



REPORT OF PRELIMINARY SUBSURFACE EXPLORATION

**LIBERTY MEGASITE
LIBERTY, NORTH CAROLINA**

**ECS CAROLINAS, LLP
PROJECT NUMBER 09.24105-A**

**PREPARED FOR
NC MEGASITES, LLC
GREENSBORO, NORTH CAROLINA**

APRIL 25, 2014



April 25, 2014

Mr. Sam Simpson
NC Megsites, LLC
c/o Piedmont Triad Partnership
416 Gallimore Dairy Road, Suite M
Greensboro, North Carolina 27409

ECS Project No. 09.24105-A

Reference: Report of Preliminary Subsurface Exploration
Liberty Megasite
Liberty, North Carolina

Dear Mr. Simpson:

ECS Carolinas, LLP (ECS) has completed a preliminary subsurface exploration for the subject site as authorized by acceptance of our Proposal No. 09.21591-P & 09.21691-P, dated March 28, 2014. The purposes of this exploration were to explore the subsurface conditions at the site and to develop geotechnical recommendations to guide design and construction of the project. This report presents our evaluations and recommendations, the results of our exploration, our scope of work, and our understanding of the project information.

This report is provided for the use of NC Megsites, LLC. This report is not intended to be used or relied upon in connection with other projects or by other unidentified third parties without the written permission of ECS. The unauthorized use of this report by any undesignated third party or parties will be at such party's sole risk and ECS disclaims liability for any such unauthorized third party use or reliance.

ECS appreciates the opportunity to provide our professional services during this phase of your project. Please contact us if you have questions concerning the following report.

Respectfully,

ECS CAROLINAS, LLP


Lorin E. Akins
Project Manager


Reviewed by: Russell A. Bendel, P.E.
Principal Engineer
Licensed NC 024430



Attachments

EXECUTIVE SUMMARY

We request you read the entire contents of this report. Recommendations and clarifications are contained in the body that are not in the report summary.

Project Information

The site is an approximate 400 acre tract located between Highway 421 and Old Highway 421 in Randolph County, North Carolina. It is our understanding that the site is being evaluated for proposed industrial development. The site is predominately agricultural land with residences, outbuildings, ponds, and wooded areas. Elevations across the site range from approximately 760 to 650 feet.

We did observe indications of rock outcrops and boulders and plowed fields during our site visit. Also it appears that minimal site grading in certain areas has been performed at the site.

Project information was provided to ECS by Mr. Sam Simpson and a visit to the site.

Subsurface Conditions

The borings encountered disturbed (plow zone) and undisturbed residual soils. Partially weathered rock and hard, unweathered rock were also encountered by the borings. The encountered conditions are summarized on the Generalized Subsurface Profile in Appendix A. Additional information is provided on the soil boring logs in Appendix A.

The disturbed and undisturbed residual soils generally consisted of medium stiff to very stiff fine to medium sandy silts, clayey silts, silty clays and loose to very dense silty fine to coarse sand. The residual soils had SPT resistance values ranging from 4 to 74 blows per foot.

Partially weathered rock and auger refusal materials were encountered by the borings. Partially weathered rock consisting of fine to medium sandy silt and silty fine to coarse sand was encountered in borings B-103, B-104, B-105, B-110, B-111, B-114, B-115, B-116, B-119 and B-121 at depths ranging from 13 to 48 feet below existing grade. Auger refusal materials were encountered in borings B-102, B-103, B-105, B-108, B-114, B-116 and B-119 through B-121 at depths ranging from 16.5 to 41 feet below existing grade.

Groundwater Conditions

Groundwater was encountered in several of the borings at elevations ranging from 676 to 735 feet across the site.

Recommendation Summary

- The site is suitable for construction of typical industrial/manufacturing/warehouse facilities.
- Piedmont residual soils are derived from the weathering of the underlying parent rock. At this site, the degree of weathering is highly variable due to the types of rock and mineralogy underlying this site. The predictability of the quantity of soil and rock excavation is very challenging. Techniques such as seismic refraction, test trenches, and additional soil borings would provide additional information to assist in developing budgets; however these tests would be costly and the additional data gathered may still not provide the owner/developer with a reliable contingency for the site grading final costs.
- Rock excavation to achieve finished grades should be anticipated at this site based on the borings. You should have a well defined rock clause or potentially deem the site grading unclassified for the purposes of bidding and project administration.
- Softer, wet soils containing some amounts of clay were encountered in the upper 2 to 3 feet in many of the borings. This is likely due to the agricultural activities across the site along with the amount of rainfall over the previous year and the measured groundwater levels. These soils may need to be removed, dried, and recompacted if at, or near, planned subgrades, or dried prior to recompacting if used as fill. This includes the plow zone soils (disturbed residual soils), which can become saturated for short periods of time after rain and can significantly impact grading activities if left in place.
- Permanent groundwater control is not expected to be necessary for this project. However, there is the potential for perched water conditions to be present overlying dense lenses of soil and PWR. The groundwater, where encountered, can likely be controlled with ditching or a sump and pump.
- The majority of the on-site soils are suitable for use as controlled fill. However, some soils will require drying in order to achieve compaction. Some plastic soils (MH and CH) are moisture sensitive and may present difficulty when used as structural fill. Highly plastic soils are moisture sensitive and are only marginally or not acceptable as fill. Near surface zones of high plastic material may be used in deeper fill areas or fill areas outside building and pavement areas, or within the building pad but at least 4 feet below bottom of footing elevation. The plastic soils are also appropriate to use for stormwater pond dam embankment construction and pond liners. Where partially weathered rock is used as fill, it is not uncommon for the grading contractor to have to use a water truck for moisture conditioning of the dry soils prior to attempting compaction.
- We recommend the proposed building be supported on shallow foundations bearing on undisturbed residual soils and new compacted controlled fill. Shallow foundations may be designed for an allowable net bearing pressure of up to 4,000 pounds per square foot (psf). In order to achieve 4,000 psf bearing capacity in new compacted fill, the fill in the building pad will need to be compacted to 98% of the Standard

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Proctor maximum dry density (ASTM D-698). This compaction requirement includes earthfill placed within 10 feet of the perimeter of the building footprint. Should it be desirable to use 3,000 psf bearing capacity, building pad fill would only need to be compacted to a minimum of 95% of the Standard Proctor.

- We recommend a Seismic Site Classification C in accordance with the North Carolina Building Code based on the encountered conditions.

Exploration Procedures

Nineteen soil test borings, denoted B-101 through B-119 and B-119 through B-121, were performed on April 14 – 17, 2014 at the approximate locations shown on the Boring Location Plan in Appendix A. The boring locations were selected by ECS and were staked in the field by measuring from existing site features. Boring elevations were interpolated from topographic contours shown on the site plan provided by Stimmel Associates.

Drilling was performed by a Deidrich D-50 truck-mounted drill rig using continuous-flight hollow stem augers. Soil samples were obtained by means of the split-barrel sampling procedures in accordance with ASTM Specification D-1586. In the split-barrel sampling procedure, a 2-inch O.D., split-barrel sampler is driven into the soil a distance of 18 inches by means of a 140-pound hammer falling 30 inches. The number of blows required to drive the sampler through a 12-inch Interval is termed the Standard Penetration Test (SPT) value and is indicated for each sample on the boring logs. This value can be used to provide a qualitative indication of the in-place relative density of cohesionless soils. In a less reliable way, it also indicates the consistency of cohesive soils. This indication is qualitative, since many factors can significantly affect the SPT value and prevent a direct correlation between drill crews, drill rigs, drilling procedures, and hammer-rod-sampler assemblies.

Representative portions of each SPT sample were sealed in airtight containers and returned to our laboratory for classification, testing, and storage. The soil samples were visually classified in general accordance with the Unified Soil Classification System (USCS). The basic elements of the USCS are described on a legend sheet attached in Appendix E and in ASTM D2487. Additional information from each soil boring is provided on the individual soil test boring logs in Appendix E.

Laboratory Testing

Representative soil samples obtained during our field exploration were selected and tested in our laboratory to verify field classifications and to help determine pertinent engineering properties of the site soils. Laboratory testing included visual classifications in accordance with the Unified Soil Classification System, (USCS, as described in ASTM D 2487), natural moisture content (ASTM D 2216), Atterberg limits (ASTM D 4318), and wash #200 (ASTM D 1140). The laboratory testing was performed in general conformance with the referenced ASTM standards. The test results are presented in the Laboratory Testing Summary in the Appendix of this report. Select index property test results are also included on the Boring Logs and individual test data sheets in the Appendix.

Excavation Conditions

Partially weathered rock was encountered in borings B-103, B-104, B-105, B-110, B-111, B-114, B-115, B-116, B-119 and B-121 at depths ranging from 13 to 48 feet below existing grade. Auger refusal materials were encountered in borings B-102, B-103, B-105, B-108, B-114, B-116 and B-119 through B-121 at depths ranging from 16.5 to 41 feet below existing grade. It should be possible to excavate soils above partially weathered rock using conventional equipment (excavators, dumptrucks, and bulldozers). Depending on finished floor elevations (FFE) lenses of partially weathered rock and stiffer or denser soils may be encountered in excavations for utilities and grading. This material may be able to be excavated with a large excavator (350) or larger with rock teeth or pneumatic hammers.

Partially weathered rock with SPT values of 50/6" to 50/4" can often be excavated from open-cut excavations by ripping with a Caterpillar D-8 bulldozer equipped with a single tooth ripper. Although it may be possible to rip the top few feet of PWR with SPT values stronger than 50/4", or even auger refusal materials, we recommend the contractor should be prepared to use pneumatic hammers or drilling and blasting techniques to excavate these materials. We recommend using pneumatic hammers or blasting to make confined excavations (footings or utility trenches) in any PWR.

The site soils are OSHA Type B and C soils for the purpose of excavation support. Excavations should be constructed in compliance with current OSHA standards for excavation and trenching safety. Excavations should be observed by a "competent person", as defined by OSHA, who should evaluate the specific soil type and other conditions, which may control the excavation side slopes or the need for shoring or bracing.

Groundwater Conditions

Groundwater was encountered at depths ranging from 5 to 45 feet below existing site grades in 12 of the 19 borings. This encountered groundwater may likely be perched water. Depending on finished floor elevations, groundwater control may be necessary for this project.

Groundwater control is the purposeful drawdown of groundwater below subgrades, foundations, slabs, or pavements to facilitate construction and to mitigate long term problems associated with groundwater. Permanent groundwater control measures typically consist of French drain systems and/or permanent sumps.

Temporary groundwater control measures typically consist of gravity ditches, well points, sump pumps, pumping from gravel lined and cased sumps, or other suitable methods. Whatever method used, the groundwater control should be in place and operating continuously (around the clock) to achieve and maintain the desired drawdown in advance of excavation, proofrolling, compaction or other construction. It is the contractor's responsibility to plan for and budget for temporary groundwater control. The means and methods of lowering the groundwater are at the contractor's discretion.

Subgrade Preparation

We recommend a stripping depth of at least 4 inches across areas to be cut or filled. Deeper stripping may be needed in wooded areas. Stripping depths will vary depending on the time of the year. During the wet seasons stripping may be deeper due to saturated soils on the surface.

Following stripping and rough excavation, but prior to placing controlled fill, the exposed subgrades should be proofrolled. Unstable areas identified by proofrolling should be undercut to firm materials. If firm soils are not encountered within 3 feet below subgrade elevation in grade slab and pavement areas, the deeper unstable materials should be evaluated by the project geotechnical engineer to determine if these materials may remain in place. Any undercut areas should be backfilled with controlled fill.

Appropriate proofrolling equipment typically consists of a dump truck having a single rear axle with axle weight of at least 10 tons, or a dump truck having a tandem rear axle with axle weight of at least 20 tons. Alternate equipment, such as a fully loaded pan scraper, may be utilized with approval of the geotechnical engineer responsible for evaluating the subgrade during construction.

Proofrolling consists of driving the appropriate equipment over the subgrade at a walking pace. The proofrolling equipment should make overlapping passes across the subgrade in the same direction, with the overlap not exceeding $\frac{1}{2}$ the width of the equipment. A second set of overlapping passes should then be made in a direction perpendicular to the first set of passes.

Earthwork

We do not anticipate widespread undercutting of site soils based on the borings. If earthwork is performed during winter or after appreciable rainfall then subgrades may be unstable due to wet soil conditions, which could increase the amount of undercutting required.

Drying of wet soils, may be accomplished by spreading and discing or by other mechanical or chemical means. The ability to dry wet soils, and therefore the ability to use them for fill, will be reduced if earthwork is performed during late winter or spring.

When dry, the majority of the site soils should provide adequate subgrade support for fill placement and construction operations. When wet, the soil may degrade quickly with disturbance from construction traffic. Good site drainage should be maintained during earthwork operations to prevent ponding water on exposed subgrades. Soil subgrades should be protected from rain by "sealing" the subgrades prior to forecast precipitation. Sealing subgrades can be performed by rolling with rubber-tired equipment, but ruts should not be created, or by rolling with a smooth steel-drum roller without vibration. Subgrades that have been sealed should be scarified prior to receiving additional fill.

If site soils are initially placed at planned subgrade elevations and are left exposed over a period of time, the exposed soils may become soft and wet and may become holding areas for trapped water. Even compacted fill soils left exposed for long periods of time will degrade due to exposure. The lack of confinement at the surface and cycles of wetting and drying through the seasons will soften and loosen the compacted fill, or in the case of cut subgrades the removal of overburden pressure promotes rebound and can allow the surficial soils to relax over time. The disturbance can extend as deep as 1 foot, or possibly more depending on soil types and

exposure conditions. Leaving site grades high allows for a sacrificial layer of soil that can then be removed from the final subgrade at the time of future construction to reduce the need for undercutting and replacement below planned grades.

Controlled Fill

Site soils can be used as controlled fill, but fine grained and moisture sensitive soils typical of the piedmont area soils were encountered. These materials are typically classified as high plasticity clay (CH) or high plasticity silts (MH). These clay and silt materials may be used as fill for building and pavement areas; however they have a high potential to shrink and swell with changes in moisture if located near planned subgrades. Therefore, these soil types should be limited to deeper fill areas. Some soils may require drying prior to being re-used as fill. Drying of wet soils may be accomplished by spreading and discing or by other mechanical or chemical means. The ability to dry wet soils, and therefore the ability to use them for fill, will be reduced if earthwork is performed during late winter or spring. Blasted rock can be used as fill provided Maximum 6-8 inch size rock is mixed with soil in deeper sections of fill.

Building Construction Recommendations

Based on our subsurface exploration, we anticipate the site to be suitable for industrial, manufacturing and distribution facilities. Buildings typical for industrial, manufacturing, and distribution can likely be supported on shallow foundations at this site. Remedial subgrade preparation will be necessary where disturbed residual was encountered. Access roads, parking lots, truck docks, etc. can be constructed using typical pavement sections for this type of use. Shallow foundations may be designed for an allowable net bearing pressure of up to 4,000 pounds per square foot (psf). In order to achieve 4,000 psf bearing capacity in new compacted fill, the fill in the building pad will need to be compacted to 98% of the Standard Proctor maximum dry density (ASTM D-698). This compaction requirement includes earthfill placed within 10 feet of the perimeter of the building footprint. Should it be desirable to use 3,000 psf bearing capacity, building pad fill would only need to be compacted to a minimum of 95% of the Standard Proctor.

We recommend a preliminary Seismic Site Classification C in accordance with the North Carolina Building Code based on the encountered conditions.

Closing

This report has been prepared in order to aid in the evaluation of this site and to assist the owner and engineer in the feasibility study of the project. The report scope is limited to the specific project and location described, and the project description represents our understanding of the significant aspects relevant to soil and foundation characteristics.

The recommendations in this report were based on the subsurface exploration work performed at the site. This report should not be used for final design or construction. Additional site exploration may be needed prior to final design once a proposed site plan and grading plan have been developed. There are likely to be other design and construction related issues that need to be analyzed which have not been addressed by this preliminary report. Subsurface conditions can vary laterally and with depth, and significantly different conditions may exist at locations between the borings. Conditions different from those encountered by the borings and

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Liberty, North Carolina
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described in this report may require modifications to the geotechnical recommendations for the project. Additional information and data are included in the attached Appendices.

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Liberty, North Carolina
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APPENDICES

Appendix A – Illustrations

Site Location Map
Boring Location Plan
Generalized Subsurface Profile
Legend Sheet and Unified Soil Classification System
Soil Test Boring Logs

Appendix B – Laboratory Test Results

Laboratory Testing Summary
Atterberg Limits
Wash #200

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Liberty, North Carolina
ECS Project No.: 09.24105-A
April 25, 2014*

APPENDIX A – ILLUSTRATIONS

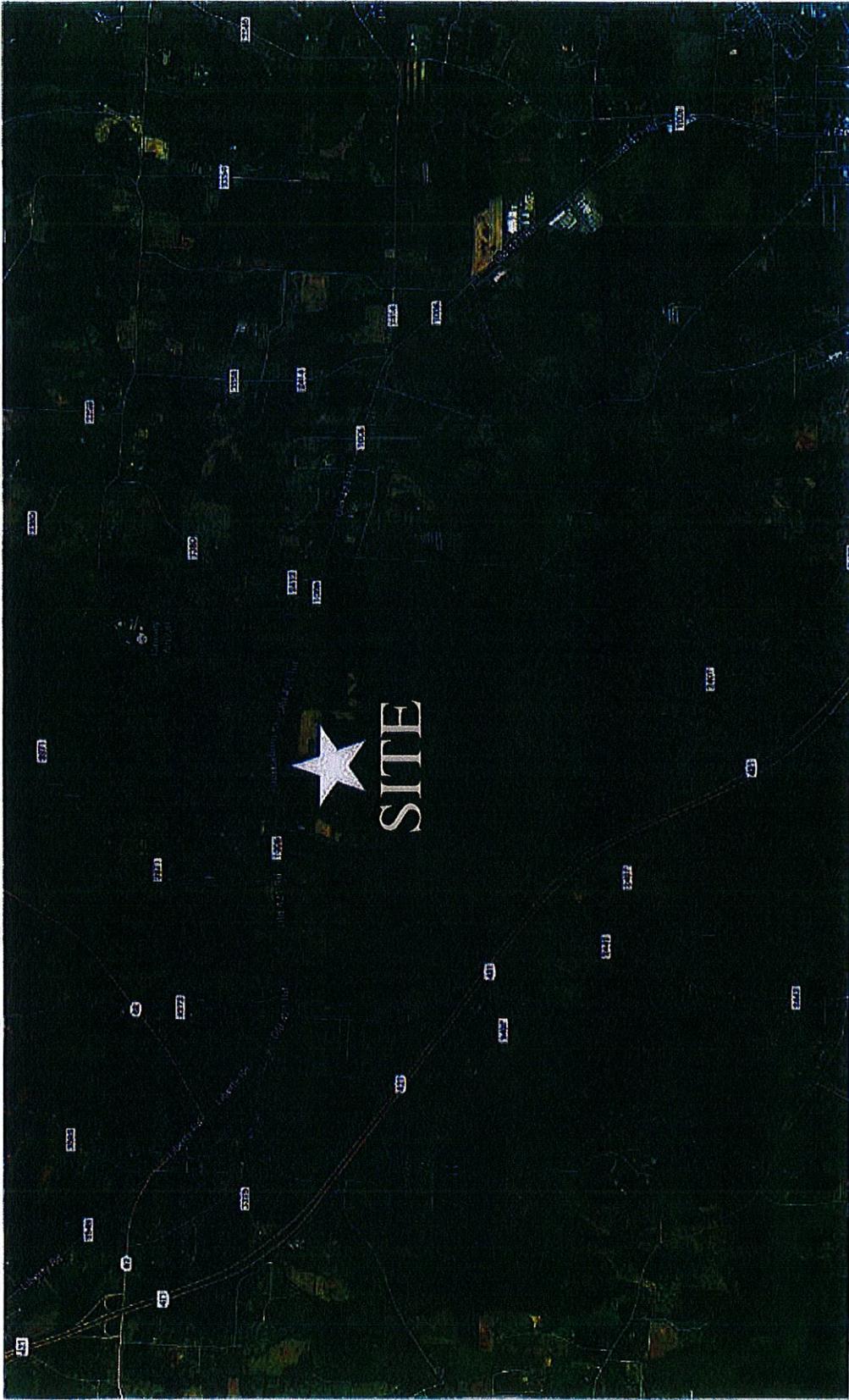
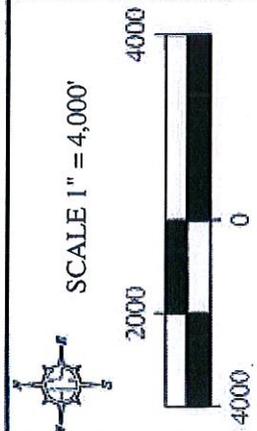


FIGURE 1
SITE LOCATION MAP
 LIBERTY MEGASITE
 LIBERTY, NORTH CAROLINA

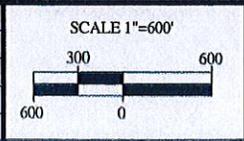


REFERENCE:
 2014 DigitalGlobe, GeoEye,
 U.S. Geological Survey,
 U.S.D.A. Farm Service Agency,
 2014 Google





