Sands - clean sand to silty sand
7. Gravelly sand to dense sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

Project Manager: JPM	Project No.: 71195007	
Drawn by: MRF	Scale: AS SHOWN	
Approved by: JPM	File Name: 71195007-13	
Date: APRIL 2020		

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SUBSURFACE PROFILE M-M'

CLT AIRPORT-DEICING PAD AND SCT
CHARLOTTE, NC

EXHIBIT D.1.13

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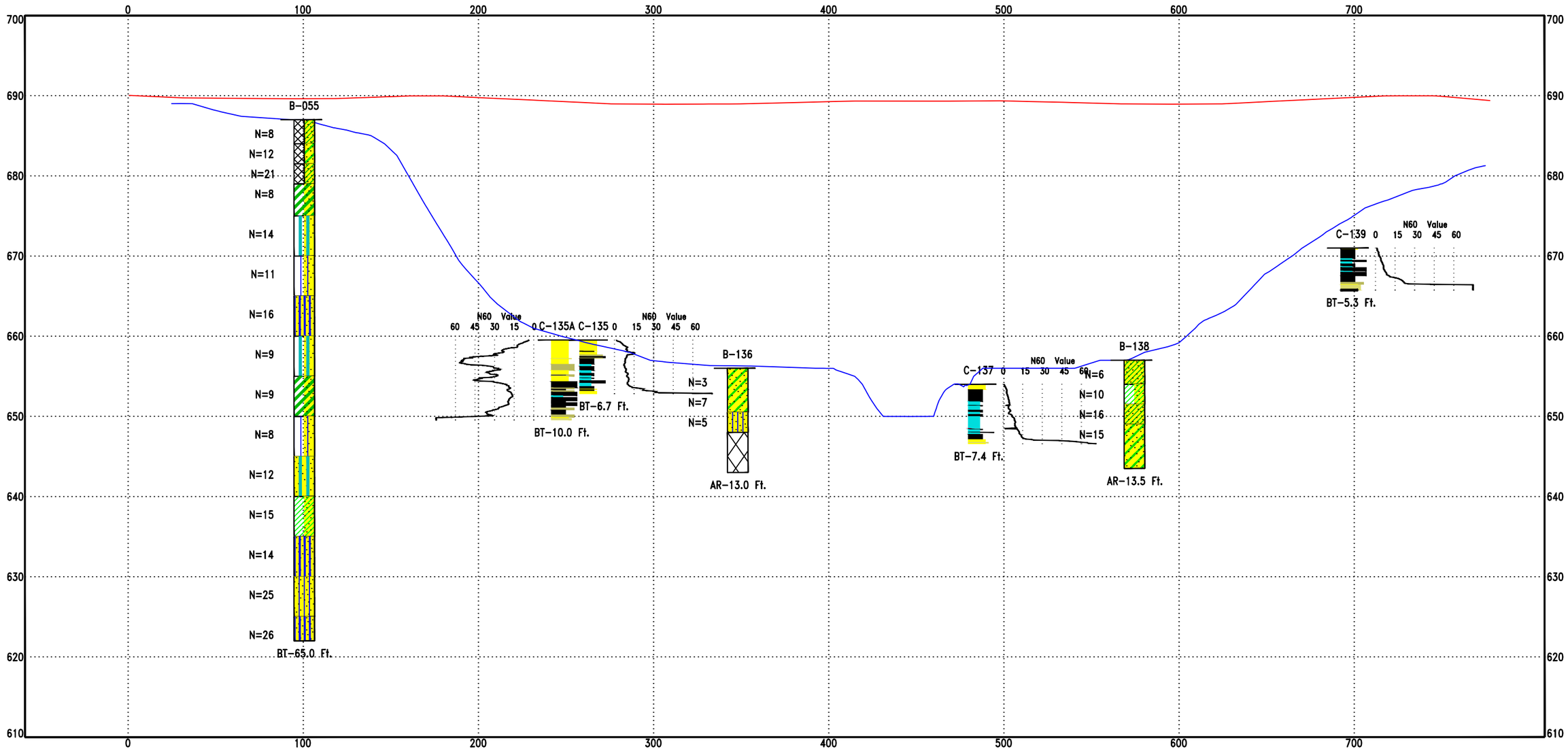
N

N'



Explanation

Exisiting Grade

Proposed Grade

B-004 — Borehole Number

Sampling (See General Notes) — Borehole Lithology

AR / BT — Borehole Termination Type

Water Level Reading at time of drilling.

Water Level Reading after drilling.

Sandy Lean Clay | Clayey Sand | Fat Clay with Sand | Elastic Silt with Sand | Silt with Sand

Sandy Silt | Sandy Elastic Silt | Lean Clay with Sand | Silty Sand | Weathered Rock

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

CPT Soil Classification Graphic Symbols

Soil Behavior Type (SBT)

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Project Manager: JPM	Project No.: 71195007
Drawn by: MRF	Scale: AS SHOWN
Approved by: JPM	File Name: 71195007-13
Date: APRIL 2020	

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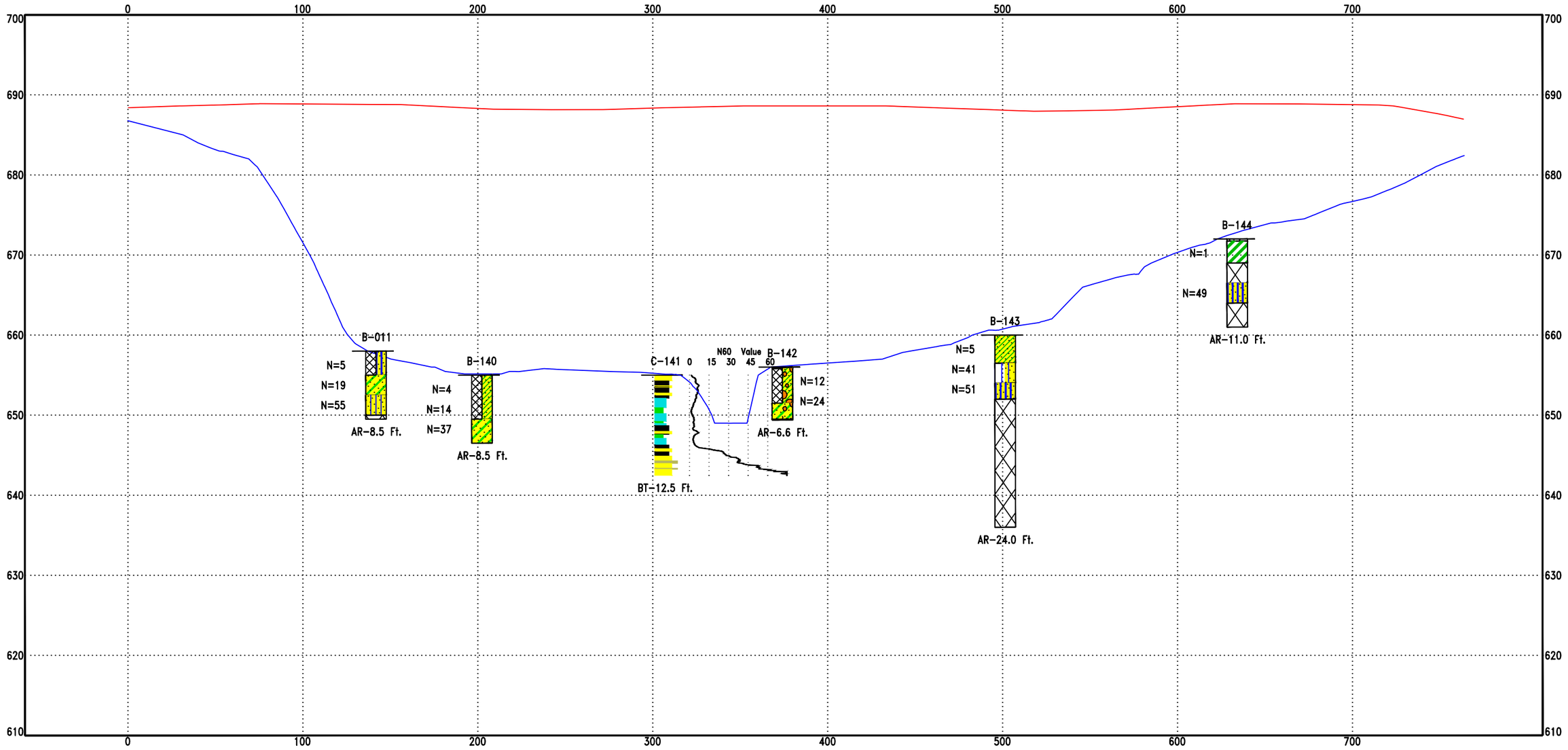
SUBSURFACE PROFILE N-N'

CLT AIRPORT-DEICING PAD AND SCT
CHARLOTTE, NC

EXHIBIT

D.1.14



Distance Along Baseline - Feet

Explanation

Exisiting Grade
Proposed Grade

B-004 — Borehole Number
Sampling (See General Notes) — Borehole Lithology
AR / BT — Borehole Termination Type

Water Level Reading at time of drilling.
Water Level Reading after drilling.

Sandy Silt | Clayey Sand | Silty Sand | Weathered Rock | Sandy Lean Clay
Topsoil | Sandy Lean Clay with Gravel | Clayey Sand with Gravel | Silt with Sand | Fat Clay

NOTES:
See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

CPT Soil Classification Graphic Symbols

Soil Behavior Type (SBT)

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Project Manager: JPM	Project No.: 71195007	
Drawn by: MRF	Scale: AS SHOWN	
Approved by: JPM	File Name: 71195007-13	
Date: APRIL 2020		

Terracon
2701 Westport Rd
Charlotte, NC
PH. 704-509-1777 FAX. 704-509-1888

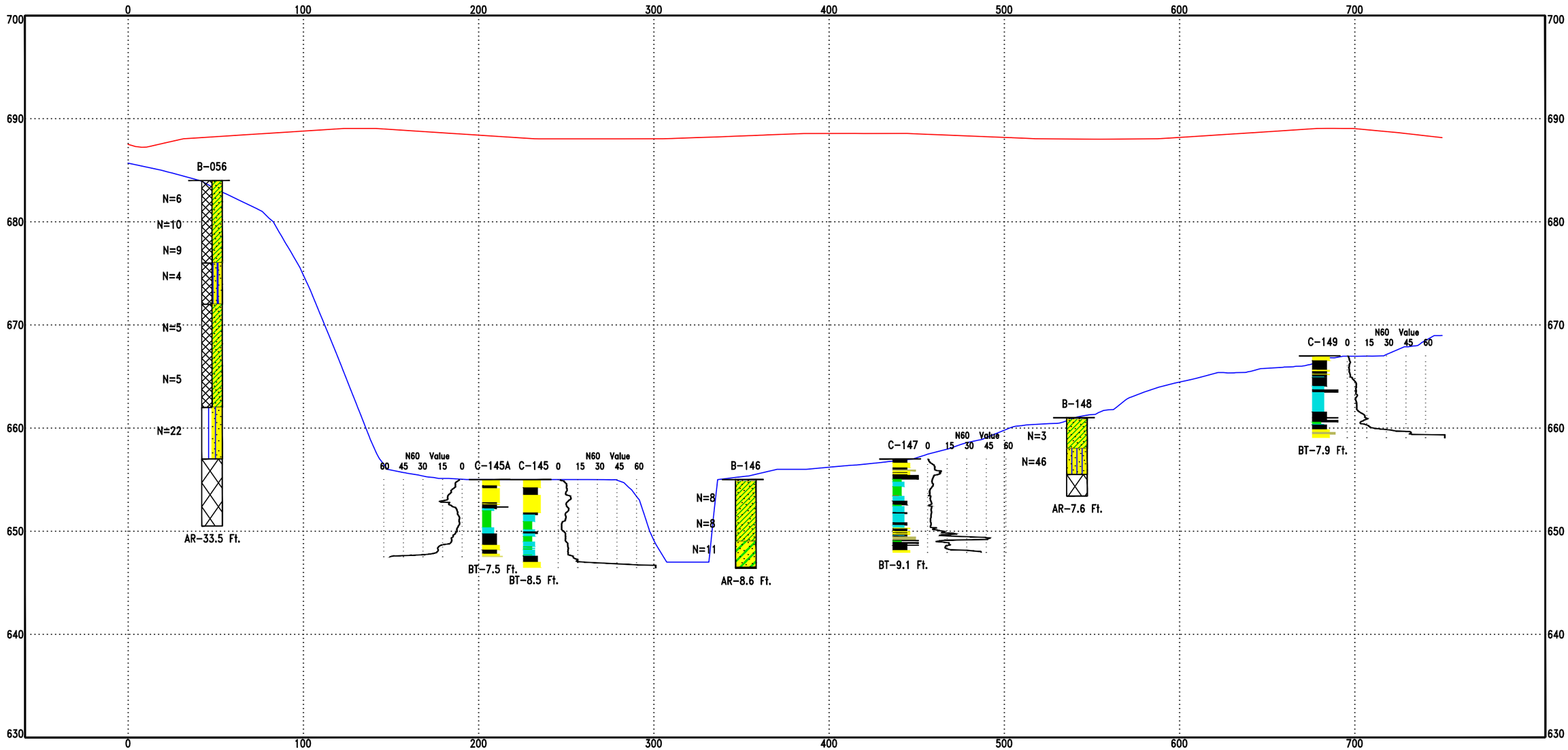
SUBSURFACE PROFILE 0-0'

CLT AIRPORT-DEICING PAD AND SCT
CHARLOTTE, NC

EXHIBIT D.1.15

◄ P

P' ►



Explanation

- Exisiting Grade
- Proposed Grade

B-004 — Borehole Number
Sampling (See General Notes) — Borehole Lithology
AR / BT — Borehole Termination Type

- Water Level Reading at time of drilling.
- Water Level Reading after drilling.

- Sandy Lean Clay
- Sandy Silt
- Silt with Sand
- Weathered Rock
- Topsoil
- Clayey Sand
- Silty Sand

NOTES:
See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

CPT Soil Classification Graphic Symbols

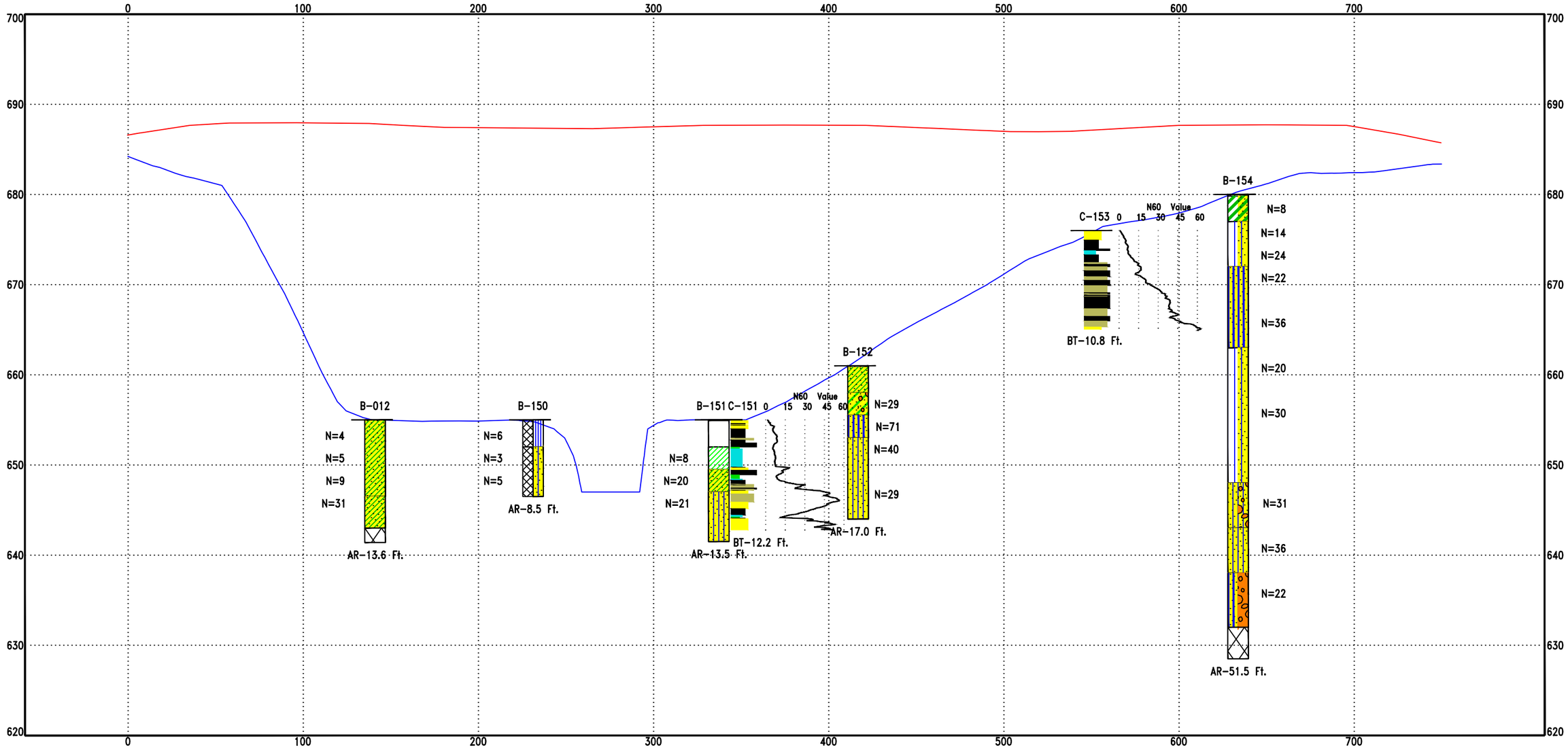
Soil Behavior Type (SBT)

1. Sensitive, fine grained
2. Organic soils - clay
3. Clay - silty clay to clay
4. Silt mixtures - clayey silt to silty clay
5. Sand mixtures - silty sand to sandy silt
6. Sands - clean sand to silty sand
7. Gravelly sand to dense sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

Project Manager: JPM	Project No.: 71195007	Terracon	SUBSURFACE PROFILE P-P'
Drawn by: MRF	Scale: AS SHOWN	2701 Westport Rd Charlotte, NC	CLT AIRPORT-DEICING PAD AND SCT CHARLOTTE, NC
Approved by: JPM	File Name: 71195007-13	PH. 704-509-1777 FAX. 704-509-1888	EXHIBIT D.1.16
Date: APRIL 2020			

Q

Q'



Explanation

Exisiting Grade

Proposed Grade

B-004 — Borehole Number

Sampling (See General Notes) — Borehole Lithology

AR / BT — Borehole Termination Type

Water Level Reading at time of drilling.

Water Level Reading after drilling.

Sandy Lean Clay | Weathered Rock | Poorly-graded Sand with Silt | Silty Sand | Topsoil

Lean Clay | Clayey Sand with Gravel | Sandy Silt | Fat Clay with Sand

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

CPT Soil Classification Graphic Symbols

Soil Behavior Type (SBT)

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Project Manager: JPM	Project No.: 71195007	Terracon	SUBSURFACE PROFILE Q-Q'
Drawn by: MRF	Scale: AS SHOWN	2701 Westport Rd Charlotte, NC	CLT AIRPORT-DEICING PAD AND SCT CHARLOTTE, NC
Approved by: JPM	File Name: 71195007-13	PH. 704-509-1777 FAX. 704-509-1888	EXHIBIT D.1.17
Date: APRIL 2020			

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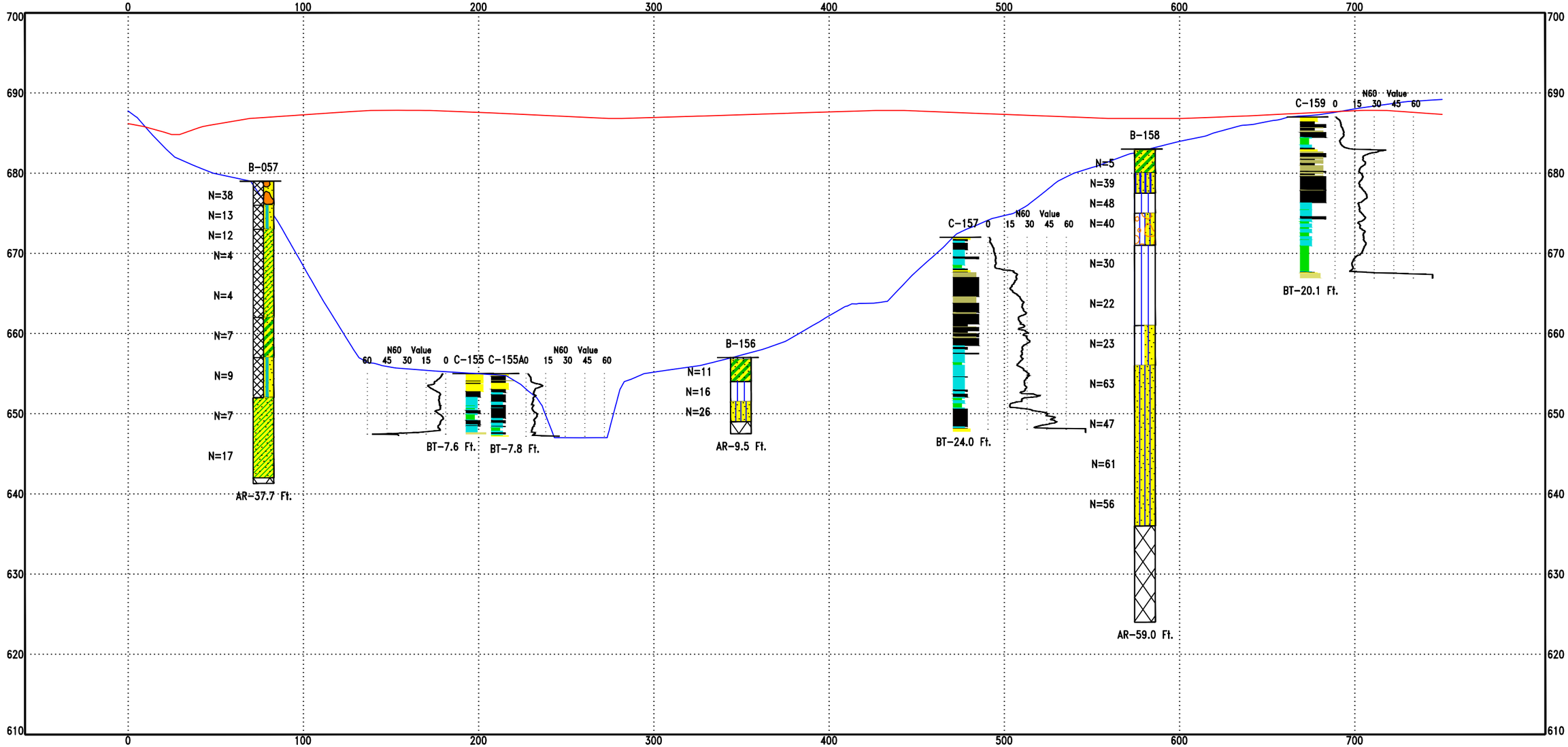
R

R'



Explanation

- Exisiting Grade
- Proposed Grade
- B-004 — Borehole Number
- Sampling (See General Notes) — Borehole Lithology
- AR / BT — Borehole Termination Type
- Water Level Reading at time of drilling.
- Water Level Reading after drilling.

Poorly-graded Gravel with Sand | Sandy Elastic Silt | Sandy Lean Clay | Sandy Fat Clay | Weathered Rock

Topsoil | Silt | Silty Sand | Sandy Silt | Silty Gravel with Sand

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

CPT Soil Classification Graphic Symbols

Soil Behavior Type (SBT)

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Project Manager: JPM	Project No.: 71195007	
Drawn by: MRF	Scale: AS SHOWN	
Approved by: JPM	File Name: 71195007-13	
Date: APRIL 2020		

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SUBSURFACE PROFILE R-R'

CLT AIRPORT-DEICING PAD AND SCT
CHARLOTTE, NC

EXHIBIT D.1.18

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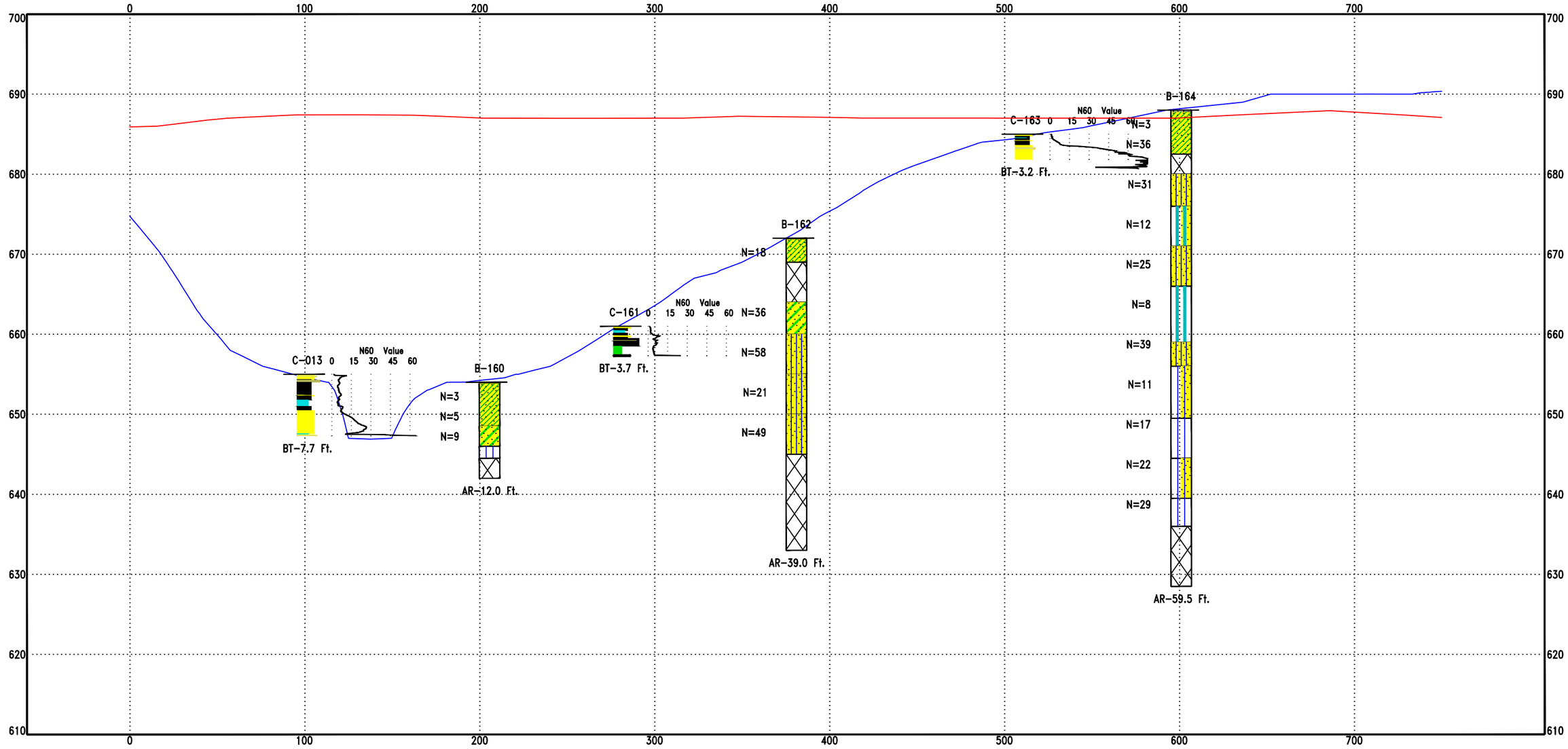
S

S'



Explanation

Exisiting Grade

Proposed Grade

B-004 — Borehole Number

Sampling (See General Notes) — Borehole Lithology

AR / BT — Borehole Termination Type

Water Level Reading at time of drilling.

Water Level Reading after drilling.

Topsoil

Sandy Lean Clay

Clayey Sand

Silt

Weathered Rock

Silty Sand

Elastic Silt with Sand

Elastic Silt

Silt with Sand

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

CPT Soil Classification Graphic Symbols

Soil Behavior Type (SBT)

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Project Manager: JPM	Project No.: 71195007	
Drawn by: MRF	Scale: AS SHOWN	
Approved by: JPM	File Name: 71195007-13	
Date: APRIL 2020		

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SUBSURFACE PROFILE S-S'

CLT AIRPORT-DEICING PAD AND SCT
CHARLOTTE, NC

EXHIBIT D.1.19

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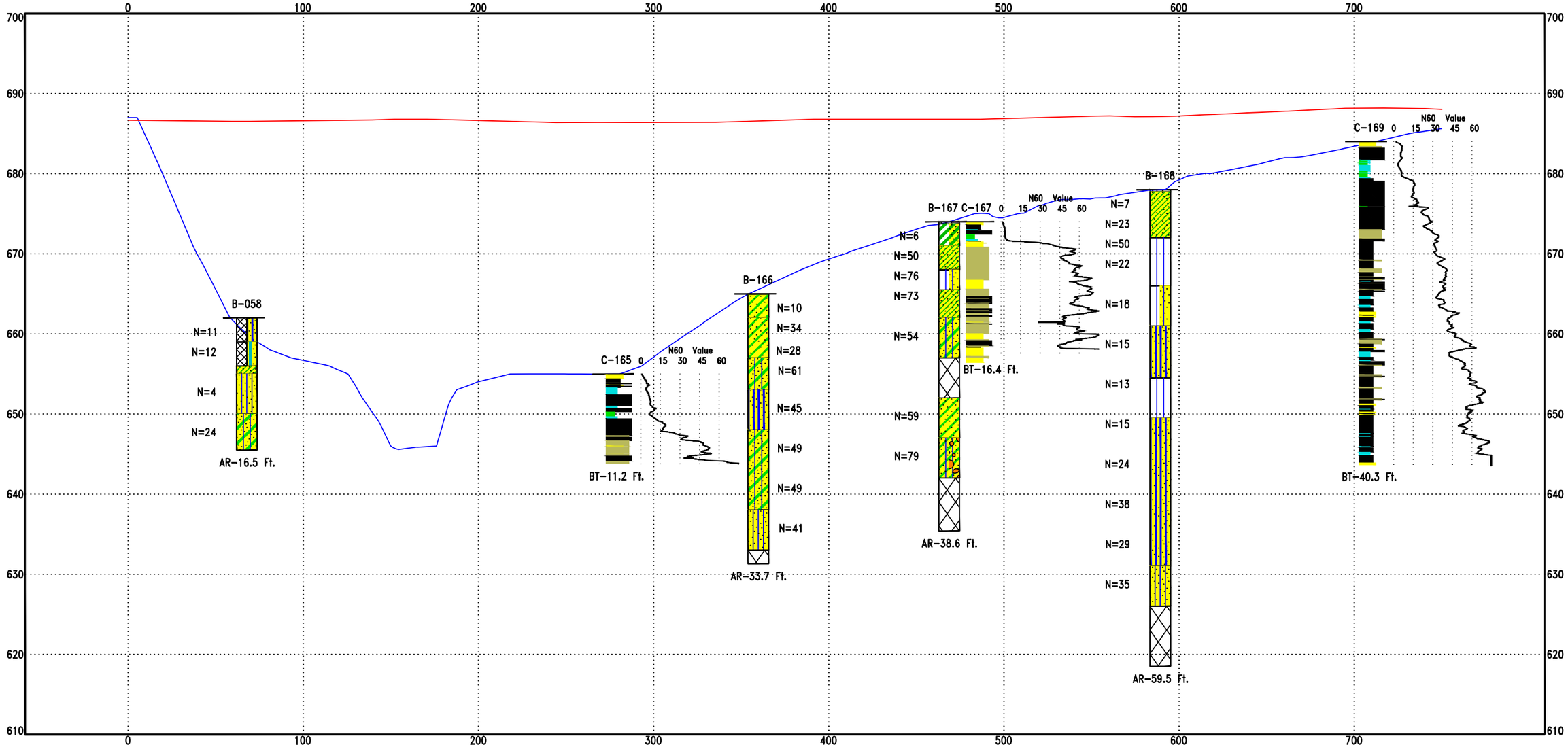
T

T'



Explanation

- Exisiting Grade
- Proposed Grade
- B-004 — Borehole Number
- Sampling (See General Notes) — Borehole Lithology
- AR / BT — Borehole Termination Type
- Water Level Reading at time of drilling.
- Water Level Reading after drilling.

Sandy Silt; Sandy Elastic Silt; Sandy Lean Clay; Silty Sand; Silty Clayey Sand; Topsoil; Clayey Sand; Weathered Rock; Fat Clay with Sand; Silt with Sand

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

CPT Soil Classification Graphic Symbols

Soil Behavior Type (SBT)

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Project Manager: JPM	Project No.: 71195007
Drawn by: MRF	Scale: AS SHOWN
Approved by: JPM	File Name: 71195007-13
Date: APRIL 2020	

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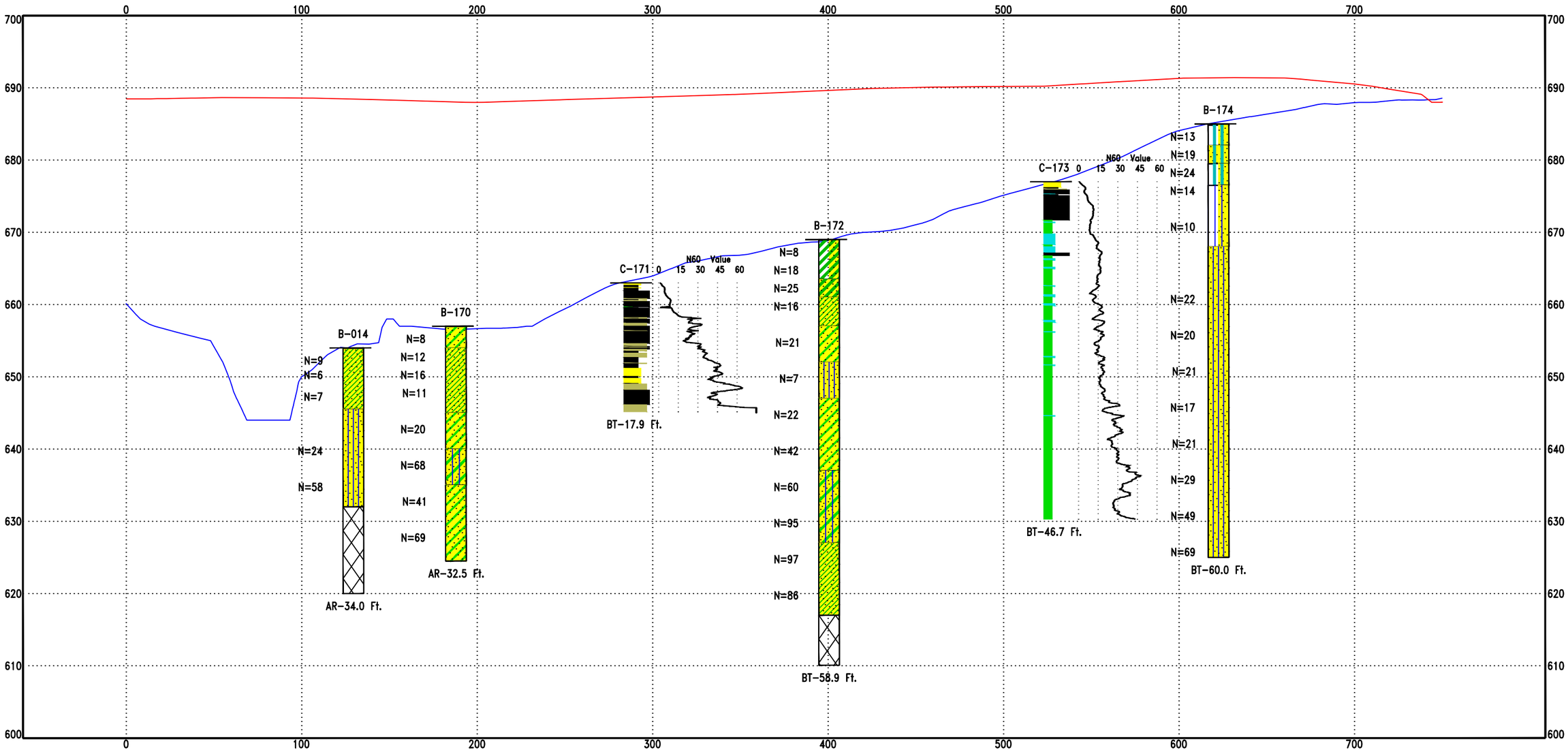
SUBSURFACE PROFILE T-T'

CLT AIRPORT-DEICING PAD AND SCT
CHARLOTTE, NC

EXHIBIT D.1.20

U

U'



Explanation

- Exisiting Grade
- Proposed Grade
- B-004 — Borehole Number
- Sampling (See General Notes) — Borehole Lithology
- AR / BT — Borehole Termination Type
- Water Level Reading at time of drilling.
- Water Level Reading after drilling.

