REPORT OF PRELIMINARY SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION

JEFF PRICE SITE
DILLON COUNTY, SOUTH CAROLINA
ECS PROJECT No. 38-1129

Prepared For

[illegible]

Prepared By

ECS

September 24, 2013

ECS CAROLINAS, LLP *"Setting the Standard for Service"*

Geotechnical • Construction Materials • Environmental • Facilities

NC Registered Engineering Firm F-1078

September 24, 2013

Reference: Report of Preliminary Subsurface Exploration and Geotechnical Engineering Evaluation
Jeff Price Site
Dillon County, South Carolina
ECS Project No. 38-1129

As authorized by the task order dated December 12, 2012, ECS Carolinas, LLP (ECS) has completed the preliminary subsurface exploration and geotechnical engineering evaluation for the above referenced project. This report contains the results of our subsurface exploration, as well as our preliminary recommendations concerning the geotechnical design and construction aspects of the project.

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

Sincerely,
ECS CAROLINAS, LLP represented by;

Stephen C. Wright, E.I.
Project Manager

Donald L. Anderson, P.E.
Senior Geotechnical Engineer

Derek L. Clyburn, P.E.
Principal Engineer

SOUTH CAROLINA LICENSED PROFESSIONAL ENGINEER No. 26004 9/24/2013 DEREK L. CLYBURN

SOUTH CAROLINA ECS CAROLINAS LLP No. C3239 CERTIFICATE OF AUTHORIZATION

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1.0 EXECUTIVE SUMMARY

The subject site is located in Dillon County, South Carolina. The site is a +/- 170-acre, undeveloped agricultural parcel of land located southeast of the city of Little Rock, South Carolina. The site is bordered to the north by Highway 9 and to the South by a CSX rail line. The site is currently being utilized as agricultural land and is generally flat with elevation changes of less than about 5 feet across the site. Structural loading information and grading information was not available at the time of report preparation.

Four (4) soil test borings were drilled and were advanced to depths of approximately 20 feet. Approximately 8 to 12 inches of topsoil soil was present at the test boring locations. Natural Coastal Plain soils typical of the Coastal Plain region were present beneath the topsoil.

Depending on the structure type, related subsurface profile and provided the subgrade preparation and earthwork operations are completed in strict accordance with the recommendations of this report, spread footings will likely be appropriate for proposed lightly to moderately loaded structures. At this time, a preliminary design bearing capacity of 2,000 to 3,000 psf for foundations bearing on firm natural soils appears feasible. Provided the site preparation and fill recommendations outlined herein are implemented, concrete slabs-on-grade can be designed using a modulus of subgrade reaction of 100 to 150 pounds per cubic inch (pci).

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

2.0 PROJECT INFORMATION

The site is a +/- 170-acre, undeveloped agricultural parcel of land located southeast of the city of Little Rock, South Carolina. The site is bordered to the north by Highway 9 and to the South by a CSX rail line. The site is currently being utilized as agricultural land and is generally flat with an elevation changes of less than 5 feet across the site. The approximate site location is shown on the Site Location Map in the Appendix of this report. Specific development plans are not available at this time.

The borings were located in the field in areas where drill rig access could be achieved without the use of mechanical clearing. As such, the subsurface exploration is preliminary in nature, and the recommendations in this report may have to be modified based on the results of a final exploration.

3.0 EXPLORATION PROCEDURES

3.1 Subsurface Exploration

Four (4) soil test borings were drilled at the approximate locations shown on the Exploration Location Diagram in the Appendix of this report. The borings were located in the field by ECS in areas where mechanical clearing was not required.

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

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

After recovery, each sample was removed from the sampler and visually classified. Representative portions of each sample were then sealed in air tight containers and brought to our laboratory for visual classification.

3.2 Refraction Microtremor (ReMi) Survey

A Refraction Microtremor (ReMi) survey was performed on the project site using one ReMi array traverse. The data was gathered in the field using standard refraction seismic equipment to measure site characteristics using ambient vibrations (microtremors) as a seismic source. Data was collected using a 24-channel exploration seismograph, with 15 geophones at 20-foot spacing. Ten unfiltered 30-second records were recorded along the array.

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

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

4.0 SITE AND SUBSURFACE CONDITIONS

4.1 Site Observations

The subject site is a +/- 170-acre, undeveloped agricultural parcel of land located southeast of the city of Little Rock, South Carolina. The site is bordered to the north by Highway 9 and to the South by a CSX rail line. The site is currently being utilized as agricultural land and is generally flat with elevation changes of less than 5 feet across the site. Shallow drainage features intersect the central portion of the site.

4.2 Area Geology

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

4.3 Subsurface Conditions

4.3.1 Soil Test Borings

The drillers reported that approximately 8 to 12 inch of topsoil was encountered in the soil test borings drilled on site. Natural Coastal Plain soils were observed beneath the topsoil.