REVISIONS	DATE



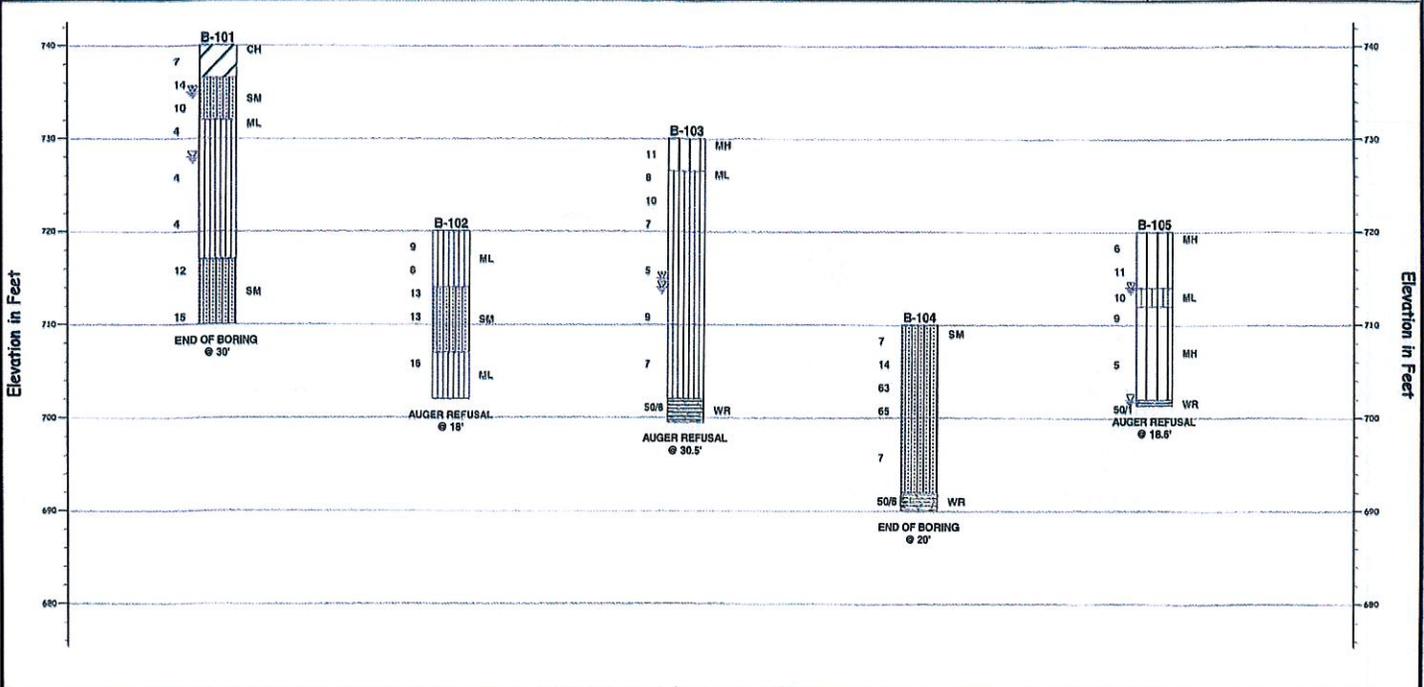
REFERENCE:
PRELIMINARY DATA
COMPILED BY
STIMMEL ASSOCIATES, PA



FIGURE 2
BORING LOCATION PLAN
LIBERTY MEGASITE
LIBERTY, NORTH CAROLINA

DATE: 08/01-23-14 PROJECT: 08.21105-A

SOIL CLASSIFICATION LEGEND				SURFACE MATERIALS		ROCK TYPES		SYMBOL LEGEND	



NOTES:
 1 SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.
 2 PENETRATION TEST RESISTANCE IN BLOWS PER FOOT (ASTM D1586).
 3 HORIZONTAL DISTANCES ARE NOT TO SCALE.

GENERALIZED SUBSURFACE SOIL PROFILE

Liberty Megasite
 NC Megasites, LLC
 Old US 421, Liberty, North Carolina

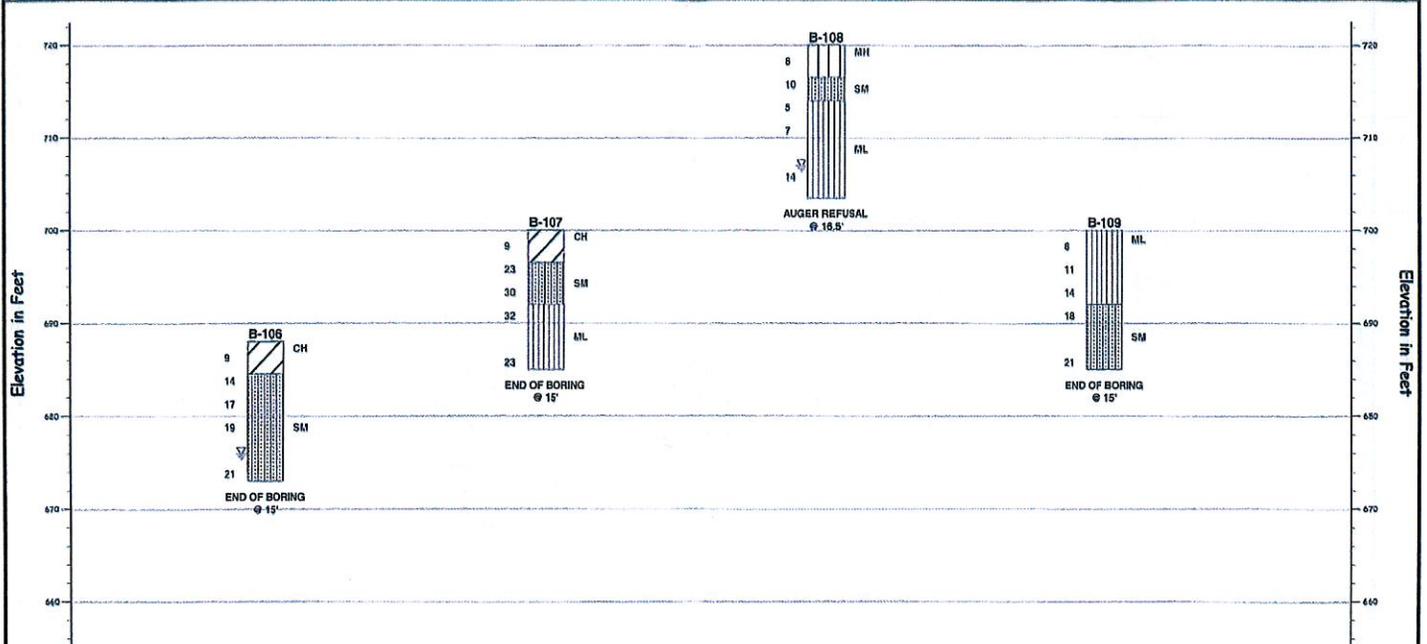
PROJECT NO.: 24109-A | DATE: 4/28/2014 | VERTICAL SCALE: 1"=10'

SOIL CLASSIFICATION LEGEND

SURFACE MATERIALS

ROCK TYPES

SYMBOL LEGEND



NOTES:
 1 SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.
 2 PENETRATION TEST RESISTANCE IN BLOWS PER FOOT (ASTM D1586).
 3 HORIZONTAL DISTANCES ARE NOT TO SCALE.



GENERALIZED SUBSURFACE SOIL PROFILE

Liberty Megasite
 NC Megasites, LLC
 Old US 421, Liberty, North Carolina
 PROJECT NO.: 24108-A | DATE: 4/25/2014 | VERTICAL SCALE: 1"=10'

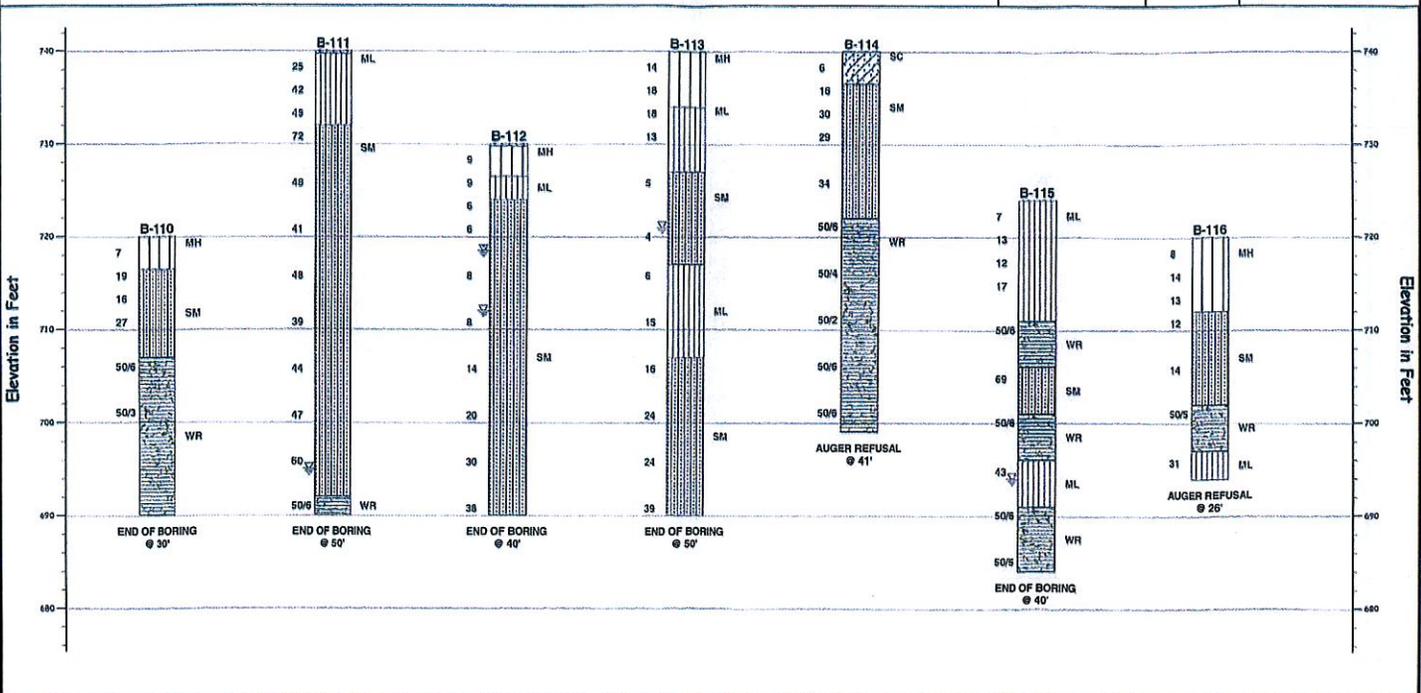
SOIL CLASSIFICATION LEGEND

SURFACE MATERIALS

ROCK TYPES

SYMBOL LEGEND

	WATER LEVEL - GROUND SURFACE/ASPHALT
	WATER LEVEL - BEFORE CASINGS REMOVAL
	WATER LEVEL - AFTER CASINGS REMOVAL
	WATER LEVEL - AFTER 24 HOURS



NOTES:
 1 SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION.
 2 PENETRATION TEST RESISTANCE IN BLOWS PER FOOT (ASTM D1586).
 3 HORIZONTAL DISTANCES ARE NOT TO SCALE.



GENERALIZED SUBSURFACE SOIL PROFILE

Liberty Megawatt
 NC Megawatts, LLC
 Old US 421, Liberty, North Carolina
 PROJECT NO.: 24105-A | DATE: 4/25/2014 | VERTICAL SCALE: 1"=10'

REFERENCE NOTES FOR BORING LOGS

I. Drilling Sampling Symbols

SS	Split Spoon Sampler	ST	Shelby Tube Sampler
RC	Rock Core, NX, BX, AX	PM	Pressuremeter
DC	Dutch Cone Penetrometer	RD	Rock Bit Drilling
BS	Bulk Sample of Cuttings	PA	Power Auger (no sample)
HSA	Hollow Stem Auger	WS	Wash sample
REC	Rock Sample Recovery %	RQD	Rock Quality Designation %

II. Correlation of Penetration Resistances to Soil Properties

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

A. Non-Cohesive Soils (Silt, Sand, Gravel and Combinations)

<i>Density</i>		<i>Relative Properties</i>	
0 to 4 blows/ft	Very Loose	Adjective Form	12% to 49%
5 to 10 blows/ft	Loose	With	5% to 12%
11 to 30 blows/ft	Medium Dense		
31 to 50 blows/ft	Dense		
Over 51 blows/ft	Very Dense		

<i>Particle Size Identification</i>		
Boulders		12 inches or larger
Cobbles		3 inches to 12 inches
Gravel	Coarse	¾ inch to 3 inches
	Fine	4.75 mm to ¾ inch
Sand	Coarse	2.00 mm to 4.75 mm
	Medium	0.425 mm to 2.00 mm
	Fine	0.075 mm to 0.425 mm
Silt and Clay		Less than 0.075 mm

B. Cohesive Soils (Clay, Silt, and Combinations)

<i>Blows/ft</i>	<i>Consistency</i>	<i>Unconfined Comp. Strength Q_p (tsf)</i>	<i>Degree of Plasticity</i>	<i>Plasticity Index</i>
0 to 2	Very Soft	Under 0.25	None to slight	0 - 4
3 to 4	Soft	0.25-0.49	Slight	5 - 7
5 to 8	Medium Stiff	0.50-0.99	Medium	8 - 22
9 to 15	Stiff	1.00-1.99	High to Very High	Over 22
16 to 30	Very Stiff	2.00-3.99		
31 to 50	Hard	4.00-8.00		
Over 50	Very Hard	Over 8.00		

III. Water Level Measurement Symbols

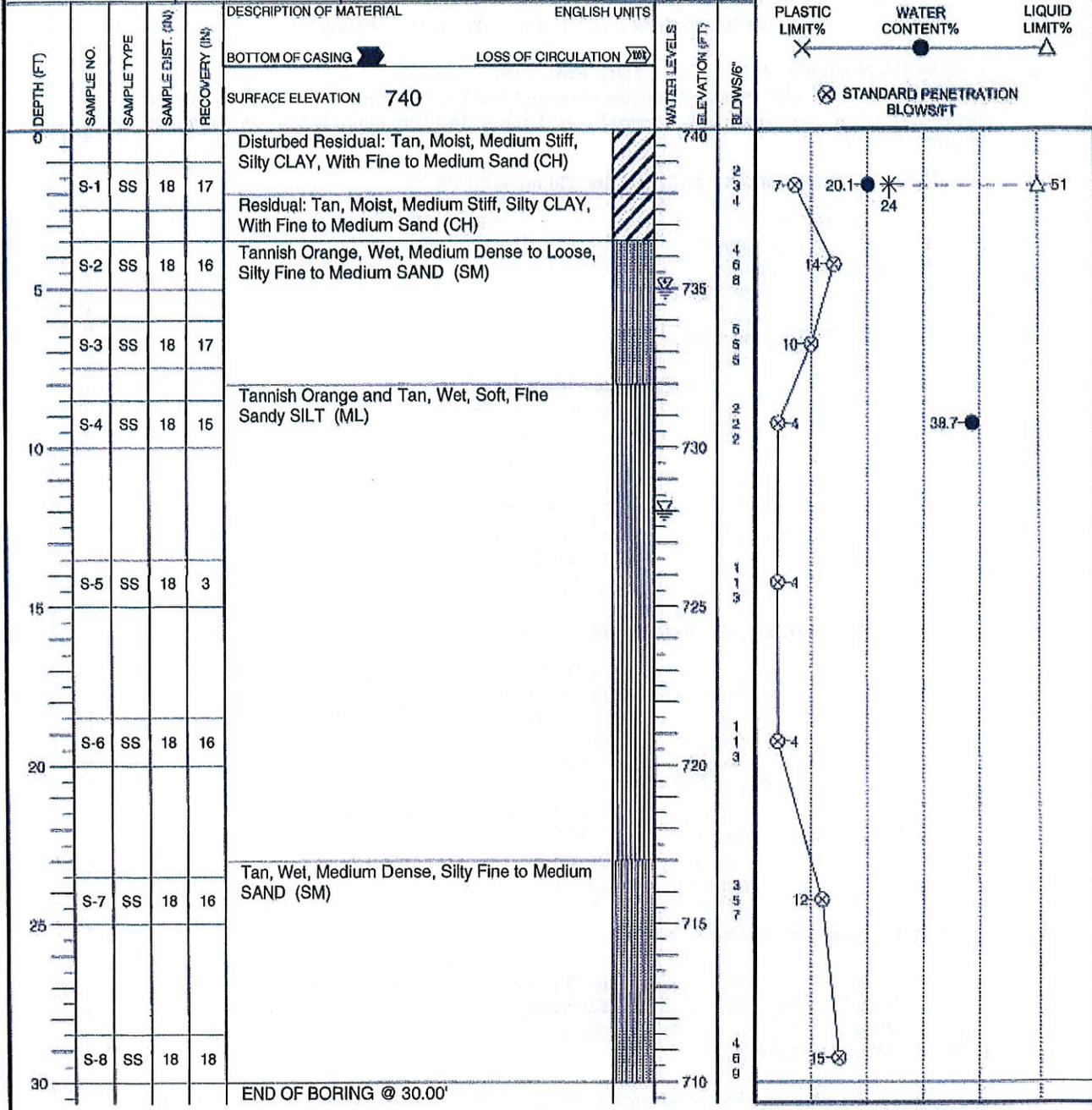
WL	Water Level	BCR	Before Casing Removal	DCI	Dry Cave-In
WS	While Sampling	ACR	After Casing Removal	WCI	Wet Cave-In
WD	While Drilling	▽	Groundwater Level at Time of Drilling		
▽	GWT Day After Drilling				

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

CLIENT NC Megsites, LLC	JOB # 24105-A	BORING # B-101	SHEET 1 OF 1	
PROJECT NAME Liberty Megsite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

NORTHING _____ EASTING _____ STATION _____



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

WL 12.00	WS □	WD □	BORING STARTED	04/18/14	
WL(BCR)	WL(ACR)		BORING COMPLETED	04/18/14	CAVE IN DEPTH @ 13.00'
WL 5.00			RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megasites, LLC	JOB # 24105-A	BORING # B-102	SHEET 1 OF 1	
PROJECT NAME Liberty Megasite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