Topsoil; Sandy Lean Clay; Silty Sand; Weathered Rock; Clayey Sand; Silty Clayey Sand; Fat Clay with Sand; Sandy Fat Clay; Elastic Silt with Sand; Sandy Elastic Silt

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

CPT Soil Classification Graphic Symbols

Soil Behavior Type (SBT)

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Project Manager: JPM	Project No.: 71195007
Drawn by: MRF	Scale: AS SHOWN
Approved by: JPM	File Name: 71195007-13
Date: APRIL 2020	

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SUBSURFACE PROFILE U-U'

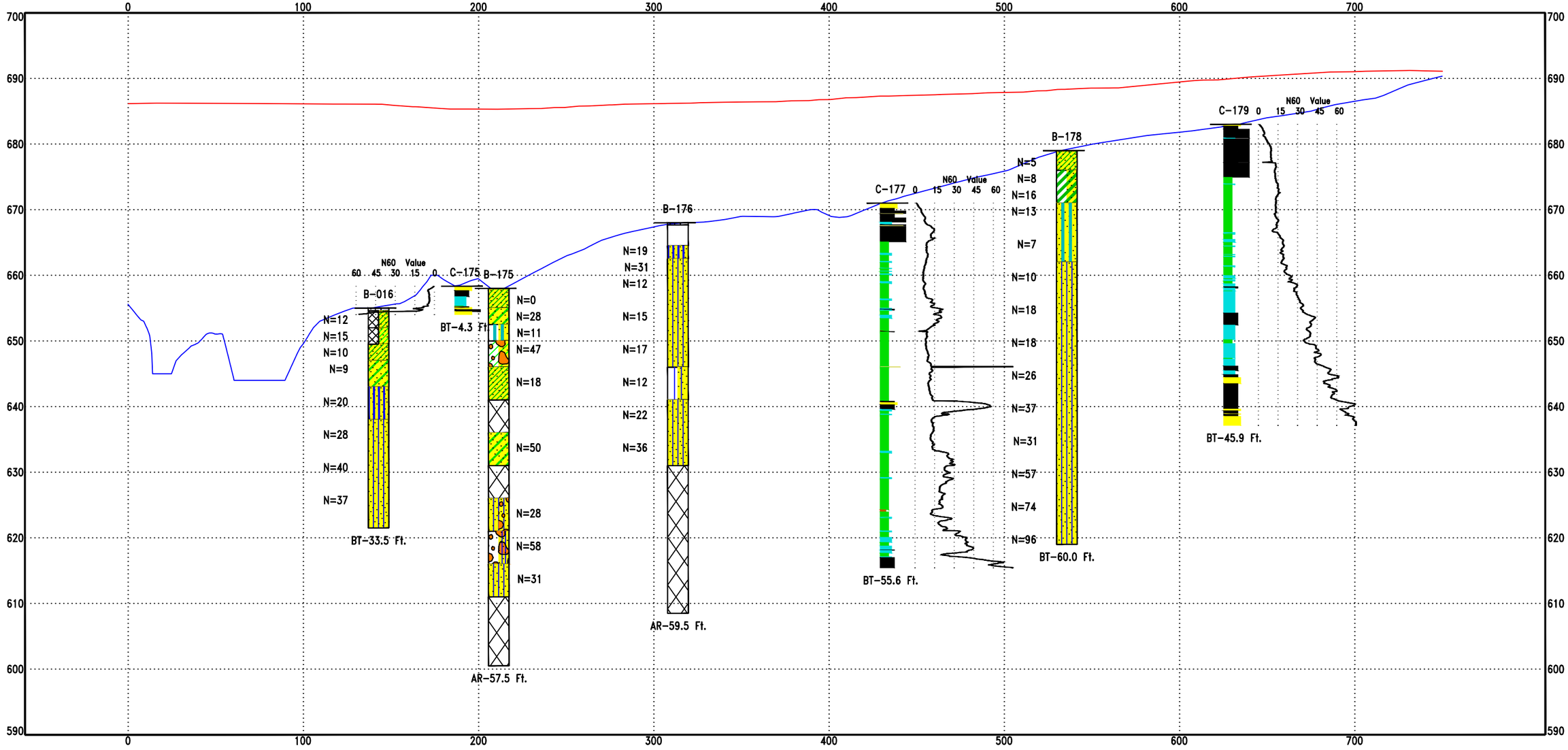
CLT AIRPORT-DEICING PAD AND SCT
CHARLOTTE, NC

EXHIBIT

D.1.21

V

V'



Explanation

- Exisiting Grade
- Proposed Grade

B-004 — Borehole Number
Sampling (See General Notes) — Borehole Lithology
AR / BT — Borehole Termination Type

- Water Level Reading at time of drilling.
- Water Level Reading after drilling.

- Topsoil
- Sandy Lean Clay
- Lean Clay with Sand
- Clayey Sand
- Sandy Silt
- Silty Sand
- Elastic Silt with Sand
- Clayey Gravel with Sand
- Weathered Rock
- Silty Sand with Gravel

NOTES:
See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

CPT Soil Classification Graphic Symbols

Soil Behavior Type (SBT)

1. Sensitive, fine grained
2. Organic soils - clay
3. Clay - silty clay to clay
4. Silt mixtures - clayey silt to silty clay
5. Sand mixtures - silty sand to sandy silt
6. Sands - clean sand to silty sand
7. Gravelly sand to dense sand
8. Very stiff sand to clayey sand
9. Very stiff fine grained

Project Manager: JPM	Project No.: 71195007	Terracon 2701 Westport Rd Charlotte, NC PH. 704-509-1777 FAX. 704-509-1888	SUBSURFACE PROFILE V-V' CLT AIRPORT-DEICING PAD AND SCT CHARLOTTE, NC
Drawn by: MRF	Scale: AS SHOWN		EXHIBIT D.1.22
Approved by: JPM	File Name: 71195007-13		
Date: APRIL 2020			

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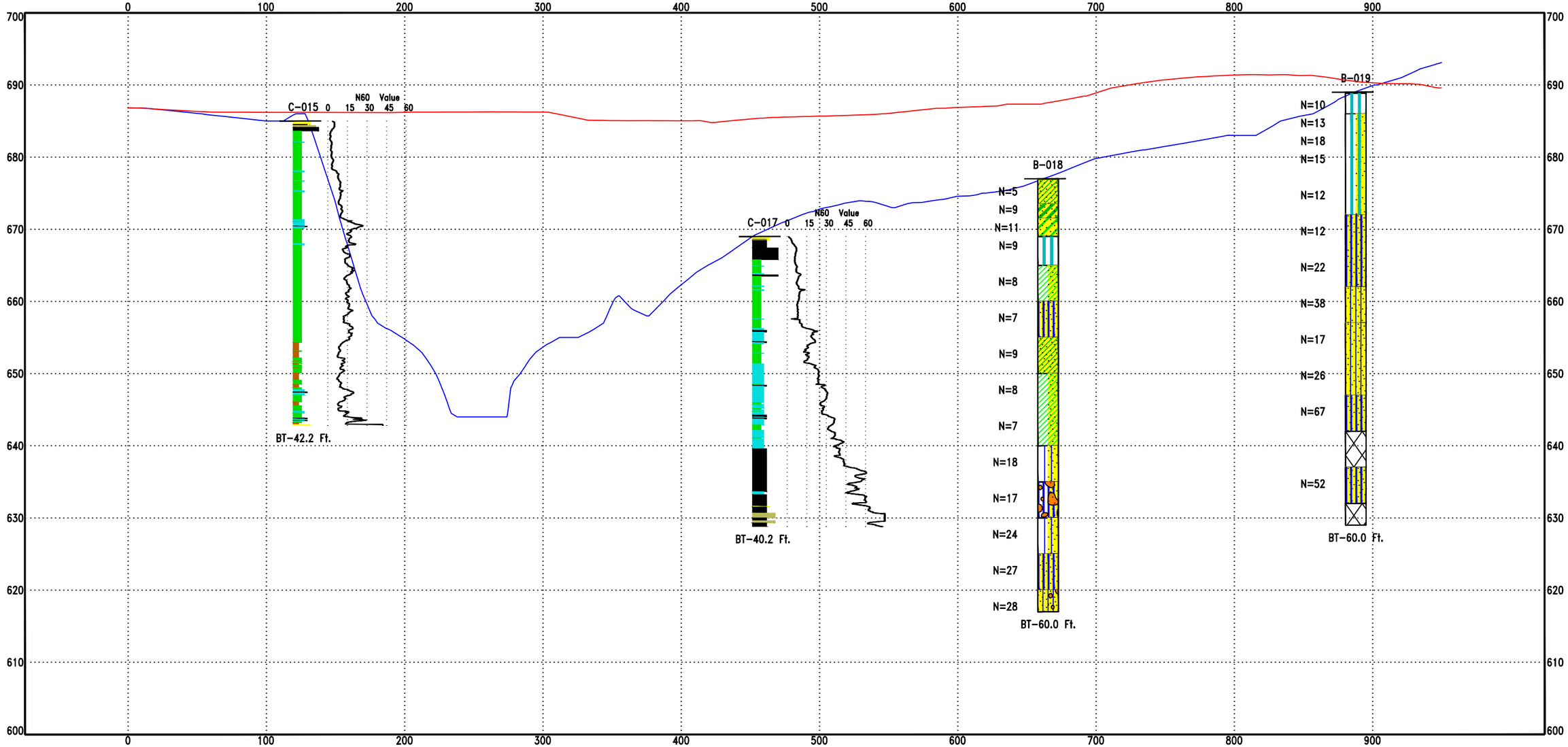

Explanation

Exisiting Grade

Proposed Grade

B-004 — Borehole Number

Sampling (See General Notes) — Borehole Lithology

AR / BT — Borehole Termination Type

Water Level Reading at time of drilling.

Water Level Reading after drilling.

Topsoil | Sandy Lean Clay | Sandy Fat Clay | Clayey Sand | Elastic Silt

Lean Clay with Sand | Sandy Silt | Silt with Sand | Gravelly Silt with Sand | Silty Sand with Gravel

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

CPT Soil Classification Graphic Symbols

Soil Behavior Type (SBT)

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

Project Manager: JPM	Project No.: 71195007
Drawn by: MRF	Scale: AS SHOWN
Approved by: JPM	File Name: 71195007-13
Date: APRIL 2020	

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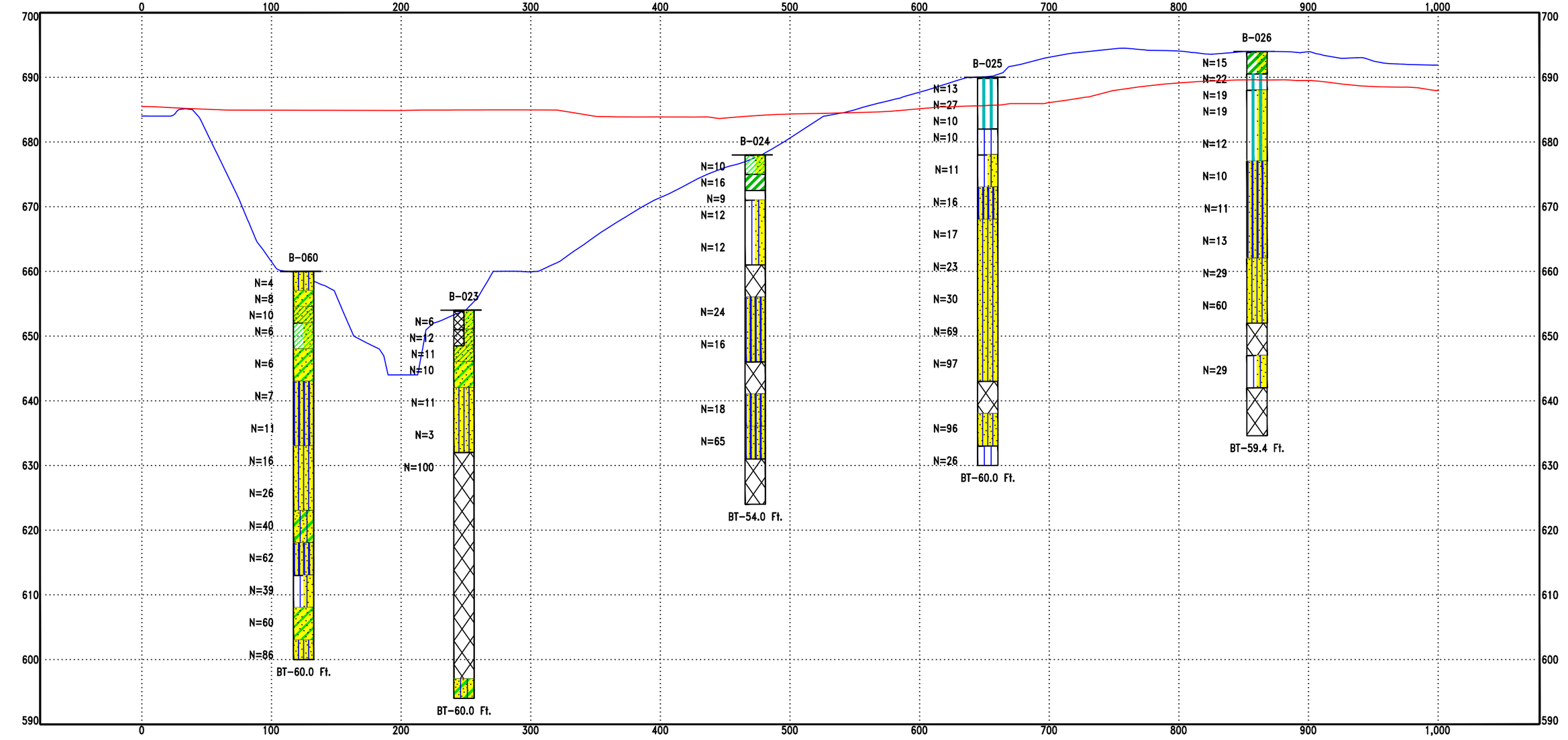
SUBSURFACE PROFILE W-W'

CLT AIRPORT-DEICING PAD AND SCT
CHARLOTTE, NC

EXHIBIT D.1.23

X

X'



Explanation

Exisiting Grade

Proposed Grade

B-004 — Borehole Number

Sampling (See General Notes) — Borehole Lithology

AR / BT — Borehole Termination Type

Water Level Reading at time of drilling.

Water Level Reading after drilling.

Topsoil

Lean Clay with Sand

Sandy Lean Clay

Clayey Sand

Silty Sand

Weathered Rock

Silty Clayey Sand

Fat Clay

Silt with Sand

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

Project Manager: JPM	Project No.: 71195007
Drawn by: MRF	Scale: AS SHOWN
Approved by: JPM	File Name: 71195007-13
Date: APRIL 2020	

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SUBSURFACE PROFILE X-X'

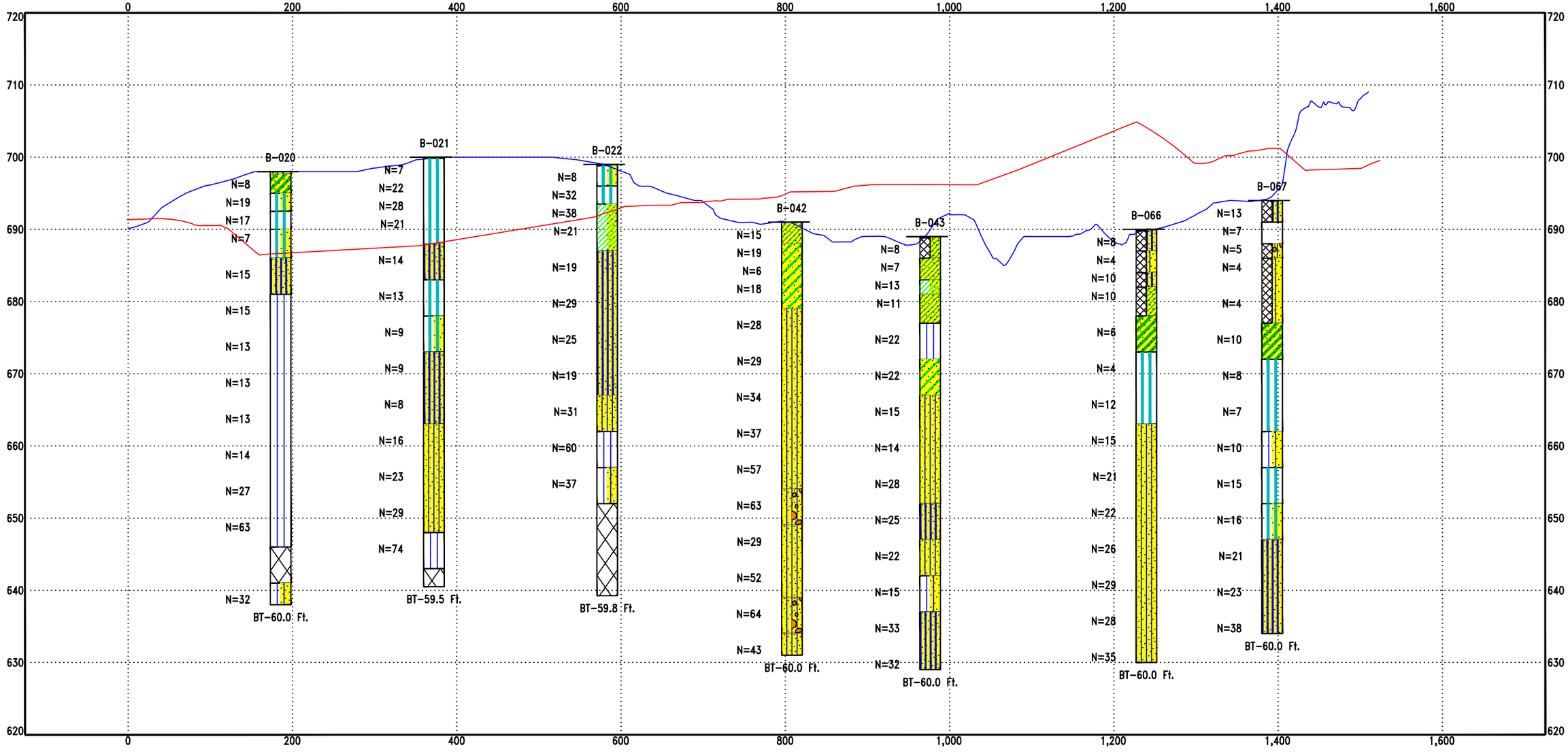
CLT AIRPORT-DEICING PAD AND SCT
CHARLOTTE, NC

EXHIBIT

D.1.24

Y

Y'



Explanation

- Exisiting Grade
- Proposed Grade

B-004 — Borehole Number
Sampling (See General Notes) — Borehole Lithology
AR / BT — Borehole Termination Type

- Water Level Reading at time of drilling.
- Water Level Reading after drilling.

- Topsoil
- Sandy Fat Clay
- Elastic Silt with Sand
- Elastic Silt
- Sandy Silt
- Silt
- Weathered Rock
- Silt with Sand
- Silty Sand
- Lean Clay with Sand

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

Project Manager: JPM	Project No.: 71195007	Terracon	SUBSURFACE PROFILE Y-Y'
Drawn by: MRF	Scale: AS SHOWN	2701 Westport Rd Charlotte, NC	CLT AIRPORT-DEICING PAD AND SCT CHARLOTTE, NC
Approved by: JPM	File Name: 71195007-13	PH. 704-509-1777 FAX. 704-509-1888	EXHIBIT D.1.25
Date: APRIL 2020			

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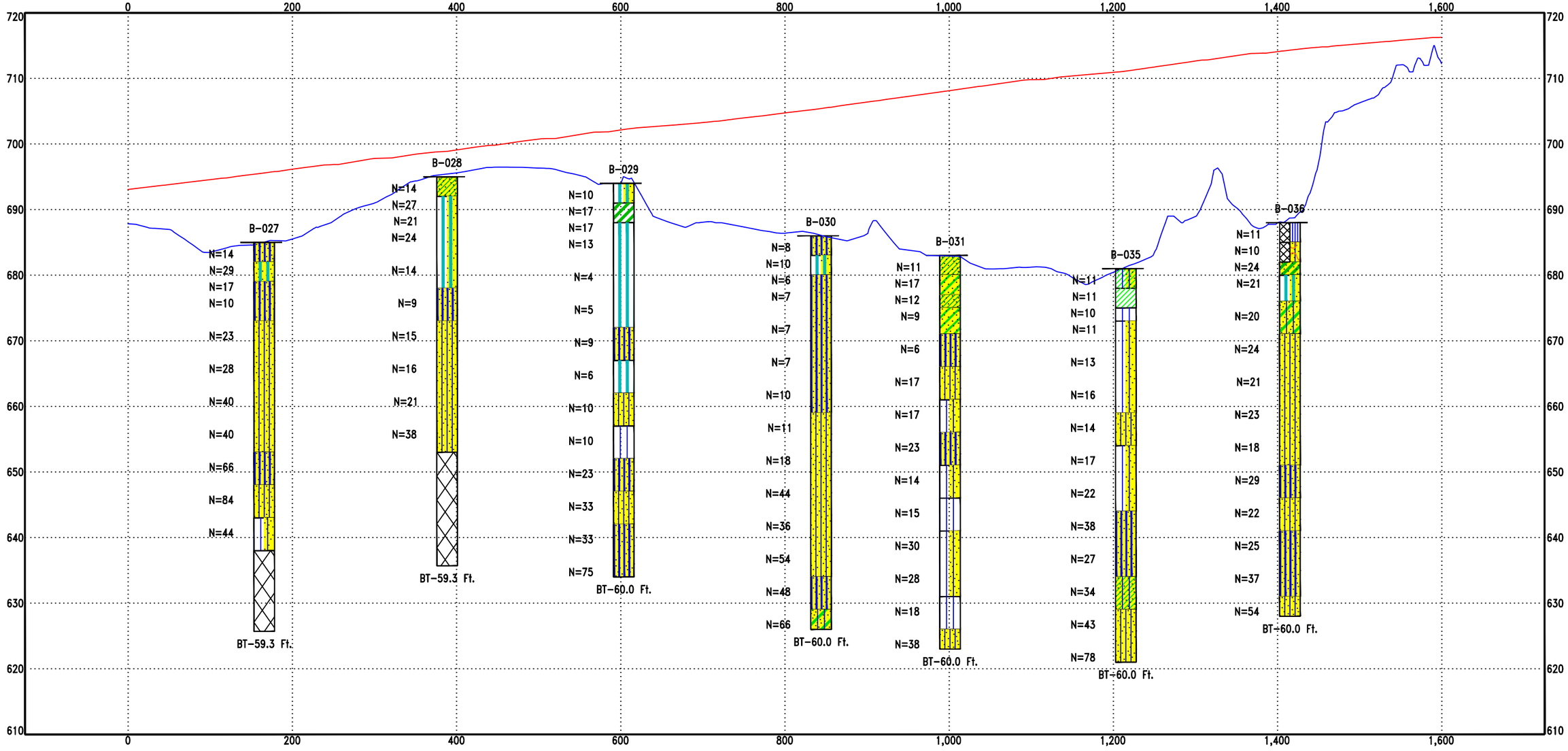
Z

Z'



Explanation

Exisiting Grade

Proposed Grade

B-004 — Borehole Number

Sampling (See General Notes) — Borehole Lithology

AR / BT — Borehole Termination Type

Water Level Reading at time of drilling.

Water Level Reading after drilling.

Topsoil | Sandy Silt | Sandy Elastic Silt | Silty Sand | Silt with Sand

Weathered Rock | Sandy Lean Clay | Elastic Silt with Sand | Fat Clay | Elastic Silt

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

Project Manager: JPM	Project No.: 71195007
Drawn by: MRF	Scale: AS SHOWN
Approved by: JPM	File Name: 71195007-13
Date: APRIL 2020	

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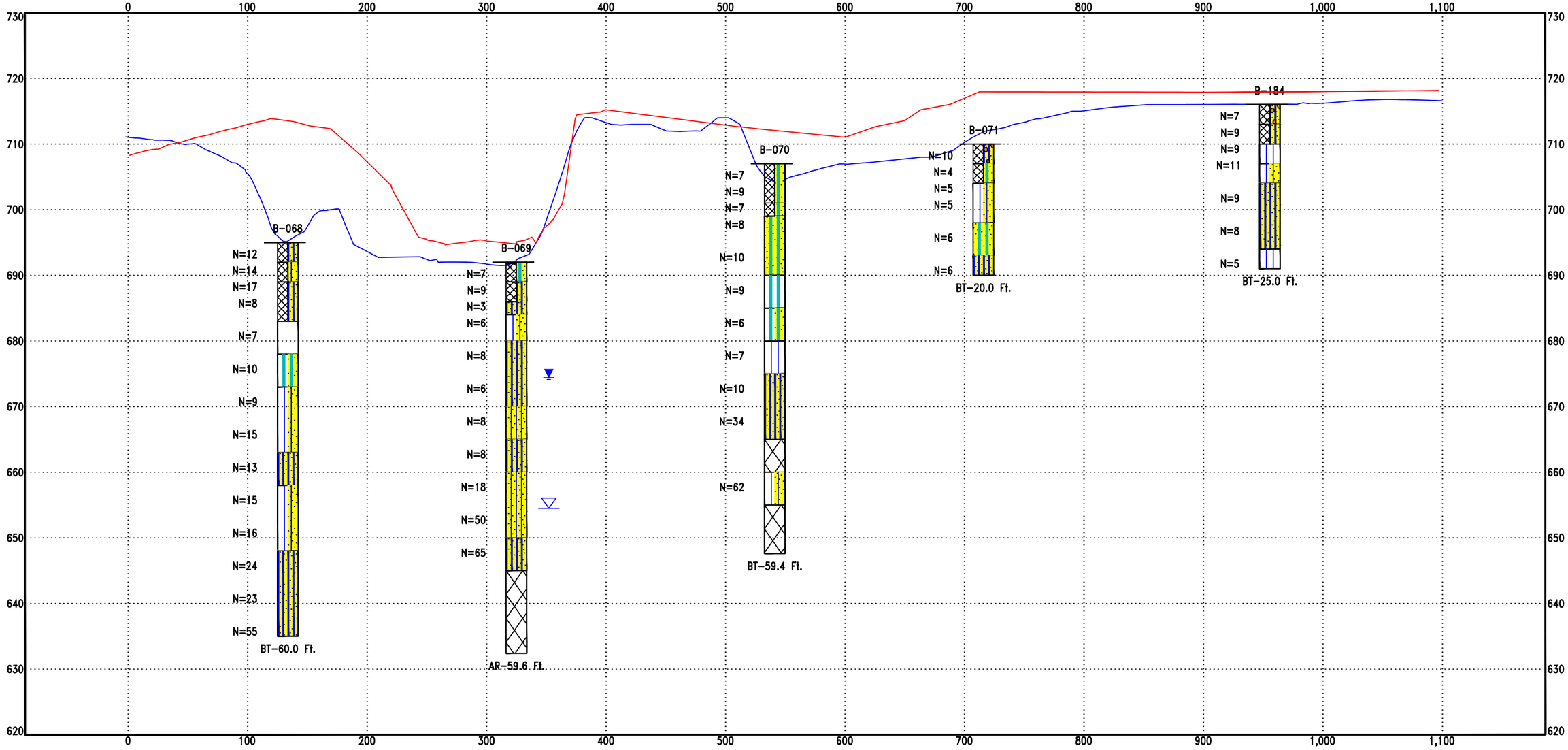
SUBSURFACE PROFILE Z-Z'

CLT AIRPORT-DEICING PAD AND SCT
CHARLOTTE, NC

EXHIBIT D.1.26



Explanation

- Exisiting Grade
- Proposed Grade

B-004 — Borehole Number
Sampling (See General Notes) — Borehole Lithology
AR / BT — Borehole Termination Type

- Water Level Reading at time of drilling.
- Water Level Reading after drilling.

- Sandy Silt
- Silt with Sand
- Elastic Silt with Sand
- Topsoil
- Sandy Elastic Silt
- Silty Sand
- Weathered Rock
- Elastic Silt
- Silt

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

Project Manager: JPM	Project No.: 71195007	Terracon	SUBSURFACE PROFILE AA-AA'
Drawn by: MRF	Scale: AS SHOWN	2701 Westport Rd Charlotte, NC	CLT AIRPORT-DEICING PAD AND SCT CHARLOTTE, NC
Approved by: JPM	File Name: 71195007-13	PH. 704-509-1777 FAX. 704-509-1888	EXHIBIT D.1.27
Date: APRIL 2020			

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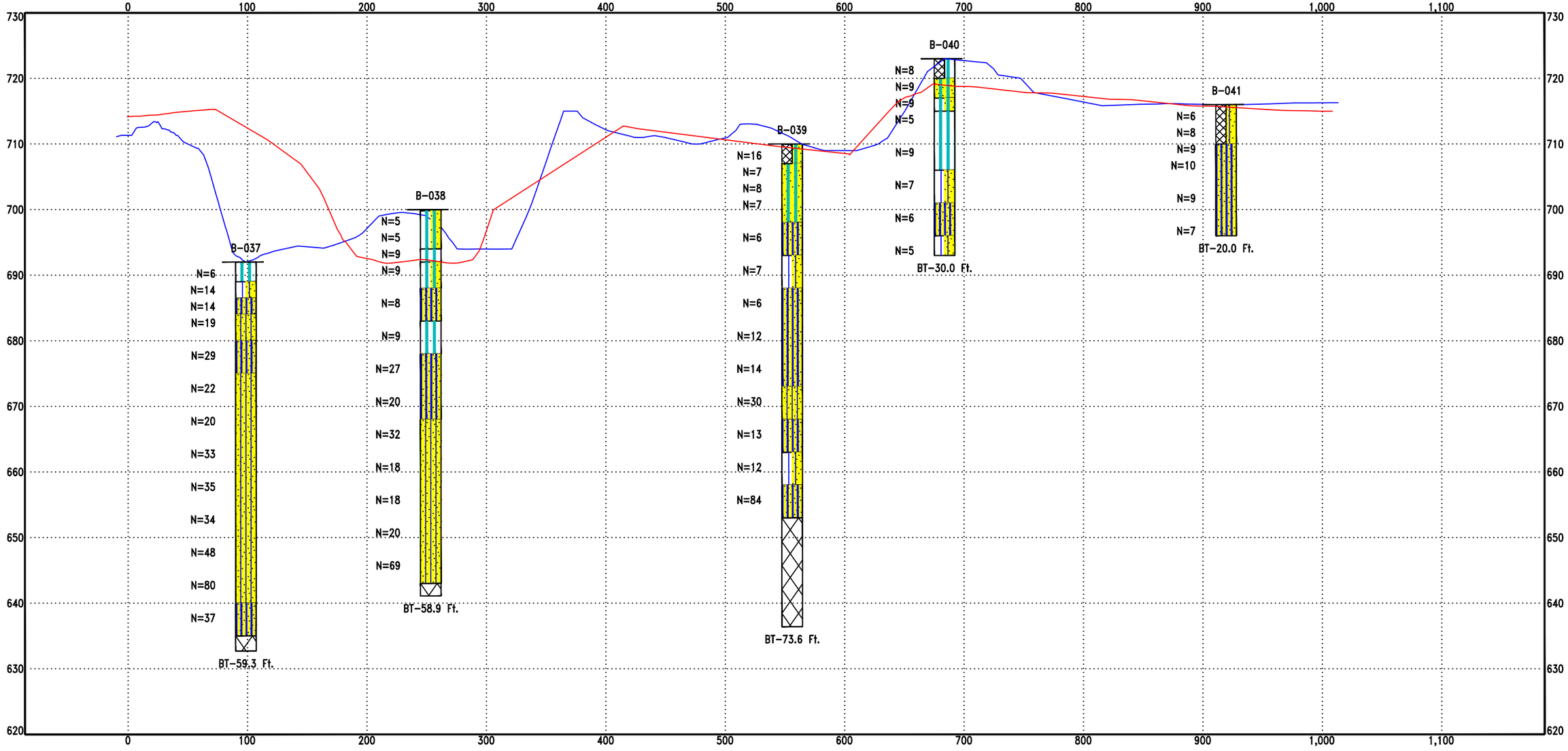
BB

BB'



Explanation

Exisiting Grade

Proposed Grade

B-004 — Borehole Number

Sampling (See General Notes) — Borehole Lithology

AR / BT — Borehole Termination Type

Water Level Reading at time of drilling.

Water Level Reading after drilling.

Elastic Silt

Silt with Sand

Sandy Silt

Silty Sand

Weathered Rock

Topsoil

Elastic Silt with Sand

Sandy Elastic Silt

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

Project Manager: JPM	Project No.: 71195007	Terracon	SUBSURFACE PROFILE BB-BB'
Drawn by: MRF	Scale: AS SHOWN	2701 Westport Rd Charlotte, NC	CLT AIRPORT-DEICING PAD AND SCT CHARLOTTE, NC
Approved by: JPM	File Name: 71195007-13	PH. 704-509-1777 FAX. 704-509-1888	EXHIBIT D.1.28
Date: APRIL 2020			

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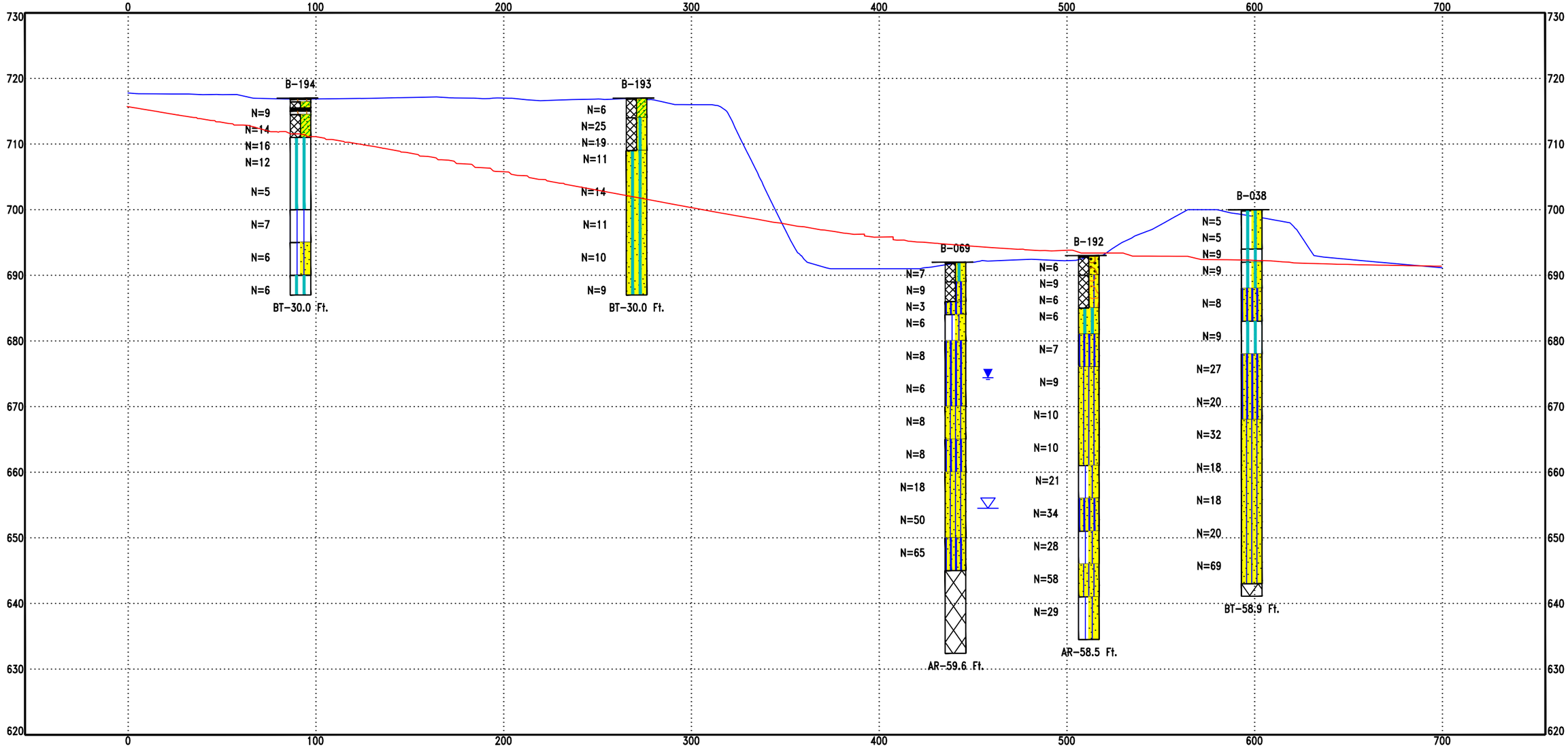


Explanation

Exisiting Grade

Proposed Grade

B-004 — Borehole Number

Sampling (See General Notes) — Borehole Lithology

AR / BT — Borehole Termination Type

Water Level Reading at time of drilling.

Water Level Reading after drilling.