The soils were generally classified as sandy clay (CL), clayey sand (SC), silty clay (CH), and fine to coarse sand (SW). The Standard Penetration Resistances (N-values) recorded in the natural soils ranged from 2 to 23 blows per foot (bpf). N-values of less than 5 bpf were typically observed in the upper 3 feet of the borings.

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

4.3.2 Groundwater Observations

Groundwater was observed at depths of approximately 6 to 7 feet in the boreholes at the time of drilling. Because of the layered nature of sands and clays at the site, shallow perched water could be present, especially during wet weather.

Please note that variations in the location of the water table may occur as a result of changes in precipitation, evaporation, surface water runoff, absorption, and other factors not immediately apparent at the time of this exploration. Consequently, fluctuations in the elevation of the groundwater table should be expected. In general, the highest groundwater levels typically occur in late winter and spring, while the lowest levels typically occur in late summer and fall.

4.3.3 Refraction Microtremor (ReMi) Survey

The weighted average of the shear wave velocities recorded in the upper 100 feet of the subsurface profile along the ReMi traverse was 850 feet/second as calculated in accordance with the International Building Code (IBC 2012).

5.0 PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS

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

Low constancy near surface soils were encountered in the soil test borings. These soils may respond unfavorably to proofrolling, and in-place stabilization or undercutting of the unstable or unsuitable soils may be required.

The on-site soils materials encountered in this exploration should generally be suitable for use as engineered fill provided they can be properly moisture conditioned and compacted. The clayey on-site soils will typically be more difficult to moisture condition than the sandy soils. Additionally, the on-site soils should typically be suitable for support of lightly to moderately loaded structures utilizing shallow foundation systems. Regardless, a final geotechnical exploration of the site should be performed once the new construction is sited and final grades are established in order to determine final geotechnical design parameters.

5.1 Site and Subgrade Preparation

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

After removal of existing deleterious surface and subsurface materials, and prior to fill placement or other at-grade construction, the exposed subgrade soils should be evaluated by an experienced geotechnical engineer or his authorized representative. The evaluation should include proofrolling with an approved piece of equipment, such as a loaded dump truck, having an axle weight of at least 10 tons to identify soft, loose or yielding subgrade materials. Unsuitable subgrade materials may require in-place stabilization, or excavation and replacement with engineered fill. The most appropriate remedial activity to repair subgrades should be determined in the field by ECS at the time of proofrolling.

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

5.2 Excavation Characteristics

The soils encountered in the borings should generally be excavatable with conventional earth moving equipment such as pans/scrapers, loaders, bulldozers, rubber tired backhoes, etc. Areas of mass excavation, trenches and pits should meet the requirements of the most current Occupational Safety and Health Administration (OSHA) 29 CFR Part 1926, "Occupational Safety and Health Standards-Excavations". For temporary excavation purposes, the site soils typically classify as OSHA Type B and C soils. Site safety shall be the sole responsibility of the contractor and his subcontractors

5.3 Site and Subgrade Preparation

New fill placed for support of the new buildings, pavements and other structures, and for backfill of utility lines within expanded structure and pavement limits should consist of engineered fill. Engineered fill should be an approved material, free of organic matter and other deleterious materials, and have a Liquid Limit (LL) and a Plasticity Index (PI) less than approximately 50 and 25, respectively. We also recommend that fills within structural areas have a standard Proctor (ASTM D 698) maximum dry density of at least 90 pounds per cubic foot (pcf).

Mass engineered fill placed within the building and pavement areas should be placed in lifts not exceeding 8 inches in loose lift thickness and moisture conditioned to within their working range of optimum moisture content, and compacted to a minimum of 95 percent of their standard Proctor maximum dry density, as determined in accordance with ASTM D 698. Similarly, isolated areas of engineered fill, such as trench line backfill, should be placed in lifts not exceeding 6 inches and moisture conditioned as mentioned above. The typical working range of optimum is typically within approximately 3 percent of the optimum moisture content.

It may be prudent to compact the upper 18 to 24 inches of filled areas to at least 98 percent of the standard Proctor maximum dry density to enhance slab and pavement support.

The on-site soils generally appear suitable for reuse as engineered fill, although sandy soils will typically be easier to moisture condition and compact than the more clayey materials.

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

5.4 Preliminary Foundation and Slab on Grade Design

Based on the limited soil test boring data, it appears that lightly or moderately loaded structures can be supported by shallow foundations. At this time, a preliminary design bearing capacity of 2,000 to 3,000 psf for foundations bearing on firm natural soils appears feasible. Please note that the provided preliminary bearing capacities may vary once the structure type is finalized.