NORTHING _____ EASTING _____ STATION _____

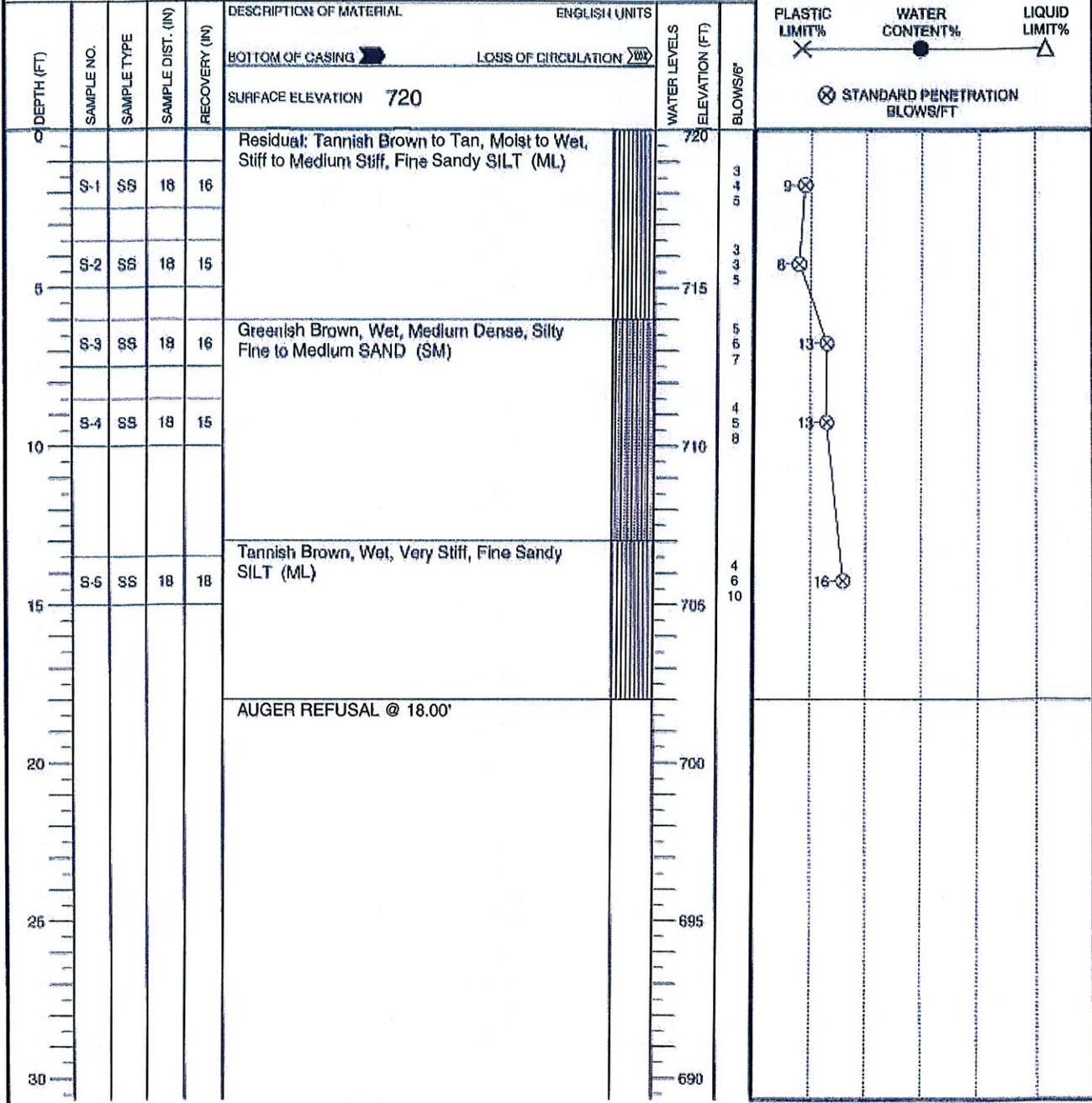
○ CALIBRATED PENETROMETER TONS/FT²

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

PLASTIC LIMIT% WATER CONTENT% LIQUID LIMIT%

✕ ● ▲

⊗ STANDARD PENETRATION BLOWS/FT



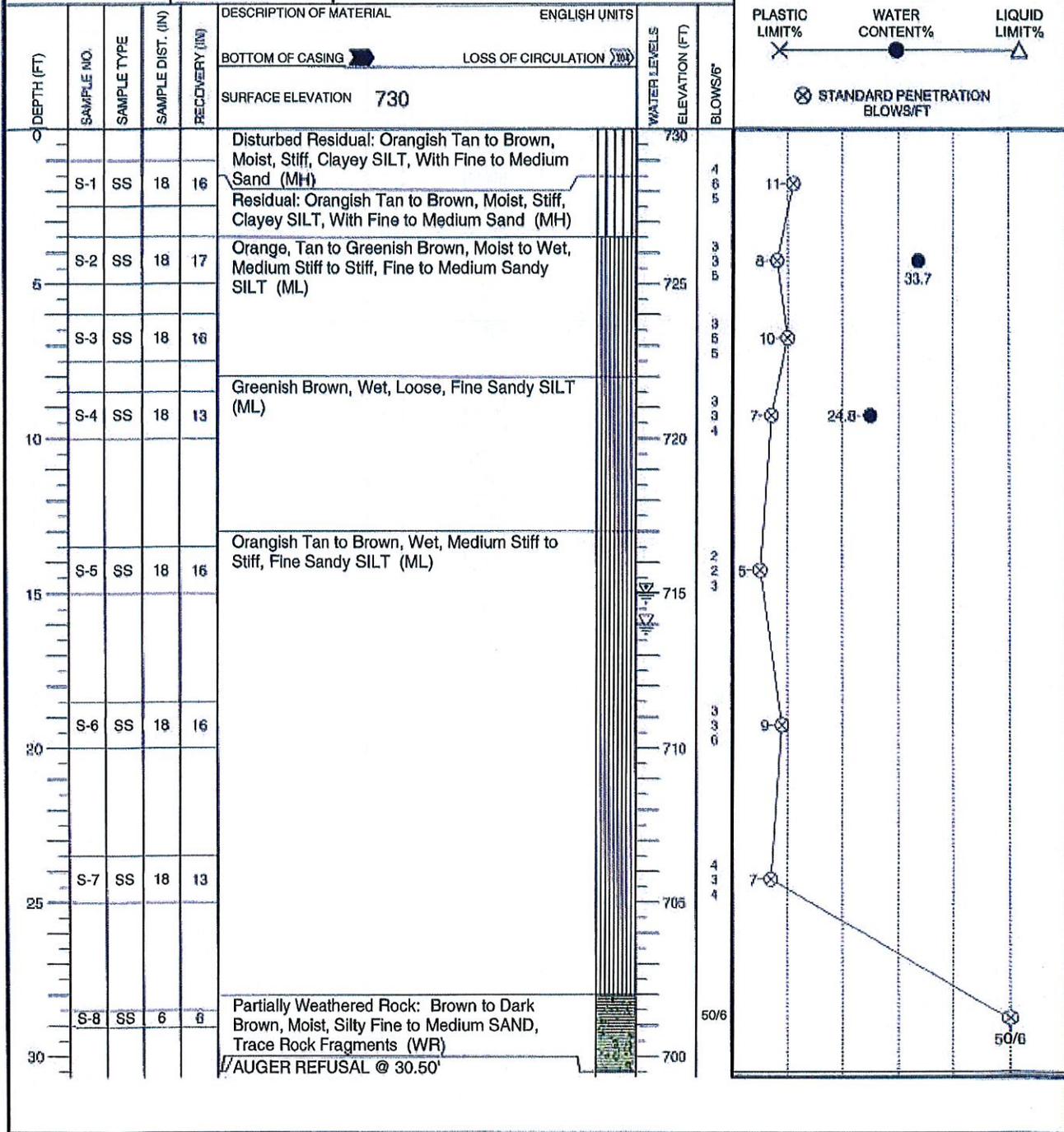
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL DRY	WS <input type="checkbox"/>	WD <input type="checkbox"/>	BORING STARTED	04/18/14	
WL(BCR)	WL(ACR)		BORING COMPLETED	04/18/14	CAVE IN DEPTH @ 14.50'
WL			RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megsites, LLC	JOB # 24105-A	BORING # B-103	SHEET 1 OF 1	
PROJECT NAME Liberty Megsite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

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

WL 16.00	WS <input type="checkbox"/>	WD <input type="checkbox"/>	BORING STARTED	04/18/14	
WL(BCR)	WL(ACR)		BORING COMPLETED	04/18/14	CAVE IN DEPTH @ 16.00'
WL 15.00			RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megasites, LLC	JOB # 24105-A	BORING # B-104	SHEET 1 OF 1	
PROJECT NAME Liberty Megasite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

NORTHING	EASTING	STATION
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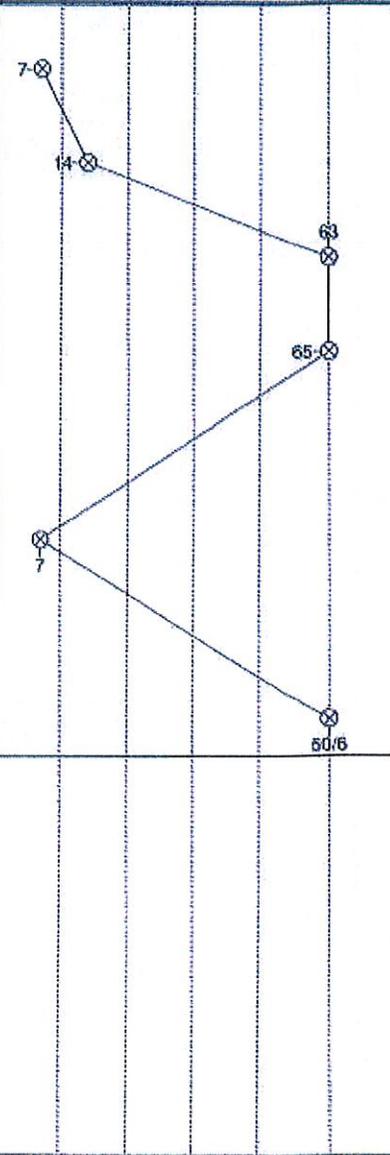
○ CALIBRATED PENETROMETER TONS/FT²

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

PLASTIC LIMIT% WATER CONTENT% LIQUID LIMIT%

⊗ STANDARD PENETRATION BLOWS/FT

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	ENGLISH UNITS	WATER LEVELS ELEVATION (FT)	BLOWS/FT
					BOTTOM OF CASING	LOSS OF CIRCULATION		
0					Disturbed Residual: Orangish Tan, Moist, Loose, Silty Fine to Medium SAND, Trace Clay (SM)		710	
3	S-1	SS	18	17	Residual: Orangish Tan, Moist, Loose, Silty Fine to Medium SAND, Trace Clay (SM)			
5	S-2	SS	18	17	Tannish Orange, Moist, Medium Dense, Silty Fine Medium SAND (SM)		705	
8	S-3	SS	18	16	Tan, Moist, Very Dense, Fine to Medium SAND (SM)			
10	S-4	SS	18	16			700	
15	S-5	SS	18	15			695	
20	S-6	SS	12	11	Partially Weathered Rock: Greenish Tan, Wet, SILT, Trace Fine Sand (WR)		690	
					END OF BORING @ 20.00'			



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

WL DRY	WS	WD	BORING STARTED	04/18/14	
WL(BCR)	WL(ACR)		BORING COMPLETED	04/18/14	CAVE IN DEPTH @ 17.00'
WL			RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megsites, LLC	JOB # 24105-A	BORING # B-105	SHEET 1 OF 1	
PROJECT NAME Liberty Megsite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

NORTHING	EASTING	STATION
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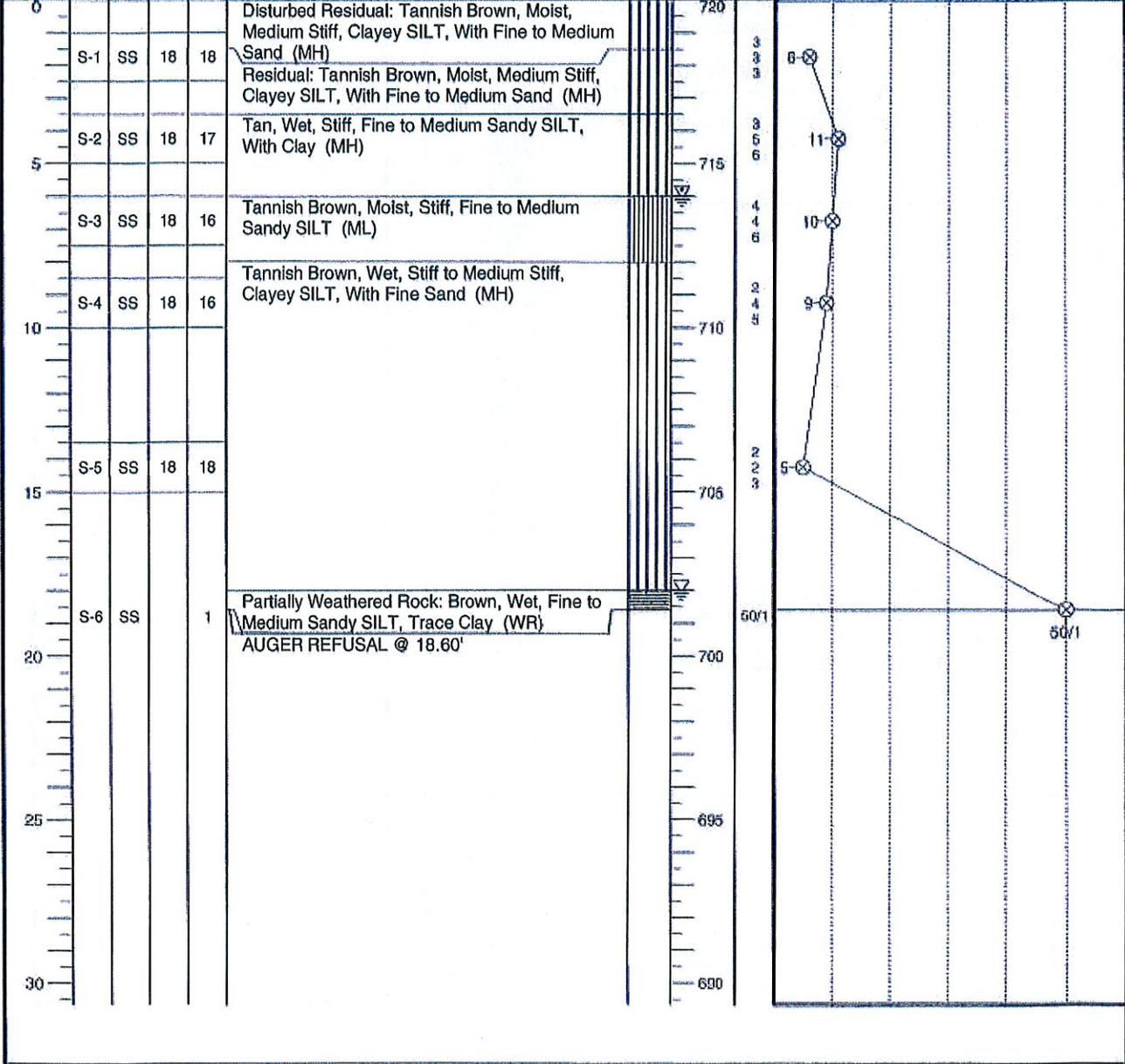
DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	ENGLISH UNITS	WATER LEVELS ELEVATION (FT)	BLOWS/FT
					BOTTOM OF CASING	LOSS OF CIRCULATION		
					SURFACE ELEVATION		720	

○ CALIBRATED PENETROMETER TONS/FT²

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

PLASTIC LIMIT% WATER CONTENT% LIQUID LIMIT%

⊗ STANDARD PENETRATION BLOWS/FT



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

WL 18.00	WS <input type="checkbox"/>	WD <input type="checkbox"/>	BORING STARTED	04/18/14	
WL(BCR)	WL(ACR)		BORING COMPLETED	04/18/14	CAVE IN DEPTH @ 11.00'
WL 6.00			RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megasites, LLC	JOB # 24105-A	BORING # B-106	SHEET 1 OF 1	
PROJECT NAME Liberty Megasite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

NORTHING	EASTING	STATION
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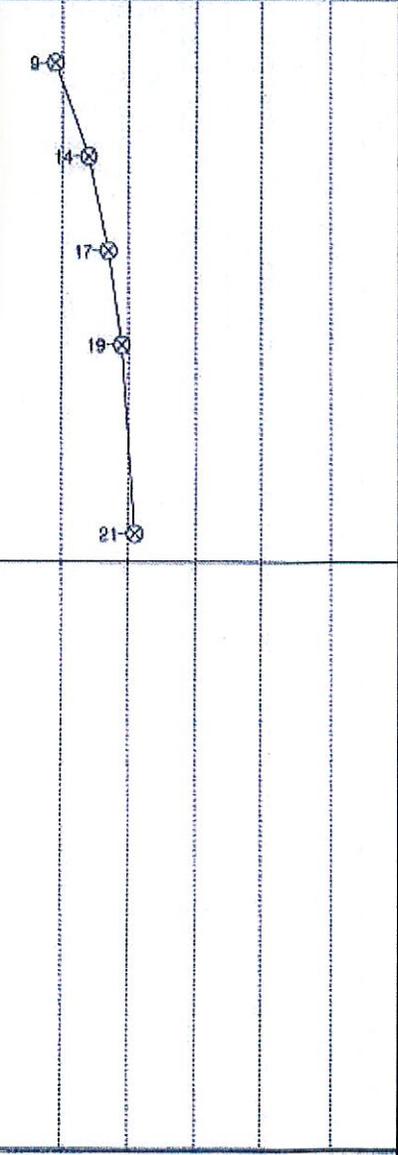
○ CALIBRATED PENETROMETER TONS/FT²

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

PLASTIC LIMIT% WATER CONTENT% LIQUID LIMIT%

⊗ STANDARD PENETRATION BLOWS/FT

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	ENGLISH UNITS	WATER LEVELS ELEVATION (FT)	BLOWS/6"
					BOTTOM OF CASING			
					LOSS OF CIRCULATION			
					SURFACE ELEVATION	688		
0					Disturbed Residual: Tannish Brown, Wet, Stiff, Silty CLAY, With Fine to Medium Sand (CH)		685	4
1	B-1	SS	18	17	Residual: Tannish Brown, Wet, Stiff, Silty CLAY, With Fine to Medium Sand (CH)			5
5	S-2	SS	18	18	Tan to Orangish Tan, Moist and Wet, Medium Dense, Silty Fine to Medium SAND (SM)		680	7
10	S-3	SS	18	18				11
15	S-4	SS	18	18				11
20	S-5	SS	18	18				13
25					END OF BORING @ 15.00'		675	
30							670	
							665	
							660	



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

WL 12.00	WS <input type="checkbox"/>	WD <input type="checkbox"/>	BORING STARTED	04/17/14	
WL(BCR)	WL(ACR)		BORING COMPLETED	04/17/14	CAVE IN DEPTH
WL			RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megasites, LLC	JOB # 24105-A	BORING # B-107	SHEET 1 OF 1	
PROJECT NAME Liberty Megasite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