Topsoil | Elastic Silt with Sand | Elastic Silt | Sandy Silt | Silty Sand

Weathered Rock | Sandy Elastic Silt | Silt with Sand | Well-graded Gravel w/sand | Silty Gravel with Sand

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

Project Manager: JPM	Project No.: 71195007
Drawn by: MRF	Scale: AS SHOWN
Approved by: JPM	File Name: 71195007-13
Date: APRIL 2020	

Terracon
2701 Westport Rd
Charlotte, NC
PH. 704-509-1777 FAX. 704-509-1888

SUBSURFACE PROFILE CC-CC'

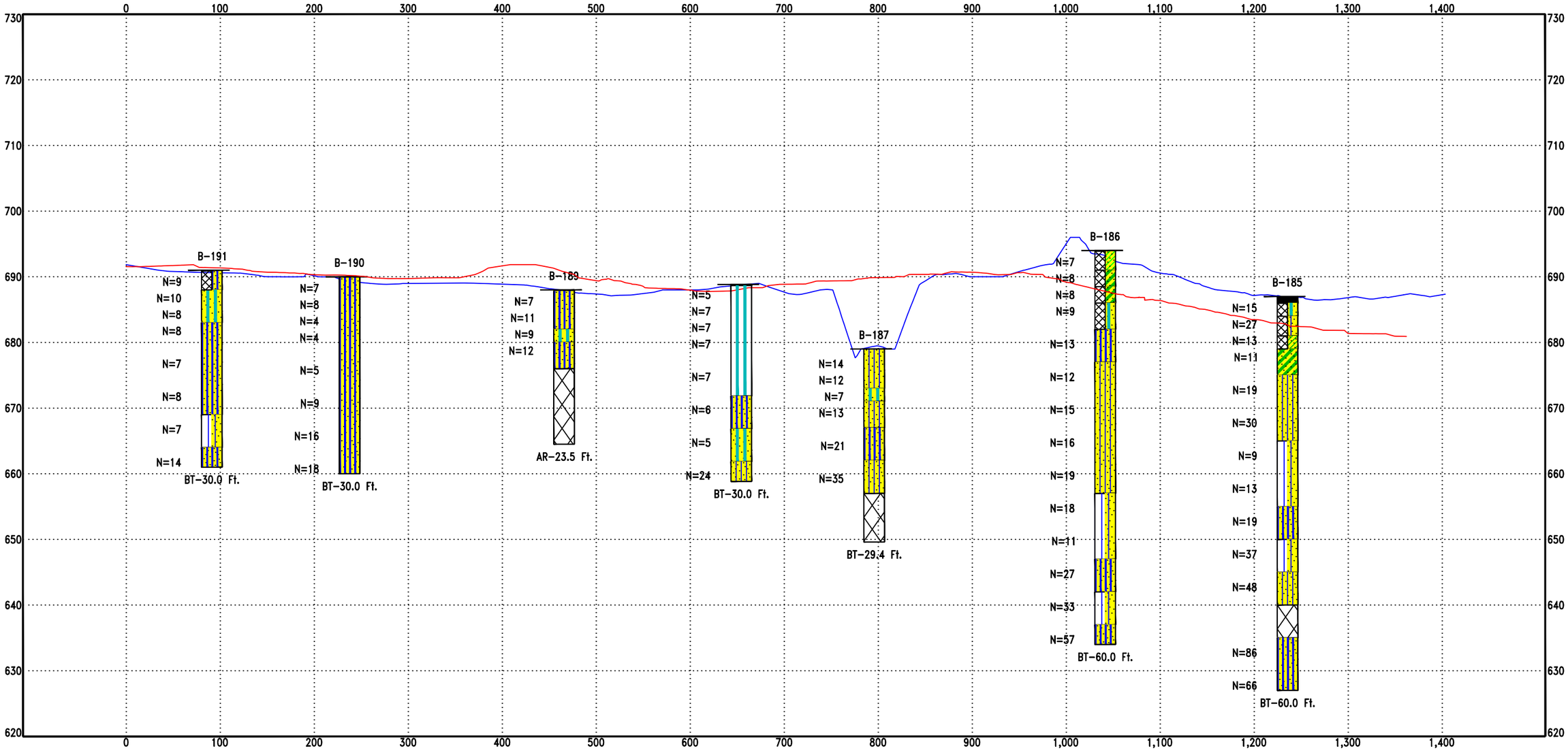
CLT AIRPORT-DEICING PAD AND SCT
CHARLOTTE, NC

EXHIBIT

D.1.29

DD

DD'



Elevation - Feet

Distance Along Baseline - Feet

Explanation

- Exisiting Grade
- Proposed Grade
- B-004 — Borehole Number
- Liquid and Plastic Limits
- Sampling (See General Notes) — Borehole Lithology
- AR / BT — Borehole Termination Type
- Water Level Reading at time of drilling.
- Water Level Reading after drilling.

- Asphalt
- Elastic Silt with Sand
- Silt with Sand
- Sandy Lean Clay
- Sandy Fat Clay
- Elastic Silt
- Silty Sand
- Sandy Silt
- Weathered Rock
- Topsoil
- Lean Clay with Sand

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

Project Manager: JPM	Project No.: 71195007	
Drawn by: MRF	Scale: AS SHOWN	
Approved by: JPM	File Name: 71195007-13	
Date: APRIL 2020		

Terracon
2701 Westport Rd
Charlotte, NC
PH. 704-509-1777 FAX. 704-509-1888

SUBSURFACE PROFILE DD-DD'

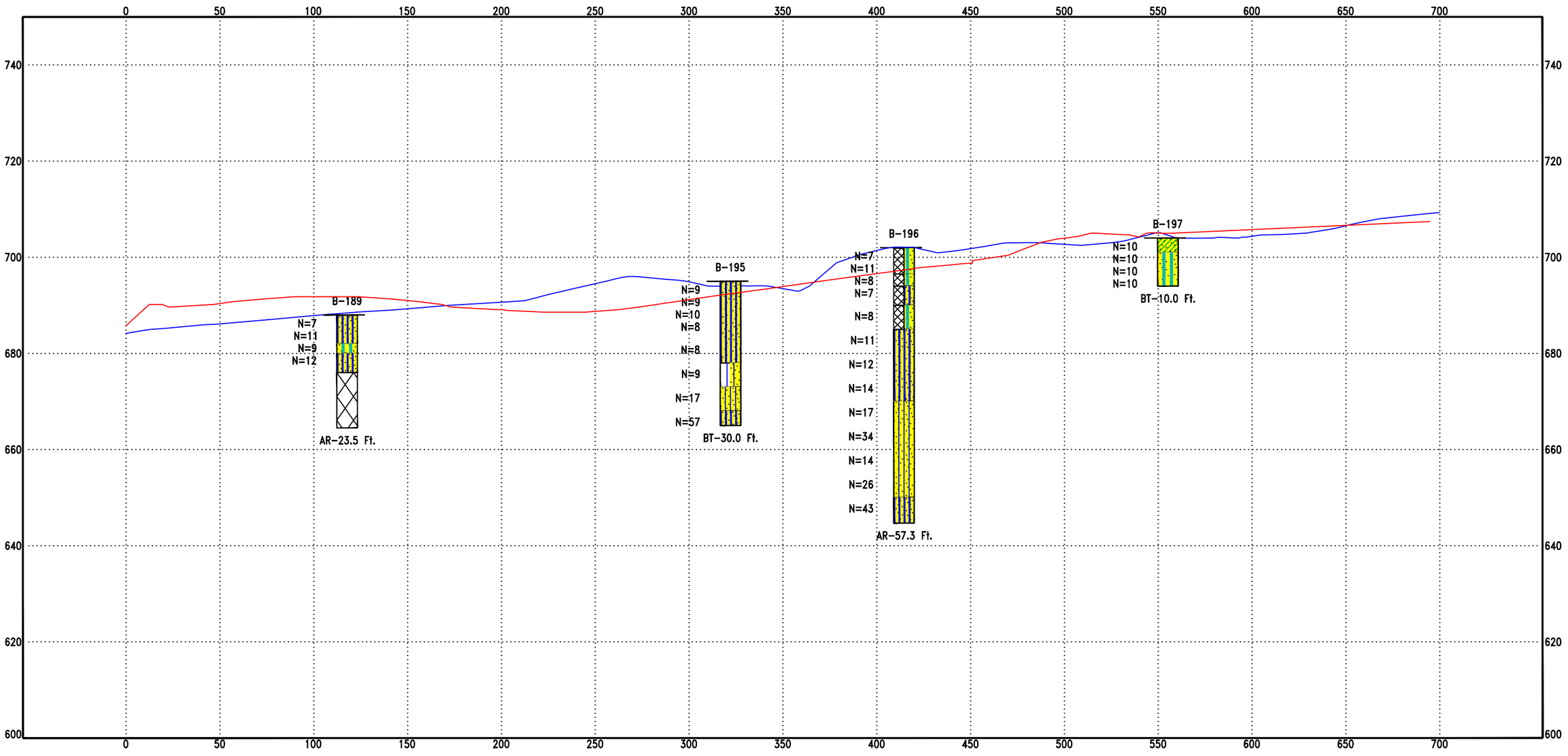
CLT AIRPORT-DEICING PAD AND SCT
CHARLOTTE, NC

EXHIBIT

D.1.30

EE

EE'



Explanation

Exisiting Grade

Proposed Grade

B-004 — Borehole Number

Sampling (See General Notes) — Borehole Lithology

AR / BT — Borehole Termination Type

Water Level Reading at time of drilling.

Water Level Reading after drilling.

Topsoil

Sandy Silt

Sandy Elastic Silt

Weathered Rock

Silt with Sand

Silty Sand

Elastic Silt with Sand

Sandy Lean Clay

NOTES:

See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

Project Manager: JPM	Project No.: 71195007	Terracon	SUBSURFACE PROFILE EE-EE'
Drawn by: MRF	Scale: AS SHOWN	2701 Westport Rd Charlotte, NC	CLT AIRPORT-DEICING PAD AND SCT CHARLOTTE, NC
Approved by: JPM	File Name: 71195007-13	PH. 704-509-1777 FAX. 704-509-1888	EXHIBIT D.1.31
Date: APRIL 2020			

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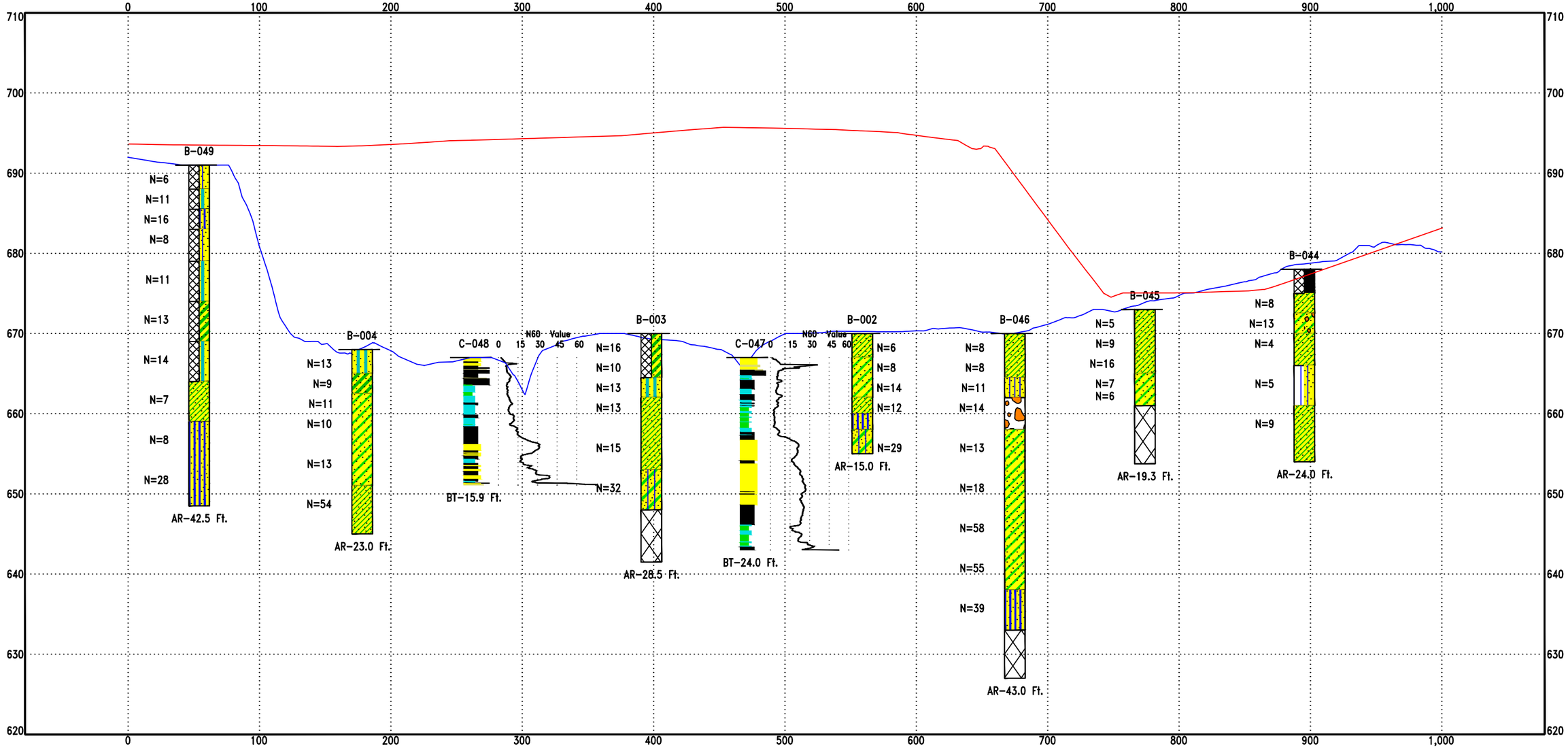
FF

FF'



Explanation

- Exisiting Grade
- Proposed Grade

Sandy Lean Clay | Clayey Sand | Sandy Silt | Silty Clayey Sand | Sandy Fat Clay

Sandy Elastic Silt | Weathered Rock | Fill | Clayey Sand with Gravel | Silt with Sand

B-004 — Borehole Number

Liquid and Plastic Limits

Sampling (See General Notes) — Borehole Lithology

AR / BT — Borehole Termination Type

Water Level Reading at time of drilling.

Water Level Reading after drilling.

NOTES:

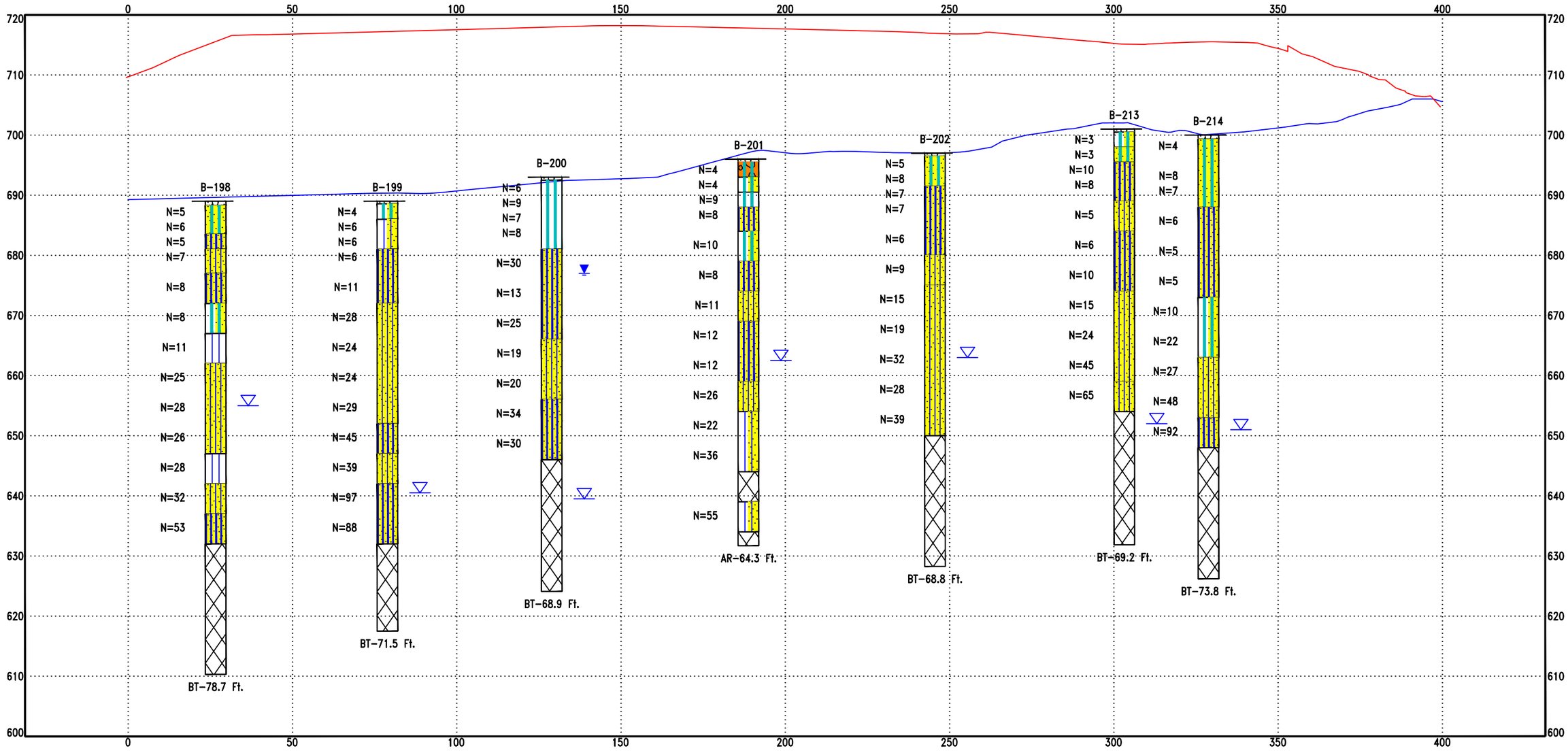
See Appendix A.2 for orientation of soil profile.
See General Notes in Appendix B for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

Project Manager: JPM	Project No.: 71195007	Terracon	SUBSURFACE PROFILE FF-FF'
Drawn by: MRF	Scale: AS SHOWN	2701 Westport Rd Charlotte, NC	CLT AIRPORT-DEICING PAD AND SCT CHARLOTTE, NC
Approved by: JPM	File Name: 71195007-13	PH. 704-509-1777 FAX. 704-509-1888	EXHIBIT D.1.32
Date: APRIL 2020			

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. SMART FENCE 71195007 CLT AIRPORT-DEICI_STATE PLANE.GPJ TERRACON_DATATEMPLATE.GDT 5/22/19

GG

GG'



Explanation

B-198 — Borehole Number

Moisture Content — Xw — LL PL — Liquid and Plastic Limits

Sampling (See General Notes) — Borehole Lithology

AR / BT — Borehole Termination Type

Water Level Reading at time of drilling.

Water Level Reading after drilling.

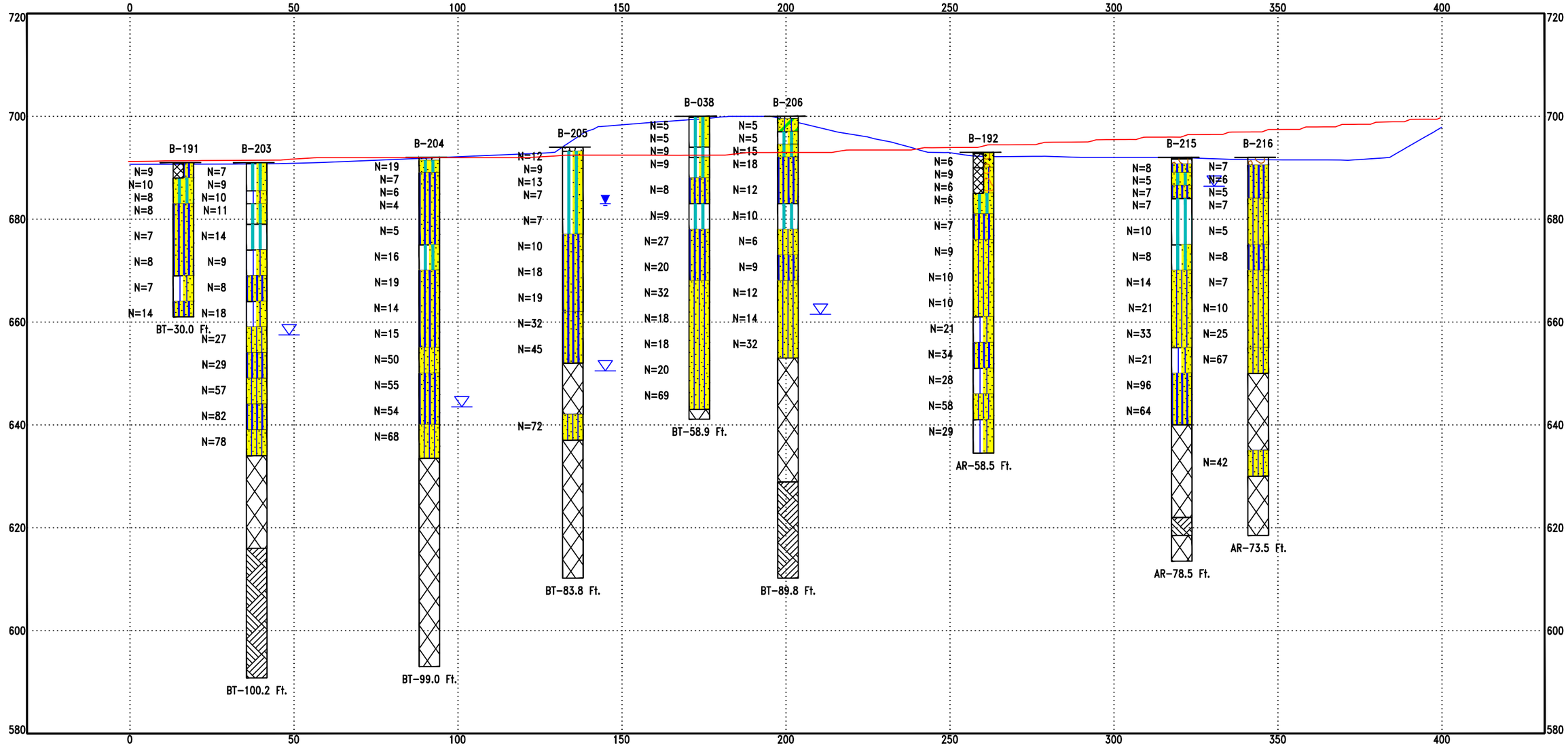
Topsoil; Sandy Elastic Silt; Sandy Silt; Silty Sand; Elastic Silt with Sand

Silt; Weathered Rock; Silt with Sand; Elastic Silt; Gravelly Elastic Silt

NOTES:

See Exhibit A-2 for orientation of soil profile.
See General Notes in Appendix C for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR – Auger Refusal
BT – Boring Termination

Project Manager: JPM	Project No.: 71195007	Terracon	SUBSURFACE PROFILE GG-GG'
Drawn by: MRF	Scale: AS SHOWN	2701 Westport Rd Charlotte, NC	CLT AIRPORT-DEICING PAD AND SCT CHARLOTTE, NC
Approved by: JPM	File Name: 71195007-13	PH. 704-509-1777 FAX. 704-509-1888	EXHIBIT D.1.33
Date: APRIL 2020			



Explanation

B-038 — Borehole Number
Moisture Content — %w
LL PL — Liquid and Plastic Limits
Sampling (See General Notes) — Borehole Lithology
AR / BT — Borehole Termination Type

Water Level Reading at time of drilling.

Water Level Reading after drilling.

Topsoil
Elastic Silt with Sand
Elastic Silt
Sandy Silt
Silty Sand
Weathered Rock
Sandy Elastic Silt
Silt with Sand
Well-graded Gravel w/sand
Silty Gravel with Sand

NOTES:
See Exhibit A-2 for orientation of soil profile.
See General Notes in Appendix C for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

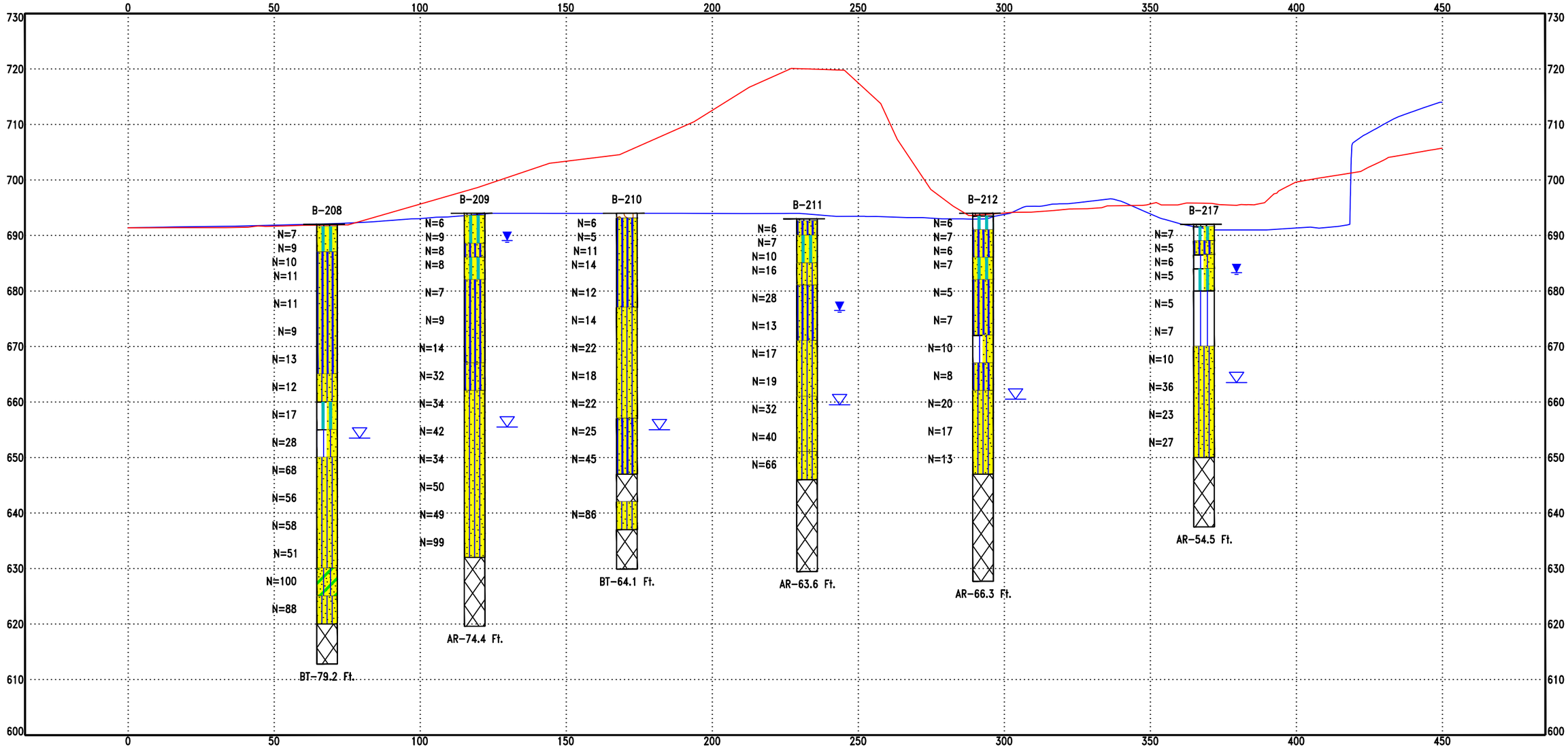
Project Manager: JPM	Project No.: 71195007
Drawn by: MRF	Scale: AS SHOWN
Approved by: JPM	File Name: 71195007-13
Date: APRIL 2020	

Terracon
2701 Westport Rd
Charlotte, NC
PH. 704-509-1777 FAX. 704-509-1888

SUBSURFACE PROFILE HH-HH'

CLT AIRPORT-DEICING PAD AND SCT
CHARLOTTE, NC

EXHIBIT D.1.34



THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. SMART FENCE 71195007 CLT AIRPORT-DEICI_STATE PLANE.GPJ TERRACON_DATATEMPLATE.GDT 5/22/19

Explanation

B-208 — Borehole Number

Moisture Content — %w

LL PL — Liquid and Plastic Limits

Sampling (See General Notes) — Borehole Lithology

AR / BT — Borehole Termination Type

Water Level Reading at time of drilling.

Water Level Reading after drilling.

- Topsoil
- Sandy Elastic Silt
- Sandy Silt
- Silty Sand
- Elastic Silt with Sand
- Silt with Sand
- Silty Clayey Sand
- Weathered Rock
- Aggregate Base Course
- Elastic Silt

NOTES:

See Exhibit A-2 for orientation of soil profile.
See General Notes in Appendix C for symbols and soil classifications.
Soils profile provided for illustration purposes only.
Soils between borings may differ
AR - Auger Refusal
BT - Boring Termination

Project Manager: JPM	Project No.: 71195007	
Drawn by: MRF	Scale: AS SHOWN	
Approved by: JPM	File Name: 71195007-13	
Date: APRIL 2020		

Terracon
2701 Westport Rd
Charlotte, NC
PH. 704-509-1777 FAX. 704-509-1888

SUBSURFACE PROFILE II-II'

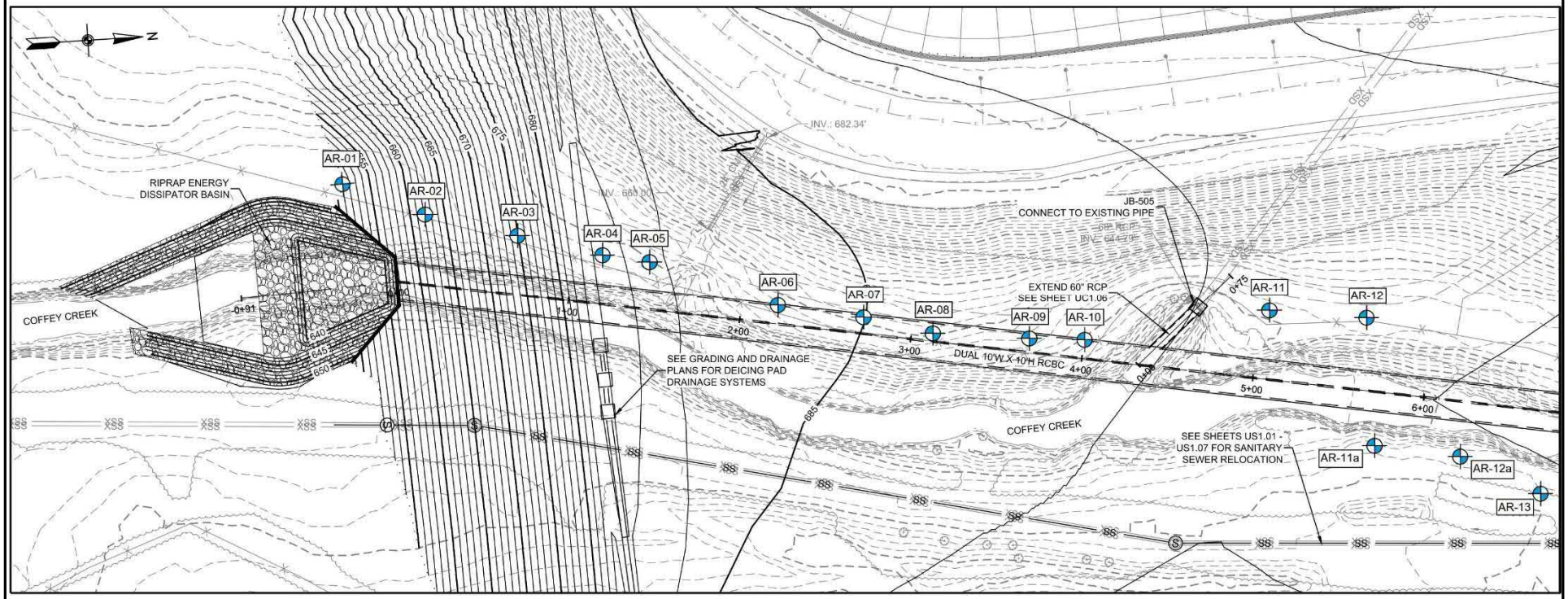
CLT AIRPORT-DEICING PAD AND SCT
CHARLOTTE, NC

EXHIBIT

D.1.35

E. ROCK PROFILES

E.1 CULVERT ROCK PROFILES



BASED ON 70% DRAWINGS. BORING LOCATIONS SHOWN ARE VALID RELATIVE TO EXISTING SITE FEATURES, NOT PROPOSED CONSTRUCTION

LEGEND

Approximate Air Rotary Boring Location

70% DESIGN, COFFEY CREEK HYDRAULIC PLAN AND PROFILE SHEET 1 OF 8 DATED FEBRUARY 20TH 2020 PROVIDED BY WSP

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

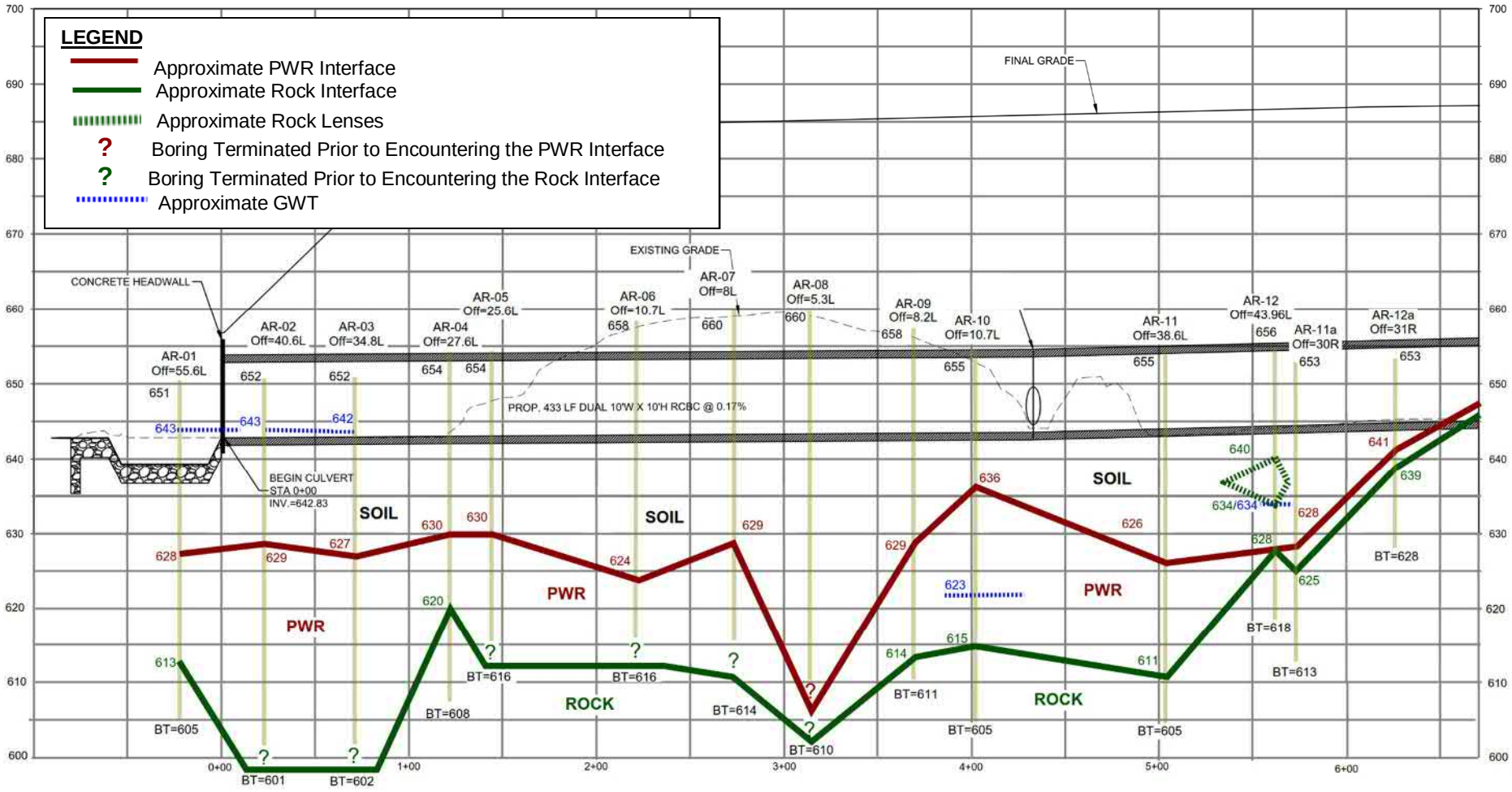
Project Manager: JPM	Project No. 71195007
Drawn by: YL	Scale: AS SHOWN
Checked by: SD	File Name:
Approved by: JPM	Date: 4/7/2020

Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

EXPLORATION PLAN FOR AIR ROTARY BORING

COFFEY CREEK CULVERT
CLT Airport-Deicing Pad and SCT
Charlotte, NC

Exhibit E.1.1



BASED ON 70% DRAWINGS. BORING LOCATIONS AND ELEVATIONS SHOWN ARE VALID RELATIVE TO EXISTING SITE FEATURES, NOT PROPOSED CONSTRUCTION

70% DESIGN, COFFEY CREEK HYDRAULIC PLAN AND PROFILE SHEET 1 OF 8 DATED FEBRUARY 20TH 2020 PROVIDED BY WSP

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	JPM
Drawn by:	YL
Checked by:	SD
Approved by:	JPM

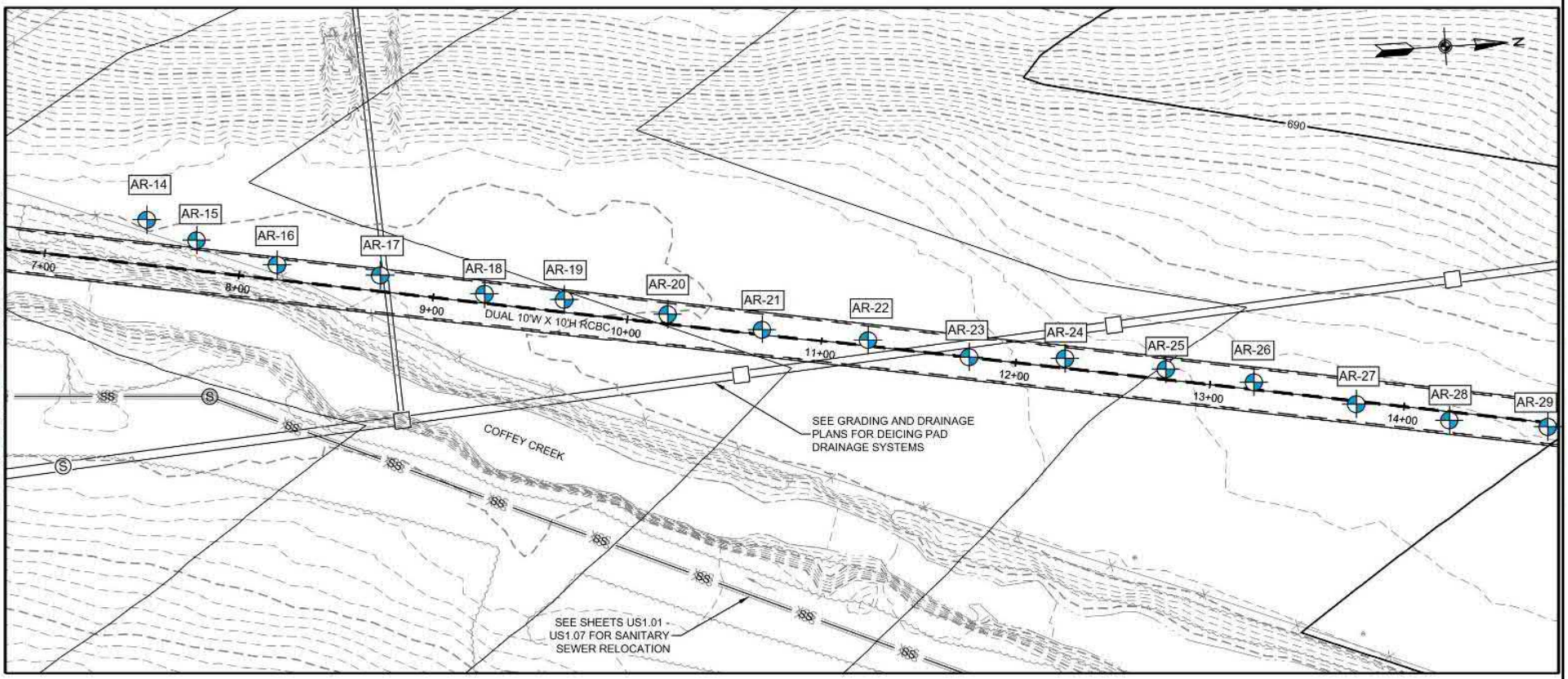
Project No.	71195007
Scale:	AS SHOWN
File Name:	
Date:	4/7/2020

Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

PROPOSED CULVERT WITH ROCK PROFILE

COFFEY CREEK CULVERT
CLT Airport-Deicing Pad and SCT
Charlotte, NC

Exhibit
E.1.2



BASED ON 70% DRAWINGS. BORING LOCATIONS SHOWN ARE VALID RELATIVE TO EXISTING SITE FEATURES, NOT PROPOSED CONSTRUCTION

LEGEND

Approximate Air Rotary Boring Location

70% DESIGN, COFFEY CREEK HYDRAULIC PLAN AND PROFILE SHEET 2 OF 8 DATED FEBRUARY 20TH 2020 PROVIDED BY WSP

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	JPM
Drawn by:	YL
Checked by:	SD
Approved by:	JPM

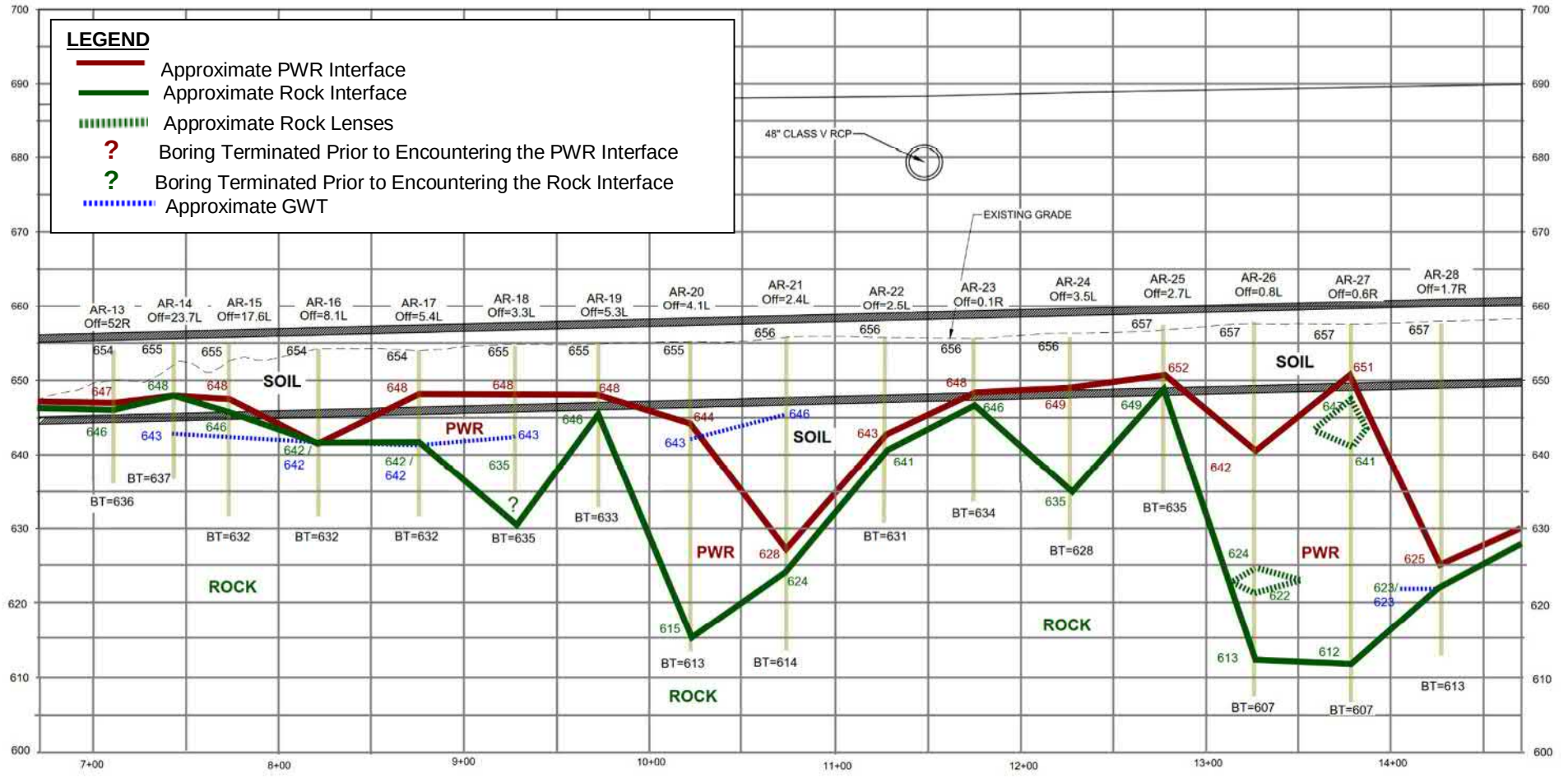
Project No.	71195007
Scale:	AS SHOWN
File Name:	
Date:	4/7/2020

Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

EXPLORATION PLAN FOR AIR ROTARY BORING

COFFEY CREEK CULVERT
CLT Airport-Deicing Pad and SCT
Charlotte, NC

Exhibit E.1.3



BASED ON 70% DRAWINGS. BORING LOCATIONS AND ELEVATIONS SHOWN ARE VALID RELATIVE TO EXISTING SITE FEATURES, NOT PROPOSED CONSTRUCTION

70% DESIGN, COFFEY CREEK HYDRAULIC PLAN AND PROFILE SHEET 2 OF 8 DATED FEBRUARY 20TH 2020 PROVIDED BY WSP

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	JPM
Drawn by:	YL
Checked by:	SD
Approved by:	JPM

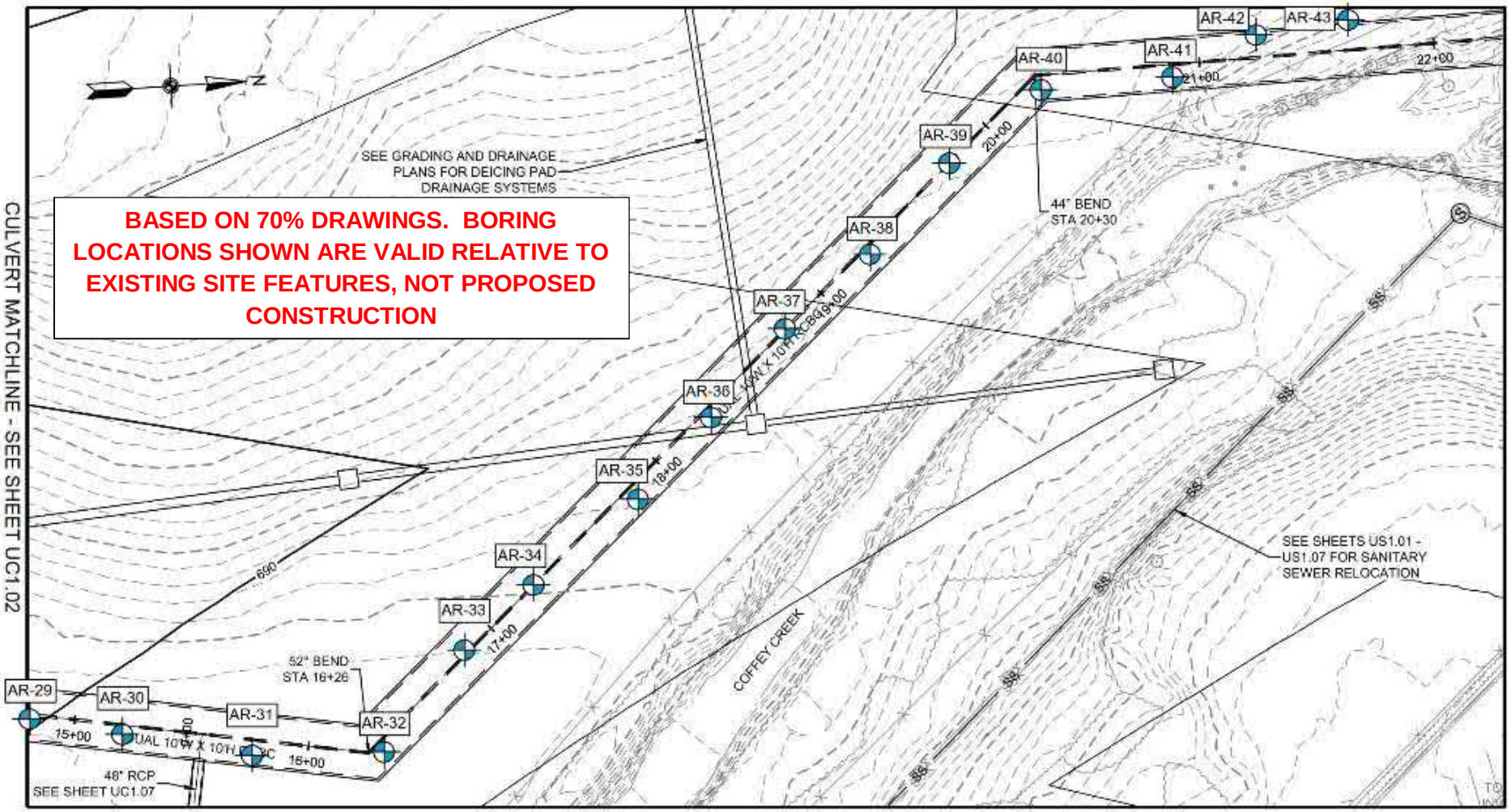
Project No.	71195007
Scale:	AS SHOWN
File Name:	
Date:	4/7/2020

Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

PROPOSED CULVERT WITH ROCK PROFILE

COFFEY CREEK CULVERT
CLT Airport-Deicing Pad and SCT
Charlotte, NC

Exhibit
E.1.4



LEGEND

Approximate Air Rotary Boring Location

70% DESIGN, COFFEY CREEK HYDRAULIC PLAN AND PROFILE SHEET 3 OF 8 DATED FEBRUARY 20TH 2020 PROVIDED BY WSP

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	JPM
Drawn by:	YL
Checked by:	SD
Approved by:	JPM

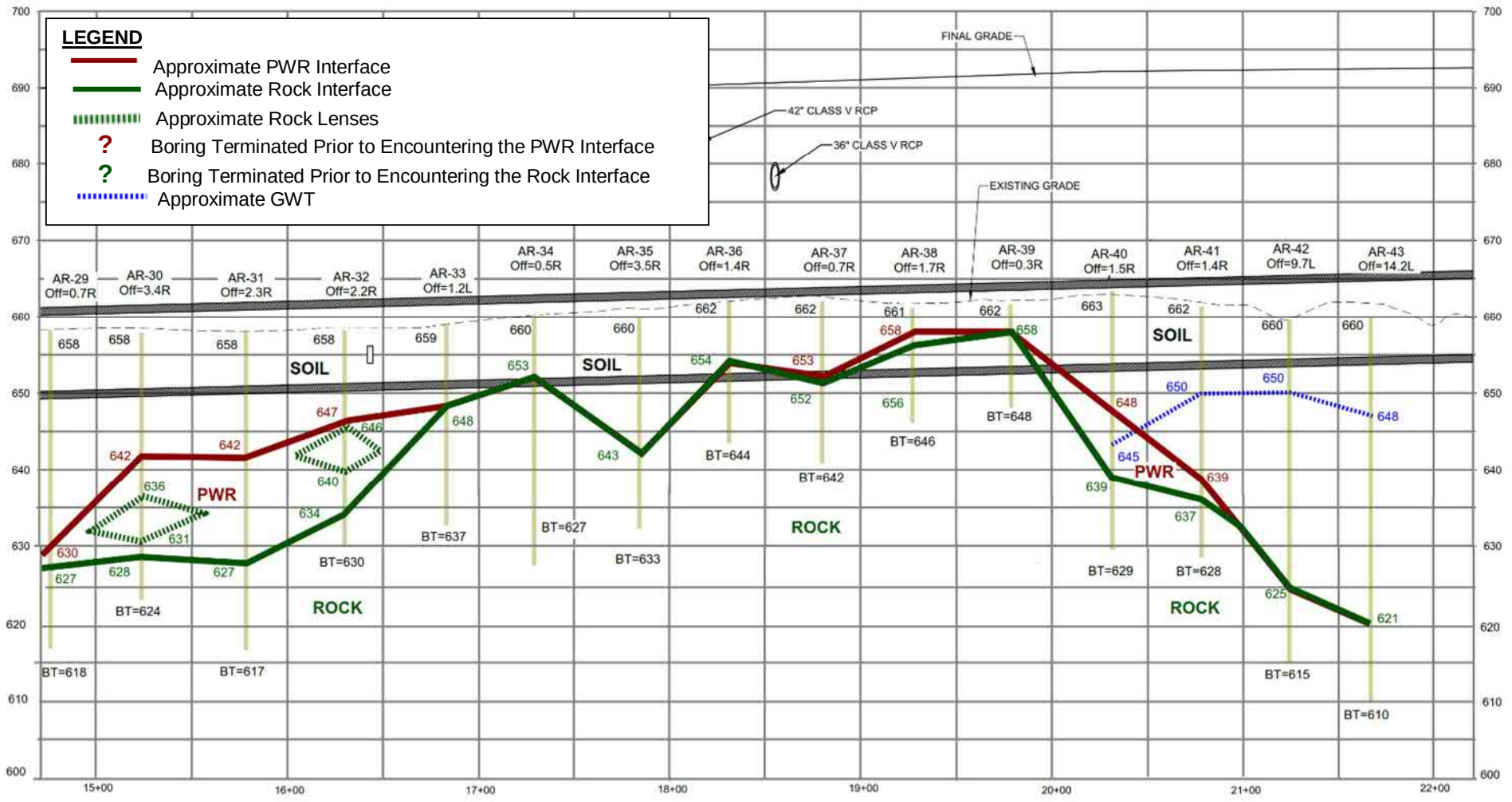
Project No.	71195007
Scale:	AS SHOWN
File Name:	
Date:	4/7/2020

Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

EXPLORATION PLAN FOR AIR ROTARY BORING

COFFEY CREEK CULVERT
CLT Airport-Deicing Pad and SCT
Charlotte, NC

Exhibit E.1.5



BASED ON 70% DRAWINGS. BORING LOCATIONS AND ELEVATIONS SHOWN ARE VALID RELATIVE TO EXISTING SITE FEATURES, NOT PROPOSED CONSTRUCTION

70% DESIGN, COFFEY CREEK HYDRAULIC PLAN AND PROFILE SHEET 3 OF 8 DATED FEBRUARY 20TH 2020 PROVIDED BY WSP

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	JPM
Drawn by:	YL
Checked by:	SD
Approved by:	JPM

Project No.	71195007
Scale:	AS SHOWN
File Name:	
Date:	4/7/2020

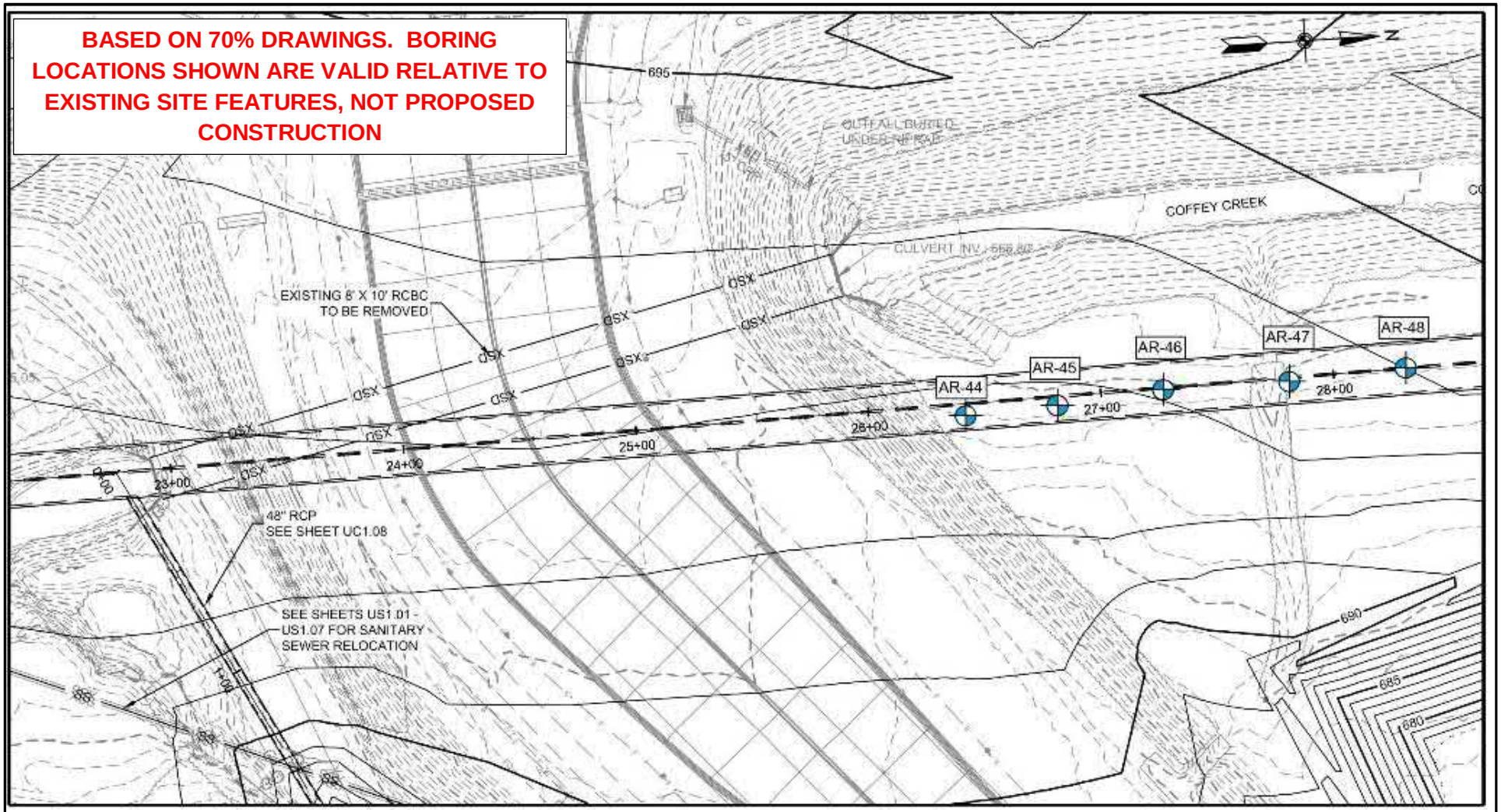
Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

PROPOSED CULVERT WITH ROCK PROFILE

COFFEY CREEK CULVERT
CLT Airport-Deicing Pad and SCT
Charlotte, NC

Exhibit
E.1.6

BASED ON 70% DRAWINGS. BORING LOCATIONS SHOWN ARE VALID RELATIVE TO EXISTING SITE FEATURES, NOT PROPOSED CONSTRUCTION



LEGEND

Approximate Air Rotary Boring Location

70% DESIGN, COFFEY CREEK HYDRAULIC PLAN AND PROFILE SHEET 4 OF 8 DATED FEBRUARY 20TH 2020 PROVIDED BY WSP

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

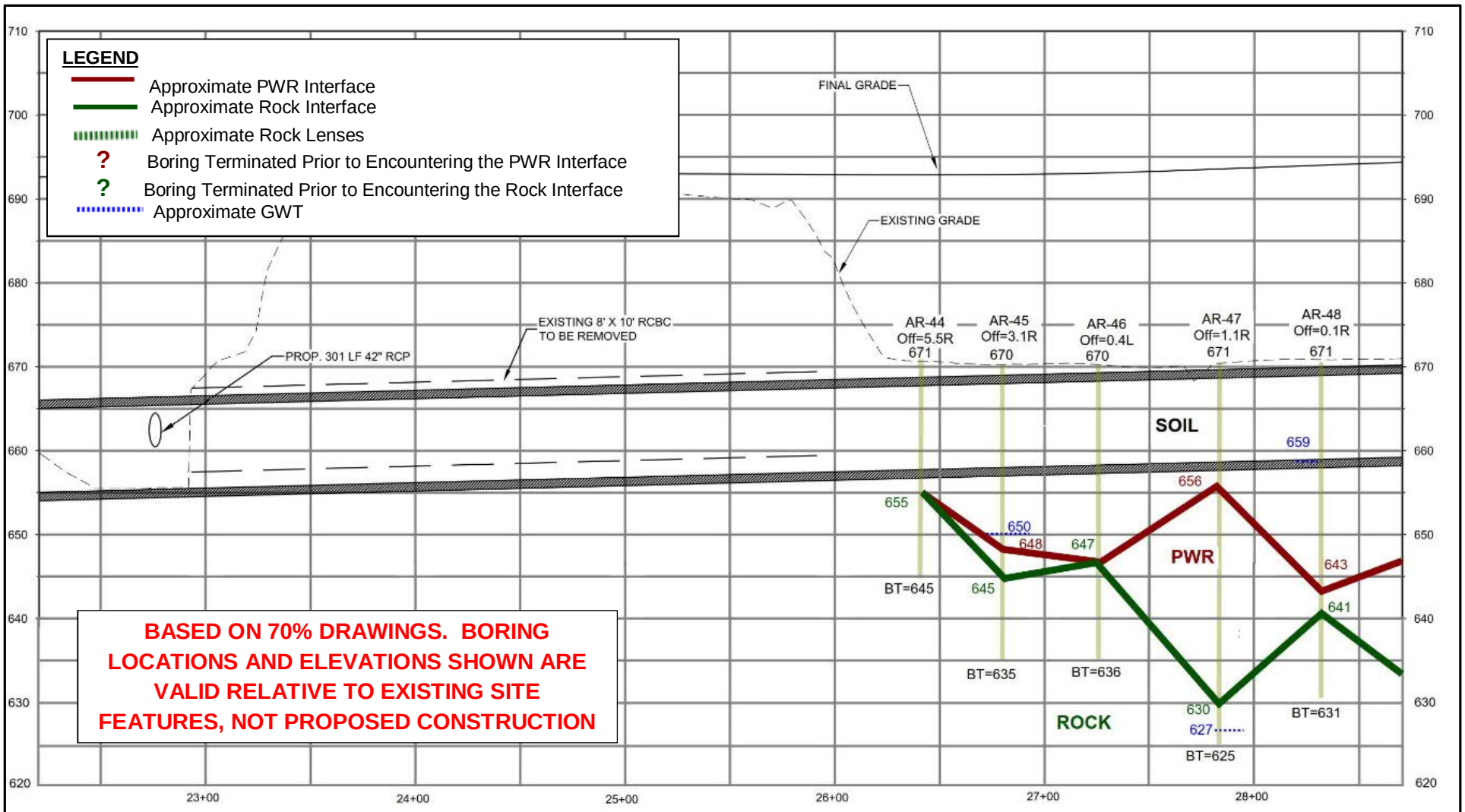
Project Manager: JPM	Project No. 71195007
Drawn by: YL	Scale: AS SHOWN
Checked by: SD	File Name:
Approved by: JPM	Date: 4/7/2020

Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

EXPLORATION PLAN FOR AIR ROTARY BORING

COFFEY CREEK CULVERT
CLT Airport-Deicing Pad and SCT
Charlotte, NC

Exhibit E.1.7



70% DESIGN, COFFEY CREEK HYDRAULIC PLAN AND PROFILE SHEET 4 OF 8 DATED FEBRUARY 20TH 2020 PROVIDED BY WSP

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	JPM
Drawn by:	YL
Checked by:	SD
Approved by:	JPM

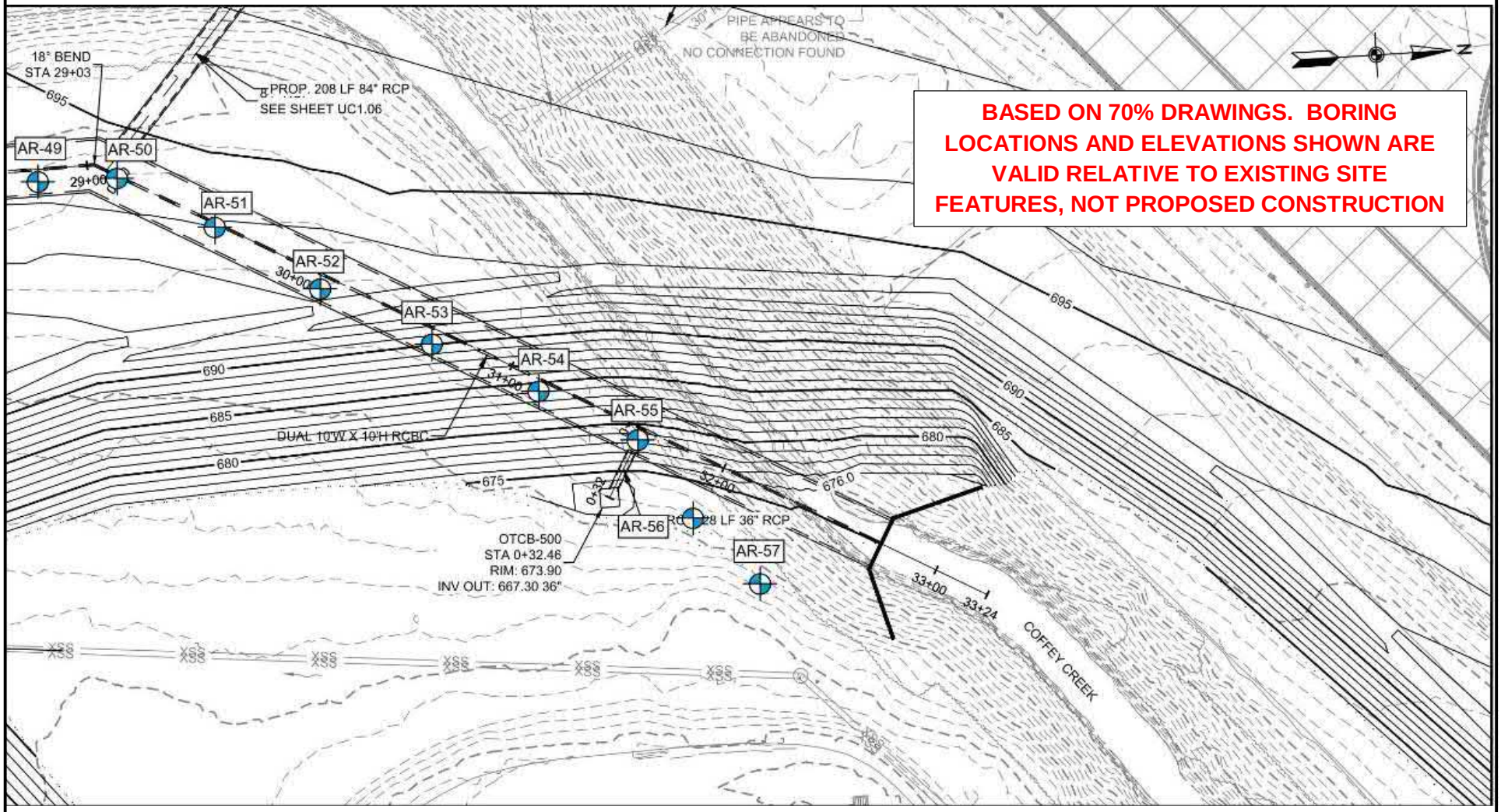
Project No.	71195007
Scale:	AS SHOWN
File Name:	
Date:	4/7/2020

Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

PROPOSED CULVERT WITH ROCK PROFILE

COFFEY CREEK CULVERT
CLT Airport-Deicing Pad and SCT
Charlotte, NC

Exhibit
E.1.8



LEGEND

Approximate Air Rotary Boring Location

70% DESIGN, COFFEY CREEK HYDRAULIC PLAN AND PROFILE SHEET 5 OF 8 DATED FEBRUARY 20TH 2020 PROVIDED BY WSP

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	JPM
Drawn by:	YL
Checked by:	SD
Approved by:	JPM

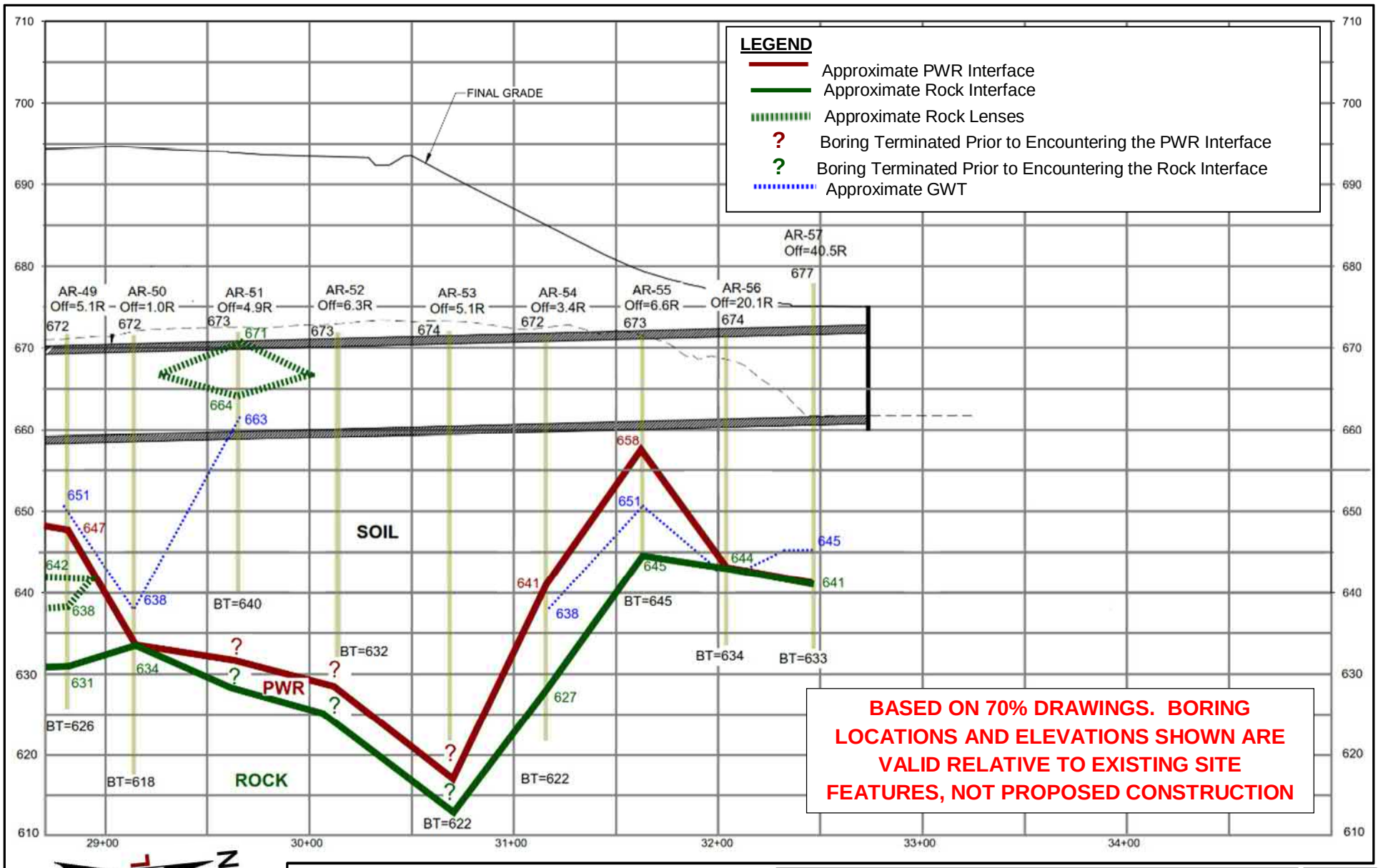
Project No.	71195007
Scale:	AS SHOWN
File Name:	
Date:	4/7/2020

Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

EXPLORATION PLAN FOR AIR ROTARY BORING

COFFEY CREEK CULVERT
CLT Airport-Deicing Pad and SCT
Charlotte, NC

Exhibit
E.1.9



70% DESIGN, COFFEY CREEK HYDRAULIC PLAN AND PROFILE SHEET 5 OF 8 DATED FEBRUARY 20TH 2020 PROVIDED BY WSP

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	JPM
Drawn by:	YL
Checked by:	SD
Approved by:	JPM

Project No.	71195007
Scale:	AS SHOWN
File Name:	
Date:	4/7/2020

Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

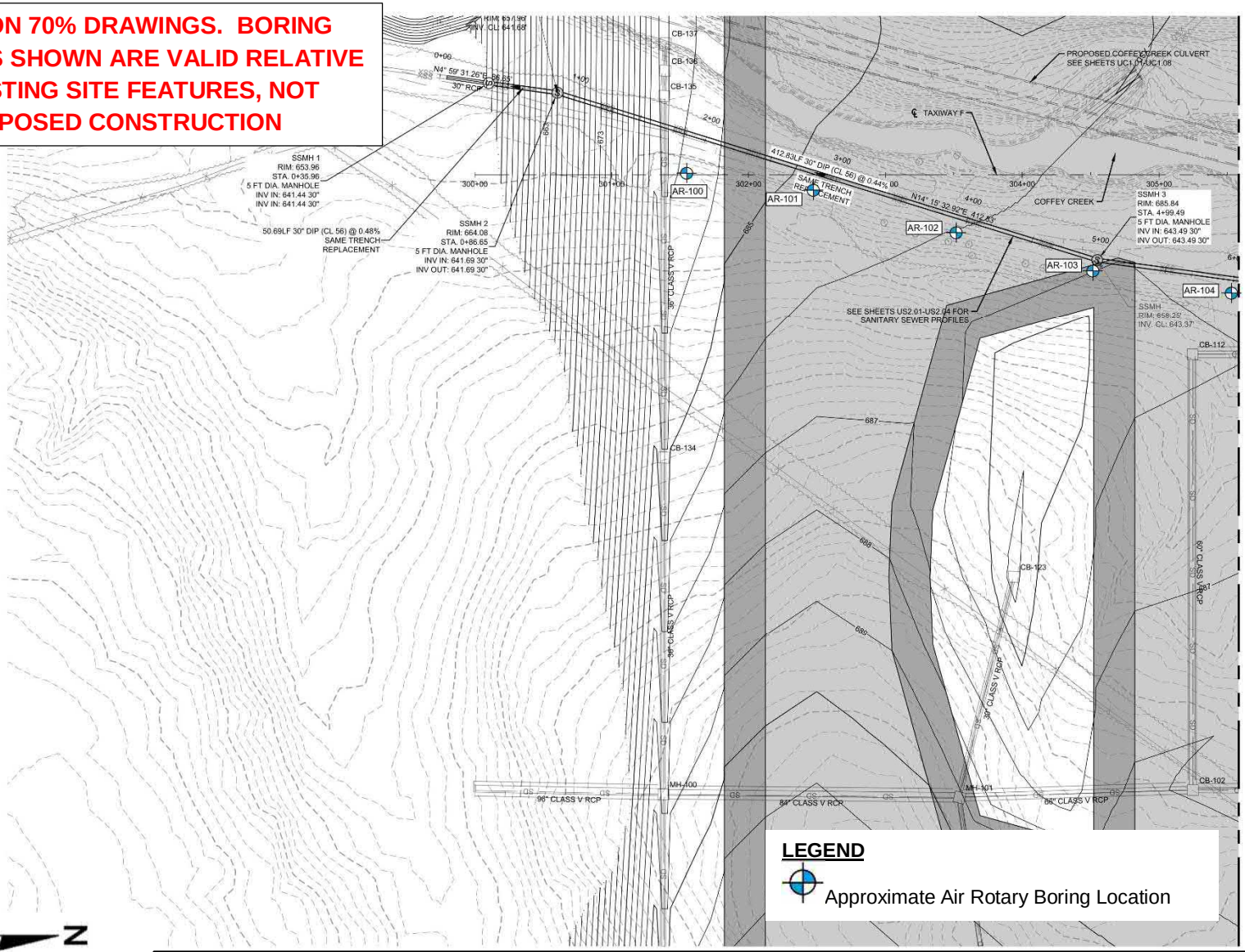
PROPOSED CULVERT WITH ROCK PROFILE

COFFEY CREEK CULVERT
CLT Airport-Deicing Pad and SCT
Charlotte, NC

Exhibit E.1.10

E.2 SEWER ROCK PROFILES

BASED ON 70% DRAWINGS. BORING LOCATIONS SHOWN ARE VALID RELATIVE TO EXISTING SITE FEATURES, NOT PROPOSED CONSTRUCTION



LEGEND

Approximate Air Rotary Boring Location

70% DESIGN, SANITARY SEWER RELOCATION PLAN SHEET 1 OF 7 DATED 20TH FEBURARY PROVIDED BY WSP

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	JPM
Drawn by:	YL
Checked by:	SD
Approved by:	JPM