To reduce the possibility of foundation bearing failure and excessive settlement due to local shear or "punching" failures, we recommend that continuous footings have a minimum width of 24 inches and that isolated column footings have a minimum lateral dimension of 36 inches. We recommend the bearing elevation for foundations be a minimum depth of 18 inches below the finished exterior grade.

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

For slab-on-grade design, a modulus of subgrade reaction value of 100 to 150 pci appears appropriate provided the subgrades are properly prepared. We recommend slabs-on-grade are underlain by a minimum of 4 inches of granular material having a maximum aggregate size of 1½ inches and no more than 2 percent fines. Prior to placing the granular material, the floor subgrade soil should be properly compacted, proofrolled, and free of standing water, mud and frozen soil.

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

5.5 Groundwater

Groundwater was observed at depths of approximately 6 to 7 feet in the boreholes at the time of drilling. We suggest that site grades be established at least 2 feet above the long-term static groundwater water levels, which could be higher than the water levels observed in the borings. Higher final grades are recommended to account for fluctuations of the ground water levels. If final grades will approach the level of water observed in the borings, we recommended that a more accurate study of potential water levels at the site be conducted.

If seepage does occur, the geotechnical engineer should be consulted to provide specific recommendations that are dependant upon actual field conditions. Groundwater that seeps into excavations can likely be managed by pumping from sumps in the excavation bottom or by gravity trenches.

We expect that perched water could be present in some areas, especially during wet weather. Perched water can often be managed by excavating interceptor trenches upgradient of the work area.

5.6 Liquefaction Potential

Based on our experience in the region and the field data collected, ECS recommends that a liquefaction analysis be conducted during the final geotechnical evaluation.

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

5.7 Seismic Site Class Determination

South Carolina has adopted the International Building Code (IBC 2012), and the IBC 2012 requires that a seismic Site Class be assigned for new structures. The seismic Site Class may be determined by calculating a weighted average shear wave velocity of subsurface materials to a depth of 100 feet. Based on the average shear wave velocity data obtained to a depth of 100 feet below the existing ground surface from the refraction microtremor surveys, the soil profile type of the site falls in the range of seismic Site Class "D" as defined in IBC 2012. The shear wave velocity profile generated from the ReMi testing is shown in the Appendix of this report.