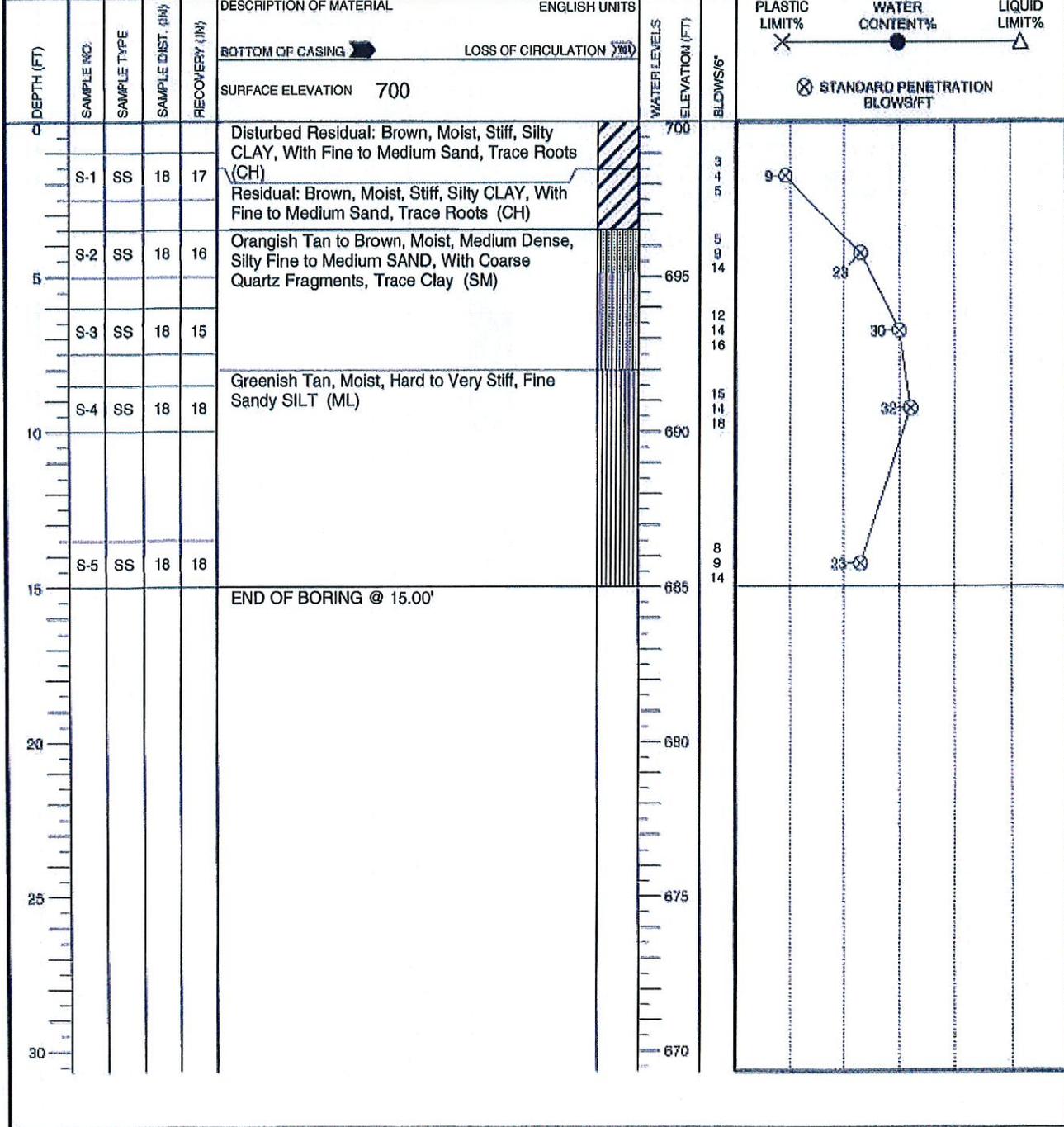
NORTHING EASTING STATION

○ CALIBRATED PENETROMETER TONS/FT²

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

PLASTIC LIMIT% WATER CONTENT% LIQUID LIMIT%

⊗ STANDARD PENETRATION BLOWS/FT



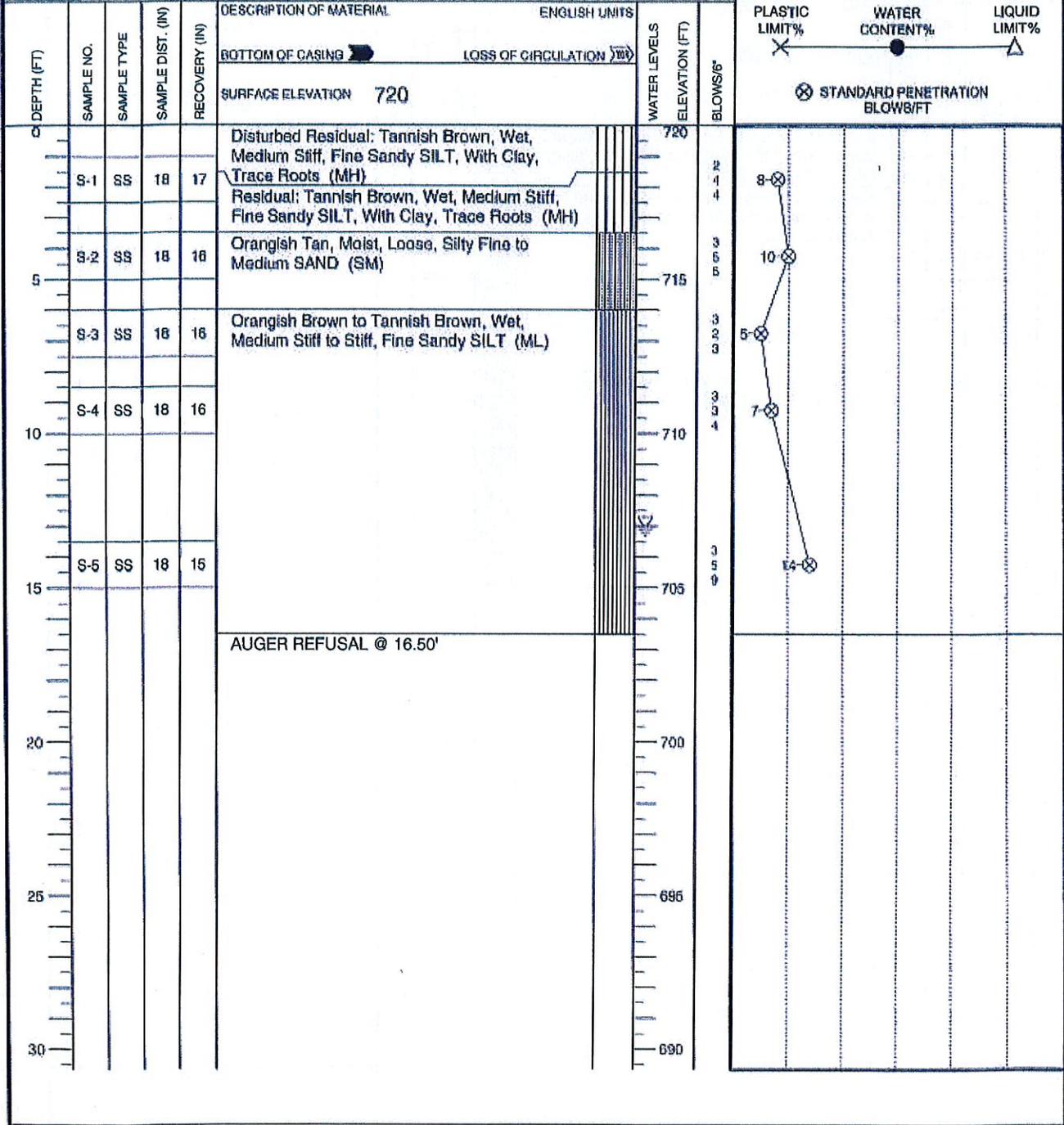
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES, IN-SITU THE TRANSITION MAY BE GRADUAL.

WL DRY	WS □	WD □	BORING STARTED	04/17/14	
WL(BCR)	WL(ACR)		BORING COMPLETED	04/17/14	CAVE IN DEPTH @ 12.50'
WL			RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megsites, LLC	JOB # 24105-A	BORING # B-108	SHEET 1 OF 1	
PROJECT NAME Liberty Megsite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

NORTHING	EASTING	STATION
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○ CALIBRATED PENETROMETER TONS/FT²

ROCK QUALITY DESIGNATION & RECOVERY
RQD% REC%

PLASTIC LIMIT% WATER CONTENT% LIQUID LIMIT%

⊗ STANDARD PENETRATION BLOWS/FT

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

WL 13.00	WS <input type="checkbox"/>	WD <input type="checkbox"/>	BORING STARTED	04/17/14	
WL(BCR)	WL(ACR)		BORING COMPLETED	04/17/14	CAVE IN DEPTH @ 14.00'
WL			RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megsites, LLC	JOB # 24105-A	BORING # B-109	SHEET 1 OF 1	
PROJECT NAME Liberty Megsite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

NORTHING	EASTING	STATION
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○ CALIBRATED PENETROMETER TONS/FT²

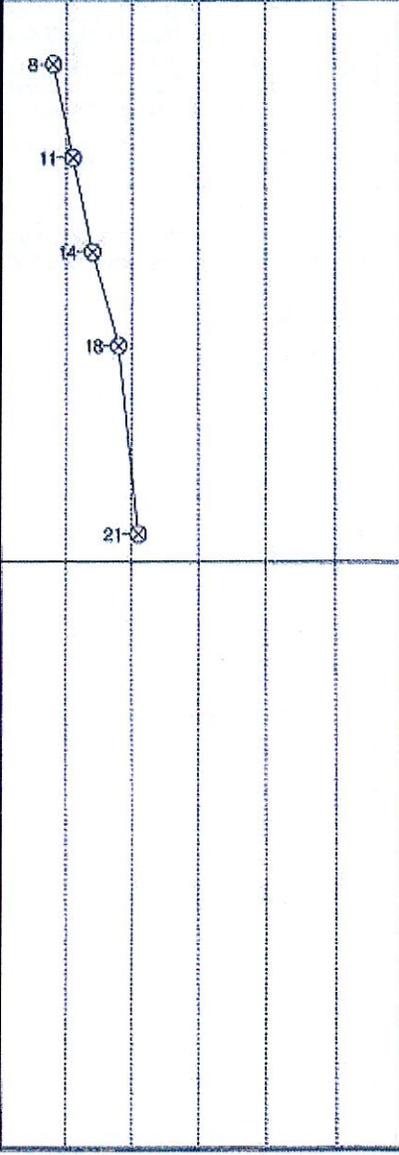
ROCK QUALITY DESIGNATION & RECOVERY
RQD% - - - - REC% ———

PLASTIC LIMIT% WATER CONTENT% LIQUID LIMIT%

✕ ● △

⊗ STANDARD PENETRATION BLOWS/FT

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	ENGLISH UNITS	WATER LEVELS ELEVATION (FT)	BLOWS/FT
					BOTTOM OF CASING	LOSS OF CIRCULATION		
0					SURFACE ELEVATION 700			
0-5	S-1	SS	18	17	Disturbed Residual: Tannish Brown to Brown, Moist to Wet, Medium Stiff to Stiff, Fine Sandy SILT, Trace Clay (ML)			
5-10	S-2	SS	18	16	Residual: Tannish Brown to Brown, Moist to Wet, Medium Stiff to Stiff, Fine Sandy SILT, Trace Clay (ML)			
10-15	S-3	SS	18	17				
15-20	S-4	SS	18	16	Tan to Tannish Brown, Wet, Medium Dense, Silty Fine to Medium SAND, (SM)			
20-25	S-5	SS	18	16				
25-30					END OF BORING @ 15.00'			



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

WL DRY	WS <input type="checkbox"/>	WD <input type="checkbox"/>	BORING STARTED	04/17/14	
WL(BCR)	WL(ACR)		BORING COMPLETED	04/17/14	CAVE IN DEPTH @ 12.50'
WL			RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megasites, LLC	JOB # 24105-A	BORING # B-110	SHEET 1 OF 1	
PROJECT NAME Liberty Megasite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

NORTHING _____ EASTING _____ STATION _____

○ CALIBRATED PENETROMETER TONS/FT²

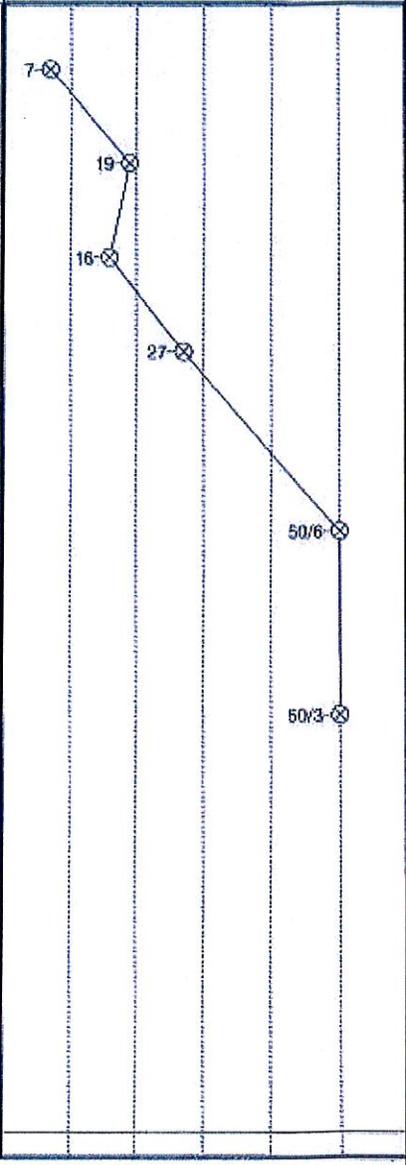
ROCK QUALITY DESIGNATION & RECOVERY
RQD% - - - - REC% ———

PLASTIC LIMIT% WATER CONTENT% LIQUID LIMIT%

✕ ● ▲

⊗ STANDARD PENETRATION BLOWS/FT

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (%)	DESCRIPTION OF MATERIAL	ENGLISH UNITS	WATER LEVELS ELEVATION (FT)	BLOWS/FT
					BOTTOM OF CASING	LOSS OF CIRCULATION		
0					SURFACE ELEVATION 720			
2	S-1	SS	18	18	Disturbed Residual: Orangish Brown, Moist, Medium Stiff, Clayey SILT, With Fine to Medium Sand (MH)			
5	S-2	SS	18	17	Residual: Orangish Brown, Moist, Medium Stiff, Clayey SILT, With Fine to Medium Sand (MH)			
7	S-3	SS	18	17	Tannish Orange to Tannish White, Moist, Medium Dense, Silty Fine to Medium SAND (SM)			
12	S-4	SS	18	18				
15	S-5	SS	12	12	Partially Weathered Rock: Tannish White, Moist, Silty Fine to Medium SAND (WR)			
20	S-6	SS	9	9				
30					END OF BORING @ 30.00'			



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

WL DRY	WS	WD	BORING STARTED	04/17/14	
WL(BCR)	WL(ACR)		BORING COMPLETED	04/17/14	CAVE IN DEPTH
WL			RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megasites, LLC	JOB # 24105-A	BORING # B-111	SHEET 1 OF 2	
PROJECT NAME Liberty Megasite	ARCHITECT-ENGINEER			

Liberty Megasite
SITE LOCATION
Old US 421, Liberty, North Carolina

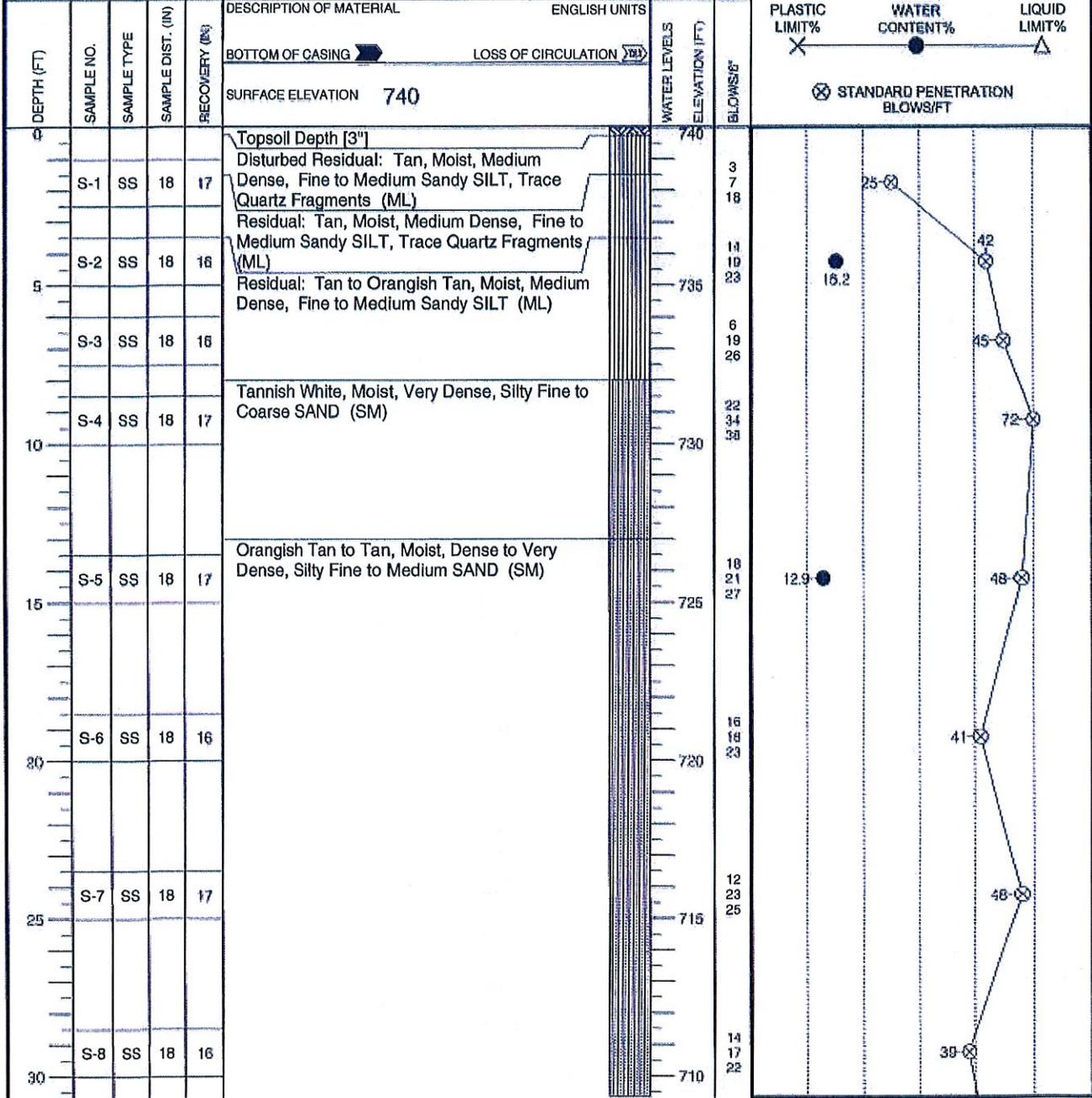
NORTHING	EASTING	STATION
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○ CALIBRATED PENETROMETER TONS/FT²

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

PLASTIC LIMIT% WATER CONTENT% LIQUID LIMIT%

✕ STANDARD PENETRATION BLOWS/FT



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

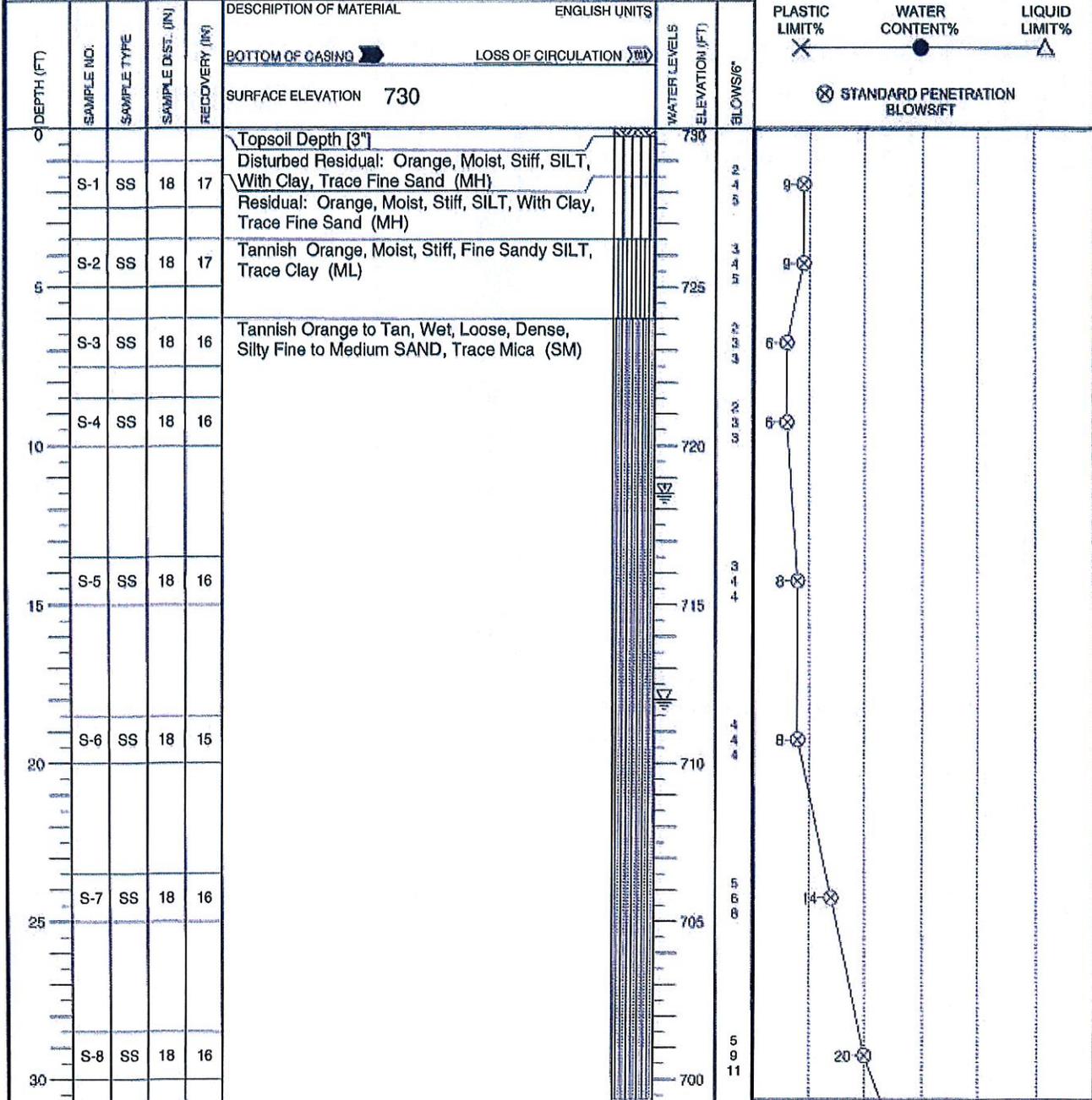
WL 45.00	WS □	WD □	BORING STARTED	04/17/14	
WL(BCR)	WL(ACR)		BORING COMPLETED	04/17/14	CAVE IN DEPTH
WL			RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megsites, LLC	JOB # 24105-A	BORING # B-112	SHEET 1 OF 2	
PROJECT NAME Liberty Megsite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