Project No.	71195007
Scale:	AS SHOWN
File Name:	
Date:	4/7/2020

Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

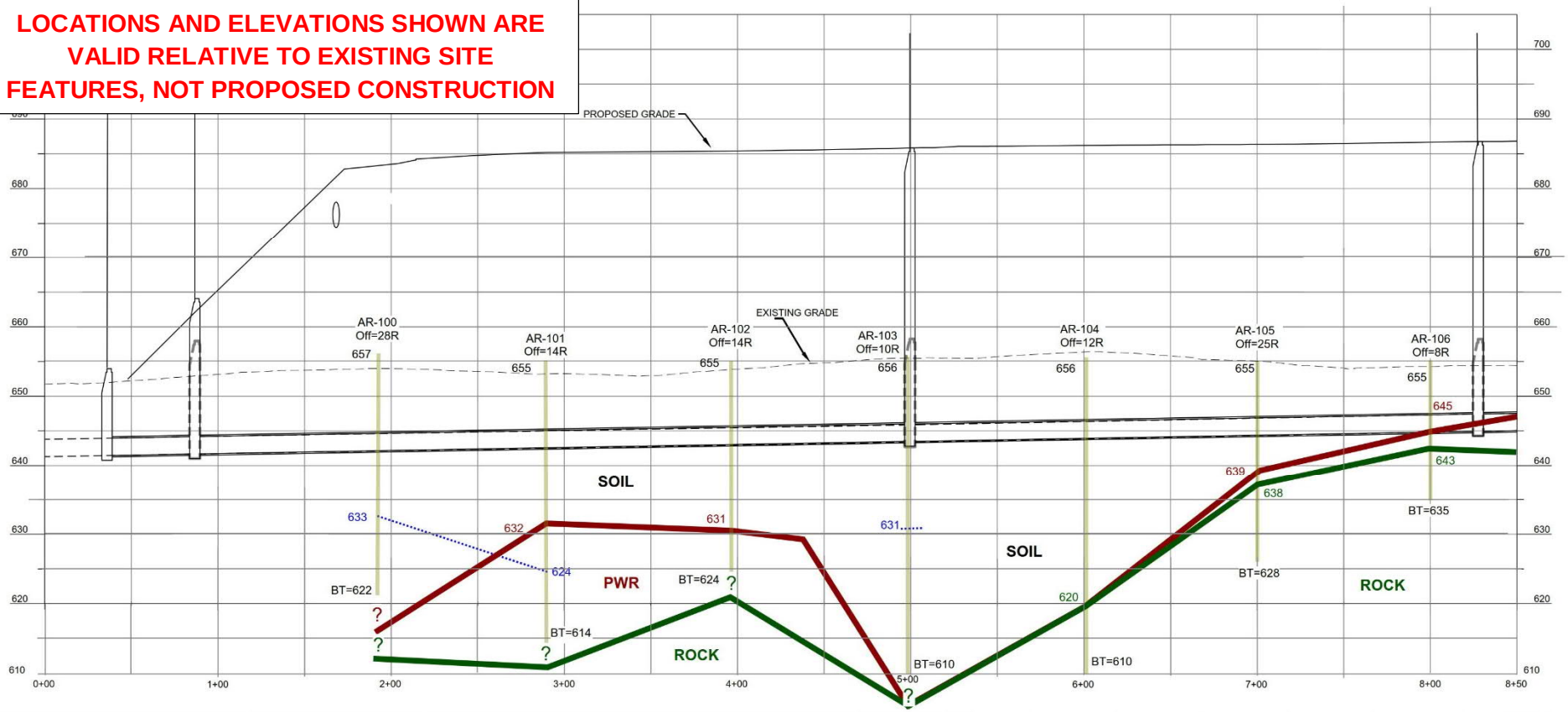
EXPLORATION PLAN FOR AIR ROTARY BORING

SANITARY SEWER RELOCATION
CLT Airport-Deicing Pad and SCT
Charlotte, NC

Exhibit

E.2.1

BASED ON 70% DRAWINGS. BORING LOCATIONS AND ELEVATIONS SHOWN ARE VALID RELATIVE TO EXISTING SITE FEATURES, NOT PROPOSED CONSTRUCTION



LEGEND

- Approximate PWR Interface
- Approximate Rock Interface
- Approximate Rock Lenses
- ? Boring Terminated Prior to Encountering the PWR Interface
- ? Boring Terminated Prior to Encountering the Rock Interface
- Approximate GWT

70% DESIGN, SANITARY SEWER RELOCATION PROFILES SHEET 1 OF 4 DATED 20TH FEBRUARY PROVIDED BY WSP

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	JPM
Drawn by:	YL
Checked by:	SD
Approved by:	JPM

Project No.	71195007
Scale:	AS SHOWN
File Name:	
Date:	4/7/2020

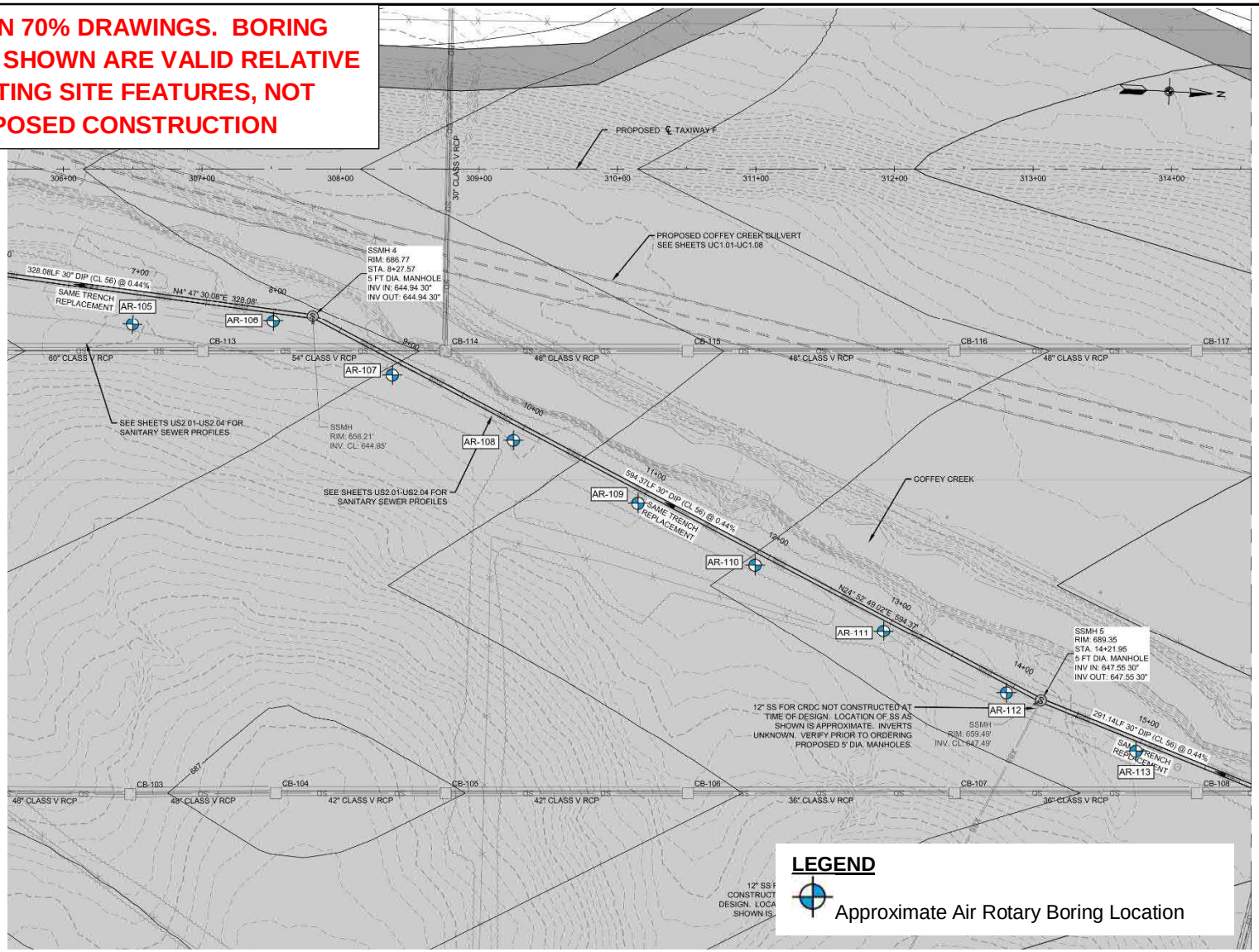
Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

PROPOSED SEWER WITH ROCK PROFILE

SANITARY SEWER RELOCATION
CLT Airport-Deicing Pad and SCT
Charlotte, NC

Exhibit E.2.2

BASED ON 70% DRAWINGS. BORING LOCATIONS SHOWN ARE VALID RELATIVE TO EXISTING SITE FEATURES, NOT PROPOSED CONSTRUCTION



70% DESIGN, SANITARY SEWER RELOCATION PLAN SHEET 2 OF 7 DATED 20TH FEBRUARY PROVIDED BY WSP

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	JPM
Drawn by:	YL
Checked by:	SD
Approved by:	JPM

Project No.	71195007
Scale:	AS SHOWN
File Name:	
Date:	4/7/2020

Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

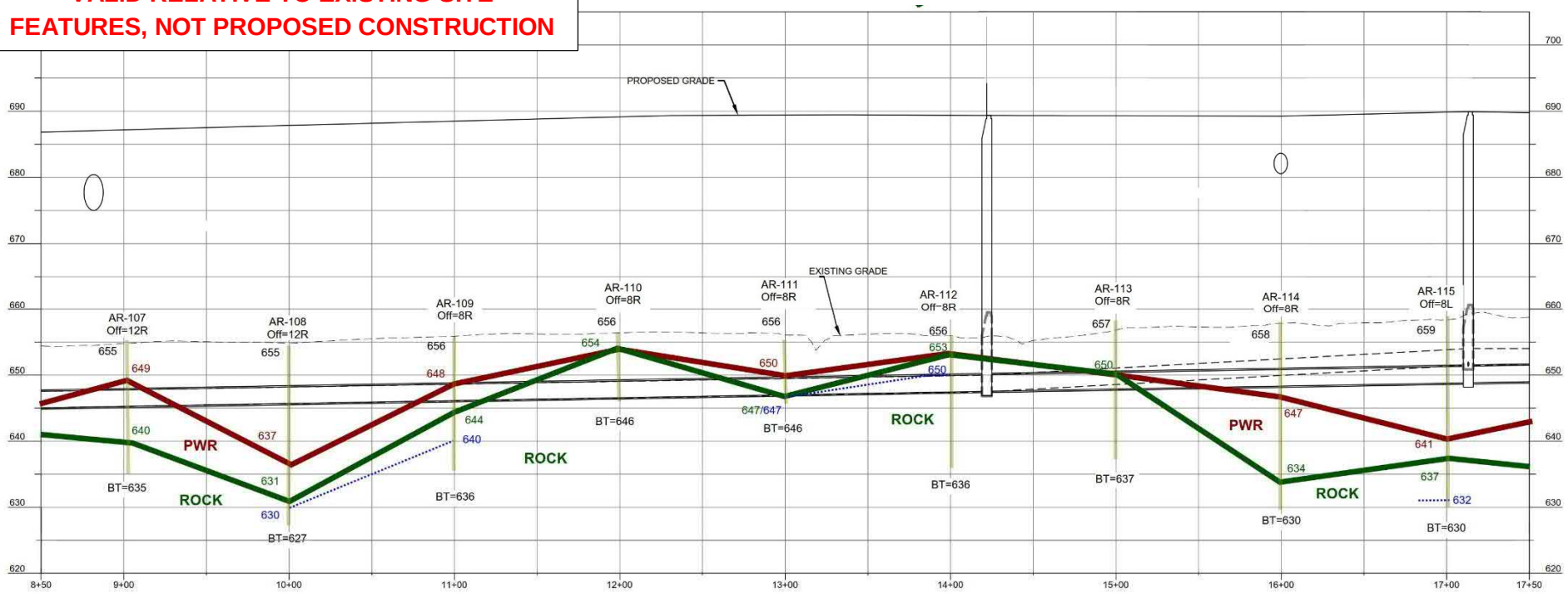
EXPLORATION PLAN FOR AIR ROTARY BORING

SANITARY SEWER RELOCATION
CLT Airport-Deicing Pad and SCT
Charlotte, NC

Exhibit

E.2.3

BASED ON 70% DRAWINGS. BORING LOCATIONS AND ELEVATIONS SHOWN ARE VALID RELATIVE TO EXISTING SITE FEATURES, NOT PROPOSED CONSTRUCTION



LEGEND

- Approximate PWR Interface
- Approximate Rock Interface
- Approximate Rock Lenses
- ? Boring Terminated Prior to Encountering the PWR Interface
- ? Boring Terminated Prior to Encountering the Rock Interface
- Approximate GWT

70% DESIGN, SANITARY SEWER RELOCATION PROFILES SHEET 1 OF 4 DATED 20TH FEBRUARY PROVIDED BY WSP SURVEY

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	JPM
Drawn by:	YL
Checked by:	SD
Approved by:	JPM

Project No.	71195007
Scale:	AS SHOWN
File Name:	
Date:	4/7/2020

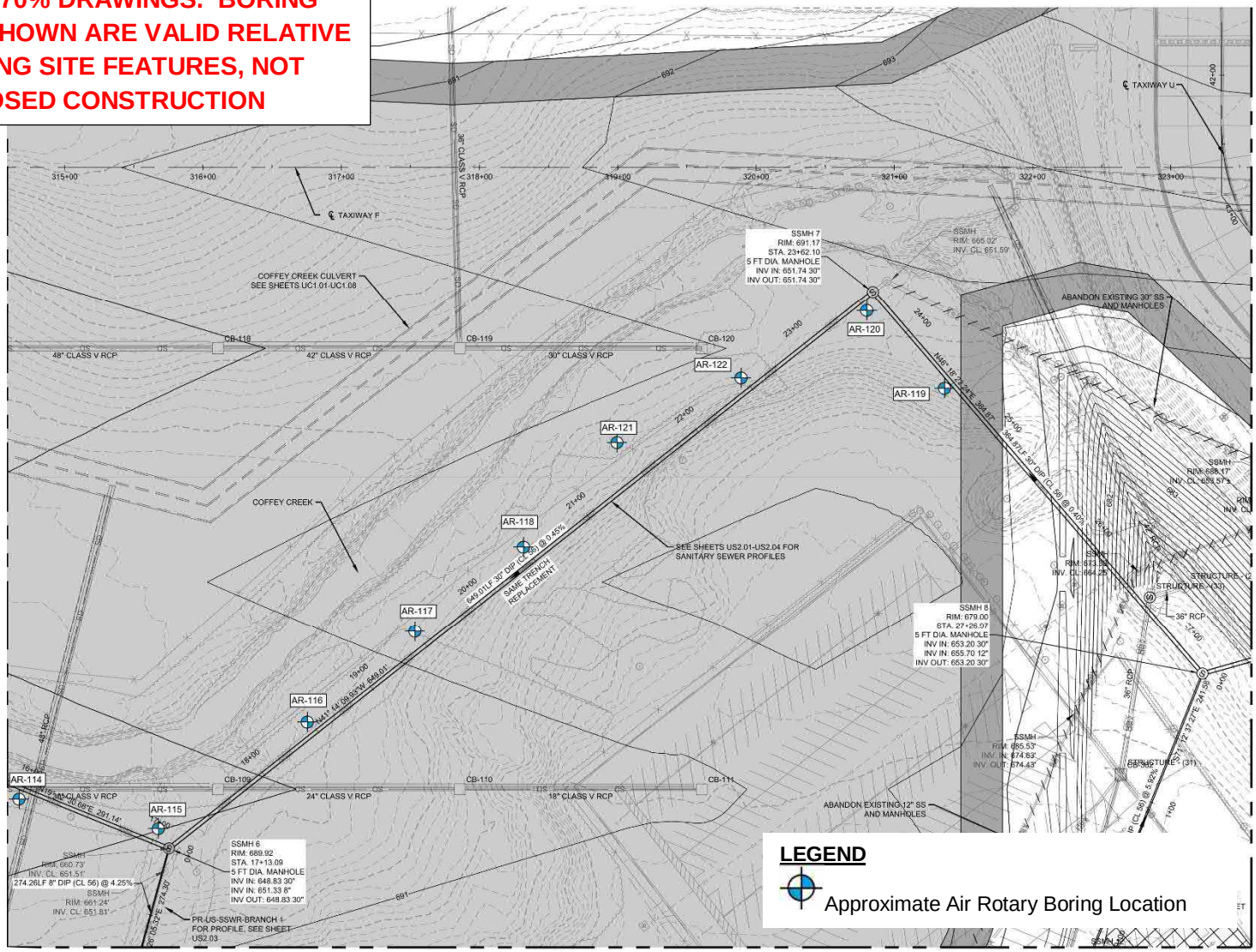
Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

PROPOSED SEWER WITH ROCK PROFILE

SANITARY SEWER RELOCATION
CLT Airport-Deicing Pad and SCT
Charlotte, NC

Exhibit E.2.4

BASED ON 70% DRAWINGS. BORING LOCATIONS SHOWN ARE VALID RELATIVE TO EXISTING SITE FEATURES, NOT PROPOSED CONSTRUCTION



70% DESIGN, SANITARY SEWER RELOCATION PLAN SHEET 3 OF 7 DATED 20TH FEBRUARY PROVIDED BY WSP

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	JPM
Drawn by:	YL
Checked by:	SD
Approved by:	JPM

Project No.	71195007
Scale:	AS SHOWN
File Name:	
Date:	4/7/2020

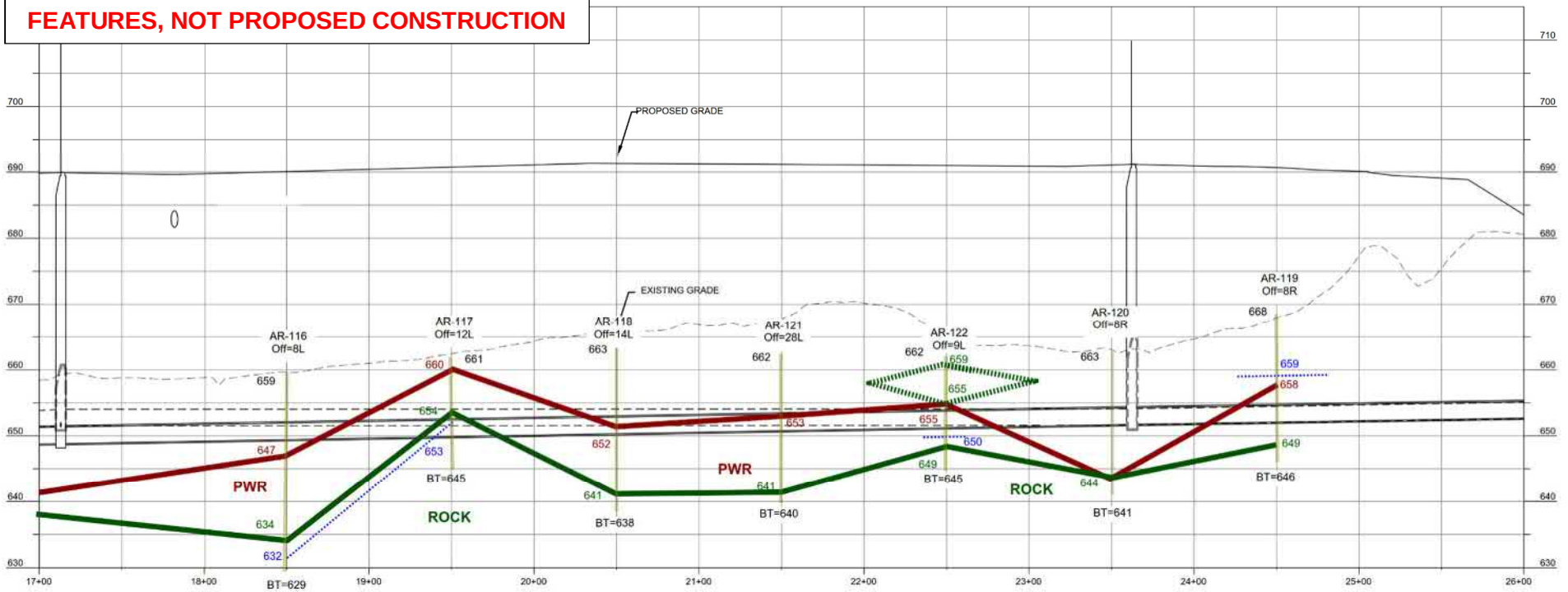
Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

EXPLORATION PLAN FOR AIR ROTARY BORING

SANITARY SEWER RELOCATION
CLT Airport-Deicing Pad and SCT
Charlotte, NC

Exhibit
E.2.5

BASED ON 70% DRAWINGS. BORING LOCATIONS AND ELEVATIONS SHOWN ARE VALID RELATIVE TO EXISTING SITE FEATURES, NOT PROPOSED CONSTRUCTION



LEGEND

- Approximate PWR Interface
- Approximate Rock Interface
- Approximate Rock Lenses
- ? Boring Terminated Prior to Encountering the PWR Interface
- ? Boring Terminated Prior to Encountering the Rock Interface
- Approximate GWT

70% DESIGN, SANITARY SEWER RELOCATION PROFILES SHEET 2 OF 4 DATED 20TH FEBRUARY PROVIDED BY WSP

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	JPM
Drawn by:	YL
Checked by:	SD
Approved by:	JPM

Project No.	71195007
Scale:	AS SHOWN
File Name:	
Date:	4/7/2020

Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

PROPOSED SEWER WITH ROCK PROFILE

SANITARY SEWER RELOCATION
CLT Airport-Deicing Pad and SCT
Charlotte, NC

Exhibit E.2.6

F. ASPHALT AND CONCRETE CORE PHOTOGRAPHS

CORE PHOTOGRAPHS
CLT Airport-Deicing Pad and SCT ■ Charlotte, North Carolina
■ Terracon Project No. 71195007

Site Description: CLT Airport – Deicing Pad and SCT	*Boring Location:* B-194 and B-185	*Geologist / Engineer*: A. Degon

Total Core Length = 2.5”

B-194

Total Core Length = 11.5”

B-185

PROJECT NUMBER: 71195007	Terracon 2701 Westport Rd Charlotte, NC	CLIENT: WSP USA Inc. Charlotte, NC

CORE PHOTOGRAPHS
CLT Airport-Deicing Pad and SCT ■ Charlotte, North Carolina
■ Terracon Project No. 71195007

Site Description: CLT Airport – Deicing Pad and SCT	*Boring Location:* PC-09	*Geologist / Engineer*: A. Degon

Total Core Length = 8.8”

Total Core Length = 9.1”

PROJECT NUMBER: 71195007	Terracon 2701 Westport Rd Charlotte, NC	CLIENT: WSP USA Inc. Charlotte, NC

CORE PHOTOGRAPHS
CLT Airport-Deicing Pad and SCT ■ Charlotte, North Carolina
■ Terracon Project No. 71195007

Site Description: CLT Airport – Deicing Pad and SCT	*Boring Location:* PC-09 (cont.)	*Geologist / Engineer*: A. Degon

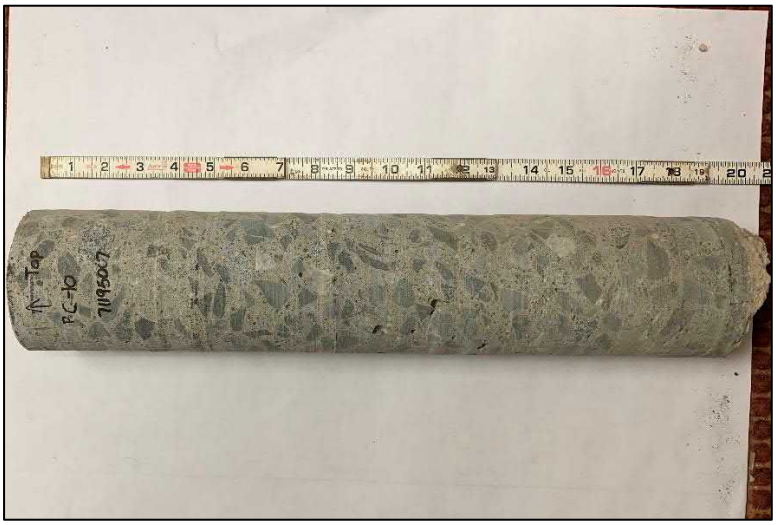
Total Core Length = 5.4”

PROJECT NUMBER: 71195007	Terracon 2701 Westport Rd Charlotte, NC	CLIENT: WSP USA Inc. Charlotte, NC

CORE PHOTOGRAPHS
CLT Airport-Deicing Pad and SCT ■ Charlotte, North Carolina
■ Terracon Project No. 71195007

Site Description: CLT Airport – Deicing Pad and SCT	*Boring Location:* PC-10	*Geologist / Engineer*: A. Degon

Total Core Length = 18.5”



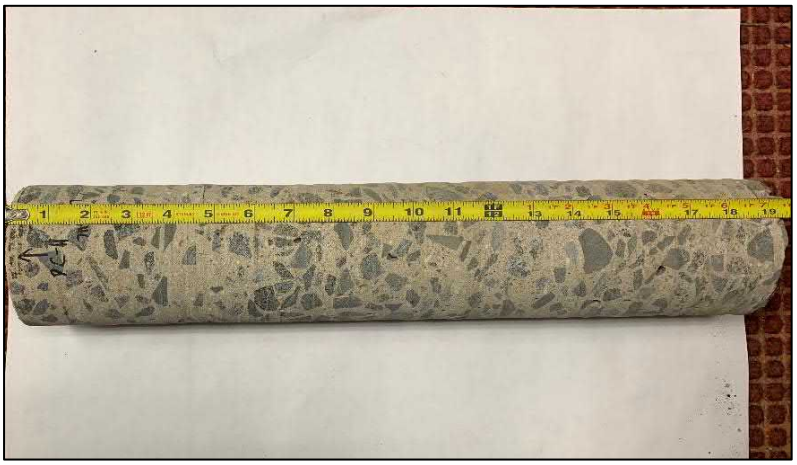
Total Core Length = 5.8”

PROJECT NUMBER: 71195007	Terracon 2701 Westport Rd Charlotte, NC	CLIENT: WSP USA Inc. Charlotte, NC

CORE PHOTOGRAPHS
CLT Airport-Deicing Pad and SCT ■ Charlotte, North Carolina
■ Terracon Project No. 71195007

Site Description: CLT Airport – Deicing Pad and SCT	*Boring Location:* PC-11	*Geologist / Engineer*: A. Degon

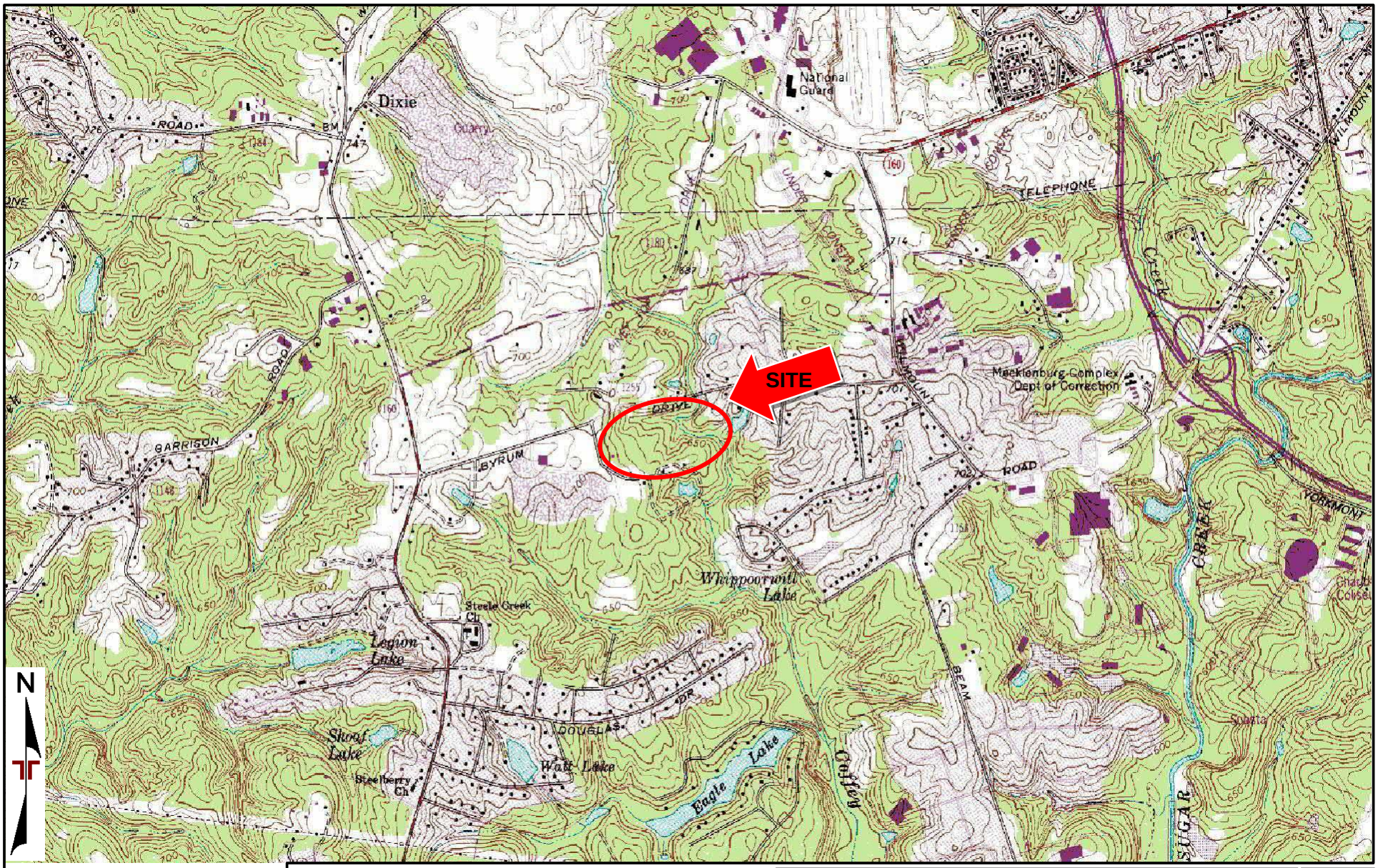
Total Core Length = 19.5”



Total Core Length = 5.75”

PROJECT NUMBER: 71195007	Terracon 2701 Westport Rd Charlotte, NC	CLIENT: WSP USA Inc. Charlotte, NC

G. ADDITIONAL BORROW SITE EXPLORATION



TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY QUADRANGLES INCLUDE: CHARLOTTE WEST, NC (1/1/1993).

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	JPM
Drawn by:	YL
Checked by:	JPM
Approved by:	JPM

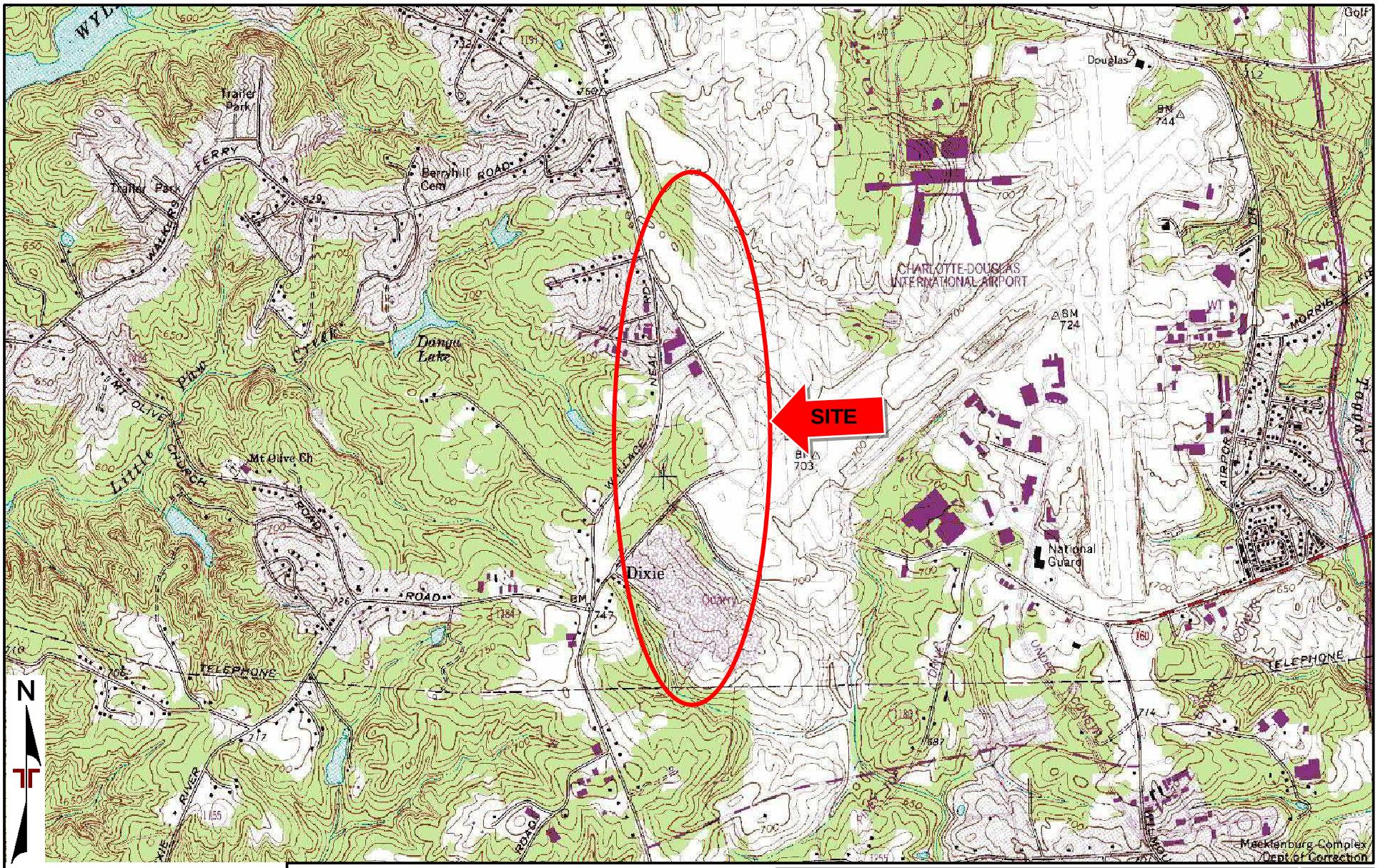
Project No.	71195007
Scale:	1"=2,000'
File Name:	
Date:	04/10/2020

Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

DETENTION BASIN SITE - LOCATION PLAN

Borrow Site Evaluation – Detention Basin Site and Runway Borrow Site
West Boulevard, ARFF Road and Byrum Drive
Charlotte, NC

Exhibit
A-1



TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY QUADRANGLES INCLUDE: CHARLOTTE WEST, NC (1/1/1993).