6.0 CLOSING

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

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

APPENDIX

Site Location Map

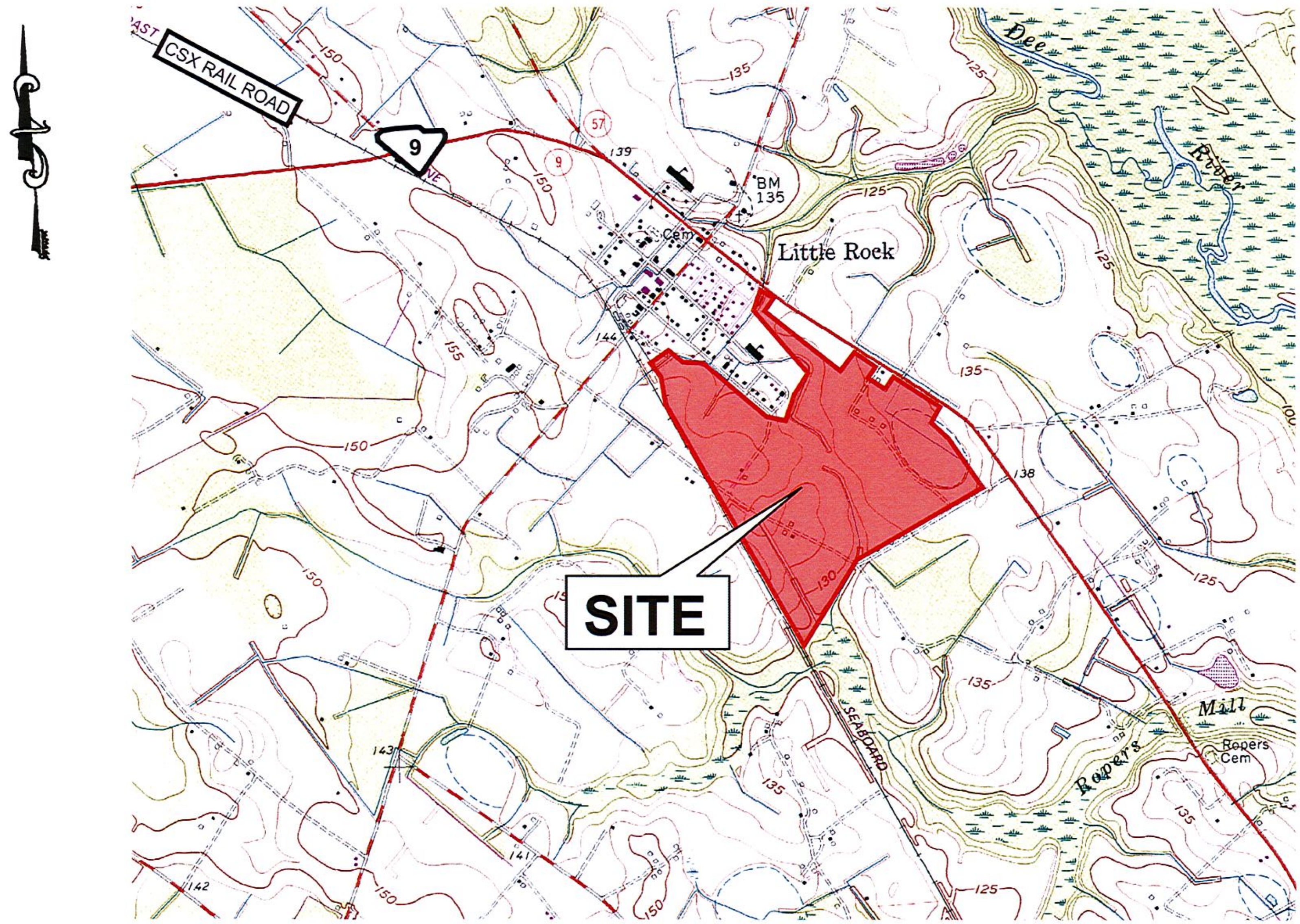
Exploration Location Diagram

Unified Soil Classification System

Reference Notes for Boring Logs

Boring Logs B-1 through B-4

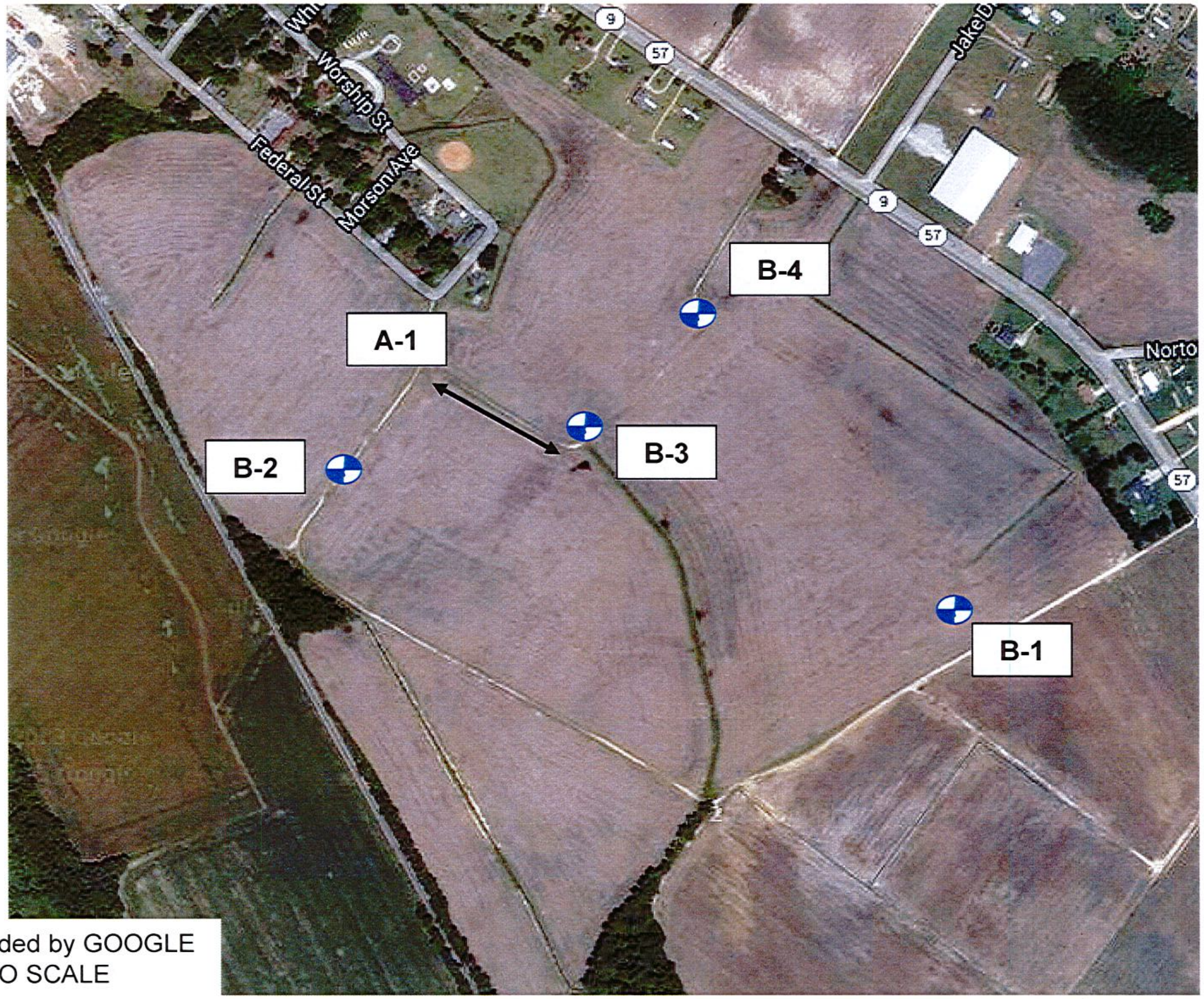
ReMi Testing Results



NOT TO SCALE

Drawing Provided by Client

SITE LOCATION MAP
JEFF PRICE SITE
DILLON, SOUTH CAROLINA
ECS PROJECT No. 38-1129



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LEGEND

Approximate Boring Location

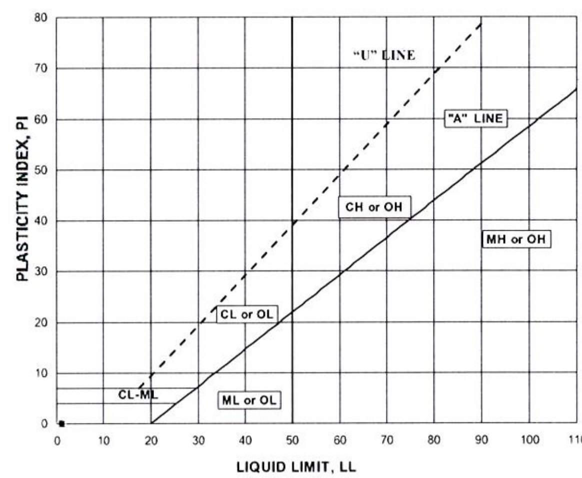
Approximate ReMi Location

EXPLORATION LOCATION DIAGRAM
JEFF PRICE SITE
DILLON, SOUTH CAROLINA
ECS PROJECT No. 38-1129

Unified Soil Classification System
(ASTM Designation D-2487)

Major Division		Group Symbol	Typical Names		Classification Criteria
Coarse-grained soils More than 50% retained on No. 200 sieve	Gravels More than 50% of coarse fraction retained on No. 4 sieve	GW	Well-graded gravels and gravel-sand mixtures, little or no fines	Classification on basis of percentage of fines: Less than 5% Pass No. 200 sieve: GW, GP, SW, SP; More than 12% Pass No. 200 sieve: GM, GC, SM, SC; 5% to 12% Pass No. 200 sieve: Borderline classification requiring use of dual symbol	$C_u = D_{60}/D_{10}$ Greater than 4 $C_z = (D_{30})^2/(D_{10}xD_{60})$ Between 1 and 3
		GP	Poorly graded gravels and gravel-sand mixtures, little or no fines		Not meeting both criteria for GW