NORTHING _____ EASTING _____ STATION _____

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



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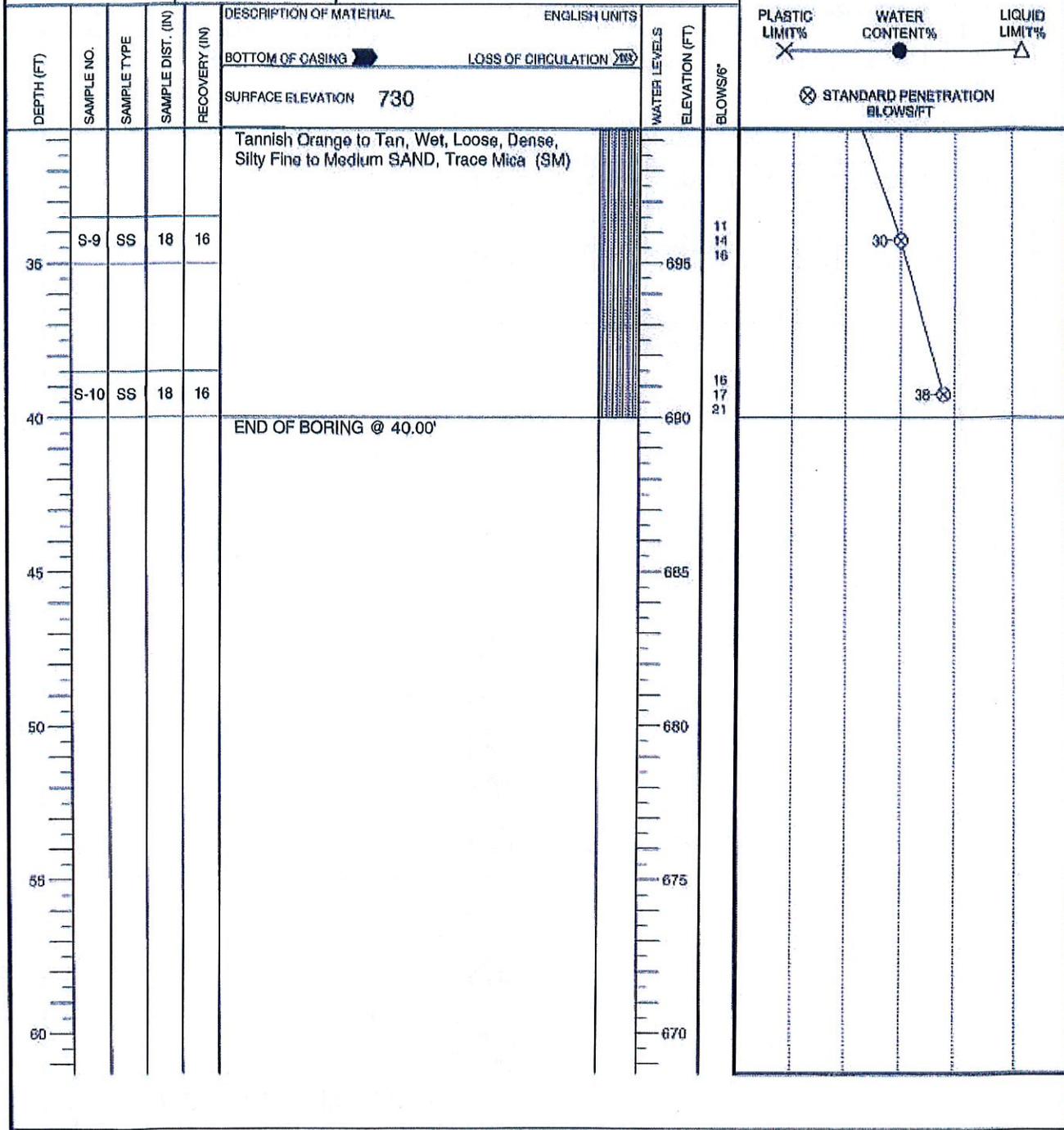
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 18.00	WS <input type="checkbox"/>	WD <input type="checkbox"/>	BORING STARTED	04/14/14	
WL(BCF)	WL(ACF)		BORING COMPLETED	04/14/14	CAVE IN DEPTH
WL 11.50			RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megasites, LLC	JOB # 24105-A	BORING # B-112	SHEET 2 OF 2	
PROJECT NAME Liberty Megasite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

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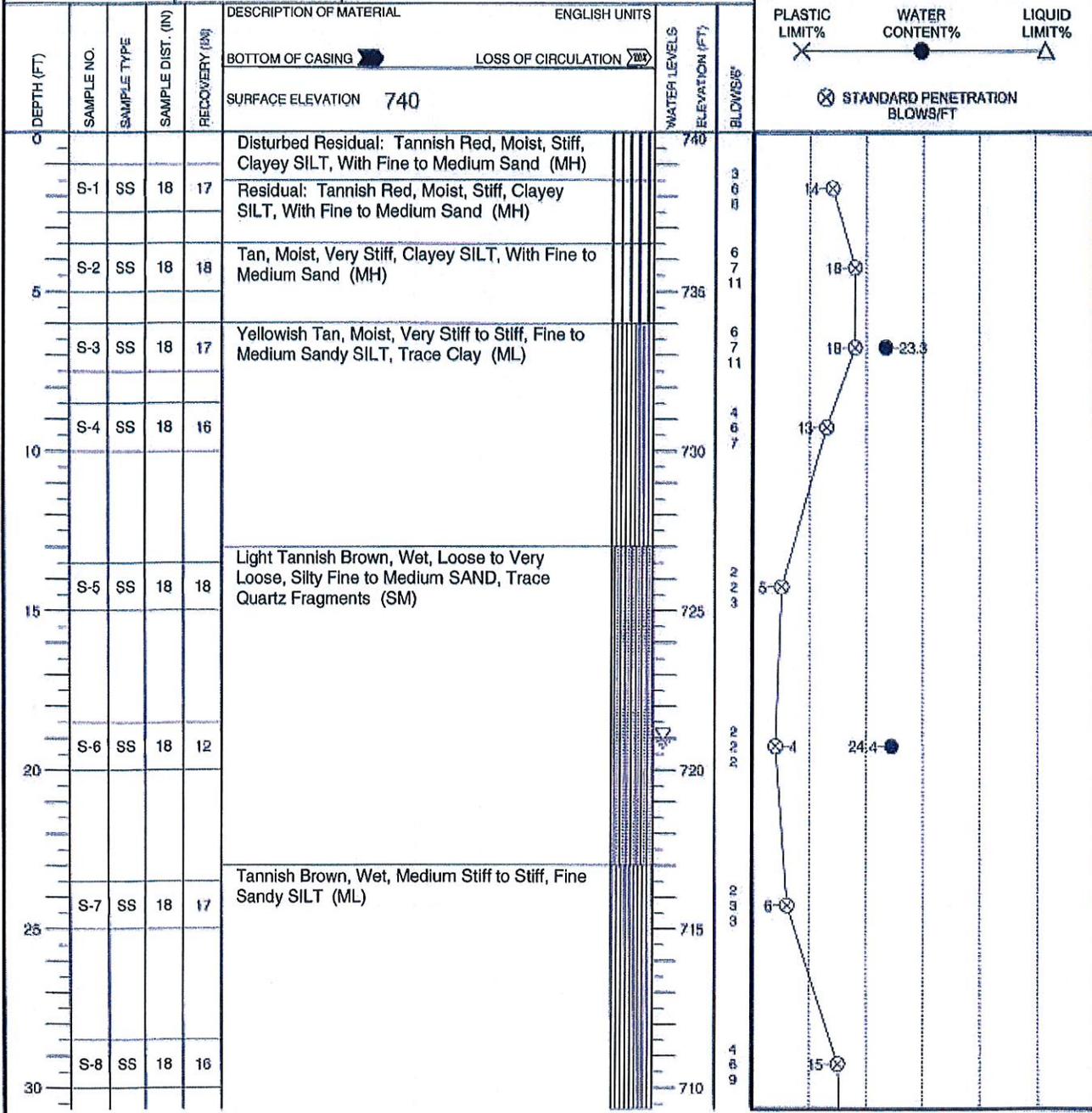
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 18.00	WS <input type="checkbox"/>	WD <input type="checkbox"/>	BORING STARTED	04/14/14	
WL(BCR)	WL(ACR)		BORING COMPLETED	04/14/14	CAVE IN DEPTH
WL 11.50			RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megsites, LLC	JOB # 24105-A	BORING # B-113	SHEET 1 OF 2	
PROJECT NAME Liberty Megosite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

NORTHING _____ EASTING _____ STATION _____



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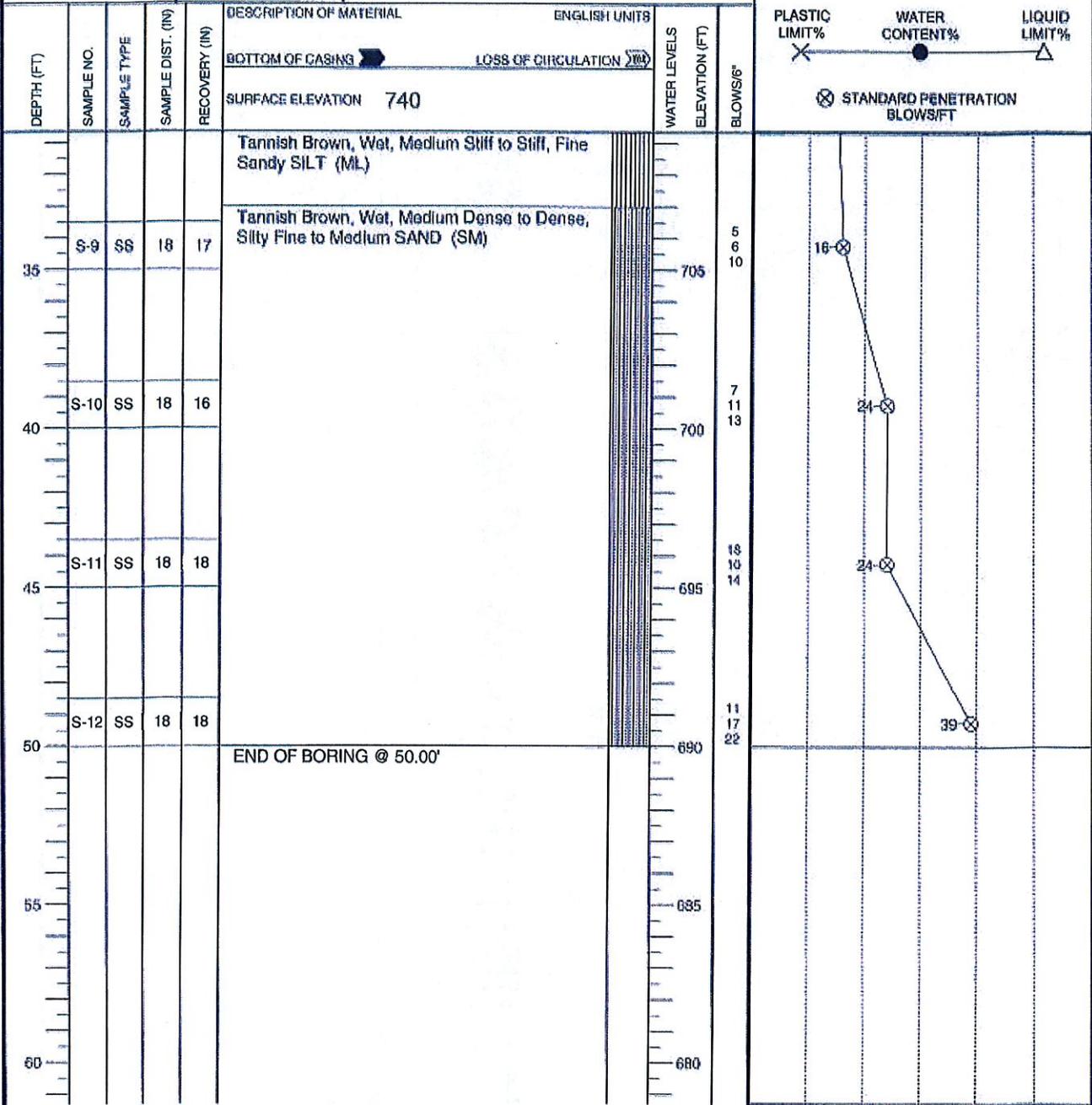
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 19.00	WS <input type="checkbox"/>	WD <input type="checkbox"/>	BORING STARTED	04/14/14	
WL(BCR)	WL(ACR)		BORING COMPLETED	04/14/14	CAVE IN DEPTH @ 27.00'
WL			RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megasites, LLC	JOB # 24105-A	BORING # B-113	SHEET 2 OF 2	
PROJECT NAME Liberty Megasite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

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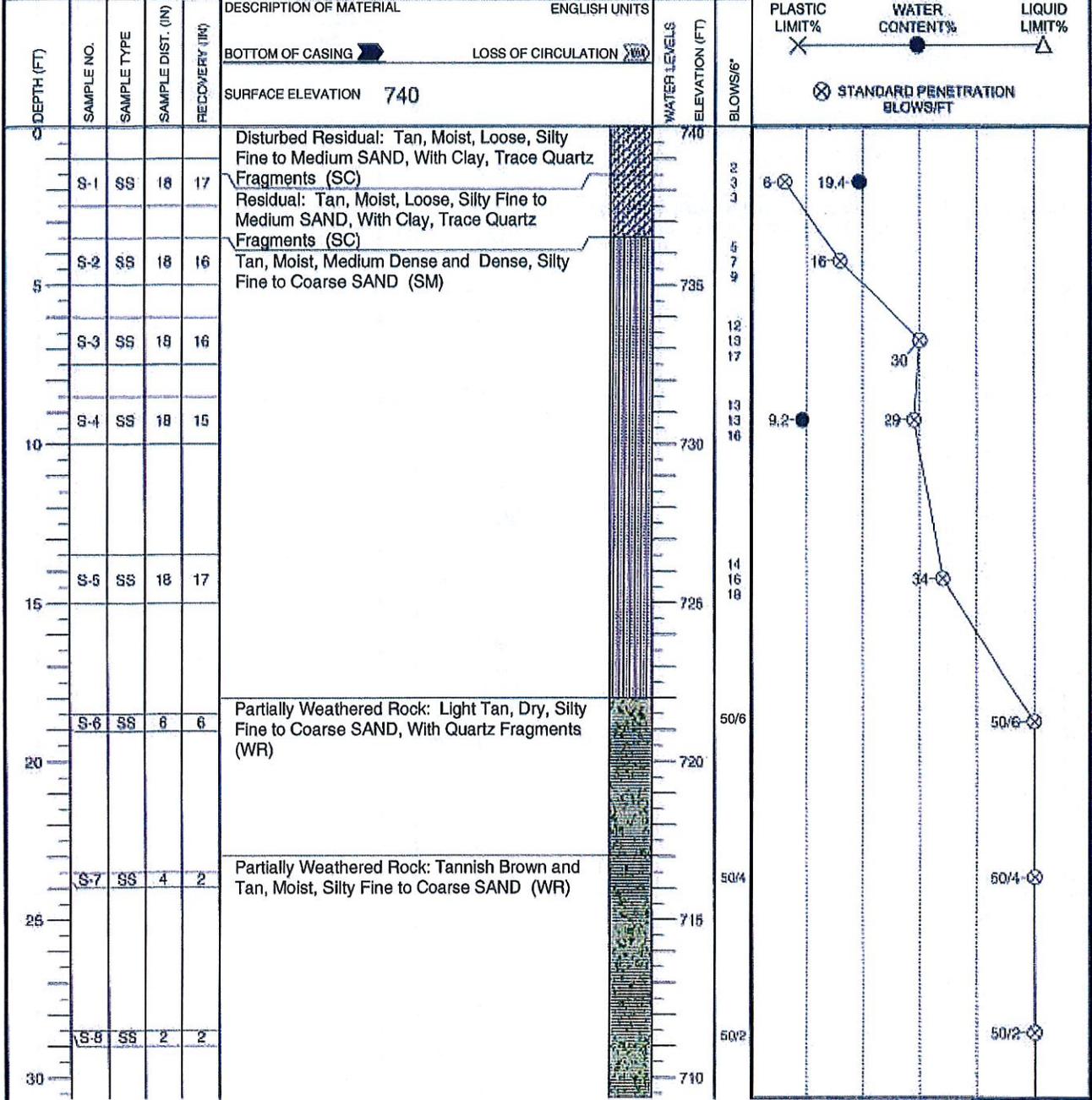
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 19.00	WS <input type="checkbox"/>	WD <input type="checkbox"/>	BORING STARTED	04/14/14	
WL(BCR)	WL(ACR)		BORING COMPLETED	04/14/14	CAVE IN DEPTH @ 27.00'
WL			RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megasites, LLC	JOB # 24105-A	BORING # B-114	SHEET 1 OF 2	
PROJECT NAME Liberty Megasite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

NORTHING _____ EASTING _____ STATION _____



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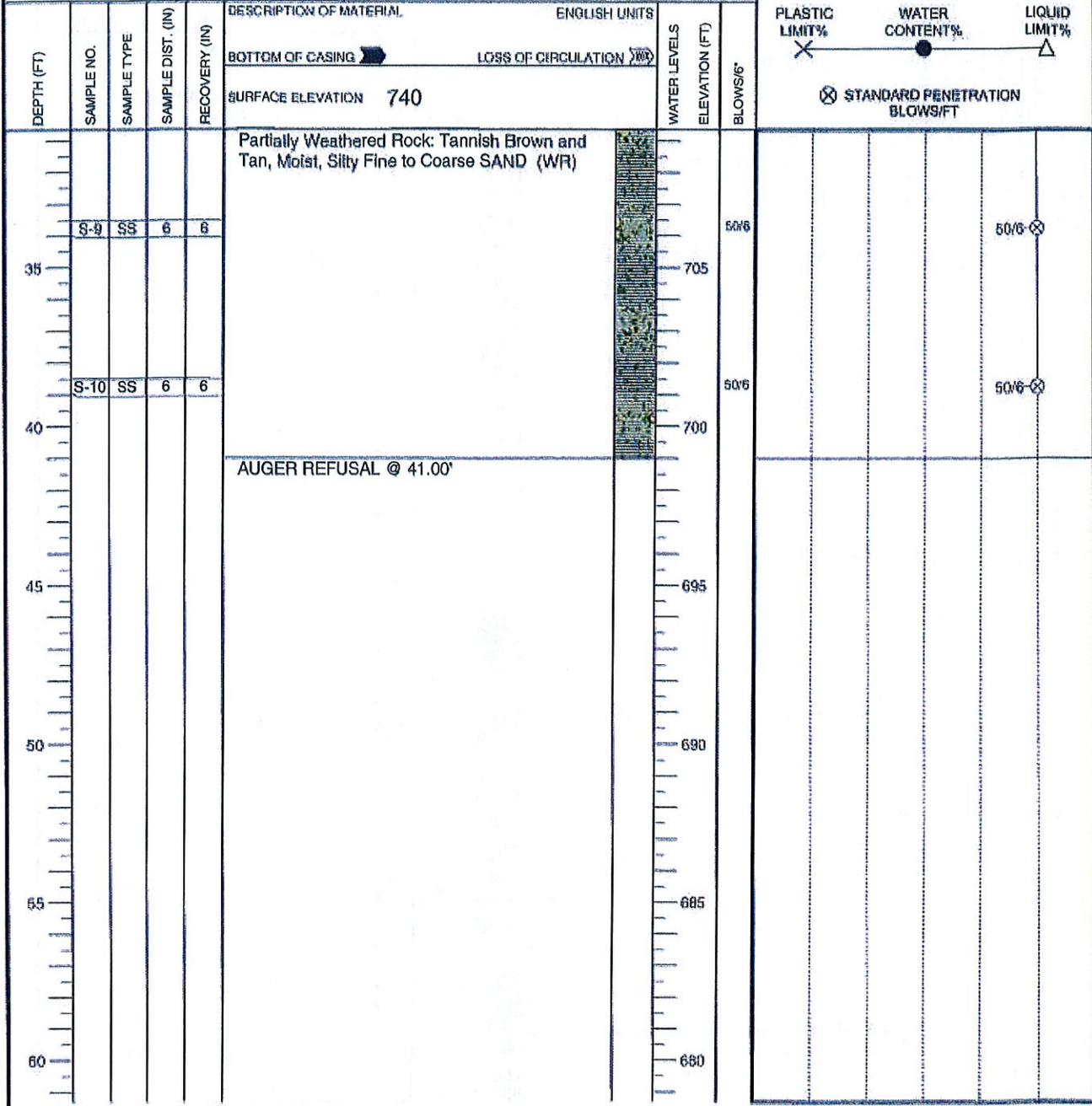
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL	WS <input type="checkbox"/>	WD <input type="checkbox"/>	BORING STARTED	04/16/14	
WL(BCR)	WL(ACR)		BORING COMPLETED	04/16/14	CAVE IN DEPTH @ 31.00'
WL			RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megsites, LLC	JOB # 24105-A	BORING # B-114	SHEET 2 OF 2	
PROJECT NAME Liberty Megsite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