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	JPM
Drawn by:	YL
Checked by:	JPM
Approved by:	JPM

Project No.	71195007
Scale:	1"=2,000'
File Name:	
Date:	04/10/2020

Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

RUNWAY BORROW SITE - LOCATION PLAN

Borrow Site Evaluation – Detention Basin Site and Runway Borrow Site
West Boulevard, ARFF Road and Byrum Drive
Charlotte, NC

Exhibit
A-2

AERIAL PHOTOGRAPHY PROVIDED BY GOOGLE EARTH

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

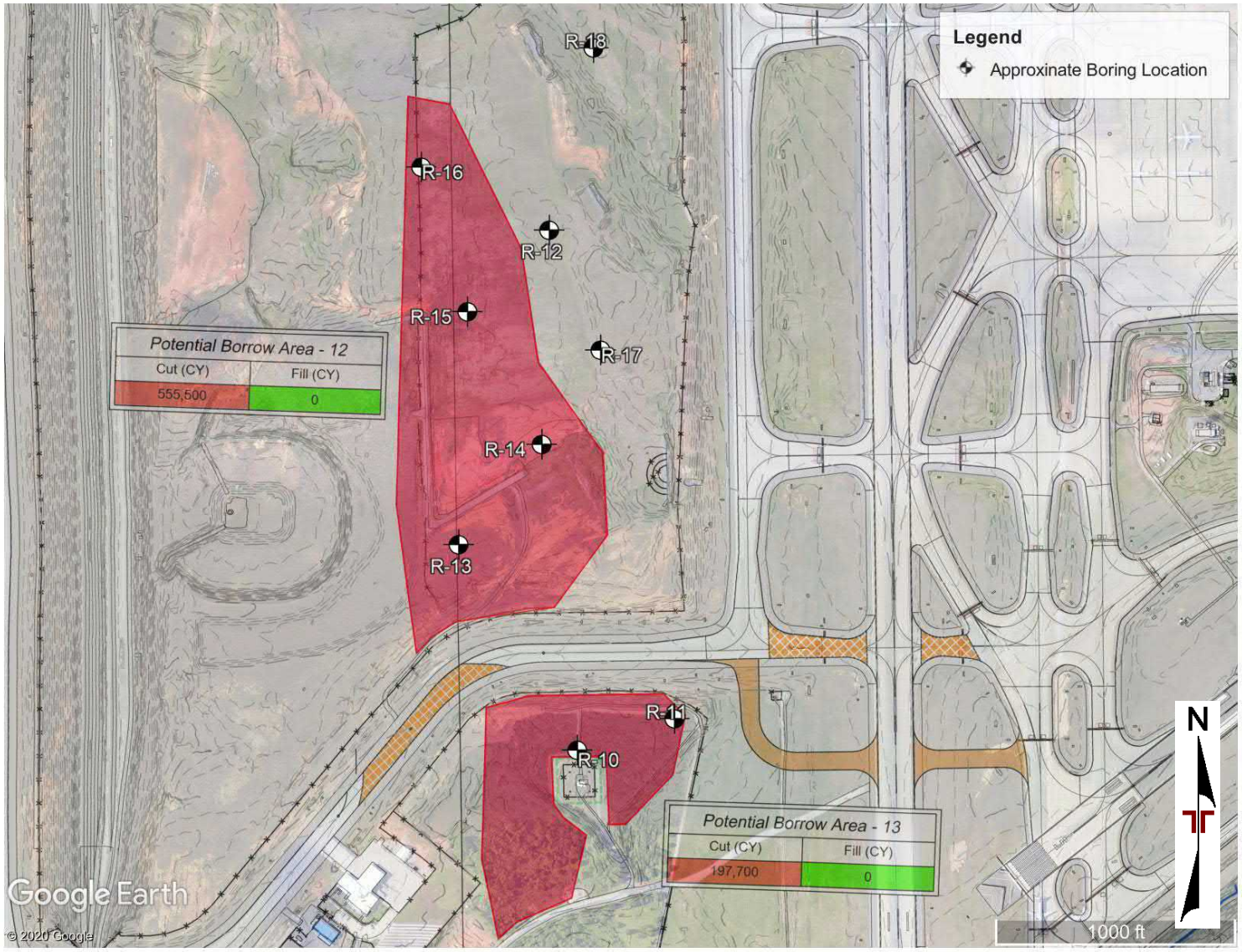
Project Manager: JPM	Project No. 71195007
Drawn by: YL	Scale: AS SHOWN
Checked by: JPM	File Name:
Approved by: JPM	Date: 04/10/2020

Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

DETENTION BASIN SITE - EXPLORATION PLAN

Borrow Site Evaluation – Detention Basin Site and Runway Borrow Site
West Boulevard, ARFF Road and Byrum Drive
Charlotte, NC

Exhibit A-3



AERIAL PHOTOGRAPHY PROVIDED BY GOGOLE EARTH PRO

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	JPM
Drawn by:	YL
Checked by:	JPM
Approved by:	JPM

Project No.	71195007
Scale:	AS SHOWN
File Name:	
Date:	04/10/2020

Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

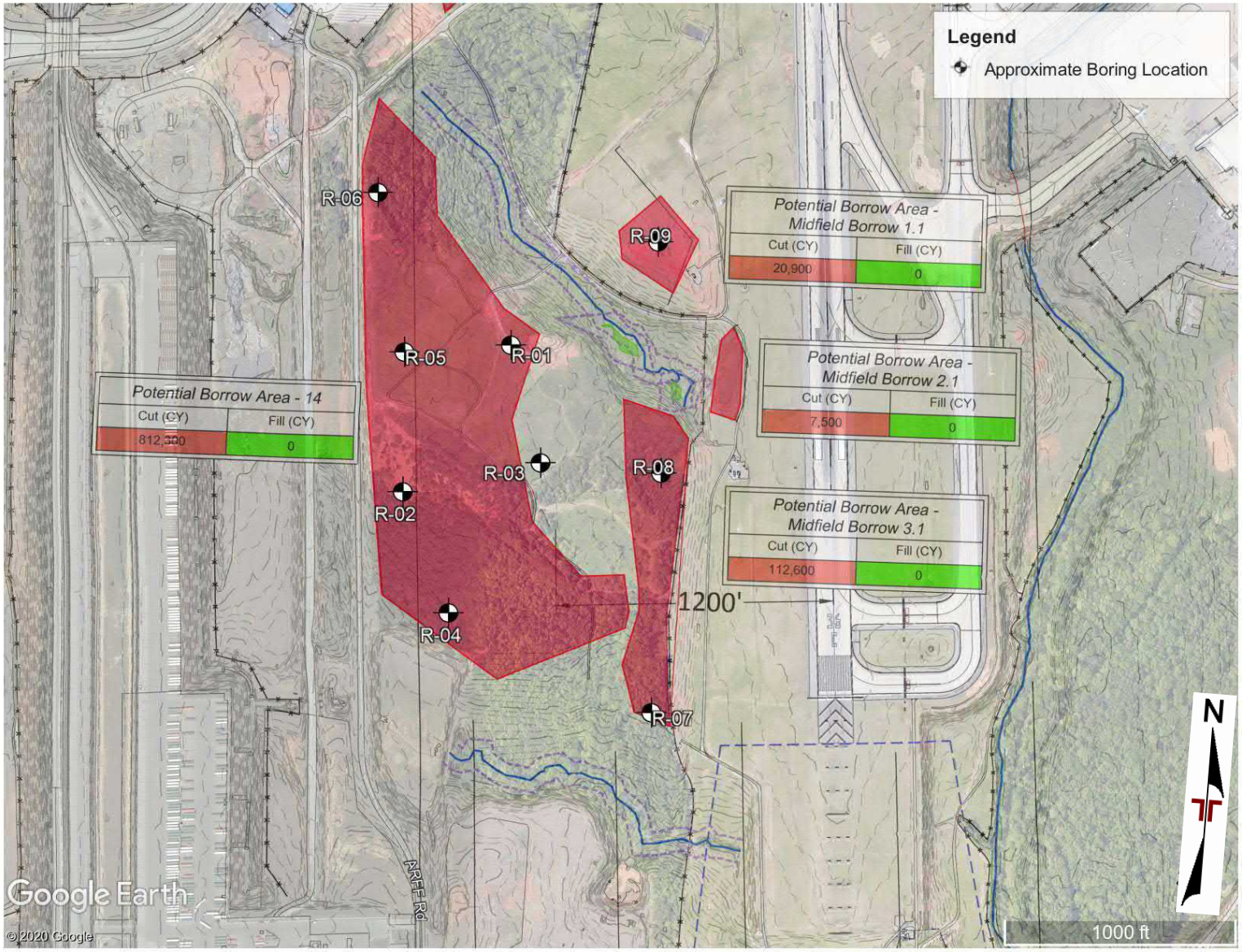
RUNWAY BORROW SITE - EXPLORATION PLAN

Borrow Site Evaluation – Runway Site and Detention Basin Site

West Blvd, ARFF Road and Byrum Dr
Charlotte, NC

Exhibit

A-4



AERIAL PHOTOGRAPHY PROVIDED BY GOGOLE EARTH PRO

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager: JPM	Project No. 71195007
Drawn by: YL	Scale: AS SHOWN
Checked by: JPM	File Name:
Approved by: JPM	Date: 04/10/2020

Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

RUNWAY BORROW SITE - EXPLORATION PLAN

Borrow Site Evaluation – Detention Basin Site and Runway Borrow Site
West Boulevard, ARFF Road and Byrum Drive
Charlotte, NC

Exhibit A-5

BORING LOG NO. D-01

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.1905° Longitude: -80.9439°

Approximate Surface Elev.: 672 (Ft.) +/-

DEPTH		ELEVATION (Ft.)
0.4	**TOPSOIL**, 5-inches	671.5+/-
	ELASTIC SILT WITH SAND (MH), brown and red, stiff to very stiff, residuum	
5.5		666.5+/-
	ELASTIC SILT (MH), brown, red and yellow, very stiff, residuum	
8.0		664+/-
	SANDY ELASTIC SILT (MH), trace mica, brown and red, stiff to very stiff, residuum	
12.0		660+/-
	SILT (ML), trace manganese and sand, brown, red and black, very stiff, residuum	
22.0		650+/-
	ELASTIC SILT WITH SAND (MH), brown, red and black, very stiff, residuum	
32.0		640+/-
	SILTY SAND (SM), fine to medium grained, white and brown, very dense to dense, residuum	

DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	3-5-6 N=11			
5	6-9-15 N=24	35	61-38-23	80
	8-8-8 N=16			
10	7-7-8 N=15	14	51-32-19	62
	7-8-9 N=17			
15				
	6-7-10 N=17			
20				
	6-8-9 N=17	24	66-38-28	84
25				
	6-10-17 N=27			
30				
	24-40-40 N=80			
35				
	26-19-16 N=35			
40				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

At completion of drilling

Dry Cave-In

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-17-2020 | Boring Completed: 02-17-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. D-01

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.1905° Longitude: -80.9439°

Approximate Surface Elev.: 672 (Ft.) +/-

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	42.0	630+/-							
	SILT (ML), trace sand and rock fragments, brown, orange and black, very stiff to hard, residuum		45	▽		14-15-15 N=30			
	48.3	623.5+/-							
	Auger Refusal at 48.3 Feet					50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Dry Cave-In

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-17-2020 | Boring Completed: 02-17-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. D-02

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.192° Longitude: -80.9432°

Approximate Surface Elev.: 651 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	DESCRIPTION	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.3	651+/-	**TOPSOIL**, 3-inches				
3.0	648+/-	**CLAYEY SAND (SC)**, trace roots, fine to medium grained, brown, red and black, medium dense, residuum	4-6-11 N=17	25	41-21-20	21
		SANDY SILT (ML), brown and orange, hard, residuum	16-28-34 N=62			
			20-35-43 N=78	9	26-22-4	51
			17-47-41 N=88			
12.0	639+/-					
		PARTIALLY WEATHERED ROCK (PWR), sampled as brown and yellow, silty SAND with gravel	50/4"			
17.0	634+/-					
		SANDY SILT (ML), brown, green and yellow, very stiff to hard, residuum	19-9-10 N=19	18	31-26-5	61
			19-20-18 N=38			
25.2	626+/-					
		Auger Refusal at 25.2 Feet	50/0"			

DEPTH (Ft.): 5, 10, 15, 20, 25

WATER LEVEL OBSERVATIONS: ▼ Measured on 03/11/2020; Dry Cave-In

SAMPLE TYPE

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings after delayed water levels were measured.

Notes:

WATER LEVEL OBSERVATIONS

▼ *Measured on 03/11/2020*

Dry Cave-In

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-18-2020 | Boring Completed: 02-18-2020

Drill Rig: CME-550 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. D-03

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.1915° Longitude: -80.9455°

Approximate Surface Elev.: 650 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	DESCRIPTION	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.6	649.5+/-	**TOPSOIL**, 7-inches				
		SILTY CLAY WITH GRAVEL (CL-ML), brown and black, stiff, residuum	4-3-6 N=9			
3.0	647+/-					
		POORLY GRADED GRAVEL (GP), brown and black, medium dense, residuum	5-5-7 N=12	2	NP	1
5.5	644.5+/-					
		SANDY LEAN CLAY (CL), green and orange, very stiff, residuum	11-15-13 N=28			
			13-13-16 N=29	18	36-22-14	68
12.0	638+/-					
		SILTY SAND (SM), fine to medium grained, green and orange, dense, residuum	13-16-14 N=30	11	26-22-4	48
17.3	632.5+/-					
		Auger Refusal at 17.3 Feet	50/0"			

DEPTH (Ft.): 5, 10, 15

WATER LEVEL OBSERVATIONS: Dry Cave-In

SAMPLE TYPE: 4-3-6 N=9; 5-5-7 N=12; 11-15-13 N=28; 13-13-16 N=29; 13-16-14 N=30; 50/0"

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Dry Cave-In

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-17-2020 | Boring Completed: 02-17-2020

Drill Rig: D-50 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. D-03 Offset

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

GRAPHIC LOG	LOCATION / DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	Latitude: 35.1915° Longitude: -80.9455° Approximate Surface Elev.: 649 (Ft.) +/-		5						
			10						
	15.3	633.5+/-	15						
	Auger Refusal at 15.3 Feet					50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-17-2020	Boring Completed: 02-17-2020
Drill Rig: D-50	Driller: Z. Kiker
Project No.: 71195007	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. D-04

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.1912° Longitude: -80.9422°

Approximate Surface Elev.: 640 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.3	639.5+/-	**TOPSOIL**, 4-inches				
		SILTY SAND (SM), trace manganese, fine to medium grained, brown, orange and black, medium dense, residuum	4-8-9 N=17	17	28-25-3	28
		very dense	19-33-33 N=66			
			20-26-38 N=64	4	24-22-2	22
8.0	632+/-	**PARTIALLY WEATHERED ROCK (PWR)**, sampled as brown, orange and black, silty SAND	26-43-50/4"			
			40-50/5"			
17.0	623+/-	**SILTY SAND (SM)**, trace manganese, brown and black, dense, residuum	12-17-26 N=43	10	27-23-4	39
22.0	618+/-	**PARTIALLY WEATHERED ROCK (PWR)**, sampled as white and brown, sandy SILT	34-50/5"			
28.6	611.5+/-	***Auger Refusal at 28.6 Feet***	50/1"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Dry Cave-In

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-18-2020 | Boring Completed: 02-18-2020

Drill Rig: CME-550 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. D-05

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.1907° Longitude: -80.9443°

Approximate Surface Elev.: 664 (Ft.) +/-

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	16.1	648+/-	5, 10, 15			50/0"			
	Auger Refusal at 16.1 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Dry Cave-In

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-06-2020 | Boring Completed: 03-06-2020

Drill Rig: D-50 | Driller: C. Odom

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. D-06

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.1914° Longitude: -80.9447°

Approximate Surface Elev.: 624 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	GRAPHIC LOG	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
15.8	608+/-				50/1"			

Auger Refusal at 15.8 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings after delayed water levels were measured.

Notes:

WATER LEVEL OBSERVATIONS

At completion of drilling

Measured on 03/11/2020

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-06-2020 | Boring Completed: 03-06-2020

Drill Rig: D-50 | Driller: C. Odom

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. D-07

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

GRAPHIC LOG	LOCATION / DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	Latitude: 35.1914° Longitude: -80.9453° Approximate Surface Elev.: 642 (Ft.) +/-		5						
	11.1	631+/-	10						
	Auger Refusal at 11.1 Feet					50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-06-2020 | Boring Completed: 03-06-2020

Drill Rig: D-50 | Driller: C. Odom

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. D-08

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.1906° Longitude: -80.9442°

Approximate Surface Elev.: 670 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
25.7	644.5+/-	25			50/0"			

Auger Refusal at 25.7 Feet

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Dry Cave-In

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 03-06-2020 | Boring Completed: 03-06-2020

Drill Rig: D-50 | Driller: C. Odom

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. R-01

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.204° Longitude: -80.9558°

Approximate Surface Elev.: 714 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	
0.0	714+/-	**SILT WITH SAND (ML)**, light brown and gray, stiff to very stiff, residuum
8.0	706+/-	**SANDY SILT (ML)**, light brown and gray, stiff to very stiff, residuum
17.0	697+/-	**SILT WITH SAND (ML)**, light brown and gray, medium stiff, residuum stiff to very stiff
37.0	677+/-	**SILT (ML)**, trace sand, gray, very stiff to hard, residuum

DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0	3-4-7 N=11	19	39-31-8	77
5	8-10-12 N=22			
	6-8-9 N=17			
10	4-4-7 N=11			
	4-6-10 N=16	23	36-30-6	65
15				
20	3-3-5 N=8			
	2-5-6 N=11			
25				
30	3-5-11 N=16			
	6-9-15 N=24	25	40-31-9	75
35				
40	6-11-19 N=30			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

Wet Cave-In

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-20-2020 | Boring Completed: 02-20-2020

Drill Rig: CME-550 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. R-01

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.204° Longitude: -80.9558°

Approximate Surface Elev.: 714 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
SILT (ML), trace sand, gray, very stiff to hard, residuum *(continued)*								
		45			17-23-45 N=68			
47.0	667+/-							
SILTY SAND (SM), fine to medium grained, gray, dense, residuum								
50.0	664+/-	50			11-15-24 N=39			
Boring Terminated at 50 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

Wet Cave-In

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-20-2020 | Boring Completed: 02-20-2020

Drill Rig: CME-550 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. R-02

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.2022° Longitude: -80.9572°

Approximate Surface Elev.: 720 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		FILL - SANDY SILT (ML), trace roots and mica, dark red, medium stiff to stiff		4-6-9 N=15			
			5	3-4-6 N=10	31	38-33-5	68
				4-4-6 N=10			
			10	2-2-4 N=6			
11.0	709+/-						
		SANDY SILT (ML), trace mangaense and mica, brown, orange, white and black, medium stiff, residuum	15	2-3-3 N=6	30	36-31-5	52
		soft to medium stiff					
			20	2-2-3 N=5			
			25	2-2-2 N=4	43	33-28-5	68
27.0	693+/-						
		SILTY SAND (SM), fine to medium grained, brown and white, dense, residuum	30	8-17-17 N=34			
32.0	688+/-						
		PARTIALLY WEATHERED ROCK (PWR), sampled as brown and white, sandy SILT	35	28-50/5"			
38.6	681.5+/-						
		Auger Refusal at 38.6 Feet		50/1"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings after delayed water levels were measured.

Notes:

WATER LEVEL OBSERVATIONS

- *While drilling*
- *At completion of drilling*
- *Measured on 03/11/2020*
- *Dry Cave-In*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-19-2020 | Boring Completed: 02-19-2020

Drill Rig: CME-550 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. R-03

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.2026° Longitude: -80.9553°

Approximate Surface Elev.: 709 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.3	709+/-	**TOPSOIL**, 3-inches							
		SANDY SILT (ML), pink and brown, soft to medium stiff, residuum				2-2-3 N=5			
						2-2-4 N=6	27	33-28-5	59
			5			3-2-2 N=4			
		trace manganese, brown, white, and black, medium stiff to stiff				2-2-3 N=5			
			10						
				▽		3-2-5 N=7	32	35-27-8	56
			15						
						3-3-7 N=10			
22.0	687+/-		20						
		SILTY SAND (SM), brown, white, and orange, medium dense, residuum				5-7-7 N=14	23	28-24-4	46
27.0	682+/-		25						
		SANDY SILT (ML), trace manganese, brown, white, and black, stiff to very stiff, residuum				3-3-9 N=12			
			30	▽					
						9-12-14 N=26			
37.7	671.5+/-		35						
		Auger Refusal at 37.7 Feet				60/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *While drilling*

▽ *At completion of drilling*

Wet Cave-In

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-20-2020 | Boring Completed: 02-20-2020

Drill Rig: CME-550 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. R-04

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.2008° Longitude: -80.9565°

Approximate Surface Elev.: 712 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.4	711.5+/-	**TOPSOIL**, 5-inches				
		FAT CLAY WITH SAND (CH), dark red, stiff, residuum	3-5-7 N=12	31	62-27-35	76
3.0	709+/-					
		SILT (ML), trace sand, dark red and yellow, medium stiff to stiff, residuum	4-5-8 N=13			
			6-6-9 N=15	26		67
		trace manganese	3-6-7 N=13			
			2-3-4 N=7			
17.0	695+/-					
		SANDY ELASTIC SILT (MH), trace manganese, brown, red and black, residuum	2-4-6 N=10			
			3-3-4 N=7	35	52-43-9	55
			2-2-4 N=6			
32.0	680+/-					
		SANDY SILT (ML), trace manganese and micaceous, brown, red, and black, soft to medium stiff, residuum	1-2-2 N=4			
			1-2-3 N=5			
40.0	672+/-					
		Boring Terminated at 40 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings after delayed water levels were measured.

Notes:

WATER LEVEL OBSERVATIONS

▼ *Measured on 03/11/2020*

Dry Cave-In

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-18-2020 | Boring Completed: 02-18-2020

Drill Rig: CME-550 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. R-05

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.2039° Longitude: -80.9573°

Approximate Surface Elev.: 724 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	Description
0.3	724+/-	**TOPSOIL**, 3-inches
		SANDY SILT (ML), trace roots and manganese, pink, brown, white, and black, medium stiff, residuum
5.5	718.5+/-	
		ELASTIC SILT (MH), trace manganese, quartz, and sand, brown and black, soft to medium stiff, residuum
27.0	697+/-	
		SANDY SILT (ML), brown and white, hard, residuum
32.0	692+/-	
		SILTY SAND (SM), trace manganese, green, orange, and black, stiff, residuum
40.0	684+/-	
		Boring Terminated at 40 Feet

DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	2-2-3 N=5			
5	2-2-3 N=5	39	46-32-14	64
	4-5-3 N=8			
10	1-2-3 N=5			
	1-2-3 N=5	49	53-38-15	91
15				
	0-2-2 N=4			
20				
	0-3-4 N=7			
25				
	6-16-43 N=59			
30				
	2-4-6 N=10	38	40-32-8	38
35				
	1-3-6 N=9			
40				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings after delayed water levels were measured.

Notes:

WATER LEVEL OBSERVATIONS

- *At completion of drilling*
- *Measured on 03/11/2020*
- *Wet Cave-In*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-19-2020 | Boring Completed: 02-19-2020

Drill Rig: CME-550 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. R-06

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.2058° Longitude: -80.9579°

Approximate Surface Elev.: 720 (Ft.) +/-

DEPTH		ELEVATION (Ft.)
0.8	**TOPSOIL**, 10-inches	719+/-
	ELASTIC SILT (MH), trace manganese, dark red and black, stiff, residuum	
5.5		714.5+/-
	FAT CLAY (CH), trace sand and manganese, dark red and black, soft to stiff, residuum	
40.0		680+/-
	Boring Terminated at 40 Feet	

DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5	4-4-6 N=10	39	74-46-28	95
	3-4-6 N=10			
	3-4-6 N=10			
10	2-3-5 N=8			
15	0-2-3 N=5	44	51-28-23	88
20	0-2-2 N=4			
25	2-2-3 N=5			
30	3-2-3 N=5	50	55-28-27	85
35	3-3-4 N=7			
40	1-1-3 N=4			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with soil cuttings after delayed water levels were measured.

Notes:

WATER LEVEL OBSERVATIONS

- *At completion of drilling*
- *Measured on 03/11/2020*
- *Wet Cave-In*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-19-2020 | Boring Completed: 02-19-2020

Drill Rig: CME-550 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. R-07

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.1997° Longitude: -80.9535°

Approximate Surface Elev.: 692 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.5	691.5+/-	**TOPSOIL**, 5.5-inches							
3.0	689+/-	**LEAN CLAY (CL)**, trace sand, brown and orange, very stiff, residuum			X	3-5-14 N=19	34	47-27-20	94
8.0	684+/-	**SILT (ML)**, trace sand, brown, green, and yellow, stiff to very stiff, residuum	5		X	7-10-15 N=25			
					X	4-6-7 N=13			
17.0	675+/-	**ELASTIC SILT (MH)**, trace manganese, brown, green, yellow, and black, medium stiff to stiff, residuum	10		X	2-3-5 N=8	45	54-40-14	99
			15		X	3-3-3 N=6			
32.0	660+/-	**SILTY SAND (SM)**, brown, white, and orange, loose to medium dense, residuum trace manganese	20	▽	X	2-2-3 N=5	32	37-33-4	46
			25		X	1-2-3 N=5			
			30		X	2-3-4 N=7			
37.0	655+/-	**SANDY SILT (ML)**, trace manganese, brown, white, and orange, very stiff, residuum		▽	X	4-8-20 N=28			
39.3	652.5+/-	**PARTIALLY WEATHERED ROCK (PWR)**, sampled as green and orange sandy SILT	35		X	14-50/4"			
		Boring Terminated at 39.3 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *While drilling*

▽ *At completion of drilling*

Wet Cave-In

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-20-2020 | Boring Completed: 02-20-2020

Drill Rig: CME-550 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. R-08

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.2026° Longitude: -80.9535°

Approximate Surface Elev.: 699 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.4	698.5+/-	**TOPSOIL**, 5-inches				
		SILT WITH SAND (ML), micaceous, red and orange, soft, residuum	0-2-1 N=3	43	48-35-13	84
4.0	695+/-					
		SANDY SILT (ML), micaceous, brown and orange, soft to medium stiff, residuum white and tan	3-3-5 N=8			
			3-3-4 N=7			
			2-2-4 N=6	26	28-26-2	52
			1-2-2 N=4			
			1-1-2 N=3			
22.0	677+/-					
		SILT WITH SAND (ML), tan, orange, and gray, medium stiff, residuum	1-3-3 N=6	48	42-34-8	79
			2-3-3 N=6			
32.0	667+/-					
		SILTY SAND (SM), fine to medium grained, gray and white, medium dense, residuum	3-5-7 N=12			
			11-12-10 N=22			
40.0	659+/-					
		Boring Terminated at 40 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

- *While drilling*
- *At completion of drilling*
- *Wet Cave-In*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-25-2020 | Boring Completed: 02-25-2020

Drill Rig: CME-550 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. R-09

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.2053° Longitude: -80.9537°

Approximate Surface Elev.: 706 (Ft.) +/-

DEPTH	ELEVATION (Ft.)		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		FILL - ELASTIC SILT WITH SAND (MH), red and brown, very stiff							
3.0	703+/-					3-7-9 N=16	30	62-38-24	85
		ELASTIC SILT WITH SAND (MH), red and brown, medium stiff to stiff, residuum				4-6-6 N=12			
			5			3-4-5 N=9			
						3-3-5 N=8	37	50-45-5	74
			10						
						2-2-3 N=5			
			15						
17.0	689+/-								
		SANDY SILT (ML), tannish brown, medium stiff to stiff, residuum							
			20			1-2-3 N=5			
25.0	681+/-		25			2-3-5 N=8	42	40-33-7	68
		Boring Terminated at 25 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Dry Cave-In

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-20-2020 | Boring Completed: 02-20-2020

Drill Rig: CME-550 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. R-10

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.2102° Longitude: -80.9561°

Approximate Surface Elev.: 736 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.4	735.5+/-	**TOPSOIL**, 5-inches					
		FILL - SILT (ML), trace mica and manganese, dark red, stiff		3-4-6 N=10			
3.0	733+/-	**SANDY SILT (ML)**, trace micaceous, pink and red, medium stiff to stiff, residuum	5	4-5-6 N=11	29	46-36-10	63
				4-5-8 N=13			
		trace manganese	10	3-3-6 N=9			
			15	4-5-9 N=14			
22.0	714+/-	**SANDY SILT (ML)**, trace manganese and micaceous, brown and black, medium stiff to stiff, residuum	20	3-3-5 N=8	30	48-39-9	54
			25	2-2-4 N=6			
			30	2-3-4 N=7	36	41-36-5	58
			35	2-2-4 N=6			
		brown and white					
40.0	696+/-		40	3-4-5 N=9			
		Boring Terminated at 40 Feet					

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

At completion of drilling

Wet Cave-In

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-19-2020 | Boring Completed: 02-19-2020

Drill Rig: CME-550 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. R-11

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.2106° Longitude: -80.9548°

Approximate Surface Elev.: 726 (Ft.) +/-

DEPTH		ELEVATION (Ft.)
0.3	**TOPSOIL**, 4-inches	725.5+/-
3.0	**FILL - SANDY LEAN CLAY (CL)**, trace roots, brown and black, medium stiff	723+/-
12.0	**SANDY FAT CLAY (CH)**, trace roots, brown, orange, and yellow, medium stiff to stiff, residuum	714+/-
32.0	**SILTY SAND (SM)**, fine to medium grained, brown, pink, and orange, loose, residuum	694+/-
40.0	**SILTY SAND (SM)**, fine to medium grained, pink, brown, and orange, medium dense, residuum	686+/-
	Boring Terminated at 40 Feet	

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
5		3-2-3 N=5			
		4-4-4 N=8	29	72-30-42	67
		3-4-6 N=10			
10		2-2-3 N=5			
15		2-3-4 N=7	29	40-34-6	43
20		2-2-3 N=5			
25		2-4-4 N=8			
30		2-3-3 N=6	29	34-31-3	44
35		5-6-9 N=15			
40		7-12-14 N=26			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

- While drilling
- At completion of drilling
- Wet Cave-In

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-24-2020 | Boring Completed: 02-24-2020

Drill Rig: CME-550 | Driller: Z. Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. R-12

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.216° Longitude: -80.9568°

Approximate Surface Elev.: 700 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SILT WITH SAND (ML), red and white, medium stiff, residuum							
3.0	697+/-					3-3-2 N=5			
		ELASTIC SILT (MH), trace sand, red and orange, medium stiff, residuum				2-2-2 N=4	62	54-46-8	88
			5	▽		2-2-5 N=7			
						1-3-3 N=6			
			10						
						2-3-5 N=8	63	54-48-6	93
			15	▨					
		orange and white				2-3-5 N=8			
			20						
22.0	678+/-								
		SANDY SILT (ML), orange and white, stiff to very stiff, residuum				5-6-7 N=13	31	42-37-5	51
			25						
						3-4-7 N=11			
			30						
						5-7-12 N=19			
			35						
37.0	663+/-								
		SILTY SAND (SM), fine to coarse grained, brown and gray, dense, residuum							
40.0	660+/-		40			12-22-25 N=47			
		Boring Terminated at 40 Feet							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

▨ *Wet Cave-In*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-25-2020 | Boring Completed: 02-25-2020

Drill Rig: D-50 | Driller: J. Cain

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

BORING LOG NO. R-13

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.2124° Longitude: -80.9579°

Approximate Surface Elev.: 741 (Ft.) +/-

DEPTH	ELEVATION (Ft.)		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.0	741+/-	**TOPSOIL**, 0.5-inch							
		FILL - SANDY ELASTIC SILT (MH), micaceous and with manganese, red, light brown, and black, medium stiff to stiff				1-3-4 N=7	25	52-38-14	59
		trace mica, brown, white, and black				4-5-7 N=12			
5.5	735.5+/-	**SILTY SAND (SM)**, with mica and manganese, fine to coarse grained, black and gray, loose to medium dense, residuum	5	▽		3-3-3 N=6			
						2-2-2 N=4	31	34-30-4	31
			10	▽					
				▨		3-2-4 N=6			
			15						
						3-4-6 N=10			
			20						
22.0	719+/-	**SANDY SILT (ML)**, with manganese, olive brown, hard, residuum				7-17-20 N=37	27	33-29-4	68
			25						
28.5	712.5+/-	***Auger Refusal at 28.5 Feet***				50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *While drilling*

▽ *At completion of drilling*

▨ *Wet Cave-In*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-21-2020 | Boring Completed: 02-21-2020

Drill Rig: CME-550 | Driller: Z. Kiker

Project No.: 71195007

BORING LOG NO. R-14

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.2136° Longitude: -80.9568°

Approximate Surface Elev.: 740 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.0	740+/-	**FILL - ELASTIC SILT (MH)**, trace sand, dark red, very stiff	5-9-14 N=23	32	70-45-25	99
3.0	737+/-	**ELASTIC SILT (MH)**, trace sand, dark red and yellow, medium stiff to stiff, residuum manganese	4-5-7 N=12 2-2-3 N=5 2-2-2 N=4	58	65-54-11	99
12.0	728+/-	**SILT WITH SAND (ML)**, trace manganese, brown, black, and white, medium stiff, residuum	1-2-3 N=5 2-2-3 N=5			
22.0	718+/-	**SILTY SAND (SM)**, trace gravel and mica, fine to medium grained, brown and yellow, medium dense, residuum	4-5-6 N=11	36	36-31-5	48
27.0	713+/-	**SANDY SILT (ML)**, trace manganese, brown and yellow, soft to medium stiff, residuum	0-2-2 N=4			
32.0	708+/-	**SANDY ELASTIC SILT (MH)**, trace mica, brown and white, soft to medium stiff, residuum	2-2-2 N=4			
37.0	703+/-	**SANDY SILT (ML)**, trace mica, brown, green, and white, medium stiff, residuum	2-3-4 N=7			
40.0	700+/-	***Boring Terminated at 40 Feet***				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

- While drilling
- At completion of drilling
- Wet Cave-In

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-21-2020 | Boring Completed: 02-21-2020

Drill Rig: CME-550 | Driller: Z. Kiker

Project No.: 71195007

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BORING LOG NO. R-15

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.215° Longitude: -80.9578°

Approximate Surface Elev.: 745 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.8	744+/-	**TOPSOIL**, 10-inches				
		SANDY SILT (ML), with manganese, red and light brown, soft to medium stiff, residuum	2-3-3 N=6	33	42-34-8	58
			2-1-3 N=4			
			2-3-3 N=6			
8.0	737+/-					
		SILTY SAND (SM), with manganese, fine to medium grained, light brown, loose, residuum	3-3-6 N=9			
			2-4-5 N=9	34	41-33-8	50
17.0	728+/-					
		SANDY ELASTIC SILT (MH), light brown and red, stiff, residuum	3-4-7 N=11			
22.0	723+/-					
		SILT WITH SAND (ML), with manganese, olive brown, very stiff, residuum	3-6-10 N=16	33	42-34-8	84
			4-7-10 N=17			
32.0	713+/-					
		SILTY SAND (SM), fine to medium grained, red and light brown, medium dense, residuum	5-8-11 N=19			
			5-8-13 N=21			
40.0	705+/-					
		Boring Terminated at 40 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

- *While drilling*
- *At completion of drilling*
- *Wet Cave-In*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-21-2020 | Boring Completed: 02-21-2020

Drill Rig: CME-550 | Driller: Z. Kiker

Project No.: 71195007

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BORING LOG NO. R-16

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.2167° Longitude: -80.9587°

Approximate Surface Elev.: 748 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.7	747.5+/-	**TOPSOIL**, 8-inches				
3.0	745+/-	**FILL - LEAN CLAY (CL)**, trace sand and roots, brown, red, and yellow, stiff	2-4-6 N=10	31	49-23-26	85
5.5	742.5+/-	**FILL - SANDY LEAN CLAY (CL)**, trace manganese and roots, brown, red, yellow, and black, medium stiff	3-4-3 N=7			
8.0	740+/-	**SANDY ELASTIC SILT (MH)**, trace roots, brown and orange, stiff, residuum	2-4-5 N=9	31	55-34-21	63
17.0	731+/-	**SILT (ML)**, trace manganese and sand, dark red and brown, stiff, residuum	3-4-6 N=10 3-5-5 N=10			
27.0	721+/-	**SILTY SAND (SM)**, fine to medium grained, brown and orange, loose, residuum trace manganese	1-2-2 N=4 3-3-5 N=8	32	35-30-5	44
37.0	711+/-	**SILTY SAND (SM)**, fine to medium grained, white and brown, medium dense to dense, residuum brown and yellowish white	12-13-19 N=32 8-10-17 N=27			
39.5	708.5+/-	**PARTIALLY WEATHERED ROCK (PWR)**, sampled as brown silty SAND	35-50/5"			
		Boring Terminated at 39.45 Feet				

DEPTH (Ft.): 5, 10, 15, 20, 25, 30, 35

WATER LEVEL OBSERVATIONS: ▽ While drilling; ▽ At completion of drilling; Wet Cave-In

SAMPLE TYPE: split spoon

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

- ▽ *While drilling*
- ▽ *At completion of drilling*
- *Wet Cave-In*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-24-2020 | Boring Completed: 02-24-2020

Drill Rig: CME-550 | Driller: Z. Kiker

Project No.: 71195007

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BORING LOG NO. R-17

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.2147° Longitude: -80.9561°

Approximate Surface Elev.: 732 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
		SILT (ML), trace sand, red and orange, medium stiff, residuum	2-2-3 N=5			
3.0	729+/-					
		ELASTIC SILT WITH SAND (MH), orange, gray, and green, stiff to very stiff, residuum	5-8-10 N=18	39	51-37-14	75
			7-7-8 N=15			
			3-4-6 N=10			
			3-4-6 N=10			
17.0	715+/-					
		SILTY SAND (SM), trace gravel, medium grained, light brown, medium dense, residuum	7-10-12 N=22	22	32-29-3	42
22.0	710+/-					
		SANDY SILT (ML), trace gravel, light brown and gray, very stiff to hard, residuum	13-20-22 N=42			
			7-12-10 N=22	28	42-32-10	57
32.0	700+/-					
		SILTY SAND (SM), trace rock fragments, medium grained, light brown and gray, very dense, residuum	14-20-34 N=54			
37.0	695+/-					
		PARTIALLY WEATHERED ROCK (PWR), sampled as light brown and gray silty SAND	35-50/6"			
39.5	692.5+/-					
		Boring Terminated at 39.5 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

At completion of drilling

Wet Cave-In

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-25-2020 | Boring Completed: 02-25-2020

Drill Rig: D-50 | Driller: J. Cain

Project No.: 71195007

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BORING LOG NO. R-18

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow Site

CLIENT: WSP USA Inc. Charlotte, NC

SITE: West Boulevard, ARFF Road and Byrum Drive Charlotte, NC

LOCATION

Latitude: 35.2181° Longitude: -80.9564°

Approximate Surface Elev.: 730 (Ft.) +/-

DEPTH	ELEVATION (Ft.)	Description	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.3	730+/-	**TOPSOIL**, 3-inches				
3.0	727+/-	**FILL - SILTY SAND (SM)**, trace roots, fine to medium grained, brown and gray, loose	2-3-3 N=6			
5.5	724.5+/-	**SANDY ELASTIC SILT (MH)**, yellow and white, soft to medium stiff, residuum	2-2-3 N=5	41	56-46-10	61
		ELASTIC SILT (ML), trace sand, yellow, white, and green, medium stiff, residuum	0-2-2 N=4			
			2-1-3 N=4			
			1-2-3 N=5			
			1-2-2 N=4	46	50-42-8	87
22.0	708+/-					
		SILT WITH SAND (ML), brown, green, and yellow, medium stiff, residuum	2-2-3 N=5			
27.0	703+/-					
		SILT (ML), green, orange, and white, stiff, residuum	2-3-8 N=11	34	38-34-4	88
32.0	698+/-					
		SILTY SAND (SM), fine to medium grained, green, white, and yellow, medium dense, residuum	3-5-10 N=15			
38.5	691.5+/-					
40.0	690+/-	no recovery	5-9-11 N=20			
		Boring Terminated at 40 Feet				