		GM	Silty gravels, gravel-sand-silt mixtures		Atterberg limits plot below "A" line or plasticity index less than 4
		GC	Clayey gravels, gravel-sand-clay mixtures		Atterberg limits plot above "A" line and plasticity index greater than 7
	Sands More than 50% of coarse fraction passes No. 4 sieve	SW	Well-graded sands and gravelly sands, little or no fines		$C_u = D_{60}/D_{10}$ Greater than 6 $C_z = (D_{30})^2/(D_{10}xD_{60})$ Between 1 and 3
		SP	Poorly graded sands and gravelly sands, little or no fines		Not meeting both criteria for SW
		SM	Silty sands, sand-silt mixtures		Atterberg limits plot below "A" line or plasticity index less than 4
		SC	Clayey sands, sand-clay mixtures		Atterberg limits plot above "A" line and plasticity index greater than 7
Fine-grained soils 50% or more passing No. 200 sieve	Silts and Clays Liquid limit 50% or less	ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands		See plasticity chart
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays		
		OL	Organic silts and organic silty clays of low plasticity		
	Silts and Clays Liquid limit greater than 50%	MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts		
		CH	Inorganic clays of high plasticitiy, fat clays		
		OH	Organic clays of medium to high plasticity		
Highly organic soils		Pt	Peat, muck and other highly organic soils		Fibrous organic matter; will char, burn, or glow

Note: U-line represents approximate upper limit of LL and PI combinations for natural soils (empirically determined). ASTM-D2487.