NORTHING	EASTING	STATION
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○ CALIBRATED PENETROMETER TONS/FT²

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

PLASTIC LIMIT% WATER CONTENT% LIQUID LIMIT%

⊗ STANDARD PENETRATION BLOWS/FT

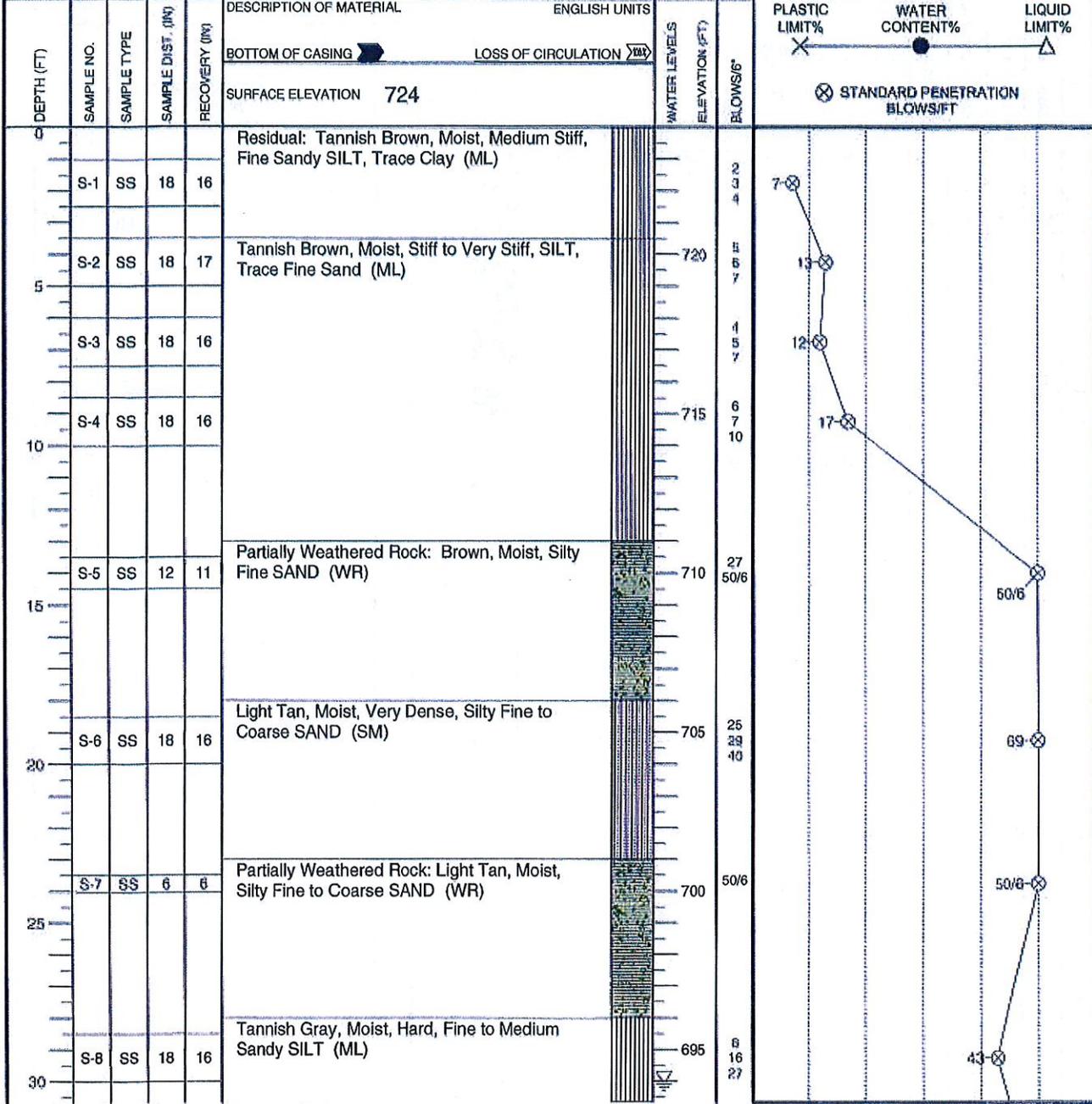
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL	WS	WD	BORING STARTED	04/16/14	
WL(BCR)	WL(ACR)		BORING COMPLETED	04/16/14	CAVE IN DEPTH @ 31.00'
WL			RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megasites, LLC	JOB # 24105-A	BORING # B-115	SHEET 1 OF 2	
PROJECT NAME Liberty Megasite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

NORTHING _____ EASTING _____ STATION _____



○ CALIBRATED PENETROMETER TONS/FT²

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

PLASTIC LIMIT% WATER CONTENT% LIQUID LIMIT%

⊗ STANDARD PENETRATION BLOWS/FT

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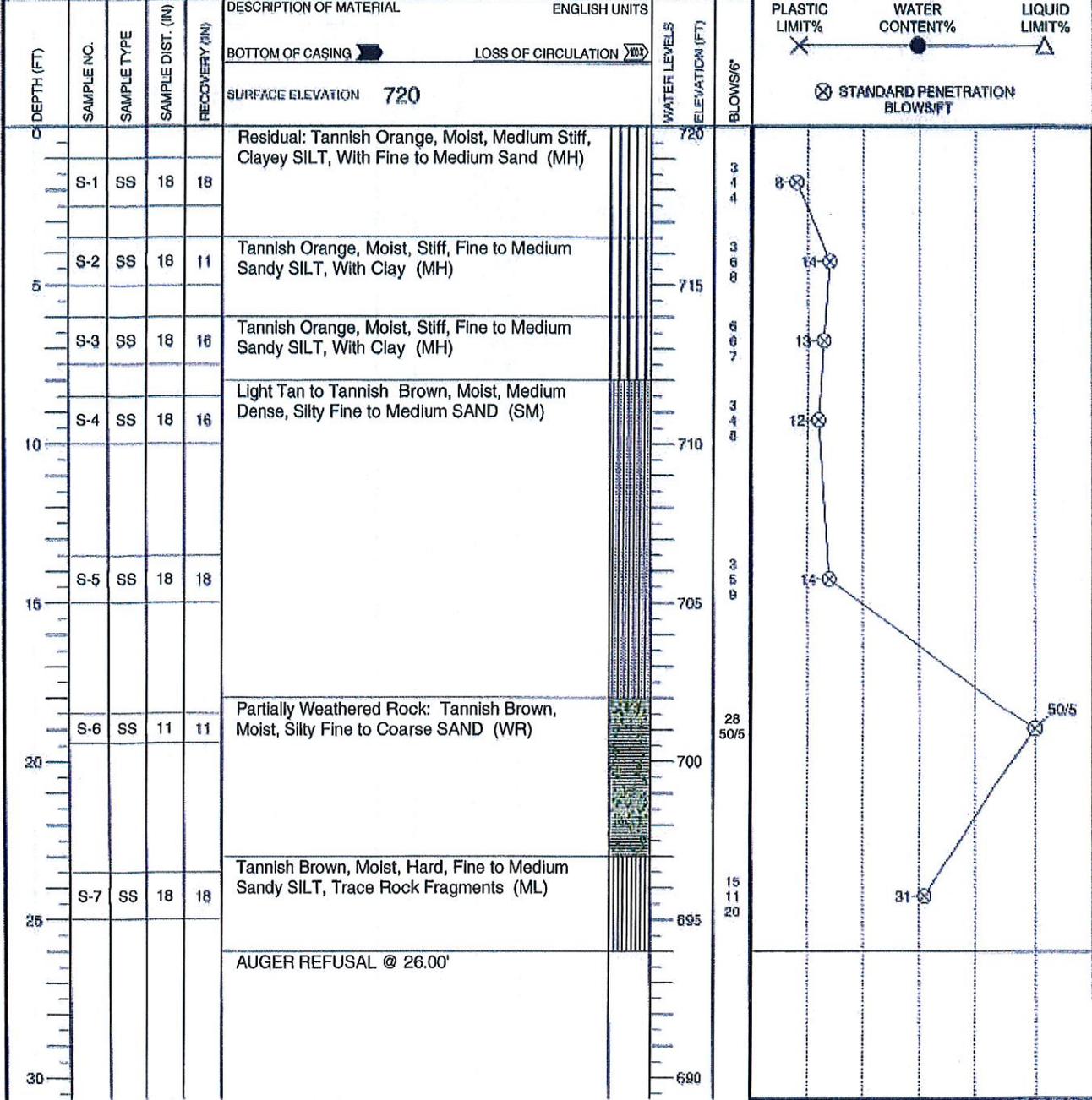
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.			
WL 30.00	WS <input type="checkbox"/>	WD <input type="checkbox"/>	BORING STARTED 04/17/14
WL(BCR)	WL(ACR)		BORING COMPLETED 04/17/14
WL			RIG Diedrich D-50 FOREMAN
			DRILLING METHOD HSA
			CAVE IN DEPTH @ 27.50'

CLIENT NC Megasites, LLC	JOB # 24105-A	BORING # B-116	SHEET 1 OF 1	
PROJECT NAME Liberty Megasite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

NORTHING _____ EASTING _____ STATION _____

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



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

WL	WS <input type="checkbox"/> WD <input type="checkbox"/>	BORING STARTED	04/16/14	
WL(BCH)	WL(ACR)	BORING COMPLETED	04/16/14	CAVE IN DEPTH @ 21.00'
WL		RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megasites, LLC	JOB # 24105-A	BORING # B-117	SHEET 1 OF 1	
PROJECT NAME Liberty Megasite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

NORTHING _____ EASTING _____ STATION _____

○ CALIBRATED PENETROMETER TONS/FT²

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

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	ENGLISH UNITS	WATER LEVELS ELEVATION (FT)	BLOWS/6"
					BOTTOM OF CASING	LOSS OF CIRCULATION		
					SURFACE ELEVATION 710			
20					END OF BORING @ 20.00'		690	
25							685	
30							680	
35							675	
40							670	
45							665	
50							660	



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

<input checked="" type="checkbox"/> WL WS <input type="checkbox"/> WD <input type="checkbox"/>	BORING STARTED
<input checked="" type="checkbox"/> WL(BCR) <input checked="" type="checkbox"/> WL(ACR)	BORING COMPLETED CAVE IN DEPTH
<input checked="" type="checkbox"/> WL	RIG _____ FOREMAN _____ DRILLING METHOD _____

CLIENT NC Megsites, LLC	JOB # 24105-A	BORING # B-118	SHEET 1 OF 1	
PROJECT NAME Liberty Megasite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

○ CALIBRATED PENETROMETER TONS/FT²

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

PLASTIC LIMIT% WATER CONTENT% LIQUID LIMIT%

⊗ STANDARD PENETRATION BLOWS/FT

NORTHING	EASTING	STATION
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DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	ENGLISH UNITS	WATER LEVELS ELEVATION (FT)	BLOWS/6"
					BOTTOM OF CASING	LOSS OF CIRCULATION		

30							720	
					END OF BORING @ 30.00'			
35								
40								
45								
50								
55								
60								

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

WL	WS	WD	BORING STARTED	
WL(BCR)	WL(ACR)		BORING COMPLETED	CAVE IN DEPTH
WL			RIG	FOREMAN
				DRILLING METHOD

CLIENT NC Megsites, LLC	JOB # 24105-A	BORING # B-119	SHEET 1 OF 2	
PROJECT NAME Liberty Megsite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

NORTHING	EASTING	STATION
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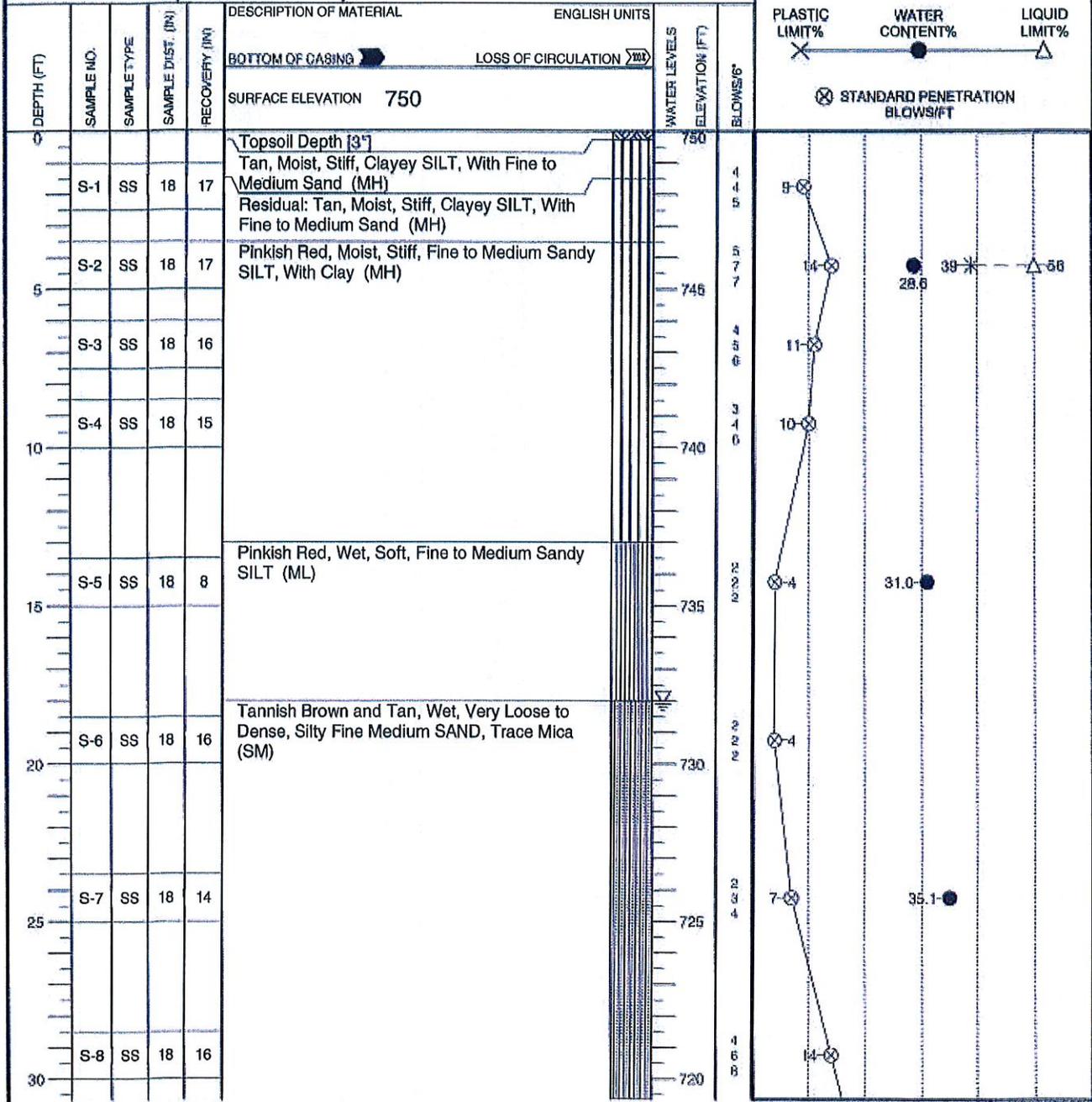
○ CALIBRATED PENETROMETER TONS/FT²

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

PLASTIC LIMIT% WATER CONTENT% LIQUID LIMIT%

✕ ● △

⊗ STANDARD PENETRATION BLOWS/FT



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

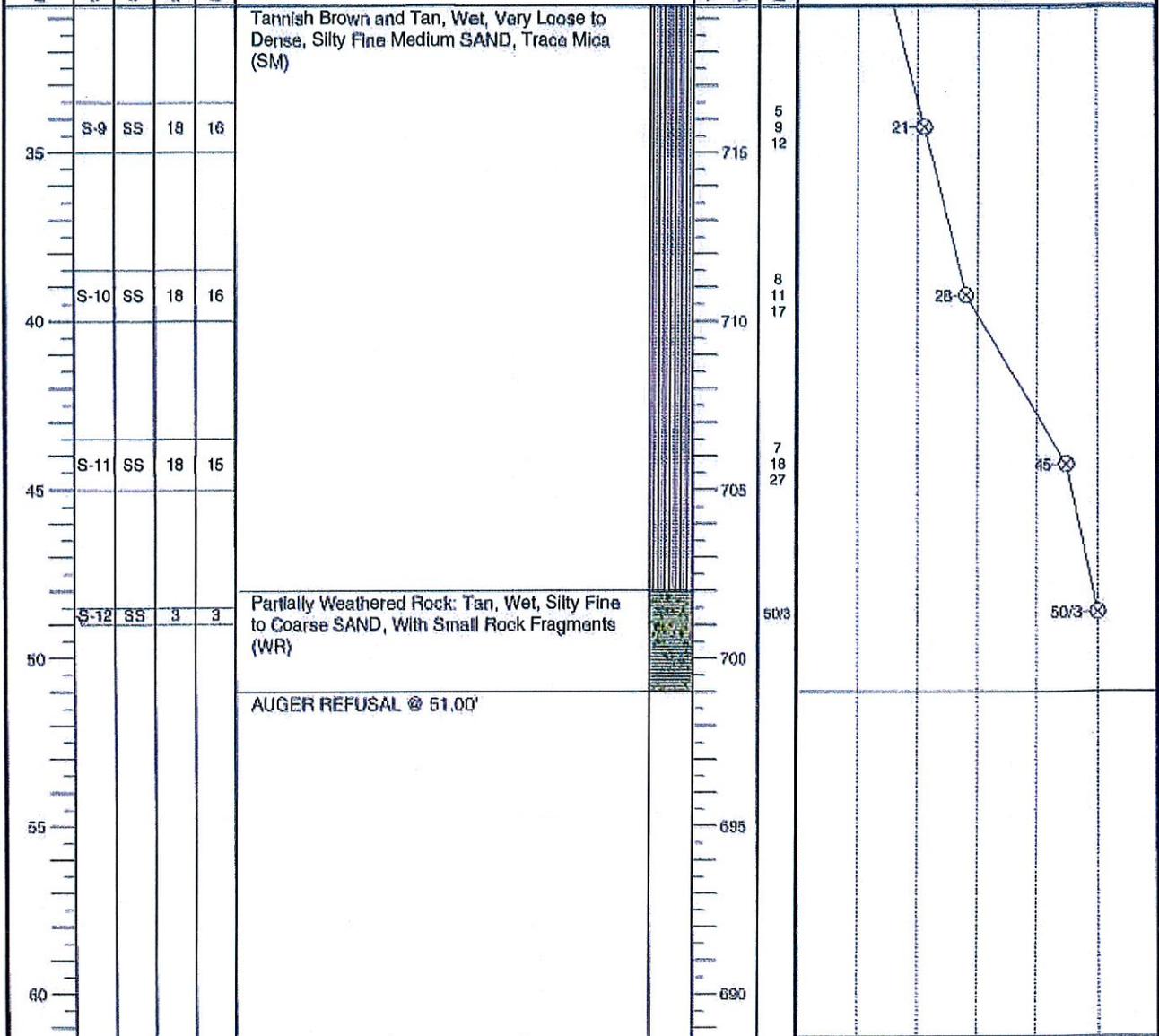
WL 18.00	WS []	WD []	BORING STARTED	04/16/14	
WL(BCR)	WL(ACR)		BORING COMPLETED	04/16/14	CAVE IN DEPTH
WL			RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megsites, LLC	JOB # 24105-A	BORING # B-119	SHEET 2 OF 2	
PROJECT NAME Liberty Megsite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

NORTHING _____ EASTING _____ STATION _____

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	ENGLISH UNITS	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
					BOTTOM OF CASING	LOSS OF CIRCULATION			
					SURFACE ELEVATION 750				



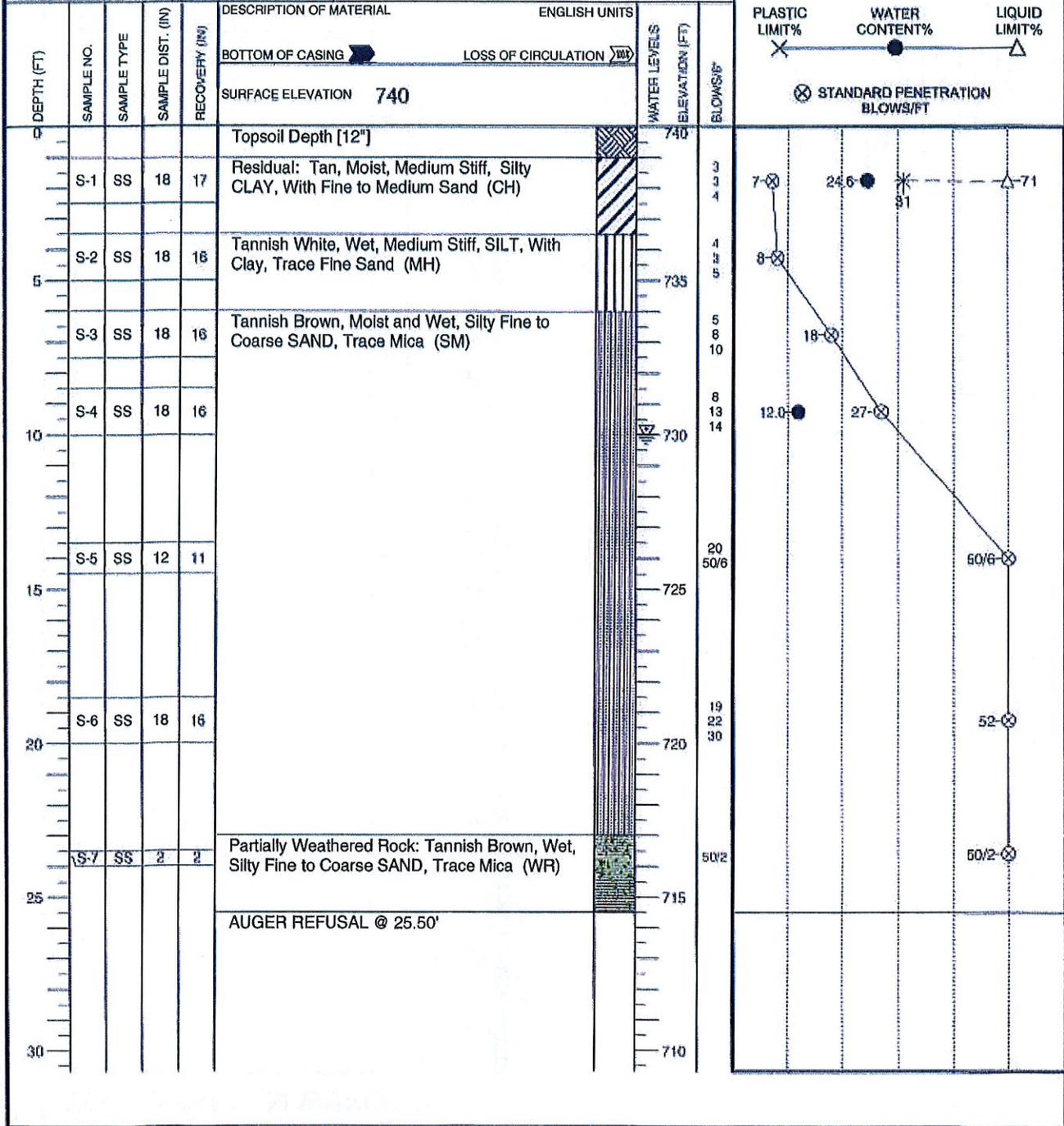
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL.