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

- *While drilling*
- *At completion of drilling*
- *Wet Cave-In*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 02-24-2020 | Boring Completed: 02-24-2020

Drill Rig: CME-550 | Driller: Z. Kiker

Project No.: 71195007

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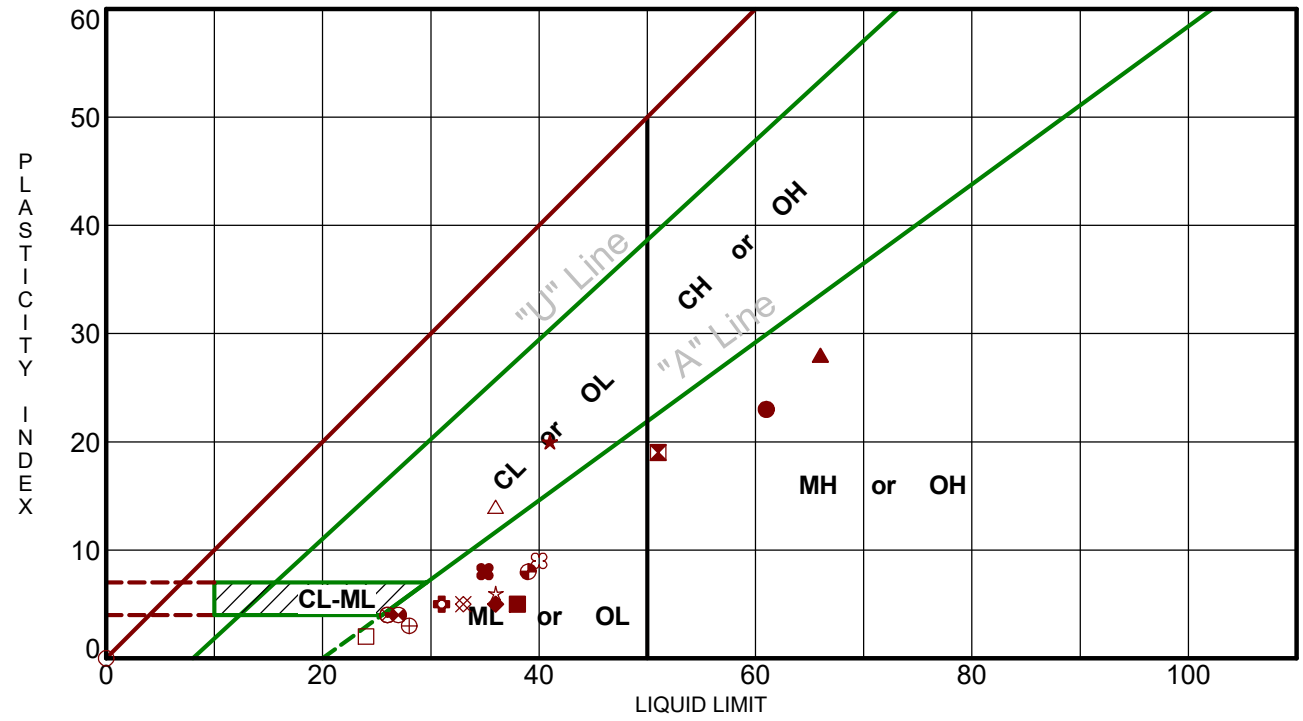
ATTERBERG LIMITS RESULTS

ASTM D4318



Boring ID	Depth	LL	PL	PI	Fines	USCS	Description
D-01	3.5 - 5	61	38	23	80.0	MH	ELASTIC SILT with SAND
D-01	8.5 - 10	51	32	19	62.3	MH	SANDY ELASTIC SILT
D-01	23.5 - 25	66	38	28	83.6	MH	ELASTIC SILT with SAND
D-02	1 - 2.5	41	21	20	20.6	SC	CLAYEY SAND
D-02	6 - 7.5	26	22	4	50.7	ML	SANDY SILT
D-02	18.5 - 20	31	26	5	61.3	ML	SANDY SILT
D-03	3.5 - 5	NP	NP	NP	0.9		
D-03	8.5 - 10	36	22	14	67.7	CL	SANDY LEAN CLAY
D-03	13.5 - 15	26	22	4	48.0	SM	SILTY SAND
D-04	1 - 2.5	28	25	3	27.7	SM	SILTY SAND
D-04	6 - 7.5	24	22	2	21.7	SM	SILTY SAND
D-04	18.5 - 20	27	23	4	38.8	SM	SILTY SAND
R-01	1 - 2.5	39	31	8	76.6	ML	SILT with SAND
R-01	13.5 - 15	36	30	6	65.5	ML	SANDY SILT
R-01	33.5 - 35	40	31	9	74.8	ML	SILT with SAND
R-02	3.5 - 5	38	33	5	68.0	ML	SANDY SILT
R-02	13.5 - 15	36	31	5	52.5	ML	SANDY SILT
R-02	23.5 - 25	33	28	5	67.7	ML	SANDY SILT
R-03	3.5 - 5	33	28	5	58.6	ML	SANDY SILT
R-03	13.5 - 15	35	27	8	55.8	ML	SANDY SILT

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow

SITE: West Boulevard, ARFF Road, Byrum Drive
Charlotte, NC

Terracon
2701 Westport Rd
Charlotte, NC

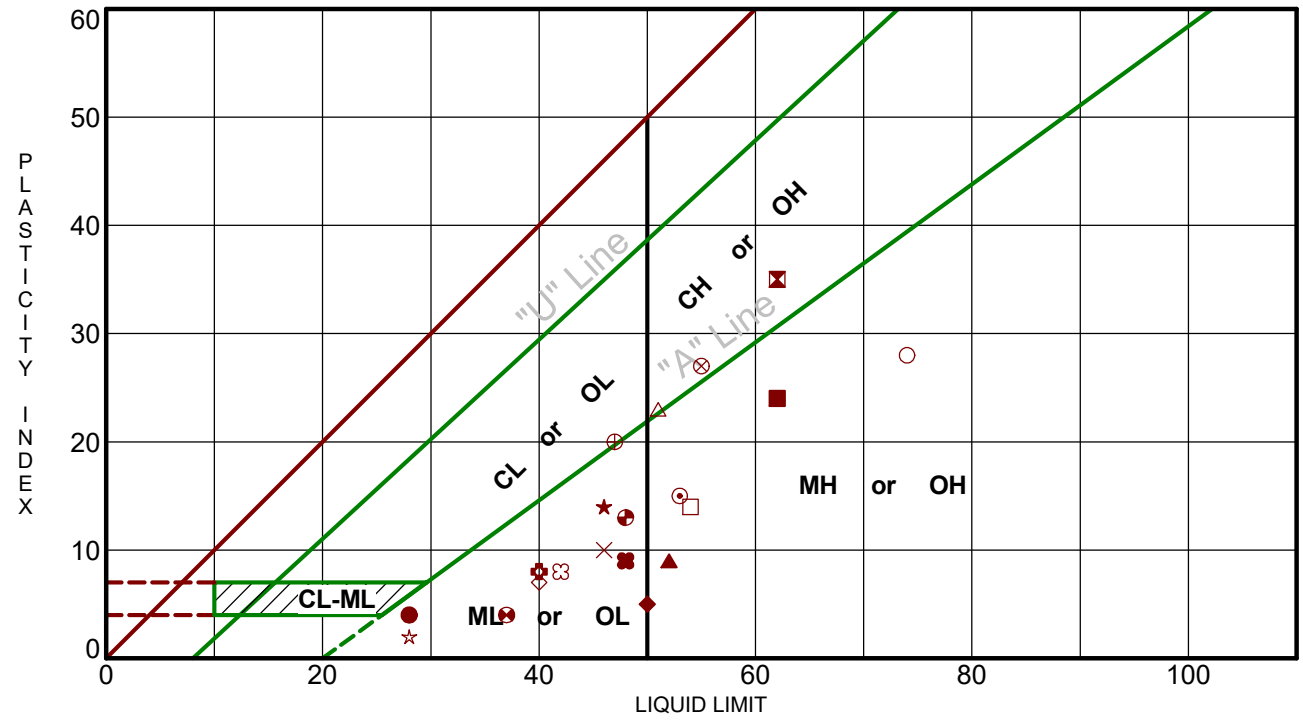
PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ATTERBERG LIMITS 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

ATTERBERG LIMITS RESULTS

ASTM D4318



Boring ID	Depth	LL	PL	PI	Fines	USCS	Description
R-03	23.5 - 25	28	24	4	46.3	SM	SILTY SAND
R-04	1 - 2.5	62	27	35	76.4	CH	FAT CLAY with SAND
R-04	23.5 - 25	52	43	9	55.1	MH	SANDY ELASTIC SILT
R-05	3.5 - 5	46	32	14	64.0	ML	SANDY SILT
R-05	13.5 - 15	53	38	15	91.2	MH	ELASTIC SILT
R-05	33.5 - 35	40	32	8	38.4	SM	SILTY SAND
R-06	1 - 2.5	74	46	28	94.9	MH	ELASTIC SILT
R-06	13.5 - 15	51	28	23	87.6	CH	FAT CLAY
R-06	28.5 - 30	55	28	27	85.2	CH	FAT CLAY
R-07	1 - 2.5	47	27	20	94.3	CL	LEAN CLAY
R-07	8.5 - 10	54	40	14	98.8	MH	ELASTIC SILT
R-07	18.5 - 20	37	33	4	46.1	SM	SILTY SAND
R-08	1 - 2.5	48	35	13	84.3	ML	SILT with SAND
R-08	8.5 - 10	28	26	2	52.4	ML	SANDY SILT
R-08	23.5 - 25	42	34	8	79.1	ML	SILT with SAND
R-09	1 - 2.5	62	38	24	84.5	MH	ELASTIC SILT with SAND
R-09	8.5 - 10	50	45	5	73.6	MH	ELASTIC SILT with SAND
R-09	23.5 - 25	40	33	7	68.3	ML	SANDY SILT
R-10	3.5 - 5	46	36	10	63.2	ML	SANDY SILT
R-10	18.5 - 20	48	39	9	54.1	ML	SANDY SILT

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow

SITE: West Boulevard, ARFF Road, Byrum Drive Charlotte, NC

Terracon
2701 Westport Rd
Charlotte, NC

PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

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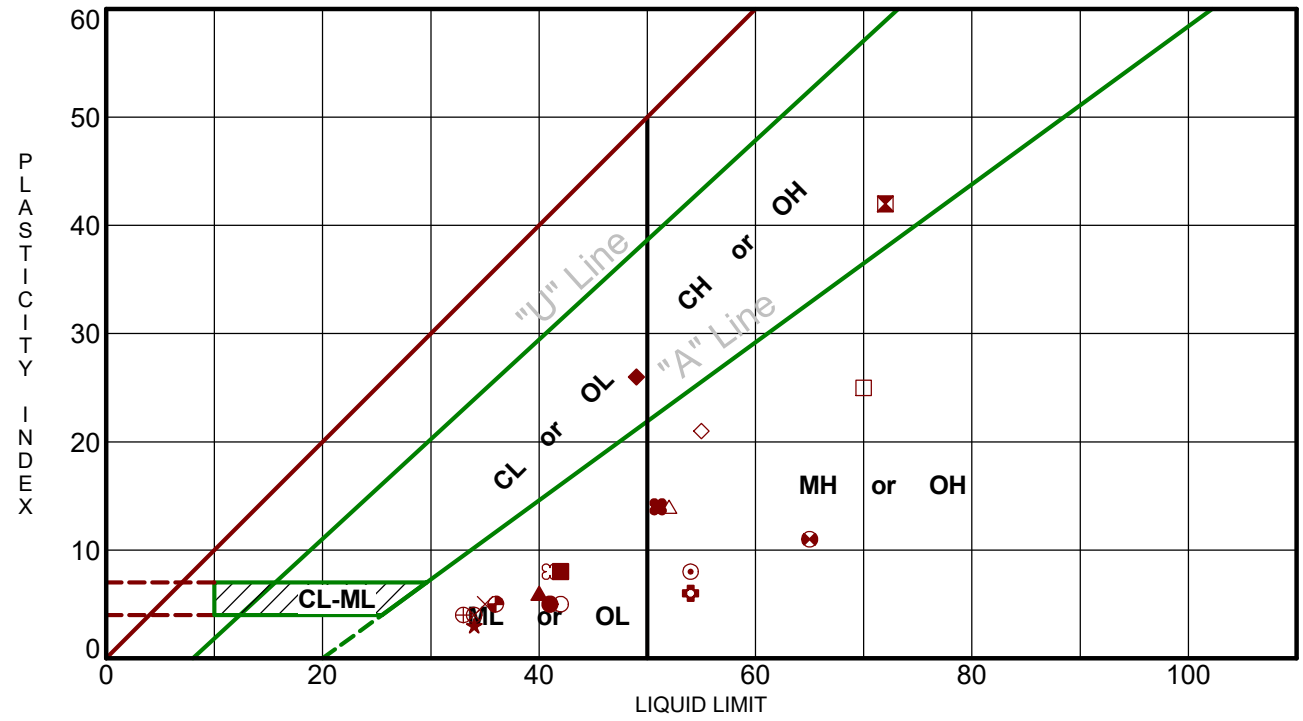
ATTERBERG LIMITS RESULTS

ASTM D4318



Boring ID	Depth	LL	PL	PI	Fines	USCS	Description
R-10	28.5 - 30	41	36	5	58.5	ML	SANDY SILT
R-11	3.5 - 5	72	30	42	66.7	CH	SANDY FAT CLAY
R-11	13.5 - 15	40	34	6	43.2	SM	SILTY SAND
R-11	28.5 - 30	34	31	3	44.2	SM	SILTY SAND
R-12	3.5 - 5	54	46	8	88.0	MH	ELASTIC SILT
R-12	13.5 - 15	54	48	6	93.3	MH	ELASTIC SILT
R-12	23.5 - 25	42	37	5	51.4	ML	SANDY SILT
R-13	1 - 2.5	52	38	14	59.0	MH	SANDY ELASTIC SILT
R-13	8.5 - 10	34	30	4	31.1	SM	SILTY SAND
R-13	23.5 - 25	33	29	4	68.3	ML	SANDY SILT
R-14	1 - 2.5	70	45	25	99.0	MH	ELASTIC SILT
R-14	8.5 - 10	65	54	11	99.4	MH	ELASTIC SILT
R-14	23.5 - 25	36	31	5	47.6	SM	SILTY SAND
R-15	1 - 2.5	42	34	8	57.5	ML	SANDY SILT
R-15	13.5 - 15	41	33	8	49.7	SM	SILTY SAND
R-15	23.5 - 25	42	34	8	84.1	ML	SILT with SAND
R-16	1 - 2.5	49	23	26	85.2	CL	LEAN CLAY
R-16	6 - 7.5	55	34	21	63.4	MH	SANDY ELASTIC SILT
R-16	18.5 - 20	35	30	5	43.7	SM	SILTY SAND
R-17	3.5 - 5	51	37	14	74.7	MH	ELASTIC SILT with SAND

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow

SITE: West Boulevard, ARFF Road, Byrum Drive
Charlotte, NC

Terracon
2701 Westport Rd
Charlotte, NC

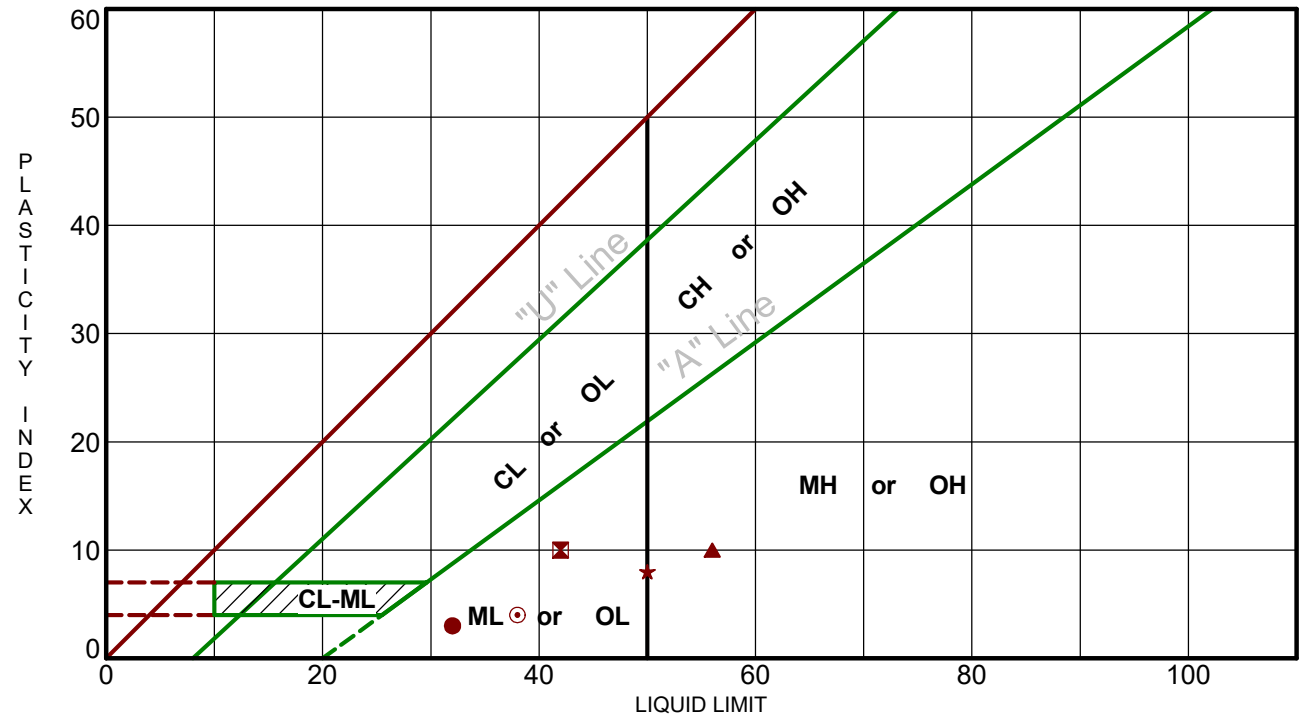
PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ATTERBERG LIMITS 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

ATTERBERG LIMITS RESULTS

ASTM D4318



Boring ID	Depth	LL	PL	PI	Fines	USCS	Description
● R-17	18.5 - 20	32	29	3	41.8	SM	SILTY SAND
⊠ R-17	28.5 - 30	42	32	10	57.0	ML	SANDY SILT
▲ R-18	3.5 - 5	56	46	10	60.9	MH	SANDY ELASTIC SILT
★ R-18	18.5 - 20	50	42	8	87.5	MH	ELASTIC SILT
⊙ R-18	28.5 - 30	38	34	4	88.2	ML	SILT

PROJECT: Borrow Site Evaluation - Detention Basin Site and Runway Borrow

SITE: West Boulevard, ARFF Road, Byrum Drive Charlotte, NC

Terracon
2701 Westport Rd
Charlotte, NC

PROJECT NUMBER: 71195007

CLIENT: WSP USA Inc.
Charlotte, NC

LABORATORY TESTS ARE NOT VALID IF SEPARATED FROM ORIGINAL REPORT. ATTERBERG LIMITS 71195007-RUNWAY_BORROW_SITE AND POND.GPJ TERRACON_DATATEMPLATE.GDT 4/9/20

GENERAL NOTES

SAMPLING	WATER LEVEL	FIELD TESTS
	 **Water Initially Encountered**  **Water Level After a Specified Period of Time**  **Water Level After a Specified Period of Time**  **Cave In Encountered** Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.	**N** Standard Penetration Test Resistance (Blows/Ft.) **(HP)** Hand Penetrometer **(T)** Torvane **(DCP)** Dynamic Cone Penetrometer **UC** Unconfined Compressive Strength **(PID)** Photo-Ionization Detector **(OVA)** Organic Vapor Analyzer

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification as noted on the soil boring logs is based Unified Soil Classification System. Where sufficient laboratory data exist to classify the soils consistent with ASTM D2487 "Classification of Soils for Engineering Purposes" this procedure is used. ASTM D2488 "Description and Identification of Soils (Visual-Manual Procedure)" is also used to classify the soils, particularly where insufficient laboratory data exist to classify the soils in accordance with ASTM D2487. In addition to USCS classification, coarse grained soils are classified on the basis of their in-place relative density, and fine-grained soils are classified on the basis of their consistency. See "Strength Terms" table below for details. The ASTM standards noted above are for reference to methodology in general. In some cases, variations to methods are applied as a result of local practice or professional judgment.

LOCATION AND ELEVATION NOTES

Exploration point locations as shown on the Exploration Plan and as noted on the soil boring logs in the form of Latitude and Longitude are approximate. See Exploration and Testing Procedures in the report for the methods used to locate the exploration points for this project. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS

RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance		CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
Descriptive Term (Density)	**Standard Penetration or N-Value Blows/Ft.**	**Descriptive Term (Consistency)**	**Unconfined Compressive Strength Qu, (tsf)**	**Standard Penetration or N-Value Blows/Ft.**
Very Loose	0 - 3	Very Soft	less than 0.25	0 - 1
Loose	4 - 9	Soft	0.25 to 0.50	2 - 4
Medium Dense	10 - 29	Medium Stiff	0.50 to 1.00	4 - 8
Dense	30 - 50	Stiff	1.00 to 2.00	8 - 15
Very Dense	> 50	Very Stiff	2.00 to 4.00	15 - 30
		Hard	> 4.00	> 30

RELEVANCE OF SOIL BORING LOG

The soil boring logs contained within this document are intended for application to the project as described in this document. Use of these soil boring logs for any other purpose may not be appropriate.

UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]					Soil Classification	
					Group Symbol	Group Name [B]
Coarse Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	$Cu \geq 4$ and $1 \leq Cc \leq 3$ [E]		GW	Well-graded gravel [F]
			$Cu < 4$ and/or $1 > Cc > 3$ [E]		GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH		GM	Silty gravel [F,G,H]
			Fines classify as CL or CH		GC	Clayey gravel [F,G,H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	$Cu \geq 6$ and $1 \leq Cc \leq 3$ [E]		SW	Well-graded sand [I]
			$Cu < 6$ and/or $1 > Cc > 3$ [E]		SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH		SM	Silty sand [G,H,I]
			Fines classify as CL or CH		SC	Clayey sand [G,H,I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots on or above "A" line [J]		CL	Lean clay [K,L,M]
			PI < 4 or plots below "A" line [J]		ML	Silt [K,L,M]
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay [K,L,M,N]
			Liquid limit - not dried			Organic silt [K,L,M,O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line		CH	Fat clay [K,L,M]
			PI plots below "A" line		MH	Elastic Silt [K,L,M]
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay [K,L,M,P]
			Liquid limit - not dried			Organic silt [K,L,M,Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor				PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve

[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay

[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 15% sand, add "with sand" to group name.

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H] If fines are organic, add "with organic fines" to group name.

[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.

[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

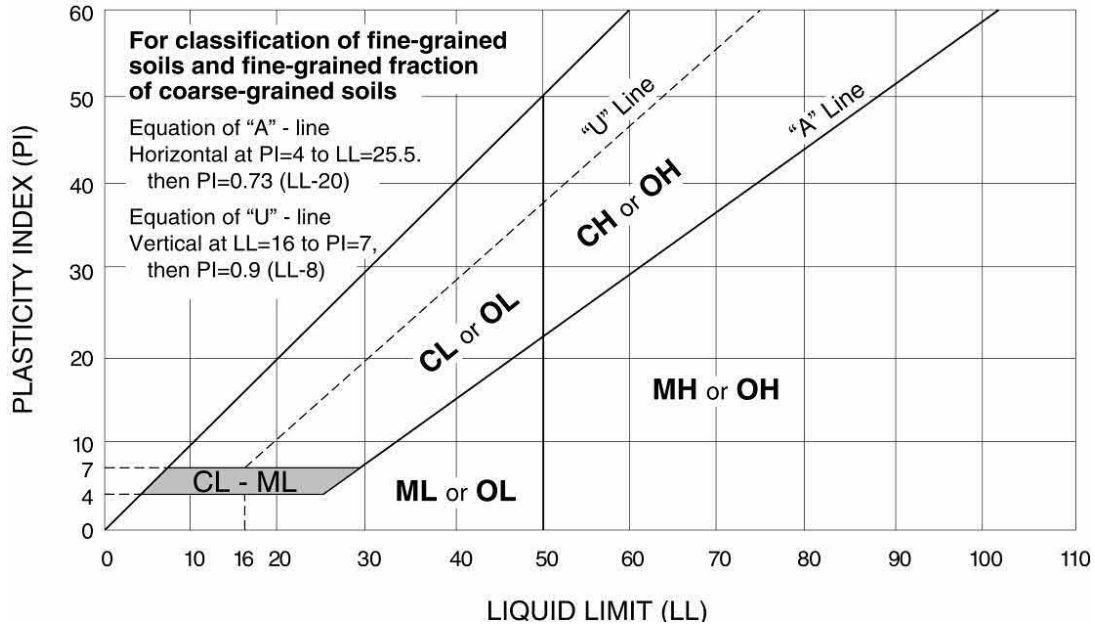
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N] PI ≥ 4 and plots on or above "A" line.

[O] PI < 4 or plots below "A" line.

[P] PI plots on or above "A" line.

[Q] PI plots below "A" line.

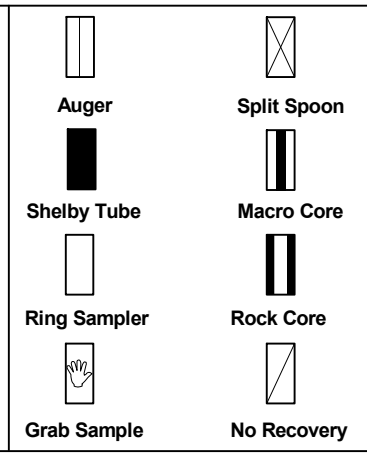


H. ADDITIONAL CULVERT AND SEWER EXPLORATION

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

SAMPLING



WATER LEVEL

Water Initially Encountered

Water Level After a Specified Period of Time

Water Level After a Specified Period of Time

Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.

FIELD TESTS

(HP)	Hand Penetrometer
(T)	Torvane
(b/f)	Standard Penetration Test (blows per foot)
(PID)	Photo-Ionization Detector
(OVA)	Organic Vapor Analyzer

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS

RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance Includes gravels, sands and silts.			CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance			
Descriptive Term (Density)	**Standard Penetration or N-Value Blows/Ft.**	**Ring Sampler Blows/Ft.**	**Descriptive Term (Consistency)**	**Unconfined Compressive Strength, Qu, psf**	**Standard Penetration or N-Value Blows/Ft.**	**Ring Sampler Blows/Ft.**
Very Loose	0 - 3	0 - 6	Very Soft	less than 500	0 - 1	< 3
Loose	4 - 9	7 - 18	Soft	500 to 1,000	2 - 4	3 - 4
Medium Dense	10 - 29	19 - 58	Medium-Stiff	1,000 to 2,000	4 - 8	5 - 9
Dense	30 - 50	59 - 98	Stiff	2,000 to 4,000	8 - 15	10 - 18
Very Dense	> 50	≥ 99	Very Stiff	4,000 to 8,000	15 - 30	19 - 42
			Hard	> 8,000	> 30	> 42

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 15
With	15 - 29
Modifier	> 30

GRAIN SIZE TERMINOLOGY

Major Component of Sample	Particle Size
Boulders	Over 12 in. (300 mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm
Silt or Clay	Passing #200 sieve (0.075mm)

RELATIVE PROPORTIONS OF FINES

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 5
With	5 - 12
Modifier	> 12

PLASTICITY DESCRIPTION

Term	Plasticity Index
Non-plastic	0
Low	1 - 10
Medium	11 - 30
High	> 30

UNIFIED SOIL CLASSIFICATION SYSTEM

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]					Soil Classification	
					Group Symbol	Group Name [B]
Coarse Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	$Cu \geq 4$ and $1 \leq Cc \leq 3$ [E]		GW	Well-graded gravel [F]
			$Cu < 4$ and/or $1 > Cc > 3$ [E]		GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH		GM	Silty gravel [F,G,H]
			Fines classify as CL or CH		GC	Clayey gravel [F,G,H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	$Cu \geq 6$ and $1 \leq Cc \leq 3$ [E]		SW	Well-graded sand [I]
			$Cu < 6$ and/or $1 > Cc > 3$ [E]		SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH		SM	Silty sand [G,H,I]
			Fines classify as CL or CH		SC	Clayey sand [G,H,I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots on or above "A" line [J]		CL	Lean clay [K,L,M]
			PI < 4 or plots below "A" line [J]		ML	Silt [K,L,M]
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay [K,L,M,N]
			Liquid limit - not dried			Organic silt [K,L,M,O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above "A" line		CH	Fat clay [K,L,M]
			PI plots below "A" line		MH	Elastic Silt [K,L,M]
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay [K,L,M,P]
			Liquid limit - not dried			Organic silt [K,L,M,Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor				PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve

[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.

[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay

[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ≥ 15% sand, add "with sand" to group name.

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H] If fines are organic, add "with organic fines" to group name.

[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.

[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add "with sand" or "with gravel," whichever is predominant.

[L] If soil contains ≥ 30% plus No. 200 predominantly sand, add "sandy" to group name.

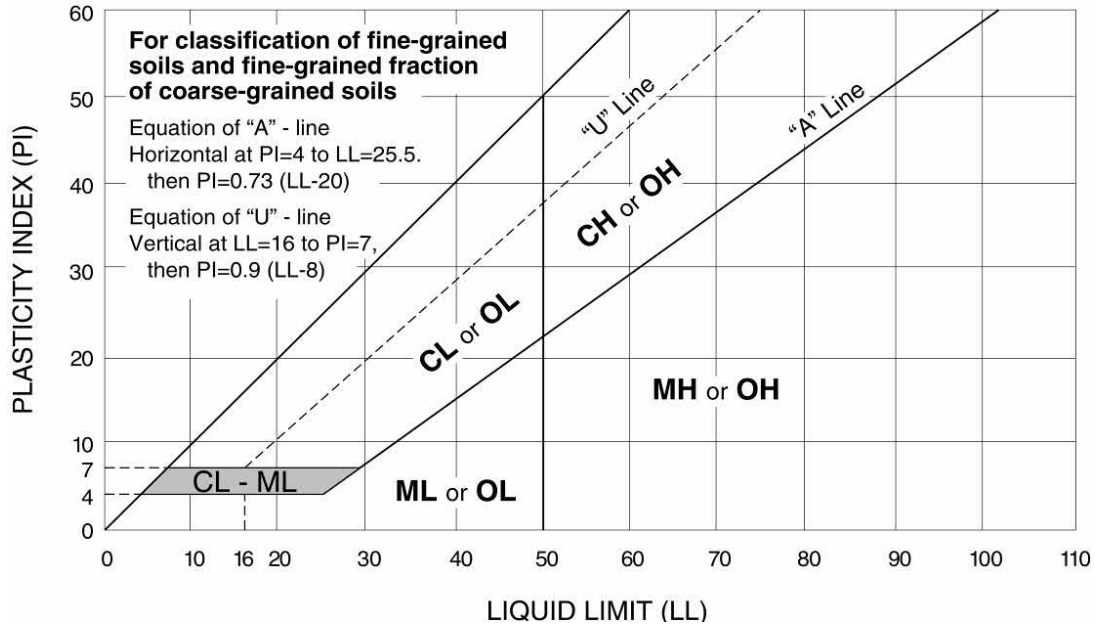
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N] PI ≥ 4 and plots on or above "A" line.

[O] PI < 4 or plots below "A" line.

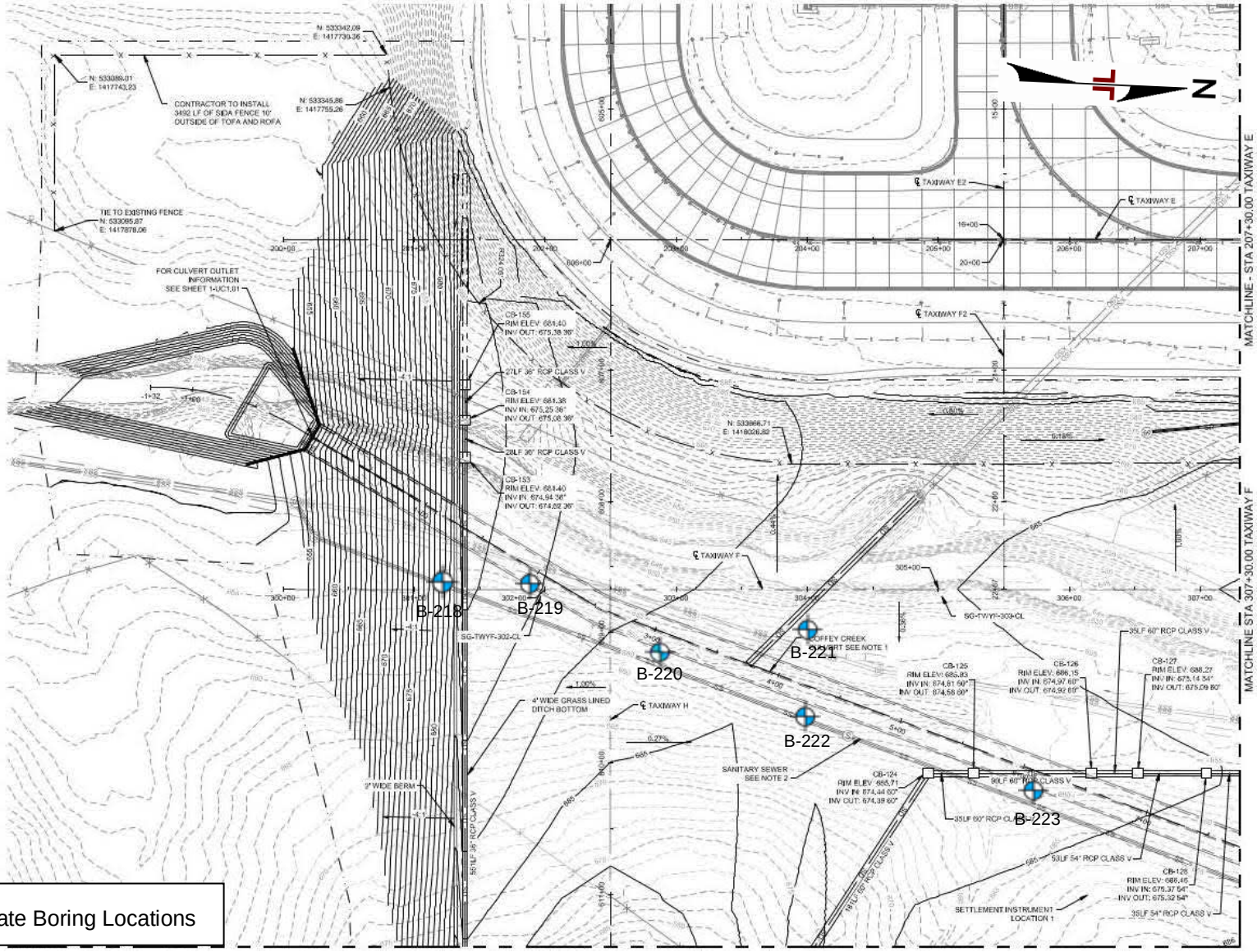
[P] PI plots on or above "A" line.

[Q] PI plots below "A" line.