Plasticity chart for the classification of fine-grained soils. Tests made on fraction finer than No. 40 sieve

UNIFIED SOIL CLASSIFICATION SYSTEM

REFERENCE NOTES FOR BORING LOGS

I. Drilling and Sampling Symbols:

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

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

II. Correlation of Penetration Resistances to Soil Properties:

Relative Density of Cohesionless Soils

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

Consistency of Cohesive Soils

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

III. Unified Soil Classification Symbols:

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

IV. Water Level Measurement Symbols:

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

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

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

ECS

CLIENT	JOB #	BORING #	SHEET
Alliance Consulting Engineers, Inc.	38-1129	B-1	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Jeff Price Site	

SITE LOCATION

Dillon County, South Carolina

NORTHING	EASTING	STATION

-O- CALIBRATED PENETROMETER TONS/FT^2

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

PLASTIC LIMIT% — WATER CONTENT% — LIQUID LIMIT%

⊗ STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING — LOSS OF CIRCULATION

SURFACE ELEVATION

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"	SPT BLOWS/FT
0					Topsoil Depth [12"]				
	S-1	SS	18	18	Fine Sandy CLAY, Reddish Brown and Gray, Moist, Firm to Stiff (CL)			2 2 3	5
5	S-2	SS	18	18				3 3 4	7
	S-3	SS	18	18		∇		3 5 4	9
10	S-4	SS	18	18	Clayey Fine SAND, Reddish Gray, Moist, Stiff (SC)			3 3 6	9
					Silty CLAY, Yellowish Brown, Wet, Soft (CH)				
15	S-5	SS	18	18				2 1 2	3
20	S-6	SS	18	18				1 1 2	3
					END OF BORING @ 20.00'				
25									
30									

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

WL 7.00' WS ☐ WD ☐	BORING STARTED 08/27/13	
WL(BCR) WL(ACR)	BORING COMPLETED 08/27/13	CAVE IN DEPTH
WL	RIG 550 ATV FOREMAN HW	DRILLING METHOD HSA

CLIENT	JOB #	BORING #	SHEET
Alliance Consulting Engineers, Inc.	38-1129	B-2	1 OF 1

PROJECT NAME: Jeff Price Site

ARCHITECT-ENGINEER:

SITE LOCATION: Dillon County, South Carolina

NORTHING: | EASTING: | STATION:

-O- CALIBRATED PENETROMETER TONS/FT^2

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

PLASTIC LIMIT% ✕ — WATER CONTENT% ● — LIQUID LIMIT% △

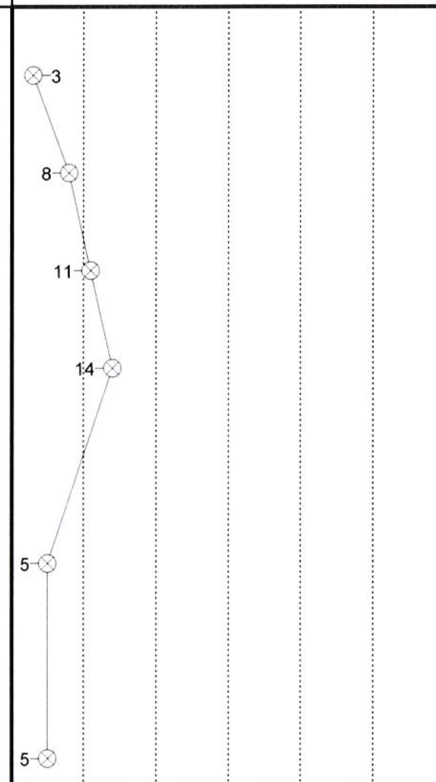
⊗ STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING — LOSS OF CIRCULATION

SURFACE ELEVATION

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"	STANDARD PENETRATION BLOWS/FT
0					Topsoil Depth [8"]				
	S-1	SS	18	18	Fine Sandy CLAY, Yellowish Brown and Red, Moist to Damp, Soft (CL)			1 1 2	3
	S-2	SS	18	18	Fine Sandy CLAY, Reddish Brown and Gray, Moist, Firm to Stiff (CL)			2 3 5	8
5						▽			
	S-3	SS	18	18				3 5 6	11
	S-4	SS	18	18				5 6 8	14
10									
					Fine to Coarse SAND, Yellowish Brown, Wet, Loose (SW)				
	S-5	SS	18	18				2 2 3	5
15									
	S-6	SS	18	18				2 3 2	5
20					END OF BORING @ 20.00'				
25									
30									



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

▽ WL 6.00' WS ☐ WD ☐	BORING STARTED 08/27/13	
WL(BCR) WL(ACR)	BORING COMPLETED 08/27/13	CAVE IN DEPTH
WL	RIG 550 ATV FOREMAN HW	DRILLING METHOD HSA

CLIENT	JOB #	BORING #	SHEET
Alliance Consulting Engineers, Inc.	38-1129	B-3	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Jeff Price Site	