WL 18.00	WS □	WD □	BORING STARTED	04/16/14	
WL(BCR)	WL(ACR)		BORING COMPLETED	04/16/14	CAVE IN DEPTH
WL			RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megsites, LLC	JOB # 24105-A	BORING # B-120	SHEET 1 OF 1	
PROJECT NAME Liberty Megsite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

NORTHING	EASTING	STATION
----------	---------	---------

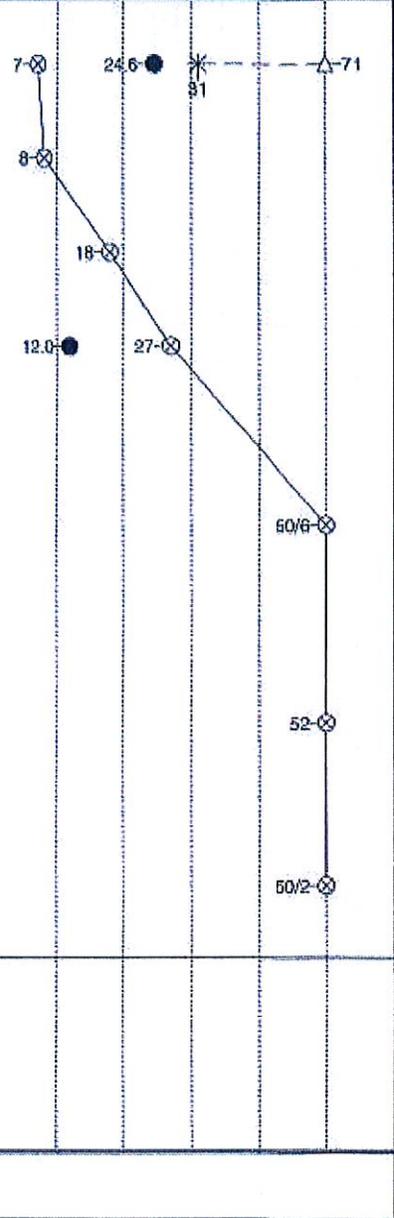


○ CALIBRATED PENETROMETER TONS/FT²

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

PLASTIC LIMIT% WATER CONTENT% LIQUID LIMIT%

⊗ STANDARD PENETRATION BLOWS/FT



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

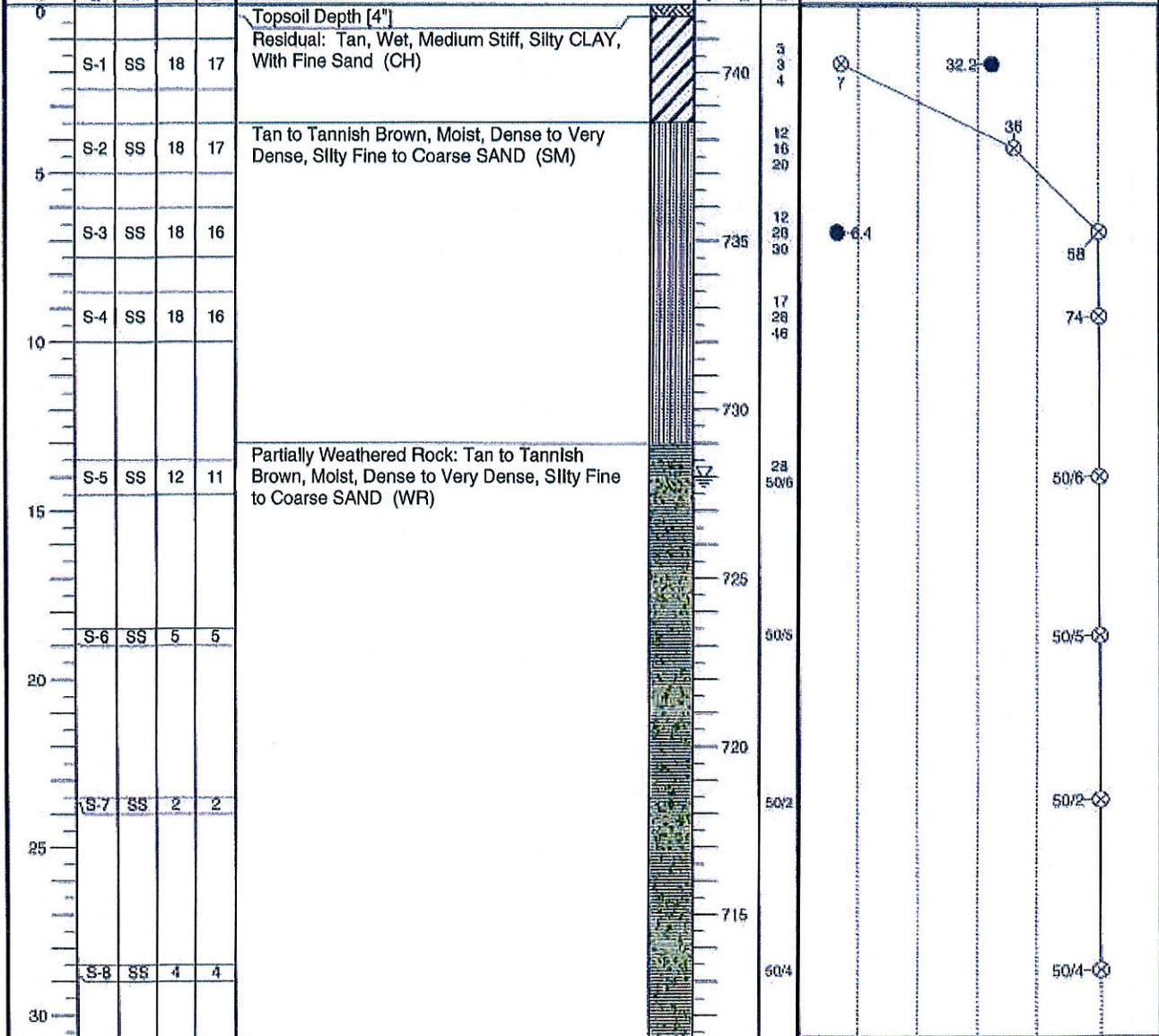
WL	WS	WD	BORING STARTED	04/18/14	
WL(BCR)	WL(ACR)		BORING COMPLETED	04/18/14	CAVE IN DEPTH @ 18.50'
WL 10.00			RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megsites, LLC	JOB # 24105-A	BORING # B-121	SHEET 1 OF 2	
PROJECT NAME Liberty Megsite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

NORTHING _____ EASTING _____ STATION _____

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	ENGLISH UNITS	WATER LEVELS	ELEVATION (FT)	BLOWS/5'
					BOTTOM OF CASING	LOSS OF CIRCULATION			
					SURFACE ELEVATION 742				



CONTINUED ON NEXT PAGE.

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

WL 14.00	WS <input type="checkbox"/> WD <input type="checkbox"/>	BORING STARTED	04/16/14	
WL(BCR)	WL(ACR)	BORING COMPLETED	04/16/14	CAVE IN DEPTH
WL		RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megasites, LLC	JOB # 24105-A	BORING # B-121	SHEET 2 OF 2	
PROJECT NAME Liberty Megasite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

NORTHING	EASTING	STATION
----------	---------	---------

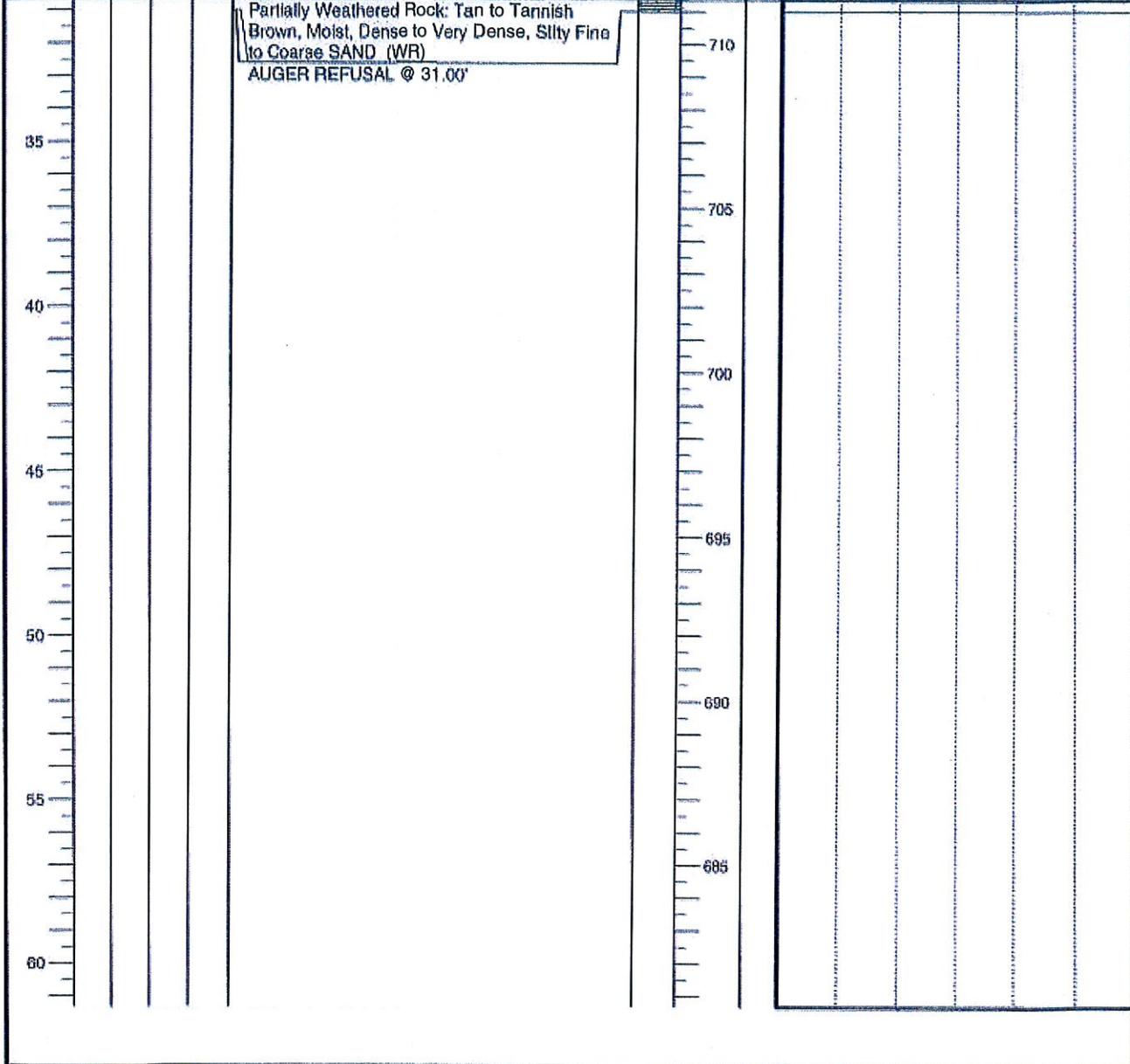
DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	ENGLISH UNITS	WATER LEVELS ELEVATION (FT)	BLOWS/6"
					BOTTOM OF CASING	LOSS OF CIRCULATION		
					SURFACE ELEVATION 742			

CALIBRATED PENETROMETER TONS/FT²

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

PLASTIC LIMIT% WATER CONTENT% LIQUID LIMIT%

STANDARD PENETRATION BLOWS/FT



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

<input checked="" type="checkbox"/> WL 14.00	WS <input type="checkbox"/>	WD <input type="checkbox"/>	BORING STARTED	04/16/14	
<input checked="" type="checkbox"/> WL(BCR)	<input checked="" type="checkbox"/> WL(ACR)		BORING COMPLETED	04/16/14	CAVE IN DEPTH
<input checked="" type="checkbox"/> WL			RIG	Diedrich D-50 FOREMAN	DRILLING METHOD HSA

CLIENT NC Megsites, LLC	JOB # 24105-A	BORING # B-122	SHEET 1 OF 1	
PROJECT NAME Liberty Megasite	ARCHITECT-ENGINEER			

SITE LOCATION
Old US 421, Liberty, North Carolina

NORTHING _____ EASTING _____ STATION _____

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	ENGLISH UNITS	WATER LEVELS ELEVATION (FT)	BLOWS/6"	○ CALIBRATED PENETROMETER TONS/FT ² ROCK QUALITY DESIGNATION & RECOVERY RQD% - - - - REC% _____ PLASTIC LIMIT% WATER CONTENT% LIQUID LIMIT% X ● △ ⊗ STANDARD PENETRATION BLOWS/FT
					BOTTOM OF CASING	LOSS OF CIRCULATION			
					SURFACE ELEVATION 680				
10					END OF BORING @ 10.00'		670		
15							665		
20							660		
25							655		
30							650		
35							645		
40							640		

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

<input checked="" type="checkbox"/> WL	WS <input type="checkbox"/> WD <input type="checkbox"/>	BORING STARTED	
<input checked="" type="checkbox"/> WL(BCR)	<input checked="" type="checkbox"/> WL(ACR)	BORING COMPLETED	CAVE IN DEPTH
<input checked="" type="checkbox"/> WL		RIG	FOREMAN
			DRILLING METHOD

*Liberty Megasite
Liberty, North Carolina
ECS Project No.: 09.24105-A
April 25, 2014*

APPENDIX B – LABORATORY RESULTS

Laboratory Testing Summary

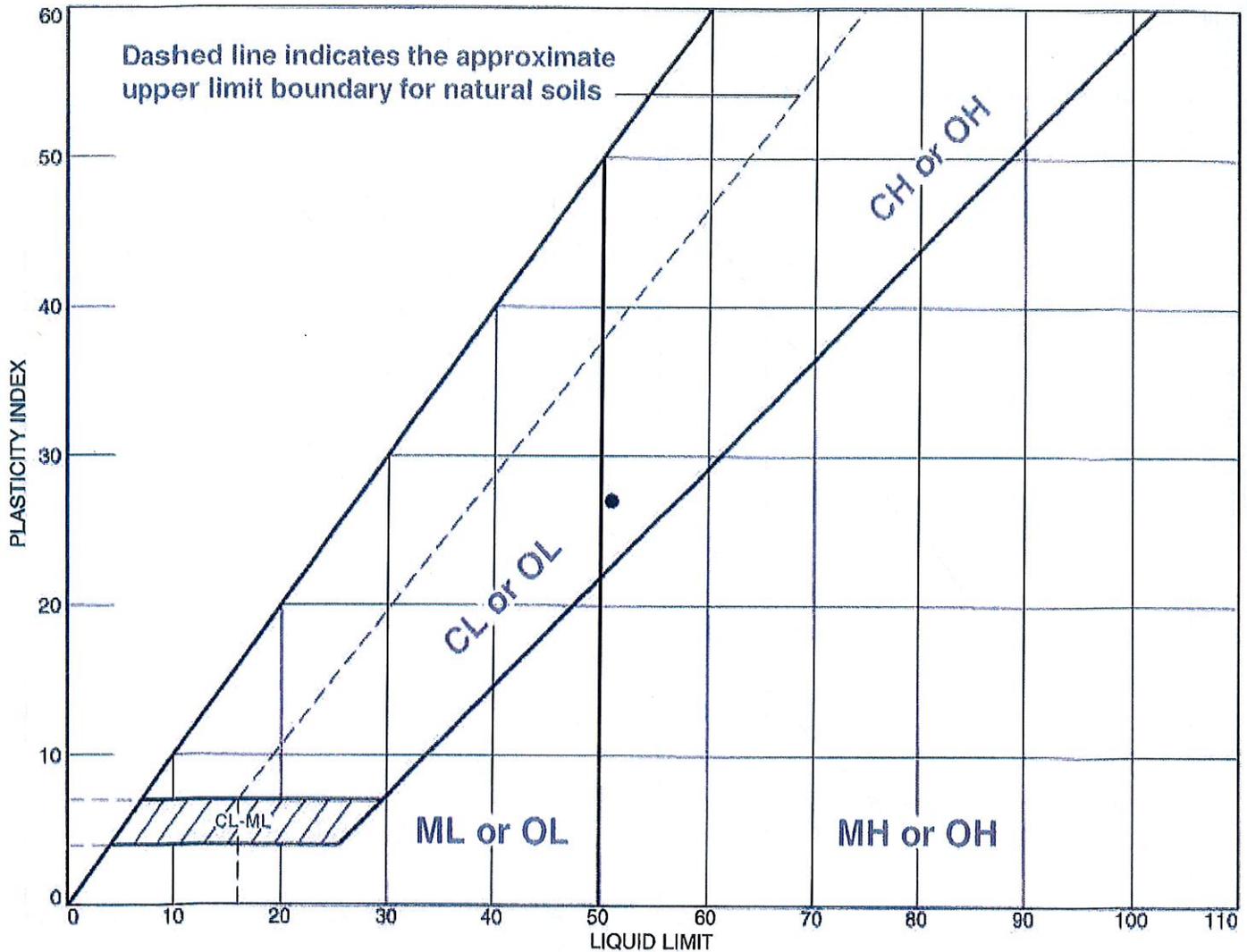
Sample Source	Sample Number	Depth (feet)	MC1 (%)	Soil Type ²	Atterberg Limits ³			Percent Passing No. 200 Sieve ⁴	Moisture - Density (Corr.) ⁵		CBR Value ⁶	Other
					LL	PL	PI		Maximum Density (pcf)	Optimum Moisture (%)		
B-101	S-1	1.00 - 2.50	20.1									
	S-4	8.50 - 10.00	38.7		51	24	27	58.3				
B-103	S-2	3.50 - 5.00	33.7									
	S-4	8.50 - 10.00	24.8									
B-111	S-2	3.50 - 5.00	15.2									
	S-5	13.50 - 15.00	12.9									
B-113	S-3	6.00 - 7.50	23.3									
	S-6	18.50 - 20.00	24.4									
B-114	S-1	1.00 - 2.50	19.4									
	S-4	8.50 - 10.00	9.2									
B-119	S-2	3.50 - 5.00	28.6									
	S-5	13.50 - 15.00	31.0		56	39	17	57.4				
	S-7	23.50 - 25.00	35.1									
B-120	S-1	1.00 - 2.50	24.6									
	S-4	8.50 - 10.00	12.0		71	31	40	58.3				
B-121	S-1	1.00 - 2.50	32.2									
	S-3	6.00 - 7.50	6.4									

Notes: 1. ASTM D 2216, 2. ASTM D 2487, 3. ASTM D 4318, 4. ASTM D 1140, 5. See test reports for test method, 6. See test reports for test method
Definitions: MC: Moisture Content, Soil Type: USCS (Unified Soil Classification System), LL: Liquid Limit, PL: Plastic Limit, PI: Plasticity Index, CBR: California Bearing Ratio, OC: Organic Content (ASTM D 2974)

Project No. 24105-A
Project Name: Liberty Megasite GEO
PIM: Lorin E. Akins
PE: James D. Hoskins, III
Printed On: Thursday, April 24, 2014



LIQUID AND PLASTIC LIMITS TEST REPORT



MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
Disturbed Residual: Tan, Moist, Medium Stiff, Silty CLAY, With Fine to Medium Sand	51	24	27		58.3	CH

Project No. 24105-A **Client:** NC Megasites, LLC
Project: Liberty Megasite
Source of Sample: B-101 **Depth:** 1.00-2.50 **Sample Number:** S-1