Terracon

Exhibit B.1.A



DRAINAGE AND GRADING PLAN PROVIDED BY WSP

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager: JPM	Project No. 71195007
Drawn by: SD	Scale: AS SHOWN
Checked by: JPM	
Approved by: JPM	Date: 6/15/2020

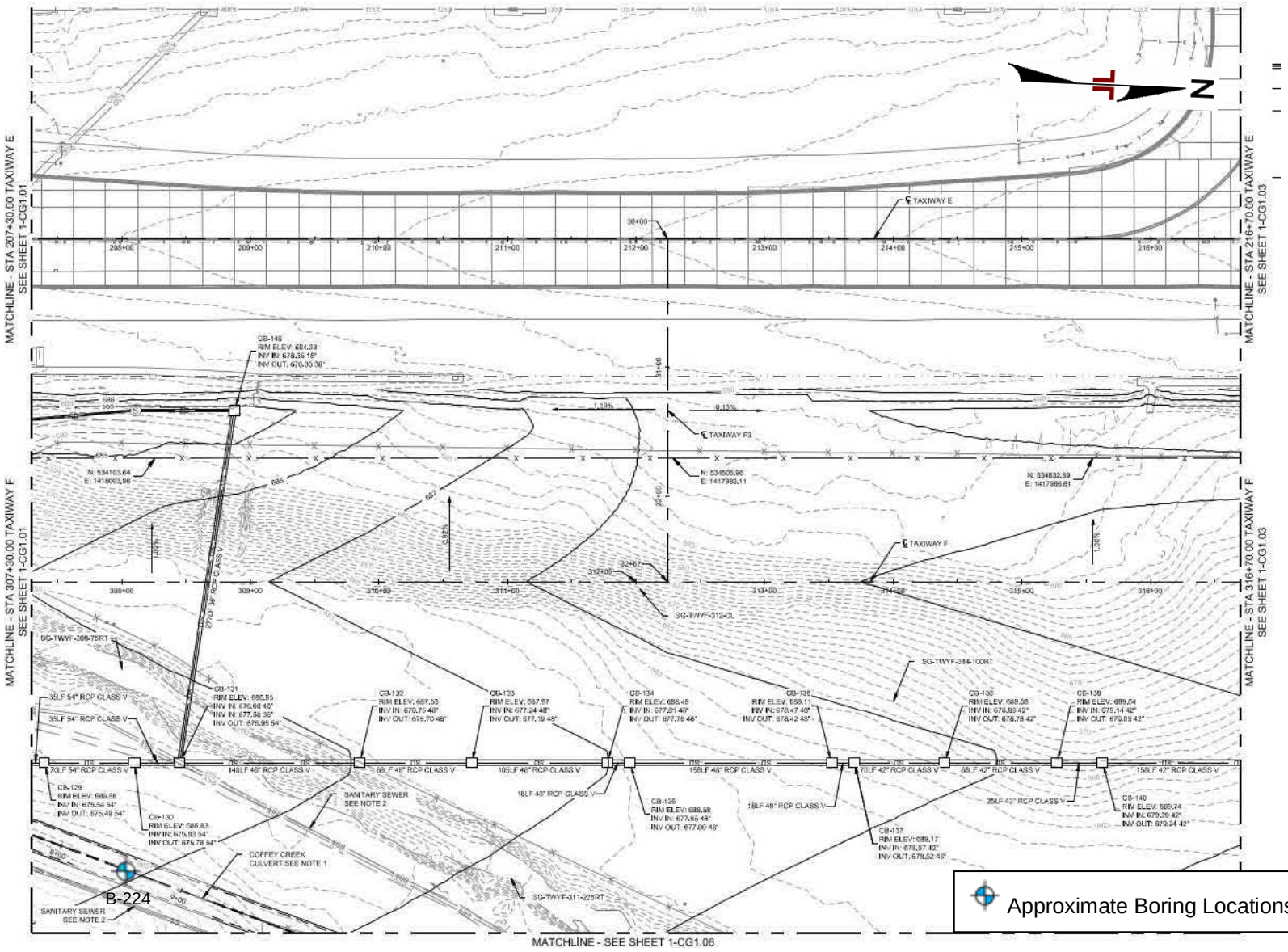
Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

EXPLORATION PLAN

CLT Airport-Deicing Pad and SCT

Charlotte, NC

Exhibit 1



DRAINAGE AND GRADING PLAN PROVIDED BY WSP

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager: JPM	Project No.
Drawn by: SD	Scale: AS SHOWN
Checked by: JPM	71195007
Approved by: JPM	Date: 6/15/2020

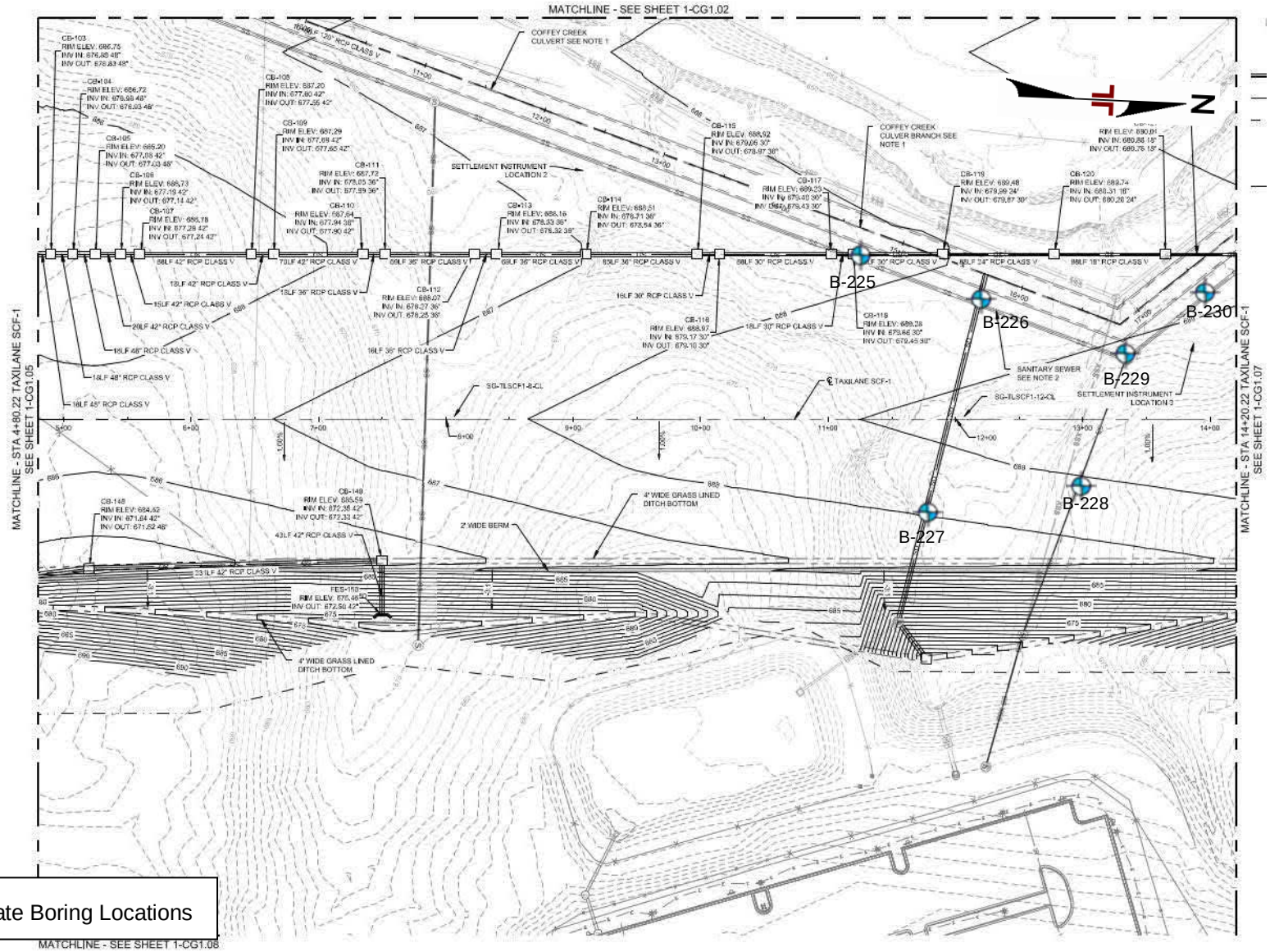
Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

EXPLORATION PLAN

CLT Airport-Deicing Pad and SCT

Charlotte, NC

Exhibit 2



Approximate Boring Locations

DRAINAGE AND GRADING PLAN PROVIDED BY WSP

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager: JPM	Project No. 71195007
Drawn by: SD	Scale: AS SHOWN
Checked by: JPM	
Approved by: JPM	Date: 6/15/2020

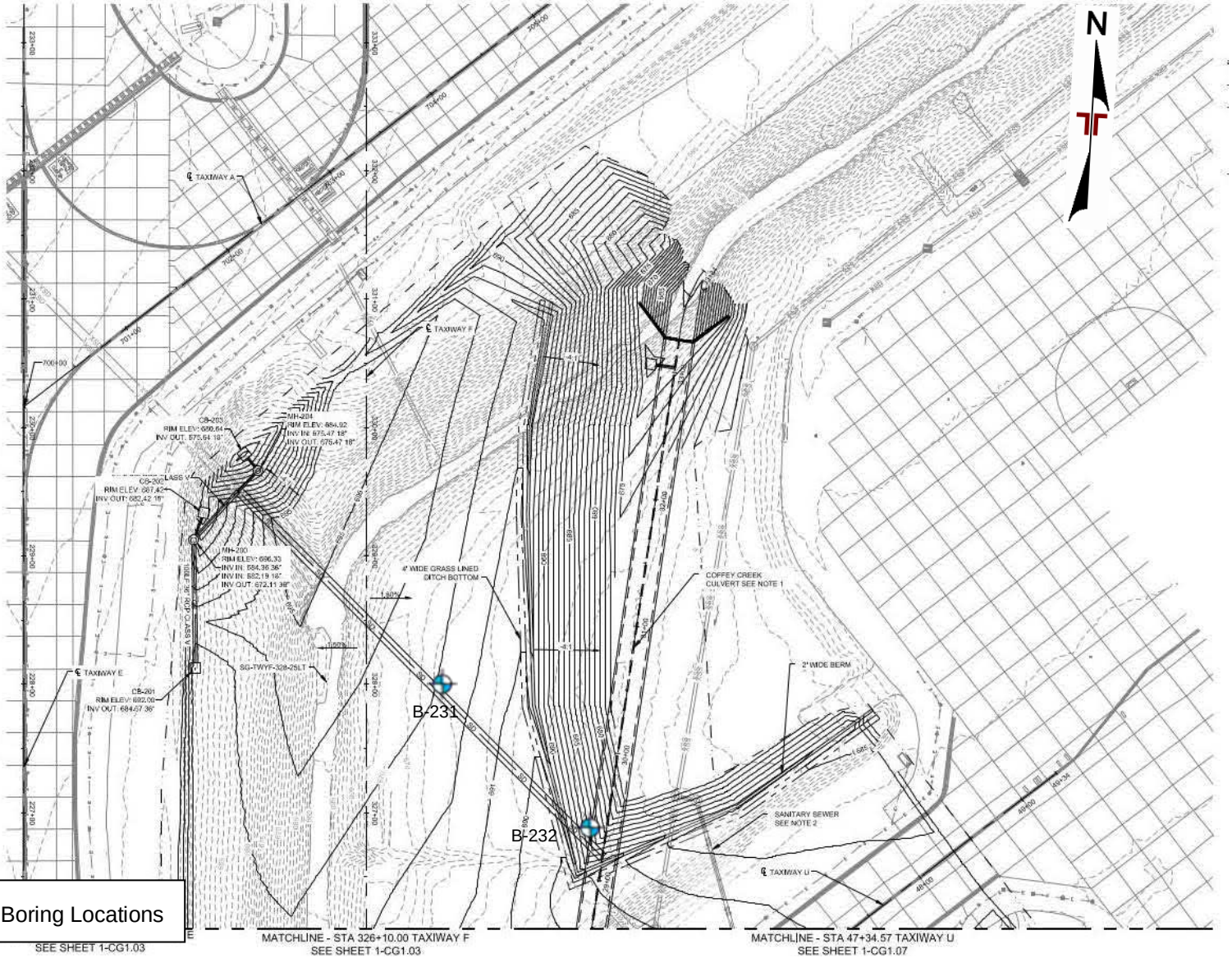
Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

EXPLORATION PLAN

CLT Airport-Deicing Pad and SCT

Charlotte, NC

Exhibit 3



Approximate Boring Locations

DRAINAGE AND GRADING PLAN PROVIDED BY WSP

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager: JPM	Project No. 71195007
Drawn by: SD	Scale: AS SHOWN
Checked by: JPM	
Approved by: JPM	Date: 6/15/2020

Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

EXPLORATION PLAN

CLT Airport-Deicing Pad and SCT

Charlotte, NC

Exhibit 4

BORING LOG NO. B-218

PROJECT: CLT Airport- Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.1999° Longitude: -80.9479°

Surface Elev.: 655 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.3	655	**TOPSOIL**, 3-inches
		SANDY FAT CLAY (CH), with silt, dark brown, olive brown and gray, medium stiff to stiff, Alluvium
5.5	649.5	
		CLAYEY SAND (SC), gray, white and light brown, stiff, Residuum
8.0	647	
		POORLY GRADED SAND WITH SILT (SP), fine to coarse grained, white and gray, dense, Residuum
12.0	643	
		PARTIALLY WEATHERED ROCK (PWR), sampled as dark brown and white, poorly graded SAND with SILT
		with gravel

DEPTH (Ft.)	FIELD TEST RESULTS
5	3-3-4 N=7
	3-4-6 N=10
10	3-4-6 N=10
	10-13-17 N=30
15	39-50/5"
	37-50/5"
20	
25	50/2"
	50/3"
30	
35	50/3"
	50/2"
40	
45	50/1"

WATER LEVEL OBSERVATIONS | SAMPLE TYPE | WATER CONTENT (%) | ATTERBERG LIMITS LL-PL-PI | PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings after delayed water levels were measured.

Notes:

WATER LEVEL OBSERVATIONS

- *While drilling*
- *At completion of drilling*
- *Measured on 6/1/2020*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 05-21-2020 | Boring Completed: 05-21-2020

Drill Rig: D-50 | Driller: Z.Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT - SD .GPJ TERRACON_DATATEMPLATE.GDT 7/1/20

BORING LOG NO. B-218

PROJECT: CLT Airport- Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

GRAPHIC LOG	LOCATION / DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	Latitude: 35.1999° Longitude: -80.9479° Surface Elev.: 655 (Ft.)							
	PARTIALLY WEATHERED ROCK (PWR), sampled as dark brown and white, poorly graded SAND with SILT *(continued)*				50/1"			
	50.5 604.5	50						
	Auger Refusal at 50.5 Feet				50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings after delayed water levels were measured.

Notes:

WATER LEVEL OBSERVATIONS

- *While drilling*
- *At completion of drilling*
- *Measured on 6/1/2020*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 05-21-2020 | Boring Completed: 05-21-2020
Drill Rig: D-50 | Driller: Z.Kiker
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT - SD .GPJ TERRACON_DATATEMPLATE.GDT 7/1/20

BORING LOG NO. B-219

PROJECT: CLT Airport- Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2002° Longitude: -80.9479°

Surface Elev.: 659 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	659	**TOPSOIL**, 2-inches
3.0	656	**FILL - POORLY GRADED SAND WITH SILT (SP-SM)**, red and brown, loose
8.0	651	**SANDY FAT CLAY (CH)**, gray and brown, stiff, Alluvium
12.0	647	**CLAYEY SAND WITH GRAVEL (SC)**, fine to coarse grained, gray and white, medium dense, Alluvium
22.0	637	**SILTY SAND (SM)**, with mica, fine to coarse grained, gray and white, dense, Residuum light brown
		PARTIALLY WEATHERED ROCK (PWR), sampled as gray and white, silty SAND

DEPTH (Ft.)	FIELD TEST RESULTS
5	3-2-2 N=4
	3-4-6 N=10
	3-4-6 N=10
10	4-10-10 N=20
15	11-15-20 N=35
20	14-20-25 N=45
25	31-46-50/4"
30	31-50/5"
35	50/5"
40	50/2"
45	

WATER LEVEL OBSERVATIONS: ▽ While drilling; ▼ Measured on 6/1/2020

SAMPLE TYPE

WATER CONTENT (%)

ATTERBERG LIMITS: LL-PL-PI

PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings after delayed water levels were measured.

Notes:

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 05-22-2020 | Boring Completed: 05-22-2020

Drill Rig: D-50 | Driller: Z.Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT - SD .GPJ TERRACON_DATATEMPLATE.GDT 7/1/20

BORING LOG NO. B-219

PROJECT: CLT Airport- Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2002° Longitude: -80.9479°
Surface Elev.: 659 (Ft.)

DEPTH	ELEVATION (Ft.)	DESCRIPTION	FIELD TEST RESULTS
		PARTIALLY WEATHERED ROCK (PWR), sampled as gray and white, silty SAND *(continued)*	50/3"
			50/2"
			50/3"
			50/3"
			50/5"
72.0	587		
		PARTIALLY WEATHERED ROCK (PWR), sampled as olive brown, SILT with SAND	50/5"
77.0	582		
		PARTIALLY WEATHERED ROCK (PWR), sampled as gray and white, silty SAND	50/3"
88.6	570.5		
		Boring Terminated at 88.63 Feet	50/2"

DEPTH (Ft.): 50, 55, 60, 65, 70, 75, 80, 85

WATER LEVEL OBSERVATIONS | SAMPLE TYPE | WATER CONTENT (%) | ATTERBERG LIMITS LL-PL-PI | PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings after delayed water levels were measured.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

Measured on 6/1/2020

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 05-22-2020 | Boring Completed: 05-22-2020
Drill Rig: D-50 | Driller: Z.Kiker
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT - SD .GPJ TERRACON_DATATEMPLATE.GDT 7/1/20

BORING LOG NO. B-220

PROJECT: CLT Airport- Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2004° Longitude: -80.9477°

Surface Elev.: 662 (Ft.)

DEPTH	ELEVATION (Ft.)	Description	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.3	661.5	**TOPSOIL**, 3.5-inches							
		ELASTIC SILT (MH), red and light brown, stiff, Alluvium				3-4-5 N=9			
3.0	659								
		SILT (ML), olive brown and white, very stiff to hard, Residuum	5			4-7-9 N=16			
						8-14-18 N=32			
			10			6-7-10 N=17			
12.0	650								
		SILT WITH SAND (ML), with manganese, olive brown, white and black, hard to very stiff, Residuum	15			11-13-21 N=34			
			20			7-8-10 N=18			
24.0	638								
		PARTIALLY WEATHERED ROCK (PWR), sampled as light brown, SAND with Silt	25	▽		36-50/2"			
26.4	635.5								
		Auger Refusal at 26.4 Feet				50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings after delayed water levels were measured.

Notes:

WATER LEVEL OBSERVATIONS

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 06-01-2020 | Boring Completed: 06-01-2020

Drill Rig: D-50 | Driller: Z.Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT - SD .GPJ TERRACON_DATATEMPLATE.GDT 7/1/20

BORING LOG NO. B-221

PROJECT: CLT Airport- Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2007° Longitude: -80.9479°

Surface Elev.: 653 (Ft.)

DEPTH (Ft.)	Description	ELEVATION (Ft.)
0.1	**TOPSOIL**, 1-inches	653
3.0	**FILL - SILTY SAND (SM)**, fine to coarse grained, red and light brown, loose	650
5.5	**ELASTIC SILT WITH SAND (MH)**, trace roots, red and light brown, medium stiff, Alluvium	647.5
8.0	**FAT CLAY (CH)**, with silt and sand, gray and brown, medium stiff, Alluvium	645
12.0	**CLAYEY SAND (SC)**, gray, loose, Alluvium	641
42.0	**POORLY GRADED SAND WITH SILT (SP-SM)**, gray, medium dense to very dense, Residuum	611
	PARTIALLY WEATHERED ROCK (PWR), sampled as brown, silty SAND	

DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1–2.5		Split spoon	3-4-4 N=8			
3.5–5		Split spoon	3-4-4 N=8			
6–7.5	▼ (~6.5, Measured on 6/1/2020)	Split spoon	3-3-5 N=8			
8.5–10	∇ (~8.5, At completion of drilling)	Split spoon	4-4-5 N=9			
13.5–15		Split spoon	11-13-15 N=28			
18.5–20		Split spoon	16-18-24 N=42			
23.5–25		Split spoon	16-17-21 N=38			
28.5–30	∇ (~30, While drilling)	Split spoon	14-18-22 N=40			
33.5–35		Split spoon	20-21-29 N=50			
38.5–40		Split spoon	17-27-37 N=64			
43.5		Split spoon	50/5"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings after delayed water levels were measured.

Notes:

WATER LEVEL OBSERVATIONS
- ∇ *While drilling*
- ∇ *At completion of drilling*
- ▼ *Measured on 6/1/2020*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 05-21-2020	Boring Completed: 05-22-2020
Drill Rig: D-50	Driller: Z.Kiker
Project No.: 71195007	

BORING LOG NO. B-221

PROJECT: CLT Airport- Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2007° Longitude: -80.9479°

Surface Elev.: 653 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	47.0	606							
PARTIALLY WEATHERED ROCK (PWR), sampled as brown, silty SAND *(continued)*									
SILT WITH SAND (ML), with mica, light brown, hard, Residuum			50			17-27-40 N=67			
	54.0	599				27-50/4"			
PARTIALLY WEATHERED ROCK (PWR), sampled as gray, SILT with sand	56.2	597	55						
Auger Refusal at 56.2 Feet						50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings after delayed water levels were measured.

Notes:

WATER LEVEL OBSERVATIONS

- *While drilling*
- *At completion of drilling*
- *Measured on 6/1/2020*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 05-21-2020 | Boring Completed: 05-22-2020

Drill Rig: D-50 | Driller: Z.Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT - SD .GPJ TERRACON_DATATEMPLATE.GDT 7/1/20

BORING LOG NO. B-222

PROJECT: CLT Airport- Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2007° Longitude: -80.9476°

Surface Elev.: 659 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.3	658.5	**TOPSOIL**, 4-inches
		SANDY ELASTIC SILT (MH), red, medium stiff, Alluvium
		with clay, light brown and gray, stiff
5.5	653.5	**SILTY SAND (SM)**, fine to coarse grained, gray, white and light brown, medium dense, Residuum
		black and light brown
17.0	642	**SILT WITH SAND (ML)**, olive brown and white, hard, Residuum
27.0	632	**SILT (ML)**, olive brown and white, hard, Residuum
32.0	627	**PARTIALLY WEATHERED ROCK (PWR)**, sampled as olive brown, white and light brown, SILT with Sand
37.9	621	***Auger Refusal at 37.9 Feet***

DEPTH (Ft.)	FIELD TEST RESULTS
	2-3-3 N=6
	6-7-8 N=15
5	4-5-7 N=12
	5-9-10 N=19
10	
	10-11-12 N=23
15	
	9-14-21 N=35
20	
	17-29-37 N=66
25	
	19-19-37 N=56
30	
	50/4"
35	
	50/0"

GRAPHIC LOG | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | WATER CONTENT (%) | ATTERBERG LIMITS LL-PL-PI | PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings after delayed water levels were measured.

Notes:

WATER LEVEL OBSERVATIONS

- *While drilling*
- *At completion of drilling*
- *Measured on 6/5/2020*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 06-01-2020 | Boring Completed: 06-01-2020

Drill Rig: D-50 | Driller: Z.Kiker

Project No.: 71195007

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BORING LOG NO. B-223

PROJECT: CLT Airport- Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2012° Longitude: -80.9475°

Surface Elev.: 661 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.3	661	**TOPSOIL**, 3-inches
3.0	658	**SANDY ELASTIC SILT (MH)**, with manganese, red, light brown and black, stiff, Residuum
8.0	653	**SANDY SILT (ML)**, light brown and gray, hard, Residuum
17.0	644	**SILT WITH SAND (ML)**, gray and white, very stiff to hard, Residuum
24.0	637	**SANDY SILT (ML)**, gray and white, hard, Residuum
37.0	624	**PARTIALLY WEATHERED ROCK (PWR)**, sampled as gray, silty SAND with gravel
44.0	617	**SILTY SAND (SM)**, orange, red and gray, very dense, Residuum

DEPTH (Ft.)	FIELD TEST RESULTS
0-5	3-5-8 N=13
0-5	6-10-20 N=30
0-5	12-15-18 N=33
5-10	11-11-14 N=25
10-15	15-23-28 N=51
15-20	32-44-42 N=86
20-25	45-50/3"
25-30	50/1"
30-35	50/4"
35-40	34-38-47 N=85
40-45	30-50/5"

WATER LEVEL OBSERVATIONS: ▽ While drilling; ▽ At completion of drilling; ▼ Measured on 6/3/2020

SAMPLE TYPE: ▩

WATER CONTENT (%)

ATTERBERG LIMITS: LL-PL-PI

PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings after delayed water levels were measured.

Notes:

WATER LEVEL OBSERVATIONS

- ▽ *While drilling*
- ▽ *At completion of drilling*
- ▼ *Measured on 6/3/2020*
- ▩

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 05-22-2020	Boring Completed: 05-22-2020
Drill Rig: D-50	Driller: Z.Kiker
Project No.: 71195007	

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BORING LOG NO. B-223

PROJECT: CLT Airport- Deicing Pad and SCT

**CLIENT: WSP USA Inc.
Charlotte, NC**

**SITE: Old Piney Top and West Blvd
Charlotte, NC**

GRAPHIC LOG	LOCATION / DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	Latitude: 35.2012° Longitude: -80.9475° Surface Elev.: 661 (Ft.)								
	PARTIALLY WEATHERED ROCK (PWR), sampled as orange, red and gray, silty SAND *(continued)*								
	48.4	612.5							
	Auger Refusal at 48.4 Feet					50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings after delayed water levels were measured.

Notes:

WATER LEVEL OBSERVATIONS

- *While drilling*
- *At completion of drilling*
- *Measured on 6/3/2020*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 05-22-2020 | Boring Completed: 05-22-2020

Drill Rig: D-50 | Driller: Z.Kiker

Project No.: 71195007

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BORING LOG NO. B-224

PROJECT: CLT Airport- Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2018° Longitude: -80.9473°

Surface Elev.: 665 (Ft.)

DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
0.3	665							
TOPSOIL, 3-inches								
ELASTIC SILT (MH), red, medium stiff, Alluvium					0-3-2 N=5			
3.0	662							
SANDY ELASTIC SILT (MH), with clay, light brown and gray, stiff, Alluvium		5			4-6-8 N=14			
6.5	658.5				38-50/4"			
PARTIALLY WEATHERED ROCK (PWR), sampled as light brown and white, silty SAND		10			50/5"			
11.3	653.5							
Auger Refusal at 11.3 Feet					50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:
Offset taken at 3 feet east of the drilled location refused at 8.5 feet

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 06-02-2020 | Boring Completed: 06-02-2020

Drill Rig: D-50 | Driller: Z.Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT - SD .GPJ TERRACON_DATATEMPLATE.GDT 7/1/20

BORING LOG NO. B-225

PROJECT: CLT Airport- Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2035° Longitude: -80.9467°

Surface Elev.: 657 (Ft.)

DEPTH		ELEVATION (Ft.)
0.2	**TOPSOIL**, 2-inches	657
3.0	**ELASTIC SILT WITH SAND (MH)**, red, light brown, and black, medium stiff, Alluvium	654
5.5	**SILT (ML)**, with trace sand and clay, gray and light brown, medium stiff, Alluvium	651.5
12.0	**SILT (ML)**, olive brown, light brown, and gray, medium stiff to stiff, Residuum	645
18.8	**PARTIALLY WEATHERED ROCK (PWR)**, sampled as olive brown, silty SAND	638
	Auger Refusal at 18.8 Feet	

DEPTH (Ft.)	SAMPLE TYPE	FIELD TEST RESULTS
5		3-2-3 N=5
		2-1-4 N=5
		3-3-4 N=7
10		4-4-6 N=10
15		50/6"
		50/2" 50/0"

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings after delayed water levels were measured.

Notes:

WATER LEVEL OBSERVATIONS

- *While drilling*
- *At completion of drilling*
- *Measured on 6/3/2020*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 06-02-2020 | Boring Completed: 06-02-2020

Drill Rig: D-50 | Driller: Z.Kiker

Project No.: 71195007

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BORING LOG NO. B-226

PROJECT: CLT Airport- Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2038° Longitude: -80.9466°
Surface Elev.: 656 (Ft.)

DEPTH	ELEVATION (Ft.)	
0.3	655.5	**TOPSOIL**, 4-inches
		SILT (ML), light brown and gray, very soft to soft, Alluvium
5.5	650.5	
		SANDY FAT CLAY (CH), with mica, gray, medium stiff, Alluvium
8.0	648	
		SANDY SILT (ML), with manganese, light brown and white, stiff to hard, Residuum
17.0	639	
		SILTY SAND (SM), fine to medium grained, olive brown and white, dense to very dense, Residuum
32.0	624	
		PARTIALLY WEATHERED ROCK (PWR), sampled as gray and light brown, silty SAND
42.2	614	
		Auger Refusal at 42.2 Feet

DEPTH (Ft.)	FIELD TEST RESULTS
	1-0-1 N=1
	1-2-2 N=4
	1-3-4 N=7
	5-6-6 N=12
	8-9-33 N=42
	7-13-18 N=31
	11-14-17 N=31
	26-45-28 N=73
	50/2"
	50/2"
	50/1"

WATER LEVEL OBSERVATIONS: SAMPLE TYPE: WATER CONTENT (%): ATTERBERG LIMITS LL-PL-PI: PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings after delayed water levels were measured.

Notes:

WATER LEVEL OBSERVATIONS

- *While drilling*
- *At completion of drilling*
- *Measured on 6/3/2020*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 06-02-2020 | Boring Completed: 06-02-2020
Drill Rig: D-50 | Driller: Z.Kiker
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT - SD .GPJ TERRACON_DATATEMPLATE.GDT 7/1/20

BORING LOG NO. B-227

PROJECT: CLT Airport- Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2037° Longitude: -80.946°

Surface Elev.: 665 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	SANDY ELASTIC SILT (MH), light brown and light gray, soft to medium stiff, Residuum					2-2-2 N=4			
	4.0	661							
	SILTY SAND (SM), dark gray, very loose to medium dense, Residuum		5	▽		0-2-0 N=2			
				▽		3-6-7 N=13			
			10			4-11-14 N=25			
	14.5	650.5				24-42-50/5"			
	PARTIALLY WEATHERED ROCK (PWR), sampled as dark gray, sandy SILT		15						
						50/3"			
	21.1	644	20						
	Auger Refusal at 21.1 Feet					50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings after delayed water levels were measured.

Notes:

WATER LEVEL OBSERVATIONS

▽ *While drilling*

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 06-03-2020 | Boring Completed: 06-03-2020

Drill Rig: D-50 | Driller: Z.Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT - SD .GPJ TERRACON_DATATEMPLATE.GDT 7/1/20

BORING LOG NO. B-228

PROJECT: CLT Airport- Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.204° Longitude: -80.9461°

Surface Elev.: 672 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	0.4 **TOPSOIL**, 5-inches	671.5							
	SANDY SILT (ML), red and brown, stiff, Residuum					3-4-7 N=11			
	3.0	669							
	NO RECOVERY					8-7-8 N=15			
	5.4	666.5	5			50/0"			
	Auger Refusal at 5.4 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

First offset taken at 5 feet west refused at 4.5 feet
Second offset taken at 10 feet north and 5 feet west refused at 1.5 feet

WATER LEVEL OBSERVATIONS

Groundwater not encountered

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 06-03-2020 | Boring Completed: 06-03-2020

Drill Rig: D-50 | Driller: Z.Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT - SD .GPJ TERRACON_DATATEMPLATE.GDT 7/1/20

BORING LOG NO. B-229

PROJECT: CLT Airport- Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2041° Longitude: -80.9465°

Surface Elev.: 664 (Ft.)

DEPTH	ELEVATION (Ft.)	
0.3	663.5	**TOPSOIL**, 3.5-inches
		SANDY ELASTIC SILT (MH), brown and gray, stiff, Residuum
5.5	658.5	
		SILTY SAND (SM), fine to medium grained, brown and gray, medium dense to dense, Residuum
12.0	652	
		SANDY SILT (ML), gray, very stiff, Residuum
17.0	647	
		SILTY SAND (SM), dark gray, medium dense to very dense, Residuum
37.0	627	
		PARTIALLY WEATHERED ROCK (PWR), sampled as dark gray and black, silty SAND

DEPTH (Ft.)	FIELD TEST RESULTS
5	5-4-5 N=9
	5-7-7 N=14
10	16-28-18 N=46
	5-9-11 N=20
15	5-8-11 N=19
20	8-9-13 N=22
25	13-18-24 N=42
30	40-44-47 N=91
35	20-41-38 N=79
40	50/2"
45	50/4"

GRAPHIC LOG | WATER LEVEL OBSERVATIONS | SAMPLE TYPE | WATER CONTENT (%) | ATTERBERG LIMITS LL-PL-PI | PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings after delayed water levels were measured.

Notes:

WATER LEVEL OBSERVATIONS

At completion of drilling

Measured on 6/4/2020

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 06-03-2020	Boring Completed: 06-03-2020
Drill Rig: D-50	Driller: Z.Kiker
Project No.: 71195007	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT - SD .GPJ TERRACON_DATATEMPLATE.GDT 7/1/20

BORING LOG NO. B-229

PROJECT: CLT Airport- Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

GRAPHIC LOG	LOCATION / DEPTH / ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	Latitude: 35.2041° Longitude: -80.9465° Surface Elev.: 664 (Ft.)							
	PARTIALLY WEATHERED ROCK (PWR), sampled as dark gray and black, silty SAND *(continued)*	50						
		55			50/4"			
		60						
		65			50/4"			
		70						
	72.9 591							
	Auger Refusal at 72.9 Feet				50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings after delayed water levels were measured.

Notes:

WATER LEVEL OBSERVATIONS

At completion of drilling

Measured on 6/4/2020

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 06-03-2020	Boring Completed: 06-03-2020
Drill Rig: D-50	Driller: Z.Kiker
Project No.: 71195007	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT - SD .GPJ TERRACON_DATATEMPLATE.GDT 7/1/20

BORING LOG NO. B-230

PROJECT: CLT Airport- Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION
Latitude: 35.2043° Longitude: -80.9467°
Surface Elev.: 660 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	660	**TOPSOIL**, 2-inches
3.0	657	**SANDY SILT (ML)**, brown and gray, soft, Alluvium
8.0	652	**FAT CLAY (CH)**, with trace sand, light brown and gray, medium stiff to stiff, Alluvium
12.0	648	**SANDY SILT (ML)**, gray, white, and light brown, stiff, Alluvium
22.0	638	**SILTY SAND (SM)**, with manganese, fine to coarse grained, light brown and white, dense to very dense, Residuum olive brown
29.5	630.5	**SANDY SILT (ML)**, olive brown and light brown, hard, Residuum
38.4	621.5	**PARTIALLY WEATHERED ROCK (PWR)**, sampled as olive brown and white, silty SAND
		Auger Refusal at 38.4 Feet

DEPTH (Ft.)	FIELD TEST RESULTS
2	2-2-2 N=4
5	2-2-4 N=6
	4-5-6 N=11
10	3-4-6 N=10
15	11-14-21 N=35
20	14-28-36 N=64
25	8-12-18 N=30
30	22-45-50/5"
35	22-50/4"
	50/0"

WATER LEVEL OBSERVATIONS: SAMPLE TYPE: WATER CONTENT (%): ATTERBERG LIMITS LL-PL-PI: PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings after delayed water levels were measured.

Notes:

WATER LEVEL OBSERVATIONS

- *While drilling*
- *At completion of drilling*
- *Measured on 6/3/2020*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 06-02-2020 | Boring Completed: 06-02-2020
Drill Rig: D-50 | Driller: Z.Kiker
Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT - SD .GPJ TERRACON_DATATEMPLATE.GDT 7/1/20

BORING LOG NO. B-231

PROJECT: CLT Airport- Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2073° Longitude: -80.9483°

Surface Elev.: 672 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.2	672	**TOPSOIL**, 3-inches
		FILL - SANDY SILT (ML), brown, soft to stiff
5.5	666.5	
		SILTY SAND (SM), fine to medium grained, dark brown, very loose, Alluvium
14.2	658	
		SILTY SAND (SM), fine to coarse grained, brown, medium dense to very dense, Residuum
24.5	647.5	
27.0	645	**PARTIALLY WEATHERED ROCK (PWR)**, sampled as brown, silty SAND
		SILTY SAND (SM), fine to coarse grained, brown, very dense, Residuum
39.5	632.5	
		PARTIALLY WEATHERED ROCK (PWR), sampled as brown, silty SAND

DEPTH (Ft.)	FIELD TEST RESULTS
5	2-2-2 N=4
	4-5-6 N=11
	2-1-1 N=2
10	1-1-2 N=3
15	5-8-11 N=19
20	17-26-34 N=60
25	14-45-50/2"
30	14-21-30 N=51
35	16-22-32 N=54
40	27-48-50/4"
45	50/4"

WATER LEVEL OBSERVATIONS, SAMPLE TYPE, WATER CONTENT (%), ATTERBERG LIMITS (LL-PL-PI), PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 06-04-2020 | Boring Completed: 06-04-2020

Drill Rig: CME-550 | Driller: Z.Kiker

Project No.: 71195007

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BORING LOG NO. B-231

PROJECT: CLT Airport- Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.2073° Longitude: -80.9483°

Surface Elev.: 672 (Ft.)

GRAPHIC LOG	DEPTH	ELEVATION (Ft.)	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
	PARTIALLY WEATHERED ROCK (PWR), sampled as brown, silty SAND								
	46.9 *(continued)*	625							
	Auger Refusal at 46.9 Feet					50/0"			

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

While drilling

At completion of drilling

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 06-04-2020 | Boring Completed: 06-04-2020

Drill Rig: CME-550 | Driller: Z.Kiker

Project No.: 71195007

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL 71195007 FINAL_GINT - SD .GPJ TERRACON_DATATEMPLATE.GDT 7/1/20

BORING LOG NO. B-232

PROJECT: CLT Airport- Deicing Pad and SCT

CLIENT: WSP USA Inc.
Charlotte, NC

SITE: Old Piney Top and West Blvd
Charlotte, NC

LOCATION

Latitude: 35.207° Longitude: -80.9479°

Surface Elev.: 676 (Ft.)

DEPTH	ELEVATION (Ft.)	Description
0.4	675.5	**TOPSOIL**, 5-inches
3.0	673	**FILL - SANDY ELASTIC SILT (MH)**, red and brown, stiff
13.0	663	**FILL - SANDY SILT (ML)**, red and brown, medium stiff to stiff
16.0	660	NO RECOVERY, rock in spoon
23.0	653	**SILTY SAND (SM)**, red and brown, dense, Residuum
27.0	649	**SANDY SILT (ML)**, dark gray, hard, Residuum
40.2	636	**PARTIALLY WEATHERED ROCK (PWR)**, sampled as dark gray and brown, silty SAND
		Auger Refusal at 40.2 Feet

DEPTH (Ft.)	FIELD TEST RESULTS
0-2	3-4-6 N=10
2-4	5-5-5 N=10
4-6	3-3-4 N=7
6-8	3-4-5 N=9
13-15	10-17-50/4"
18-20	20-25-23 N=48
23-25	30-38-31 N=69
28-30	30-50/5"
33-35	50/2"
40	50/0"

WATER LEVEL OBSERVATIONS: ▽ While drilling; ▽ At completion of drilling

SAMPLE TYPE

WATER CONTENT (%)

ATTERBERG LIMITS — LL-PL-PI

PERCENT FINES

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Hollow Stem Auger 7" bit

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

Notes:

WATER LEVEL OBSERVATIONS

▽ *While drilling*

▽ *At completion of drilling*

Terracon
2701 Westport Rd
Charlotte, NC

Boring Started: 06-04-2020 | Boring Completed: 06-04-2020

Drill Rig: CME-550 | Driller: Z.Kiker

Project No.: 71195007

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