SITE LOCATION
Dillon County, South Carolina

NORTHING	EASTING	STATION

-O- CALIBRATED PENETROMETER TONS/FT^2

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

PLASTIC LIMIT% × — WATER CONTENT% ● — LIQUID LIMIT% △

⊗ STANDARD PENETRATION BLOWS/FT

DESCRIPTION OF MATERIAL — ENGLISH UNITS

BOTTOM OF CASING — LOSS OF CIRCULATION

SURFACE ELEVATION

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"	STANDARD PENETRATION BLOWS/FT
0					Topsoil Depth [8"]				
					Fine Sandy CLAY, Gray, Moist, Firm (CL)				
	S-1	SS	18	18				2 2 3	5
					Clayey Fine SAND, Gray, Moist, Medium Dense (SC)				
	S-2	SS	18	18				6 8 8	16
5									
	S-3	SS	18	18		▽		5 7 8	15
					Clayey Fine SAND, Yellowish Brown, Wet, Very Loose (SC)				
	S-4	SS	18	18				4 2 2	4
10									
					Silty CLAY, Yellowish Red, Wet, Very Soft to Soft (CH)				
	S-5	SS	18	18				1 1 1	2
15									
	S-6	SS	18	18				1 2 2	4
20					END OF BORING @ 20.00'				
25									
30									

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

▽ WL 6.50' WS ☐ WD ☐	BORING STARTED 08/27/13	
WL(BCR) WL(ACR)	BORING COMPLETED 08/27/13	CAVE IN DEPTH
WL	RIG 550 ATV FOREMAN HW	DRILLING METHOD HSA

CLIENT	JOB #	BORING #	SHEET
Alliance Consulting Engineers, Inc.	38-1129	B-4	1 OF 1