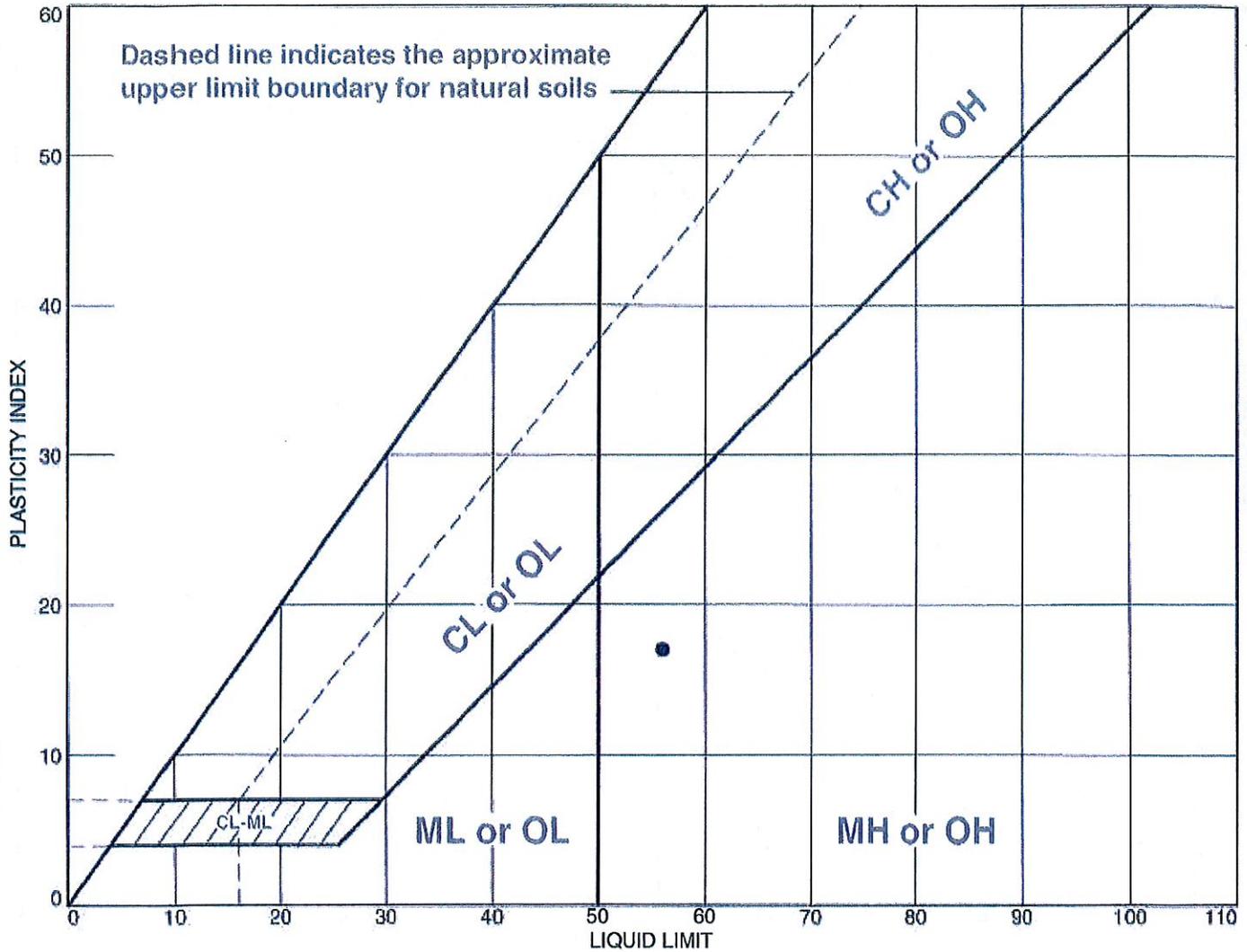
Remarks:



ECS Carolines, LLP
 4811 Kapor Boulevard
 Greensboro, NC 27407
 Phone: (336) 856-7100 Fax: (336) 484-2828

Figure

LIQUID AND PLASTIC LIMITS TEST REPORT

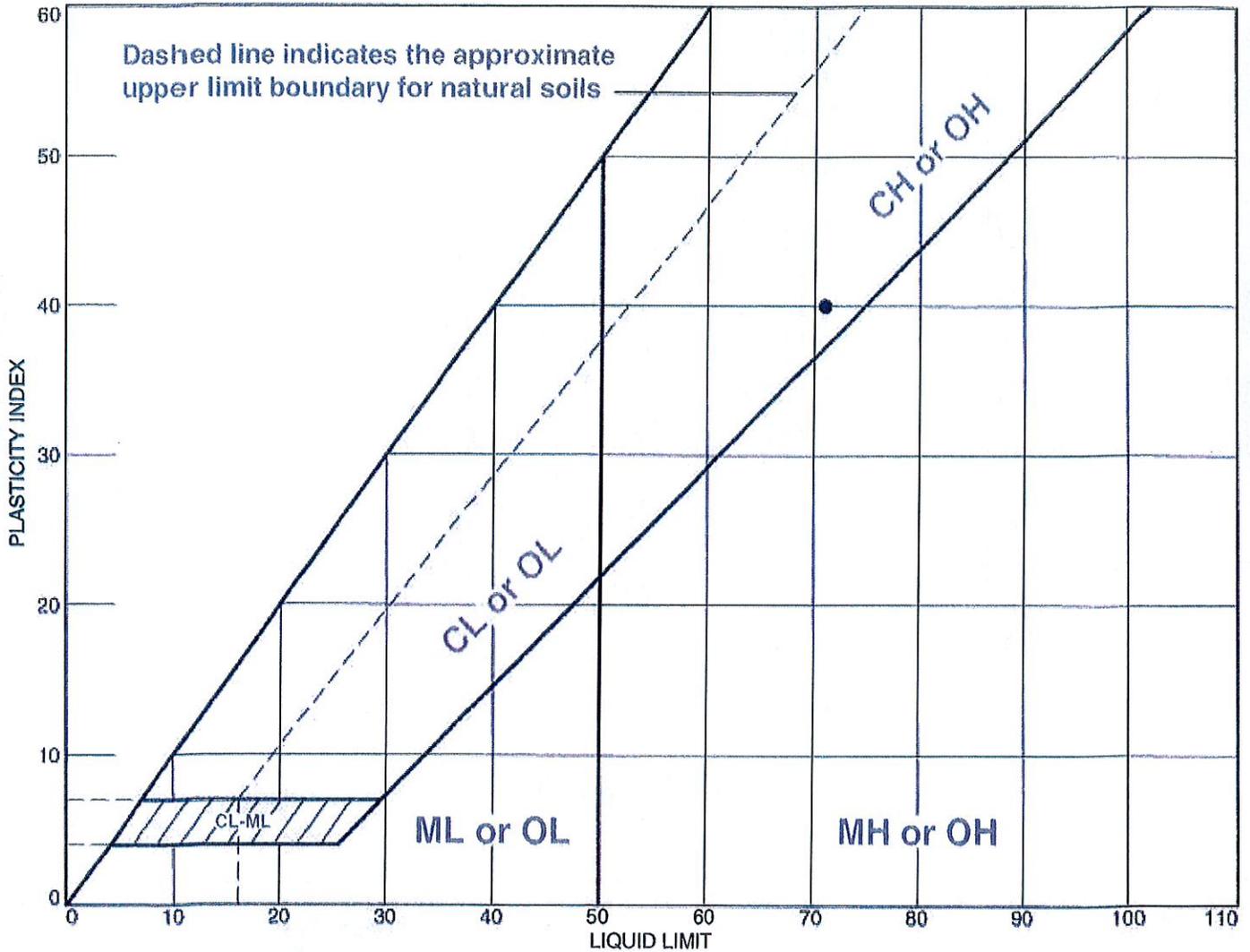


MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
● Residual: Tan, Moist, Stiff, Clayey SILT, With Fine to Medium Sand	56	39	17		57.4	MH

Project No. 24105-A **Client:** NC Megasites, LLC
Project: Liberty Megasite
● Source of Sample: B-119 **Depth:** 3.50-5.00 **Sample Number:** S-2

Remarks:

LIQUID AND PLASTIC LIMITS TEST REPORT

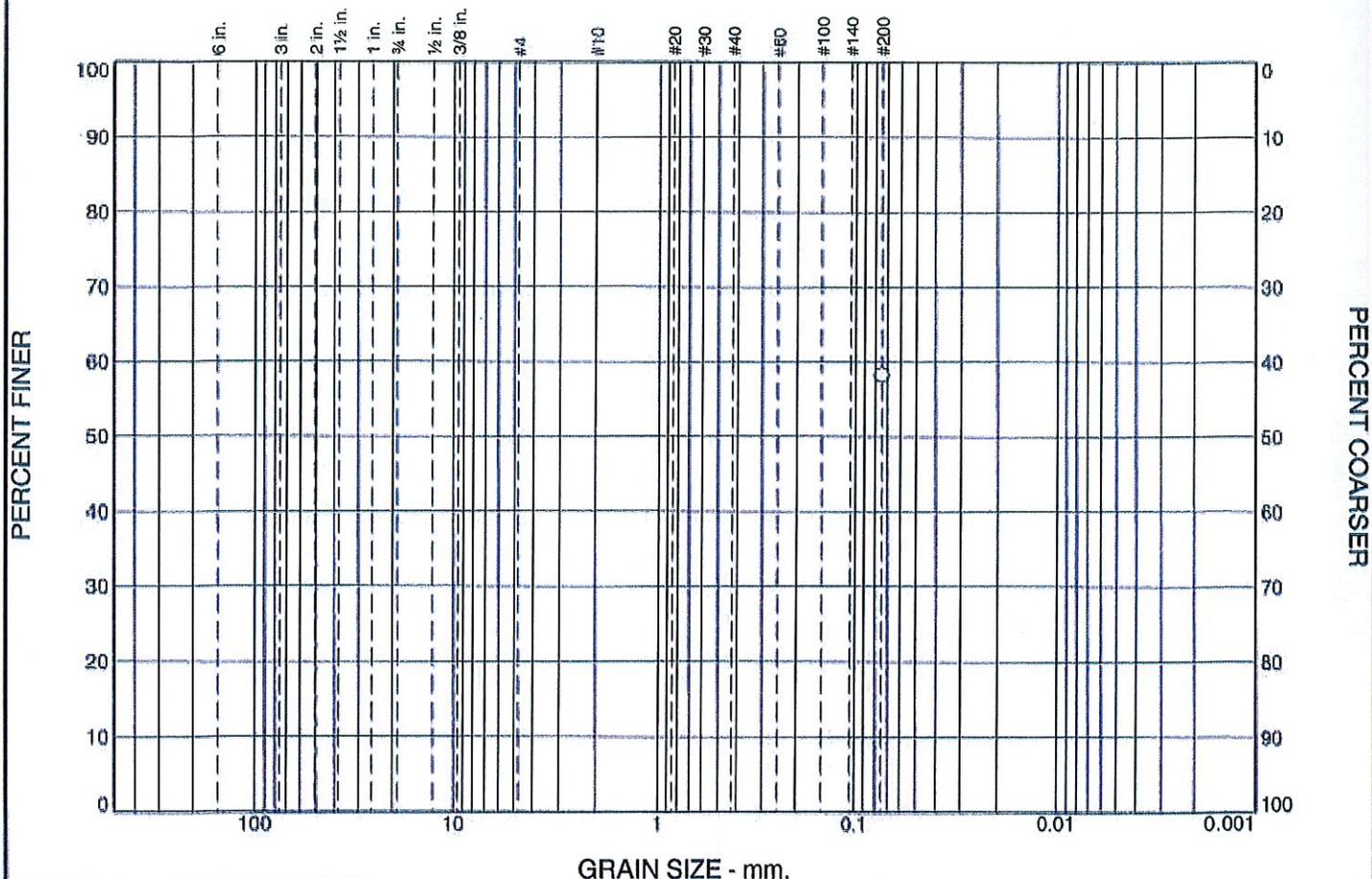


MATERIAL DESCRIPTION	LL	PL	PI	%<#40	%<#200	USCS
● Residual: Tan, Moist, Medium Stiff, Silty CLAY, With Fine to Medium Sand	71	31	40		58.3	CH

Project No. 24105-A **Client:** NC Megasites, LLC
Project: Liberty Megasite
● Source of Sample: B-120 **Depth:** 1.00-2.50 **Sample Number:** S-1

Remarks:

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						58.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	58.3		

Soil Description

Disturbed Residual: Tan, Moist, Medium Stiff, Silty CLAY, With Fine to Medium Sand

Atterberg Limits

PL= 24 LL= 51 PI= 27

Coefficients

D₉₀= D₈₅= D₆₀=
D₅₀= D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= CH AASHTO=

Remarks

* (no specification provided)

Source of Sample: B-101
Sample Number: S-1

Depth: 1.00-2.50

Date:



ECS Carolinas, LLP
4811 Koger Boulevard
Greensboro, NC 27407
Phone: (336) 856-7150

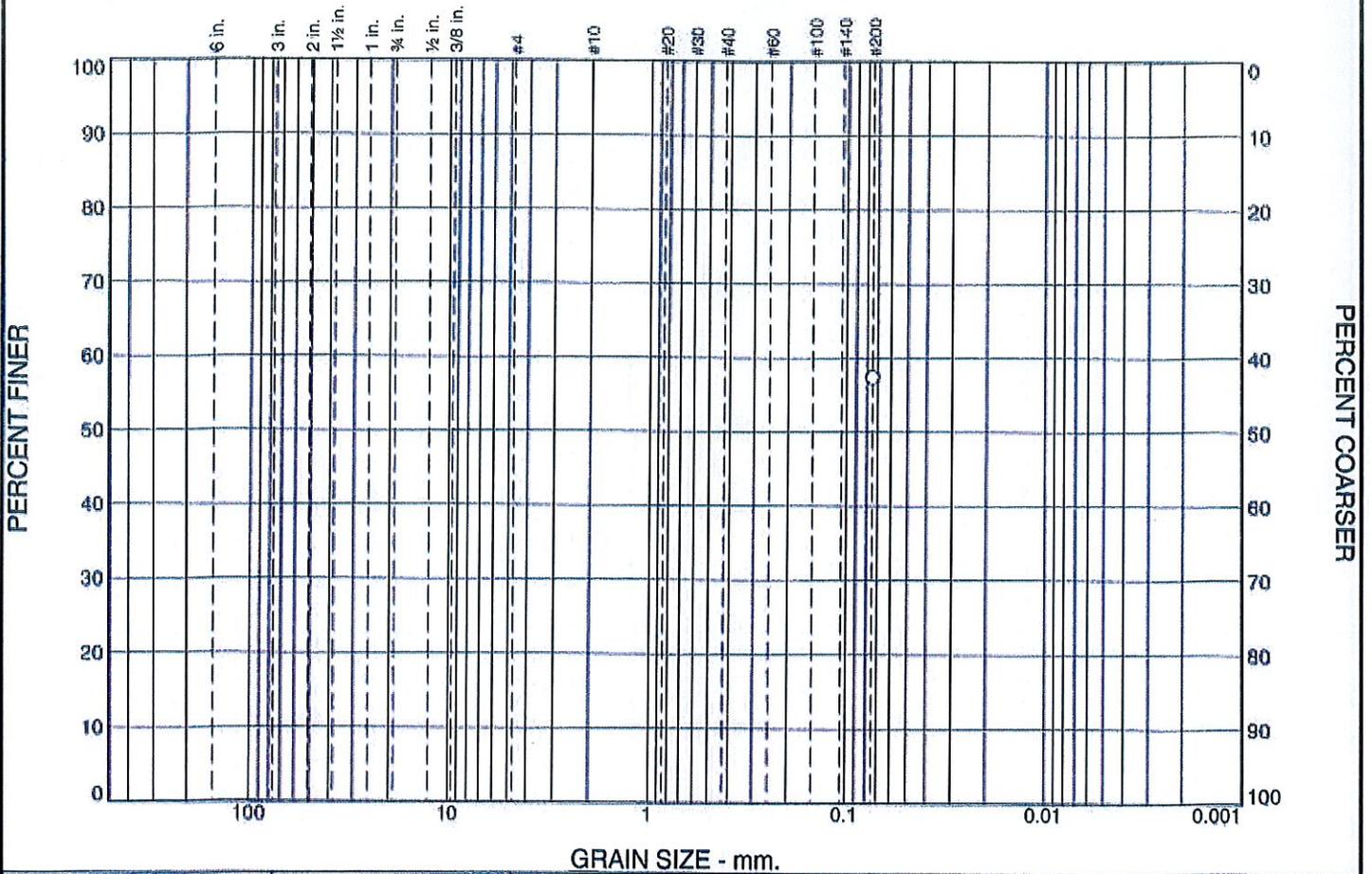
Fax: (336) 464-2869

Client: NC Megasites, LLC
Project: Liberty Megasite

Project No: 24105-A

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						57.4	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	57.4		

* (no specification provided)

Soil Description

Residual: Tan, Moist, Stiff, Clayey SILT, With Fine to Medium Sand

Atterberg Limits

PL= 39 LL= 56 PI= 17

Coefficients

D₉₀= D₈₅= D₆₀=
D₅₀= D₃₀= D₁₅=
D₁₀= C_u= C_c=

Classification

USCS= MH AASHTO=

Remarks

Source of Sample: B-119
Sample Number: S-2

Depth: 3.50-5.00

Date:



ECS Carolinas, LLP
4811 Koger Boulevard
Greensboro, NC 27407
Phone: (336) 856-7150

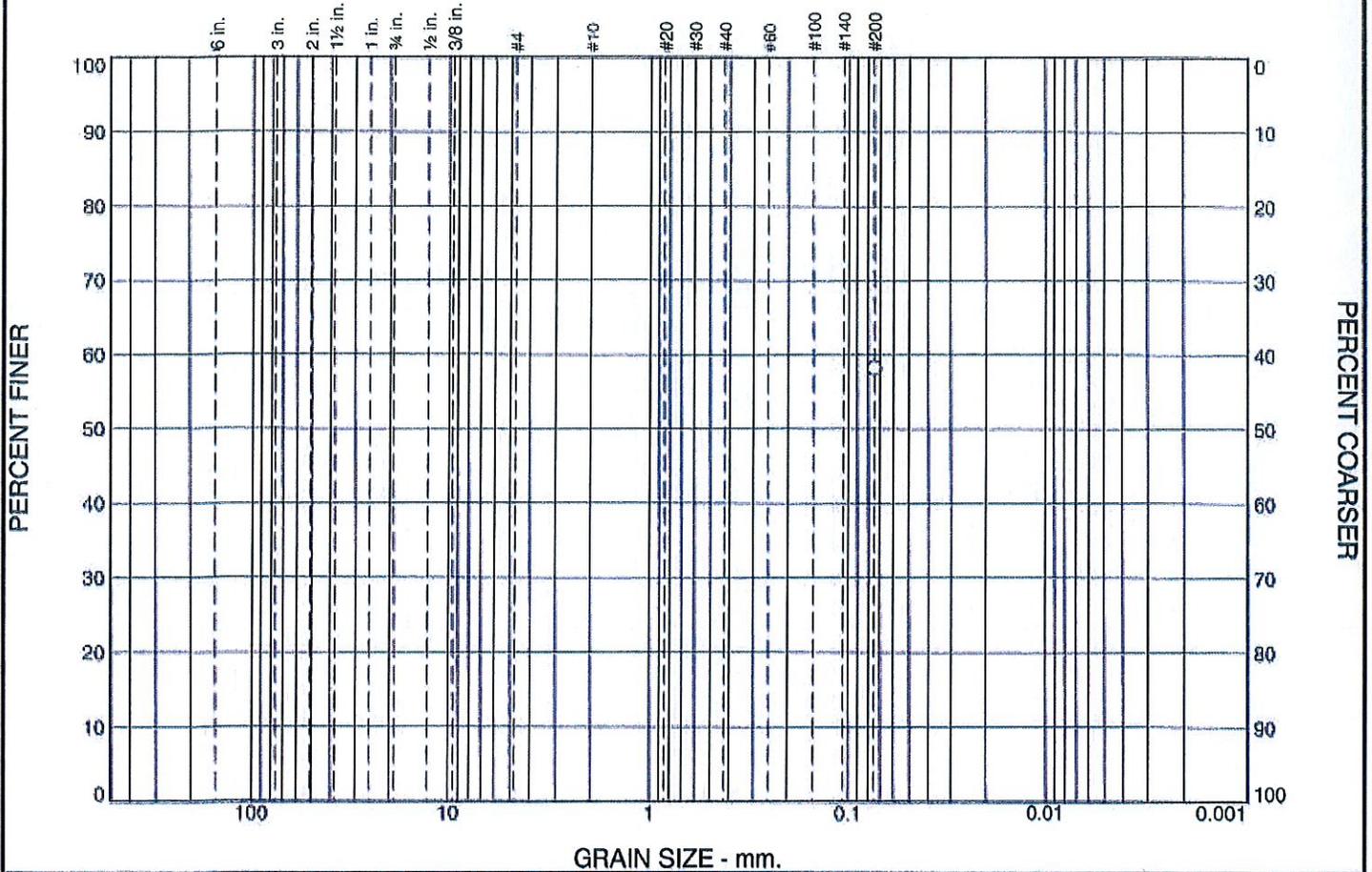
Fax: (336) 464-2869

Client: NC Megsites, LLC
Project: Liberty Megsite

Project No: 24105-A

Figure

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
						58.3	

SIEVE SIZE	PERCENT FINER	SPEC.* PERCENT	PASS? (X=NO)
#200	58.3		

Soil Description

Residual: Tan, Moist, Medium Stiff, Silty CLAY, With Fine to Medium Sand

Atterberg Limits

PL= 31 LL= 71 PI= 40

Coefficients

D₉₀= D₈₅= D₆₀=
 D₅₀= D₃₀= D₁₅=
 D₁₀= C_u= C_c=

Classification

USCS= CH AASHTO=

Remarks

* (no specification provided)

Source of Sample: B-120
Sample Number: S-1

Depth: 1.00-2.50

Date:



ECS Carolinas, LLP
 4811 Koger Boulevard
 Greensboro, NC 27407
 Phone: (336) 858-7150

Fax: (336) 464-2869

Client: NC Megasites, LLC
Project: Liberty Megasite

Project No: 24105-A

Figure