PROJECT NAME	ARCHITECT-ENGINEER
Jeff Price Site	

SITE LOCATION

Dillon County, South Carolina

NORTHING	EASTING	STATION

-O- CALIBRATED PENETROMETER TONS/FT^2

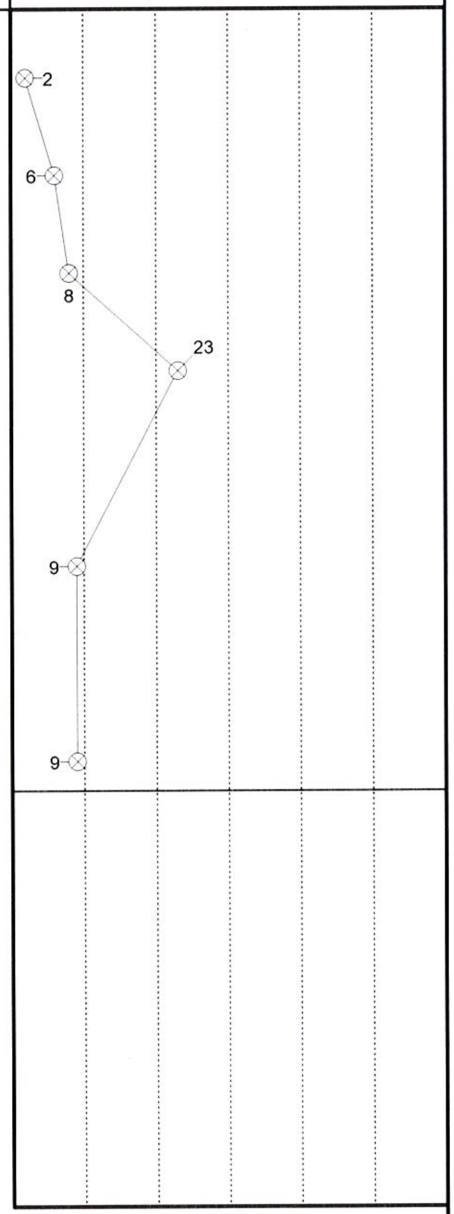
ROCK QUALITY DESIGNATION & RECOVERY
RQD% - - - REC% ———

PLASTIC LIMIT% X — WATER CONTENT% ● — LIQUID LIMIT% △

⊗ STANDARD PENETRATION BLOWS/FT

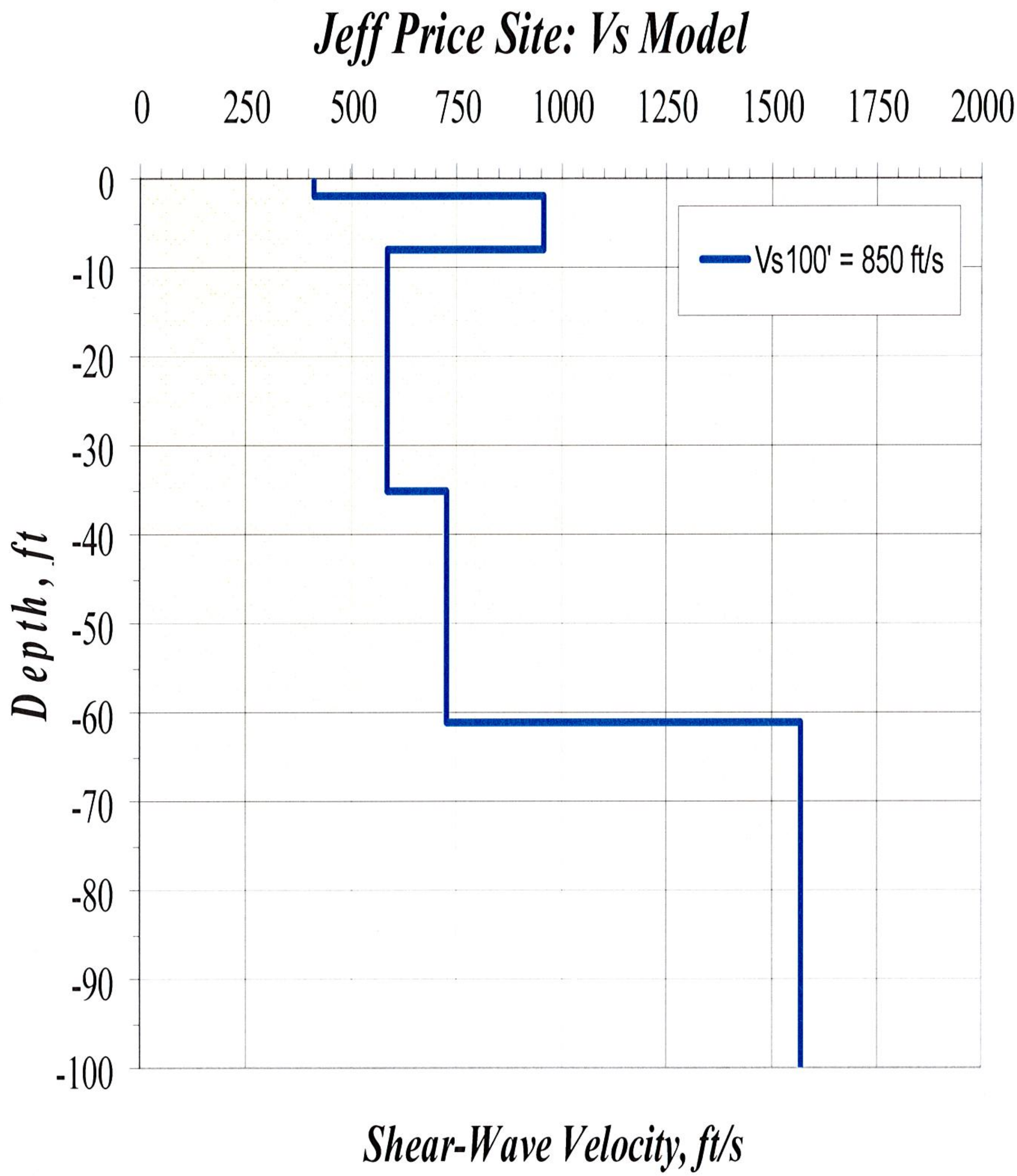
DESCRIPTION OF MATERIAL — ENGLISH UNITS
BOTTOM OF CASING — LOSS OF CIRCULATION
SURFACE ELEVATION

DEPTH (FT)	SAMPLE NO.	SAMPLE TYPE	SAMPLE DIST. (IN)	RECOVERY (IN)	DESCRIPTION OF MATERIAL	WATER LEVELS	ELEVATION (FT)	BLOWS/6"
0					Topsoil Depth [12"]			
	S-1	SS	18	18	Fine Sandy CLAY, Brownish Gray, Moist, Very Soft (CL)			1 1 1
	S-2	SS	18	18	Fine Sandy CLAY, Gray, Moist, Firm to Very Stiff (CL)			2 2 4
5								
	S-3	SS	18	18		▽		2 3 5
	S-4	SS	18	18				6 8 15
10								
					Clayey Fine to Medium SAND, Yellowish Gray, Wet, Loose (SC)			
	S-5	SS	18	18				4 4 5
15								
	S-6	SS	18	18				3 4 5
20					END OF BORING @ 20.00'			
25								
30								



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

▽ WL 7.00' WS ☐ WD ☐	BORING STARTED	08/27/13	
WL(BCR) WL(ACR)	BORING COMPLETED	08/27/13	CAVE IN DEPTH
WL	RIG 550 ATV	FOREMAN HW	DRILLING METHOD HSA



REMI TEST RESULTS
LINE 1
SITE CLASS 'D'

JEFF PRICE SITE
DILLON COUNTY, SOUTH CAROINA
ECS PROJECT No. 38-1129